PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 033000 – Cast-in-Place Concrete

.2 Section 3123 33.01 – Excavating, Trenching and Backfilling

.3 Section 321116.01 – Granular Sub-base

.4 Section 311123 – Aggregate Base Courses

.5 Section 310516 – Aggregate Materials

1.2 REFERENCES

.1 American Society for Testing and Materials International (ASTM)
- .1 ASTM C 117-04, Standard Test Method for Materials Finer than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
- .2 ASTM C 136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- .3 ASTM D 260-86(2001), Standard Specification for Boiled Linseed Oil.
- .4 ASTM D 698-00ae1, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600 kN-m/m^3).

.2 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-3.3-99(March 2004), Kerosene, Amend. No. 1, National Standard of Canada.
- .2 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.

.3 Canadian Standards Association (CSA International)
- .1 CSA-A23.1-04/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submittals in accordance with Section 013300 - Submittal Procedures.

.2 Product Data: submit WHMIS MSDS sheets.

.3 Inform Departmental Representative of proposed source of materials and provide access for sampling at least 4 weeks prior to commencing work.

.4 If materials have been tested by accredited testing laboratory approved by Departmental Representative within previous 2 months and have passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

1.4 BASIS OF PAYMENT

.1 Item No. C-001: Precast Concrete Barrier Curb per OPSD 603.020 - Precast concrete curbs will be measured for payment by each section / unit of curb actually installed. The unit price bid will be full compensation for the supply and placement of the pre-cast concrete curb, anchoring reinforcing steel, and site preparation as indicated on Contract Drawings, and all associated works.

.2 Item No. C-002: Concrete Barrier Curb as per OPSD 600.110 - Concrete curbs will be measured for payment in linear metres of curb actually installed (by type). The unit price bid will be full compensation for the supply and placement of concrete, reinforcing steel, formwork, expansion joints, form removal, earth backfill and depressions as indicated on Contract Drawings, and all associated works.

.3 Item No. C-003: Monolithic Concrete Barrier Curb & Sidewalk as per detail - Monolithic concrete curb and sidewalk will be measured for payment in square metres of monolithic concrete curb and sidewalk actually installed. The unit price bid will be full compensation for the supply and placement of concrete, reinforcing steel, formwork, expansion joints, form removal, earth backfill and depressions as indicated on Contract Drawings, and all associated works.

.4 Installation of Salvaged Granite Curb - Supply to be provided by the Departmental Representative from stockpile as directed by Departmental Representative. The lump sum bid will be full compensation for the placement of the granite curb, reinforcing steel as required, expansion joints, earth backfill and all associated works.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Concrete mixes and materials: in accordance with Section 033000 - Cast-in-Place Concrete.

.2 Joint filler: in accordance with Section 033000 - Cast-in-Place Concrete.

.3 Granular base: material to Section 310516 - Aggregate Materials and following requirements:
- .1 Type 1, 2 or 3 fill.
- .2 Crushed stone or gravel.
- .3 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1.

.4 Non-staining mineral type form release agent: chemically active release agents containing compounds that react with free lime to provide water-soluble soap.

.5 Fill material: to Section 310516 - Aggregate Materials and following requirements:
- .1 Type 1, 2 or 3 fill.
- .2 Crushed stone or gravel.
- .3 Gradations: within limits specified when tested to

ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1.

PART 3 - EXECUTION

3.1 GRADE PREPARATION

.1 Do grade preparation work in accordance with Section 312333.01 - Excavating, Trenching and Backfilling.

.2 Construct embankments using excavated material free from organic matter or other objectionable materials.
.1 Dispose of surplus and unsuitable excavated material off site.

3.2 GRANULAR BASE

.1 Obtain Departmental Representative's approval of subgrade before placing granular base.

.2 Place granular base material to lines, widths, and depths as indicated.

.3 Compact granular base in maximum 150 mm layers to at least 100% of maximum density to ASTM D 698.

3.3 CONCRETE

.1 Obtain Departmental Representative's approval of granular base and reinforcing steel prior to placing concrete.

.2 Do concrete work in accordance with Section 033000 - Cast-in-Place Concrete.

.3 Immediately after floating, give sidewalk surface uniform broom finish to produce regular corrugations not exceeding 2 mm deep, by drawing broom in direction normal to centre line.

.4 Provide edging as indicated with 10 mm radius edging tool.

.5 Slip-form pavers equipped with string line system for line and grade control may be used if quality of work acceptable to Departmental Representative can be demonstrated. Hand finish surfaces when directed by Departmental Representative.

3.4 TOLERANCES

.1 Finish surfaces to within 3 mm in 3 m as measured with 3 m straightedge placed on surface.

3.5 EXPANSION AND CONSTRUCTION JOINTS

.1 Install tooled transverse contraction joints after floating, when concrete is stiff, but still plastic, at intervals of 2m.

.2 Install expansion joints at intervals of 6 m.

.3 When sidewalk is adjacent to curb, make joints of curb, gutters and sidewalk coincide.

3.6 ISOLATION JOINTS

.1 Install isolation joints around manholes and catch basins and along length adjacent to concrete curbs, catch basins, buildings, or permanent structure.

.2 Install joint filler in isolation joints in accordance with Section 033000

- Cast-in-Place Concrete.

.3 Seal isolation joints with sealant approved by Departmental Representative.

3.7 CURING

.1 Cure concrete with curing compound as directed by Departmental Representative.

.2 Where burlap is used for moist curing, place two pre-wetted layers on concrete surface and keep continuously wet during curing period.

.3 Apply curing compound evenly to form continuous film, in accordance with manufacturer's requirements.

3.8 BACKFILL

.1 Allow concrete to cure for 4 days prior to backfilling.

.2 Backfill to designated elevations with material as directed by Departmental Representative.

.1 Compact and shape to required contours as indicated.

3.9 CLEANING

.1 Proceed in accordance with Section 017411 - Cleaning.

.2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

***** END OF SECTION *****