

## SECTION 61

### CONCRETE SIDEWALK, CURB RAMPS, AND DETECTABLE WARNING SURFACES

#### 61.1 DESCRIPTION

**A. General:** This work consists of constructing sidewalks, curb ramps, detectable warning surfaces, Type "C" retaining wall/sidewalk and exposed aggregate sidewalk on a prepared subgrade.

**B. Related Work:**

Section 55	Cast in Place Concrete Structures
Section 56	Class M6 Concrete for Curb & Gutter and Flatwork
Section 57	Reinforcing Steel
Section 100	Portland Cement
Section 101	Air-Entraining Admixtures
Section 102	Chemical Admixtures for Concrete
Section 104	Water for Use in Portland Cement Concrete
Section 105	Fine Aggregate for Use in Portland Cement Concrete
Section 107	Coarse Aggregate for Use in Portland Cement Concrete
Section 108	Concrete Curing Materials
Section 113	Preformed Expansion Joint Filler for Concrete
Section 114	Concrete Joint Sealer
Section 117	Aggregates for Granular Bases and Surfacing
Section 123	Concrete Reinforcement
Section 203	Submittals

#### 61.2 MATERIALS

**A. Concrete:** For sidewalk shall conform to the requirements of Class M6 Concrete provided in Section 56.

**B. Expansion Joint Filler:** Shall conform to the requirements of Section 113.

**C. Cushion Material:** Shall meet the requirement of Section 117.

**D. Curing Compound:** Shall conform to the requirements of Section 108.

**E. Concrete Joint Sealer:** Shall conform to the requirements of Section 114.

**F. Concrete Reinforcing Steel:** Shall conform to the requirements of Section 57 and Section 123.

- G. Detectable Warning:** Color shall be a contrasting color to the surrounding sidewalk. Color shall be homogeneous throughout the tile. Detectable warnings may be cast iron or composite and shall be approved by the Engineer.

### 61.3 CONSTRUCTION REQUIREMENTS

- A. General:** The foundation shall be excavated, shaped, and compacted to a firm, uniform, bearing surface conforming to the planned section and established grade. Unsuitable foundation material shall be removed and replaced as directed. The foundation shall be thoroughly moistened immediately prior to the placing of concrete. Moisture shall be applied without forming pools of water.

Cushion material shall be placed under the sidewalk to a depth of two (2) inches and satisfactorily compacted.

Forms shall be made of wood not less than two (2) inches nominal thickness or of steel of equal rigidity. Flexible strips may be used on curves. The forms shall be securely held to line and grade and shall not deviate more than one-eighth (1/8) inch from an accurate template ten (10) feet in length. The forms shall remain in place until the concrete has hardened to the point that no damage will be done to the concrete during form removal. Damage to the concrete as the result of form removal shall be repaired by the contractor at no additional expense to the City.

Contraction joints shall be formed at intervals equal to sidewalk width by means of a grooving tool, to a depth of at least one-fourth (1/4) the thickness of the sidewalk. Joints shall be penetrated with point of a trowel or other tool at least one-half (1/2) the thickness of the concrete at minimum intervals of 8 inches to 12 inches along the joint. Joints and edges shall be finished with an approved one-fourth (1/4) inch edging tool. If plans specify saw-cutting joints, the depth shall be one-fourth (1/4) the thickness of the concrete.

Expansion joints shall be constructed of 1/2 inch preformed expansion joint filler at a maximum spacing of 100 feet, at the locations and dimensions specified on the plans, or as directed by the Engineer. When the concrete sidewalk is placed adjacent to the curb and gutter, the Contractor shall place 1/2 inch preformed expansion joint filler longitudinally along the backface of the curb and gutter. When the concrete sidewalk is placed adjacent to other solid fixtures including, but not limited to, buildings, parking lots, driveways, and retaining walls, the Contractor shall place a double thickness of preformed expansion joint filler at the back of the sidewalk. All other obstructions will require 1/2 inch preformed expansion joint filler, as directed by the Engineer. The expansion joint filler shall be placed the full depth of the sidewalk.

All expansion joints shall be sealed with hot poured elastic joint sealer, or low modulus silicon sealant.

Immediately after the water sheen has disappeared, the concrete shall be brushed or broomed in a direction perpendicular to the flow of traffic to roughen the surface and remove tool marks.

Concrete sidewalk shall be protected and cured in accordance with Section 55.

After the curing period, the area adjacent to new sidewalk shall be filled to the required elevation with suitable material and the material shall be satisfactorily compacted, seeded, or sodded.

Colored or stamped concrete or similar forms of architectural concrete finish shall not be placed with in the street right of way, except as specified by the Engineer.

Concrete type "C" retaining wall shall be per approved plans and details.

- B. Testing:** The Contractor shall be responsible for providing a minimum of one set of slump, air content, seven (7) and twenty-eight (28) day compressive strength quality tests for each day's pour. Additional test sets or testing may be required by the Engineer or as called for in the Detailed Specifications. Results from concrete testing shall be provided to the Engineer within 3 days of the test being performed.
- C. Detectable Warning:** Installation of detectable warning surfaces shall be per manufacturers installation instructions.

#### 61.4 METHOD OF MEASUREMENT

- A. Concrete Sidewalk and Curb Ramp:** Will be measured to the nearest one-tenth (0.1) linear foot and the area computed to the nearest square foot.
- B. Concrete Type "C" Retaining Wall:** Concrete Type "C" retaining wall will be measured to the nearest one-tenth (0.1) linear foot. A separate measurement for wall will be made in 2 foot vertical increments. The sidewalk area associated with a Type "C" retaining wall will not be measured. Reinforcing steel will not be measured.
- C. Detectable Warning:** Detectable warnings will be measured to the nearest square foot.
- D. Concrete Test Set:** When called for in detailed plans and specifications concrete test sets shall be measured per each. If concrete test sets are not called out as a bid item in the detailed plans and specifications they shall be considered incidental to the various bid items.

#### 61.5 BASIS OF PAYMENT

- A. Concrete Sidewalk and Curb Ramp:** Will be paid for at the contract unit price per square foot for concrete sidewalk or curb ramp, exclusive of sidewalk associated with Type "C" wall. Payment for this item will also be full compensation for labor, equipment, tools, backfilling, furnishing, preparing, testing, and placing materials and incidentals necessary, including disposal of excavation and discarded materials. Such payment shall include cushion material.

- B. Concrete Type “C” Retaining Wall:** Will be paid for at the contract unit price per linear foot of wall categorized within separate bid items of 2 foot vertical increments. Such payment shall include the adjacent sidewalk. Reinforcing steel shall be incidental to the Type “C” retaining wall. Payment for this item will also be full compensation for labor, equipment, tools, backfilling, furnishing, preparing, testing, and placing materials and incidentals necessary, including disposal of excavation and discarded materials. Such payment shall include cushion material.
- C. Detectable Warning:** Will be paid for at the contract unit price per square foot furnished and installed.
- D. Concrete Test Set:** When called for in detailed plans and specifications concrete test sets shall be paid per each. If concrete test sets are not called out as a bid item in the detailed plans and specifications they shall be considered incidental various bid items.

**END OF SECTION**