

825 - CONCRETE CURB CONSTRUCTION

825.1 DESCRIPTION

Concrete curb shall be installed, or removed and replaced as shown on the plans and in accordance with the requirements of Section 401 "Concrete Construction" and Section 825 of the Standard Specifications except as otherwise modified herein.

825.2 MATERIALS

a. Reinforcing Steel

Reinforcement for curb and gutter shall be three No. 4 bars in accordance with Section 711 "Reinforcing Steel".

b. Concrete

Concrete for curb and gutter shall be in accordance with Section 401 "Concrete Construction".

825.3 CONSTRUCTION REQUIREMENTS

a. Concrete Placement

A slip form curb machine, with electronic control, shall be required on all continuous curb construction of lengths greater than 100 feet.

The concrete shall not be placed until the subgrade has been inspected for compaction and moisture. The concrete shall be consolidated with an approved internal type vibrator. The surface shall be shaped by use of a steel tool to produce the sections shown on the drawings. The edges shall be rounded with edgers to form the radii indicated on the drawings.

The surfaces shall be finished with a wooden or metallic float and brushed. All concrete shall be cured in accordance with Section 401 "Concrete Construction".

b. Reinforcement

No reinforcement shall be required when curb and gutter is laid on four inches or more of asphaltic concrete base.

c. Joints

All joints shall be formed at right angles to the alignment of the curbing.

(1) Expansion Joints

Expansion joints shall be placed at points of curvature, curb returns, curb inlet transitions, and at intervals not to exceed 250 feet. The expansion joints shall consist of one-half inch premoulded bituminous, nonextruding and resilient expansion joint material cut to the configuration of the curb section. The material shall extend through the full curb section. The edges of the joints shall be rounded with an edging tool of one-quarter inch radius.

After curing, the joints shall be sealed with urethane sealant meeting ASTM C 920. The sealant shall be Class 35 ($\pm 35\%$ Joint Movement), Type S and Grade NS.

(2) Contraction Joints

Curbing shall have contraction joints formed at 15 foot intervals. They shall extend across the entire curb section. The cut shall be approximately 1/4 inch wide, and the depth shall be one-third the thickness of the curb (minimum) or as shown in the plans. The contraction joints may be formed by any approved method. If sawing joints, the contractor shall begin as soon as the concrete hardens sufficiently to prevent excessive raveling along the saw cut and shall finish before conditions induce uncontrolled cracks, regardless of the time or weather.

d. Line and Grade

The new concrete curb and gutter shall be accurately placed in accordance with the line and grade as established by the Engineer. Curbs shall be formed to the cross section as shown on the drawings with a mule; or templates supported on the side forms and with a float not less than 4 feet in length, for hand placed curb.

The finished surface of the curb and gutter shall be checked for no more than 1/4 inch deviation, by the use of a 10 foot straightedge, and corrected if necessary. Where grades are flat and while the concrete is still plastic, the drainage of the gutter should be checked with a 4 foot carpenter's level.

e. Finish

The surfaces of curb and gutter shall be finished with a wooden or steel float and broomed. Brooming shall be perpendicular to the curb line. The brooming operation shall be so executed that the marks will be uniform in appearance and not more than one-sixteenth inch in depth. Brooming shall be completed before the concrete is in such condition that it will be torn or unduly roughened and before the concrete has attained its initial set.

f. Curing and Backfilling

(1) Curing

Concrete curbs and gutters shall be cured in accordance with "Concrete Construction".

(2) Backfilling

Backfilling operations shall not commence prior to the completion of the curing period, or until the concrete attains 75% design strength, as shown by compressive tests of field cured cylinders. All backfill material shall consist of soil suitable for vegetation. The area shall be prepared such that sod can be placed on bare soil.

g. Curb Removal and Replacement

(1) Removal

Excavation, removal of concrete, concrete curbing, sidewalks, pavement material, or any other items required to be removed for the completion of this project shall be removed from the construction site and disposed of by the Contractor. The pavement shall be saw cut full depth in a true line a minimum of 2 inches in front of the section of curb marked to be removed. The concrete curb shall be sawed at each end of the section of curb marked to be removed. The curb shall be removed as not to disturb the adjacent pavement and adjacent curb. The Contractor will be responsible for repairing all damage to the pavement and curb and gutter resulting from his operations beyond the limits marked for repair.

(2) Replacement

The subgrade shall be compacted as required by the plans and specifications, but not less than Type AA (MR-5), clean of any foreign material, and moistened prior to placing concrete. If additional fill is required for subgrade, aggregate designated as AB-3 shall be used in accordance with Section 1104 of the Standard Specifications, or as approved by the Engineer, and 95% compacted. The Contractor shall have available adequate hand or mechanical compaction equipment to accomplish the compaction as set forth in these Specifications. Concrete, as a base material, shall be placed in front of the new curb and shall have obtained 75% design strength, as shown by compressive tests of field cured cylinders, prior to placement of asphalt surface. The concrete shall be left below the existing surface by the surface thickness, and an asphaltic concrete surface shall be placed over the concrete and compacted. Concrete and asphalt in front of the new curb shall not be paid for directly but shall be considered subsidiary to the contract price bid per linear foot of "Curb Removal and Replacement" of the specified type.

Replaced curb shall match the lines and grades of existing pavement, entrances, and existing ground unless approved by the Engineer. Replaced curb that does not match the surroundings without approval of the Engineer shall be removed and replaced at the contractor's expense. All curb shall be replaced within three days of removal. Curb removed on residential streets shall be removed one side of the street at a time to maintain areas of parking for residents during curb construction.

(3) Unspecified Locations

Some Curb and Gutter removal and replacement locations are not designated in the plans. These locations will be determined by the Engineer during construction and may be located anywhere within the City of Overland Park. Where these locations are less than 100 feet of continuous curb and in distinctly different locations than those specified in the plans, the curb removal and replacement shall be measured and paid for as "Curb and Gutter, Combined (All Types) Remove and Replace, Unspecified Locations".

h. Notification of Property Owner

The Contractor shall notify each property owner when the work will actually commence.

825.4 MEASUREMENT AND PAYMENT

The Engineer will measure the curb and gutter of the specified type by linear foot along the lip of gutter.

Payment for "Curb and Gutter, Combined" and "Curb" at the contract unit prices bid is full compensation for the specified work. Curb in front of sidewalk ramps, curb transitions, Type C curbs, and other locations not a standard width or section, will be paid for as "Curb and Gutter, Combined" of the more prevalent type unless otherwise specified.

Curbs constructed in front of existing inlets shall be paid for at the contract unit price bid per linear foot of concrete curb. (See Standard Curb Inlet Detail).

No direct payment shall be made for sawing as it shall be considered subsidiary to curb construction.

Payment for "Curb and Gutter, Combined (type) Remove and Replace" and "Curb and Gutter, Combined (All Types) Remove and Replace, Unspecified Locations" for the specified type at the contract unit prices bid is full compensation for the specified work. Curb in front of sidewalk ramps, curb transitions, Type C curbs, and other locations not a standard width or section, will be paid for as same type adjacent to the standard section unless otherwise specified.

No direct payment shall be made for backfill, sawing, irrigation repair, seeding, restoration, or any other work incidental to Curb Construction as it shall be considered subsidiary to "Curb and Gutter, Combined (type) Remove and Replace" and "Curb and Gutter, Combined (All Types) Remove and Replace, Unspecified Locations" for the specified type.