

CHAPTER 13 - CONCRETE PLACEMENT

13.1 GENERAL

This section covers installation of curb and gutter and all concrete flatwork. All improvements shall be constructed to the dimensions and thickness shown on the Standard Drawings.

13.2 CONCRETE

See Chapter 9, Portland Cement Concrete.

13.3 GRADE

After construction, gutters shall be checked by flowing water. The City Engineer / Public Works Representative shall be present during the flow test. Any high spots or depressions (which exceed 0.02 feet) shall be repaired by removing concrete and replacing to the correct grade. Puddling shall not flow from flow line past lip of gutter. (Minimum flow line grade shall be 0.5 percent.)

13.4 FORMS

All forms shall be steel, except at curves with a radius smaller than 200 feet. They shall be of a size to match the sections shown on the Drawings. Forms shall be held firmly in place with stakes or other approved means and shall be true to line and grade.

All forms shall be clean and coated with a light oil to prevent the concrete from adhering to them. Clamps, spreaders and braces shall be used where required to insure rigidity in the forms.

Forms shall not vary from vertical grade by more than 0.02 feet and from horizontal alignment by more than 0.05 feet. All forms shall have smooth even lines in both the horizontal and vertical plane.

Forms for curved sections shall be so constructed and placed that the finish surface of walls and edge of sidewalks, curbs and gutters will not deviate from the arc of the curve.

13.5 SUBGRADE PREPARATION

The Developer/Contractor shall grade to the line and grade approved by the City. The sub-grade shall be properly shaped to conform with the cross section shown on the Standard Drawings, graded and compacted. Compaction shall meet the requirements of Division 7 Earthwork.

All excess material excavated by the Developer/Contractor shall be removed from the site. Removal of the excavated material shall be done before or immediately after the concrete is placed. The Developer/Contractor shall maintain adequate barricades and other devices to protect the public until excavated material is removed.

Placement of concrete on unsuitable materials shall not be permitted. The subgrade surface shall have a road base foundation as shown on the Standard Drawings. Immediately prior to the placing of concrete, the subgrade shall be compacted to at least 95% of the maximum dry density as determined by AASHTO T-180 (Modified Proctor).

13.6 CONSTRUCTION OF CURB, GUTTER AND SIDEWALK

Concrete for curb and gutter or sidewalks may be placed using stationary forms or the slip method of forming.

13.6.1 Matching Existing Monolithic Curb, Gutter and Sidewalk

When matching an existing condition of combination curb, gutter and sidewalk the following construction methods shall be used: Concrete curb, gutter and sidewalk shall be constructed by first constructing the curb and gutter and then constructing the sidewalk behind it. Stationary forms may be used to place combination curb, gutter and sidewalk. The slip form method may be used if it can be demonstrated that the tolerances specified herein can be met.

13.6.2 Curb and Gutter Joints

Curb and gutter shall have contraction joints placed every 10 feet by use of 1/8-inch steel template of the exact cross section of the curb and gutter. Remove the templates as the concrete takes initial set. Cut the joint 1-1/2 inches deep when using the slip form method to place the concrete. Use 1/2-inch thick, pre-molded, expansion joint filler at all cold joints unless otherwise specified by the City Engineer / Public Works Representative.

13.6.3 Sidewalk Joints

Sidewalks shall have contraction joints at 5-foot intervals. The joints shall be approximately 3/16 inch wide and approximately one-half of the total slab thickness in depth.

Expansion joints shall be 1/2-inch thick, shall be placed every 50 feet minimum, and at all cold joints. Material for expansion joints shall be as specified in AASHTO M-153 and AASHTO M-213, and shall be installed with its top approximately 1/4-inch below the concrete surface.

13.6.4 Finishing of Sidewalks

After the concrete placed for a sidewalk has been brought to the established grade and screeded, it shall be float finished, edged and then given a light broom finish. In no case shall dry cement or a mixture of dry cement and sand be sprinkled on the surface to absorb moisture or hasten hardening. Surface edges of all slabs shall be rounded to a radius of 1/2 inch.

13.6.5 Finishing of Curb and Gutter

After concrete has been placed in curb and gutter forms, it shall be consolidated so as to insure a thorough mixture, eliminate air pockets, and create uniform, smooth sides. As the concrete takes its initial set the forms shall be removed and all exposed surfaces shall be float finished, edged and broomed lightly. The curb and gutter shall be constructed to the dimensions shown in the Standard Drawings.

The top and face of the curb and also the top of the apron on combination curb and gutter must be finished true to line and grade and without any noticeable irregularities of surface. No portion of the surface or face of the curb and gutter shall depart more than 1/4 inch from a straight edge ten feet in length, placed on the curb parallel to the street center line nor shall any part of the exposed surface present a wavy appearance.

13.7 CONCRETE DRIVE APPROACH

The concrete to be used for the drive approach shall be Class AA(AE) and shall meet the requirements of Chapter 9, Portland Cement Concrete.

The approach shall be of the minimum thickness and constructed to the dimensions shown on the Standard Drawings. The concrete shall be finished as described above for sidewalks.

The approach shall have a compacted untreated base course under them as shown on the standard drawings.

13.8 ADA (AMERICANS WITH DISABILITIES ACT) STANDARDS IN PUBLIC RIGHTS-OF-WAY

All construction shall conform to the current Federal American With Disabilities Act (ADA) guidelines for public rights-of-way, and in accordance to the City's Standard Drawings.