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SECTION 56: SIGNS

56.1.01 GENERAL

Signs shall be constructed/installed in accordance with the approved improvement plans and specifications, these Construction Standards, the City Design Standards, The California Manual on Uniform Traffic Control Devices (CMUTCD), and the Standard Highway Signs manual.

All sign materials shall be produced by same manufacturer to eliminate incompatibility issues associated with indifferent materials, (i.e. 3M high intensity prismatic sheeting and 3M electronic cut-films shall be similar material). Prior to City acceptance of new sign improvements, Contractor shall submit to City Construction Inspector either letter of authenticity by manufacturer or certification from 3M or approved equal, indicating like materials were used.

As a minimum, all signs shall be the common size as shown in the Standard Highway Signs manual. On collector and arterial streets, the minimum size of type R1 stop signs and R1-2 yield (measured on outside edge) shall be 36 inches. Type R1 stop signs and R1-2 yield signs on other streets shall be 30 inches. If the intersection has more than three lanes (including turn lanes) in each direction, a supplemental 24" STOP sign is required in the median. Retro reflective red tape is also required for both unistruts. If the median is too narrow for supplemental signage, a 36" LED flashing STOP sign is required from the approved City equipment list. Type R1 stop signs installed on bike trails may be either 24 inches or 18 inches as approved by the Engineer. Type R1 stop signs and R1-2 yield signs installed on alleys may be 24 inches as approved.

All signs shall be fabricated using HIP sheeting, except, Fluorescent Yellow Green (FYG) background colored signs shall be diamond grade sheeting and installed for the following sign types: S1-1, S3-1, S4-3, W11-1, W11-2, and W16-7p and W16-9p when used with one of the previously listed signs.

Advance D3 Guide signs shall have a 1 inch white reflective border around the perimeter of the sign as shown in Detail 17-B of these standards.

All Overhead Signs (Signal Mounted) and advance D3 Guide signs shall have a 1-1/4 inch white reflective border around the perimeter of the sign as shown in Code 67-1 of the CalTrans Sign Specifications.

All sign panels, except as otherwise directed in these standards, shall be fabricated using reflective high intensity prismatic (HIP) sheeting or equivalent. Message and sheeting shall be on one side of the panel only. No mixing of diamond, high intensity, or engineering grade sheeting on the same panel shall be allowed.

Overhead Signs (Signal Mounted) shall be fabricated using high intensity sheeting. All Fluorescent Yellow Green (FYG) background colored signs shall be fabricated using diamond grade sheeting. All type D3 (street name and advance street name) signs along arterials and collectors shall be high intensity grading meeting FHWA MUTCD Table 2A-3.

Where crossing the street is restricted at signalized intersections, R9-3 and R9-3bP signs shall be installed on the signal pole in the place of the pedestrian signal indication.

U-turns shall be restricted where less than 44 feet exists between the right lane line of the left turn lane and the face of curb for the opposing direction of travel for single left turn lanes, where less than 36 feet exists between the left edge of the inside left turn lane to the face of curb for the opposing direction of travel for dual turn lanes, or as required by the Engineer (TS-15).

W3-3 Signal Ahead signs shall be installed on all approaches to a signalized intersection on the day of signal activation. The signs shall be installed prior to the left or right turn pocket bay tapers at a minimum and shall be mounted on street light poles when possible. Please see Detail TS-16 for additional placement information. Immediately prior to the activation of a new traffic signal, the contractor shall install 2 orange flags on the “Signal Ahead” signs. The flags shall remain in place for 2 weeks prior to removal by the contractor.

A bicycle signal actuation sign, R10-22, shall be installed in conjunction with bicycle detection. The sign shall be placed adjacent to the bicycle loop on the nearest signal pole or on a sign post per City standards as directed by the Engineer.

A. Subdivision Signage Requirements:

1. Subdivision Entrances

- a.** At all entrances to a subdivision off a collector or arterial, install a type R2-1 “25 mph Speed Limit” sign.
- b.** At the first 4-way intersection entering a subdivision, coming off a collector or arterial with a separation of less than 200 feet, install type R1-1 “Stop” signs, bars and legends on the residential minor streets.
- c.** At the first Tee intersection entering a subdivision, coming off a collector or arterial, install type R1-2 “Yield” sign on the stem of the intersection.
- d.** Install type R26 (CA) “No Parking Anytime” signs at the entrance to subdivision that have a small median/island just off an arterial or collector.

2. Courts

- a.** Install a type W14-2 “NO OUTLET” sign at the entrance to all Courts or Cul-de-Sac’s when you cannot see the end of the roadway from the last intersection. Place the sign on the nearest street light pole when possible (left or right side of roadway acceptable).

3. Intersections within Subdivisions

- a.** All four-way intersections shall have right-of-way controls established on the minor street. Install type R1-1 “Stop” signs, bars and legends.

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All existing traffic signs, which are in conflict with the proposed work as shown on the plans, shall be removed by the Contractor and returned to the City. The Engineer shall make the final decision if a question arises as to what represents said conflict.

OVERHEAD SIGN STRUCTURES (Signal Mounted)

56.1.02 MATERIAL

D3 and G-8 (CA) street sign lettering shall be white high intensity prismatic (HIP) or equivalent Series C, with 8 inch upper case and 6 inch lower case lettering. When the text is too long for a single line, lettering other than Series C, but not smaller than Series B, may be used with the approval of the Engineer.

D-3 and G-8 (CA) Signs with 1 line of text shall be 24 inches tall. Signs with 2 lines of text shall be 36 inches tall.

All white symbols and arrows on G-8 (CA) signs shall be reflectorized.

Internally Illuminated Street Name Signs (IISNS) shall require a City approved layout proof matching existing City LED IISNI's prior to ordering. Only products with prior approval from the City shall be allowed.

56.1.06 SIGN PANELS & FASTENING HARDWARE

Overhead sign Structures shall be attached to signal mast arms per CalTrans Standard Detail ES-7N, or as directed by the Engineer.

All D3 street name signs mounted on signal mast arms shall not be the swinging arm type. One end of each street name sign shall be attached to the signal pole in at least 2 places, and the other end shall be attached to the signal mast arm. Fastener shall pass through both sign panels and stiffening braces, unless otherwise noted.

All signal mast arm mounted signs shall have back stiffening braces attached to the sign panel.

ROADSIDE SIGNS

56.2.02 MATERIAL

D3-2 and G-8 (CA) Signs with 1 line of text shall be 18 inches tall. Signs with 2 lines of text shall be 24 inches tall. At non-signalized intersections, street name signs shall be provided, and shall conform to Detail TS-17A in the City of Roseville Construction Standards.

56.2.02A METAL POLE

All roadside signs shall be installed on metal poles as specified in these standards. Wood posts shall not be allowed. See TS-17 for additional details.

Metal pole, square tube, shall conform to the standard specifications for cold rolled carbon sheet steel, commercial quality, ASTM A-446 or hot rolled carbon steel sheet, structural quality, ASTM

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A-570-90 and ASTM A-653-94 structural grade 50.

Square tubes shall be installed into a sleeve of same material with 2 holes showing above “**finished**” grade. All holes below grade shall be taped closed. The sleeve shall be embedded in concrete, per S-1. No concrete shall be allowed to enter the sleeve.

Corner weld shall be carefully rolled to size and shall be welded directly in the corner by high frequency resistance welding and externally scarfed to agree with corner radii. Corner weld shall be zinc coated after scarfing operation.

The cross section of the post shall be square tube formed of 12 gauge (.105” USS gauge) steel, carefully rolled to size and shall be welded directly in the corner by high frequency resistance welding and externally scarfed to agree with corner radii.

Posts shall be 1-3/4” x 1-3/4”, have a squareness tolerance of plus or minus 0.010”, be made of 12 gauge U.S.S., weigh 2.06 pounds per foot, and twist no more than 0.062” over 3 foot in length. Typical length of pole 10’, 12’, 14’ (MAX) or as approved per section 56-2.04

The square tubes shall have holes that are 7-1/16” plus or minus 1/64” diameter on 1 inch centers, on all four sides for the entire length of the pole. The holes shall be on the centerline of each side in true alignment and opposite to each other directly and diagonally. All posts shall be cut in such a manner to ensure hole alignment between anchors and sleeves when installed.

The length of each post shall be per plan, as required for the project, or as designated per these specifications.

The finished posts shall be straight and shall have a smooth uniform finish. All holes and ends shall be free from burrs and ends shall be cut square.

Supports shall be of sufficient size to support the sign panel. Signs on single supports shall resist the effect of eccentric wind force. A support member 10 feet long shall not rotate more than 2 degrees when test loaded with 50 foot-pounds (600 inch-pounds) torque on one end while the other end is firmly held against rotation.

Permissible variation in the straightness is 1/16” in 3 feet.

Standard outside corner radius shall be 5/32” plus or minus 1/64”

Welding flash on the inside corner of the welded square tubes shall be controlled to permit a 9/64” radius gauge to be place in the corner.

Square tubes shall be manufactured from hot dipped galvanized steel with 1.40 ounces of zinc coating per square foot, conforming to ASTM A-653, also referred to as G-140.

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Square tubes shall be produced utilizing a Polyester TGIC Powder Coating in a white high-gloss finish.

Corner weld should be zinc coated after scarfing operation. Interior and exterior walls of the tubing shall be galvanized, or tubing shall be given a triple coated protection by an in-line application of hot-dipped zinc (galvanization) per AASHTO M-120 followed by a chromate conversion coating and a clear organic exterior coating. The inside surface shall be given corrosion protection by double in-line application of a full zinc base organic coating.

56-2.02 DESIGN PANEL FASTENING HARDWARE

All signs with a surface area greater than 9 square feet shall have back bracing attached from the post support to the sign panel. Sign panels 9 square feet or larger shall have adequate bracing to prevent panel flexing.

56-2.04 SIGN PANEL INSTALLATION

Efforts shall be made to ensure that all signs in the center median or shoulder areas are not installed next to landscaping or other objects which may impair visibility of the sign.

The bottom of roadside signs shall be mounted at a minimum height of 7 feet above the grade of the sidewalk (or traveled way if there is no sidewalk), with the following exceptions:

1. The bottom of type R4-7, W1-6, and W1-7 signs shall be mounted at a minimum height of 5 feet.
2. The bottom of type R6-1 signs located in the median shall be mounted at a minimum height of 18 inches.
3. The bottom of type W1-8 signs located outside of sidewalk areas shall be mounted at a minimum height of 3 feet.
4. At intersections in residential areas, the bottom of street name signs shall be mounted at a minimum height of 8 feet.