

Section 802. CONCRETE CURB, GUTTER AND DIVIDERS

802.01 Description. This work consists of constructing concrete curb, combination curb and gutter, valley gutter, shoulder gutter, downspout headers, spillways, noses and dividers on the prepared base. These items shall be either nonreinforced or reinforced, as specified.

802.02 Materials. Materials shall meet the following requirements.

Concrete, Grade P1	601
Concrete, Grade S2	701
Mortar, Type R-2	702
Curing Compound	903
Steel Reinforcement	905
Geotextile Liner	910
Lane Ties	914
Joint Fillers	914

802.03 Construction.

A. **Preparation of Base.** The base shall be prepared according to subsection 602.03.B. The bed and geotextile liner for concrete spillways shall be prepared according to subsection 814.03.A.

B. **Placing Forms.** When fixed forms are used they shall be placed according to the applicable requirements in subsection 602.03.C. Face forms may be required when constructing straight curb with fixed forms.

When using slipforming methods, the dimensions of the form shall match the curb dimensions shown on the plans.

C. **Placing Steel Reinforcement.** When steel reinforcement or lane ties are required, they shall be properly spaced and fixed in the correct position during concrete placement.

Splicing of steel reinforcement bars shall be accomplished by lapping and securely wiring the bars together with a minimum of two ties per splice. The bars shall be lapped at least 10 inches.

Mesh reinforcement, when called for on the plans, shall be placed according to subsection 602.03.E.

D. **Placing Concrete.** No concrete shall be placed until the base has been approved by the Engineer. The base shall be uniform and moist at the time of placing concrete, and shall be compacted to 95 percent of the maximum unit weight. The concrete shall be deposited to proper depth and spaded or vibrated to ensure satisfactory consolidation.

Except at night headers, concrete for curbing constructed as an integral part of the pavement shall be placed within 30 minutes of placing the concrete for the pavement. At night headers, acceptable ties and methods meeting the approval of the Engineer shall be used.

Transitions between concrete valley gutter and concrete curb and gutter shall be constructed as specified for miscellaneous pavement in section 602 and according to the details shown on the plans.

Fixed Form Method:

1. Forms and form placement shall be approved by the Engineer before placing concrete.
2. The concrete shall be placed to proper depth and spaded or vibrated to ensure satisfactory consolidation.
3. After stripping forms and before applying curing compound membrane, honeycombed areas or voids shall be repaired with Type R-2 mortar or removed and replaced as directed by the Engineer.

- E. **Joints.** Joints shall be constructed perpendicular to the surfaces of the structure and shall not vary more than $\frac{1}{4}$ inch from their plan location.

Where joint sealing is required, the sealing shall be done according to subsection 602.03.S.

1. **Contraction Joints and Plane-of-Weakness Joints.** Joints shall be constructed by methods meeting the approval of the Engineer to assure a plane-of-weakness to at least $\frac{1}{4}$ the depth of the section.
2. **Expansion Joints.** Expansion joint filler shall extend to the full depth of the joint. The top of the joint filler shall be recessed $\frac{1}{4}$ to $\frac{1}{2}$ inch from the finished surface of the structure.

- F. **Finishing.** All exposed edges including all transverse joints shall be rounded with an approved finishing tool having a radius of approximately $\frac{1}{4}$ inch. The face of the curb shall be shaped with approved finishing tools to produce the radii shown on the plans. Low spots shall be filled in with the concrete mixture used in the work.

The exposed surfaces shall be finished smooth and even, followed by a light brushing, using a broom, brush, or burlap. The gutter and top of curb shall not vary more than $\frac{3}{16}$ inch in 10 feet when checked with a 10-foot straightedge. The balance of the exposed surfaces shall not vary more than $\frac{3}{8}$ inch from the alignment and typical cross section.

Water shall not be added to the concrete surface as an aid to finishing, except when approved by the Engineer.

- G. **Stenciling.** The Contractor shall stencil survey station numbers according to subsection 602.03.L, into the exposed surface of continuous runs of concrete curb, gutter, curb and gutter, and any driveway opening or shoulder that directly adjoins the traveled way. Stenciling is not required if it is to be placed into a concrete barrier according to subsection 804.03.E.

The stenciled numbers shall be placed as follows:

1. So that they can be read from the traveled way.
2. On one side of one-way roadways (preferably the right side).
3. On both sides of the traveled way of two-way roadways.
4. Midway on the face of a curb or 2 inches from the back of a gutter or driveway opening.

- H. **Curing.** The concrete shall be cured according to subsection 602.03.M.

- I. **Weather and Temperature Limitations.** The concrete shall be protected according to subsection 602.03.T.

J. **Backfilling.** After the concrete has gained sufficient strength, the remaining excavated areas shall be backfilled, compacted thoroughly, and graded.

802.04 Measurement and Payment.

Contract Item (Pay Item)	Pay Unit
Curb, Conc, Det —	Foot
Curb and Gutter, Conc, Det —	Foot
Valley Gutter, Conc	Foot
Curb and Gutter, Bridge Approach	Foot
Shoulder Gutter, Conc, Det —	Each
Curb Nose	Each
Downspout Header, Conc	Each
Driveway Opening, Conc, Det M	Foot
Spillway, Conc	Foot
Divider, Reinf Conc, Type I	Square Foot
Divider, Nonreinf Conc, Type —	Square Foot

- A. **Curb, Conc; Curb and Gutter, Conc; Valley Gutter, Conc; and Curb and Gutter, Bridge Approach** will be measured in place along the junction of the curbing with the pavement. No deductions will be made in length for catch basins, inlet castings, or Driveway Opening, Conc, Det L. The pay limits for **Valley Gutter, Conc** will be shown on the plans. Transition areas between **Valley Gutter, Conc** and **Curb and Gutter, Conc** will be divided in half and each half measured in the units of the adjacent item.
- B. Curb constructed at the Contractor's option, as an integral part of the pavement will be measured the same as if it had been constructed separately. No extras or increases in pay quantities due to the Contractor's election to cast curbing integral with the pavement will be considered for payment.
- C. The work of **Shoulder Gutter, Conc** includes furnishing and placing a geotextile liner. The pay limits for **Shoulder Gutter, Conc** will be shown on the plans.
- D. **Driveway Opening, Conc, Det M** will be measured from springline to springline.
- E. **Spillway, Conc** includes furnishing and placing a geotextile liner.
- F. **Divider, Conc** includes steel reinforcement if specified.
- G. Unless otherwise provided for, backfilling will be included in the payment for the item.