

NOT YET REVIEWED/FINALIZED BY ALPINE FIRE CHIEF

Christine Wagner

From: Robert Wagner
Sent: Tuesday, June 18, 2024 3:56 PM
To: mulevogt@msn.com
Cc: Christine Wagner
Subject: Alpine Meadows Fire Access Road
Attachments: IFC Appendix D Approved Fire Apparatus Access Roads.pdf

Mayor and Council,

Attached are code sections from the Adopted International Fire Code in reference to Oatgrass Street egress from County Road 100.

I met with the Alpine Fire Chief in regards to this request from the Alpine Meadows HOA to block off this entrance at the intersection of County Road 100 and Oatgrass Street.

As you see in section D107, two separate and approved fire apparatus access roads are required, currently there are three. Section D107.2 Requires the two fire apparatus access roads to be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses. The Oatgrass access from County Road 100 cannot be permanently closed off as it does not meet this requirement. A gate can be installed following Section D103.5 if desired. Prior to construction please contact the Fire Department and the Town of Alpine as there is a manhole just off of County Road 100 that needs to be considered prior to construction.

The Oatgrass Street section of road between County Road 100 and Columbine is less 150 feet in length, therefore, a fire apparatus turnaround is not required.

APPENDIX D

D106.3 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 property or area to be served, measured in a straight line between accesses.

❖ This concept is similar to the one dealing with the remoteness of exits in Section 1007.1.1. One of the primary reasons for multiple access roads is to ensure that if one access road is blocked or otherwise unavailable, another will allow access by the fire department. Therefore, where more than one access road is required, those roads must be separated by enough distance to avoid a situation where both would be blocked or unavailable simply because they are too close to one another.

**SECTION D107
ONE- OR TWO-FAMILY
RESIDENTIAL DEVELOPMENTS**

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

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, 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*.

❖ This section requires that one- and two-family dwelling subdivisions with more than 30 dwellings have more than one fire apparatus access road into the development. The second access road is needed in case one access road for any reason becomes unusable

Exception 1 states that where there are more than 30 dwelling units equipped throughout with an approved sprinkler system in accordance with NFPA 13, 13R or 13D, as applicable or approved, a second access road is not required. This recognizes the effectiveness and reliability of properly designed and installed automatic sprinkler systems in mitigating the need to have two access points.

Exception 2 requires approval by the fire code official any time a new house is constructed on an existing access road. Once the maximum number of dwelling units allowed by this section has been reached, no further development may occur unless the fire code official determines that there will be a future road connection that will prevent creation of an excessive dead-end situation with no means for

apparatus turnaround. Such determination by the fire code official should consider the phased development of an individual project or adjacent projects. Requiring evidence of legal agreements for specific future development would be prudent, especially in times of economic uncertainty. This gives the fire code official an opportunity to assess whether additional access is required in the interim.

D107.2 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 property or area to be served, measured in a straight line between accesses.

❖ This concept is similar to the one dealing with the remoteness of exits in Section 1007.1.1. One of the primary reasons for multiple access roads is to ensure that if one access road is blocked or otherwise unavailable, another will allow access by the fire department. Therefore, when more than one access road is required, those roads must be separated by enough distance to avoid a situation where both would be blocked or unavailable simply because they are too close to one another.

**SECTION D108
REFERENCED STANDARDS**

ASTM F2200—13	Standard Specification for Automated Vehicular Gate Construction	D103.5
UL 325—02	Door, Drapery, Gate, Louver, and Window Operators and Systems, with Revisions through June 2013	D103.5

Bibliography

The following resource material was used in the preparation of the commentary for this appendix of the code.

2015 International Code Interpretations. Washington, DC: International Code Council, 2015.

D103.4 Dead ends. Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) shall be provided with width and turnaround provisions in accordance with Table D103.4.

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

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
151-500	20	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure D103.1
Over 750		Special approval required

For SI: 1 foot = 304.8 mm.

❖ Though the widths of the access roadways may be sufficient to move and operate the necessary equipment at a fire scene, they may not be wide enough for the vehicles to turn around. On through streets this is not an issue, but when the road is a dead end and is sufficiently long, some means are necessary to enable fire department vehicles to turn around rather than having to back up over excessive distances. The three major methods used to provide a turnaround area are a cul-de-sac, hammerhead and "Y." Figure D103.1 shows examples of all three types. Section 503 does not give any specific guidance. Each jurisdiction can choose from a variety of ways to accomplish this.

Dead ends require a fire vehicle turnaround when they exceed 150 feet (45 720 mm). The turnaround is to be located at the end of the roadway or within 150 feet (45 720 mm) of the end of the roadway to limit the backing distance to a maximum of 150 feet (45 720 mm). Backing a large vehicle, such as a tower ladder, over 150 feet (45 720 mm) can be especially challenging, especially in cases where the engineer may have to use a video camera-equipped back-up system due to the vehicle's length. Refer to the table for more guidance in determining the kind of turning radius required. In any event, the configuration of the roadway and turnaround must be approved by the fire code official.

This table, which is based on the length of a dead end, sets minimum widths and recommends which types of turnarounds should be used. The diagrams in Figure D103.1 show the configurations of these turnarounds.

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

1. 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).
2. Gates shall be of the swinging or sliding type.
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 F2200.

❖ Gates are sometimes required by the fire code official to limit access to certain hazardous fire areas. They are also often used as a security mechanism for gated communities and complexes. Section 503 discusses the use of gates in more general terms whereas this section provides more specific guidelines. The nine requirements stated here all must be complied with where applicable. They focus on maintaining the required width, ease of use and ability to open in an emergency. The construction and installation of gates and methods for opening the gates, whether by manual means or by a listed electrical mechanism, must comply with the referenced standards and be approved by the fire code official. This ensures that the operating procedures of the fire department are taken into account. See the commentary to Sections 503.5 and 503.6 for further information on gates.

D103.6 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. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted