

## 2

## Street Types

## 2.1. Roadways

The width and configuration of the roadways indicated in this manual are designed to provide safety and accommodation for all modes of travel. Factors considered are safety, accessibility, and connectivity to promote walking, cycling, and transit use while providing reasonable conditions for the estimated future average daily traffic (ADT) and on-street parking needs, which reflects the policies in the City's General Plan.

- All dimensions for cross sections with raised medians shown in Chapter 2 of this manual assume the use of standard concrete curb per Standard Drawing SDG-154.
- Traffic calming devices can include chicanes, traffic circles, median slow points, road lumps, speed tables, raised crosswalks, intersection pop-outs, semi-diverters, or channelizations. Additional information can be found in Section 5.8, "Traffic Calming", in NACTO's Urban Street Design Guide, and the City of San Diego Traffic Calming Guidelines.
- The ADTs corresponding to the various level of services included in the City of San Diego's Transportation Study Manual are guidelines to correlate the quality of traffic service with typical sections of different street classifications. The ADT should not be used as the sole factor in determining the appropriate street classifications, since other factors play a vital role in shaping the operating conditions on a facility. Designers are encouraged to perform analysis using Highway Capacity Manual methodologies to assist in determining appropriate levels of service for their street projects.
- Senate Bill 743 (SB 743) was signed into law in September 2013, modifying the existing California Environmental Quality Act (CEQA) by removing auto delay, level of service (LOS), parking and other vehicular capacity measures as metrics of transportation system impacts for mixed-use, infill or transit oriented development projects. Vehicle miles traveled (VMT) is considered the new analysis metric used to measure transportation impacts and reflects the land use type, intensity, and location in relation to the capacity and roadway connectivity of the transportation network. It is also influenced by the availability and quality of multimodal facilities, and system operations.

## 2.2. Alleys

An alley is a secondary means of access usually lying along the rear of property, the front of which abuts on, and has primary access from, a street. The following design specifications for new alley design apply (see Figures 2-1 and 2-2):

- Alleys should not intersect streets of four-lane urban major or higher classification.
- Alleys are to be improved 20 feet wide within a 20-foot right-of-way. Where utility services, fire hydrants, etc. are located in the alley, the right-of-way must be widened as required. At the intersection of two alleys, a triangular area at the corner, 20 feet on each side, shall be improved and included in the right-of-way.
- Maximum grade for alleys is 15 percent. Minimum curve radius is 100 feet or as needed to accommodate commercial and emergency vehicle access and provide for 15 mph minimum sight distance.
- Curb ramps shall be installed on both sides of an alley entrance in the sidewalk path of travel.
- Alleys shall be constructed in accordance with City of San Diego Standard Drawings.
- Alley setbacks shall comply with SDMC Chapter 13, Article 1.

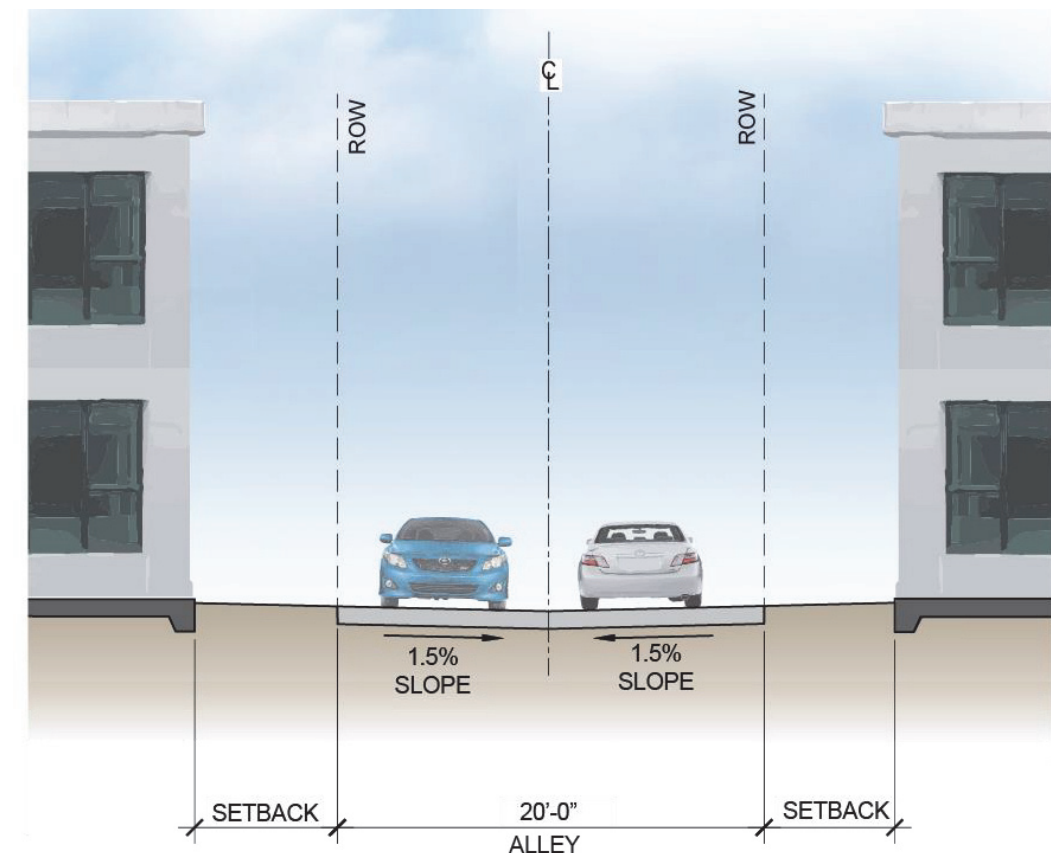


FIGURE 2-1 ALLEY SECTION VIEW

### 2.3. Residential Streets

Residential streets are a type of local streets that provides, primarily, direct access to abutting property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

All Figures are for illustrative purposes and all signing and striping are subject to the most recently adopted edition of the CA MUTCD or as deemed appropriate by the City Engineer. Figures 2-3 through 2-10 and Tables 2-1 through 2-12 illustrate the design specifications for cul-de-sacs, low-volume residential local streets, and residential local streets.

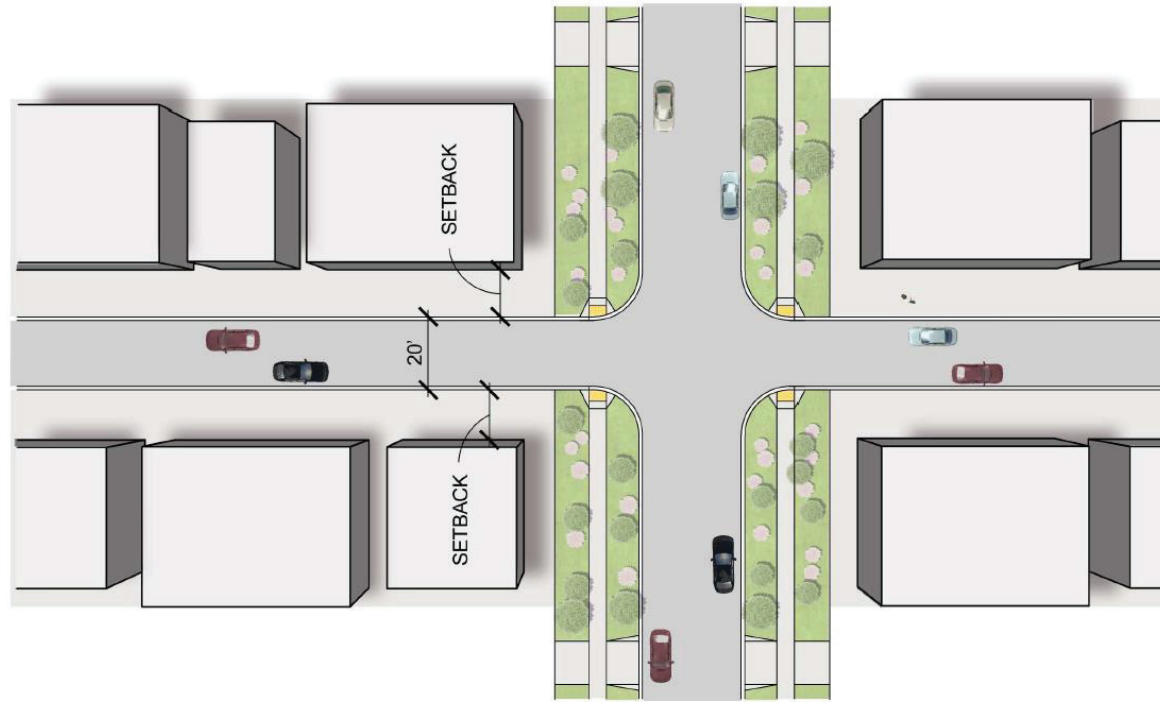


FIGURE 2-2 ALLEY PLAN VIEW

### 2.3.1 Cul-De-Sac

A street that primarily provides direct access to abutting property and does not have through access to an adjacent street. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It is important to maintain and increase connectivity for all modes. Cul-de-sacs can be used to minimize encroachments into steep topography or other sensitive environmental features.

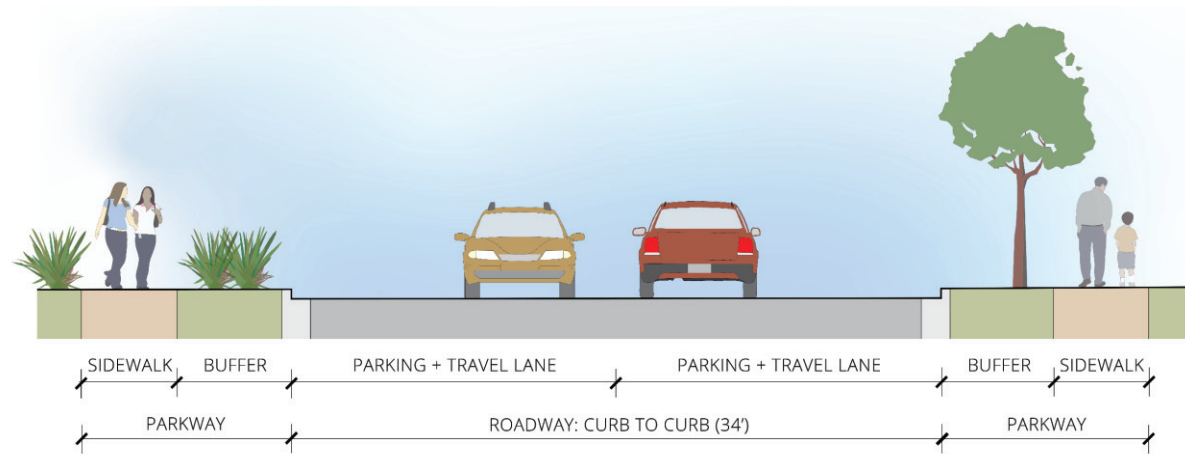


FIGURE 2-3 CUL-DE-SAC AND ENHANCED CUL-DE-SAC SECTION VIEW (OPTION C3)



FIGURE 2-4 CUL-DE-SAC AND ENHANCED CUL-DE-SAC PLAN VIEW (OPTION C3)

- Notes:
1. Not to scale. Refer to Geometric Design in the guidelines below.
  2. On-street parking should be prohibited on refuse collection days.

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	34	30	34	BL TL TL BL	Under 35	
C2	Parallel Parking + Bike Lane	34	32	34	BL TL TL PP		
C3	Parallel Parking	34	33	34	PP TL TL PP		
C4	Travel Lanes Only	24	20	34	TL TL		

TABLE 2-1 CUL-DE-SAC DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9 <sup>1</sup>	12	
PP	Parallel Parking	8	7	9	
BL	Bike Lane (Class II)	7	5	8	

TABLE 2-2 CUL-DE-SAC STREET FACILITY DIMENSIONS

- Notes:
- \* Bicycle Facility should exclude gutter pan width, if adjacent
  - \* See Section 6.5 for bicycle intersection treatments.
  - <sup>1</sup> Requires San Diego Fire-Rescue Department review.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	48	64	ft
Curb-to-Curb Width	34	28 <sup>1</sup>	34	ft
Design ADT	200	-	-	ADT
Design Speed <sup>2</sup>	-	20	30	mph
Grade	-	-	15	%
Curve Radius <sup>3</sup>	-	100	-	ft

TABLE 2-3 CUL-DE-SAC STREET SPECIFICATIONS

- <sup>1</sup> Single-loaded
- <sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds
- <sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-1
Residential: Residential Low-1 through 4	UP-3 or UP-4
Institutional, Public, and Semi-Public Facilities	UP-2

TABLE 2-4 PARKWAYS FOR CUL-DE-SAC

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

**Considerations:**

- Cul-de-sacs should only be used in limited locations where providing a connection to an adjacent street is infeasible due to topographical or environmental constraints.
- When utilizing cul-de-sacs, care should be taken to design an interconnected street pattern within a residential neighborhood in order to provide, to the maximum extent feasible, direct pedestrian/bicycle routes to local destinations.

**Connections/Access:**

- When a cul-de-sac exceeds 150 feet in length and/or pedestrian or bicycle circulation is being or will be significantly impacted and the traffic levels on neighboring streets are being or will be degraded, additional design features should be included, but are not limited to:
  - Providing for pedestrian and bicycle connections through the cul-de-sac, or
  - Provide for pedestrian and bicycle connections through the interconnection of the bulb of the cul-de-sac with an adjacent local street. These options should be considered in order to provide access to adjacent streets or to adjacent land uses such as open space, parks, trails, or commercial areas.
- The design of pedestrian and bicycle access ways needs to address the following to provide for the safety of users:
  - Length should be kept to a minimum.
  - Adequate lighting should be provided.
  - Landscaping, fences, grade differences, or other obstructions should not hinder visibility into the access way from adjacent streets and properties.
  - Surrounding land uses should be designed to provide surveillance opportunities from those uses into the access way, such as with the placement of windows.
  - Emergency vehicle access must be provided in cases where external surveillance is inadequate.

**Standards and Guidelines:**

For areas with abutting properties that are designated for either commercial or industrial in a land use plan:

- Turnaround curb radius shall be 55 feet.
- Such cul-de-sacs shall be limited to 500 feet in length from the property line of the intersecting street to end of the bulb unless there are clearly defined topographic conditions requiring greater lengths. In such instances, intermediate turnarounds or secondary emergency vehicle only access may be required satisfactory to the City Engineer.

For areas with abutting properties that are designated for a residential use by a land use plan:

- Cul-de-sacs serving more than four dwelling units or over 150 feet in length require a turnaround. Cul-de-sacs of 150 feet or less shall be developed such that access can be provided without backing onto streets intersecting the cul-de-sacs.
- Turnaround curb radius shall be 50 feet.
- Based on fire apparatus capabilities, the minimum cul-de-sac radius is 40 feet.
- Residential cul-de-sacs are limited to a maximum of 200 ADT unless there are clearly defined topographic constraints that require greater volumes. Intermediate turnarounds shall have a 50-foot radius. In all cases, intermediate turnarounds and/or special design may be required to accommodate access by emergency vehicles and/or emergency evacuations.
- Coordinate with the Fire-Rescue Department for minimum dimensions based on current apparatus capabilities.

### 2.3.2 Green Infrastructure for Cul-De-Sacs

Typical cul-de-sacs are paved across their entire diameter. This large impervious area adds to environmental degradation by increasing runoff. Adding a landscaped area in the center of the cul-de-sac (see Figures 2-5 and 2-6) can reduce impervious land coverage by 30-40 percent, depending on configuration, while maintaining the required turning radius. Refer to Section 3.7.4 Landscaping and Stormwater Management for the standards and guidelines of street trees and landscape plantings maintenance. Green Infrastructure shall be designed in conformance with the Stormwater Manual.

Reference:

- Stormwater Standards Manual, City of San Diego, 2024

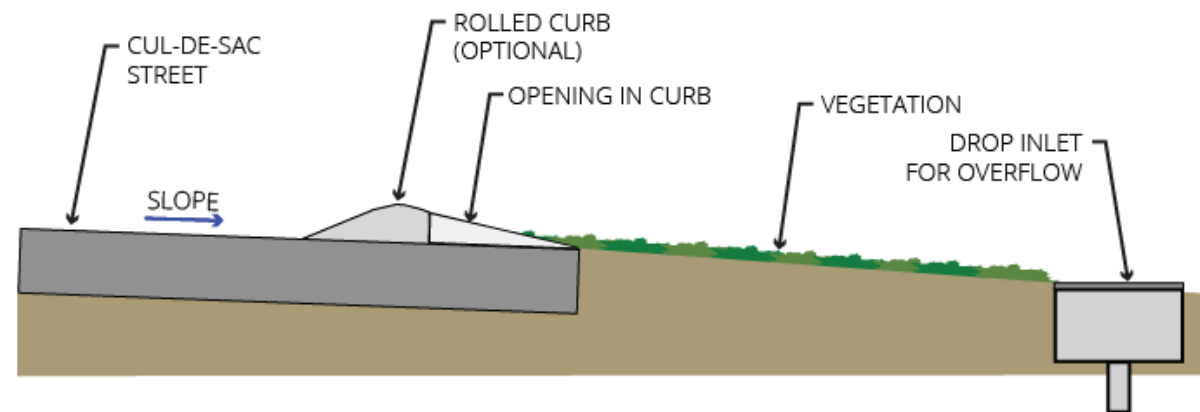


FIGURE 2-5 GREEN INFRASTRUCTURE FOR CUL-DE-SAC SECTION A-A VIEW

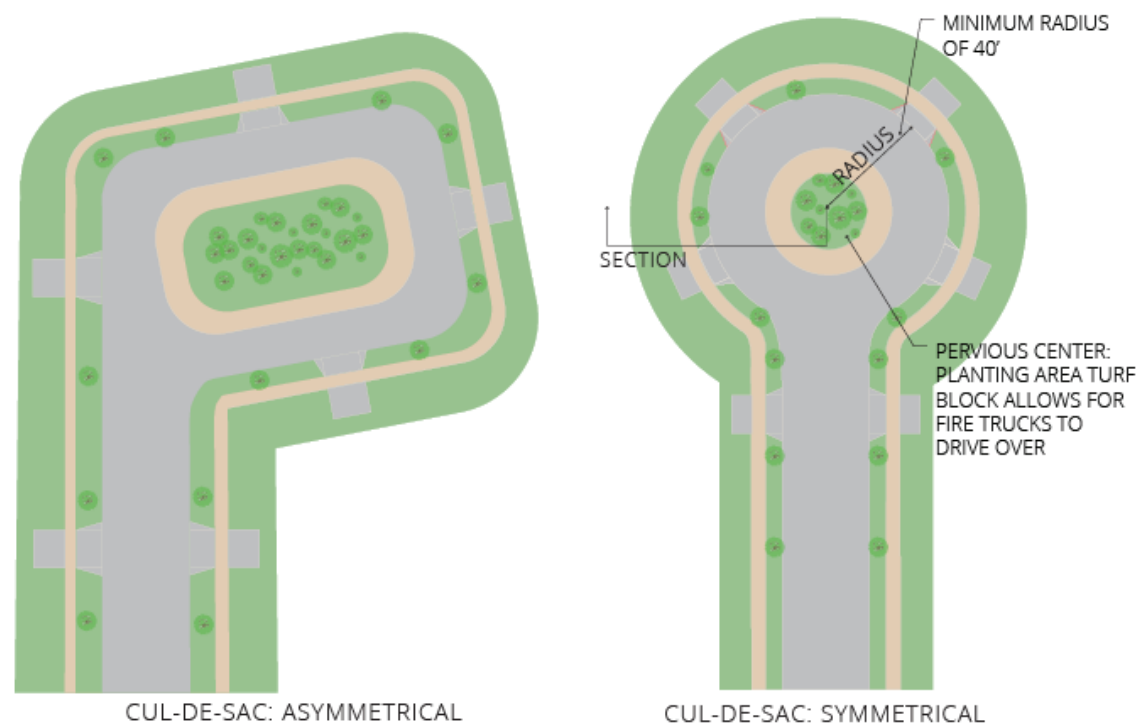


FIGURE 2-6 GREEN INFRASTRUCTURE FOR CUL-DE-SAC PLAN VIEW



### 2.3.3 Low-Volume Residential Local Street

A street that primarily provides direct access to abutting property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

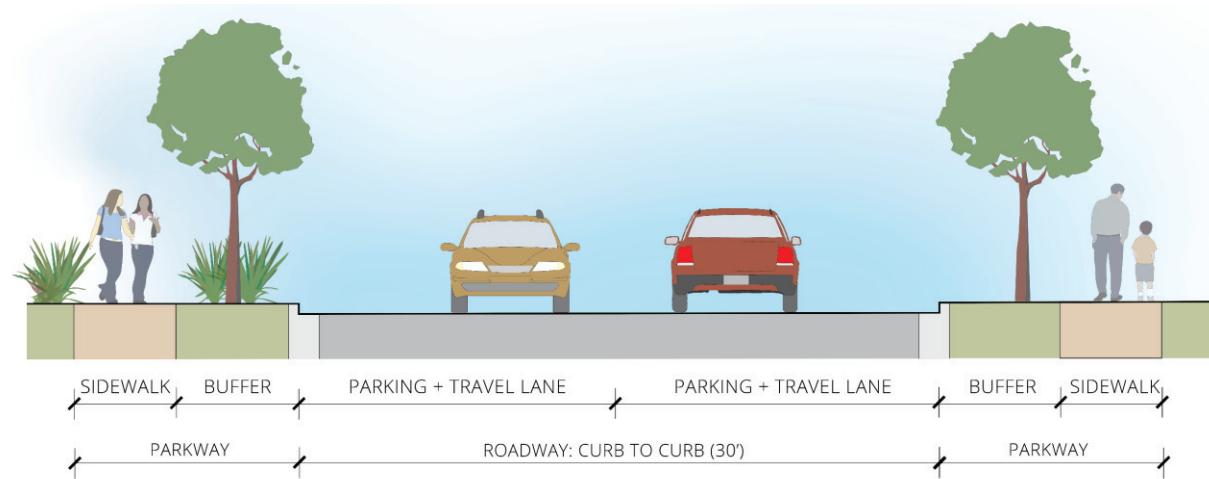


FIGURE 2-7 LOW-VOLUME RESIDENTIAL LOCAL STREET SECTION VIEW (OPTION C2)

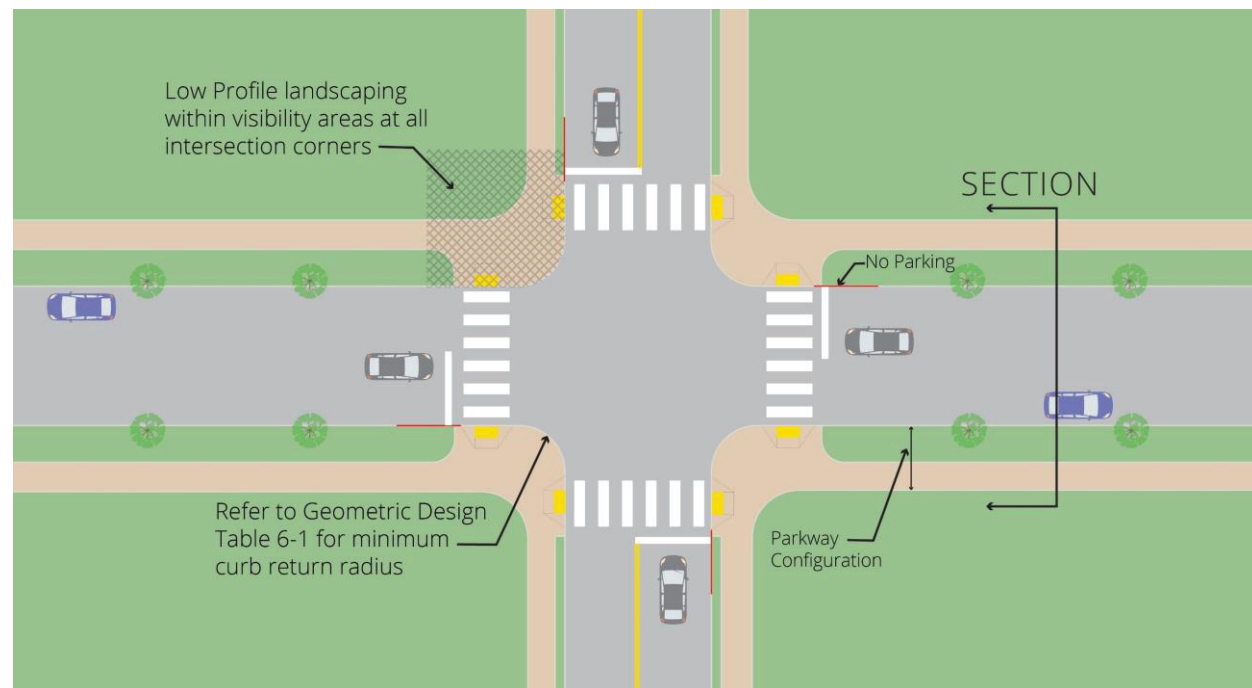


FIGURE 2-8 LOW-VOLUME RESIDENTIAL LOCAL STREET PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	32	30	32	BL TL TL BL	Under 35	
C2	Parallel Parking	30	28 <sup>1</sup>	32	PP TL TL PP		
C3	Travel Lanes Only	24	20	32	TL TL		

TABLE 2-5 LOW-VOLUME RESIDENTIAL LOCAL STREET DESIGN OPTIONS

Note:  
<sup>1</sup> Single-loaded

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9 <sup>1</sup>	12	
PP	Parallel Parking	8	7	10	
BL	Bike Lane (Class II)	7	5	8	

TABLE 2-6 LOW-VOLUME RESIDENTIAL LOCAL STREET FACILITY DIMENSIONS

Note:  
\* Bicycle Facility should exclude gutter pan width, if adjacent  
\* See Section 6.5 for bicycle intersection treatments  
<sup>1</sup> Requires San Diego Fire-Rescue Department review.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	48	62	ft
Curb-to-Curb Width	30	28 <sup>1</sup>	32	ft
Design ADT	700	-	-	ADT
Design Speed <sup>2</sup>	-	20	30	mph
Grade	-	-	15	%
Curve Radius <sup>3</sup>	-	100	-	ft

TABLE 2-7 LOW-VOLUME RESIDENTIAL LOCAL STREET SPECIFICATIONS

Note:  
<sup>1</sup> Single-loaded  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-1
Residential: Residential Low, Residential Medium, Residential High	UP-3 or UP-4
Multiple Use Institutional, Public, and Semi-Public Facilities	UP-2

TABLE 2-8 PARKWAYS FOR LOW-VOLUME RESIDENTIAL LOCAL STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.3.4 Residential Local Street

A street that primarily provides direct access to abutting property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

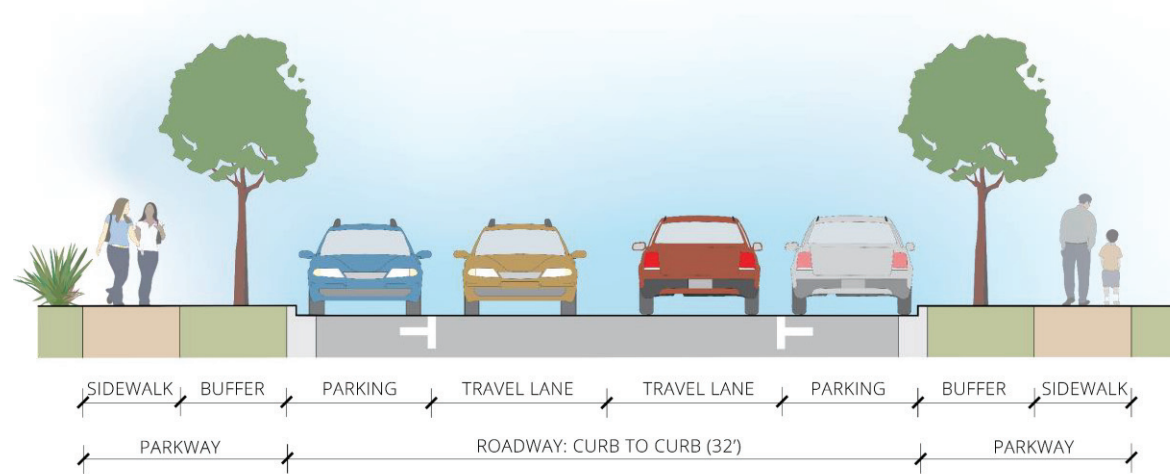


FIGURE 2-9 RESIDENTIAL LOCAL STREET SECTION VIEW (OPTION C3)

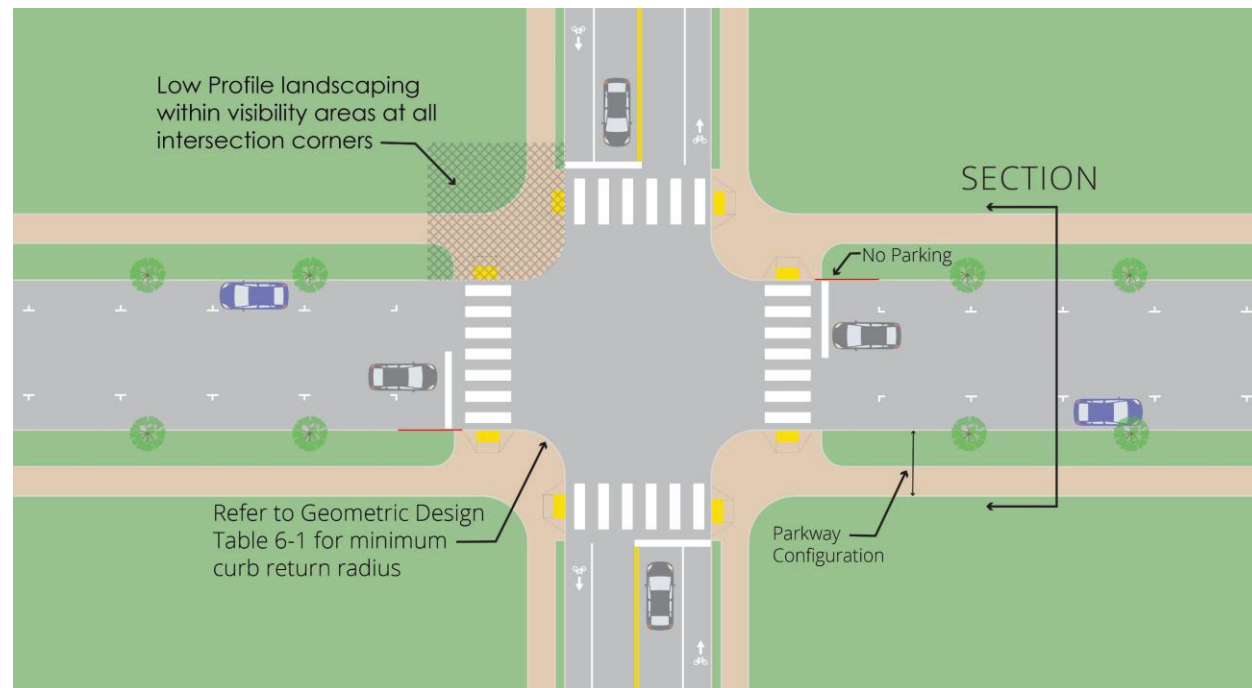


FIGURE 2-10 RESIDENTIAL LOCAL STREET PLAN VIEW (OPTION C3)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	32	30	32	BL TL TL BL	Under 35	Car, Bicycle
C2	Parallel Parking (one side)	28	28	32	PP TL TL		Car, P
C3	Parallel Parking	32	32	32	PP TL TL PP		Car, P
C4	Travel Lanes Only	24	20	32	TL TL		Car

TABLE 2-9 RESIDENTIAL LOCAL STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	Car
	Through Lane (All other)	10	9 <sup>1</sup>	12	Car
PP	Parallel Parking	8	7	9	P
BL	Bike Lane (Class II)	7	5	8	Bicycle

TABLE 2-10 RESIDENTIAL LOCAL STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.  
<sup>1</sup> Requires San Diego Fire-Rescue Department review.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	48	62	ft
Curb-to-Curb Width	32	28 <sup>1</sup>	32	ft
Design ADT	1,500	-	-	ADT
Design Speed <sup>2</sup>	-	20	30	mph
Grade	-	-	15	%
Curve Radius <sup>3</sup>	-	100	-	ft

TABLE 2-11 RESIDENTIAL LOCAL STREET SPECIFICATIONS

Note:  
<sup>1</sup> Single-loaded  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-1
Residential: Residential Low-1 through 4	UP-3 or UP-4
Institutional, Public, and Semi-Public Facilities	UP-2

TABLE 2-12 PARKWAYS FOR RESIDENTIAL LOCAL STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

## 2.4. Commercial Streets

Commercial Streets are a type of local streets that provides similar direct access to abutting commercial property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

All Figures are for illustrative purposes and all signing and striping are subject to the most recent adopted edition of the CA MUTCD or as deemed appropriate by the City Engineer. Figures 2-11 through 2-14 and Tables 2-13 through 2-20 below illustrate the design specifications for commercial local streets and industrial local streets.

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### 2.4.1 Commercial Local Street

A street that primarily provides direct access to abutting property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

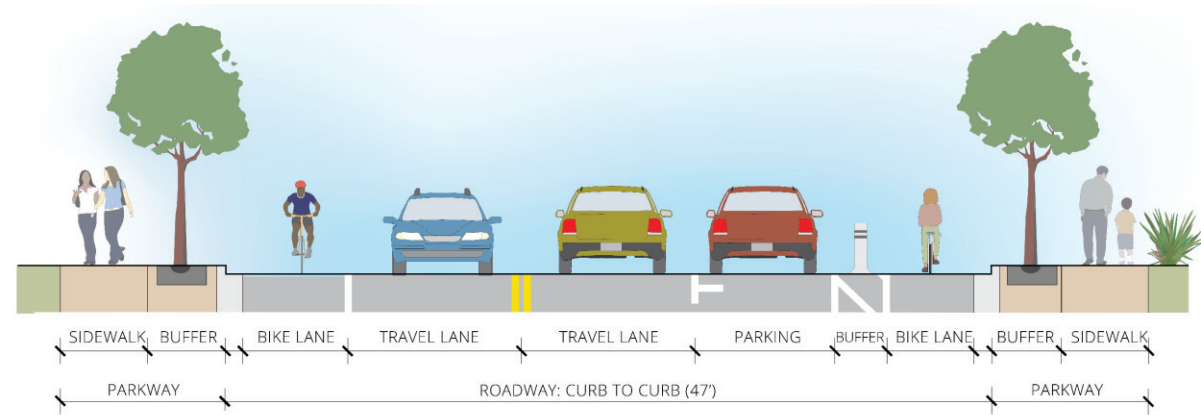


FIGURE 2-11 COMMERCIAL LOCAL STREET SECTION VIEW (OPTION C2)

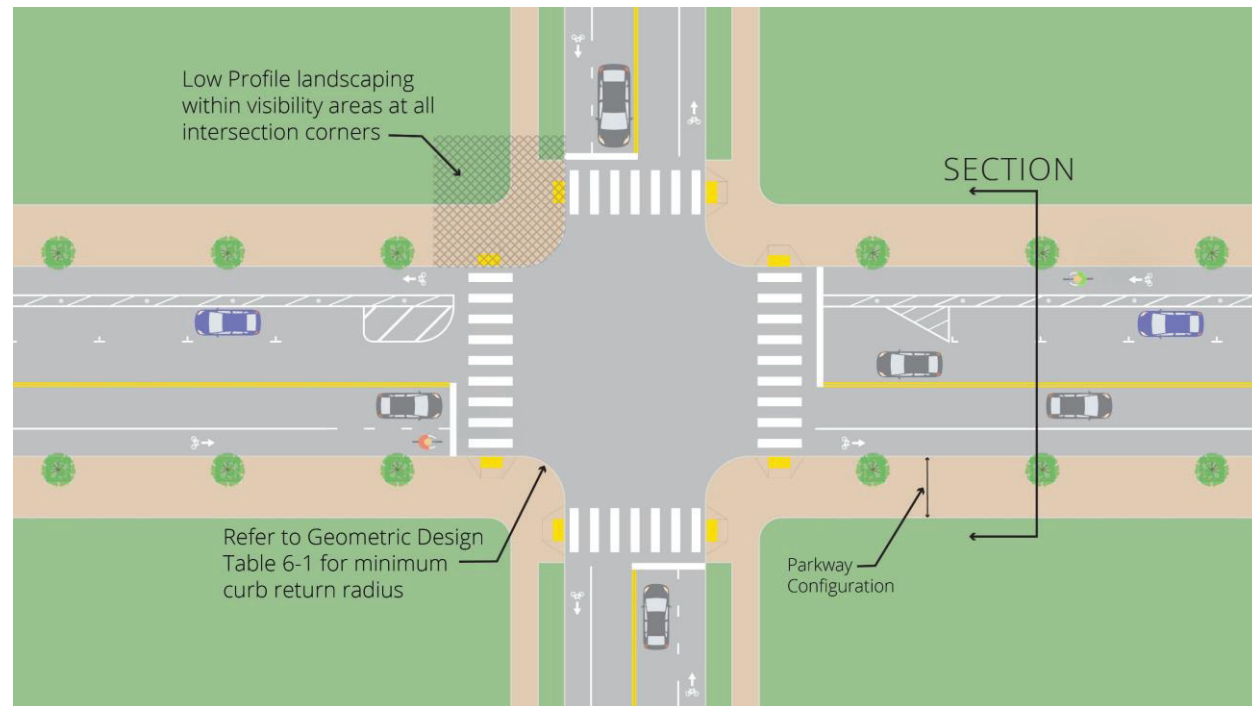


FIGURE 2-12 COMMERCIAL LOCAL STREET PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	38	30	40	BL TL TL BL	Under 35	Car, Bicycle
C2	Bike Lane + Parallel Parking	47	39	52	BL BB PP TL TL BL		Car, Bicycle, P
C3	Parallel Parking	40	34	40	PP TL TL PP		Car, P
C4	Angle Parking (Both Sides)	52	52	52	AP TL TL AP		Car, P
C5	Parallel Parking + Angle Parking	46	46	52	PP TL TL AP	35 and Over	Car, P, Bicycle
C6	Two-Way Cycle Track	40	35	40	BTW BB TL TL		Car, Bicycle
C7	One-Way Cycle Tracks	40	34	52	BT BB TL TL BB BT		Car, Bicycle
C8	Bus Only Lanes	44	42	48	Bus TL TL Bus		Car, Bus

TABLE 2-13 COMMERCIAL LOCAL STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane	11	10	12	Car
PP	Parallel Parking	8	7	9	P
AP	Angle Parking	16	16	19	P
Bus	Bus Only Lane	12	11	14	Bus
BL	Bike Lane (Class II)	7	5	8	Bicycle
BT	One-way Cycle Track (Class IV)	7	6	8	Bicycle
BTW	Two-way Cycle Track (Class IV)	12	8	14	Bicycle
BB	Buffer	3	2	-	Bicycle

TABLE 2-14 COMMERCIAL LOCAL STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	60	92	ft
Curb-to-Curb Width	40	40	52	ft
Design ADT	2,000	-	-	ADT
Design Speed <sup>2</sup>	-	20	30	mph
Grade	-	-	8	%
Curve Radius <sup>3</sup>	-	290	-	ft

TABLE 2-15 COMMERCIAL LOCAL STREET SPECIFICATIONS

Note:  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-2
Commercial Employment, Retail, and Services - Residential Prohibited	UP-6, UP-6T, UP-7, or UP-7T
Institutional, Public, and Semi-Public Facilities	
Industrial Employment: <i>Scientific Research</i>	

TABLE 2-16 PARKWAYS FOR COMMERCIAL LOCAL STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.4.2 Industrial Local Street

A street that primarily provides direct access to abutting property. It carries low vehicular movement, low-to-heavy pedestrian movement, and low-to-moderate bicycle movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may include landscaping, pedestrian-scale lighting, and underground utilities.

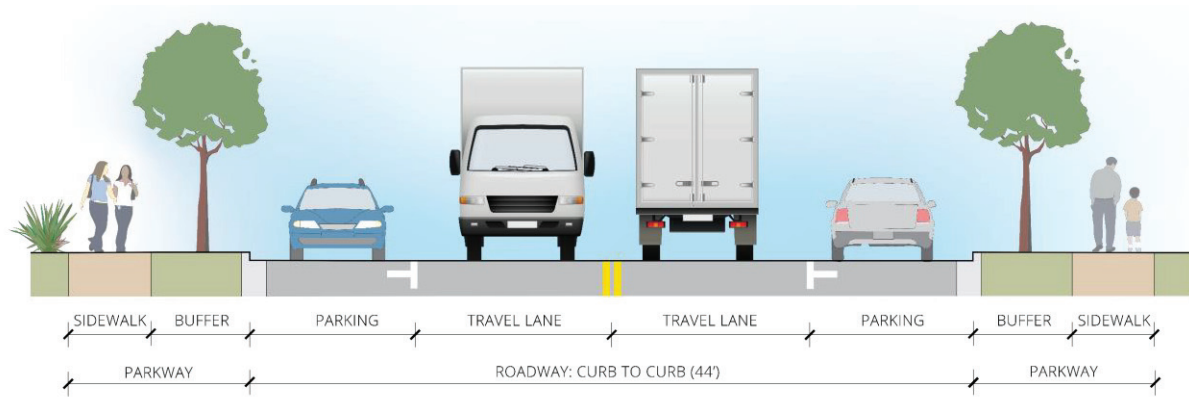


FIGURE 2-13 INDUSTRIAL LOCAL STREET SECTION VIEW (OPTION C1)

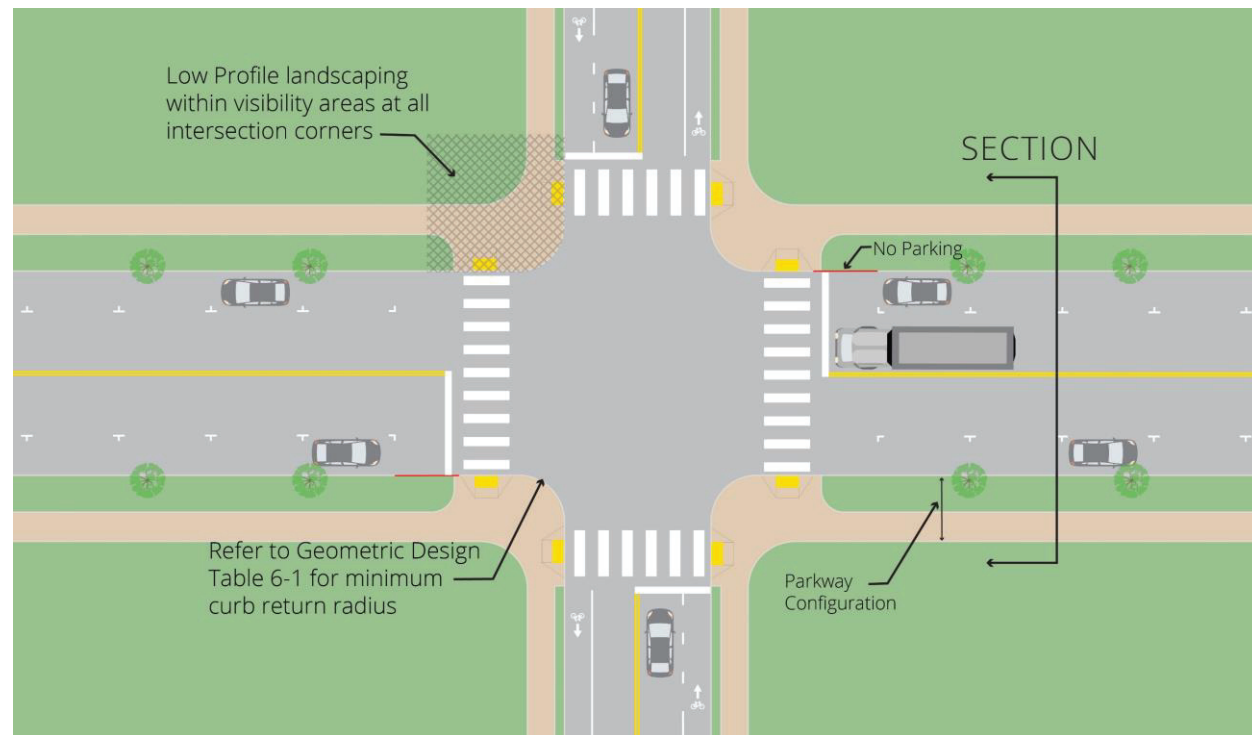


FIGURE 2-14 INDUSTRIAL LOCAL STREET PLAN VIEW (OPTION C1)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Parallel Parking	38	34	42	PP TL TL PP	Under 35	🚗 🚲 🚶 🚚 🚛 🚙
C2	Travel Lanes Only	24	20	42	TL TL		🚗 🚲 🚶

TABLE 2-17 INDUSTRIAL LOCAL STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	🚗
	Through Lane (All other)	10	9 <sup>1</sup>	12	🚗
PP	Parallel Parking	8	7	9	🚗 🚲 🚶 🚚 🚛 🚙

TABLE 2-18 INDUSTRIAL LOCAL STREET FACILITY DIMENSIONS

Note:  
<sup>1</sup> Requires San Diego Fire-Rescue Department review.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	64	74	ft
Curb-to-Curb Width	42	-	-	ft
Design ADT	2,000	-	-	ADT
Design Speed <sup>2</sup>	-	20	30	mph
Grade	-	-	8	%
Curve Radius <sup>3</sup>	-	290	-	ft

TABLE 2-19 INDUSTRIAL LOCAL STREET SPECIFICATIONS

Note:  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Industrial Employment	UP-2, UP-3, UP-4, or UP-4T

TABLE 2-20 PARKWAYS FOR INDUSTRIAL LOCAL STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

## 2.5. Collector Streets

Collector Streets primarily provides movement between local/collector streets and streets of higher classification and, secondarily, provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

All Figures are for illustrative purposes and all signing and striping are subject to the most recent adopted edition of the CA MUTCD or as deemed appropriate by the City Engineer. Figures 2-15 through 2-24 and Tables 2-21 through 2-40 illustrate the design specifications for two-lane sub-collector streets, two lane collector streets, two lane collector streets with two way left turn lanes, two lane industrial collector streets, and four lane urban collector streets with two way left turn lanes.

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### 2.5.1 Two-Lane Sub-Collector

A street that primarily provides movement between local/collector streets and streets of higher classification; secondarily, it provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

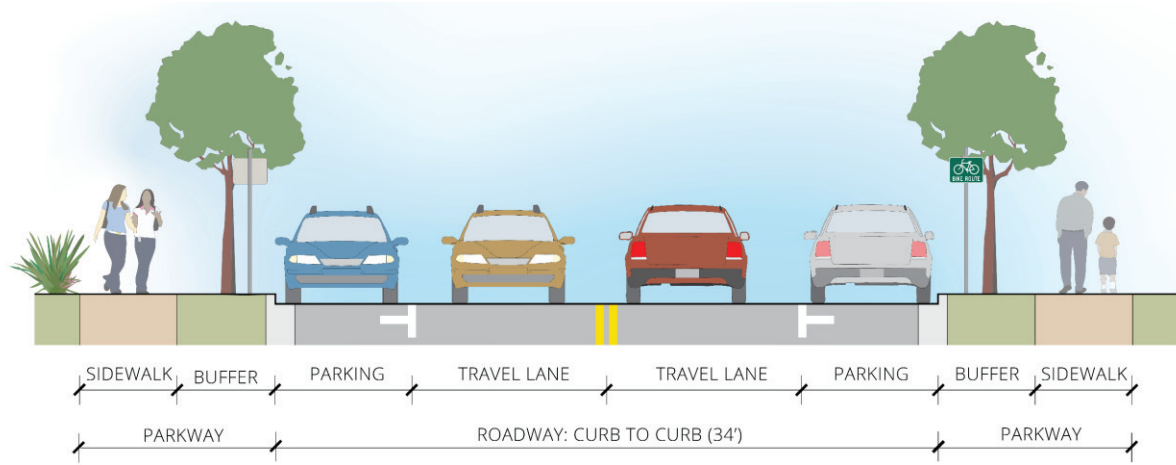


FIGURE 2-15 TWO-LANE SUB-COLLECTOR SECTION VIEW (OPTION C2)

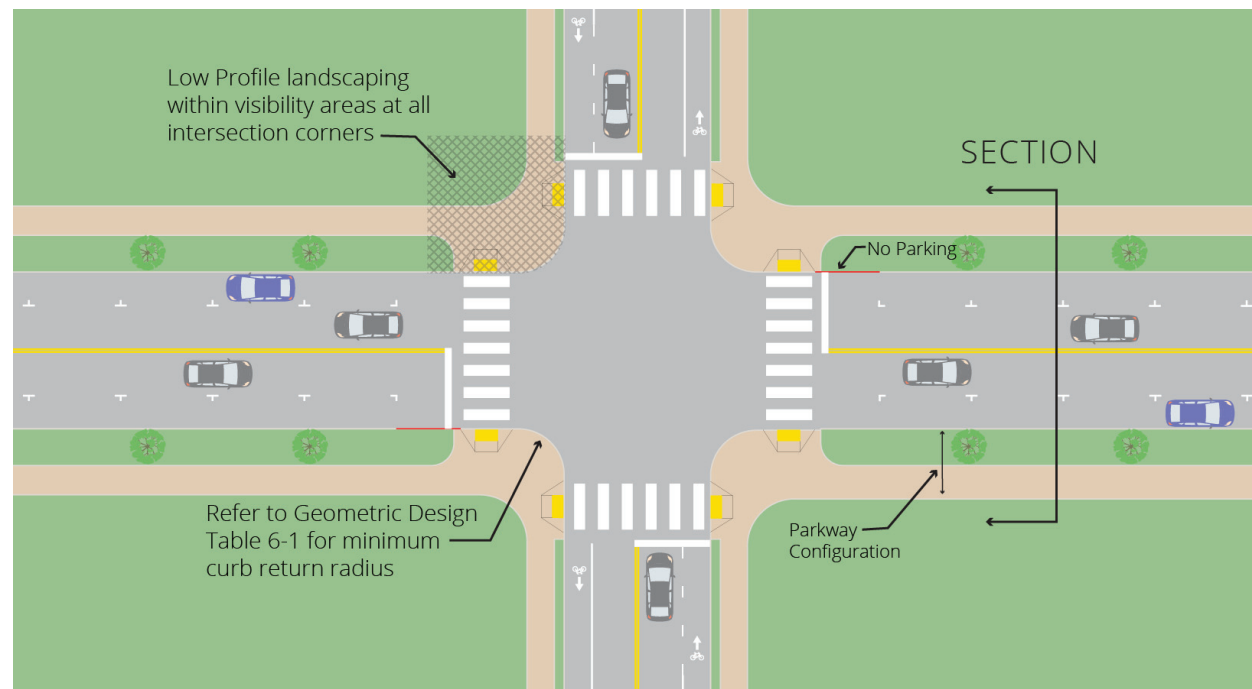


FIGURE 2-16 TWO-LANE SUB-COLLECTOR PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	34	30	34	BL TL TL BL	Under 35	
C2	Parallel Parking	34	34	34	PP TL TL PP		
C3	Travel Lanes Only	34	20	34	TL TL		

TABLE 2-21 TWO-LANE SUB-COLLECTOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9.5 <sup>1</sup>	12	
PP	Parallel Parking	8	7	9	
BL	Bike Lane (Class II)	7	5	8	

TABLE 2-22 TWO-LANE SUB-COLLECTOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.  
<sup>1</sup> Requires San Diego Fire-Rescue Department review.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	54	74	ft
Curb-to-Curb Width	34	-	-	ft
Design ADT <sup>1</sup>	2,200	2,200	-	ADT
Design Speed <sup>2</sup>	-	25	35	mph
Grade	-	8	10	%
Curve Radius <sup>3</sup>	-	450	500	ft

TABLE 2-23 TWO-LANE SUB-COLLECTOR STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-3, UP-4, or UP-4T
Residential	UP-3, UP-4, or UP-4T
Commercial Employment, Retail, and Services: <i>Neighborhood Commercial-Residential Prohibited, Community Commercial-Residential Prohibited</i>	UP-2, UP-6, UP-6T, UP-7 or UP-7T
Institutional, Public, and Semi-Public Facilities	

TABLE 2-24 PARKWAYS FOR TWO-LANE SUB-COLLECTOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways



### 2.5.2 Two-Lane Collector

A street that primarily provides movement between local/collector streets and streets of higher classification; secondarily, it provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

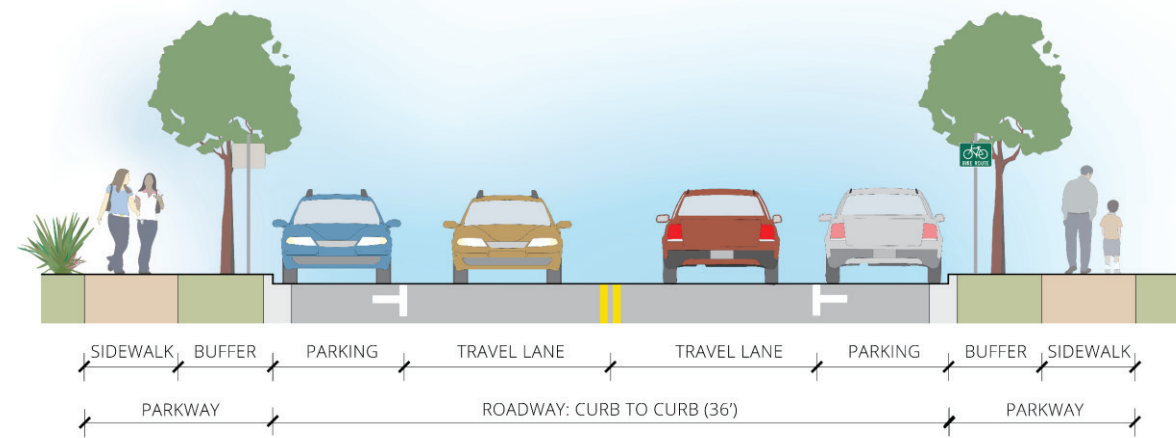


FIGURE 2-17 TWO-LANE COLLECTOR SECTION VIEW (OPTION C3)

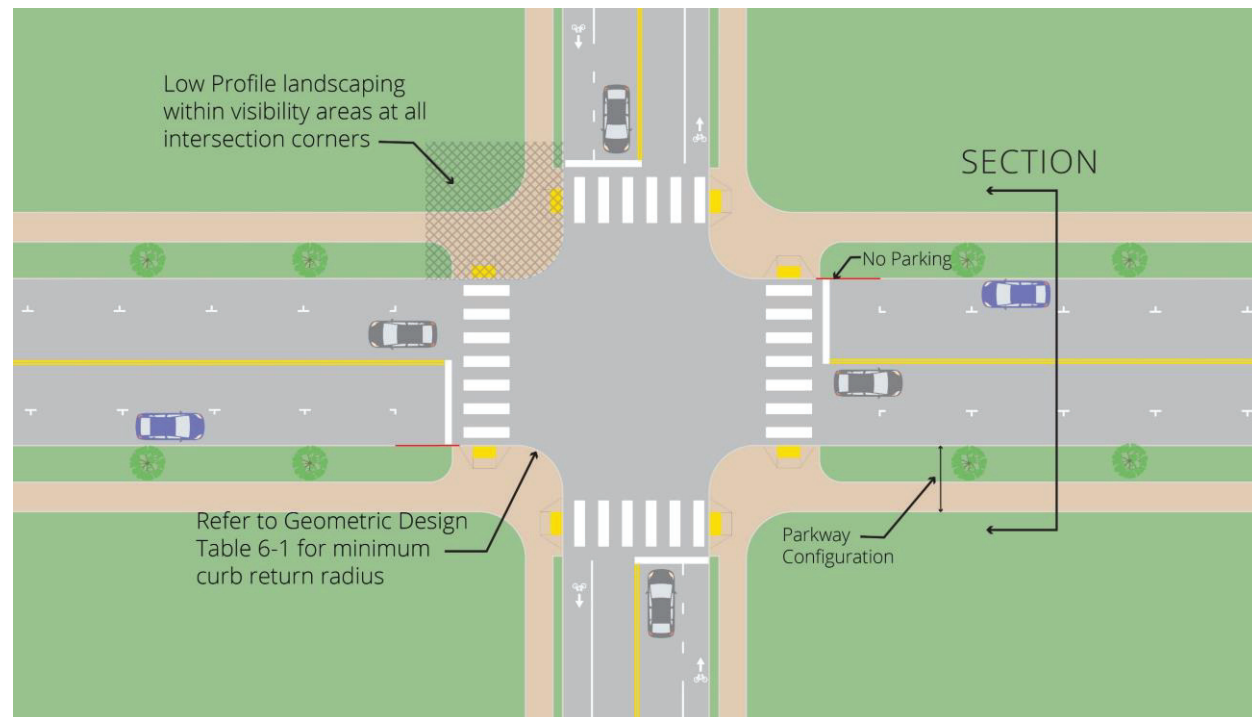


FIGURE 2-18 TWO-LANE COLLECTOR PLAN VIEW (OPTION C3)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	46	30	46	BL BB TL TL BB BL	Under 35	Car, Bicycle, Pedestrian
C2	Parallel Parking + Bike Lane	46	44	46	PP BL TL TL BL PP		Car, Bicycle, Pedestrian
C3	Parallel Parking	36	34	36	PP TL TL PP		Car, Pedestrian
C4	Two-Way Cycle Track	40	35	46	BTW BB TL TL	35 and Over	Car, Bicycle, Pedestrian
C5	One-Way Cycle Tracks	46	34	46	BT BB TL TL BB BT		Car, Bicycle, Pedestrian
C6	Parallel Parking + Two-Way Cycle Track	48	42	48	BTW BB TL TL PP		Car, Bicycle, Pedestrian
C7	Bus Only Lanes	46	44	50	Bus TL TL Bus	Car, Bus	

TABLE 2-25 TWO-LANE COLLECTOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane	11	10	12	Car
PP	Parallel Parking	8	7	9	P
Bus	Bus Only Lane	12	11	14	Bus
BL	Bike Lane (Class II)	7	5	8	Bicycle
BT	One-way Cycle Track (Class IV)	7	6	8	Bicycle
BTW	Two-way Cycle Track (Class IV)	12	8	14	Bicycle
BB	Buffer	3	2	-	Bicycle

TABLE 2-26 TWO-LANE COLLECTOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent.  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	60	96	ft
Curb-to-Curb Width	36	-	46	ft
Design ADT	-	5,000	6,500	ADT
Design Speed <sup>2</sup>	-	25	35	mph
Grade	-	8	10	%
Curve Radius <sup>3</sup>	-	450	500	ft

TABLE 2-27 TWO-LANE COLLECTOR STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-3, UP-4, or UP-4T
Residential: Residential Low-1 through 4	UP-3, UP-4, UP-4T
Commercial Employment, Retail, and Services - Residential Prohibited Institutional, Public, and Semi-Public Facilities	UP-6, UP-6T, UP-7, or UP-7T

TABLE 2-28 PARKWAYS FOR TWO-LANE COLLECTOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways



### 2.5.3 Two-Lane Collector with Two-Way Left Turn Lane

A street that primarily provides movement between local/collector streets and streets of higher classification; secondarily, it provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

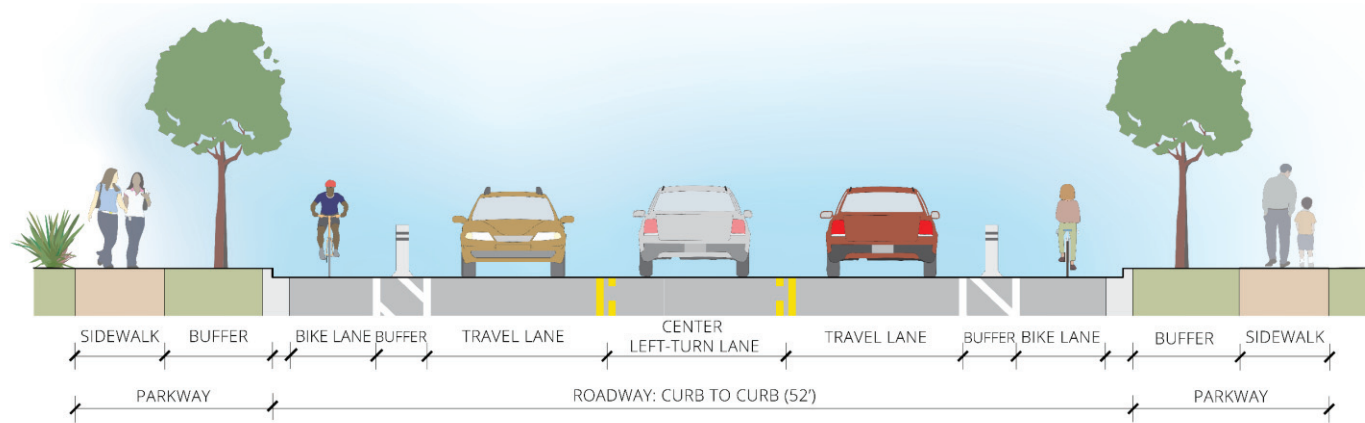


FIGURE 2-19 TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE SECTION VIEW (OPTION C5)

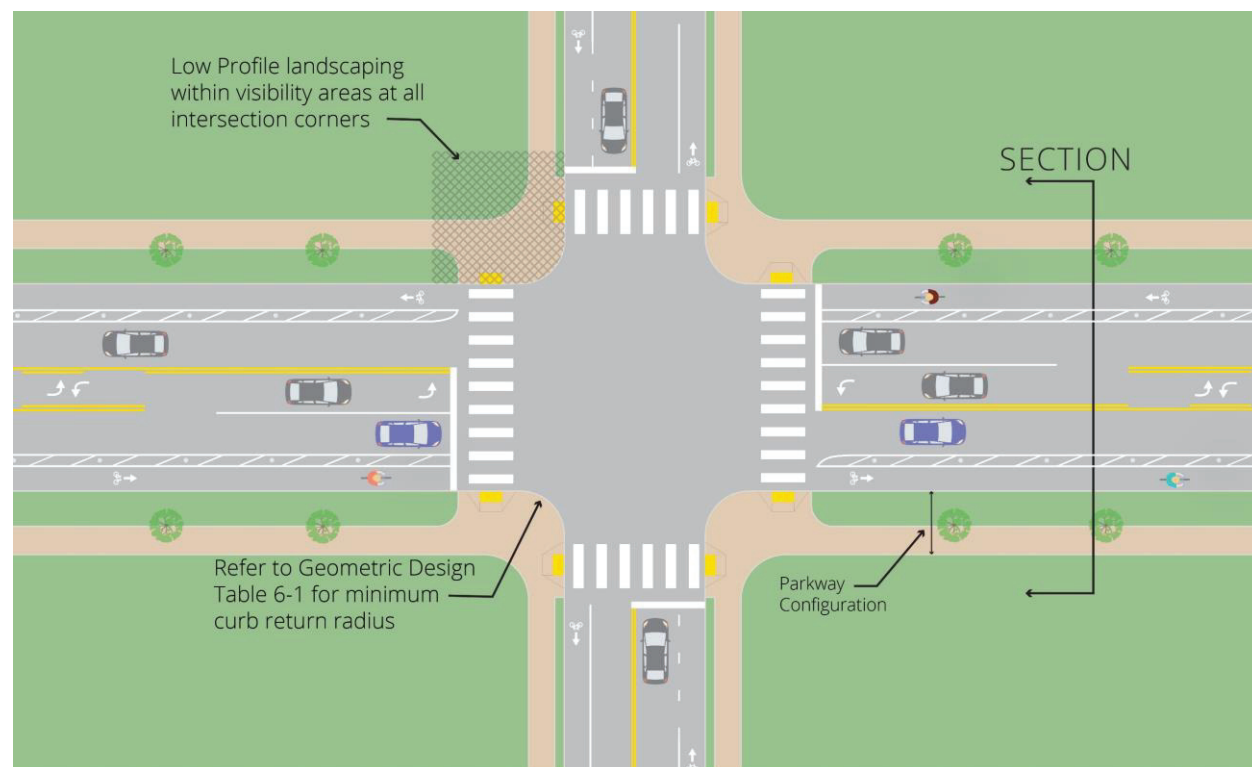


FIGURE 2-20 TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE PLAN VIEW (OPTION C5)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	54	40	54	BL BB TL CT TL BB BL	Under 35	Car, Bicycle
C2	Parallel Parking + Bike Lane	54	54	54	PP BL TL CT TL BL PP	Under 35	Car, Bicycle, Parking
C3	Parallel Parking	50	44	54	PP TL CT TL PP	Under 35	Car, Parking
C4	Two-Way Cycle Track	50	45	54	BTW BB TL CT TL	35 and over	Car, Bicycle
C5	One-Way Cycle Tracks	52	44	54	BT BB TL CT TL BB BT	35 and over	Car, Bicycle
C6	Bus Only Lanes	54	52	54	Bus TL CT TL Bus	35 and over	Car, Bicycle, Bus

TABLE 2-29 TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	Car
CT	Center Turn Lane	10	10	12	Car
PP	Parallel Parking	8	7	9	Parking
Bus	Bus Only Lane	12	11	14	Bus
BL	Bike Lane (Class II)	7	5	8	Bicycle
BT	One-way Cycle Track (Class IV)	7	6	8	Bicycle
BTW	Two-Way Cycle Track (Class IV)	12	8	14	Bicycle
BB	Buffer	3	2	-	Bicycle

TABLE 2-30 TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	78	94	ft
Curb-to-Curb Width	54	40	-	ft
Design ADT <sup>1</sup>	-	10,000	13,000	
Design Speed <sup>2</sup>	-	30	40	mph
Grade	-	-	8	%
Curve Radius <sup>3</sup>	470	380	610	ft

TABLE 2-31 TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-3, UP-4, or UP-4T
Residential	UP-3, UP-4, or UP-4T
Commercial Employment, Retail and Services - Residential Prohibited	
Institutional, Public, and Semi-Public Facilities	UP-6, UP-6T, UP-7, or UP-7T
Multiple Use: <i>Urban Village</i>	

TABLE 2-32 PARKWAYS FOR TWO-LANE COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.5.4 Two-Lane Industrial Collector

An industrial street that primarily provides movement between local/collector streets and streets of higher classification; secondarily, it provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

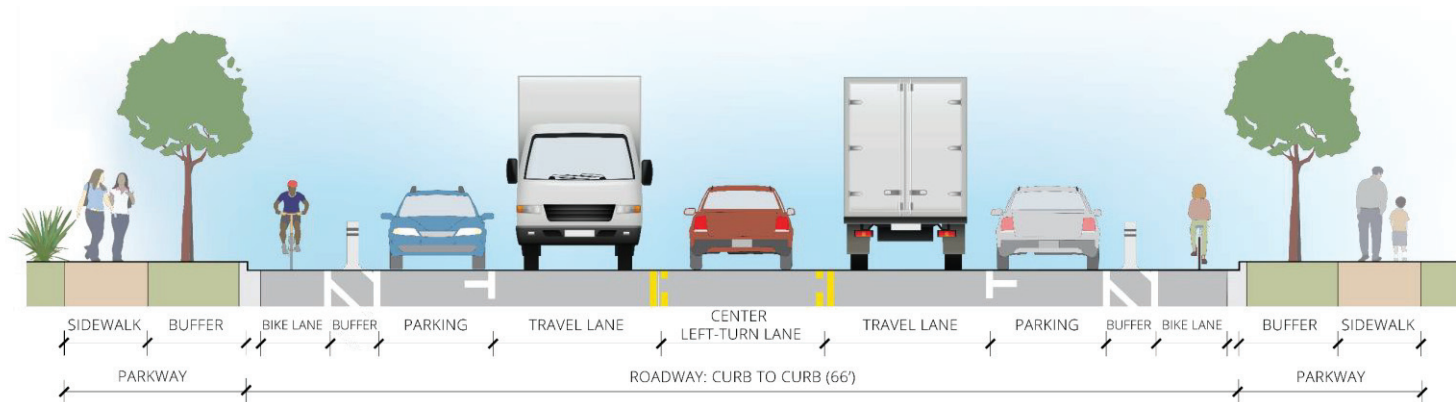


FIGURE 2-21 TWO-LANE INDUSTRIAL COLLECTOR SECTION VIEW (OPTION C5)

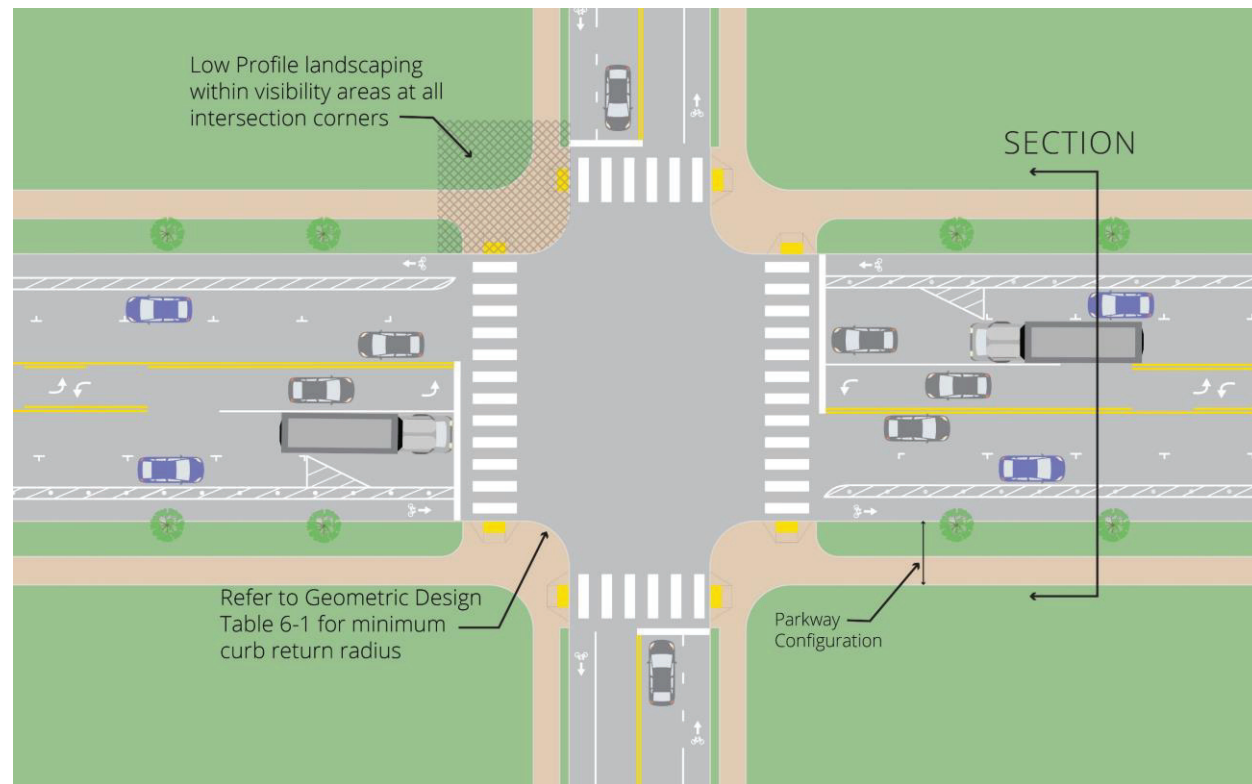


FIGURE 2-22 TWO-LANE INDUSTRIAL COLLECTOR PLAN VIEW (OPTION C5)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Bike Lane	54	40	54	BL BB TL CT TL BB BL	Under 35	
C2	Parallel Parking + Bike Lane	54	54	54	PP BL TL CT TL BL PP		
C3	Parallel Parking	50	44	54	PP TL CT TL PP		
C4	Two-Way Cycle Track	50	45	54	BTW BB TL CT TL	35 and Over	
C5	One-Way Cycle Tracks	54	44	54	BT BB TL CT TL BB BT		
C6	One-Way Cycle Tracks + Parking	66	60	66	BT BB PP TL CT TL PP BB BT		
C7	Bus Only Lanes	54	52	54	Bus TL CT TL Bus		

TABLE 2-33 TWO-LANE INDUSTRIAL COLLECTOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane	11	10	12	
CT	Center Turn Lane	10	10	12	
RM	Raised Median	14	6	-	-
PP	Parallel Parking	8	7	9	
Bus	Bus Only Lane	12	11	14	
BL	Bike Lane (Class II)	7	5	8	
BT	One-way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-34 TWO-LANE INDUSTRIAL COLLECTOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	80	90	ft
Curb-to-Curb Width	60	40	66	ft
Design ADT <sup>1</sup>	-	5,000	6,500	ADT
Design Speed <sup>2</sup>	-	30	40	mph
Grade	-	-	8	%
Curve Radius <sup>3</sup>	340	300	430	ft

TABLE 2-35 TWO-LANE INDUSTRIAL COLLECTOR LANE STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Industrial Employment	UP-2, UP-3, UP-4 or UP-4T

TABLE 2-36 PARKWAYS FOR TWO-LANE INDUSTRIAL COLLECTOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.5.5 Four-Lane Urban Collector with Two-way Left Turn Lane

A street that primarily provides movement between local/collector streets and streets of higher classification; secondarily, it provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy pedestrian movement, moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It typically has on-street parking, street trees, traffic safety street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and underground utilities.

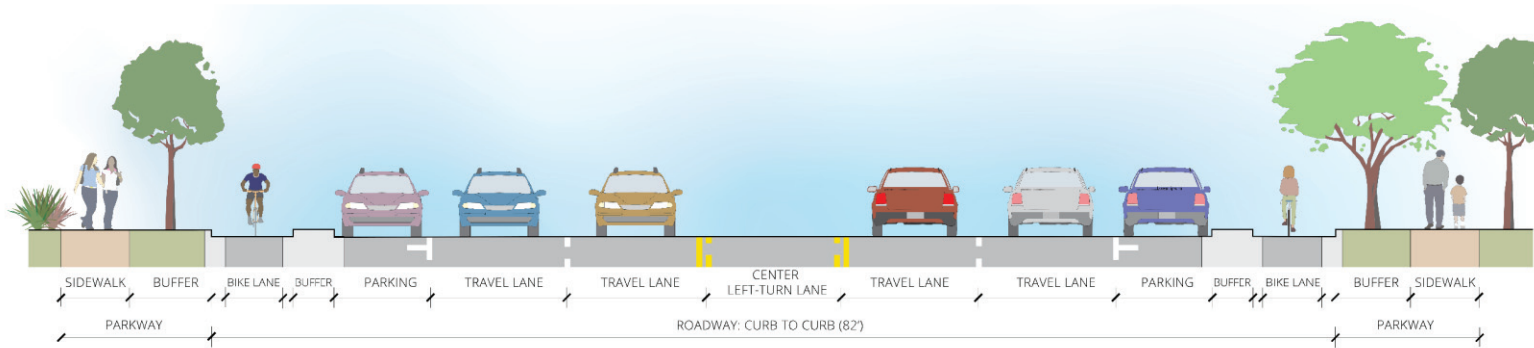


FIGURE 2-23 FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE SECTION VIEW (OPTION C4)

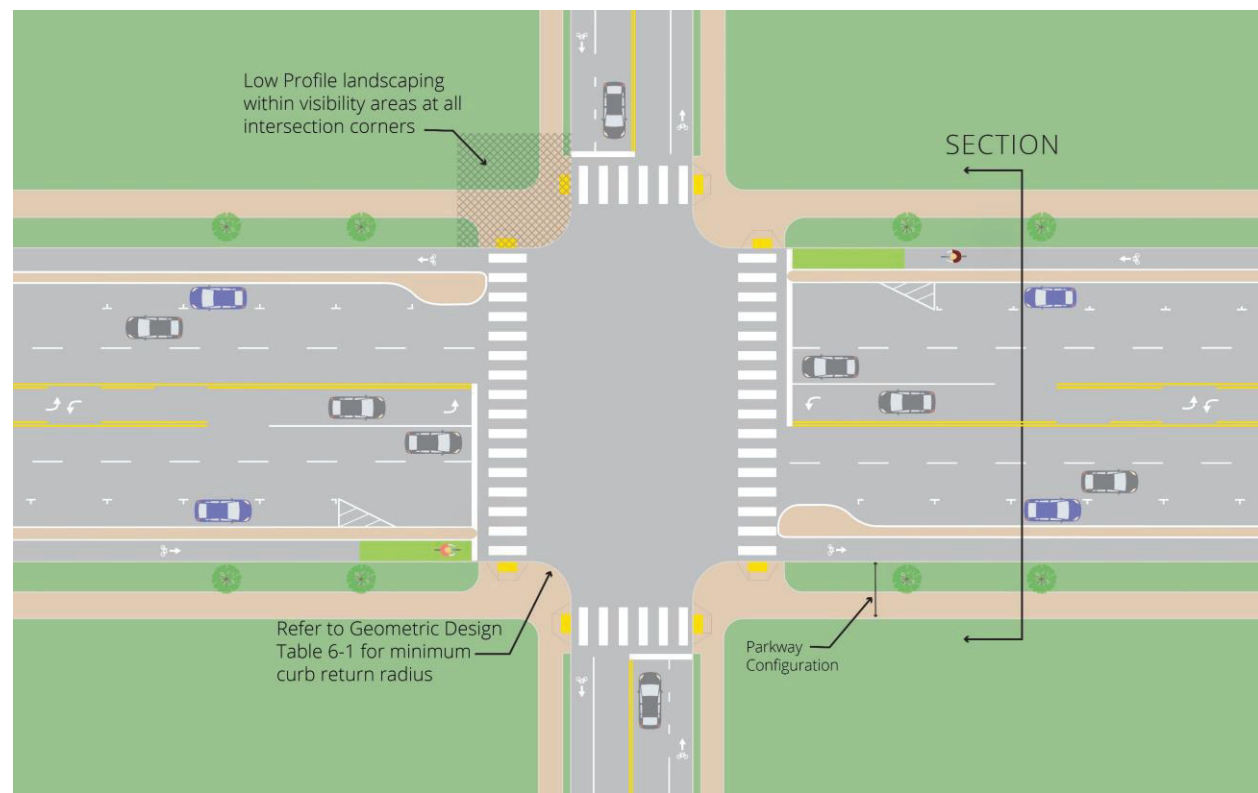


FIGURE 2-24 FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE PLAN VIEW (OPTION C4)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Two-Way Cycle Track	74	64	82	BTW BB TL TL CT TL TL	35 and over	
C2	One-Way Cycle Tracks	76	66	82	BT BB TL TL CT TL TL BB BT		
C3	Parallel Parking + Two-Way Cycle Track	82	78	82	BTW BB PP TL TL CT TL TL PP		
C4	Parallel Parking + One-Way Cycle Tracks	82	80	82	BT BB PP TL TL CT TL TL PP BB BT		
C5	Bus Only Lanes	58	52	82	Bus TL CT TL Bus		
C6	Travel Lanes Only	58	50	82	TL TL CT TL TL		

TABLE 2-37 FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9.5	12	
CT	Center Turn Lane	10	10	12	
	Raised Median	14	6	-	
PP	Parallel Parking	8	7	9	
Bus	Bus Only Lane	12	11	14	
BT	One-Way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-38 FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	110	112	ft
Curb-to-Curb Width	82	-	-	ft
Design ADT <sup>1</sup>	-	20,000	25,000	ADT
Design Speed <sup>2</sup>	-	30	40	mph
Grade	-	-	8	%
Curve Radius <sup>3</sup>	470	380	610	ft

TABLE 2-39 FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-4 or UP-4T
Residential	UP-4 or UP-4T
Commercial Employment, Retail, and Services - Residential Prohibited	UP-6, UP-6T, UP-7, or UP-7T
Institutional, Public, and Semi-Public Facilities	UP-6, UP-6T, UP-7, or UP-7T
Industrial Employment	UP-4 or UP-4T

TABLE 2-40 PARKWAYS FOR FOUR-LANE URBAN COLLECTOR WITH TWO-WAY LEFT TURN LANE STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

## 2.6. Major Streets

Major Streets are streets that primarily provides a network connecting vehicles and transit to other major streets, primary arterials, and to the freeway system; secondarily, it provides access to abutting commercial and industrial properties. It carries moderate-to-heavy vehicular movement, low-to-high pedestrian and bicycle movements, and moderate-to-high transit movement. It typically has a raised center median, street trees, traffic safety street lighting, and sidewalks, and may include landscaping, pedestrian-scale lighting, underground utilities, on-street parking, and/or bicycle facilities.

Primary Arterials are streets that primarily provides a network connecting vehicles and transit to other primary arterials and to the freeway system. It carries heavy vehicular movement while providing low pedestrian movement and moderate bicycle and transit movements. It typically has a raised center median, bicycle facilities, street trees, traffic safety street lighting, sidewalks, and no access from abutting property. It may include underground utilities.

All Figures are for illustrative purposes and all signing and striping are subject to the most recent adopted edition of the CA MUTCD or as deemed appropriate by the City Engineer. Figures 2-25 through 2-32 and Tables 2-41 through 2-56 below illustrate the design specifications for four-lane urban major streets, four-lane major streets, six-lane urban major streets, and six-lane primary arterial streets.

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### 2.6.1 Four-Lane Urban Major

A street that primarily provides a network connecting vehicles and transit to other major streets, primary arterials, and to the freeway system; secondarily, it provides access to abutting commercial and industrial properties. It carries moderate-to-heavy vehicular movement, low-to-high pedestrian and bicycle movement, and moderate-to-high transit movement. It typically has a raised center median, street trees, traffic safety street lighting, and sidewalks; it may include landscaping, pedestrian-scale lighting, underground utilities, on-street parking, and/or bicycle facilities.

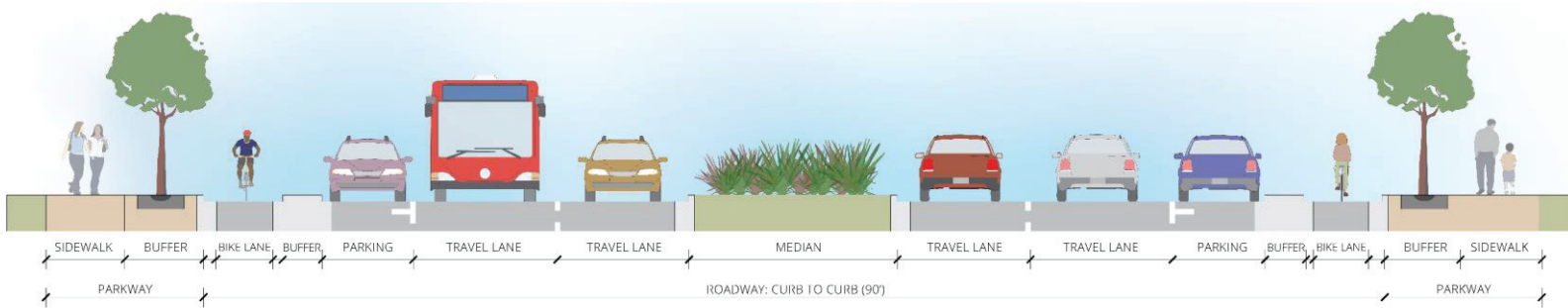


FIGURE 2-25 FOUR-LANE URBAN MAJOR SECTION VIEW (OPTION C4)

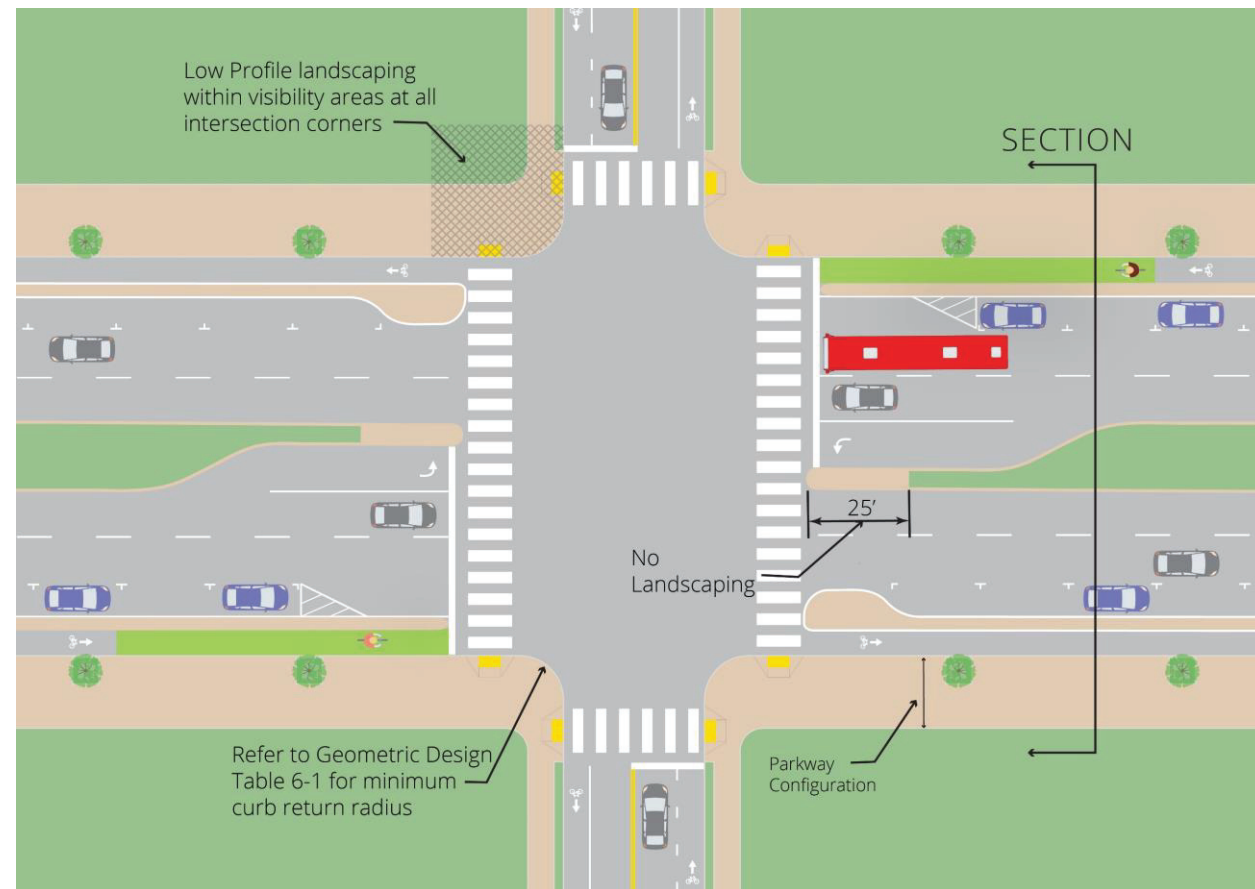


FIGURE 2-26 FOUR-LANE URBAN MAJOR SECTION VIEW (OPTION C4)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Two-Way Cycle Track	80	70	90	BTW BB TL TL CT TL TL	35 and Over	
C2	One-Way Cycle Tracks	84	74	90	BT BB TL TL CT TL TL BB BT		
C3	Parallel Parking + Two-Way Cycle Track	90	84	90	BTW BB PP TL TL CT TL TL PP		
C4	Parallel Parking + One-Way Cycle Tracks	90	88	90	BT BB PP TL TL CT TL TL PP BB BT		
C5	Bus Only Lanes	64	58	90	Bus TL CT TL Bus		
C6	Travel Lanes Only	64	56	90	TL TL CT TL TL		

TABLE 2-41 FOUR-LANE URBAN MAJOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9.5	12	
CT	Center Turn Lane	10	10	12	
	Raised Median	14	6	-	
PP	Parallel Parking	8	7	9	
Bus	Bus Only Lane	12	11	14	
BT	One-Way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-42 FOUR-LANE URBAN MAJOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	118	130	ft
Curb-to-Curb Width	90	-	-	ft
Design ADT <sup>1</sup>	-	30,000	35,000	ADT
Design Speed <sup>2</sup>	-	25	45	mph
Grade	-	-	7	%
Curve Radius <sup>3</sup>	830	660	1,090	ft

TABLE 2-43 FOUR-LANE URBAN MAJOR STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-5 or UP-5T
Residential	
Commercial Employment, Retail, and Services: Community Commercial, Regional Commercial, Commercial Office, Visitor Commercial	
Institutional, Public, and Semi-Public Facilities	
Industrial Employment	

TABLE 2-44 PARKWAYS FOR FOUR-LANE URBAN MAJOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways



### 2.6.2 Four-Lane Major

A street that primarily provides a network connecting vehicles and transit to other major streets and primary arterials and to the freeway system; secondarily, it provides access to abutting commercial and industrial properties. It carries moderate-to-heavy vehicular movement, low-to-high pedestrian and bicycle movement, and moderate-to-high transit movement. It typically has a raised center median, street trees, traffic safety street lighting, and sidewalks; it may include landscaping, pedestrian-scale lighting, underground utilities, on-street parking, and/or bicycle facilities.

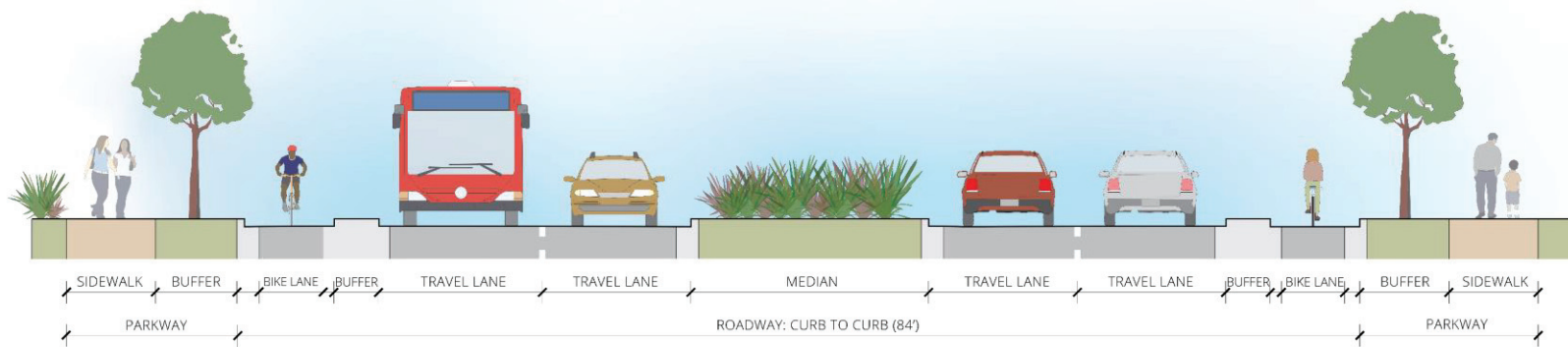


FIGURE 2-27 FOUR-LANE MAJOR SECTION VIEW (OPTION C2)

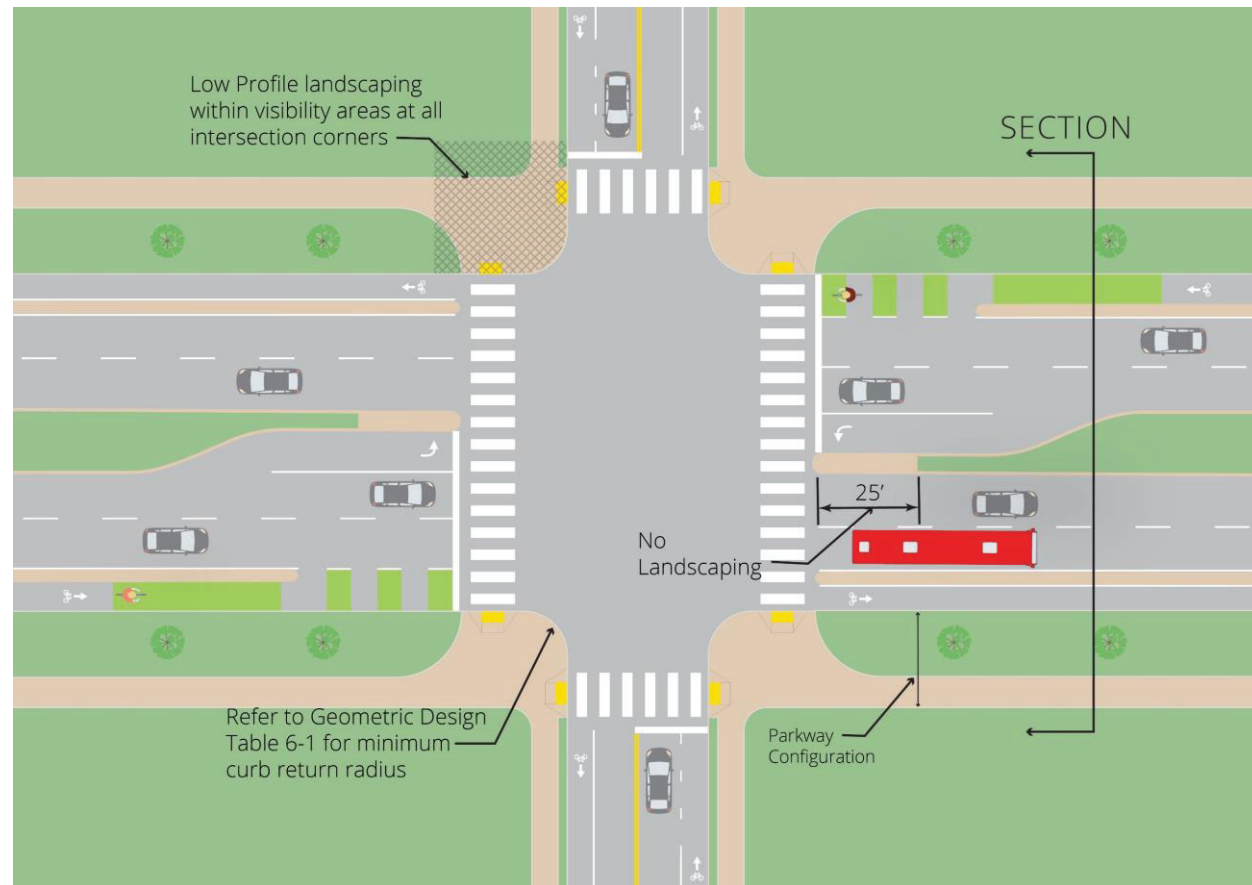


FIGURE 2-28 FOUR-LANE MAJOR PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Two-Way Cycle Track	69	60	78	BTW BB TL TL CT TL TL	35 and Over	Car, Bicycle
C2	One-Way Cycle Tracks	74	74	82	BT BB TL TL CT TL TL BB BT	35 and Over	Car, Bicycle
C3	Bus Only Lanes	56	52	76	Bus TL CT TL Bus	35 and Over	Car, Bus
C4	Travel Lanes Only	54	50	76	TL TL CT TL TL	35 and Over	Car

TABLE 2-45 FOUR-LANE MAJOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	Car
	Through Lane (All other)	10	9.5	12	Car
CT	Center Turn Lane	10	10	12	Car
	Raised Median	14	6	-	-
Bus	Bus Only Lane	12	11	14	Bus
BT	One-Way Cycle Track (Class IV)	7	6	8	Bicycle
BTW	Two-Way Cycle Track (Class IV)	12	8	14	Bicycle
BB	Buffer	3	2	-	Bicycle

TABLE 2-46 FOUR-LANE MAJOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	120	-	-	ft
Curb-to-Curb Width	76	-	-	ft
Design ADT <sup>1</sup>	-	30,000	35,000	ADT
Design Speed <sup>2</sup>	-	30	55	mph
Grade	-	-	7	%
Curve Radius <sup>3</sup>	1,350	880	1,850	ft

TABLE 2-47 FOUR-LANE MAJOR STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-5 or UP-5T
Residential	
Commercial Employment, Retail, and Services: Community Commercial, Regional Commercial, Commercial Office, Visitor Commercial	
Institutional, Public, and Semi-Public Facilities	
Industrial Employment	

TABLE 2-48 PARKWAYS FOR FOUR-LANE MAJOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.6.3 Six-Lane Urban Major

A street that primarily provides a network connecting vehicles and transit to other major streets and primary arterials and to the freeway system; secondarily, it provides access to abutting commercial and industrial properties. It carries moderate-to-heavy vehicular movement, low-to-high pedestrian and bicycle movement, and moderate-to-high transit movement. It typically has a raised center median, street trees, traffic safety street lighting, and sidewalks; it may include landscaping, pedestrian-scale lighting, underground utilities, on-street parking, and/or bicycle facilities.

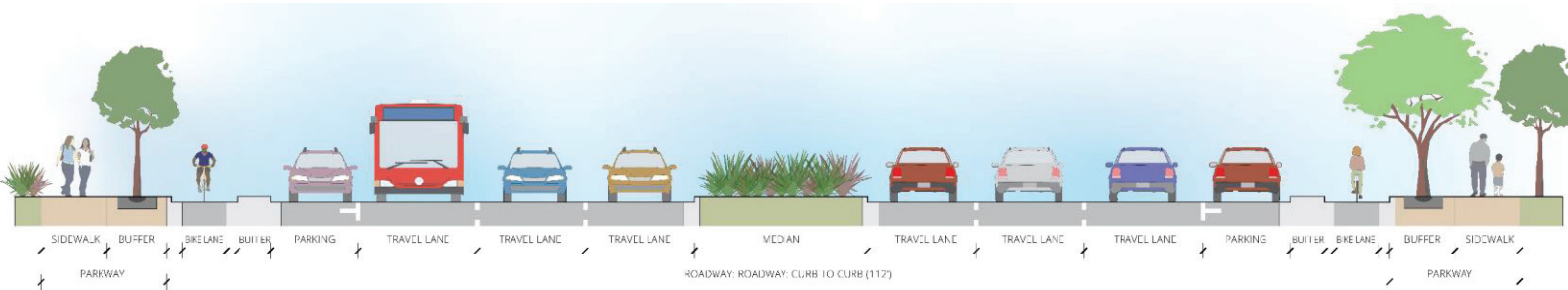


FIGURE 2-29 SIX-LANE URBAN MAJOR SECTION VIEW (OPTION C4)

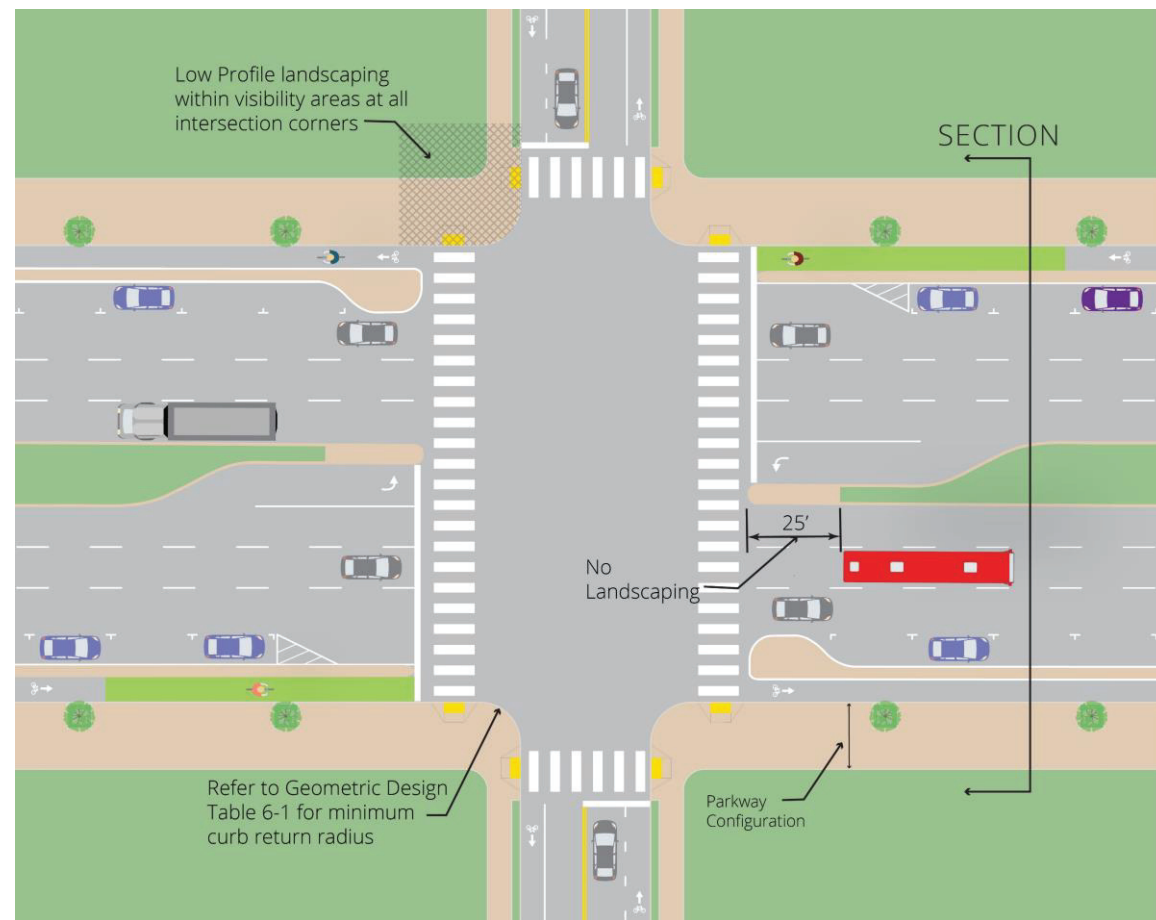


FIGURE 2-30 SIX-LANE URBAN MAJOR PLAN VIEW (OPTION C4)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Two-Way Cycle Track	104	90	112	BTW BB TL TL TL CT TL TL TL	35 and Over	
C2	One-Way Cycle Tracks	108	92	112	BT BB TL TL TL CT TL TL TL BB BT		
C3	Parallel Parking + Two-Way Cycle Track	112	104	112	BTW BB PP TL TL TL CT TL TL TL PP		
C4	Parallel Parking + One-Way Cycle Tracks	112	106	112	BT BB PP TL TL TL CT TL TL TL PP BB BT		
C5	Bus Only Lanes	88	78	112	Bus TL TL CT TL TL Bus		
C6	Travel Lanes Only	88	76	112	TL TL TL CT TL TL TL		

TABLE 2-49 SIX-LANE URBAN MAJOR STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	
	Through Lane (All other)	10	9.5	12	
CT	Center Turn Lane	10	10	12	
	Raised Median	14	6	-	-
PP	Parallel Parking	8	7	9	
Bus	Bus Only Lane	12	11	14	
BT	One-Way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-50 SIX-LANE URBAN MAJOR STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	140	152	ft
Curb-to-Curb Width	112	-	-	ft
Design ADT <sup>1</sup>	-	40,000	45,000	
Design Speed <sup>2</sup>	-	25	45	mph
Grade	-	-	7	%
Curve Radius <sup>3</sup>	830	660	1,090	ft

TABLE 2-51 SIX-LANE URBAN MAJOR STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-4, UP-4T, UP-6, UP-6T, UP-7, or UP-7T
Residential	
Commercial Employment, Retail, and Services: Community Commercial, Regional Commercial, Commercial Office, Visitor Commercial	
Institutional, Public, and Semi-Public Facilities	
Multiple Use: Urban Village	
Industrial Employment	

TABLE 2-52 PARKWAYS FOR SIX-LANE URBAN MAJOR STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

### 2.6.4 Six-Lane Primary Arterial

A street that primarily provides a network connecting vehicles and transit to other primary arterials and to the freeway system. It carries heavy vehicular movement while providing low pedestrian movement and moderate bicycle and transit movements. It typically has a raised center median, bicycle facilities, street trees, traffic safety street lighting, sidewalks, and no access from abutting property. It may include underground utilities.



FIGURE 2-31 SIX-LANE PRIMARY ARTERIAL SECTION VIEW (OPTION C2)

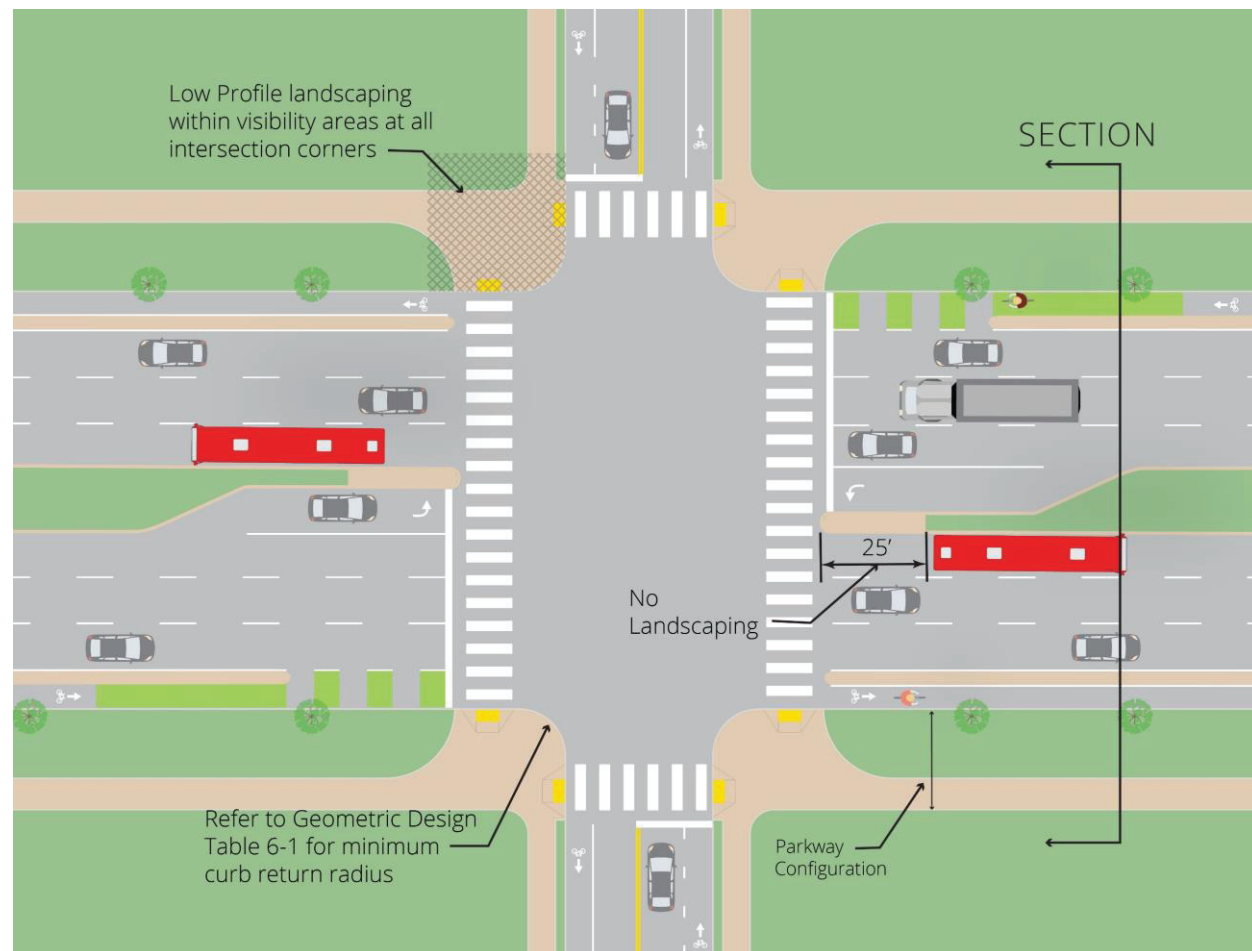


FIGURE 2-32 SIX-LANE PRIMARY ARTERIAL PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Two-Way Cycle Track	98	90	98	BTW BB TL TL TL CT TL TL TL	35 and Over	Car, Bicycle
C2	One-Way Cycle Tracks	98	92	98	BT BB TL TL TL CT TL TL TL BB BT	35 and Over	Car, Bicycle
C3	Bus Only Lanes	88	78	98	Bus TL TL CT TL TL Bus	35 and Over	Car, Bus, Bicycle
C4	Travel Lanes Only	88	76	98	TL TL TL CT TL TL TL	35 and Over	Car

TABLE 2-53 SIX-LANE PRIMARY ARTERIAL STREET DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane (Adjacent to Curb)	11	10	12	Car
	Through Lane (All other)	10	9.5	12	Car
CT	Center Turn Lane	10	10	12	Car
	Raised Median	14	6	-	-
Bus	Bus Only Lane	12	11	14	Bus
BT	One-Way Cycle Track (Class IV)	7	6	8	Bicycle
BTW	Two-Way Cycle Track (Class IV)	12	8	14	Bicycle
BB	Buffer	3	2	-	Bicycle

TABLE 2-54 SIX-LANE PRIMARY ARTERIAL STREET FACILITY DIMENSIONS

Note:  
 \* Bicycle Facility should exclude gutter pan width, if adjacent  
 \* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	142	-	-	ft
Curb-to-Curb Width	98	-	-	ft
Design ADT <sup>1</sup>	-	50,000	55,000	ADT
Design Speed <sup>2</sup>	-	50	60	mph
Grade	-	-	6	%
Curve Radius <sup>3</sup>	1,350	880	1,850	ft

TABLE 2-55 SIX-LANE PRIMARY ARTERIAL STREET SPECIFICATIONS

Note:  
<sup>1</sup> Minimum and maximums for Design ADTs refer to LOS C and LOS D  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	UP-5 or UP-5T
Residential	
Commercial Employment, Retail, and Services: Community Commercial, Regional Commercial, Commercial Office, Visitor Commercial	
Institutional, Public, and Semi-Public Facilities	
Industrial Employment	

TABLE 2-56 PARKWAYS FOR SIX-LANE PRIMARY ARTERIAL STREET

Note: See Appendix A for land use definitions and see Section 3.5.1 Urban Parkway Configurations for parkways

## 2.7. Rural Roads

Rural roads are typically in agricultural, natural open space, and large lot (greater than 2.5 acres) residential areas that primarily provides direct access to abutting property or provides movement between local, collector, or streets of higher classification. It carries low-to-moderate vehicular movement, low pedestrian movement, low-to-moderate bicycle movement, and low transit movement. It may include traffic safety street lighting and underground utilities. It typically does not have sidewalks or landscaping.

All Figures are for illustrative purposes and all signing and striping are subject to the most recent adopted edition of the CA MUTCD or as appropriate by reviewer. Figures 2-33 through 2-36 and Tables 2-57 and 2-64 below illustrate the design specifications for rural local roads and rural collector roads.

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### 2.7.1 Rural Local Road

A road in agricultural, natural open space, and large lot (greater than 2.5 acres) residential areas that primarily provides direct access to abutting properties. It carries low vehicular movement, low pedestrian movement, and low bicycle movement. It may include traffic safety street lighting and underground utilities. It typically does not have sidewalks or landscaping.

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Travel Lanes Only	24	24	24	TL TL	Under 35	
C2	Travel Lanes + Shoulder	36	24	36	SD TL TL SD	Under 35	

TABLE 2-57 RURAL LOCAL ROAD DESIGN OPTIONS

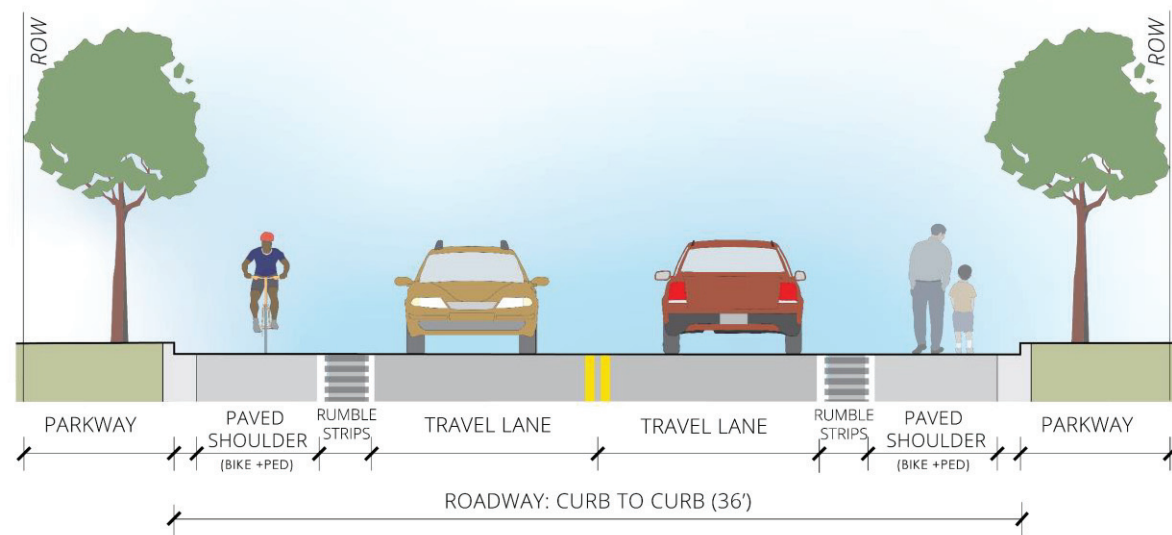


FIGURE 2-33 RURAL LOCAL ROAD SECTION VIEW (OPTION C2)

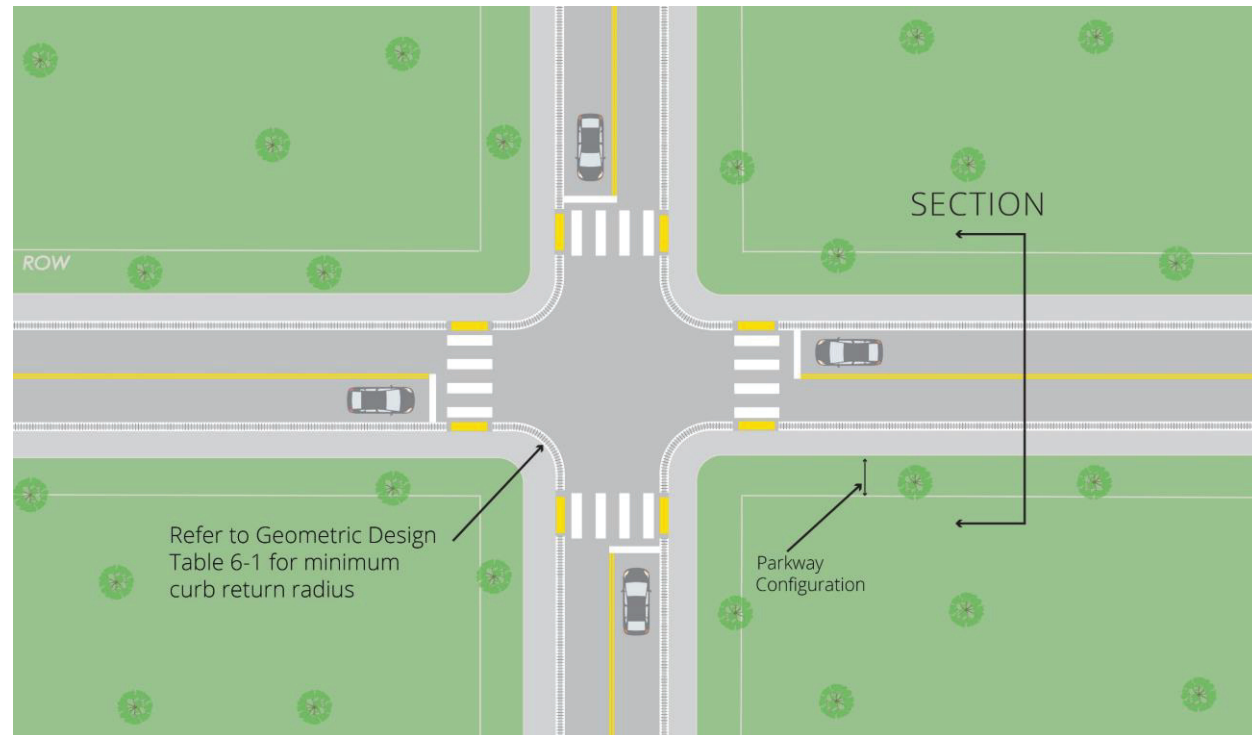


FIGURE 2-34 RURAL LOCAL ROAD PLAN VIEW (OPTION C2)

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane	11	10	12	
SD	Paved Shoulder	-	-	-	-
BL	Bike Lane (Class II)	7	5	8	
BT	One-Way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-58 RURAL LOCAL ROAD FACILITY DIMENSIONS

Note:  
\* See Section 6.5 for bicycle intersection treatments.

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	60	-	-	ft
Paved Width	36	-	-	ft
Design ADT	1,500	-	-	ADT
Design Speed <sup>2</sup>	-	20	50	mph
Grade	-	-	15	%
Curve Radius <sup>3</sup>	340	300	430	ft

TABLE 2-59 RURAL LOCAL ROAD SPECIFICATIONS

Note:  
<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds  
<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation Residential: Residential Low-1 through 3 Agriculture	RP-1, RP-2, or RP-3

TABLE 2-60 PARKWAYS FOR RURAL LOCAL ROAD

Note: See Appendix A for land use definitions and Section 3.5.2 Rural Parkway Configurations for parkways



## 2.7.2 Rural Collector Road

A road in agricultural, natural open space, and large lot (greater than 2.5 acres) residential areas that primarily provides direct access to abutting properties. It carries low vehicular movement, low pedestrian movement, and low bicycle movement. It may include traffic safety street lighting and underground utilities. It typically does not have sidewalks or landscaping.

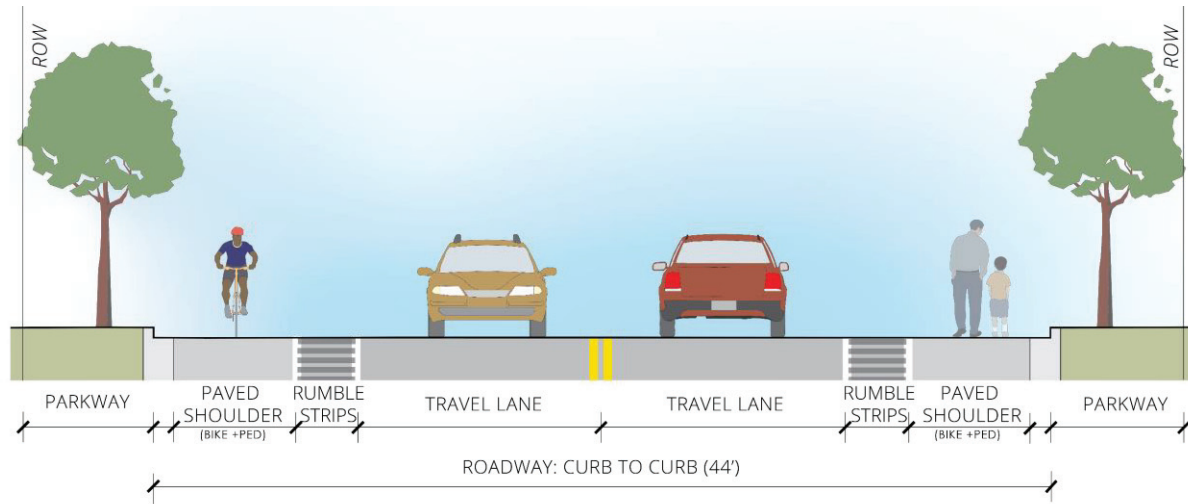


FIGURE 2-35 RURAL COLLECTOR ROAD SECTION VIEW (OPTION C2)

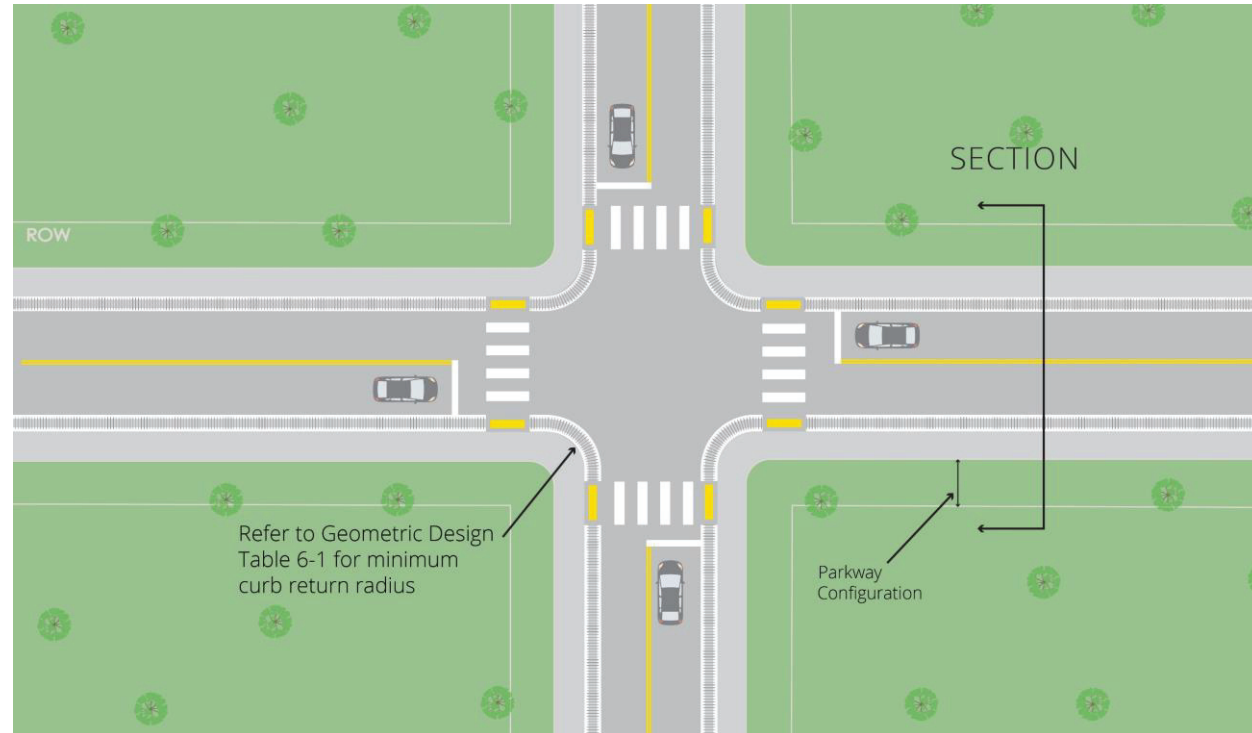


FIGURE 2-36 RURAL COLLECTOR ROAD PLAN VIEW (OPTION C2)

Opt #	Description	Curb-to-Curb Width (ft)			Sample Layout	Speed	Modal Priority(ies)
		Pref	Min	Max			
C1	Travel Lanes Only	22	20	24	TL TL	Over 35	
C2	One-way Cycle Tracks	44	40	44	BL BB TL TL BB BL	Over 35	

TABLE 2-61 RURAL COLLECTOR ROAD DESIGN OPTIONS

Key	Description	Dimensions (ft)			Mode
		Pref	Min	Max	
TL	Through Lane	11	10	12	
BL	Bike Lane (Class II)	7	5	8	
BT	One-Way Cycle Track (Class IV)	7	6	8	
BTW	Two-Way Cycle Track (Class IV)	12	8	14	
BB	Buffer	3	2	-	

TABLE 2-62 RURAL COLLECTOR ROAD FACILITY DIMENSIONS

Note:

\* See Section 6.5 for bicycle intersection treatments

Description	Specifications			Units
	Pref	Min	Max	
Right of Way Width	-	80	96	ft
Paved Width	44	-	-	ft
Design ADT	7,500	-	-	ADT
Design Speed <sup>2</sup>	-	20	60	mph
Grade	5	4	7	%
Curve Radius <sup>3</sup>	1,350	970	1,850	ft

TABLE 2-63 RURAL COLLECTOR ROAD SPECIFICATIONS

Note:

<sup>2</sup> Minimum and maximums refer to AASHTO 2018 Greenbook Design Speeds

<sup>3</sup> Curve radii are derived from Caltrans' HDM Maximum Comfortable Speed on Horizontal Curves chart.

Land Use	Parkway Configurations
Parks, Open Space, and Recreation	RP-4
Residential: Residential Low-1 through 3	
Agriculture	

TABLE 2-64 PARKWAYS FOR RURAL COLLECTOR ROAD

Note: See Appendix A for land use definitions and Section 3.5.2 Rural Parkway Configurations for parkways

### 2.7.3 Green Infrastructure for Rural Roads

Rural swale systems are a combination of street design elements that allow for surface drainage while simultaneously protecting the roadway edge, organizing parking, and allowing for driveway access (see BASMAA, 1999). A section of a typical rural swale system is illustrated in Figure 2-37. As shown in the figure, curb and gutter are not required. The street is crowned to direct runoff to shoulders where it is collected into a vegetated swale or gravel shoulder. The rural swale system is appropriate for Private Street, Rural Local Road, and Rural Collector Road classifications.

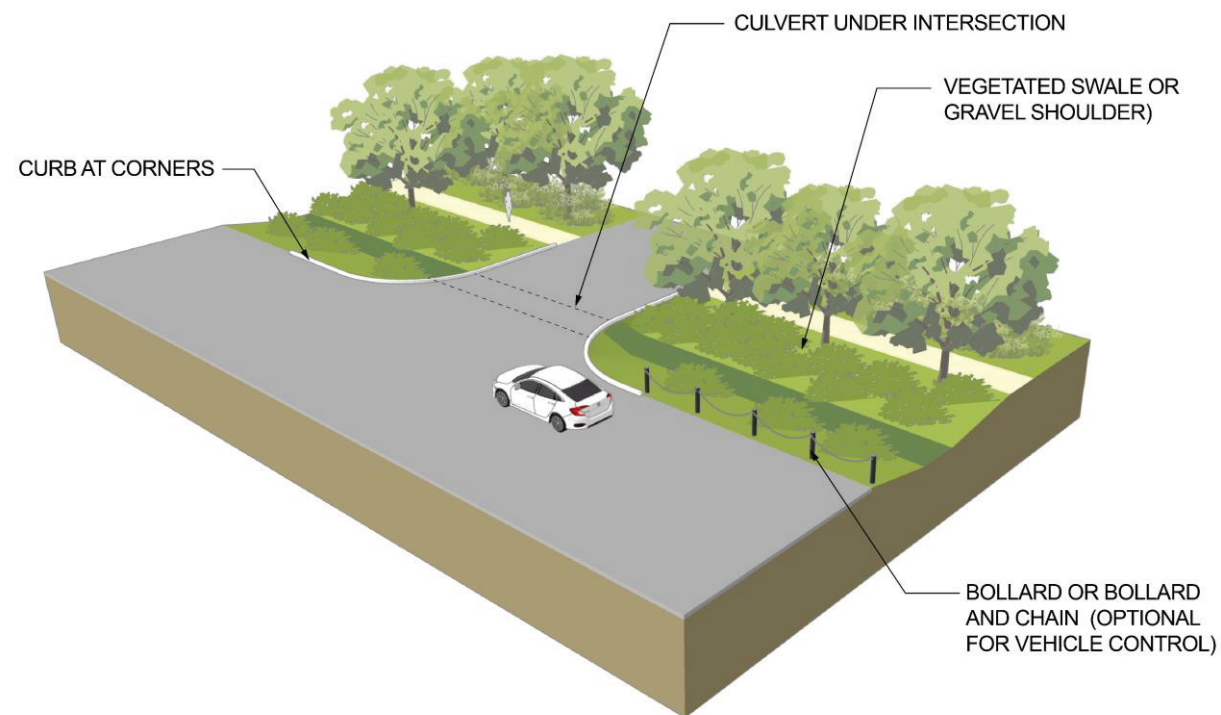


FIGURE 2-37 RURAL SWALE SYSTEM DIAGRAM

**References:**

- Start at the Source: Design Guidance Manual for Stormwater Quality Protection, BASMAA, 1999

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