



## **Hamilton Rural Fire District**

**P.O. Box 1994  
Hamilton, MT 59840**

### **FIRE PROTECTION STANDARDS**

These revised Fire Protection Standards were adopted on October 12, 2016 as authorized in the Ravalli County Subdivision Regulations 12-9 F 3.

The Hamilton Rural Fire District has established Fire Protection Standards for proposed new subdivisions within the Rural Fire District. The requirements were established with consideration for the life and safety of the residents of the district, as well as the volunteer firefighters who protect the district, to mitigate possible harm to the general public and to minimize the fiscal impacts to the Hamilton Rural Fire District.

In establishing the requirements, emphasis was given to the adopted International Fire Code (2012), The Ravalli County Subdivision Regulations, The Ravalli County Road Department Standards, and the 2010 Fire Protection Guidelines for Wildland Residential Interface Development. These Publications and Articles establish rules for dealing with fire apparatus access roads, fire department access to buildings, water supplies for fire protection, installation and maintenance of fire protection systems and clearance of brush and vegetative growth from roadways.

Consideration was also given to Section 23.12.601 Administrative Rules of Montana, which is adopted pursuant to authority of 50-3-102 (2) and 50-3-103, MCA, which incorporates by reference the International Fire Code (IFC) (2012) and establishes a minimum fire prevention code for Montana.

Every effort has been made to use words and phrases consistent with the definitions given in the above-mentioned publications.

#### **ACCESS**

The Fire District requires that all roads and bridges meet or exceed, and are maintained to, the requirements of the IFC, Chapter 5 - Fire Service Features, which reads in part:

#### **SECTION 503 FIRE APPARATUS ACCESS ROADS**

##### **503.1 Where required.**

Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.3.

### **503.1.1 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 (45 720 mm) 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.

**Exception:** The Fire District is authorized to increase the dimension of 150 feet (45 720 mm) where:

1. The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an alternative means of fire protection is provided.
3. There are not more than two Group R-3 or Group U occupancies.

### **503.1.2 Additional access.**

The Fire District 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.

### **503.2 Specifications.**

Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.8.

#### **503.2.1 Dimensions.**

Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).

#### **503.2.2 Authority.**

The Fire District shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations

#### **503.2.3 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.

#### **503.2.4 Turning radius.**

The required turning radius of a fire apparatus access road shall be determined by the Fire District.

#### **503.2.5 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.

#### **503.2.6 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 when required by the Fire District. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the Fire District.

#### **503.2.7 Grade.**

The grade of the fire apparatus access road shall be within the limits established by the Fire District based on the fire department's apparatus.

#### **503.2.8 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 District based on the fire department's apparatus.

#### **503.3 Marking.**

Where required by the Fire District, 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.

#### **503.4 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 in Section 503.2.1 shall be maintained at all times.

##### **503.4.1. Traffic calming devices.**

Traffic calming devices shall be prohibited unless approved by the Fire District.

#### **503.5 Required gates or barricades.**

The Fire District 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.

#### **503.5.1 Secured gates and barricades.**

When 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 District.

**Exception:** The restriction on use shall not apply to public officers acting within the scope of duty.

#### **503.6 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.

**While not all parts of the IFC are listed above, it is the responsibility of the Subdivision Developer to construct and maintain all fire apparatus access roads to comply with all aspects of the IFC and Ravalli County Road Standards. For additional information on fire apparatus access, see Appendix D of the IFC.**

### **SPECIFIC REQUIREMENTS:**

The Fire District requires that fire apparatus access to all lots (premises) meet the requirements of IFC, Section 503 as soon as construction begins with a temporary or permanent address posted at the premises driveway and upon occupancy with a permanent address posted in accordance with the IFC.

### **BUILDING STANDARDS**

The Fire District will request that all residential buildings (less than a 4 flex) be built to International Residential Building Code and require that all commercial buildings be built to comply with the International Building Code, in order to protect persons and property, and that all subdivisions shall be planned, designed, constructed and maintained so as to minimize the risk of fire and to permit effective and efficient suppression of fires.

### **WATER SUPPLY**

#### **One- and two-family dwellings.**

The Insurance Services Office (ISO) uses the following flow rates:  
For 1- and 2-family dwellings not exceeding 2 stories in height, the following Needed Fire Flows at a duration of 1 hour shall be used:

Distance Between Buildings	Needed Fire Flow
More than 100'	500 gpm
31 - 100'	750 gpm
11 - 30'	1,000 gpm
10' or less	1,500 gpm

The Hamilton Rural Fire District will use these fire flows for all subdivisions of one- and two-family dwellings not exceeding two (2) stories in height.

**Buildings other than one- and two-family dwellings**

All commercial, industrial, or multi-family dwellings requiring higher fire flows shall meet the fire-flow requirements and flow duration established in IFC Section B105.2.

**B105.2 Buildings other than one- and two-family dwellings.**

The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

**Exception;** A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the IFC. The resulting fire-flow shall not be less than 1,500 GPM for the prescribed duration as specified in Table B 105.1.

**TABLE B105.1 MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS**

**TABLE B105.1  
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS**

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
Type IA and IB*	Type IIA and IIIA*	Type IV and V-A*	Type IIB and IIIB	Type V-B		
0-22,700	0-12,700	0-8,200	0-5,900	0 3,600	1,500	
22,701-30,200	12,701 17,000	8,201-10,900	5,901-7,900	3,601 4,800	1,750	
30,201-38,700	17,001 21,800	10,901-12,900	7,901-9,800	4,801 6,200	2,000	
38,701-48,300	21,801 24,200	12,901 17,400	9,801 12,600	6,201 7,700	2,250	
48,301-59,000	24,201 33,200	17,401 21,300	12,601-15,400	7,701 9,400	2,500	
59,001-70,900	33,201 39,700	21,301-25,500	15,401-18,400	9,401 11,300	2,750	
70,901-83,700	39,701 47,100	25,501 30,100	18,401-21,800	11,301 13,400	3,000	
83,701 97,700	47,101 54,900	30,101 35,200	21,801 25,900	13,401 15,600	3,250	3
97,701 112,700	54,901 63,400	35,201 40,600	25,901 29,300	15,601 18,000	3,500	
112,701 128,700	63,401 72,400	40,601 46,400	29,301 33,500	18,001 20,600	3,750	
128,701-145,900	72,401 82,100	46,401-52,500	33,501 37,900	20,601 23,300	4,000	
145,901-164,200	82,101-92,400	52,501-59,100	37,901 42,700	23,301-26,300	4,250	4
164,201-183,400	92,401-103,100	59,101-66,000	42,701 47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701 53,000	29,301-32,600	4,750	
203,701 225,200	114,601 126,700	73,301-81,100	53,001 58,600	32,601 36,000	5,000	
225,201 247,700	126,701-139,400	81,101-89,200	58,601 65,400	36,001 39,600	5,250	
247,701 271,200	139,401-152,600	89,201-97,700	65,401 70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601 77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001 83,700	47,401 51,500	6,000	
		115,801-125,500	83,701 90,600	51,501-55,700	6,250	
		125,501-135,500	90,601 97,900	55,701 60,200	6,500	
		135,501-145,800	97,901 106,800	60,201-64,800	6,750	
		145,801-156,700	106,801 113,200	64,801-69,600	7,000	
		156,701-167,900	113,201 121,300	69,601-74,600	7,250	
		167,901 179,400	121,301 129,600	74,601-79,800	7,500	
		179,401-191,400	129,601-138,300	79,801-85,100	7,750	
		191,401 Greater	138,301-Greater	85,101 Greater	8,000	

For SI: 1 square foot = 0.0929 m<sup>2</sup>, 1 gallon per minute = 3.785 L m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *International Building Code*.

b. Measured at 20 psi residual pressure

For ~~minor~~ residential subdivisions of 30 lots or less, the Hamilton Rural Fire District realizes the financial burden of installing and maintaining a water supply and or storage tanks capable of providing the required water flows and is willing to accept a payment of \$900.00 (Nine Hundred Dollars) per lot, in lieu of providing the required water supply. Payment of \$900.00 per lot will be due upon approval and recording of the final plat of the subdivision. The Hamilton Rural Fire District will use funds paid in lieu of the water supply required by the IFC to maintain or improve fire protection within the district, for the development of water supplies, or capital improvements.

**EXCEPTIONS: 1.** When all buildings in the subdivision are completely protected with an approved automatic sprinkler system, the above listed water supply and in lieu of payment schedule may be reduced by 50% (fifty percent). The Subdivision Covenants

must state that "All residences constructed within the subdivision will be protected with an approved automatic sprinkler system." Payment for the reduced amount of \$450.00 per lot will be accepted at the time the Subdivision is approved. If at any time any residence is built within the subdivision without an approved sprinkler system, all lots will be subject to an additional \$450.00 payment, regardless of whether they have sprinklers in residences located on them or not.

**Maintenance:**

The water supply system installation, upkeep and maintenance will be the responsibility of the Subdivision Developer or Home Owners Association (HOA), pursuant to IFC Section 507.5.2. HOA documents shall describe how water supply systems are to be maintained currently and in the future, by whom, and how local Fire District can be assured that the water supply will function appropriately. An easement for unrestricted use by the fire department, in perpetuity, of the water supply system shall be recorded and noted on the plat. The fire department will not be responsible for any maintenance, electricity, or any costs associated with enhancements, upgrades or other measures necessary to assure the system functions to original specifications.

**Developments in the Wildland Urban Interface**

Developments in the Wildland Urban Interface (WUI) or High Fire Hazard Areas will be required to comply with additional design standards as specified in the Ravalli County Subdivision Regulations Section 12-5.

# APPENDIX D

## FIRE APPARATUS ACCESS ROADS

### SECTION D101 GENERAL

#### D101.1 Scope.

Fire apparatus access roads shall be in accordance with this appendix and all other applicable requirements of the *International Fire Code*.

### SECTION D102 REQUIRED ACCESS

#### D102.1 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 (34 050 kg).

### SECTION D103 MINIMUM SPECIFICATIONS

#### D103.1 Access road width with a hydrant.

Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure 0103.1).

#### D103.2 Grade.

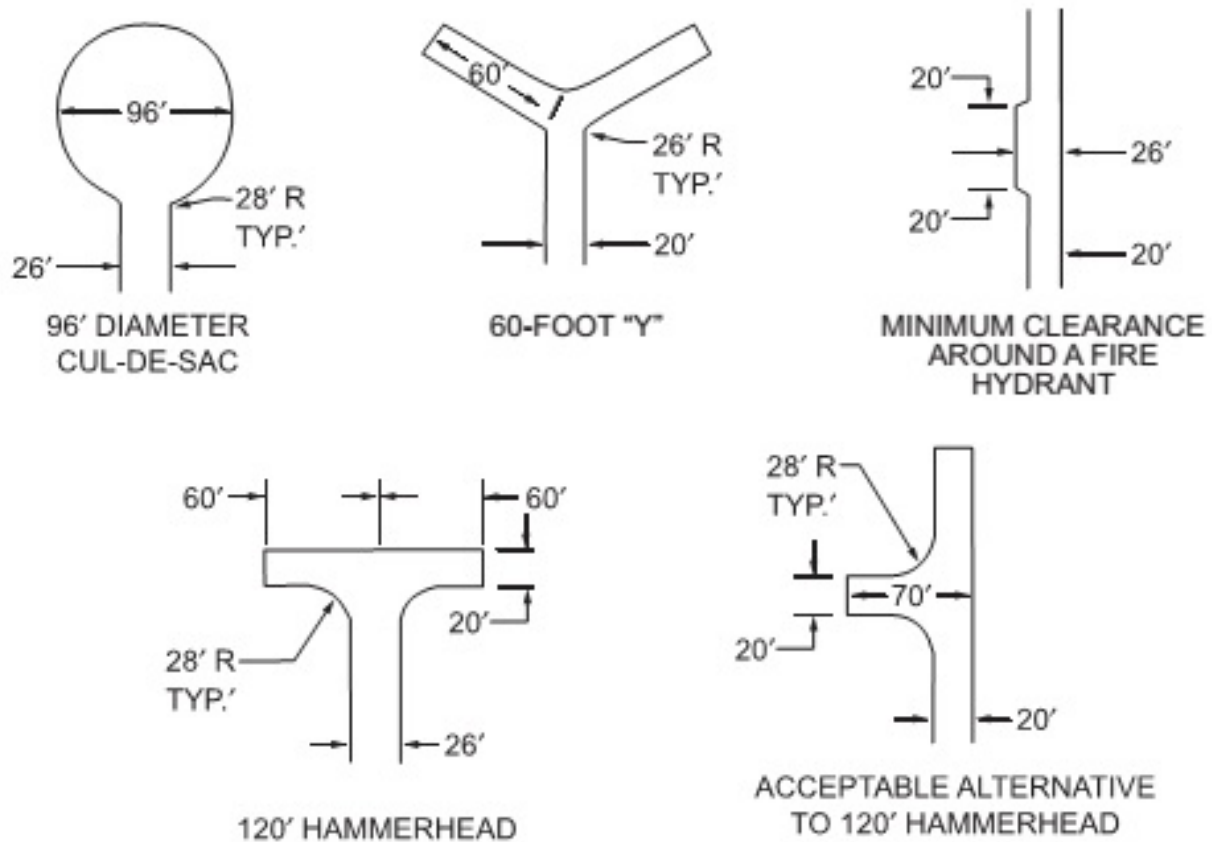
Fire apparatus access roads shall not exceed 10 percent in grade.

**Exception:** Grades steeper than 10 percent as *approved* by the fire chief.

#### D103.3 Turning radius.

The minimum turning radius shall be determined by the *fire district*.





For SI: 1 foot = 304.8 mm.

**FIGURE D103.1 DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND**

**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 0103.4.

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 0103.1
501-750	26	120-foot Hammerhead, 60-foot "Y" or 96-foot diameter cul-de-sac in accordance with Figure 0103.1
Over 750	Special approval required	

For SI: 1 foot = 304.8 mm.

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

**D103.5 Fire apparatus access road gates.**

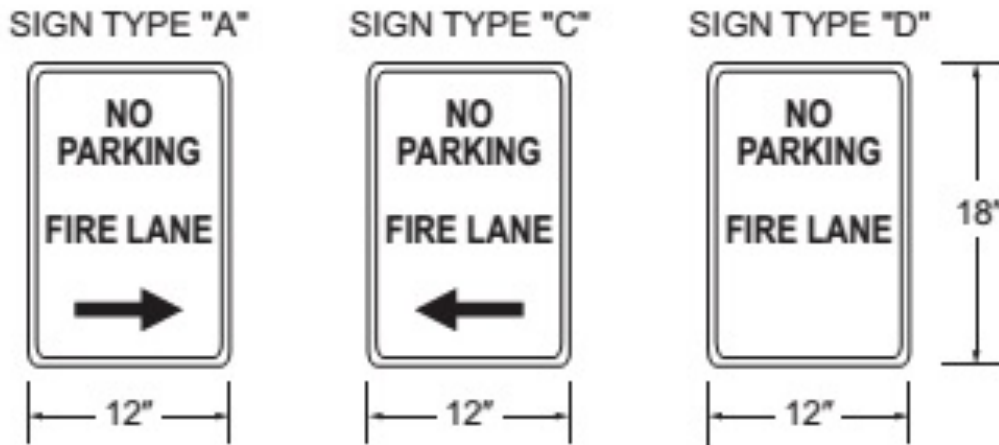
Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 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 district*.
6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools or when a key box containing the key(s) to the lock is installed at the gate location.
7. Locking device specifications shall be submitted for approval by the *fire district*.

8. Electric gate operators, where provided, shall be *listed* in accordance with UL 325.
9. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

**D103.6 Signs.**

Where required by the *fire district*, fire apparatus access roads shall be marked with permanent NO PARKING-FIRE LANE signs complying with Figure 0103.6. 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 on one or both sides of the fire apparatus road as required by Section 0103.6.1 or 0103.6.2.



**D103.6.1 Roads 20 to 26 feet in width.**

Fire lane signs as specified in Section 0103.6 shall be posted on both sides of fire apparatus access roads that are 20 to 26 feet wide (6096 to 7925 mm).

**D103.6.2 Roads more than 26 feet in width.**

Fire lane signs as specified in Section 0103.6 shall be posted on one side of fire apparatus access roads more than 26 feet wide (7925 mm) and less than 32 feet wide (9754 mm).

**SECTION D104  
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS**

**D104.1 Buildings exceeding three stories or 30 feet in height.**

Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have at least two means of fire apparatus access for each structure.

**D104.2 Buildings exceeding 62,000 square feet in area.**

Buildings or facilities having a gross *building area* of more than 62,000 square feet (5760 m<sup>2</sup>) shall be provided with two separate and *approved* fire apparatus access roads.

**Exception:** Projects having a gross *building area* of up to 124,000 square feet (11,520 m<sup>2</sup>) that have a single *approved* fire apparatus access road when all buildings are equipped throughout with *approved automatic sprinkler systems*.

**D104.3 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 lot or area to be served, measured in a straight line between accesses.

**SECTION D105  
AERIAL FIRE APPARATUS ACCESS ROADS**

**D105.1 Where required.**

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.

**D105.2 Width.**

Aerial fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm), exclusive of shoulders, in the immediate vicinity of the building or portion thereof.

**D105.3 Proximity to building.**

At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet (4572 mm) and a maximum of 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the *fire district*.

**D 105.4 Obstructions.**

Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building. Other obstructions shall be permitted to be placed with the approval of the *fire district*.

**SECTION D106  
MULTIPLE-FAMILY RESIDENTIAL DEVELOPMENT**

**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.

**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* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

**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*.

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

**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, and shall meet the requirements of Section 0104.3.

Exceptions:

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.

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 district*.