



## **FIRE PREVENTION CONSTRUCTION STANDARDS FIRE APPARATUS ACCESS STANDARD**

Standard Number: FPCS-1004  
Original Effective Date: 3/24/2020  
Revision Date: 4/15/2022, 10/20/2023  
Code Section: 2022 California Fire Code

### **PURPOSE AND SCOPE**

1004.1 This standard is for the requirement, construction, and identification of fire apparatus access roads, streets, driveways, and the like, to meet the emergency access requirements of the California Fire Code (CFC) and Cosumnes Fire Department fire code ordinance.

### **APPLICATION**

#### **1004.2 Definitions**

- a. **Fire Apparatus Access Road:** Any public or private road, street, lane, driveway, or the like designed to provide emergency access to meet the minimum requirements of the California Fire Code.

#### **1004.3 Specifications**

- a. Developers shall be responsible for the construction and identification of all new fire apparatus access roads in accordance with this policy. Owners and managers shall be responsible for maintaining fire apparatus access roads and their respective signs. Property owners shall not designate and identify any roadway on their property as a fire lane without prior fire district approval.
- b. A minimum of 2 remote fire apparatus access roads shall be provided for: (CFC 503.1.2)
  - 1. Single buildings of more than 10,000 square feet.
  - 2. Multiple buildings of less than 10,000 square feet individually but within a single parcel where the total combined square footage is more than 62,000 square feet.



3. Developments of more than 39 dwelling units of one- and two-family dwellings.
  4. Multi-family dwellings with more than 39 units.
- c. Where two fire apparatus access roads are required, they shall be located not less than one-half the length of the maximum diagonal dimension of the area to be served, measured in a straight line between points of access. (CFC 503.1.2)

Exception: One- and Two-Family Dwelling Developments. All subdivisions over 39 lots shall have at least two fire apparatus access roads remotely placed as approved by the city engineer and the fire code official.

- d. Fire apparatus access roads shall be designed with an approved all-weather driving surface and maintained to support the imposed live load of 80,000 pounds gross vehicle weight, with a maximum axle load of 31,000 pounds, and meet City of Elk Grove Public Works Standards, City of Galt Municipal Code or County of Sacramento Public Works Standard Construction Specifications, as applicable, for roadways. All-weather is defined as a minimum surface finish of concrete or one layer of asphalt. (CFC 503.2.3)

*Exception:*

1. Agricultural buildings not used for commercial purposes.
2. Driveway serving two or less single-family dwellings on the same parcel may have an aggregate base gravel road provided they are engineered to support 80,000 pounds gross vehicle weight in all weather conditions.

A report, prepared by a registered geotechnical or civil engineer, verifying the ability of the road to bear the required minimum weight, shall be submitted with the site plan indicating the construction of the access road. Verification of constructed roadway shall be provided by a registered geotechnical engineer prior to final of the project.

The use of turf-block or grass-crete or similar alternate road surfaces are not approved for installation in a fire apparatus access road.



- e. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches. (CFC 503.2.1)

*Exception:*

1. Fire apparatus access roads serving two or fewer single-family dwellings on the same private residential parcel, may be reduced to 16 feet in width.
2. Split fire apparatus roadway with dividers shall not exceed 150 feet in length.

Fire apparatus access road width shall be measured from the flow line to flow line of roadways with curbs. When roadways do not have curbs, measurements shall be from the edge of the all-weather surface of the roadway, excluding the header or edge boards.

- f. Fire apparatus access roads for aerial fire apparatus shall be provided for all buildings exceeding 30 feet in height. Aerial apparatus access roads shall be provided on at least two (2) intersecting building sides. Overhead utility and power lines shall not be located over aerial apparatus access roads or between the access road and the building. Shade trees shall not interfere with aerial operations.

Underground vaults or utility boxes shall not be located within the designated/designed aerial operations areas to avoid conflict with outriggers. The unobstructed width of aerial apparatus roads shall not be less than 26 feet. Aerial apparatus access roads shall be designed in relation to buildings as follows: (CFC 503.1.1)

1. Buildings up to 40 feet in height, located a minimum of 14 feet from building.
2. Buildings 41 to 50 feet in height, located a minimum of 20 feet from building.
3. Buildings 51 to 60 feet in height, located a minimum of 27 feet from building.
4. Buildings 61 feet in height and greater, located a minimum of 33 feet from building.



For the purposes of this section, building height shall be determined by the measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater. Distance from buildings is measured from the building face to the nearest edge of the fire lane. Fire lane widths are measured from flow line to flow line.

- g. Turns in fire apparatus access roads shall (see Attachment A):
  - 1. Have a minimum turning radius of 50 feet outside and 25 feet inside, having a minimum width of 25 feet wide at and through the entire turn. The required turn radius may increase for fire lanes provided for aerial operations (CFC 503.2.4) or;
  - 2. Meet the requirements as shown in the Turning Performance Analysis. Curb to curb turning radius is calculated for a 9-inch curb.
- h. Fire apparatus access roads shall not exceed 10% in grade for asphalt and 5 % for concrete. (CFC 503.2.7)
- i. Fire apparatus access roads shall have an approach and/or departure angle not to exceed 8 degrees. (CFC 503.2.8)
- j. Fire apparatus access roads on private property over 150 feet in length shall have an approved fire apparatus turn-around (see Table 1). The shape and dimensions of this required turnaround shall be, at a minimum, designed to those shown below in Attachment A, Figures A, C, D, and E. Figure B may only be used for individual residential parcel driveways. (CFC 503.2.5)

**Table 1**

<b>LENGTH IN FEET</b>	<b>MINIMUM WIDTH IN FEET</b>	<b>TURNAROUND REQUIRED</b>
0-150	20	Not Required
151-500	20	Figures A, C, D, or E
501-750	20	Figures A, C, D, or E
Over 750	20	Figure A

- k. Required roadways, fire access lanes, street signs, and addresses shall be installed prior to combustible construction or on-site storage of combustible materials.



- I. All public and private streets and roads shall meet the city/county improvement standards plus the Cosumnes Fire Department Fire Apparatus Access Standard FPCS-1004. Dead-end streets shall be provided with a cul-de-sac meeting the requirements of this standard.

#### 1004.4 **Parking**

Table 2 provides parking allowances based on the width of the access roadway.

**Table 2**

ACCESS ROADWAY WIDTH*:	PARKING RESTRICTIONS ON THE ROADSIDE:
Less than 26'	No parking on either side
26' to 32'	Parallel parking on one side only
Over 32'	Parking is allowed on both sides

\*Fire lane widths are measured from flow line to flow line.

#### 1004.5 **Identification of Fire Lanes**

All fire apparatus access roads shall be identified in accordance with Section 22500.1 of the California Vehicle Code and the California Fire Code. (CFC 503.3)

#### 1004.6 **Gates**

The installation of perimeter fencing, gates, or barriers that obstruct fire apparatus access roads shall require a separate plan submittal, review, and approval by the Fire District prior to installation. Refer to the Cosumnes Fire Department Fire Prevention Construction Standard Emergency Access Gates and Barriers Standard FPCS-1003.

### **REFERENCES**

- 1004.7 California Fire Code, Section 503
- 1004.8 City of Elk Grove Public Works Standards
- 1004.9 City of Galt Municipal Code



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- 1004.10 County of Sacramento Public Works Standard Construction Specifications
  - 1004.11 Turning Performance Analysis (Attachment A)
  - 1004.12 California Vehicle Code, Section 22500.1
  - 1004.13 Cosumnes Fire Department, Fire Prevention Construction Standards  
Emergency Access Gates and Barriers Standard FPCS-1003



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# **ATTACHMENT A**

## **FIRE APPARATUS ACCESS STANDARD**

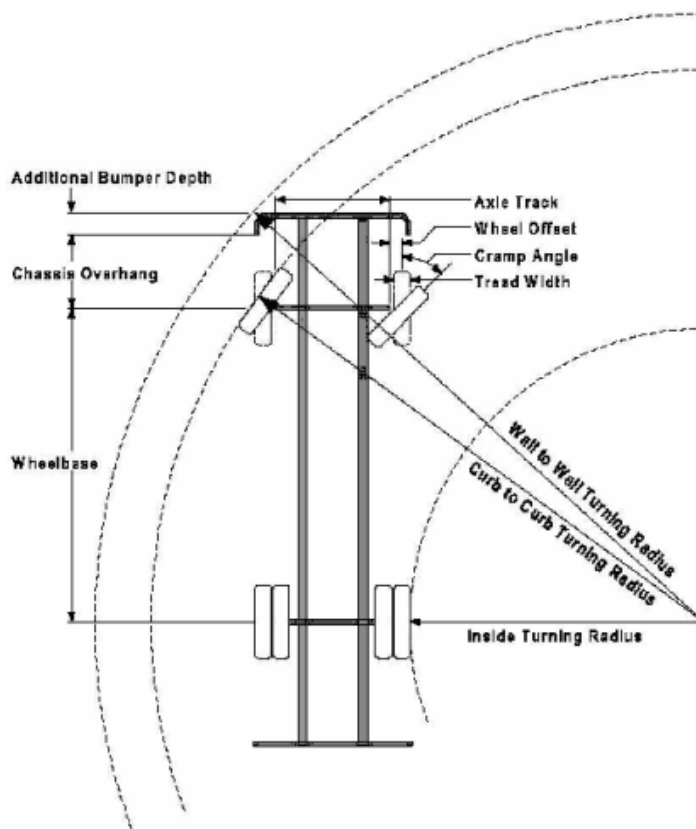
### **POLICY 1004**



## TURNING PERFORMANCE ANALYSIS (SECTION 1004.3.G.2)



### Turning Performance Analysis



#### Parameters:

Inside Cramp Angle:	40°
Axle Track:	82.92 in.
Wheel Offset:	5.30 in.
Tread Width:	17.80 in.
Chassis Overhang:	65.99 in.
Additional Bumper Depth:	26.00 in.
Front Overhang:	145.60 in.
Wheelbase:	258.00 in.

#### Calculated Turning Radii:

Inside Turn:	24 ft. 5 in.
Curb to Curb:	40 ft. 2 in.
Wall to Wall:	47 ft. 7 in.

#### Comments:

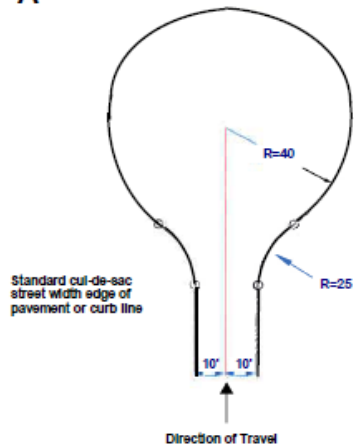
\*Curb to curb turning radius is calculated for a 9-inch curb.





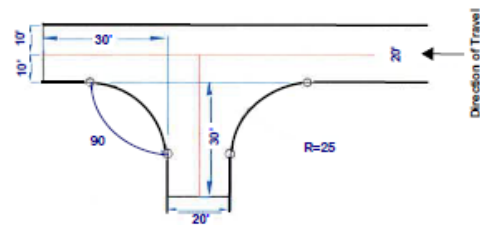
## MINIMUM TURNAROUND STANDARDS FOR PRIVATE PROPERTY (Section 1004.3.f)

**A** Cul-De-Sac Turnaround

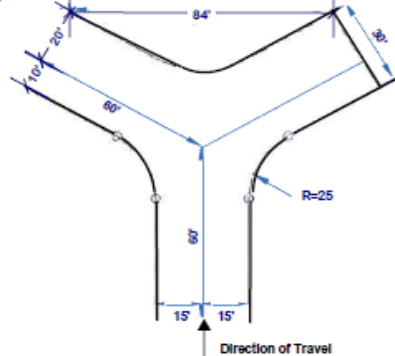


**B** Single Family Dwelling Driveway  
Serving One to Four Lots

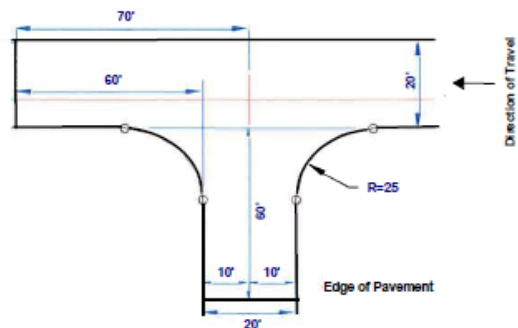
NOTE: Driveway turnaround serving two or less homes on private property may be reduced to 16 feet wide.



**C** "Y" Turnaround



**D** "T" Turnaround



**E** Hammerhead Turnaround

