SECTION 638 – PORTLAND CEMENT CONCRETE CURB AND GUTTER

638.01 Description. This section describes constructing or resetting portland cement concrete curb and gutter.

Portland cement concrete curb and gutter are designated as follows:

(A) Type 2 - Cast-In-Place Concrete Curb, or
    Cast-In-Place Concrete Gutter, or
    Cast-In-Place Concrete Curb and Gutter

(B) Type 3 - Precast Concrete Curb

(C) Type 4 - Dowelled Concrete Curb

638.02 Materials.

Structural Concrete  601
Asphalt Cement  702.01
Aggregate for Untreated Base  703.06
Joint Filler  705.01
Joint Mortar for Pipe  705.02
Reinforcing Steel  709.01
Precast Concrete Curb, Gutter  712.05

Furnish pre-emergent and non-selective type, EPA approved weed killer for highway application, suitable for use under designed thickness of pavements. Ensure weed killer is free of solvents or other substances deleterious to pavement. Apply at highest dosage recommended by manufacturer. Submit product catalog cuts containing pertinent data and material safety data sheets for acceptance by Engineer before use.

638.03 Construction.

(A) General.

(1) Excavating. Excavate to required depth, remove unsuitable material, and compact subgrade to firm, even surface in accordance with Subsection 203.03(A)(4) - Subexcavation.
(2) **Bed Course.** Use aggregate for untreated base conforming to Subsection 703.06 - Aggregate for Untreated Base, as bed course material. Place bed course material a minimum of 4 inches in depth. Compact with at least three passes of lightweight mechanical tamper, roller, or vibratory system.

(3) **Backfilling.** After setting curb, gutter, or curb and gutter, fill remaining excavated areas with material acceptable to Engineer. Place and tamp accepted material in layers up to 6 inches in depth. Do not backfill until 24 hours after constructing joints.

(B) **Precast.**

(1) **Installing.** Set front top arris line to required line and grade. Fill and tamp spaces under curb with bed course material.

(2) **Joints.** Set precast blocks approximately 1/2 inch apart and fill joints with mortar. When constructed next to portland cement concrete pavement, align curb joints with pavement expansion joints. Provide 1/2-inch-wide expansion joint filler to cover entire end of curb. Attach expansion joint filler to end of curb with asphalt cement.

(C) **Cast-in-Place.**

(1) **Forms.** Use full-depth wood or metal forms that are straight, free of warp, and allow inspection of grade and alignment. Brace and secure forms to prevent alignment or grade deflection during placing of concrete.

(2) **Placing.** Moisten subgrade and forms immediately before placing concrete. Place concrete in accordance with Section 503 – Concrete Structures. If curb or curb and gutter construction is stopped for more than 45 minutes, install construction joint.

Float concrete gutter surface and round exposed edges with 1/4-inch edging tool. Before concrete has fully set, remove face form of curb and provide uniform finish with float and steel trowel. Broom finish other exposed surfaces longitudinally. Finish rear of curb to a Class 2 finish to 4 inches below finish grade of the backfill against the curb.

When tying into existing curb, or curb and gutter, transition as required to match existing. Do not plaster surface.
(3) **Sections.** Construct weakened-plane joints, approximately 1/8-inch wide by 1/4 gutter depth, in 15-foot sections.

When constructed next to portland cement concrete pavement, construct weakened-plane joints to match pavement weakened-plane joints. Maintain 15 feet maximum joint spacing.

(4) **Expansion Joints.** Form expansion joints at intervals shown in contract documents using 1/2-inch thick preformed expansion joint filler shaped to cross section of curb, gutter, or curb and gutter. Construct additional expansion joints to match expansion joints in adjacent portland cement concrete pavement.

Construct expansion joints at structure abutments and at curb returns. Do not construct expansion joints within 20 feet of traffic island nose.

(5) **Curing.** Cure concrete immediately upon completion of finishing by continually moistening for three days, or by using membrane curing compound.

(6) **Curb Machine.** Curb-forming machine acceptable to Engineer may be used as alternative method for concrete placement.

(7) **Construction Joints.** Construct construction joints at end of each day of placing concrete. Coincide construction joints with spacing of weakened plane joints. Coat dowels uniformly with thin film of heavy lubricating oil immediately before placement of concrete at joint. Insert and position dowels parallel to gutter surface. Provide firm support for dowels during concrete placement. Leave forms in place until concrete operations resume next to joint.

(D) **Resetting Curb.**

(1) **Salvaging.** Remove, store, protect, and clean curb to be reset. Replace lost, damaged, or destroyed salvaged curb.

(2) **Resetting.** Reset top arris line to required line and grade. Fill and tamp spaces under curb with bed course material. Set blocks approximately 1/2 inch apart and fill joints with mortar.

(3) **Cutting and Fitting.** Cut and fit curb if necessary.

638.04 **Measurement.** Curb, gutter, curb and gutter, or reset curb will be paid on a lump sum basis. Measurement for payment will not apply.
638.05  

638.05  **Payment.** Engineer will pay for the accepted curb, gutter, curb and gutter, or reset curb on a contract lump sum basis. Payment will be full compensation for work prescribed in this section and contract documents.

Engineer will pay for each of the following pay items when included in proposal schedule:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curb, Type _____</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>Gutter, Type _____</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>Curb and Gutter, Type _____</td>
<td>Lump Sum</td>
</tr>
<tr>
<td>Reset Curb, Type _____</td>
<td>Lump Sum</td>
</tr>
</tbody>
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**END OF SECTION 638**