

Amend **Section 609 - Curb and/or Gutter** to read as follows:

"SECTION 609 - CURB AND/OR GUTTER

609.01 Description. This work includes constructing or resetting curb and/or gutter according to the contract.

The contract designates the types of curb and/or gutter as follows:

- (1) Type 1 - (Unassigned)
- (2) Type 2 - Cast-in-place concrete curb and/or gutter
- (3) Type 3 - Precast concrete curb and/or gutter
- (4) Type 4 - Dowelled concrete curb
- (5) Type 5 - (Unassigned)
- (6) Type 6 - Bituminous curb
- (7) Type 7 - Bituminous gutter

609.02 Materials. Materials shall conform to following:

Emulsified Asphalt	702.04
Bed Course Material for Sidewalks & Curbing	703.16(A)
Joint Fillers	705.01
Joint Mortar	705.02
Reinforcing Steel	709.01
Precast Concrete Curb and/or Gutter	712.05

Concrete for curb and/or gutter shall conform to Section 601 - Structural Concrete and shall be Class A.

Bituminous material for curb shall conform to Section 401 - Asphalt Concrete Pavement and shall be Type V.

Bituminous mixture for Type 7 - Bituminous Gutter shall conform to Section 401 - Asphalt Concrete Pavement and as modified below. Bituminous

mixture for Type 7 - Bituminous Gutter shall be Mix No. V. The Contractor shall increase the asphalt content of the mixture by at least 0.5% above that normally used for asphalt concrete pavement.

Weed killer shall be a nonemergent and nonselective type, EPA approved for highway application, and suitable for use under the designed thickness of pavements. The materials shall be free of solvents or other substances deleterious to the pavement. Application rates shall be at the highest recommended dosage stated on the label. The Contractor shall submit a sampler label containing the pertinent data for acceptance by the Engineer before use.

Concrete, bituminous mixes and manufactured curb and/or gutter materials will be subject to inspection and tests at the plants for compliance with the quality requirements.

The condition of materials will be subject to inspection for acceptance before or during incorporation of materials into the work.

609.03 Construction Requirements.

(A) Precast Concrete Curb and/or Gutter.

(1) **Excavation.** Excavate to the required depth and compact the base to a firm, even surface. Remove and replace soft and unsuitable material with suitable material so that the Contractor can compact thoroughly.

(2) **Installation.** Set the curb so that the front top arris line conforms to the line and grade required. Fill the spaces under the curb and/or gutter with bed course material. Tamp this material thoroughly.

(3) **Joints.** Set the precast blocks approximately 0.5 inch apart. Fill these joints with mortar as specified.

When constructing portland cement concrete pavement abutting the curb and/or gutter, construct the joints in the curb and/or gutter directly in line with pavement expansion joints. The joint in curb and/or gutter shall be 0.75 inch in width. Fill the joint in curb and/or gutter with an expansion joint filler of the same nominal thickness as the pavement joint. Fill the voids between the joint filler and the curb and/or gutter with mortar.

(4) **Backfilling.** After setting the curb and/or gutter, fill the remaining excavated areas with accepted material. Place and

tamp this material thoroughly in layers not exceeding 6 inches in depth.

(B) Cast-in-Place Concrete Curb and/or Gutter.

(1) Excavation. Excavation and bedding shall conform to Subsection 609.03(A)(1) - Excavation.

(2) Forms. Forms shall be of wood or metal, straight, free from warp and of construction that there shall be no interference with the inspection of grade or alignment.

Forms shall extend for the entire depth of the curb and/or gutter. Brace and secure the forms sufficiently so that no deflection from alignment or grade shall occur during the placing of the concrete.

(3) Placing of Concrete. Place the concrete according to Section 503 - Concrete Structures. Moisten the subgrade and forms thoroughly ahead of placing concrete.

Work the surfaces of concrete gutters with proper floats and round the exposed edges with an edging tool. Before the concrete has fully set, remove and finish the face form of the curb with a float and steel trowel to a uniform finish. Broom finish other exposed surfaces longitudinally. The Contractor may require special trowels to shape curbs and/or gutters.

To match adjacent concrete finishes, the Engineer may permit other methods of finishing. The Engineer will not permit plastering.

(4) Sections. Construct curb and/or gutter in sections having a uniform length of 15 feet. Separate the sections by weakened plane joints approximately one-eighth inch wide and cut to a depth of one-fourth the gutter thickness. When curb and/or gutter abut portland cement concrete pavement, install weakened plane joints in the curb and/or gutter continuously with the weakened plane joints in the abutting pavement.

(5) Expansion Joints. Form the expansion joints at the intervals shown in the contract using a preformed expansion joint filler having a thickness of 0.5 inch. When constructing curb and/or gutter next to or on concrete pavement, locate the expansion joints opposite to or at expansion joints in the pavement.

Construct expansion joints in curb and/or gutter at structure

abutments and at the ends of returns. Do not construct expansion joints within 20 feet of a traffic island nose.

Shape expansion joints filler to the cross section of the curb and/or gutter.

(6) **Curing.** Immediately upon completion of the finishing, the Contractor shall:

(a) moisten and keep the curb and/or gutter moist for three days or

(b) cure the curb and/or gutter by using membrane forming material.

The method and details of curing will be subject to acceptance.

(7) **Backfilling.** After the concrete has set sufficiently, refill the spaces in front and back of the curb and/or gutter to the required elevation with suitable material. Tamp the material thoroughly in layers of not more than 6 inches.

(8) **Curb Machine.** With the acceptance of the Engineer, the Contractor may construct the curb and/or gutter by using a curb and/or gutter forming machine.

(9) **Construction Joints.** Build construction joints in cast-in-place curbs and/or gutters:

(a) when the delays are greater than 45 minutes between two consecutive batches in concrete operations,

(b) at the end of each day of pouring, or

(c) when specified by the Engineer.

Build the construction joints according to the details shown in the contract and shall coincide with the spacing of weakened plane joints. Coat the dowels for the joints uniformly with a thin film of heavy lubricating oil immediately before placement of concrete at the joint. Support the dowels firmly during concrete placement. The forms shall remain in place until the Contractor resumes concrete operations on the other side of the joint.

(C) Bituminous Curb.

- (1) Preparation of Bed.** When constructing bituminous curb on a fresh laid bituminous surface, the Contractor may lay the curb only after cleaning the surface.

When constructing the curb on a cured or aged portland cement concrete base, bituminous pavement or bituminous treated base, sweep and clean the bed thoroughly by compressed air. Dry the surface thoroughly. Immediately before placing the bituminous mixture, place tack coat of bituminous material of the type and grade accepted. The rate of application of the tack coat material shall be between 0.05 to 0.15 gallon per square yard of surface. In the application of this tack coat, prevent the spread of the tack coat to areas outside of the area of the curb.

- (2) Placing.** Construct bituminous curb by use of self-propelled automatic curber or curb machine or a paver with curbing attachments.

The automatic curber or machine shall conform to following and accepted before its use:

- (a)** The weight of the machine shall be such that the Contractor gets the required compaction without the machine riding above the bed.
 - (b)** The machine shall form curb that is uniform in texture, shape, and density.
 - (c)** The Engineer may permit the construction of curb other than the automatic curb machine, when the contract requires short sections or sections with short radii or as warranted. The resulting curb shall conform to the curb produced by using the machine.
- (3) Painting and Sealing.** If the contract requires painting or sealing, paint or seal only on a curb that is clean and dry and reaches the ambient temperature.

(D) Resetting Curb and/or Gutter.

- (1) Salvage.** Carefully remove, store, and clean curb and/or gutter specified for resetting. Replace the existing curb and/or gutter that the Contractor:

- (a)** will reset and
- (b)** loses, damages, or destroys due to its operations or its failure to store and protect the existing curb and/or gutter.

- (2) Excavation.** Excavation and bedding shall conform to Subsection 609.03(A)(1) - Excavation.

(3) **Resetting.** Set the curb and/or gutter on a firm bed with the front top arris line conforming to the required line and grade. Set the sections of curb and/or gutter. The maximum opening between adjacent section shall be not more than 0.75 inch wide for the entire exposed top and face. Dress the ends of the curb and/or gutter necessary to meet this requirement at no cost to the State.

After setting the curb and/or gutter, fill the joints completely with mortar as specified.

(4) **Backfilling.** Refill the spaces in front and back of the curb and/or gutter to the required elevation with suitable material. Tamp this material thoroughly in layers of not over 6 inches in depth.

(5) **Cutting and Fitting.** Cutting and fitting may be necessary to install the curb and/or gutter at the locations ordered.

(E) Bituminous Gutter.

(1) **Excavation.** Excavate to the required depth and compact to a firm, even surface. Remove and replace soft and unsuitable material with suitable material. Compact the material thoroughly.

(2) **Weed Killer.** After completing the grading and compacting operations, spray the subgrade thoroughly with the non-emergent weed killer. The application shall be according to the manufacturer's recommendations.

(3) **Base Course.** Place and compact the base course material according to Section 304 - Aggregate Base Course.

(4) **Prime Coat.** Apply and protect the prime coat according to Section 408 - Prime Coat.

(5) **Bituminous Material.** Place and compact the bituminous material according to Section 401 - Asphalt Concrete Pavement and below. The equipment, lift thickness and compaction requirements will not apply to material placed on a 2:1 slope. Compact the mixture to a relative density of not less than 80% of the laboratory-compacted density using ASTM D 1561. The finished surface of the 2:1 slope shall be uniform in texture, without ruts, corrugations or other irregularities.

609.04 Method of Measurement. The Engineer will measure curb and/or gutter per linear foot. The Engineer will measure along the front face of the curb at the finished grade elevation. If the Engineer measures gutter separately, the Engineer will measure gutter along the front face of the gutter. The Engineer will not make deduction in gutter length for drainage appurtenances installed such as catch basins and drop inlets.

The Engineer will measure curb and/or gutter transition for payment as follows:

From	To	Measurement for Payment
Cast-In-Place Curb or Precast Curb	Cast-In-Place Curb and Gutter	Cast-In-Place Curb and Gutter
Cast-In-Place Curb and Gutter	Precast Curb and Cast-In-Place Gutter	Cast-In-Place Curb and Gutter
Cast-In-Place Curb and Gutter Type _____	Cast-In-Place Curb and Gutter Type _____	Cast-In-Place Curb and Gutter 1/2 of Transition to Each Type
Cast-In-Place Curb Type _____	Cast-In-Place Curb Type _____	Cast-In-Place Curb 1/2 of Transition to Each Type
Bridge Abutments	Cast-In-Place Curb and/or Gutter or Precast Curb or Lava Rock Curb	Cast-In-Place Curb and/or Gutter or Precast Curb or Lava Rock Curb
Bituminous Gutter	Cast-In-Place Curb and/or Gutter	Cast-In-Place Curb and/or Gutter
Bituminous Gutter Type _____	Bituminous Gutter Type _____	Bituminous Gutter 1/2 of Transition to Each Type

The Engineer will measure precast concrete drop curb and driveway curb or cast-in-place integral driveway curb and gutter under the adjacent normal curb and/or gutter.

609.05 Basis of Payment. The Engineer will pay for the accepted curb and/or gutter at the contract unit price per linear foot.

The price includes full compensation for removing and disposing the existing curb and/or gutter; excavating; backfilling; installing reinforcing steel; furnishing, placing and compacting the bed course material; installing expansion joint material and weakened plane joint; and furnishing labor, materials, equipment, tools, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item

Pay Unit

Curb, Type _____

Linear Foot

END OF SECTION