PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 05 50 00 - Metal Fabrications.

1.2 REFERENCES

.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 307-00, Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength .

.3 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-1.28-98, Exterior, Alkyd, House Paint.
.2 CAN/CGSB-1.40-M97, Anti-corrosive, Structural Steel Alkyd Primer.
.3 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
.4 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
.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-97(February 2000), Wood Preservation.

.5 CAN/CSA-G164-M92(R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.3 SAMPLES

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Inform Departmental Representative at least 4 weeks prior to beginning Work, of proposed sources of guide rail and components.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Division 1.

.2 Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging

1.4 WASTE MANAGEMENT AND DISPOSAL (Cont'd)

.2 (Cont'd) material 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 metal recycling facility as approved by Departmental Representative.

.5 Unused paint or coating material must be disposed of at an official hazardous material collections site as approved by Departmental 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.

1.5 MEASUREMENT FOR PAYMENT

.1 Vehicle W-Beam Guide Rail (Post Replacement) - Replacement of existing vehicle W-beam guide rail post shall be measured by the each. Include incidental to this cost, all costs for removal of existing, excavation, backfilling, hardware, compaction and backfill, trimming of post, supply and application of wood preservative, removal and reattachment of existing metal sections, and all other plant, labour, equipment and material required to complete the work as provided in the Contract Drawings and Specifications.

.2 Vehicle W-Beam Guide Rail (Metal Section Replacement) - Replacement of existing vehicle W-beam

1.5 MEASUREMENT FOR PAYMENT (Cont'd)

.2 (Cont'd) guide rail metal sections used in anchorages and terminal sections shall be measured by the each. Include incidental to this cost, all costs for removal of existing, installation of new, post realignment, hardware, tails, bolts, nuts, and washers, and all other plant, labour, equipment and material required to complete the work as provided in the Contract Drawings and Specifications.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Steel W-beam guide rail as indicated and to following requirements:
.1 Steel rail and terminal sections: to AASHTO M180, class A Type 1 hot dip galvanized coated.
.2 Bolts, nuts and washers: to ASTM A 307, hot dip galvanized to CSA G164.

.2 Hot dip galvanized coating: to CSA G164.

.3 Sawn timber posts and offset blocks:
.1 Species: Hemlock.
.2 Type: pressure treated in accordance with CAN/CSA-O80 Series.
.3 Grade: Seasoned structural grade lumber.
.4 Dimensions: as indicated.

PART 3 - EXECUTION

3.1 ERECTION

.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.

3.1 ERECTION (Cont'd)

.5 Worker protection: workers must wear gloves, dust masks, long sleeved clothing, eye protection, protective clothing, when handling, drilling, sawing, cutting or sanding preservative treated wood and applying preservative materials.

.6 Treat cut tops with two coats of clear copper napthenate or 5% pentachlorophenol solution, water repellant preservative.

.7 Construct anchorages to details as indicated. Place and compact backfill for anchors as directed by Departmental Representative.

.8 Erect steel W-beam components to details as indicated. Lap joints in direction of traffic. Tighten nuts to 100 N.m torque. Maximum protrusion of bolt 12 mm beyond nut.

END