

## SECTION 3 STREET DESIGN

### 3.01 GENERAL

For purposes of geometric and structural design, streets shall be classified according to the following table. The City Engineer will determine the class of all proposed streets. Any deviation from the following standards shall require the approval of the City Engineer. Street standards shown below in **bold italic** print apply to streets located within the North Area as shown on Figure 3-1, except as modified within the Washington Specific Plan and the Triangle Specific Plan. Street Standards shown below in plain print apply to streets located within the Southport Area as shown on Figure 3-1.

**TABLE 3.01**

Class	Right of Way (ft)	Face of Curb to Face of Curb	Intersection Face of Curb Radius <sup>7</sup> (ft)	Traffic Index <sup>1</sup>	Median Width (ft)	Number of Travel Lanes	Bike Lane Width <sup>4</sup> (ft)	Minimum Centerline Radius <sup>2</sup> (ft)	Sidewalk Width <sup>3</sup> (ft)	Minimum Landscape
Loop Pkwy - Maximum (Minor/Major) <sup>8</sup>	136/160	76/100	50	10	16	4/6	6	1150	6	4.5
Loop Pkwy - Minimum (Collector)	106	56	40	7	16	2	6	800	6	6.5
Major Arterial (4 Lane/6 Lane)	136/160	76/100	50	10	16	4/6	6	1150	6	4.5
<b>Major Arterial</b>	<b>100 min</b>	<b>80 min</b>	<b>50</b>	<b>10</b>	<b>16</b>	<b>4 (min)</b>	<b>6</b>	<b>800</b>	<b>5</b>	<b>N/A</b>
Minor Arterial	110	60	40	9	N/A	4	6	800	6	6.5
<b>Minor Arterial</b>	<b>84</b>	<b>64</b>	<b>40</b>	<b>9</b>	<b>N/A</b>	<b>4</b>	<b>6</b>	<b>800</b>	<b>5</b>	<b>N/A</b>
Res. Collector (Back/Back Yard)	72	36	30	7	N/A	2	6	550	5	5.5
Res. Collector (Back/Side Yard)	65	36	30	7	N/A	2	6	550	5	5.5
<b>Res. Collector</b>	<b>60</b>	<b>40</b>	<b>40</b>	<b>7</b>	<b>N/A</b>	<b>2</b>	<b>6</b>	<b>250</b>	<b>4</b>	<b>N/A</b>
Residential Local	56	36	25	7	N/A	2	N/A	250	4	5.5
<b>Residential Local</b>	<b>56</b>	<b>36</b>	<b>40</b>	<b>7</b>	<b>N/A</b>	<b>2</b>	<b>N/A</b>	<b>250</b>	<b>4</b>	<b>N/A</b>
Residential Cul-de-sac	56	36	25	6	N/A	2	N/A	250	4	5.5
<b>Residential Cul-de-sac</b>	<b>50</b>	<b>36</b>	<b>25</b>	<b>6</b>	<b>N/A</b>	<b>2</b>	<b>N/A</b>	<b>250</b>	<b>4</b>	<b>N/A</b>
Rural Roads <sup>5</sup>	50	24 <sup>10</sup>	25	6	N/A	2	N/A	300	N/A	N/A
Industrial Collector <sup>9</sup>	68	56	40	10	N/A	3	8	800	5.5	5.5 <sup>11</sup>
Commercial / Industrial Local <sup>9</sup>	56	44	40	10	N/A	2	8	600	5.5	5.5 <sup>11</sup>
<b>Commercial / Industrial Local<sup>9</sup></b>	<b>64</b>	<b>48</b>	<b>41</b>	<b>10</b>	<b>N/A</b>	<b>2</b>	<b>N/A</b>	<b>250</b>	<b>5</b>	<b>N/A</b>

1. The Traffic Index may be changed at the discretion of the City Engineer if traffic warrants a different value.
2. Actual design of horizontal curves shall be based on the design speed of the street as determined by the City Engineer. Use of expanded corners shall be limited to projected low volume residential, commercial and industrial streets and conditions where conformance to minimum horizontal length of centerline radius is not practical, and shall be subject to the approval of the City Engineer.
3. Sidewalk width shall be measured from top back of curb to back of walk for both rolled and vertical curbs, and shall not include width of the curb.
4. The dimensions for rights-of-way and widths between curbs shall be increased if bikeways are required within the public right-of-way. Bikeway design shall conform to the State Highway Design Manual and City Bikeway Master Plan.
5. Rural roads may only be constructed when providing access to properties zoned Rural Residential, Rural Estates, Agricultural, or Planned Residential with a minimum one-acre lot size. Roads exceeding the limits for the Rural Road Standard shall be considered collectors and shall be dealt with on a case-by-case basis.
6. Sidewalks shall be separated from the curb by a landscape parkway strip, except for streets located within the North Area as shown in Figure 3-1 and all cul-de-sac bulbs and expanded corners, where they shall be adjacent to the curb. Sidewalks within industrial areas of Southport shall be adjacent to the curb unless the sidewalk is eliminated on one side of the street, in which case, a 5.5-ft. landscape strip shall be provided. The landscape strip shall be measured from the top back of curb and shall not include the width of the curb.
7. An intersection curb return radius may be adjusted, at the discretion of the City Engineer, to accommodate signal timing. Property line radius at intersections shall be consistent with adjacent streets or as otherwise approved by the City Engineer. Where unlike streets intersect, the largest curb return radius shall apply.
8. The Loop Parkway width and treatment shall be reduced by 5 feet on each side of the street within Rural Residential and Rural Estate areas. A sidewalk may be deleted on one side with right-of-way at curb face when adjacent to Industrial areas.
9. No on-street parking within 20 feet of a driveway.
10. Edge of pavement to edge of pavement.
11. Required where sidewalk is eliminated on one side of the street in industrial areas.



### **3.02 STRUCTURAL SECTION**

#### **A. Design**

Street sections shall be calculated based on “R” values reported in a “soils report” and obtained from material gathered from the level of the proposed subgrade using the State of California Department of Transportation design method. If subgrade has an “R” value of 10 or less, geotextile fabric shall be installed on subgrade prior to placement of AB or ASB material. In addition, the City Engineer may require the installation of edge drains in soils where the “R” value of the subgrade is 10 or less. The geotechnical engineer may submit for treatment of the subgrade material with lime or cement if suitable soils exist. This may be considered in lieu of geotextile fabric with approval from the City Engineer.

### **3.03 OPEN TRENCHING**

#### **A. Moratorium**

Open trenching shall be prohibited on all newly paved and newly overlaid streets and reconstructed streets for a period of two years as determined by the City Engineer. Potholing in these prohibited areas shall only be allowed upon prior approval of the City Engineer.

#### **B. Backfill**

Open trenches within City right-of-way shall be backfilled per Standard Detail 110 of these standards.

#### **C. Permit Required**

All open trenching within City right-of-way shall be subject to a City Encroachment Permit.

#### **D. Horizontal and Vertical Alignment:**

Dry utilities shall be placed to avoid utility conflicts, with sufficient depth and horizontal separation from other utilities, as approved by the City Engineer.

### **3.04 PARTIAL STREETS**

#### **A. Allowances**

At the discretion of the City Engineer, partial streets may be permitted along the boundary of a subdivision or other private development where the full right-of-way cannot be dedicated. When permitted, the developer shall, as a minimum, dedicate sufficient right-of-way and construct a full ½ street section for the appropriate class of street indicated above along the frontage of the development and 14-foot wide paved roadway with 4-foot wide gravel shoulder along the opposite side. Construction of partial streets shall be limited to residential streets only.

### **3.05 GEOMETRICS**

#### **A. Intersection Spacing**

All streets shall intersect at or as near right angles as is practicable. The centerlines of streets that intersect on opposite sides of another street shall coincide, or the offset distance between the intersecting streets shall equal or exceed 500 feet for arterials. The distance between intersections for all other streets, centerline to centerline, shall be at least 200 feet, except when a

residential local street intersects a collector; and then the first intersection on the residential local street may not be less than 150 feet, centerline to centerline, from the collector when the residential local intersection is no more than three-legged.

#### B. Curve Data Requirements

Curve data for street centerline, right-of-way, and face of curb alignment shall be tabulated in a box shown on the improvement plans. Curve data shall include curve length and radius.

#### C. Gutter Slope

Gutter flow line grades shall have a minimum slope of 0.0032 ft/ft. Maximum grades shall be determined by the City Engineer on a case-by-case basis.

#### D. Cross Slope

Cross slope on all streets shall be as shown on the Standard Details. Any deviation from these standard cross slopes shall be subject to the approval of the City Engineer. For new construction, the maximum cross slope shall be 2%. For reconstruction projects, the maximum cross slope may be increased to 3% with special approval by the City Engineer.

#### E. Vertical Curves

The minimum vertical curve length allowable at the intersection of two grades shall be 50 feet. Actual design of the vertical curve shall be based on the design speed of the street and stopping sight distance and shall conform to the State Highway Design Manual unless otherwise specifically approved by the City Engineer. However, vertical curves may be omitted where the algebraic difference in grades does not exceed 2.0 percent.

#### F. Stopping Sight Distance

The minimum stopping sight distance over any segment of the roadway on any street shall conform to the State Highway Design Manual unless otherwise specifically approved by the City Engineer. No obstructions shall be located closer than 25 feet from the intersection of the right-of-way line extensions unless specifically approved by the City Engineer.

#### G. Dead-End Length

Except for Rural Roads, all new residential, commercial and industrial cul-de-sacs may not exceed 600 feet in length as measured from the centerline of the intersecting street to the radius point of the cul-de-sac bulb.

For Rural Roads serving any parcel with a gross area between 1.0 and 4.99 acres, cul-de-sacs may not exceed 1320 feet in length as measured from the centerline of the intersecting street to the radius point of the cul-de-sac bulb.

For Rural Roads serving only parcels with a gross area equal or greater to 5.0 acres, cul-de-sacs may not exceed 1640 feet in length as measured from the centerline of the intersecting street to the radius point of the cul-de-sac bulb.

Turnarounds (cul-de-sac bulbs) shall be provided on any dead-end road in excess of 150 feet in length as measured from the centerline of the intersecting street. The cul-de-sac radius and bulb transition geometrics shall be as shown on the Standard Details.

#### H. Additional Lanes

At intersections, additional right-of-way or reduction of landscaping within the median or adjacent to the right-of-way boundary may be required to accommodate additional left-turn, right turn, or through lanes.

### 3.06 APPURTENANCES

#### A. Driveways

For purposes of the following, driveway widths do not include width of transitions, and the top of driveway transition constitutes the edge of driveway.

1. No driveway shall be permitted within 2 feet of a property line on multi-family and commercial properties. Driveway locations for single family property shall not be permitted within 2 feet of a property line unless a property fronts on a cul-de-sac bulb in which case a driveway may be constructed up to the property line. Special consideration by the City Engineer may be given for unusual circumstances.
2. The minimum width for single family residential and duplex driveways shall be 10 feet. The maximum driveway width shall be 30 feet.
3. The minimum width for 2-way commercial, industrial and multi-family residential driveways shall be 20 feet. For one-way driveways, the minimum width shall be 10 feet. Maximum driveway width shall be 45 feet.
4. The minimum distance between driveways serving the same parcel shall not be less than 22 feet as measured along the face of curb from the near edges of the driveway transitions.
5. Not more than 40 percent of the frontage of any parcel shall be occupied by driveways except on cul-de-sac bulbs and expanded corners.
6. The design of driveways shall conform to the Standard Details.
7. The maximum number of driveways for any parcel shall conform to the following:\*

Street Frontage Length (feet)**	Maximum No. of Driveways***
Up to 100	one
101 to 400	two
Over 400	More than two shall be subject to approval by the City Engineer

\* With special approval by the City Engineer, the maximum number of driveways may be increased by one to provide a secondary, accessory driveway for RV parking per the Zoning Ordinance. The design of such driveways shall comply with the Standard Details.

\*\* For corner lots, street frontage length shall be measured as the sum of all continuous street frontage.

\*\*\* For corner lots, the maximum number of driveways to the site shall be reduced by one. At the discretion of the City Engineer the maximum number of driveways indicated above may be reduced by requiring

that driveways be located at the common property line of adjacent parcels.

8. No residential driveway access shall be allowed on any major or minor arterial street or on Southport Area collector streets.
9. On commercial, industrial and arterial streets located in the North Area as shown on Figure 3-1, driveways shall be located at least 75 feet from all intersections, as measured from the projected near face of curb line of the intersecting street. On commercial and industrial streets located in the Southport Area, driveways shall be located at least 150 feet from all intersections, measured likewise. If physical constraints or other conditions exist which, in the judgment of the City Engineer, make it impractical to meet these standards, then driveways may be located closer to the intersection provided that measures are taken to prohibit or significantly reduce left turn movements in and out of the driveway. For all other streets, driveways shall be located as far away from intersections as is practicable.
10. Driveways entering rural roads shall be provided with a minimum 12- inch culvert under the driveway where roadside ditches exist (see Division I, section 4.08). The design of rural driveways, including the profile grade, shall be subject to the approval of the City Engineer.

#### B. Bus Turn-Outs

Bus turn-outs shall be provided at the intersection of all arterial streets, and at all other locations directed by the City Engineer. Space for bus turn-outs shall be provided outside of the travel lane and shoulder of the roadway. The design of bus turn-outs shall comply to the Standard Specifications, or as required by the City Engineer.

#### C. Parking

For all single-family parcels, at least one on-street parking space, 21 feet in length measured along the face of curb, shall be provided for each single-family lot along the street frontage of the lot. The parking space shall not encroach within any driveway, including the driveway transitions. This requirement does not apply to cul-de-sac bulbs or expanded corner bulbs.

#### D. Valley Gutters

Valley gutters will not be allowed within the public right of way or public easement unless otherwise approved by the City Engineer.

#### E. Sidewalks, Curbs and Gutters

1. Sidewalk widths and landscape parkway strips shall comply with Table 3.01. Wider and/or separated sidewalks may be required by the City Engineer in certain situations.
2. The design of sidewalks, curbs and gutters shall conform to the Standard Details, or as required by the City Engineer. Sidewalks are required on both sides of all residential and commercial streets. Sidewalk shall be provided on at least one side of the street in industrial areas and may be eliminated on the north side of the Loop Parkway adjacent to heavy industrial uses.



3. Handicap ramps shall be installed at the center of curb returns at all intersections, and at all other locations specified by the City Engineer.
4. Projections of side yard lot lines shall be clearly marked with a "+" chiseled or sawcut in the concrete at the top edge of the back of sidewalk.
5. All new streets, including residential streets, shall be constructed with vertical curb and gutter conforming to the Standard Details.
6. For retrofit sidewalk construction, any existing improvements located in the sidewalk area including, but not necessarily limited to, joint poles, fire hydrants, street lights, meter boxes, and utility vaults shall be relocated to the back of sidewalk unless otherwise approved by the City Engineer.

#### F. Survey Monuments

1. Survey monuments shall be installed at the following locations:
  - a. On the public street centerline at intersections, and at the beginning and end of all curves and at the centerline radius of all cul-de-sac bulbs and expanded corners.
  - b. At all subdivision boundary corners and at intersections of the subdivision boundary with public street centerlines.
  - c. At any other locations necessary to enable the subdivision boundaries to be retraced or re-established as determined by the City Engineer.
2. All monuments within the street right of way shall conform to the Standard Details and shall clearly show the registration number of the licensed Civil Engineer or Land Surveyor under whose responsible direction they were placed.

#### G. Signing, Barricades, and Striping

1. Street names shall be subject to approval by the Planning Commission at the time of Tentative Map approval, and shall be shown on the tentative map submitted to the Community Development Department.
2. Street name and all regulatory and warning signs shall be installed by the developer or subdivider at his expense.
3. Internally illuminated street name signs shall be installed at signalized intersections of major arterial streets.
4. Permanent barricades shall be installed where improvements cover only a portion of the ultimate development or as directed by the City Engineer. The barricade shall be constructed, erected, painted and signed in accordance with the Standard Details.
5. All striping shall be thermoplastic unless otherwise specified by the City Engineer.

#### H. Easements

Public utility, sewer, water, drainage, landscaping, fence and all other public easements shall be located as required by the utility companies, these Design Standards, and as directed by the City Engineer.

## I. Streetscapes

Median sections less than or equal to 4 feet shall be paved or filled with materials subject to approval of the City Engineer. The remainder of the median shall be landscaped.

## J. Bike Lanes

On-street bike lanes are required on all arterials and collectors located in Southport as outlined in the Standard Details and on streets identified within the City Bikeway Master Plan located within the North Area. The minimum width of bike lanes shall be 6 feet. Bike lane width requirements may increase resulting from design speed as determined by the City Engineer.

## K. Emergency Access

1. Except for Rural Raods, at least two connections with an existing, improved public street, or with a future street extension approved by the City, shall be provided for all proposed roadways, except when the dead-end length of the roadway does not exceed 600 feet.

For Rural Roads, at least two connections with an existing, improved public street, or with a future street extension approved by the City, shall be provided for all proposed roadways, except when the dead-end length of the roadway does not exceed the maximum lengths specified in Section 3.05 G of these Standards, and when no more than 30 residences without approved automatic sprinkler systems are to be served by the road. When more than 30 residences without approved automatic sprinkler systems are to be served by the road, the maximum dead end length of the roadway shall not exceed 600 feet.

2. When the secondary access is to be provided with a future street extension, then a temporary emergency access road or acceptable alternative shall be required as determined by the City Engineer and the City Fire Department.

Temporary emergency access roads shall have a minimum paved width of 20 feet and have a minimum structural section of 2" AC over 4" AB. A Knox lock or Opticom lock may be required on gates per the City Engineer and the City Fire Department. Gates shall be provided at all points of access to public streets as approved by the City Engineer and the City Fire Department. Said roads shall be contained within an emergency access easement.