

SECTION 2100-CONCRETE CURB, CURB AND GUTTER, SIDEWALK, AND DRIVEWAY ENTRANCES

2101 **SCOPE.** This section covers concrete curb, curb and gutter, concrete sidewalk and concrete driveway entrances, including reinforcing steel, forms, joints, finishing, curing, and other appurtenant work.

2102 **MATERIALS.** All items of material included in this work shall conform to the requirements of the Technical Specifications.

2103 **GENERAL.** All construction covered in this section shall conform to the requirements of the Technical Specifications. All improvements shall be constructed to the lines, grades and cross-sections shown on the approved plans and Standard Details. All curb construction shall be performed prior to placement of pavement or sidewalk, except when the curb is placed on the base asphalt, unless otherwise approved by the City Engineer.

There shall be a wheelchair passing space constructed where length of a 4' wide sidewalk exceeds two hundred (200) feet in length.

2104 **GRADING AND SUBGRADE PREPARATION.** All excavation required in the grading and subgrade preparation shall be considered as "Unclassified Excavation" as defined in the Technical Specifications. All grading shall be done in conformance with the Technical Specifications.

2105 **FORMS.** All forms shall be in good condition with not more than one-fourth (1/4) inch variation horizontal and vertical alignment for each ten (10) feet in length. The forms shall have adequate strength and bracing to obtain an acceptable finished product.

A slip-form machine equipped with electronic controls may be used in lieu of forms. The machine shall be equipped with mechanical internal vibrations, and shall be capable of placing the finished curb to the cross-section, line and grade shown in the plans.

2106 **EXPANSION AND CONTRACTION OR CONSTRUCTION JOINTS.** Expansion and contraction or construction joints shall be formed at right angles to the alignment of the curb in accordance with the Standard Details, unless otherwise specified by the City Engineer.

The Contractor shall perform sawing and jointing operations in a manner that prevents uncontrolled cracking of the concrete. The Contractor shall be responsible for the removal and replacement of any concrete that has developed uncontrolled cracking.

Contraction joints shall be constructed by sawing the curb to a minimum depth of one and one-fourth (1 ¼) inches at a spacing of ten (10) feet. The width of the joint shall not exceed three-eighths (3/8) of an inch. Hand-tooling of the contraction joints may be permitted with the approval of the City Engineer. Hand-tooled contraction joints must conform to the sawed-joint dimension requirements.

2107 **FINISHING.** Additional water shall not be used to aid in the finishing operation, unless otherwise approved by the City Engineer. Additional concrete shall not be added to concrete that has taken initial set. Finishing shall be performed as follows:

- a. **Curb and Curb and Gutter.** The curb shall be shaped to the required cross-section as soon as possible after the concrete has been placed in the forms. The surface of the curb shall be floated with a wood or metal float and broom finished. A one-quarter ($\frac{1}{4}$) of an inch radius shall be tooled on the exposed edges of the curb. Brooming shall be perpendicular to the alignment of the curb. The finished curb shall be uniform in appearance, and shall be in conformance with the specified lines, grades and configurations shown on the approved plans.
- b. **Sidewalk and Driveway Entrances.** After the concrete has been thoroughly consolidated and leveled, the surface shall be floated with a wood or metal float and broom finished. The broom finish shall be perpendicular to the centerline of the sidewalk. All exposed edges shall be rounded with an edger with a one-quarter inch ($\frac{1}{4}$ ") radius. The edges and joints of the sidewalk and driveway shall be straight and neat in appearance. The Contractor shall be responsible for picture-framing at locations determined by the City Engineer. The finished surface shall be uniform in color and free of voids.

2108 PROTECTION. The Contractor shall, at his expense, protect the concrete work against damage or defacement of any kind until the project has been accepted by the City Council.

Concrete items which are not acceptable to the City Engineer shall be removed and replaced, or repaired to the satisfaction of the City Engineer.

2109 OPENING TO TRAFFIC. Residential drive approaches shall not be opened to traffic until the concrete is at least seventy-two (72) hours old and has attained a minimum compressive strength of 3,000 psi and 75% of the mix design strength. Commercial drive approaches shall not be opened to traffic until the concrete is at least one hundred and twenty (120) hours old and has attained a minimum compressive strength of 3,500 psi and has attained 80% of the mix design strength. If high early strength concrete is used, the drive approaches may be opened to traffic when the concrete has attained a compressive strength of 3,500 psi and has attained 80% of the mix design strength.

2110 REINFORCEMENT (Curb and Gutter). Reinforcement for concrete curb and gutter shall be as designated in the Standard Details. When the curb and gutter is constructed on an asphaltic concrete base with a minimum thickness of three (3) inches, no reinforcement shall be required, unless otherwise determined by the City Engineer.

2111 REINFORCEMENT (Other). Reinforcement for all other work shall be as shown on the approved plans or Standard Details.