Farmington City Fire Department

Commercial Plan Review Guide

(Note: *Compliance with the information on this document does not guarantee compliance with the State of Utah Fire and Building Codes, nor does it guarantee issuance of a permit.)*

This guide is not all-inclusive of applicable codes but serves to help applicants submit complete and accurate fire plans. A thorough and precise submittal helps speed up the plan review process. Ensuring completeness and accuracy from the beginning reduces delays and minimizes requests for revisions by the Fire Marshal. Applicants are responsible for submitting complete applications. Incomplete applications will be rejected or returned during the review process. Plans must be legible, with a readable typeface and a clear contrast between light and dark areas to ensure readability.

Plans should be easily readable and properly labeled with high contrast for clarity. Proper scaling and organization are essential for an efficient review process. Additionally, contact information for fire plan reviews in other jurisdictions is included for reference. For questions or further guidance, applicants should contact the appropriate fire department based on the project's location.

Fire Chief – Rich Love
Desk – 801-451-2842
Cell – 801-682-5778
Rlove@farmington.utah.gov

82 North 100 East, UT 84074

Fire Marshal – James Weston
Desk/Cell 801-837-8378
Jweston@farmington.Utah.gov

Farmington Fire Code References

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- 2021 International Fire Code 2021 International Fire Code (IFC)
- Utah State 2021 Amended Fire Code IFC-2021-edition-amendment-inserts-1-FINAL.pdf
- 2006 Utah Wildland Urban-Interface Code M:\data\CODES\STATE CODES\Utah\Lisa\Utah.wildland.final.titlepage.cdr
- NFPA 13 Standard for the Installation of Sprinkler Systems NFPA 13 Standard Development
- NFPA 13R Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies NFPA 13R Standard Development
- NFPA 14 Standard for the installation of Standpipe and Hose Systems NFPA 14 Standard Development
- NFPA 72 National Fire Alarm Code NFPA 72 Code Development
- NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations NFPA 96 Standard Development
- NFPA 1142 Standard on Water Supplies for Suburban and Rural Firefighting NFPA 1142 Standard Development
- NFPA 22 Standard for Water Tanks for Private Fire Protection NFPA 22 Standard Development
- NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances NFPA 24 Standard Development
- Farmington City Development Office Development
- Farmington Fire Department

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Commercial Plan Review Guide

Site Plan Sheet Checklist

General Fire Information	
Site address/Tract or Tentative Tract/ Parcel Map Number shown?	__ Yes
Standard site plan notes included?	__ Yes
Location of all buildings on the site, including setbacks from property lines?	__ Yes
Location and Identity of all exterior aboveground storage tanks, private utility equipment (e.g. cell phone towers), non-vehicle storage areas or process equipment locations?	__ Yes
Location of proposed or existing overhead utilities or solar arrays?	__ Yes
Site engineering scale?	__ Yes
Landscape and vegetation details?	__ Yes
Building information summary table to include building area; construction type; number of floors above and/or below grade levels; occupancy uses; and fire sprinkler/alternate fire suppression systems provided?	__ Yes

Fire Access Roads	
Existing and proposed fire access roads clearly marked on the plan with required width, length, grade, turning radius, and surface?	__ Yes
Extent of fire access roadway(s) and adjacent parking areas/width clearly shown?	__ Yes
Any potential obstructions on access roads? (trees, overhead utilities, etc.)	__ Yes
Located within 150’ hose pull distance of exterior of all structures?	__ Yes
Walkable surfaces to required building openings shown?	__ Yes
Location of vehicle loading/unloading zones?	__ Yes
Is aerial apparatus access required? (see Aerial Fire Apparatus Proximity to Building for requirements)	__ Yes __ N/A

Building Location and Features	
Exterior walls, interior fire walls, interior/exterior stairways, elevator shafts and fire-resistive rating (if any). Show only exterior wall features locations of existing buildings?	__ Yes
Location of all roof projections/overhangs from exterior walls?	__ Yes __ N/A
Location of highest point on the road >30 feet above the level “Fire Dept Vehicle Access”?	__ Yes __ N/A
Location of building entry/egress points and loading doors/docks?	__ Yes
Location of building Knox Key Box (required if building has a fire alarm/suppression system)?	__ Yes __ N/A
Location of fire alarm panel?	__ Yes __ N/A
Location of fire alarm annunciator?	__ Yes __ N/A
Location of fire sprinkler riser room?	__ Yes __ N/A
Location of water flow alarm bell(s)?	__ Yes __ N/A
Location of exterior utility meters/shutoffs? (natural gas & electric)	__ Yes
Premises address signage location identification?	__ Yes
Location of all exterior trash/recycling enclosures/collection site? (N/A if interior collection)	__ Yes __ N/A

Fire Suppression Water Supplies	
Location of all existing or proposed fire hydrants, water tanks, or drafting sites?	__ Yes
New fire hydrants provided along required access roads?	__ Yes
Hydrant flow rate information at 20 psi residual pressure and main size?	__ Yes
Hydrant within 100’ of a fire department connection? (FDC)	__ Yes __ N/A

Farmington City Fire Department

Commercial Plan Review Guide

Plan Sheet Checklist Cont.

Fire Lane Identification	
If RED curbs are used Fire Lanes in PUBLIC right-of-way? (unless signs are provided)	__ Yes __ N/A
If RED curbs are used for Fire Lanes on PRIVATE property? (unless signs are provided)	__ Yes __ N/A
Contrasting stenciling identifying “FIRE LANE” for painted curbs? (unless signs are provided)	__ Yes __ N/A
Location of each “FIRE LANE – NO PARKING” sign shown? (unless signs are provided)	__ Yes __ N/A
Fire Lane identification shown 30’ on either side of any driveway entrance accessed from 28’ or less wide street, with on street parking?	__ Yes __ N/A
Aerial access fire lanes identified. Aerial access road 26’ wide and 90’ in length?	__ Yes __ N/A

Gates and Obstructions	
Location of all gates, fences, road bollards, and planters?	__ Yes __ N/A
Vehicle gates identified as manual or electric?	__ Yes __ N/A
Vehicle date detail drawings included?	
Pedestrian gates provided adjacent to electric gates?	__ Yes __ N/A
Emergency use-only vehicle gates have “No Parking” sign noted on plans?	__ Yes __ N/A
Knox key boxes/locks/switches noted on plans?	__ Yes __ N/A
Location and mature height of street trees?	__ Yes __ N/A

During Construction	
Method of temporary addressing?	__ Yes
Access to and through the project during construction?	__ Yes
Temporary fencing with Knox padlocks?	__ Yes __ N/A
Temporary water supply?	__ Yes __ N/A
Temporary standpipe?	__ Yes __ N/A

Fire Department Access – Fire Lanes/Fire Apparatus Access Roads

Scope and Purpose

The following information applies to commercial and/or industrial projects where the buildings do not exceed 30 feet in vertical distance between grade plane and the highest roof surface of the building. The highest roof surface of the building. The highest roof surface shall be determined by measurement of the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater. If the proposed building exceeds 30 feet in vertical distance, please see Fire Department Access- Aerial Fire Apparatus Access.

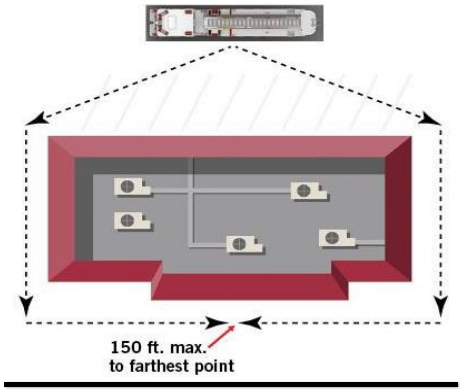
Definition

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.

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 drive aisle, and access roadway.

Required Access

Fire Apparatus shall have access to within 150 feet of all portions of a 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 a facility or building.



Exception: The Fire Code Official is authorized to increase the access dimensions of 150 feet where all of the following apply:

- The building is equipped throughout with an approved automatic sprinkler system.
- Fire apparatus access roads cannot be installed because of location of property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.
- There are not more than two Group R-3 or Group U occupancies. (Does not apply to structures built under IRC)

Fire Department Access – Fire Lanes/Fire Apparatus Access Roads Cont.

Surface

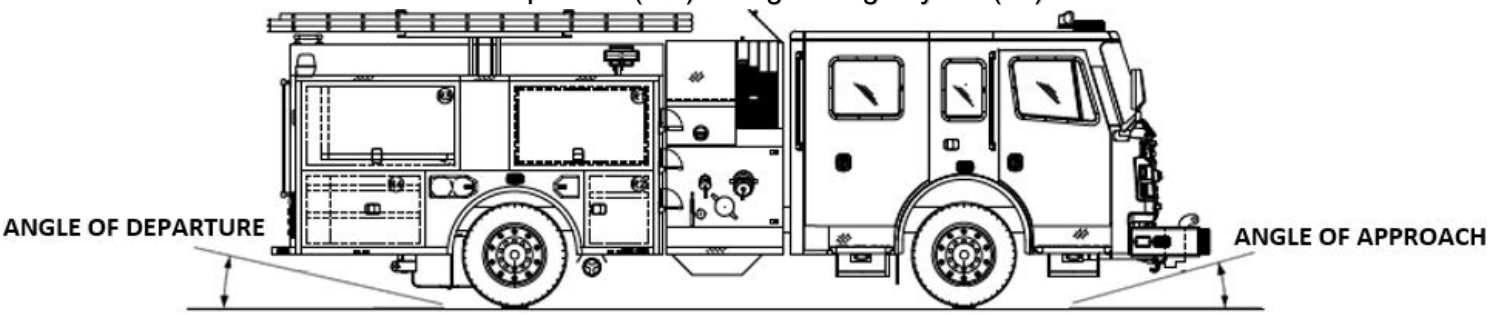
Approved Fire Apparatus Access roads shall be constructed of asphalt, concrete or other approved all-weather driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds.

Vertical Clearance

Fire Apparatus Access Roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

Grade

- Fire apparatus access roads shall not exceed 10 percent (10%) in grade longitudinally.
- Cross slope of a road section or within a turnaround area shall not exceed fire percent (5%).
- In order to accommodate proper angles of approach and departure, the gradient in fire access roads shall not exceed a five percent (5%) change along any ten (10) foot section.

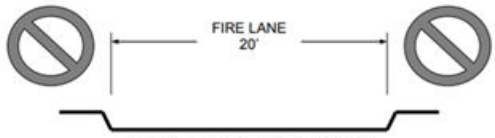


Fire Department Access – Fire Lanes/Fire Apparatus Access Roads Cont.

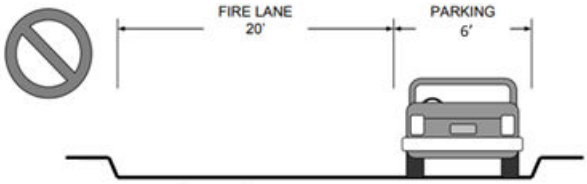
Width

A Fire apparatus access roads shall have a minimum unobstructed width (exclusive of shoulder) of not less than the following:

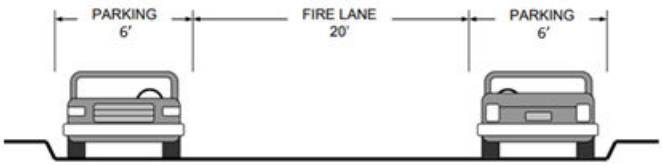
WIDTH (FEET)		
No parking	Parking on One Side (Parallel)	Parking on Both Sides (Parallel)
20	26	32



(20-26 FEET) NO PARKING



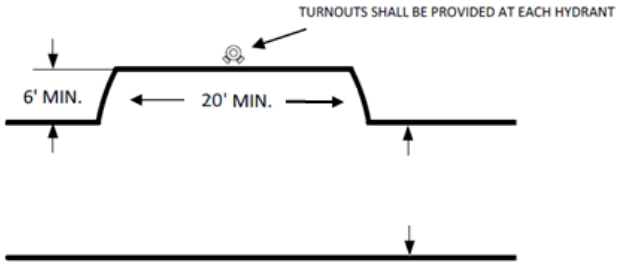
(26-32) PARKING ON ONE SIDE



(32+) PARKING ON BOTH SIDES

Exceptions:

- Dead-end fire apparatus access roads in excess of 501 feet shall be a minimum unobstructed width of 26 feet. (See “Dead Ends & Turnarounds”)
- Where Aerial Fire Apparatus Access Roads are required, see Fire Department Access – Requiring Aerial Fire Apparatus Access.
- Where a fire hydrant is located on a fire apparatus access road, the minimum unobstructed road width shall be 26 feet. See illustration below.

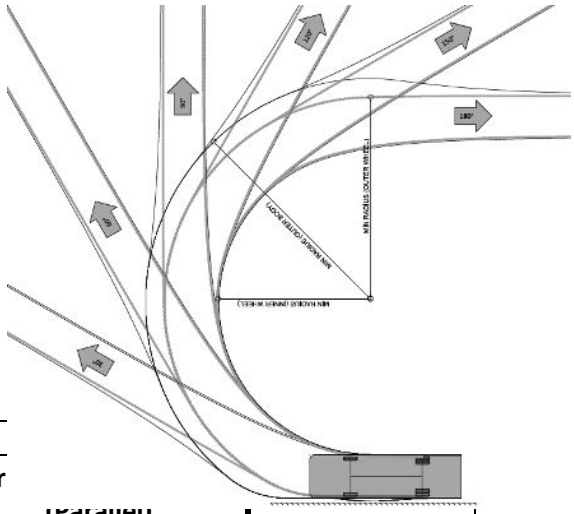


Fire Department Access – Fire Lanes/Fire Apparatus Access Roads Cont.

Turning Radius

Fire apparatus access road shall be designed to accommodate the following radius;

- 35 foot minimum inside turning radius.
- 55 foot minimum outside turning radius.



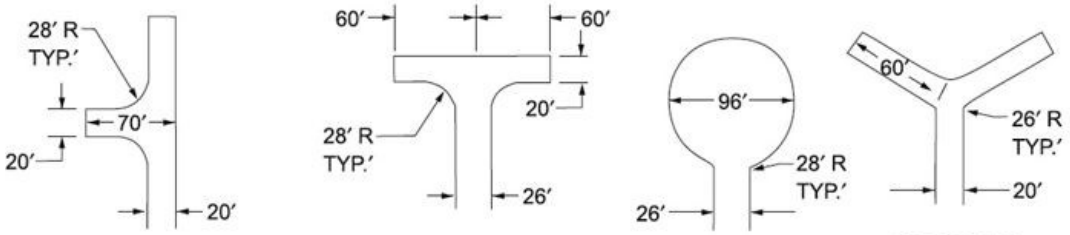
LENGTH (FEET)	WIDTH (FEET)			
	No Parking	Parking on One Side (Parallel)	Par (Parallel)	
0-150	20	26	32	Not Required
151-500	20	26	32	Required
501-750	26	32	38	Required
Over 750	Special Approval Required			

Turnarounds

A Dead-end fire apparatus access roads in excess of 150 feet shall be provided with width and turnaround provisions in accordance with International Fire Code Table D103.4 & Figure D103.1

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

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



ACCEPTABLE ALTERNATIVE TO 120′ HAMMERHEAD | 120′ HAMMERHEAD | 96′ DIAMETER CUL-DE-SAC | 60-FOOT "Y"

Fire Department Access – Fire Lanes/Fire Apparatus Access Roads Cont.

Signs & Markings

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 wide by 18 inches high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus roads as required by Section D103.6.1 or D103.6.2 (D103.6)

Gates

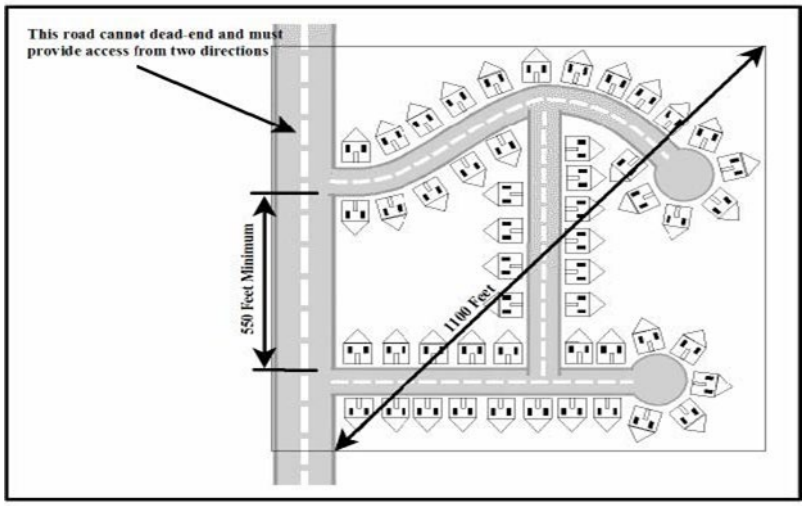
Gates securing the fire apparatus access roads shall comply with the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 20 feet. Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 12 feet.
2. Gates shall be of the horizontal swing, horizontal slide, vertical lift or vertical pivot 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 personnel for emergency access. Emergency opening devices shall be approved 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.

Fire Department Access – Fire Lanes/Fire Apparatus Access Roads Cont.

Two or More Means of Access

- 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.
    - **Exception:** Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road where all buildings are equipped throughout with approved automatic sprinkler systems.
- The Fire Marshal is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, conditions of terrain, climatic conditions or other factors that could limit access.
- Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than on half of the length of the maximum overall diagonal dimensions of the lot or area to be served, measured in a straight line between accesses.



Fire Department Access – **AERIAL** Fire Apparatus Access

Scope and Purpose

The following Fire Department Access requirement applies to commercial and/or industrial projects where building(s) have a vertical distance between grade plan and the highest roof surface of the building exceeds 30 feet. 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. If your project does not exceed this 30-foot ark, please see Fire Department Access – Fire Lanes/Fire Apparatus Access Roads – Commercial and Industrial Projects.

Definition

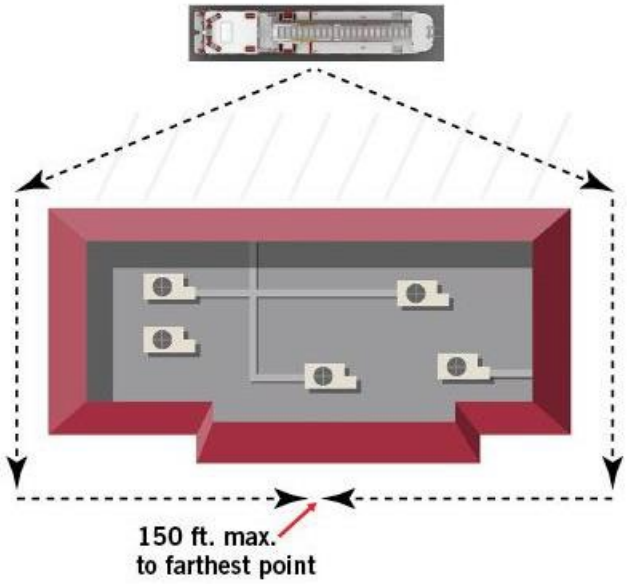
Fire Lane – A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

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 drive aisle, and access roadway.

Fire Department Access – **AERIAL** Fire Apparatus Access Cont.

Required Access

Fire Apparatus shall have access to within 150 feet of all portions of a 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 a facility or building.



Surface

Approved Fire Apparatus Access roads shall be constructed of asphalt, concrete or other approved all-weather driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds.

Vertical Clearance

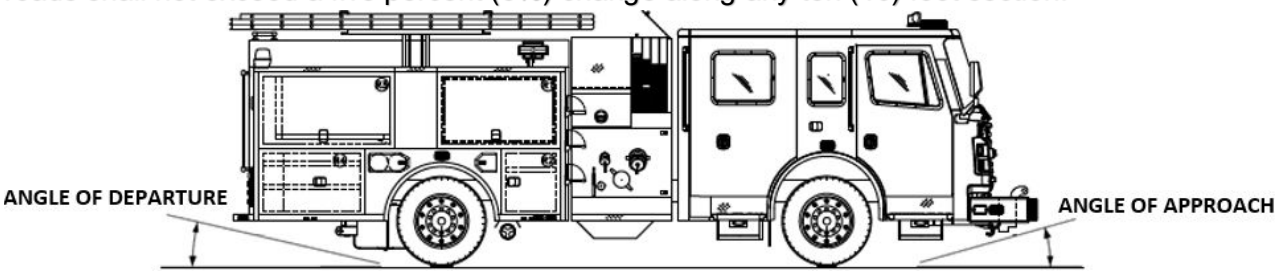
Overhead utility and power lines shall not be located over the aerial fire apparatus access road or between the aerial fire apparatus road and the building.

The Fire Code Official may allow limited obstructions that do not affect the placement or use of aerial fire apparatus, such as site vegetation or a porte-cochere at the entrance to a building. Permitted obstructions shall have an unobstructed vertical clearance of not less than 13 feet 6 inches.

Fire Department Access – **AERIAL** Fire Apparatus Access Cont.

Grade

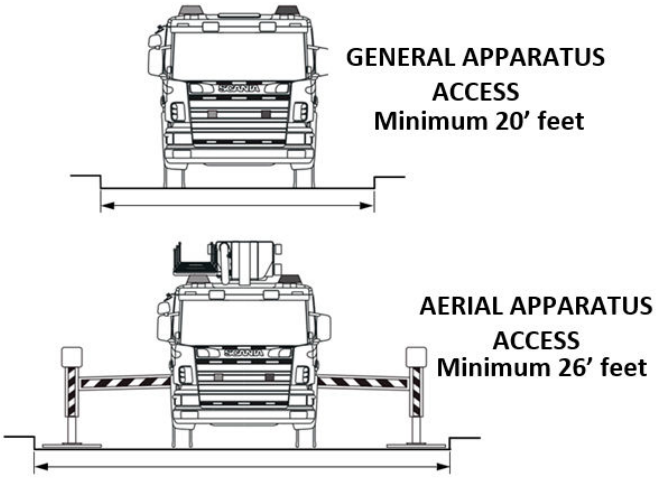
- Fire apparatus access roads shall not exceed 10 percent (10%) in grade longitudinally.
- Cross slope of a road section or within a turnaround area shall not exceed five percent (5%).
- In order to accommodate proper angles of approach and departure, the gradient in fire access roads shall not exceed a five percent (5%) change along any ten (10) foot section.



Width

An Aerial Fire Apparatus Access Road shall have a minimum unobstructed with (exclusive of shoulder) of not less of the following.

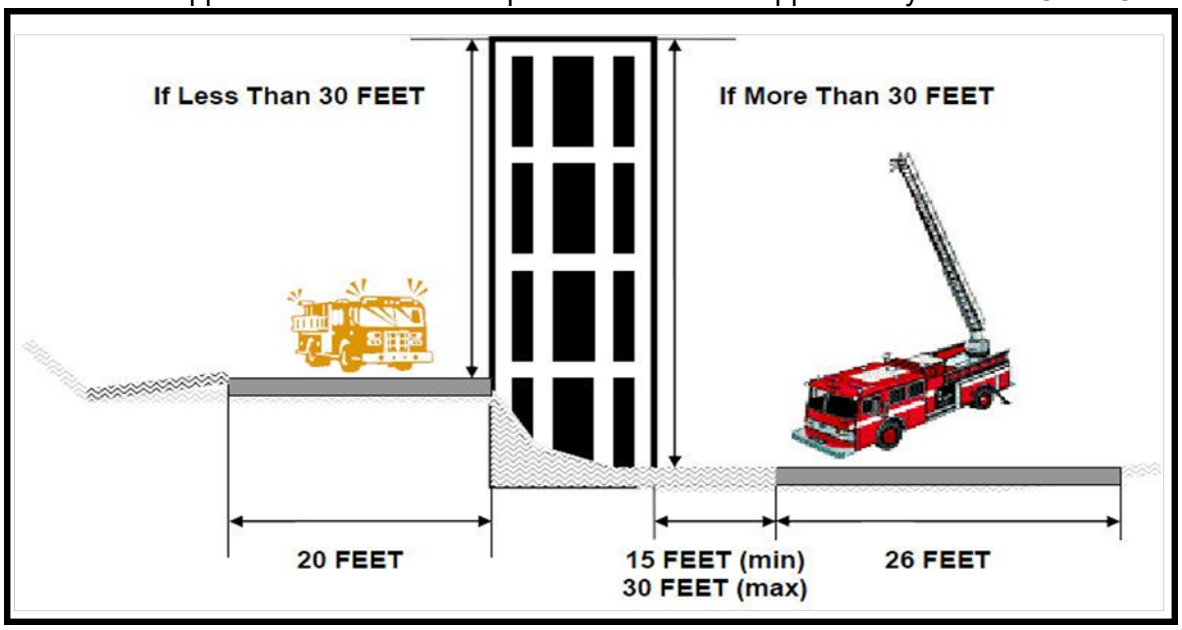
WIDTH (FEET)	
No Parking	26 feet
Parking on One Side (Parallel)	34 feet
Parking on Both Sides (Parallel)	42 feet



Fire Department Access – **AERIAL** Fire Apparatus Access Cont.

Proximity to Building

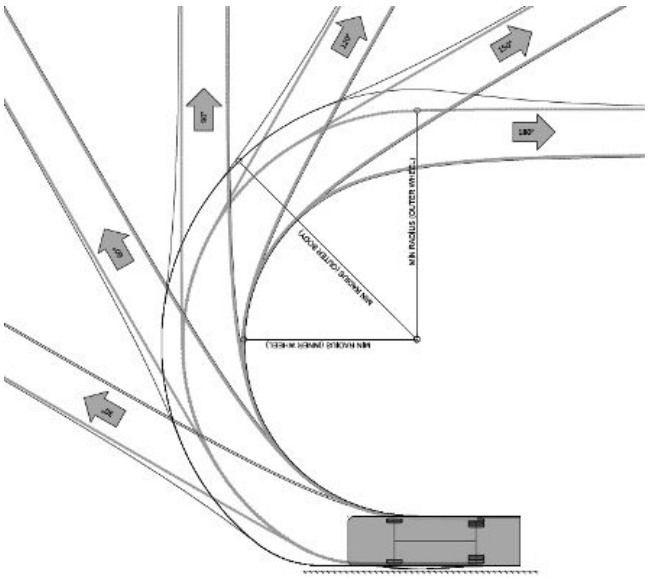
At least one of the required access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the Fire Code Official.



Turning Radius

Fire apparatus access road shall be designed to accommodate the following turning radius;

- 35 foot minimum inside turning radius
- 55 foot minimum outside turning radius



Fire Department Access – **AERIAL** Fire Apparatus Access Cont.

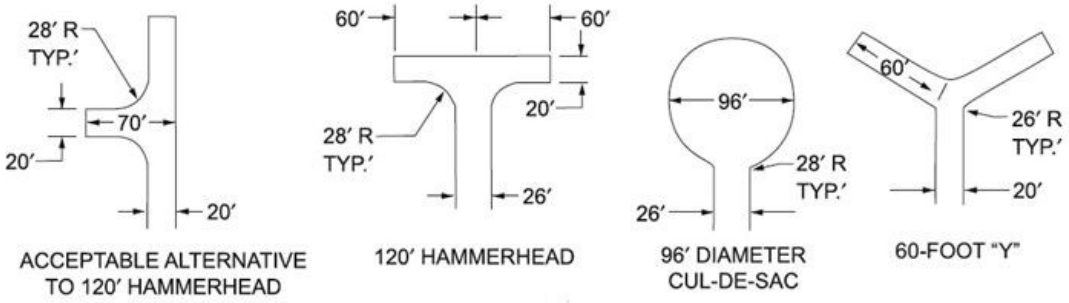
LENGTH (FEET)	WIDTH (FEET)			TURNAROUNDS
	No Parking	Parking on One Side (Parallel)	Parking on Both Sides (Parallel)	
0-150	20	26	32	Not Required
151-500	20	26	32	Required
501-750	26	32	38	Required
Over 750	Special Approval Required			

Turnarounds

A Dead-end fire apparatus access roads in excess of 150 feet shall be provided with width and turnaround provisions in accordance with International Fire Code Table D103.4 & Figure D103.1

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

FIGURE D103.4 – REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS



During Construction

Approved vehicle access for firefighting shall be provided as described in Chapter 5 of this code to all construction or demolition sites (3311.1.3)

Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections (FDC). (3311.1.2)

Vehicle access shall be provided by either temporary or permanent roads. (3311.1.3)

Temporary roads shall be maintained until permanent fire apparatus access roads are available. (3311.1.4)

Temporary or permanent fire department access roads shall be functional before construction above the foundation begins and before an appreciable amount of combustible construction materials are on site. (3311.1.5)

Temporary roads shall be constructed with a minimum of site specific required structural fill for permanent roads and road base, or other approved material complying with local standards. (3311.3.1)

Compaction reports may be required. An engineer's review and certification of a temporary fire department access road is not required. (3311.3.2)

If an improvement completion assurance has been posted in accordance with Section 10-9a-604.5, a local jurisdiction may not require permanent roads, or asphalt or concrete on temporary roads, before final approval of the structure served by the roads. (3311.3.3)

Premises Identification During Construction/Demolition

New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches high with a minimum stroke width of ½ inch. Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole, or other sign or means shall be used to identify the structure. Address identification shall be maintained. (505.1)

During Construction Cont.

Water Supply During Construction or Demolition Operations

An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible buildings materials arrive on the site, or commencement of vertical combustible construction and on installation of a standpipe system in buildings under construction, in accordance with Sections 3313.2 through 3313.5 (3313.1)

> **Exception:** Reduced fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

When combustible buildings materials of the building under construction are delivered to a site, a minimum fire flow of 500 gallons per minute shall be provided. The fire hydrant used to provide this fire-flow supply shall be within 500 feet of the combustible buildings materials, as measured along an approved fire apparatus access lane. Where the site configuration is such that one fire hydrant cannot be located within 500 feet of all combustible building materials, additional fire hydrants shall be required to provide coverage (3313.2)

Prior to commencement of vertical construction of Type III, IV, or V buildings that utilize any combustible building materials, the fire flow required by Sections 3313.3.1 through 3313.3.3 shall be provided, accompanied by fire hydrants in sufficient quantity to deliver the required fire flow and proper coverage. (3313.3)

When a building of Type III, IV, or V construction has a fire separation distance of 30 feet from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide either a minimum of 500 gallons per minute or the entire fire flow required for the building when constructed, whichever is greater. (3313.3.1)

Where a building of Type III, IV, or V construction has a fire separation distance of 30 feet up to 60 feet from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide a minimum of 500 gallons per minute or 50 percent of the fire flow required for the building when constructed, whichever is greater. (3313.3.2)

Where a building of Type III, IV, or V construction has a fire separation of 60 feet or greater from a property lot line, a water supply of 500 gallons shall be provided. (3313.3.3)

If combustible buildings materials are delivered to the construction site, water supply in accordance with Section 3313.2 shall be provided. Additional water supply for fire flow is not required prior to commencing vertical construction of Type I and II buildings. (3313.4)

Regardless of the presence of combustible building materials, the construction type or the fire separation distance, where a standpipe is required in accordance with Section 3314, a water supply providing a minimum flow of 500 gallons per minute shall be provided. The fire hydrant used for this water supply shall be located within 100 feet of the fire department connection (FDC) supplying the standpipe (3313.5)

Farmington City Fire Department

Commercial Plan Review Guide

Addressing Signage

Commercial/Industrial

1. Building address shall be a minimum of six inches (152 mm) in height with a stroke of not less than ¾ inch (19 mm), contrasting in color to the background, readily visible from the street, and illuminated during the hours of darkness.
2. Where structures are set back more than 150' from the street, larger numbers shall be required. In the event a structure is not visible from the street, the address numbers shall be posted adjacent to the driveway entrance as well as on the structure.
3. Suite numbers shall be above or adjacent to the entrance door.
    a. Suite numbers shall be a minimum of four inches (102 mm) in height, contrasting in color to the background and readily visible.
4. Multiple occupancies with rear doors shall also provide suite numbers above or adjacent to the rear door.
    a. Rear door numbers shall be a minimum of four inches (102 mm) in height, contrasting in color to the background and readily visible.

Directory Map

1. Address directory maps shall be provided at each entrance into a complex containing six or more buildings and 36 individual units.
2. Maps shall show all streets, driveways, building numbers, unit numbers, a notation “you are here,” and any additional information that would assist in locating individual units.
3. It is suggested that this directory map be island mounted so that it is on the driver’s side of an approaching vehicle and that the directory island or turnout is so designed that a vehicle stopped at the directory map does not block vehicle access to the complex.

Directory Map Dimensions

1. Set back two feet (0.6 m) from the curb, facing the driveway. Minimum size: 3' X 2' (0.91 m X 0.6 m).
2. Individual unit numbers: 1/4 inch (6.4 mm) in height. Building numbers: 3/8 inch (9.5 mm) in height.
3. Lettering: ½ inch (12.7 mm) in height.
4. During the hours of darkness, the map shall be illuminated or located in an illuminated area.
5. These numbers shall contrast with their background. Where required by the *fire code official*, Address numbers shall be Arabic numbers or alphabetical letters.
6. Numbers shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm).
7. Where access is by means of a private road and the building cannot be viewed from the *public way*, a monument, pole or other sign or means shall be used to identify the structure.

Key Boxes

Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for lifesaving or fire-fighting purposes, the fire code official, after consultation with the building owner, may require a key box to be installed in an approved location. The key box shall contain keys to gain necessary access as required by the fire code official. (506.1)

- The approved Farmington Fire Department and related security devices (Hazmat lockers, padlocks, and any key operated switches are produced by the Knox Company. https://www.knoxbox.com/
    - The local fire department agency name is listed as "Farmington Fire Department"
- The operator of the building shall immediately notify the fire code official and provide the new key where a lock is changed or rekeyed. The key to such lock shall be secured in the key box.

Knox Box Vault Contents

When more than one (1) key is secured in the Knox Box vault, each key shall be legibly identified for its use, utilizing a round key tag a minimum of one (1) inch in diameter. Necessary keys provided by the building owner or business owner may include:

A. Main entrance door
B. Fire alarm control panel
C. Alarm codes
D. Manual pull stations
E. Fire sprinkler control padlock(s)
F. Mechanical rooms
G. Elevator control
H. Attic or roof access
I. Any other keys necessary to access building controls.

All keys stored in the Knox Box should be hung on the key hooks supplied with the vault. Keys placed on the floor of the vault will rust and also may jam the locking mechanism.

Key Boxes Cont.

Knox Box Installation Specifications

A Knox Box is required on all new buildings that are protected by a fire sprinkler system (except single and duplex dwellings) and/or automatic fire alarm system (except for single and duplex dwellings) monitored by an approved fire alarm service.

The Knox Box shall be located at the main entrance into the structure. The Knox Box shall be located immediately adjacent to the main door(s), located to the right side (as viewed from the exterior, facing the door(s), and mounted six (6) above finished floor level. Any deviation from these location parameters shall be reviewed by the fire code official prior to installation of the Knox Box.

The two-inch square self-adhesive reflective Knox decal shall be attached to the door located closest to the installed Knox Box. The decal shall be placed next to the door locking mechanism, in an area not subject to repainting if possible.

The Knox Box shall be secured to the structure with a minimum of five (5) 5/16-inch diameter Grade 8 carriage bolts per the Knox Company installation instructions or fire code official approved equivalent fasteners. The bolts shall penetrate through a substantial structure element, and the securing lock nuts shall be located within the Knox Box vault. Tamper switches are optional but recommended in those occupancies where the tamper switches can be integrated with a monitored sprinkler or fire alarm system.

- Knox Box 3200 is designed to provide secure storage for up to ten (10) keys. Knox Box 4400 shall be used when ten (10) or more keys are necessary. The recessed-mount kit is recommended as this style of installation is more resistant to vandalism. Both 3200 and 4400 Knox Boxes are fully tested and listed by UL as both an anti-theft device and burglar alarm system accessory unit.

Special Applications

Doors Provided with Electro-Magnetic Security Locks

1. When the main entrance to a structure is provided with an electro-magnetic security locking system and keypad or card reader, Fire Department emergency access can be accomplished by:
    a. Providing a Knox key switch wired to release the magnetic door lock. This Knox key switch shall be mounted at the keypad or card reader provided at the entrance door; or,
    b. Providing a security key card for door release. This key card shall be stored in a Knox box located at the door to which access is to be provided. Knox box mounting location shall be as designated above.

Vehicle Gates, Automatically Operated (Unattended)

1. Electrically operated gates that control vehicle access on drives utilized by Fire Department vehicles shall be provided with a Knox Box with access card or a Knox key switch.
2. If the gate provides access to a residential neighborhood or complex housing more than 18 units, emergency gate control shall be accomplished utilizing the Opticom system.

The Knox key switch shall be mounted adjacent to the keypad or card reader and face the vehicle access drive.

Key Boxes Cont.

Vehicle Gates, Manually Operated

1. A Knox padlock is the preferred method of security. If the gate design will not accommodate more than a single padlock and access is required by other individuals or agencies, a single private padlock may be utilized, and a Knox Box installed.
2. The Knox Box shall be located on the support fence post closest to the private padlock. If the gate has two panels, the Knox Box shall be installed on the right support fence post, located at a height of six (6) feet or at the top of the post for a fence less than six (6) feet in height.

Fire Department Access to Equipment

Standard

Fire protection equipment shall be identified in an approved manner (IFC 509.1).

Specification

1. Identification. Rooms containing controls for air-conditioning systems, sprinkler risers and valves, or other fire detection, suppression or control elements shall be identified for the use of the fire department. *Approved* signs required to identify fire protection equipment and equipment location shall be constructed of durable materials, permanently installed and readily visible (IFC 509.1)

2. Utility identification. Gas shutoff valves, electric meters, service switches and other utility equipment shall be clearly and legibly marked to identify the unit or space that it serves. Identification shall be readily visible and shall be maintained. (509.1.1)

3. Equipment access. *Approved* access shall be provided and maintained for all fire protection equipment to permit immediate safe operation and maintenance of such equipment. Storage, trash and other materials or objects shall not be placed or kept in such a manner that would prevent such equipment from being readily accessible (IFC 509.2).

First Responder Radio Coverage

New Buildings

When required by the fire code official approved in-building, two-way emergency responder communication coverage for emergency responders shall be provided in all new buildings. In-building, two-way emergency responder communication coverage within the building shall be based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. This section shall not require improvement of the existing public safety communication systems. (510.1)

Exceptions:

1. Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained instead of an approved radio coverage system.
2. Where it is determined by the fire code official that the radio coverage system is not needed.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency radio coverage system.

Existing Buildings

Existing buildings shall be provided with approved in-building, two-way emergency responder communication coverage for emergency responders as required in Chapter 11. (510.2)

Fire Protection Water Supplies

Required Water Supply

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction (IFC 507.1).

Fire flow may be reduced for an isolated one and two-family dwelling when the authority having jurisdiction over the dwelling determines that the development of a full fire-flow requirement is impractical. (507.1.1)

The requirements for a pre-existing subdivision lot shall not exceed the requirements described in Section 501.5. (507.1.2)

A water supply shall consist of reservoirs, pressure tanks, elevated tanks, water mains or other fixed systems capable of providing the required fire flow. (507.2)

Private fire service mains and appurtenances shall be installed in accordance with NFPA 24. (507.2.1)
Water tanks for private fire protection shall be installed in accordance with NFPA 22. (507.2.2)

Fire flow requirements for buildings or portions of buildings and facilities shall be determined by an approved method. See Appendix B102.1. (507.3)

The fire flow rate of a water supply is measured at 20 pounds per square inch (psi) residual pressure that is available for firefighting (IFC Appendix B102.1)

Fire Flow Requirements for Buildings **WITH** Adequate and Reliable Water Systems

1. The provisions of the IFC Appendix section B105 shall apply to those areas where fire hydrants and water supply systems are present and that are capable of meeting the minimum specified fire flows specified as follows:
   a. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.2 as modified by Sections B105.3 and B105.4 but shall be not less than 1,500 gallons per minute at not less than 20 pounds per square inch residual (IFC Appendix B105.3).

2. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 400 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building on-site fire hydrants and mains shall be provided where required.

   Exceptions:
   1. For group R-3 and Group U occupancies the distance requirement shall be 600 feet
   2. For buildings equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the distance requirement shall be 600 feet.

   If no current Fire Flow data is available, a developer has the option to have the test conducted through a private entity under the following guidelines:
   i. Farmington Community Development and the Fire Department shall be notified prior to performing any hydrant water flow tests.
   ii. The test shall be conducted by a fire sprinkler contractor, a fire protection engineer, or a NICET Level III sprinkler designer.
   iii. Approved independent testing shall utilize the flow test procedure identified in NFPA 13, Chapter 23.
   iv. At the conclusion of the flow test, documented results shall be submitted to representatives of the Community Development Office Farmington Fire Department for review and entry into the permanent record.

Farmington City Fire Department
Commercial Plan Review Guide

Table B105.1(2)

TABLE B105.1(2) REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2

FIRE-FLOW CALCULATION AREA (square feet)					FIRE FLOW (gallons per minute) [b]	FLOW DURATION (hours)
Types IA and IB[a]	Types IIA and IIIA [a]	Types IV and V-A[a]	Types IIB and IIIB [a]	Type V-B[a]		
0–22,700	0–12,700	0–8,200	0–5,900	0–3,600	1,500	2
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	3
83,701–97,700	47,101–54,900	30,101–35,200	21,801–25,900	13,401–15,600	3,250	
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	4
145,901–164,200	82,101–92,400	52,501–59,100	37,901–42,700	23,301–26,300	4,250	
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^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

1. Types of construction are based on the *International Building Code*.
2. Measured at 20 psi residual pressure.

The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings, Group R-3 and R-4 buildings and townhouses shall be as specified in Tables B105.1(2) and B105.2. (105.2)

TABLE B105.2

REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3 AND R-4 BUILDINGS AND TOWNHOUSES

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the *International Fire Code*	25% of the value in Table B105.1(2)	Duration in Table B105.1(2) at the reduced flow rate
Section 903.3.1.2 of the *International Fire Code*	25% of the value in Table B105.1(2)	Duration in Table B105.1(2) at the reduced flow rate

For SI: 1 gallon per minute = 3.785 L/m.

a. The reduced fire flow shall be not less than 1,000 gallons per minute.

b. The reduced fire flow shall be not less than 1,500 gallons per minute.

Fire Flow Requirements for Buildings **WITH** Adequate and Reliable Water Systems Cont.

Water Supply for Buildings Equipped *With* an Automatic Sprinkler System (B105.3)

For buildings equipped with an approved automatic sprinkler system, the water supply shall be capable of providing the greater of:

1. The automatic sprinkler system demand, including hose stream allowance.
2. The required fire flow.

Fire Hydrants

Fire hydrants shall comply with the International Fire Code (IFC Section 507.5)

1. 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. (IFC 507.5.4)
2. A clear space of not less than three feet shall be maintained around the circumference of fire hydrants (IFC 507.5.5)
3. Where fire hydrants are subject to impact by a motor vehicle, guard posts or other approved means shall comply with Section 312. (IFC 507.5.6)
4. Color Coding. To provide additional visibility and to identify flow volume**,** the hydrant bonnet shall be identified by an adhesive-backed reflective trim.
    a. The reflective trim shall be attached by the contractor at the time new hydrants are accepted by the Farmington Community Development office and the Farmington Fire Department.
    b. On retrofitted hydrants, the reflective trim will be attached by the Fire Department after the inspection/flush is performed by the Fire Department.
    c. The color of the adhesive trim shall indicate the available flow volume of the water supply system as identified in NFPA 291, “Fire Flow Testing and Marking of Fire Hydrants” (shown below):

Trim Flow (GPM) @ 20 psi Residual	
Blue	1,500 or greater
Green	1,000 - 1,499
Orange	500 – 999
Red	Less than 500

5. **Private Fire Service Mains and Water Tanks – Maintenance.** The owners of developments provided with private water mains and hydrants are responsible for the maintenance and testing in accordance with NFPA 25 at the following intervals. (IFC 507.5.3)
    a. **Private fire hydrants of all types:** inspection annually and after each operation; flow test and maintenance annually.
    b. **Fire Service main piping:** inspection of exposed, annually; flow test every 5 years.
    c. **Fire service main piping strainers:** inspection and maintenance after each use. **Records of inspections, testing and maintenance shall be maintained.**

Farmington City Fire Department

Commercial Plan Review Guide

Fire Hydrant Location and Distribution

TABLE C102.1

REQUIRED NUMBER AND SPACING OF FIRE HYDRANTS[h]

FIRE-FLOW REQUIREMENT (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS[a, b, c, f, g] (feet)	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT[d, f, g]
1,750 or less	1	500	250
1,751—2,250	2	450	225
2,251—2,750	3	450	225
2,751—3,250	3	400	225
3,251—4,000	4	350	210
4,001—5,000	5	300	180
5,001—5,500	6	300	180
5,501—6,000	6	250	150
6,001—7,000	7	250	150
7,001 or more	8 or more[e]	200	120

For SI: 1 foot = 304.8 mm, 1 gallon per minute = 3.785 L/m.

a. Reduce by 100 feet for dead-end streets or roads.
b. Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis.
c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.
d. Reduce by 50 feet for dead-end streets or roads.
e. One hydrant for each 1,000 gallons per minute or fraction thereof.
f. A 50-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the *International Fire Code*.
g. A 25-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2 or 903.3.1.3 of the *International Fire Code* or Section P2904 of the *International Residential Code*.
h. The fire code official is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

Fire Flow Requirements for Buildings **WITHOUT** Adequate and Reliable Water Systems

An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into or within the jurisdiction **(**IFC 507.1).

This guideline **does not** cover all the requirements or details, nor is it an attempt to restate all of the requirements or details for appurtenances installed on or for sprinkler systems addressed by NFPA 1142 **but addresses only those items listed below**, the specific details of which may not be adequately identified by existing code language.

Specifications: Refer to International Fire Code Appendix B for specifications.

1. The provisions of IFC Appendix B, Section B103 are intended for use by the fire code official in protected areas in which adequate and reliable water supply systems do not exist or where water supply systems are incapable of meeting the provisions specified in this guide.
2. Commercial Structures: All commercial structures in excess of 3,600 square feet shall have a water supply calculated using NFPA 1142 *Standard on Water Supplies for Suburban and Rural Fire Fighting*, 2022 Edition. Commercial structures less than 3,600 square feet will be re-evaluated on a case-by-case basis.
3. The minimum water supply for any structure without an exposure hazard shall not be less than 2,000 gallons (NFPA 1142, 4.2.2).
4. The minimum water supply for any structure with an exposure hazard shall not be less than 3,000 gallons (NFPA 1142, 4.3.2).

NOTE: Structures protected by an approved automatic fire sprinkler system are not required to have a water supply other than that required to supply the sprinkler system.

NFPA 1142 Calculation

1. The applicant will need to provide the following information to determine the volume of water supplied on site (NFPA 1142, 4.11):
   a. Occupancy Hazard
   b. Type of Construction
   c. Total Structure Volume including all covered porches, attics, crawl spaces, and garages
   d. Exposures located within 50 feet of the structure being evaluated
2. Example of NFPA 1142 calculation. **1.5 multiplier** used for structures with exposures located within 50 feet. Multiplier may be excluded from calculation with no exposure.

$$\text{Water Supply}_{min} = \frac{\text{Volume of Structure}_{tot}}{\text{Occupancy Hazard Classification}} \text{ X (Construction Classification) X (1.5)}$$

Private Water Supply Access

3. The water supply shall be maintained and accessible on a year-round basis (NFPA 1142, 7.1.2)
4. All non-pressurized water supply sources shall be accessible using dry hydrants (NFPA 1142, 7.1.4)
5. Example of dry hydrant detail, NFPA 1142. Figure A.8.3.2(b)

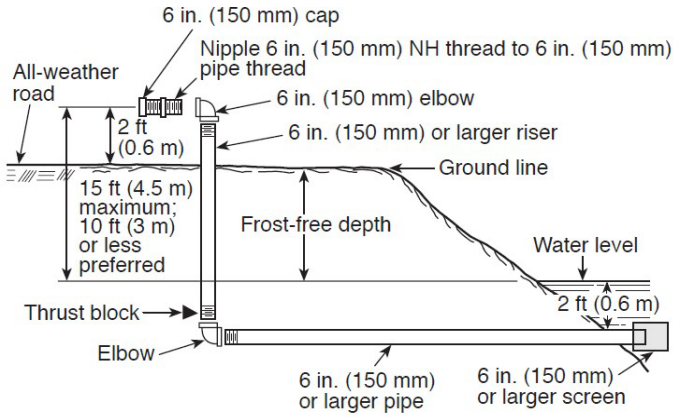


FIGURE A.8.3.2(b) Exploded View of Dry Hydrant Construction.

6. All water supply sources shall maintain the minimum capacity and delivery requirements on a year-round basis, based on the 50-year drought for the water service (NFPA 1142, 7.1.5)
7. Roads providing a means of access to any required water supply shall be constructed and maintained in accordance with the following (NFPA 1142, 7.5):
   a. Roadways shall have a minimum clear width of 16 feet for each lane of travel
   b. A fire department turnaround shall be provided
   c. Turns shall be constructed with a minimum radius of 100 feet to centerline
   d. The maximum sustained grade shall not exceed 10 percent
   e. The surface shall be treated as required for year-round travel.

Fire Suppression Systems

Automatic sprinklers and appurtenances shall meet the approval of the Fire Department as to installation and location, and shall be designed in accordance with NFPA 13, NFPA 13R or NFPA 13D, and NFPA 25, and subject to acceptance tests as required by the Fire Marshal.

This guideline **does not** cover all the requirements or details, nor is it an attempt to restate all of the requirements or details for appurtenances installed on or for sprinkler systems addressed by NFPA 13 **but addresses only those items listed below**, the specific details of which may not be adequately identified by existing code language.

The intent is to establish guidelines which detail specific installation and testing requirements for appurtenances installed on or for automatic fire sprinkler (NFPA 13) systems, including:

Fire Department Connection (FDC)

1. Design of installation
2. FDC Location
3. FDC design for a system with a Fire Flow requirement exceeding 2,100 gpm
4. FDC Signage
5. FDC Access
6. Single FDC service for multiple buildings

Local Water Flow Alarm Bell

Signage/Marking of Maximum Commodity Height
Signage/Marking of Multiple Fire Protection System Division Lines
Underground Fire Sprinkler Permits
Acceptance Testing Requirements for Underground Piping
NFPA 13D Residential Fire Sprinkler System Acceptance Testing

Fire Department Connection (FDC)

Installation and Location

FDCs shall be installed in accordance with the NFPA standard applicable to the system design and shall comply with the Sections 912.2 through 912.7. (IFC 912.1)

With respect to hydrants, driveways, building and landscaping, fire department connections shall be located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved by the fire code official. (912.2)

Fire department connections shall be located on the street side of buildings or facing approved fire apparatus access roads, fully visible and recognizable from the street. Fire apparatus access road or nearest point of fire department vehicle access or as otherwise approved by the fire code official. (912.2.1)

Where a building is equipped with an FDC the hydrant must be installed within 100’ of the FDC. (507.5.1.1)

On existing buildings, wherever the fire department connection is not visible to approaching fire apparatus, the fire department connection shall be indicated by an approved sign mounted on the street front or on the side of the building. Such sign shall have the letters “FDC” not less than 6 inches high and words in letters not less than 2 inches high or an arrow to indicate the location. Such signs shall be subject to the approval of the fire code official.(IFC 912.2.2)

Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls, or any other fixed or moveable object. Access to fire department connections shall be approved by the fire code official. (912.4)

> **Exception**: Fences, where provided with an access gate equipped with a sign complying with the legend requirements of Section 912.5 and a means of emergency operation. The gate and the means of emergency operation shall be approved by the fire code official and maintained operational at all times.

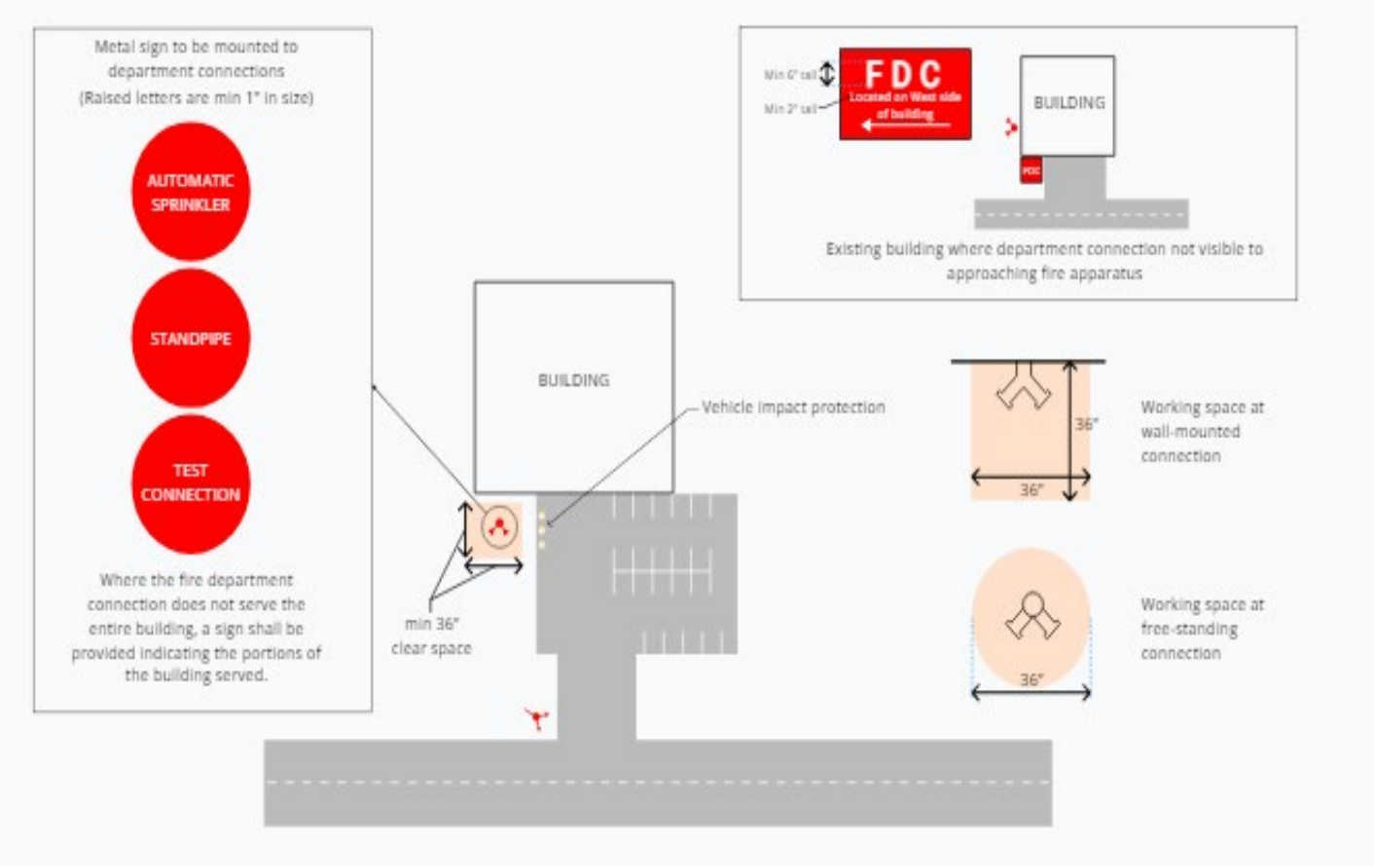
A working space of not less than 36 inches in width, 36 inches in depth, ad 78 inches in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire code official (912.4.2)

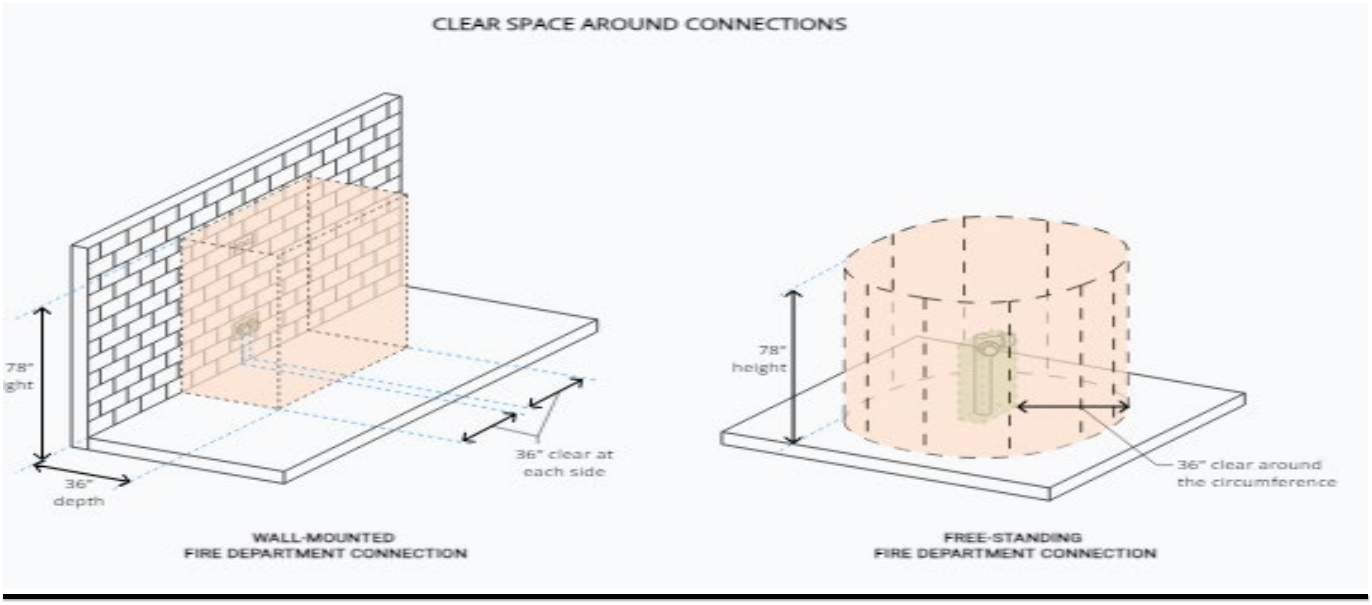
> *NOTE: it is preferable to have a remote FDC from the building with a Storz connection on a 45 degree downwards angle than the 2 ½ inch N.S. Clappered inlets*.

A metal sign with raised letters not less than 1 inch in size shall be mounted on all fie department connections serving automatic sprinklers, standpipes, or fire pump connections. Such signs shall read: “AUTOMATIC SPRINKLERS” or “STANDPIPES” or “TEST CONNECTION” or a combination thereof as applicable. Where the fire department connection does not serve the entire building, a sign shall be provided indicating the portions of the building served. (912.5)

See following page for examples of signage, protection and clearances

Fire Department Connection (FDC) Cont.





Local Water Flow Alarm Bell (Both electrical and water motor operated)

1. Exterior Alarm Bell Location:
    a. The water flow alarm bell for a single building shall be located on the face of the building closest to the FDC, and directly in line with, and behind the FDC.

2. If a single FDC serves more than one building, a water flow alarm bell shall be provided for each protected structure.
    a. These bells shall operate independently of each other and only when there is a water flow within the building to which each is attached.
    b. To avoid audible confusion, these units shall be bell/strobe assemblies and listed for exterior installation. The bell/strobe assemblies on each building served shall be visible from the FDC location.
    c. The location of the bell/strobe assemblies shall be specified by the applicant on the fire sprinkler plans and shall be approved by the Fire Marshal on these plans prior to issuance of the permit authorizing sprinkler system installation.

3. The alarm bell shall be installed at a height of at least eight (8) feet above prevailing grade, but no more than twelve (12) feet. Other installation locations may be approved by the Fire Marshal.

4. Alarm notification appliances shall be provided and shall be *listed* for their purpose (IFC 907.5.2).

5. Audible alarm notification appliances shall be provided and emit a distinctive sound that is not to be used for any purpose other than that of a fire alarm (IFC 907.5.2.1).

6. When a contiguous building (or buildings in the case where area separation walls exist) has multiple Fire Department Connections, the individual FDCs and water flow alarm bells shall be labeled in a manner to correlate each water flow alarm bell to the appropriate FDC, either by address (i.e., suite 1, 2, etc., or Suite A, B, etc.); sprinkler system number or letter (i.e., 1, 2, or A, B, etc.); or by direction (i.e., east system, west system, etc.).

Signage/Marking of Multiple Fire Protection System Division Lines

When a contiguous building (or buildings in the case where area separation walls exist) is protected by more than one sprinkler system, those sprinkler system divisional lines shall be permanently identified on the exterior of the structure.

a. The sign shall be centered on the sprinkler system divisional line and mounted on the exterior of the building at the top of the wall or eave line.
b. If the division line is at an inside corner created by exterior walls, the sign must be folded lengthwise at a 90-degree angle to fit the corner.

Commodity Storage

High-piled combustible storage shall be in accordance with this chapter. In addition to the requirements of this chapter, the following material=specific requirements shall apply: (3201)

1. Aerosols shall be in accordance with Chapter 51, Aerosols.
2. Flammable and combustible liquids shall be in accordance with Chapter 57, Flammable and Combustible Liquids.
3. Hazardous materials shall be in accordance with Chapter 50, Hazardous Materials – General Provisions.
4. Storage of combustible paper shall be in accordance with NFPA 13
5. Storage of combustible fibers shall be in accordance with Chapter 37, Combustible Fibers.
6. General storage of combustible material shall be in accordance with Chapter 3, General Requirements.

At the time of building permit application for new structures designed to accommodate high-piled storage or for requesting a change of occupancy/use, and at the time of application for a storage permit, plans and specifications shall be submitted for review and approval. In addition to the information required by the International Building Code, the storage permit submittal shall include the information specified in this section. The construction documents shall include all of the following:

- Floor plan of the building showing location and dimensions of high piles storage areas.
- Usable storage height for each storage area.
- Number of tiers within each rack, if applicable.
- Commodity clearance between top of storage and the sprinkler deflector for each storage arrangement.
- Aisle dimensions between each storage array.
- Maximum pile volume for each storage array.
- Location and classification of commodities in accordance with Section 3203
- Location of commodities that are banded or encapsulated.
- Location of required fire department access doors.
- Type of fire protection systems.
- Location of valves controlling the water supply of ceiling and in-rack sprinklers.
- Type, location and specifications of smoke removal and curtain board systems.
- Dimensions and location of transverse and longitudinal flue spaces.
- Additional information regarding required design features, commodities, storage arrangements and fire protection features within the high-piled storage area shall be provided at the time of permit, where required by the fire code official.

Commodities shall be classified as Class I, II, III, IV, or High Hazard in accordance with Sections 3203.2 through 3203.10.3. Materials listed within each commodity classification are assumed to be unmodified for improved combustibility characteristics. Use of flame-retarding modifiers or the physical form of the material could change the classification. (Section 3203)