



# **UNDERSTANDING FIRE DEPARTMENT ACCESS**

## **City of Canton**

### **Building & Safety Services**

If you have any questions or comments regarding the information contained within, or if you need assistance interpreting these requirements, please contact:

Jay Kula  
City of Canton Building & Safety Services  
Tel: (770)704-1509  
Website:  
Email: [jay.kula@cantonga.gov](mailto:jay.kula@cantonga.gov)

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## Introduction

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Fire response agencies across the nation respond to a multitude of emergencies in various types of buildings and occupancies. These include single-family dwellings, apartment buildings, shopping centers, business complexes, industrial facilities, schools, hospitals and nursing homes. To provide effective fire-fighting operations, fire apparatus must be able to reach all structures by way of approved access roads, streets or driveways. This guidance document provides general access requirements for the development review process and are not all inclusive. **Requirements are accompanied by International Fire Code (2018 ed.) Section Numbers.**



## Definitions (International Fire Code)

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**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.

**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.

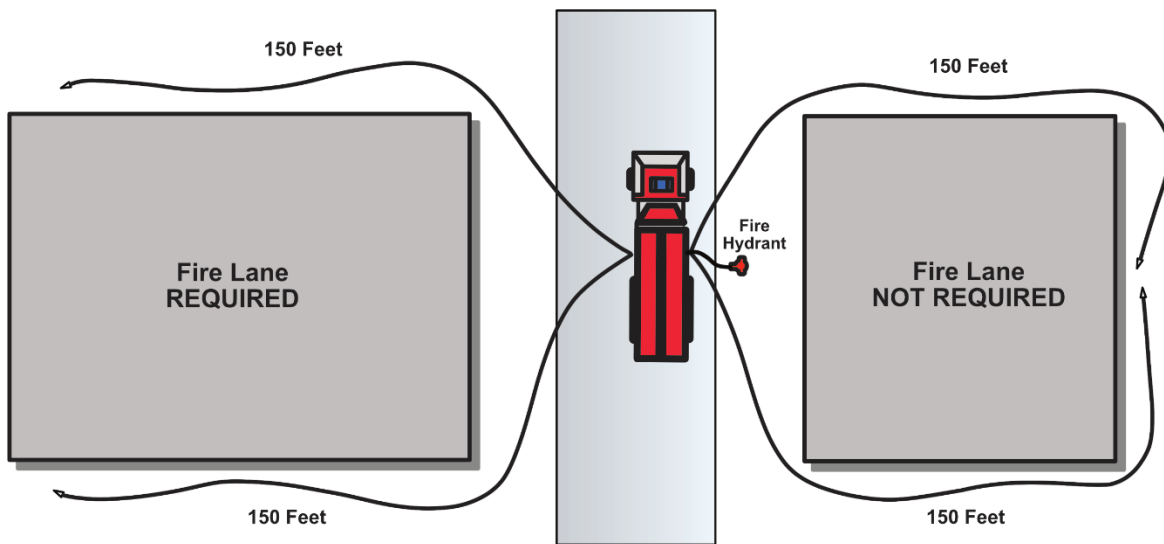
**APPROVED.** Acceptable to the *fire code official*.

**FIRE CODE OFFICIAL.** The fire chief or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative (i.e. Fire Marshal, Fire Prevention Specialist, Fire Inspector)

## General Requirements

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**Locations.** *Approved* fire apparatus access roads shall be provided within 150 feet of the exterior walls of all buildings or facilities at grade level as measured along an *approved* route around the exterior of the building. The distance may be extended to 200 feet on one side of the building or facility when equipped with a full NFPA 13 fire sprinkler system and when *approved* by the *fire code official*. [503.1.1]



**Maintenance.** *Fire apparatus access roads* shall not be obstructed in any manner to include the parking of vehicles. The installation of gates, bollards and other similar devices must be *approved* by the *fire code official*. [503.4, 503.5, 503.6]

**Design.** The fire apparatus access road must be prepared and certified by an engineer registered by the State of Georgia. [503.2.3.1]

**Public Street Access.** A *fire apparatus access road* on a public right of way. Public street access routes must comply with the City or County road design standards and also must comply with the International Fire Code.

**Private Street Access.** A *fire apparatus access road* on private land. Private street access routes must comply with the International Fire Code. Private fire apparatus access roads are permissible provided they are on the same property as the project or, when located on an adjacent property, a permanent access agreement has been secured and recorded on the site plan. Check City of Canton UDC.

**Width.** *Fire apparatus access roads* shall have an unobstructed width of not less than 20 feet. Loop lanes, shared driveways and private driveway have different width criteria. The *fire code official* is authorized to require or permit modifications to required access widths were they are determined to be inadequate for emergency operations or when necessary to meet public safety objectives. [503.2.1, 503.2.2]

**Height.** All fire apparatus access roads shall have at least 13 feet, 6 inches of vertical clearance for the entire required width. [503.2.1]

**Turn Radius.** All fire apparatus access road designs must be *approved* and shall be in compliance with the turning radius and maneuverability of the jurisdiction's largest fire apparatus specifications. The use of computer modeling in the form of Auto-Turn or similar software shall be used, unless otherwise directed by the fire code official. [503.2.4]

**Surface Materials.** Facilities, buildings or portions of buildings shall be accessible to fire department apparatus by way of an *approved* fire apparatus access road with asphalt, concrete or other approved drivable surface capable of supporting the imposed load of fire apparatus weighing up to GVW 75,000 pounds minimum. [503.2.3.1, D102.1]

**Alternative Engineered Surfaces.** The use of alternative drivable surfaces known as engineered alternative fire apparatus road systems to include, but not limited to surfaces commonly known as gravel, recycled asphalt, pavers, or grasspave require review and *approval* of the *fire code official*. These surfaces are generally discouraged for common applications and mainly considered for campus settings with a common maintenance entity or personnel group in order to maintain the continuity and reliability of the surface (i.e. college campus, government, district entities, etc.) Applications are considered on a case by case basis. [D102.1]

**Grade.** Street grades shall comply with City/County design standards for both *Public* and *Private Street Access* routes. Maximum grade shall not exceed 10% with no more than 5% cross slope. Maximum grades on fire apparatus access road turn around areas shall not exceed 4%. Grades steeper than 10% must be approved by the fire code official [503.2.7, D103.2]

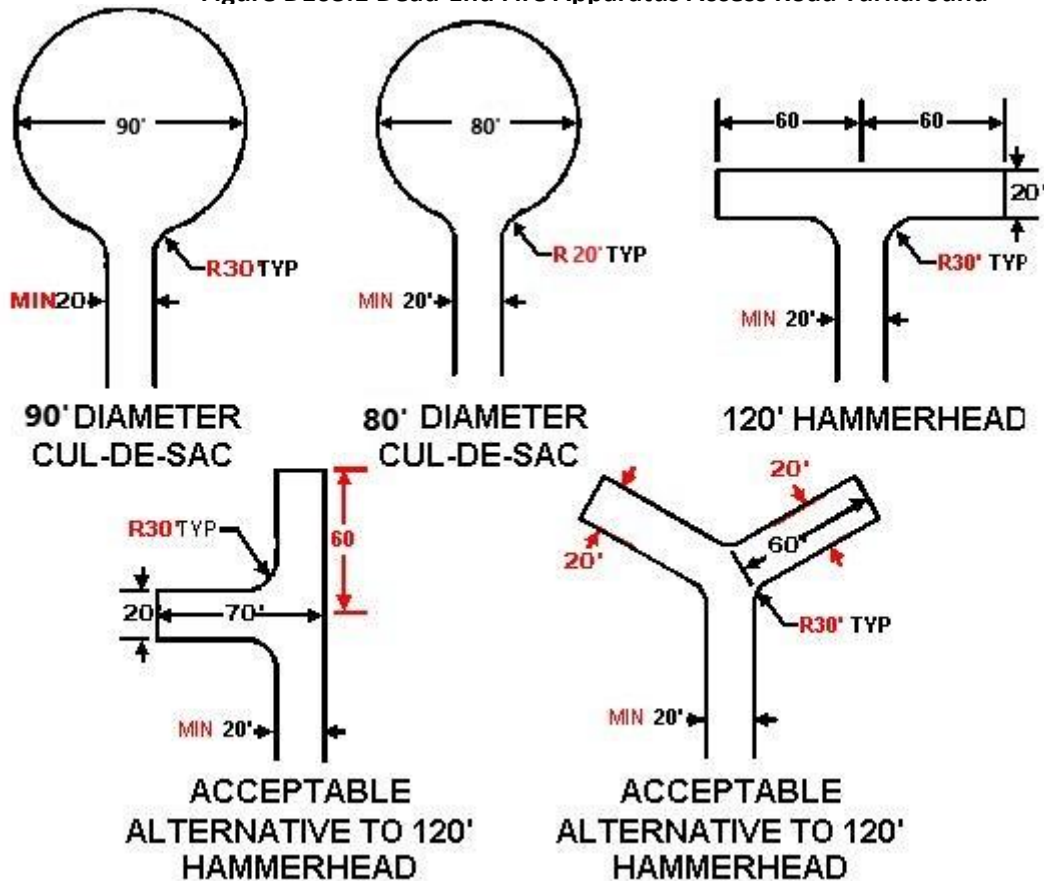
**Private Driveway.** A private driveway is defined as a driveway that is 12-foot-wide minimum and intended for the use of occupants of no more than two single-family dwelling units, or one two-family dwelling unit. If the most remote area of the dwelling unit's exterior is located more than 150 feet from an approved fire apparatus access road, then the private driveway must meet minimum design standards of this code related to fire department access to include, but not limited to surface, weight support, grade, apparatus turnarounds, etc. as determined by the fire code official. The fire code official is authorized to increase the minimum width requirement where sharp curves and grades are factors. [D102.2]

**Dead Ends.** Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an *approved* area for turning around fire apparatus. [D103.1, D103.4]

**Exceptions:** When all buildings are equipped throughout with approved automatic sprinkler systems installed in accordance with NFPA 13, NFPA 13R or NFPA 13D/IRC P2904 the fire code official is authorized to allow a dead-end fire apparatus road to extend to 300 feet before a turnaround is required.

**Fire Apparatus Access Road Turnaround.** Fire apparatus access road turnarounds shall be designed and constructed utilizing Figure D103.1 and the City of Canton Unified Development Code (UDC). Specifically, all residential and commercial/industrial court Cue-De-Sac designs shall adhere to the City of Canton Unified Development Code (UDC). All designs must be *approved* by the fire code official (see design pages) [D103.1, D103.4]

Figure D103.1 Dead-End Fire Apparatus Access Road Turnaround



**TABLE D103.4.1**  
**REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS**  
**FIRE SPRINKLER PROVISION EXCEPTION**

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-300	20	None Required
301-500	20	120-foot Hammerhead, 60-foot "Y" or 90-foot diameter cul-de-sac in accordance with Figure D 103.1
501-750	20	120-foot Hammerhead, 60-foot "Y" or 90-foot diameter cul-de-sac in accordance with Figure D 103.1
Over 750		Special Approval Required

For SI: 1 foot = 304.8 mm

**Intermediate Fire Apparatus Turnarounds.** The fire code official is authorized to require an intermediate fire apparatus turnaround where a single point of access exceeds 500 feet or when development projects utilize an alternative streets design in accordance with the City of Canton Unified Development Code (UDC). All designs must accommodate for fire apparatus turn radius requirements and be *approved* by the fire code official. [D104.4.2]

**Signs.** Where required by the fire code official, fire apparatus access roads shall be marked with permanent NO PARKING – FIRE LANE signs complying with Figure D103.6 below and red painted curbs. All sign locations must be *approved* by the fire code official. [D103.6 thru D103.6.4]



FIGURE D103.6  
 FIRE LANE SIGNS

**Roads between 16 to 22 feet in width.** NO PARKING – FIRE LANE signs shall be posted along both sides of the access route.

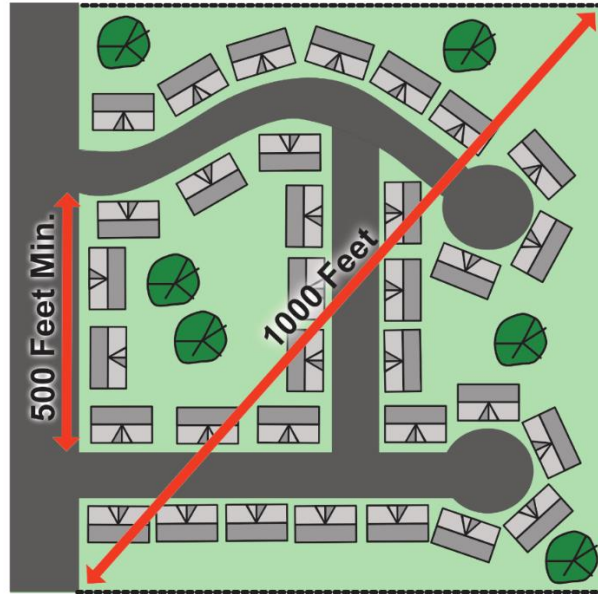
**Roads between 22 to 28 feet in width.** NO PARKING – FIRE LANE signs shall be posted along one side of the access route.

**Fire Apparatus Access Road Turnarounds.** NO PARKING – FIRE LANE signs shall be posted along both sides of the turnaround areas.

**Cul-de-sacs.** NO PARKING – FIRE LANE signs shall be posted along the outside of the turnaround area when required by the fire code official

**Two Points of Access Required.** Some developments upon reaching established thresholds are required to provide two access points into the project. Providing two points of fire apparatus access has several benefits to include the availability of a second means of access should the primary means be obstructed and the second point of access may serve as an alternative exit/evacuation route during emergency events.

When two points of access are required, they shall be placed a distance apart equal to no less than one half of the length of the maximum overall diagonal dimension of the property or area to be served, and be measured in a straight line between accesses. The second access road must be made available to the public and cannot be designated for sole use by emergency responders unless otherwise *approved* by the *fire code official*. [D104, D106, D107]



**Note:** Main road containing two access points to development should not be a dead-end.

### **Commercial and Industrial Developments:**

Buildings or facilities exceeding 30 feet or 3 stories in height shall have at least 2 means of fire apparatus access.

Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least 2 means of fire apparatus access. If the buildings or facilities are provided with an approved automatic fire sprinkler system, the gross building area can be increased to 124,000 square feet with one access road.

### **Multi-family Residential Developments:**

Multi-family residential projects having more than 100 dwelling units shall be provided with at least 2 means of fire apparatus access.

Multi-family residential projects of up to 200 dwelling units, which are provided with an approved fire sprinkler system, may have one means of fire apparatus access.

### **One or Two Family Residential Developments:**

Developments where the number of dwelling units exceeds 120, shall be provided with separate and approved fire apparatus access roads.

**Exception 1:** Where there are more than 120 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, access from two directions shall not be required.

**Exception 2:** A development with a single access is allowed to a maximum of 100 dwelling units when a viable future secondary access is platted as public right-of-way and constructed to public street standards to the property line of the subdivision. This includes circumstances involving the extension of an existing development by means of adding new lots or dwellings.

**Exception 3:** The fire apparatus access roads cannot be installed because of location on the property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided. Plans shall accompany the written request that delineate improvements to proposed fire apparatus access roads approved by the fire code official of the local responding fire department. Recommended compliance alternatives for residential developments having less than the minimum of two entrances includes, but is not limited to one of more of the following alternative remedies:

Enhanced turning radii to meet local responding fire department requirements; and/or

Increased road widths to meet local responding fire department requirements; or

Fire Lane signs per D103.6 in locations determined by the Fire Code Official; or

The absence of dead-end streets and cul-de-sacs; and unless the requirements meet or exceed Table D103.4 for Fire Apparatus Access Roads; or

The primary entrance roadway being a boulevard with medians and each lane meeting fire access road widths; or

Single entrance roads providing a dedicated emergency lane separating each drive lane; or

Additional fire apparatus access road which is permitted to be a roadway or approved surface not accessible to motor vehicles, designed by a registered design professional to meet the loading requirements and minimum specifications of Appendix D; and this surface provides all weather conditions capabilities for emergency fire department access; or

Statement by Fire Code Official that the Plans submitted meet the requirements of Exception 3 and/or Appendix D for access by local responding fire department

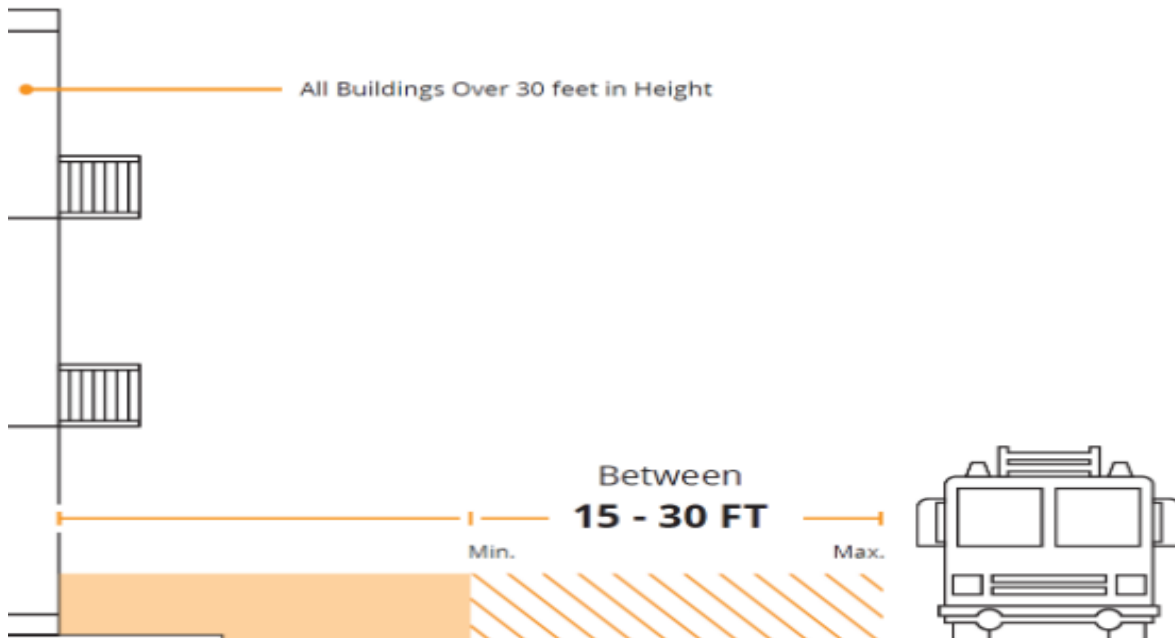
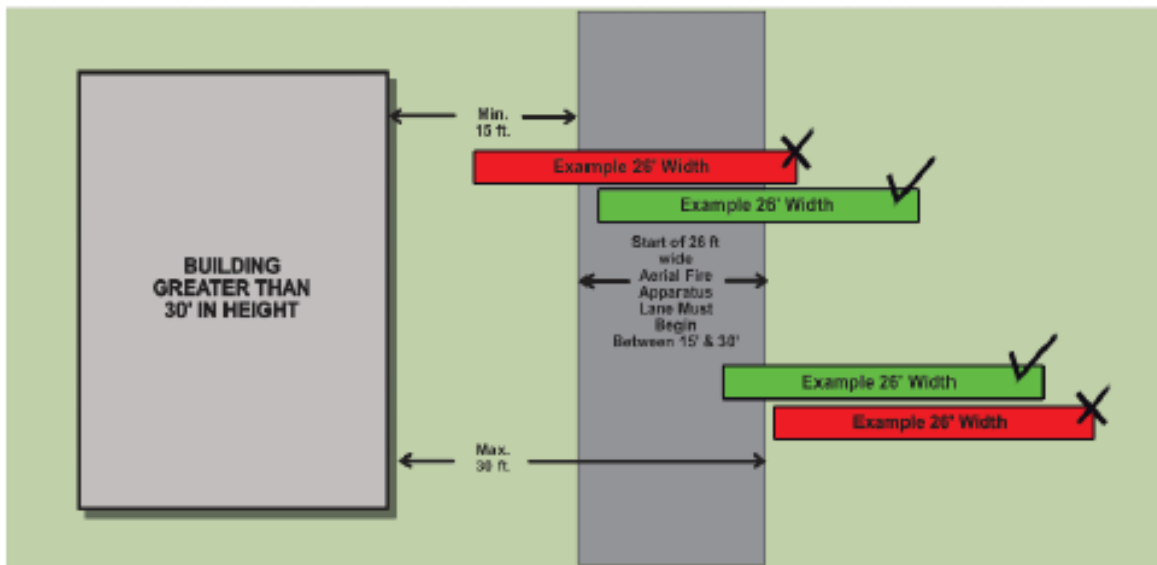
Pursuant to O.C.G.A. Title 25-2-12 (e)(4) the local fire official, building official, or developer may obtain a waiver when adequate access appropriate for the fire apparatus of the local responding fire department is not met or provided by using alternative methods on a waiver form designed and prescribed by the Safety Fire Commissioner. The State Fire Marshal or designated representative shall respond within 30 days for the decision for approval or disapproval or recommendations for modifications to the Plan. If the 30-day time frame is not met, the Plans submitted shall be deemed to be approved.



**Building Access for Ladder Truck Operations.** Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), *approved* aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by 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. [D105]

Aerial fire apparatus access roadways shall have a minimum unobstructed width of 26 feet in the immediate vicinity of any building or portion of building. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The location of the aerial fire apparatus road must be *approved* by the *fire code official*.

**Exception:** Buildings equipped throughout with an approved NFPA 13 automatic sprinkler system installed in accordance with Section 903.3.1.1 and when *approved* by the *fire code official*. NFPA 13R systems will not be considered.



# **Fire Apparatus access road gates & Private Entry Gates**

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## **Fire Apparatus Road Gates**

Gates securing the fire apparatus access roads shall comply with all of the following criteria:

Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet (3658 mm).

Gates shall be of the swinging or sliding type.

Construction of gates shall be of materials that allow manual operation by one person.

Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.

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.

Methods of locking shall be submitted for approval by the fire code official.

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 F2200.

## **Private Entry Gates**

Private gates for single family homes or multi-family complexes shall be installed with back-up batteries that are programmed to fail safe (open completely) during a power outage. This applies to all gate configurations.

## **Code References**

**International Fire Code (2018 Edition), as amended by the State of Georgia**

**City of Canton Unified Development Code**