

## **SECTION IV**

### **STREETS**

#### **IV-1. DESIGN GUIDELINES**

The Circulation Element of the General Plan establishes certain key City streets as Arterials. These streets are identified further as four-lane divided, two-lane divided and two-lane undivided arterials. Streets not designated arterial are established as Local. Their specifications may vary depending on their need for bike lanes and/or parking, location within specific plans, rural areas and/or hillside terrain.

Typical right-of-way widths are established in these Standard Details and Specifications. Variations to these standards may occur due to topography, or other constraints. These variations will be considered on a case by case basis.

##### **A. Classes of Streets**

Arterial Streets may be designed with either two or four lanes. Typical designs include landscape medians, separate lanes for turning movements, Class II bike lanes, and pedestrian paths separated by landscaped parkways. **Standard Details A-1 through A-3** provide examples.

Local streets provide direct access to all parcels in the City. **Standard Details No. A-4 through A-6** apply. Local street standards may be modified by specific plans where topography or other constraints warrant alternative designs.

##### **B. Geometrics and Profiles**

Where feasible, the minimum grade on new streets shall be one percent (1%). Portions of streets may be designed with a minimum grade of 0.50 percent where topographic constraints warrant.

Local streets may be designed with a maximum grade of up to 15 percent. The maximum grade on new arterial streets should be limited to eight percent (8%) subject to topographic constraints.

Vertical curves shall be designed in accordance with design speed and grade difference criteria as outlined in "A Policy on Geometric Design Of Urban Highways", published by the American Association of State Highway and Traffic Officials, latest edition (**See Standard Details B-1 and B-2**). For visibility and safety minimum design speeds shall be 35 miles per hour for arterial streets and 25 mph for local streets.

Traffic calming features are encouraged in the design of all new streets. When two streets intersect, neither street shall have a grade greater than three percent (3%) for a minimum distance of 20 feet measured from the curb line of the intersected street. **Standard Detail B-3** provides profile information for use in hillside terrain.

Curb return radii may vary from 10 to 30 feet depending upon the width of the streets being accessed. Smaller radii are preferred; however, accommodations must be made for emergency services (and other large vehicles depending upon projected land uses).

In accordance with the California Fire Code, a dead-end street may serve no more than 30 single-family dwellings.

### **C. Survey Monuments**

Survey monuments shall be shown on the plans in accordance with the final subdivision map and **Standard Detail C-14**. Street monuments shall be set at all street centerline intersections and on centerline at the beginning and end of all curves. Existing survey monuments shall be preserved and reset in accordance with **Standard Detail C-14** if necessary.

### **D. Road and Lane Width Guidance**

The following road and lane width guidance should be considered during the design of new roads, completion of existing roads, and re-striping of roads after paving maintenance or rehabilitation projects. The following guidance is meant as an aid to design and must not be construed as requirements or a replacement for engineering judgement or an engineering study.

- 1) New Roads:
  - a. New roads shall be designed in accordance with the minimum standards contained herein. The design guidance listed in Table 1 can be considered for new roads. However, the City Engineer must approve design exceptions prior to construction. Design Alternatives must comply with Section II-2.
- 2) Existing Roads:
  - a. Existing roads that are not completely constructed should continue to follow the previously approved road section. The Consultant should contact the City to verify the desired road section.
  - b. Exceptions to 2).a will be considered by the City Engineer in order to address stormwater runoff, topography, a specifically adopted plan line that changes the width, eliminates parking, a road classification change (local to

arterial), or other factor. Table 1 provides conditions where a design alternative may be warranted.

3) Road Striping, Marker, and Legend Projects:

- a. Projects that will require striping plans include road maintenance or rehabilitation projects, road widening projects that add new parking, bike, or travel lanes, or new road construction projects. Any project that obliterates or reduces the visibility of striping, markers, or legends must replace it in kind or at the City Engineer's direction. Changes to road striping must be approved by the City Engineer prior to construction.
- b. Road striping often requires balancing existing road uses, surrounding land use, and available road width. Table 1 provides guidance on lane width for existing roads. Striping, markers, and legends shall be designed and constructed in conformance with the California Manual of Uniform Traffic Control Devices, latest edition.

**Table 1  
Road and Lane Width Guidance**

Condition	Guidance			
	Arterials/Collectors	Local Roads (Transit Routes)	Parking	Bike Lanes
<b>Truck and Transit Routes</b>	Consider increasing striping width of truck lane up to 12 feet, number 1 lane remains at 11 or 10 feet on four lane roads.	Consider increasing striping width of lanes up to 11' to accommodate transit coaches.	Consider eliminating parking on one or both sides of Arterial streets to provide lane width for truck or transit routes and or bike lanes.	Consider providing bike lane buffers to provide space between bikes and the travel lane.
<b>Excess Road Width</b> – Where existing road width is wider than needed.	Consider increasing striping width of truck lane up to 12 feet, number 1 lane remains at 11 or 10 feet on truck and transit routes.	Lane striping width should follow the appropriate road standard, unless speeding, a dangerous condition, or other factor exists that warrants narrowing lane width.	Consider Increasing parking lane width up to 8' (preference is to provide bike lane buffers)	Consider providing bike lane buffers to provide more space between bikes and travel lanes where class II bike lanes exist.
<b>Narrow Road Width</b> – where existing road or right-of-way is narrower than needed.	Preference is given to maintaining existing travel lane width or widening the road to achieve minimum widths for all lanes.	Preference is given to maintaining existing travel lane width unless speeding, a dangerous condition, or other factor exists that warrants narrowing lane width.	Consider eliminating parking to provide lane width for travel, center turn, bike buffers and/or bicycle lanes on arterials.	Consider share the road signage or share the lane markings where a street is designated for class II bike lanes.
<b>Roads with existing class II bike Lanes</b>	Consider bike lane buffers if extra road width is available.	Consider widening the bicycle lanes to 6' if road width is available.	Consider eliminating parking to provide lane width for travel, center turn, bicycle buffers and/or bicycle lanes.	Consider providing bike lane buffers to provide more space between bike and travel lanes where class II bike lanes exist.
<b>Two Way Left Turn Lane (TWLTL)</b>	Preference for the TWLTL to be at least as wide as the narrowest travel lane, but generally not less than 10'. The TWLTL can be narrowed to provide width to travel or bike lanes.	N/A	Consider eliminating one or both parking lanes or narrowing the parking lane to 7' to provide width for a TWLTL.	Consider share the road signage and markings where designated by the Bicycle and Pedestrian Master Plan.
<b>Routes to School</b>	Consider traffic calming measures including decreasing lane width, chicanes, or signage to slow traffic speeds near school zones.	Consider traffic calming measures including decreasing lane width to modify traffic speeds near school zones.	Consider using parking lanes as bike lane buffers. Parking lanes can be narrowed to 7 feet to provide Bike Lane buffers.	Preference should be given to bike lane buffers for routes to elementary schools.
<b>Crosswalks</b>	Consider using bulb-outs, islands, and flashing warning signage to enhance safety when warranted	Consider using bulb-outs, islands, and flashing warning signage to enhance safety when warranted.	Consider eliminating a parking space(s) to accommodate crosswalk enhancements such as curb extensions.	N/A

## **IV-2. MATERIALS**

All materials furnished and the methods of performing any proposed work shall be in conformance to the applicable portions of these Standard Details and Specifications and Caltrans Standard Specifications.

### **A. Asphalt Concrete**

Asphalt Concrete shall conform to the requirements for Type B Asphalt Concrete as specified in Section 39 of Caltrans Standard Specifications utilizing the 3/4 inch maximum aggregate.

### **B. Aggregate Base**

Aggregate base shall be Class II and shall conform to the requirements of Section 26 of Caltrans Standard Specifications.

### **C. Concrete**

All structures and surfaces subject to vehicle loads shall be constructed with Class A Portland Concrete Cement (PCC), 6 sack, 3/4 inch crushed aggregate, 3,000 psi. Curbs and sidewalks may be constructed with Class B PCC, 5 sack, 2,500 psi. See standard details for specifications.

Expansion joints shall be placed with 1/2 inch material at 20-foot intervals in curbs and sidewalks, at the ends of all returns and transitions, storm drain inlets and driveways.

### **D. Street Lights**

All street light poles, lamps, wiring and circuits shall be installed, owned and operated by P. G. and E. Street light styles must be chosen from a catalog and supplier approved by P. G. and E. Proposed street light styles must be included in all entitlement applications where street improvements will be required. The proposed street light style must be approved by the Planning Commission prior to improvement plan approval.

## **IV-3. CONSTRUCTION GUIDELINES**

Unless otherwise modified in the following or approved by the Engineer, the roadbed shall be prepared and constructed in accordance with the applicable portions of Caltrans Standard Specifications.

## **A. Pavement Structure Section**

The design of street structural sections shall be determined by Resistance ("R") Value testing of sub-grade and traffic indexes as outlined and updated in the Pavement Management Program adopted by the City Council in 2013. Traffic indexes shall be 8.0 for three and four lane arterial streets and streets subject to heavy truck traffic (industrial areas); 7.0 for two lane arterial streets and 6.0 for all other streets.

Relative compaction tests shall be made on sub-grade, base and asphalt material placed within streets as directed by the supervising Geotechnical Engineer.

## **IV-4 STREETS EXEMPT FROM IMPROVEMENTS, CODE SECTION 11.12.030**

With the adoption of these Standard Details and Specifications, the City Council has waived the requirements for street frontage improvements associated with building permits per Code Section 11.12.030. In lieu fees for construction of sidewalks apply in accordance with the Code.

**Orchard Bungalow** (with the exception of Shannon Hill Drive, Walnut Drive from Creston Road to Shannon Hill Drive, Tanner Drive and Palm Court)

**Hilltop Drive** - exemption applies to sidewalk only

**Olive Street** between 21<sup>st</sup> and 24 Streets – exemption applies to sidewalk only

**Tract 37 (Ridgeview Drive and Court, Greenwood Drive)** – exemption does not apply to frontages on 12<sup>th</sup> Street and Fresno Street

**Tract 95 (Glen Court Drive, Highland Park Drive and Piedmont Place)**

**Tract 103 (Glencrest Lane, Crestline Drive, Vista Court, Fairview Lane, Sunset Drive and Panorama Drive)**

**Tract 147 (Par Avenue, Country Club Drive, Niblick Road, Creston Road, Bogie Lane, Birdie Court, Fairway Drive, Eagle Court, Putter Avenue, Tee Court)** – exemption applies to sidewalk only

**Tract 1215 (21<sup>st</sup> Street, Almond Springs Drive, Burket Place, Almond Crest Court)** – exemption applies to sidewalks only

**Tract 1243 (Villa Drive)**

**Tract 1350 (28<sup>th</sup> Street)** – exemption applies to sidewalk only

**Tract 2521 (21<sup>st</sup> Street, Country View Lane)** - exemption applies to sidewalk only

**Experimental Station Road east of Buena Vista Drive** (with the exception of Tentative Tract 2504)