

Table of Contents

Scope.....	3
Purpose	3
Definitions.....	3
Permitting, Plans, Fees, and Inspections	3
Permitting	3
<i>Plans and Required Documentation</i>	3
<i>Fees</i>	4
<i>Inspections</i>	5
General Provisions	6
Construction.....	6
Where Required.....	6
Specifications	6
Access Requirements for Various Operations	8
High pile combustible storage	8
Tire storage	9
Aviation facilities.....	9
Lumber yards	9
Gates Across Fire Apparatus Access Roads.....	9
Fire Apparatus Access Road Markings	10
Fire Hydrants/Fire Department Connections	10
Commercial and Industrial Developments	11
Miscellaneous	12

Scope This document is applicable to all construction where structures are being constructed, added on to or moved into the City of Colorado Springs.

Purpose This document outlines the Colorado Springs Fire Department’s policies, procedures, requirements and local fire code interpretations pertaining to fire department access to and around a site and building. It is not the intent of this document to reiterate fire code requirements. Fire code requirements can be viewed by visiting www.iccsafe.org. Local amendments to the fire code can be found at www.coloradosprings.gov and searching for “Fire Code Amendments” in the search field.

Definitions

APPROVED. Acceptable to the fire code official.

FIRE CODE OFFICIAL. The fire chief or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative.

FIRE LANE. A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

HIGH-RISE BUILDING. A building with an occupied floor located more than 75 feet above the lowest level of fire department vehicle access.

HIGHWAY. A public street, public alley or public road.

TRAFFIC CALMING DEVICES. Traffic calming devices are design elements of fire apparatus access roads such as street alignment, installation of barriers, and other physical measures intended to reduce traffic and cut-through volumes, and slow vehicle speeds.

FIRE APPARATUS ACCESS ROAD. A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane and access roadway.

Permitting, Plans, Fees, and Inspections

Permitting

No permits are required for fire department access.

Plans and Required Documentation

The following, as applicable, is required to be submitted for review and acceptance for all development and/or site plans:

1. Title Block/Cover Sheet:
 - a. North Arrow
 - b. Scale including a graphical representation
 - c. Vicinity map
 - d. Project name
 - e. Project description
 - f. Applicant name
 - g. Owner name
 - h. Developer/Contractor name
 - i. Date of preparation
 - j. Site address

- k. Tax schedule number
 - l. Legal description
2. General Plan Information:
 - a. Property boundaries and dimensions
 - b. Existing and proposed lots with dimensions
 - c. Proposed uses and occupancies of all buildings
 - d. Existing and proposed topography at two-foot maximum contour intervals
 - e. Existing and proposed easements with dimensions and use information
 - f. Location and dimensions of all buildings
 - g. All public and private street names adjacent to project
 - h. Significant natural features (rock outcroppings, wooded areas, water features, etc.)
 - i. Show proposed landscaping around all buildings as well as any fire protection appliance (fire hydrant, fire department connection, etc.)
 - j. Show all walls, fences, and other similar obstructions and indicate construction and heights
 3. Building(s) Information:
 - a. Footprints, size, heights dimensions and types of construction of all proposed buildings
 - b. Elevations of buildings as well as any object extending across any drivable surface
 4. Fire Apparatus Access Information:
 - a. Proposed streets, drives, parking areas, etc., with dimensions and whether public or private
 - b. Construction materials, grades for all drivable surfaces and fire lanes
 - c. Show and identify all curb types
 - d. Indicate all curbs or edges of roadways that will be marked as a fire lane
 - e. Utilizing approved data, illustration(s) regarding apparatus turning movements throughout the site
 - f. Show all gates across all drivable surfaces and indicate the gate operation (electronically/manually) along with gate movement/swing direction
 - g. Provide dimensions for all gate openings (clear width of opening)
 - h. Indicate slopes of all roadways with slopes of 10% or greater
 - i. Ensure dead-ends are provided with approved FD turnarounds as applicable
 - j. Provide a statement or other indications that angles of approach and departure at all intersections or changes in grade are less than 8 degrees (not percent)

Site plans submitted without the required information listed above may be returned and/or not accepted. Please allow a minimum of five working days for site plans and supplemental information submitted to be reviewed. Expedited reviews may be requested for an additional fee. The applicant will be notified either by phone and/or email the status of the application once the review has been completed.

Fees

Plan review and inspection fees are required for all development and site plans. Fee amounts are based on the currently approved Division of the Fire Marshal fee schedule.

For site plans specifically:

- The initial plan review fee covers the first two plan reviews and first inspection
- Third and subsequent plan review fees will be imposed in addition to the initial permit fee

- Second and subsequent inspection fees and/or trip fees will be imposed in addition to the initial permit fee should the structure not be ready for or fail inspection the first time
- Overtime fees will be imposed in addition to the initial fee should the inspection be requested after normal business hours
- Trip or inspection fees will be imposed in addition to the initial fee for inspection of additional arrangements

If desired, an expedited plan review fee may be paid to expedite review of the plans and permit application. This fee is in addition to the initial plan review fee. Plans designated as Rapid Response do not require an additional expedite fee.

Plan review fees must be paid before the inspection can be scheduled. Any fees resulting from multiple inspections will be billed to the applicant. If fees are not paid, future permit applications and/or inspections may be denied.

Once the plans have been reviewed and accepted, and the plan review fees have been paid, the contractor/installer may begin construction of the site in compliance with the accepted plans. Should the site begin development prior to the review and approval of the application, a "Work without Permit" fee will be imposed in addition to the initial plan review fee.

Fees may be paid in person or via the phone. Cash, checks (made out to City of Colorado Springs), and credit cards (Visa and MasterCard only) are acceptable forms of payment.

To see the approved fee schedule, visit <https://coloradosprings.gov/fire-department> and search for "Fee Schedule" then select the "Fire Code Services Fee Schedule."

Inspections

Inspections of fire department apparatus access is typically done at through the building fire inspection process since the access is related to new/remodeled building construction that requires building permits. Contact Fire Construction Services at 719-385-5982, option 2, to schedule these inspections. For all other fire department access that is not part of a building permit, call 719-385-5978 and follow the prompts for inspection scheduling. This may be done and is recommended, at the same time fees are being paid (if applicable). Due to the fluctuation of inspector's schedules, it is strongly recommend that inspections be scheduled as soon as possible so as not to hold up the project.

The following is required for the fire inspection:

1. Representative from the installing contractor be present
2. Representative from the user be present (if possible)
3. Approved fire lane markings to be fully installed
4. Gates installed with approved Knox equipment
5. Bollards and/or other fire apparatus access security devices installed
6. Reports from compaction testing (if applicable)
7. Reports from specialized installations/inspections of unique access features (if applicable)
8. Any other items called out in the plan review

General Provisions

Construction

Timing of installation. Where fire apparatus access roads are required to be installed, such roads shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection where construction of new roadways allows passage by vehicles. (CSFC 501.4)

Required access. Approved vehicle access for fire fighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available. (CSFC 3310.1)

Minimum specifications for temporary roads. Temporary access roads shall be an all-weather surface comprised of either the first lift of asphalt or concrete/compacted gravel to a thickness capable of supporting the imposed loads of fire department apparatus. A 20-ft minimum width shall be maintained unless the permanent road is designed less than 20-ft, in which case the temporary road shall be the intended width of the permanent road. Adequate street signs and fire lane signs shall be installed where applicable. Temporary access roads must be maintained in accord with this section. Temporary access roads must be approved and inspected by the fire code official and maintained in accord with this section. (CSFC 3310.1.1)

Where Required

Buildings and facilities. Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility. (CSFC 503.1.1)

Generally speaking, a fire apparatus access road will be approved if it meets or exceeds the minimum fire code requirements as amended. Fire apparatus access roads designed and/or built with alternative materials may be approved on a case by case basis. An "approved route" means a route that is walkable by a firefighter wearing full personal protective equipment (including SCBA) and carrying tools. It also means as the hose would lay and not as the crow flies. In order to meet fire code requirements, Firefighters and the required 150 feet of fire hose cannot negotiate retaining walls, fences, steep slopes, waterways, heavily landscaped areas, etc. Provisions for these obstacles must be made.

Additional access. The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access. (CSFC 503.1.2)

Specifications

Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders, except for approved security gates and an unobstructed vertical clearance of not less than 13 feet 6 inches. (CSFC 503.2.1)

Fire apparatus access roads may be narrower if located within the Hillside Overlay/Wildland Urban Interface (WUI) or Traditional Neighborhood Developments (TND). See the Fire Apparatus Access Road Markings informational document for additional.

Authority. The fire code official shall have the authority to require or permit modifications to the required access widths where they are inadequate for fire or rescue operations or where necessary to meet the public safety objectives of the jurisdiction. (CSFC 503.2.2)

Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

Access and loading. Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, concrete or other approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds with a minimum single axle weight of 27,000 pounds. (CSFC D102.1)

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be determined by the fire code official. (CSFC 501.4)

Currently for CSFD fire apparatus, the minimum inside turning radii is 33 feet and the minimum outside turning radii is 53 feet. Alternatively, applicants with access to AutoTurn may input data specific for CSFD fire apparatus and use the resulting apparatus to “drive” through the site. This is the preferred method of showing fire apparatus access throughout the site. The required data inputs for this can be found at:<http://bit.ly/FireApparatusSpecifications>. All areas identified with fire lane markings must illustrate fire apparatus movements to and from them. This also includes access to and from all fire protection devices such as fire hydrants and fire department connections.

Dead ends. Dead-end fire apparatus access roads in excess of 200 feet in length shall be provided with an approved area for turning around fire apparatus.

Dead ends. Dead-end fire apparatus access roads in excess of 200 feet shall be provided with width and turnaround provisions in accordance with Table D103.4. See Table below. (CSFC D103.4)

**TABLE D103.4
REQUIREMENTS FOR DEAD-END
FIRE APPARATUS ACCESS ROADS**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-200	20	None required
201-500	20	120-foot Hammerhead, 60-foot “Y” or 96-foot or 84’ diameter cul-de-sac in accordance with Figure D103.4
501-750	26	120-foot Hammerhead, 60-foot “Y” or 96-foot diameter cul-de-sac in accordance with Figure D103.4. <i>Additional intermediate turnarounds may be required.</i>
Over 750		Special approval required

For SI: 1 foot = 304.8 mm.

Any dead-end fire apparatus access road greater than 750 feet in length will require special consideration and approval. Factors such as density along dead-end, land use and location within the City all plays factors in determining whether dead-ends longer than 750 feet are acceptable.

Bridges and elevated surfaces. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges where required by the fire code official. Where elevated surfaces designed for

emergency vehicle use are adjacent to surfaces that are not designed for such use, approved barriers, approved signs or both shall be installed and maintained where required by the fire code official. (CSFC 503.2.6)

Grade. Fire apparatus access roads shall not exceed 10 percent in grade. (CSFC D103.2)

Fire apparatus access roads located within the WUI/Hillside Overlay, the maximum slope is 12% for runs of up to 250 feet. Then the slope must be reduced to less than 12% to allow vehicles to gain momentum. The slope may then go back to 12% for another run of 250 feet and so on.

Angles of approach and departure. The angles of approach and departure for fire apparatus access roads shall be within the limits established by the fire code official based on the fire department’s apparatus. (CSFC 502.3.8)

Currently the maximum angles of approach and departure are 8 degrees (degrees, not percent). The concern is that apparatus with longer front ends from the front axle don’t scrape the front bumper on the slope of the road before the front wheel gets onto the slope. Conversely, apparatus with longer tail ends from the rear axles don’t want to scrape the back bumper as the apparatus is trying to climb a slope. High centering is also a concern. That is where the undercarriage between the front and rear wheels hit a slope in the road. See Figure 1.

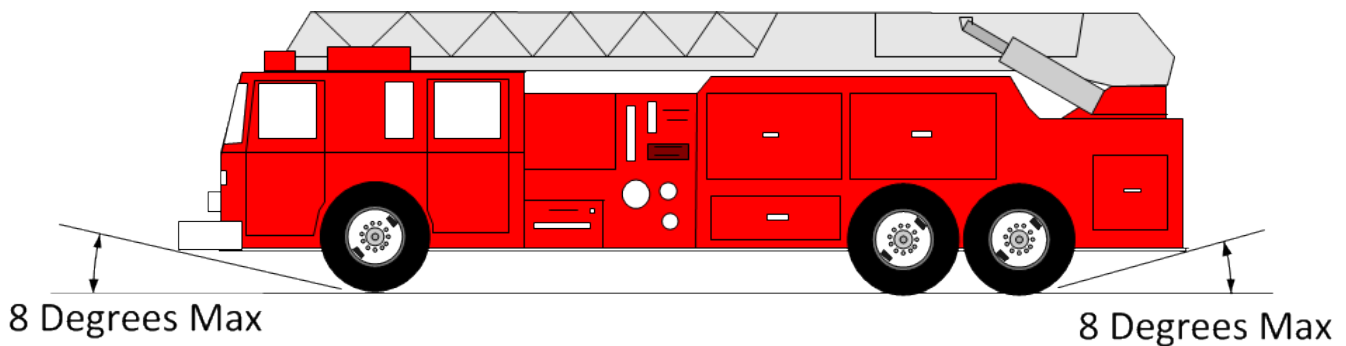


Figure 1 - Angles of Approach and Departure

Marking. Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility. (CSFC 503.3)

Exception: The fire code official is authorized to modify this requirement when the required remoteness is not possible due to location on property, topography, water ways, nonnegotiable grades or similar.

For additional details regarding fire apparatus access road marking, see the [Fire Apparatus Access Road Markings](#) informational document.

Access Requirements for Various Operations

High pile combustible storage

Building access. Where building access is required by Chapter 32, fire apparatus access roads shall be provided within 150 feet of all portions of the exterior walls of buildings used for high-piled storage. (CSFC 3206.6)

Exception: Where fire apparatus access roads cannot be installed because of topography, railways, waterways, nonnegotiable grades or other similar conditions, the fire code official is authorized to require additional fire protection.

Tire storage

Existing facilities

Access to piles. Access roadways shall be within 150 feet of any point in the storage yard where storage piles are located not less than 20 feet from any storage pile. (CSFC 1106.1.1)

Location within piles. Fire apparatus access roads shall be located within all pile clearances as required and within all fire breaks required. (CSFC 1106.1.2)

New facilities

Required access. New tire storage yards shall be provided with fire apparatus access roads. Existing tire storage yards shall be provided with fire apparatus access roads as required. (CSFC 3406.1)

Location. Fire apparatus access roads shall be located within all pile clearances as required and within all fire breaks as required. Access roadways shall be within 150 feet of any point in the storage yard where storage piles are located, not less than 20 feet from any storage pile. (CSFC 3406.2)

Aviation facilities

Fire department access. Fire apparatus access roads shall be provided and maintained as required. Fire apparatus access roads and aircraft parking positions shall be designed in a manner so as to preclude the possibility of fire vehicles traveling under any portion of a parked aircraft. (CSFC 2003.4)

Lumber yards

Fire apparatus access roads. Fire apparatus access roads shall be provided for buildings and facilities in accordance with Section 503. (CSFC 2803.6)

Gates Across Fire Apparatus Access Roads

Required gates or barricades. The fire code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200. (CSFC 503.5)

Secured gates and barricades. Where required, gates and barricades shall be secured in an approved manner. Roads, trails and other accessways that have been closed and obstructed in the manner prescribed by Section 503.5 shall not be trespassed on or used unless authorized by the owner and the fire code official. (CSFC 503.5.1)

Security gates. The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200. (CSFC 503.6)

Fire apparatus access road gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria: (CSFC D103.5)

1. Where a single gate is provided, the gate width shall be not less than 16 feet or as wide as necessary to accommodate fire apparatus turning radius needs. Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 16 feet or as wide as necessary to accommodate fire apparatus turning radius needs.
2. Gates shall be of the swinging or sliding type unless otherwise specifically approved.
3. Construction of gates shall be of materials that allow manual operation by one person.

4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Methods of locking shall be submitted for approval by the fire code official.
7. Electric gate operators, where provided, shall be listed in accordance with UL 325.
8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

Fire Apparatus Access Road Markings

For complete requirements and information, please see the [Fire Apparatus Access Road Markings](#) informational document.

Roads less than 28 feet in width. Fire lane signs as specified in Section D103.6 shall be posted on both sides of fire apparatus access roads that are less than 28 feet wide. (CSFC D103.6.1)

Exceptions:

1. For fire apparatus access roads located in WUI/hillside overlay, fire lane signs shall be posted on both sides when access roads are less than 20 feet wide.
2. For fire apparatus access roads located within a traditional neighborhood development, fire lane signs shall be posted on both sides when access roads are less than 22 feet wide.

Roads 28 to less than 34 feet in width. Required fire lane signs shall be posted on one side of fire apparatus access roads 28 feet wide to less than 34 feet wide. (CSFC D103.6.2)

Exceptions:

1. For fire apparatus access roads located in WUI/hillside overlay, fire lane signs shall be posted on one side when access roads are 24 to less than 34 feet wide.
2. For fire apparatus access roads located within a traditional neighborhood development, fire lane signs shall be posted on one side when access roads are 22 to less than 28 feet wide.

Roads 34 feet in width and greater. Fire lane signs are not required along either side of fire apparatus access roads 34 feet wide or more. (CSFC D103.6.3)

Fire Hydrants/Fire Department Connections

Obstruction. Unobstructed access to fire hydrants shall be maintained at all times. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants. (CSFC 507.5.4)

Clear space around hydrants A 3-foot clear space shall be maintained around the circumference of fire hydrants, except as otherwise required or approved. See Figure 2. (CSFC 507.5.5)

One of the biggest disapproval comments of site plans is obstructed and/or inaccessible fire hydrants primarily due to landscaping.

Physical protection. Where fire hydrants are subject to impact by a motor vehicle, guard posts or other approved means shall comply with the following. (CSFC 507.5.6)

Posts. Guard posts shall comply with all of the following requirements (CSFC 312):

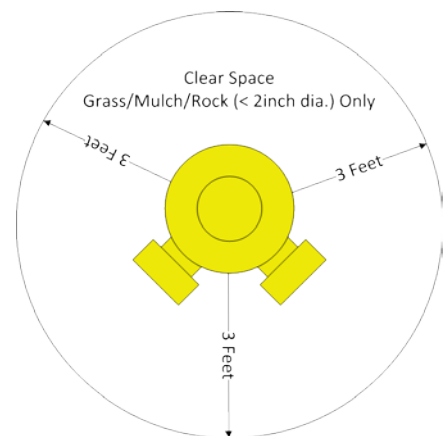


Figure 2 - 3 foot hydrant clearance

1. Constructed of steel not less than 4 inches in diameter and concrete filled.
2. Spaced not more than 4 feet between posts on center.
3. Set not less than 3 feet deep in a concrete footing of not less than a 15-inch diameter.
4. Set with the top of the posts not less than 3 feet above ground.
5. Located not less than 3 feet from the protected object.

Other barriers. Barriers, other than posts specified above, that are designed to resist, deflect or visually deter vehicular impact commensurate with an anticipated impact scenario shall be permitted where approved. (CSFC 321.3)

Commercial and Industrial Developments

Buildings exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet or three stories in height shall have at least two means of fire apparatus access for each structure. (CSFC D104.1)

Exception: A single fire apparatus access road is acceptable when all buildings serviced by the single access road are provided with an approved fire sprinkler system.

Buildings exceeding 62,000 square feet in area. Buildings or facilities having a gross building area of more than 62,000 square feet shall be provided with two separate and approved fire apparatus access roads. (CSFC D104.2)

Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.

Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses. (CSFC D104.3)

Projects having more than 100 dwelling units. Multiple-family residential projects having more than 100 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads. (CSFC D106.1)

Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with approved automatic sprinkler systems.

Projects having more than 200 dwelling units. Multiple-family residential projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus access roads regardless of whether they are equipped with an approved automatic sprinkler system. (CSFC D106.2)

One- or two-family dwelling residential developments. Developments of one- or two-family dwellings where the number of dwelling units exceeds 30 shall be provided with two separate and approved fire apparatus access roads. (CSFC D107.1)

Exceptions:

1. Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 of the International Fire Code, access from two directions shall not be required.
2. The number of dwelling units on a single fire apparatus access road shall not be increased unless fire apparatus access roads will connect with future development, as determined by the fire code official.
3. The fire code official is authorized to modify the requirement of two separate and approved fire apparatus access roads, when they are not possible due to location on property, topography, water ways, nonnegotiable grades or similar.

Miscellaneous

Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. The minimum widths and clearances established shall be maintained at all times. (CSFC 503.4)

Traffic calming devices. Traffic calming devices shall be prohibited unless approved by the fire code official. (CSFC 503.4.1)

Traffic calming devices restrict fire apparatus response times due to apparatus having to slow down to negotiate the devices. Examples of traffic calming devices include, but are not limited to the following: speed bumps, humps, cushions, tables, bump outs, and chicanes.

Required access. Exterior doors and openings required by this code or the International Building Code shall be maintained readily accessible for emergency access by the fire department. An approved access walkway leading from fire apparatus access roads to exterior openings shall be provided when required by the fire code official. (CSFC 504.1)

Street or road signs. Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs. (CSFC 505.2)