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SECTION 56: SIGNS

56.1.01 GENERAL

General Construction and Installation

Signs shall be constructed and 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 signs shall have messages and sheeting on one side only.

Certification and Warranty

Prior to City acceptance, the Contractor shall submit a letter of authenticity from the manufacturer or a certification from 3M (or approved equal) to the City Construction Inspector, confirming material compatibility and manufacturer warranty.

Material Requirements

The following materials shall be used in the construction of signs, adhering to the specified standards:

- **Sign Sheeting and Protective Film:**
 - All signs shall have 3M 1160i/1170C protective film or approved equal.
 - All traffic signs shall be 0.080 inch thick aluminum.
 - Stop Signs, Speed Limit Signs, shall have a 3M #4090 DG3 or approved equal White reflective sheeting.
 - School and Pedestrian Signs shall have a 3M #4083 DG3 or approved equal Florescent Yellow Green sheeting.
 - All other Warning Signs shall have a 3M #4081 DG3 or approved equal Florescent Yellow sheeting.
 - All other signs shall have 3M #3930 High Intensity Prismatic or approved equal reflective sheeting.
- **Manufacturer Compatibility:**
 - All sign materials, including sheeting and electronic cut-films, shall be produced by the **same manufacturer** to ensure compatibility (e.g., 3M HIP sheeting and 3M electronic cut-films, including 1170C).
 - No mixing of diamond, high intensity, or engineering grade sheeting is permitted on the same panel.
- **Date Card Sticker:**
 - Each sign shall have a **weather-resistant punched date card sticker** on the back, printed on **Engineer Grade Film**, indicating the month and year of installation.

Sign Sizes and Specific Requirements

- Sign sizes shall conform to the Standard Highway Signs manual unless otherwise specified. Specific minimum sizes include:
 - **Type R1 Stop and R1-2 Yield signs:**
 - 36 inches on collector and arterial streets, along with residential streets entering arterial streets.

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- 30 inches on other streets.
 - 24 or 18 inches on bike trails and 24 inches in alleys, as approved by the Engineer.
 - At intersections with more than three lanes (including turn lanes) per direction:
 - A supplemental 30-inch Stop sign, equipped with retroreflective red tape, is required in the median. Additionally, all other Stop sign posts must be fitted with retroreflective red tape.
 - If the median is too narrow, install a 36-inch LED flashing Stop sign from the approved City equipment list.
- **Guide signs (Advance D3 and Overhead Signal-Mounted):**
 - Shall have a 1-1/4 inch white reflective border per CalTrans Sign Specifications Code 67-1, unless Detail 17-B of these standards specifies otherwise, subject to Engineer approval.
- **Signalized Intersections:**
 - At signalized intersections restricting pedestrian crossing, install R9-3 and R9-3bP signs on the signal pole in place of the pedestrian signal indication.
- **U-turn Restrictions:**
 - U-turns are restricted where:
 - Single left turn lanes have less than 44 feet between the right lane line and the opposing curb face.
 - Dual left turn lanes have less than 36 feet between the inside left turn lane's left edge and the opposing curb face, or as directed by the Engineer (TS-15).
- **W3-3 Signal Ahead Signs:**
 - Shall be installed on all approaches to signalized intersections on the day of activation, prior to left or right turn pocket bay tapers, and mounted on street light poles when possible (see Detail TS-16).
 - At activation, the Contractor shall install two orange flags on each sign, removing them after two weeks.
- **Bicycle Signal Actuation Sign (R10-22):**
 - Shall be installed with bicycle detection, placed adjacent to the bicycle loop on the nearest signal pole or sign post per City standards, as directed by the Engineer.

Subdivision Signage Requirements:

1. Entrances
 - a. Install R2-1 "25 mph Speed Limit" signs at all entrances off collectors or arterials.
 - b. At the first 4-way intersection (less than 200 feet separation from a collector or arterial), install R1-1 Stop signs, bars, and legends on minor streets.
 - c. Install R26 (CA) "No Parking Anytime" signs at entrances with a small median/island off an arterial or collector.

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2. Courts
 - a. Install W14-2 “No Outlet” signs at entrances to courts or cul-de-sacs where the end is not visible from the last intersection, placed on the nearest street light pole (left or right side acceptable).
3. Intersections
 - a. At all four-way intersections, establish right-of-way controls on minor streets with R1-1 Stop signs, bars, and legends. If all approaches are stop controlled install R1-3P signs under R1-1 signs.

The Contractor shall remove and return to the City any existing traffic signs conflicting with the proposed work, as determined by the Engineer.

OVERHEAD SIGN STRUCTURES (Signal Mounted)

56.1.02 MATERIAL

D3 and G-8 (CA) signs shall use white HIP Federal Highway Series C lettering (8-inch uppercase, 6-inch lowercase). If text exceeds one line, lettering may use Series B (or larger) with Engineer approval. Sign heights:

- 1 line of text: 24 inches.
- 2 lines of text: 36 inches.

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

Internally Illuminated Street Name Signs (IISNS) require a City-approved layout proof matching existing City LED IISNS prior to ordering. Only pre-approved products are permitted. IISNS name panels shall be:

- Clear (not opaque) polycarbonate, 3.5–6.0 mm thick.
- Background sheeting: 3M DG3 (Diamond Grade) series 4090, white.
- Etched sheeting (street name and City of Roseville logo): 3M EC 1177c, green.
- Double-sided with street names on both sides.
- Suffixes: Way, Blvd, Pkwy, Rd, Ave, Ln, or St.
- Manufacturer warranted against chemical reactions between sheeting components.

56.1.06 SIGN PANELS & FASTENING HARDWARE

Overhead signs shall be attached to signal mast arms per CalTrans Standard Detail ES-7N or as directed by the Engineer. D3 street name signs shall be fixed (not swinging), attached to the signal pole in at least two places and to the mast arm, with fasteners passing through panels and stiffening braces unless otherwise noted. All signal mast arm-mounted signs shall include back stiffening braces.

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ROADSIDE SIGNS

56.2.02 MATERIAL

D3-2 and G-8 (CA) signs at non-signalized intersections shall conform to Detail TS-17A and have heights of:

- 1 line of text: 18 inches.
- 2 lines of text: 24 inches.

56.2.02A SIGN POSTS

All roadside signs shall use metal poles (wood posts prohibited) per TS-17A, constructed and installed as follows:

- Material: Cold-rolled carbon steel (ASTM A-446) or hot-rolled carbon steel (ASTM A-570-90, A-653-94, structural grade 50).
- Shape: 12-gauge (0.105" USS) square tube, 1-3/4" x 1-3/4", weighing 2.06 lbs/ft, with a maximum twist of 0.062" over 3 ft.
- Dimensions: 10', 12', or 14' (max) lengths, or as approved per 56-2.04.
- Holes: 7/16" ± 1/64" diameter, 1-inch centers on all four sides, aligned for sleeve installation.
- Finish: Hot-dipped galvanized steel (1.40 oz/ft² zinc, ASTM A-653 G-140), with Polyester TGIC powder coating (white high-gloss). Corner welds zinc-coated after scarfing.

INSTALLATION

- Embedded in a concrete sleeve (per TS-17A) with two holes above finished grade; below-grade holes taped closed.
- If a sign is to be installed in existing concrete, the concrete shall be cored with a 6-inch diameter hole.
- If a sign is to be placed where new concrete is to be poured, a 6-inch diameter PVC sleeve shall be used.
- Solid embedment of sign posts in concrete is not permitted.
- Any voids around sign posts passed through sleeves in concrete shall be backfilled with soil and thoroughly compacted to the satisfaction of the City.

56.2.02B Sign Mounting Hardware

All mounting hardware shall be zinc coated, galvanized, or stainless. Banding shall be 3/4 inch wide stainless steel. All signs shall be mounted using bolts. Hose clamps, rubber washers and rivets are not permitted.

Poles shall be straight, smooth, and burr-free, with a squareness tolerance of ±0.010" and corner radius of 5/32" ± 1/64". Supports shall resist eccentric wind force, with a 10-ft pole rotating no more than 2 degrees under 50 ft-lbs torque.

56-2.04 SIGN PANEL INSTALLATION

Signs in medians or shoulders shall avoid landscaping or objects impairing visibility. Minimum mounting heights from sidewalk grade (or traveled way if no sidewalk) are:

- General roadside signs: 7 feet.
- R4-7, W1-6, W1-7: 5 feet.
- R6-1 (median): 18 inches.

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- W1-8 (outside sidewalk areas): 3 feet.
- Street name signs at residential intersections: 8 feet.

Signs with a surface area greater than 9 square feet require back bracing from the post to the panel to prevent flexing.