

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 03 30 01 - Cast-in-Place Concrete
- .2 Section 31 23 10 - Excavating, trenching and backfilling.

**1.2 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM D698-91 (1998), Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600 kN-m/m<sup>3</sup>).
- .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 MEASUREMENT PROCEDURES**

- .1 Concrete curbs will be measured in meter. Works include, but not limited to, supply and installation of stone, concrete, saws cuts, formwork, formwork removal, joints, asphaltic boards, any reinforcement required or indicated on drawings, leveling surfaces, connection to adjacent structures with dowels and all material, equipment, materials and labor required to complete the work

**1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials
- .2 Put in designated containers any substance that complies with toxic or dangerous waste definition.
- .3 Ensure that containers are sealed and stored correctly and safely.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Concrete mixes and materials: in accordance with Section 03 30 01 - Cast-in-Place Concrete.
- .2 Reinforcing steel: in accordance with Section 03 20 00 - Concrete Reinforcing.
- .3 Joint filler and curing compound: in accordance with Section 03 30 01 - Cast-in-Place Concrete.
- .4 Granular base: material to Section 31 05 17 – Aggregate.

- .5 Non-staining mineral type form release agent: chemically active release agents containing compounds that react with free lime to provide water-soluble soap.
- .6 Fill material: to Section 31 23 10 – Excavating, trenching and backfilling.
- .7 Kerosene: to CAN/CGSB-3.3.

## **Part 3 Execution**

### **3.1 GRADE PREPARATION**

- .1 Do grade preparation work in accordance with Section 31 23 10 - Excavating, Trenching and Backfilling.
- .2 Construct embankments using excavated material free from organic matter or other objectionable materials.
- .3 When constructing embankment provide for minimum 1 m shoulders, where applicable, outside of neat lines of concrete.
- .4 Place fill in maximum 150 mm layers and compact to at least 95% of maximum dry density to ASTM D698.

### **3.2 GRANULAR BASE**

- .1 Obtain Engineer'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 95% of maximum density to ASTM D698.

### **3.3 CONCRETE**

- .1 Obtain Engineer's approval of granular base and reinforcing steel prior to placing concrete.
- .2 Do concrete work in accordance with Section 03 30 01 - Cast-in-Place Concrete.
- .3 Provide edging as indicated.
- .4 Slip-form pavers equipped with string line system for line and grade control may be used if quality of work acceptable to ministry Representative can be demonstrated. Hand finish surfaces when directed by ministry 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 CONTRACTION JOINTS**

- .1 Install tooled transverse contraction joints after floating, when concrete is stiff, but still plastic.
- .2 Install expansion joints as indicated.
- .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 as indicated.
- .3 Seal isolation joints with sealant approved Engineer.

**3.7 CURING**

- .1 Cure concrete by adding moisture continuously in accordance with CSA-A23.1/A23.2 to exposed finished surfaces for at least 1 day after placing, or sealing moisture in by curing compound as directed by Engineer.
- .2 Where burlap is used for moist curing, place two prewetted 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 (7)seven days prior to backfilling.
- .2 Backfill to designated elevations with material as directed by ministry Representative.
  - .1 Compact and shape to required contours as indicated

**END OF SECTION**