

**SECTION 02530 – CURB RAMPS AND OTHER MINOR CONCRETE FACILITIES**

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## SECTION 02530 – CURB RAMPS AND OTHER MINOR CONCRETE FACILITIES

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. The work includes the furnishing of all labor, materials, equipment, and services required to saw cut and remove designated sections of curb, gutter, and sidewalk, adjust existing utilities to grade as required and construct Portland cement concrete curb ramps to the form and dimensions shown on applicable City Standard Drawings, Project Plans and to meet existing field conditions.

#### 1.02 RELATED REQUIREMENTS

- A. Section 01340, “*Submittals*”
- B. Section 03300, “*Minor Concrete*”

#### 1.03 INSPECTION AND TESTS

All work shall be subject to the inspection of the Engineer and representatives of any other agencies having jurisdiction.

- A. NOTIFICATION OF BEGINNING OF WORK: Contractor shall notify the Engineer at least twenty-four (24) hours prior to the beginning of work, to permit scheduling inspection of forms and subgrade, and to witness concrete placing. No concrete shall be placed until the Engineer has approved the forms and subgrade.
- B. MILL TEST REPORTS: When so requested by the Engineer, the Contractor shall furnish mill test reports on the cement and aggregates, showing compliance with the respective specifications.
- C. CERTIFICATE OF COMPLIANCE: Contractor shall submit a certificate of compliance for the Portland cement concrete mix design.

#### 1.04 QUALITY ASSURANCE

- A. The Contractor’s attention is directed to Article 8 of the City’s General Conditions (Section 00700). To validate that specified final elevations have been provided, the Contractor shall provide to the City applicable grade certificates as required by Article 8. No separate payment will be made for providing such certification. All cost therefore shall be included in the various work item(s) requiring certification.

#### 1.05 MEASUREMENT AND PAYMENT

- A. Measurement and payment for provision of curb ramps or other minor concrete facilities will be made on a unit price, per each, based on the actual construction of curb ramp or other facility. Payment will include costs for all required work and materials.

## PART 2 - PRODUCTS

### 2.01 CONCRETE

Concrete shall be Class A (6 sacks cement per cubic yard), as designated in Section 90-1.02 of the State Standard Specifications.

### 2.02 CEMENT

Cement shall be Type II conforming to Section 90-2.01 of the State Standard Specifications.

### 2.03 AGGREGATE

Aggregate shall be one and one-half inch (1 ½") maximum size, conforming to Section 90-2.02 of the State Standard Specifications.

### 2.04 PRE-MOLDED EXPANSION JOINT

Pre-molded expansion joint shall conform to Section 51-1.12C "Pre-Molded Expansion Joint Filler," of the State Specifications and shall be one-quarter (1/4") thick by the full depth of the concrete section.

### 2.05 CURING COMPOUND

Curing compound shall conform to Section 90-7.01B of the State Standard Specifications for pigmented curing compounds.

### 2.06 CONCRETE COLOR

Color of the finished product shall match the adjacent concrete color to the maximum extent possible. Contractor shall be responsible for determining the proper quantity of additives needed to match the adjacent concrete color. Contractor shall use lamp black at the minimum rate of one and one half (1 ½) pound per cubic yard, or other coloring agents as approved to provide the color match. New concrete differing from the color of the adjacent existing concrete shall be removed and replaced to the satisfaction of the Engineer.

### 2.07 ASPHALT CONCRETE

Type A or Type B, 3/4" maximum medium, conforming to Section 39 of the State Standard Specifications.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

#### A. Location and Layout:

Ramp or facility shall be located as closely to match existing or to meet other lines shown on the plans in relation to existing score lines or other existing facilities. The limits of each ramp or facility shall be marked and approved by the Project Inspector prior to saw cutting.

#### B. Saw Cut:

Saw cut shall be along the limits of the facility as marked and approved by the Engineer. When new concrete is placed next to old concrete and not adjacent to an expansion joint, adjoining concrete shall be saw cut to a depth of at least one and one-half inches (1 ½") on the exposed side.

#### C. Demolition and Removal:

As required, concrete sidewalk, curbs and/or gutter in the designated ramp construction area shall be demolished and removed; and the concrete material removed shall be disposed of, at the Contractor's expense. All vegetation and tree roots shall be removed to allow the new construction.

#### D. Removal of Vegetation:

Removal of vegetation also shall include proper disposal of all shrubs, hedges and all tree roots. Root barrier shall be installed to prevent damage to new ramp from overgrown root, when called for on the Project Plans or details. Root barrier shall be installed per applicable City Standard Drawings. Payment for root barrier shall be considered as included in the unit price for installing ramps or facilities, and no additional compensation will be allowed.

#### E. Subgrade Preparation:

The subgrade shall be constructed true to grade and cross section meeting the required ramp slopes and warp, as shown on the plans or directed by the Engineer. It shall be watered and thoroughly compacted before placing the concrete. All soft or spongy material shall be removed to a depth of not less than 1.0 – foot below subgrade elevation for curbs, gutter depressions, and 0.75-foot below for sidewalks, and the resulting space filled with earth, sand or gravel of a quality that, when moistened and compacted, shall form a stable foundation.

The completed subgrade shall be tested for grade and cross section by means of a template supported on the side forms, and shall not project into the planned concrete cross section at any point. The subgrade and forms shall be wetted immediately in advance of placing concrete.

In areas where required, bridging shall be furnished over sidewalks for the convenience of the landholders and public.

F. Existing Utility Boxes and Signs:

All utility boxes encountered during subgrade preparation shall be set or adjusted so the top surface of said box matches the slope and elevation of the ramp or facility. Contractor shall protect existing utility boxes and other facilities during the construction. All utility boxes or other existing facilities that have been damaged shall be replaced by the contractor at his expense or by the utility company at the contractor's expense. Replacement boxes shall be purchased from the appropriate agency (City, Communication Companies, Gas and Electric Company, Water Company, etc.). Existing water valve boxes, sewer vent and street light boxes that were broken before the construction will be furnished by the City upon the request from the contractor before the construction.

All utility boxes or other existing facilities that have been damaged shall be replaced by the Contractor at his expense or by the utility company before the concrete is placed. Existing signs and other facilities within the ramp area shall be removed and/or relocated as shown on the Plans or as directed by the Engineer.

G. Existing Irrigation System

Contractor shall protect existing irrigation system including but not limited to sprinkler head and irrigation line. Damage to irrigation system shall be fixed at the contractor's own expense.

H. Forms:

Forms shall be carefully set to alignment and grade, and shall have a smooth straight upper edge. The depth of forms for back of curbs shall be equal to the full depth of the curb. The depth of face forms for concrete curbs shall be equal to the full-face height of curb. The depth of forms for sidewalks, driveway aprons and gutters shall be equal to the full depth of the concrete.

Form boards for sidewalks, driveway aprons and gutters shall be of sufficient width to form the entire depth of the section with one board. Piecing with narrow battens or scabs will not be permitted. Benders of thin plank forms may be used on curves, grade change curves, or for curb returns.

Forms shall be held rigidly in place by stakes placed at necessary intervals. Clamps, spreaders and braces shall be used where required to insure rigidity of the forms.

Curb face forms shall not be removed until more than two (2) hours after the concrete has been placed. In no event shall forms be removed while the concrete is sufficiently plastic to slump. Side forms for sidewalks, driveway aprons and gutters shall not be removed in less than forty-eight hours after the finishing has been completed.

Gutter portion of the ramp shall be formed as per applicable City Standard Drawings. A 12" wide asphalt concrete strip shall be removed along the lip of the gutter to allow placing of the form.

Forms that may inhibit safe access to the corner of pedestrians or present tripping hazard will be installed only on the day of concrete placement. The Engineer shall be notified for form inspection a minimum of 24 hours before placement of concrete.

I. Expansion Joints:

One-quarter inch (1/4") wide expansion joints shall be constructed at both ends of the curb ramp unless directed otherwise by the Engineer. Expansion joint filler shall be shaped to the cross section of the concrete being placed.

J. Mixing and Placing Concrete:

Ready-mix and job-mixed concrete shall conform to the pertinent requirements as set forth in Sections 90-6.01 through 90-6.05 of the State Standard Specifications.

Consistency and Penetration – Concrete shall be of a consistency as set forth in Section 90-6.06 of the State Standard Specifications.

K. Site Cleanup:

Care shall be exercised to prevent concrete from splashing on existing improvements, such as buildings, street lighting electroliers, and fire hydrants. If splashing does occur, all such surfaces shall be cleaned before spatter hardens.

L. Finishing Concrete:

1. Curbs and Gutters – Prior to removal of forms, the top surfaces shall be finished true to grade by means of a straight edge float operated longitudinally over the surface of the concrete. Form clamps shall be constructed so as not to interfere with the operation of this float.

Immediately after removing the front curb forms, all exposed surfaces shall be troweled smooth, the top edges of the curb rounded as shown on the drawings, and all exposed surfaces given a final fine brush finish with brush strokes parallel to the line of curb.

The top and face of the finished curb shall be true straight, and the top surface of curb shall be of uniform width free from humps, sags, or other irregularities.

When a straight edge ten feet (10') long is laid on top or face of the curb, or on the surface of gutters, the surface shall not vary more than 0.01 foot from the edge of the straight edge except at grade changes or curves.

All exposed surfaces shall be spray cured with a resin base compound containing a completely dissipating red fugitive dye to facilitate inspection.

2. Ramps – Fresh concrete shall be struck off and compacted until a layer of mortar has been brought to the surface. The surface shall be finished to grade and cross section with a float troweled smooth and finished with a broom as shown in an applicable City Standard Drawings. Brooming shall be transverse to the line of traffic.

The surface shall not vary more than 0.02 foot from a ten-foot (10') straight edge, except at grade changes and the finished surface shall be free from blemishes.

All exposed surfaces shall be spray cured with a resin-based compound containing a completely dissipating red fugative dye to facilitate inspection.

M. Curing:

Concrete shall be cured in accordance with the pertinent requirements as set forth in Section 90-7.01B of the State Standard Specifications.

N. Asphalt Concrete:

The 12" wide strip along the lip of the gutter shall be plugged with 9" deep lift asphalt concrete. Tack coat shall be applied to all surfaces to be in contact with the asphalt concrete.

O. Time Limit:

The Contractor shall complete installation curb ramps or island pathway within two working days after removal of existing concrete.

P. Written Notices:

The Contractor shall notify property owners whose walkways are affected by the proposed construction, a minimum of forty-eight (48) hours prior to the construction of the ramps. All notices to be posted by the Contractor shall be approved by the Engineer.

End Of Section