

MARBLE FALLS

Fire Marshals Office

**DEVELOPER AND CONSTRUCTION
INFORMATION**

**2003 EDITION
INTERNATIONAL FIRE CODE**

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The Marble Falls Fire Department, Fire Prevention Division desires to assist all members of the construction community in the understanding of our inspection and plan review process as it applies to plan submittal, review, approval, and inspection of construction projects within the City of Marble Falls. The following sections cover the Marble Falls Fire Department’s Construction Process for new construction projects within the City of Marble Falls:

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Development related City Offices

City of Marble Falls
Public Works Department
1001 Second Street
Marble Falls, Texas 78654
830-693-2551

City of Marble Falls
Development Services Department (2nd Floor)
Planning, Building Inspection, & City Engineer
801 Third Street, Suite 201
Marble Falls, Texas 78654
830-693-3615
(Across street from City Hall)
Fire Marshal (1st Floor)
801 Third Street, Suite 102
830-798-7075

City of Marble Falls - City Hall
800 Third Street
Marble Falls, Texas 78654
830-693-3615

Lake Marble Falls

1 inch equals 600 feet

General Information - Guidelines

The goal of the Fire Marshals Office is to assist its customers in understanding our submittal, plan review and inspection process and policies, as they pertain to new construction.

Adherence to these guidelines can greatly assist you in the inspection process.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Fire Chief or Fire Marshal.

To expedite the plan review and inspection processes, please refer to the information listed below.

1. All Fire Protection System plan submittals must be submitted to the Marble Falls Fire Marshal.
2. All Fire Protection Systems plan submittals must be accompanied by a copy of a Texas Department of Insurance License;
3. All calculations must be signed by a State Fire Marshal's Office Licensed Fire Protection Contractor;
4. All Fire Protection System plans submitted must be stamped and signed by a State Fire Marshal's Office Licensed Fire Protection Contractor;

The contractor is responsible for ensuring that the system(s) being installed or serviced complies with all locally adopted codes, including but not limited to the International Fire Code, NFPA Fire Codes, and Fire Department requirements. Plans approved by the City of Marble Falls, Fire Prevention Division give authorization for construction. Final approvals are subject to field verification. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.

All installations must concur with the approved plans. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division.

All plan review and inspection process steps must be followed. Deviation from the requirements can result in delays and possible rejection of plans and/or inspection delays.

Codes

Below is a list of the most commonly referenced codes.

The City of Marble Falls has adopted and amended the 2003 International Fire Code. The 2003 IFC does reference specific NFPA codes for additional guidance. Ordinance No. 2006-O-11C, which adopted the 2003 IFC, is available upon request.

International Fire Code, 2003 Edition

International Building Code, 2003 Edition

Applicable NFPA codes

In addition the City Engineer has set guidelines and specifications on waterlines, fire lines, hydrants, backflow prevention, and other applications that should be referenced. City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual

With the exception of the above referenced codes, the most recent referenced code edition will be utilized.

Fire Prevention Division Staff

Fire Marshal

Johnny P. Caraway

801 Third Street, Suite 201

Marble Falls Texas, 78654

Office (830)798-7075 Cell phone: (512)755-2153

Fax (830)693-0210

jcaraway@ci.marble-falls.tx.us

Fee Schedule

The International Fire Code, as adopted and amended by City of Marble Falls Ordinance No. 2006-O-11C, has adopted and amended the following fee schedule:

<u>Inspections</u>	<u>Fee</u>
Day Car Center	\$25.00
Group Day Care	\$35.00
Registered Family Home	\$35.00
Nursing Home	\$125.00
Foster Home	\$25.00
Hospital/Clinic	\$125.00
Cutting and Welding Shop	\$35.00
Lumber Yard	\$50.00
Repair Garage	\$35.00
Spraying and Dipping Bs.	\$50.00
Temporary Tent	\$25.00
*other Inspections required by code	\$25.00

<u>Plan Review</u>	<u>Fee</u>
Fire Alarm	\$25.00
Hood Sprinkler System	\$25.00
*Fire Sprinkler System	\$25.00

(*Note: Additional fee due if third party review is required)

<u>Compliance/Acceptance Inspections</u>	<u>Fee</u>
Underground Tank	\$25.00
Hood or Fire Sprinkler	\$25.00
Natural Gas	\$25.00
Fixed Suppression	\$25.00
Fire Alarm	\$25.00
Tank Removal	\$25.00
Stand Pipe	\$25.00
Hydrant Flow	\$25.00
Other	\$25.00

105.7 required construction permits.

105.7.1 Automatic fire extinguishing systems.

Automatic fire sprinklers (water based) review FEE: Based on engineer review cost

Automatic fire sprinklers (water based) test FEE: \$50.00

Underground pipe test FEE: \$25.00

Commercial cooking fire suppression systems review FEE: 25.00

Commercial cooking fire suppression systems test FEE: 25.00

Fixed fire suppression systems test FEE \$25.00

105.7.2 Compressed gases. FEE: \$25.00

105.7.3 Fire alarm and detection systems and related equipment.

Fire alarm review FEE: \$25.00

Fire alarm test FEE: \$50.00

105.7.4 Fire pumps and related equipment. FEE: Based on engineer review cost

105.7.5 Flammable and combustible liquids, FEE: \$25.00

105.7.6 Hazardous materials. FEE: \$25.00

105.7.7 Industrial ovens. FEE: \$25.00

105.7.8 LP gas or Natural Gas. FEE: \$25.00

105.7.9 Private fire hydrants. FEE: \$25.00

105.7.10 Spraying or dipping. FEE: \$25.00

105.7.11 Standpipe systems. FEE: \$25.00

105.7.12 Temporary membrane structures, tents and canopies. FEE \$25.00

Note: Fees established by the City of Marble Falls City Council and changed periodically.

Note: All fees may not be listed for specific fees contact the Fire Prevention Division.

Key Boxes for Emergency Access

Seconds count in a life-threatening medical emergency or a fire. Yet many times, Fire Fighters responding to an emergency find access blocked by locked entrance doors or gates. To help reduce delays in providing emergency assistance, the City of Marble Falls has adopted use of the *Knox Rapid Entry System*...

Knox Rapid Entry System

Used by Fire Departments throughout the country, the primary component of the Knox Rapid Entry System is a key box unique to the jurisdiction in which it is located. Only the Marble Falls Fire Department has the key to open Fire Department access boxes located within our City. Use of the system can improve emergency access to buildings and result in savings by eliminating property damage from Fire Department forced entry.

Use of the Knox Rapid Entry System is authorized by the Fire Code. The Code specifies that the Fire Department may require a key box containing access keys be installed at the entrance to structures or areas where access for the purpose of life safety or fire fighting is restricted.

How does it Work?

A building owner installs a Knox key box on the exterior of the building at the main entrance point. The box is manufactured with a lock which can be opened only with a key that is issued solely to the Marble Falls Fire Department. Fire Apparatus in Marble Falls are each equipped with one Knox box key, held in a special security device.

Installation Location

When emergency access is required, the arriving Fire Department member in charge removes the key from the special security device in their Fire Department vehicle and opens the Knox box to remove the building main entrance key. After use, the Fire Department member returns the entrance key to the key box and locks it, and then returns the special Knox box key to the security device inside the emergency vehicle.

Steps to Obtaining and Installing the Knox Rapid Entry System

When an occupancy chooses or is directed to install a key box, a model 3200 or 4400 (single core) series box may be purchased from the Knox Company. Where installation allows, a recessed box is recommended. Upon purchase, the Knox box is shipped directly from the manufacturer to the purchaser.

The purchaser installs the empty box **according to the included installation guidelines**. Once the box is installed, the purchaser makes an appointment to meet the Fire Marshal at the building to approve the box location and integrity of the installation. Upon approval, the building owner places the appropriate key for the main access entrance inside the box. The Fire Marshal or his representative then closes and locks the box.

The building owner is responsible for installation of the Knox key box. It must be **securely** mounted on the building exterior at a height of between four to six feet, and within three feet of the Fire Department main direct access point (front door, main gate). **Recessed mount Knox key box installations are strongly recommended.**

Once the Knox key box is installed, the building owner contacts the Fire Marshal's Office during regular office hours at 830-693-3615 to arrange for final inspection of the installation. The install will be inspected for compliance with the Knox installation guidelines and to have the building keys placed inside the Knox box.

After the box has been inspected and the lock is installed, future access to add or remove a key from the box should be coordinated through the Fire Marshals Office. Building owners may call 830-693-3615 to make an appointment so that keys can be changed.

Step-by-Step Guide to Obtaining a Knox Box

If a Knox Box is **required**, the responsible party will be notified in writing by the Marble Falls Fire Marshals Office of the need to obtain one. Remember, a Knox Box may not be required or

recommended for your building. Contact the Marble Falls Fire Marshal's Office for clarification if needed at 830-693-3615.

1. If you have been directed to install a Knox Box, or have voluntarily made the decision to obtain one, visit the Knox Company website at www.knoxbox.com. Only the 3200 or 4400 (single core) series boxes with hinged doors (with or without tamper switch) are currently approved for use in the City of Marble Falls.

The Knox Company

1601 W. Deer Valley Road
Phoenix, AZ 85027
(866) 625-4563
www.knoxbox.com

1. Once your Knox Box is purchased, the Knox Company will ship your box directly to you. Then make sure manufacturers recommended installation directions are followed.

2. Once your box is installed contact the Marble Falls Fire Marshal's Office at (830) 693-3615 to arrange for inspection. Allow at least 24 hours prior notice for inspection. A Marble Falls Fire official will meet the building's representative at the address for final inspection, placement of the access key(s) into the Knox Box, and securing the door.

Fire Extinguishers

INSPECTION AND MAINTENANCE OF PORTABLE FIRE

Responsibility

The owner or occupant of a property in which extinguishers are located shall be responsible for ensuring that the inspection, maintenance, and recharging of these extinguishers is accomplished as required.

NUMBER OF FIRE EXTINGUISHERS REQUIRED

The number and type of portable fire extinguishers used shall be approved by the Fire Marshal.

Extinguishers shall be Underwriters Laboratories Listed.

Occupancy Type	Minimum Extinguisher Size	Maximum Area Per Extinguisher/ Travel Distance
Office, church classroom, etc.	2A10BC	3,000 sq. ft. /75 ft.
High-rise Office Buildings	2A10BC	*mounted in common Buildings corridors and exit ways with maximum travel distance in corridor of 75 ft.
Retail non-combustible storage, etc.	2A10BC	3,000 sq. ft. /75 ft.
service stations	4A40BC	3,000 sq. ft. /50 ft.
warehouses with combustible storage	4A40BC	3,000 sq. ft. /75 ft.
storage or processes utilizing flammable/ combustible liquids	4A40BC	1,000 sq. ft. /30 ft.
restaurant kitchens	“K”	1,000 sq. ft. /30 ft.

*normally extinguishers mounted in the corridors adjacent to exits will be adequate in sprinkled office buildings.

EXTINGUISHER MOUNTING

Extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. Preferably they shall be located along normal paths of travel, including exits from an area.

Extinguishers shall be properly mounted at least four inches (4") from the floor and not more than five feet (5') above the floor.

In areas where aesthetics is a concern, extinguishers may be located in an approved fire extinguisher cabinet. The cabinet must be marked and readily identifiable as a fire extinguisher cabinet. Where locked cabinets are permitted (with Fire Marshal's Office approval obtained in advance) an approved tool shall be attached to the cabinet for access.

Address Guidelines

Prior to building construction Fire Marshal approval must be obtained for addresses. This applies to residential and commercial occupancies. It is the contractor's responsibility to ensure that the address of the building is approved by the Fire and Building Departments.

Fire Marshal Address Guide for All Properties

Single Family Homes Minimum 4" high, 5/8" contrasting numbers.

Multi Family Communities (Apartments, condos, townhouses)

Street Address: Minimum 12" high numbers with a 2" stroke with contrasting background.

• **12" high numbers with a 2" stroke are only acceptable when placed within approximately 75' of the road in which the property is addressed.**

Building Numbers:

Minimum 18" high numbers with a 3" stroke with contrasting background.

Apartment Spread Numbers/ Corridor Spread Numbers:

• Apartment spread numbers are to be a minimum 7" high numbers with a 1" stroke with contrasting background.

• Corridor spread numbers are to be a minimum 4" high number with a 5/8" brush stroke with contrasting background.

• Number example format:

301-310 3rd Floor

201-210 2nd Floor

101-110 1st Floor

Apartment Unit Numbers:

Minimum 4" high numbers with a 5/8" stroke with contrasting background and visible from access road.

Large Office and Warehouse Buildings

Minimum 24" high numbers with a 4" stroke with contrasting background.

Address must be visible from all access directions.

• Suite numbers are required for multi tenant complexes and shall be located over the **front door and on the rear door** with a 6" high x 1" brush stroke.

Shopping Centers, High Rise Buildings and Other Applications

Minimum 12" high numbers with a 2" stroke with contrasting background. Be visible from all access directions. Suite numbers are required over the door with a 6" high x 1" brush stroke.

- Buildings beyond 100' from the street and 10,000 square feet or more would need to install 18" x 3" address numbers.

Marquee and Monument

Addresses installed on a marquee or monument located next to the street will require numbers 12" high x 2" brush stroke to be located a minimum of 3 feet above grade. Numbers shall contrast with the background.

Address must be provided at gas and electric meters and/or disconnecting means.

General Construction Site Guidelines

This guide is written to assist general contractors and developers with Fire Marshal construction site requirements. This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Marble Falls Fire Marshal.

Please note that the below information is intended as a guideline and, as such, does not constitute all requirements. Additional requirements may be required based upon each individual site.

General Requirements

1. Temporary site address shall be displayed plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. The address must be visible from the roadway at normal traffic speed.
2. See *Inspection Process* Section for further information.

Vertical Construction Approval

3. Fire hydrants and fire lane access roadways shall be installed and approved prior to vertical construction of any building or structure, *unless prior approval is obtained.*

Stock and/or Equipment Placement Approval

4. All required fire protection systems must be installed and approved prior to any stock and/or equipment being installed within a building.
5. An “*OK to Stock Meeting*” must be schedule through the Building and Fire Department Inspectors.
6. Approval must be given prior to any stock and/or equipment to be placed within the building.

Temporary Fuel Storage Tanks

7. A permit shall be obtained from the Marble Falls Fire Marshal prior to placement of any above ground fuel dispensing tanks or containers on construction sites. For the specific requirements for onsite fuel storage and use contact the Fire Prevention Division.

Temporary Heating Devices

24. Temporary heating devices shall be listed and labeled. Installation, maintenance, and use of temporary heating devices shall be in accordance with the terms of the listing.
25. Oil-fired heaters shall comply with IFC 603.
26. Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with NFPA 58 and the International Fuel Gas Code.
27. Refueling operations shall be conducted in accordance with IFC 3405. The appliance shall be allowed to cool prior to refueling.
28. Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from

damage, dislodgement, or overturning in accordance with the manufacturer's instructions.

29. The use of temporary heating devices shall be supervised and maintained only by competent personnel.

Precautions against Fire

30. Smoking shall be prohibited except in approved areas. Signs shall be posted in conspicuous locations. In approved areas where smoking is permitted, approved noncombustible ashtrays shall be provided.
31. Combustible debris shall not be accumulated within buildings. Combustible debris, rubbish, and waste material shall be removed from buildings at the end of each shift of work. Combustible debris, rubbish, and waste material shall not be disposed of by burning on the site.
32. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.
33. Where required by the code official for building demolition that is hazardous in nature, qualified personnel shall be provided to serve as an on-site fire watch. The sole duty of fire-watch personnel shall be to watch for the occurrence of fire.
34. Operations involving the use of cutting and welding shall be done in accordance with IFC Chapter 26.
35. Temporary wiring for electrical power and lighting installations used in connection with the construction, alteration, or demolition of buildings, structures, equipment, or similar activities shall comply with the Electrical Code.

Flammable and Combustible Liquids

36. Storage of flammable and combustible liquids shall be in accordance with IFC 3404.
37. The storage, use, and handling of flammable and combustible liquids at construction sites shall be in accordance with IFC 3406.2. Ventilation shall be provided for operations involving the application of materials containing flammable solvents.
38. Flammable and combustible liquid storage areas shall be maintained clear of combustible vegetation and waste materials. Such storage areas shall not be used for the storage of combustible materials.
39. Sources of ignition and smoking shall be prohibited in flammable and combustible liquid storage areas. Signs shall be posted.

40. Handling at point of final use. Class I and II liquids shall be kept in approved safety containers.

41. Leaking vessels shall be immediately repaired or taken out of service and spills shall be cleaned up and disposed of properly.

Owner's Responsibility for Fire Protection

54. Temporary covering of fire protection devices.

Coverings placed on or over fire protection, devices to protect them from damage during construction processes shall be immediately removed upon the completion of the construction processes in the room or area in which the devices are installed.

55. Emergency telephone. Readily accessible emergency telephone facilities shall be provided in an approved location at the construction site.

The street address of the construction site and the emergency telephone number of the fire department shall be posted adjacent to the telephone.

Means of Egress

56. Where a building has been constructed to a height greater than 50 feet (15 240 mm) or four stories, or where an existing building exceeding 50 feet (15 240 mm) in height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses.

57. Required means of egress components shall be maintained during construction and demolition.

Portable Fire Extinguishers

64. Structures under construction, alteration, or demolition shall be provided with not less than one approved portable fire extinguisher at each stairway on all floor levels where combustible materials have accumulated. An approved portable fire extinguisher shall be provided in every storage and construction shed. The code official is authorized to require additional approved portable fire extinguishers where special hazards exist, such as flammable or combustible liquid storage hazards. Fire extinguishers shall comply with IFC 906.

Safeguarding Roofing Operations

65. Roofing operations utilizing heat-producing systems or other ignition sources shall be performed by a contractor licensed and bonded for the type of roofing process to be performed.

66. Asphalt and tar kettles shall be operated in accordance with IFC 303.

67. Fire extinguishers for roofing operations. Fire extinguishers shall be installed in accordance with IFC 906. There shall be at least one multipurpose portable fire extinguisher with a rating of 2-A:20B:C on the roof being covered or repaired.

Site Plans- Commercial

This guide is intended as a resource for the civil construction plan submittal requirements for commercial properties.

Civil construction plans consist of the approved site plan; roadways, fire lanes, landscape plans, water, sewer, drainage, and other utility plan drawings. Civil construction plans are reviewed to determine compliance with Fire Marshal requirements as they relate to site construction and layout, building size, fire lanes, fire department access, fire hydrants, and other issues as designated. These requirements can be found in the 2003 International Fire Code, as adopted and amended by City of Marble Falls

In an effort to expedite the Fire Marshals civil plan review process, please ensure the following list of items are incorporated into the proposed civil construction plans. Please note that the below information is intended as a guideline and, as such, does not constitute all requirements.

Additional requirements may be required based upon each individual plan.

General Comments

31. Site plan in the civil construction drawing set matches the site plan approved by City Council.

Fire Access

32. If fire lanes are provided, they must meet the criteria stipulated in the *Fire Lane Guidelines*

33. Two points of emergency vehicle access must be provided if buildings exceed 30-feet or three stories in height.

34. Buildings or portions of buildings or facilities exceeding 30 feet (9144 mm) in height above the lowest level of fire department vehicle access shall be provided with approved fire apparatus access roads capable of accommodating fire department aerial apparatus.

Overhead utility and power lines shall not be located within the aerial fire apparatus access roadway.

35. Approved fire lanes shall be provided such that all portions of the exterior of the building shall be within 150 feet of a fire apparatus access road, as measured by an approved route around the exterior of the building or facility, as the hose lays.

36. Fire apparatus access roads shall have a minimum unobstructed width of 26 feet (7925 mm) in the immediate vicinity of any building or portion of building more than 30 feet (9144 mm) in height.

37. 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.

38. Fire lanes must meet the following criteria:

51. See *Fire Hydrant Guidelines* for additional information regarding location and spacing.

Building Size, Height, and Location Requirements

- a. Fire lanes must have a minimum width of 20 feet
- b. Minimum clear vertical height clearance of 14 feet
- c. Provide 3600 psi strength, 6-inch thick, concrete construction
- d. Support a 75,000 lb. fire apparatus
- e. Cannot exceed 10 percent in grade slope and not exceeding 5 percent on cross-slope.

39. Dead end fire lanes in excess of 150 feet shall be provided with an approved turnaround.

40. Size, type, and location of turnarounds are required to be approved by the Fire Department.
(See Approved Fire Lane Turnaround Section VI).

41. Fire lanes shall be shaded on the site plan with clearly indicated width, radii, and construction details.

42. See *Fire Lane Guidelines* for additional construction information.

Fire Hydrants and Water Lines

43. In general, fire hydrants shall be located at each street intersection and at intervals on the interior of each block.

44. Fire Hydrants shall be within 20-feet of fire lane.

45. Fire hydrants shall be spaced such that all portions of the exterior of the building are within the following distances as the hose lays:

- a) 400-feet for a commercial building, or facility
- b) 400-feet for multi-family developments
- c) 600-feet for single and double family developments.

46. Spacing between fire hydrants along fire apparatus roadways shall not exceed 500 feet for commercial properties and 600 feet for single and double family residential unit developments.

47. Existing fire hydrants shall be indicated on the site plan.

48. All Fire Hydrants must have Storz connections.

48. Proposed new fire hydrants shall be indicated on the site plan.

49. Required fire flow must be achieved with available fire hydrants. See IFC Appendix B.

50. Indicate proposed location of the Fire Department Connection (FDC). Note that the FDC is required to be along the fire lane with a maximum distance of 50-feet and within 100- feet, as the hose lays, of a fire hydrant.

51. Building or facility size, in square feet, to be indicated on the site plan.

52. Building or facility construction type to be indicated on the site plan.

53. Building height to be indicated on the site plan.

54. Will the building(s) require automatic fire sprinklers?
55. If the building is equipped with an electric fire pump for the fire sprinkler system, a secondary direct utility feed will be required to the pump controller. This feed must be circumvent the primary utility feed disconnect.

Additional Requirements

56. Fire hydrants and fire lane access roadways shall be installed and maintained prior to vertical construction of any building or structure.
57. If a fire pump is required for the automatic fire sprinkler system, a separate and independent utility feed shall be provided to the fire pump controller.

58. A Texas Department of Insurance licensed fire sprinkler contractor must install the fire sprinkler underground piping system, from the point the water line leaves the piping system and is dedicated to fire protection use, to a point 5 feet inside the building and 1 ft. above the finish floor. Plans must be submitted to the Fire Department for review and approval, prior to installation.

Site Plans- Residential Subdivisions

This guide is intended as a resource for the civil construction plan submittal requirements for residential subdivisions. Civil construction plans consist of the approved plat, roadways, fire lanes, water, sewer, drainage, and other utility plan drawings. Civil construction plans are reviewed to determine compliance with Fire Department requirements as they relate to fire department access, fire hydrants, and other issues as designated. These requirements can be found in the 2003 International Fire Code, as adopted and amended by City of Marble Falls. In an effort to expedite the Fire Marshals civil plan review process, please ensure the following list of items are incorporated into the proposed civil construction plans. Please note that the below information is intended as a guideline and, as such, does not constitute all requirements. Additional requirements may be required based upon each individual plan.

General Comments

1. Ensure plat in the civil construction drawing set matches the plat approved by staff, P & Z or City Council.

Fire Access

2. If fire lanes are provided, they must meet the criteria stipulated in the *Fire Lane Guidelines*.
3. Two points of fire apparatus access must be provided where there are more than 30 one- or two-family dwelling units.
4. Two points of fire apparatus access must be provided where there are more than 100 multifamily units.
5. The maximum cul-de-sac length shall not exceed 600 feet in length as measured from the centerline of the intersection, street to the center point of the radius.
6. All cul-de-sacs must have a minimum of 95-foot diameter of paving.
7. Width of streets must allow passage of emergency vehicles with cars parked on both sides of the street.
8. Minimum clear width for fire apparatus access is 11 feet.
9. Gated access is required to be reviewed & approved by the Fire Department.

Fire Hydrants and Water Lines

10. In general, fire hydrants shall be located at each street intersection and at intervals on the interior of each block.

11. Fire Hydrants shall be within 20-feet of fire lane.
12. A minimum required fire flow of 1000 gpm is required for one or two-family homes. All others shall comply with IFC Appendix B.
13. Spacing between fire hydrants shall not exceed 400-feet for one or two-family development areas.
14. Spacing between fire hydrants shall not exceed 300-feet for multi-family development areas.
15. All one and two-family homes shall be within 400-feet of a fire hydrant.
16. All multi-family buildings shall be within 250- feet of a fire hydrant.
17. Distances between hydrants shall be measured along the route the fire hose is laid by a fire apparatus vehicles, not as the "crow flies."
18. Existing fire hydrants shall be indicated.
19. Proposed new fire hydrants shall be indicated on the plans.
20. Indicate type and size of underground water lines serving the fire hydrants, and other utility services.
21. See *Fire Hydrant Guidelines* for additional information regarding location and spacing.

Additional Requirements

19. Fire hydrants and fire lane access roadways shall be installed and maintained prior to vertical construction of any building or structure.

Tenant Finish-Out/Building Alteration

Tenant Finish-Out/Building Alteration plans consist of lease spaces within strip malls, warehouses, office buildings or other construction in which only a portion or portions of the building is modified, altered or otherwise changed. Tenant Finish-out/Building Alterations are reviewed to determine compliance with Fire Marshals requirements as they relate to building construction and layout, fire department access, protection in place, exiting, and other issues as designated. These requirements can be found in the 2003 International Fire Code, as adopted and amended by City of Marble Falls. In an effort to expedite the Fire Marshals plan review process, please ensure the following list of items are incorporated into the proposed tenant finish-out plans.

Please note that not all of the below requirements pertain to all submittals

Please note that the below information is intended as a guideline and, as such, does not constitute all requirements. Additional requirements may be required based upon each individual plan.

1. Type of occupancy. (I.e. A — Assembly, B — Business, E — Educational, I — Institutional, M — Mercantile, S — Storage, etc.)
2. Indicate total square footage and/or square footage of each occupancy in multiple occupancy spaces;
3. Type of construction (combustible, noncombustible or combustible concealed spaces);
4. Is the building provided with an existing fire sprinkler system or fire alarm system?
5. Documentation regarding the operation(s) of the proposed business. Based upon this information, a complete diagram concerning the storage configuration may be required. Please see our *High Pile Storage Guidelines* for additional information.
6. Number, type, and arrangement of exits.
7. If required, tenant separation wall/demising wall shall be a minimum of 1-hr fire rated construction. The 1-hr rated designation shall be clearly indicated with U.L listing number.
8. A minimum of one 2A-10BC fire extinguisher per 3000 sq. ft., with a maximum travel distance of 75-feet shall be provided.
9. Address must be legible from the street in which you are addressed off. And the address and name of business must be provided on all rear doors. Suite numbers shall be 4-inch.
10. Address must be provided at gas and electric meters and/or disconnecting means.
11. Illuminated exit signs are required over each exit door when two or more exit doors are required.
12. Emergency lighting
13. Emergency lighting shall be tied to the lighting circuit in which it serves.
14. All exit doors located in the means of egress that are capable of locking or latching, shall be operable from the inside without the use of a key or any special knowledge or effort, or provided with approved panic hardware.
15. Arrangement of interior walls and/or drop ceiling may not interfere with the operation of the fire sprinkler system.
16. Will any type of special protection system be required? (i.e. ventilation, smoke dampers, fire alarm, fire sprinkler, kitchen hood, storage tank)
17. Knox Box entry system may be required.
18. Storage of combustibles is not permitted within 18” clearance of the ceiling, for sprinklered occupancies, 24” clearance for non-sprinklered
19. Additional criteria as required by the Fire Chief or Fire Marshal.
20. A Texas Department of Insurance licensed fire alarm contractor must install/modify the fire alarm system. Plans must be submitted to the Fire Department for review and approval.
21. A Texas Department of Insurance licensed fire sprinkler contractor must modify the fire sprinkler system. Plans must be submitted to the Fire Department for review and approval.
22. A Texas Department of Insurance licensed fire extinguisher contractor must install/modify the kitchen hood extinguishing system. Plans must be submitted to the Fire Department for review and approval.
23. A Texas Department of Insurance licensed aboveground/underground storage tank contractor must install/modify the aboveground/underground storage tank system. Plans must be submitted to the Fire Marshal for review and approval.
24. All access controlled egress doors shall meet the requirements of IFC 1003.3.1.3.4, “Access — controlled egress doors.” Access control doors are required to be reviewed, approved, and permitted by the Fire Department.

Building Construction – Plans Submittal

Building plans are reviewed to determine compliance with Fire Marshals requirements as they relate to building construction and layout, fire department access, protection in place, exiting, and other issues as designated. These requirements can be found in the 2003 International Fire Code, as adopted and amended by City of Marble Falls. In an effort to expedite the Fire Marshals plan review process, please ensure the following list of items are incorporated into the building construction plans.

Please note that not all of the below requirements pertain to all submittals.

It is recommended by the Fire Marshal's Office that a pre-construction meeting is requested to discuss your project in detail.

1. Type of occupancy. (*Le. A — Assembly, B — Business, E — Educational, I — Institutional, M — Mercantile, S — Storage, etc.*)
2. Indicate total square footage and/or square footage of each occupancy in multiple occupancy spaces.
3. Is the building to be provided with a fire sprinkler system, fire alarm system or other fire protection system?
4. Please see section when a fire protection system is required. For the purpose of this provision, firewalls shall not define separate buildings.
 - a. When determining the requirement for sprinkler protection, the total area contained within the exterior walls, including mezzanines and basements and the total area under any roof overhangs, canopies, projections, or other horizontal structures that are used to protect storage or use areas, is included in the total area determination.
5. If a fire pump is required for the automatic fire sprinkler system, a separate and independent utility feed shall be provided to the fire pump controller.
6. Type of construction (Type I, Type II, Type III, etc)
7. Documentation regarding the operation(s) of the proposed business. A complete diagram concerning the storage configuration may be required. Based upon this information, additional requirements and building features may be required. Please review the 2003 IFC for any features that may be applicable to your building.
EXAMPLE: Storage over 12 ft. is considered high-piled and the requirements of Section 23 of the IFC will be required to be met.
8. Number, type, size, separation, width, and arrangement of exits. This is to include the corridor rating, travel distance, and common path of travel. An egress plan is typically requested which indicates the required exits, distance to the exit and total width and number provided.
9. Wall and ceiling finishes shall be in accordance with the 2003 International Fire Code, Table 806.3, for all corridors, rooms and enclosed spaces.
10. Required tenant separation wall/demising wall shall be a minimum of 1-hr fire rated construction. The 1-hr

- rated designation shall be clearly indicated. The U.L listing number shall be provided. Higher rated walls may be required based upon occupancy and adjacent uses.
11. Indicate any types of special hazards. (I.e. medical gases, dust operations, spraying operations, etc.)
 12. Indicate any types of flammable or combustible liquids tank storage.
 13. A minimum of one 2A-10:BC fire extinguisher per 3000 sq. ft., with a maximum travel distance of 75 ft.
 14. Address must be legible from the street in which you are addressed 4-inch in rear. Suite numbers must be a minimum of 4-inch in front.
 15. Address must be provided at gas and electric meters and/or disconnecting means.
 16. Illuminated exit signs are required over each exit door when two or more exit doors are required.
 17. Emergency lighting will be required.
 18. Emergency lighting shall be tied to the lighting circuit in which it serves
 19. All exit doors located in the means of egress that are capable of locking or latching shall be operable from the inside without the use of a key or any special knowledge or effort, or provided with approved panic hardware.
 20. Arrangement of interior walls and/or drop ceiling may not interfere with the operation of the fire sprinkler system.
 21. Will any type of special protection system be required? (i.e. ventilation, smoke dampers, fire alarm, fire sprinkler, kitchen hood, storage tank).
 22. Knox Box entry system may be required.
 23. Storage of combustibles is not permitted within 18" clearance of the ceiling, for sprinklered occupancies, 24" clearance for non-sprinklered.
 24. Complete listing of hazardous materials, if any, and storage and location information.

Mid-Rise Residential Building Plans Submittal

The following policy is intended to support existing standards to insure fire and life safety for occupants of “mid-rise” residential occupancies. This includes structures three or more stories in height with interior common corridors, but not classified as a high-rise. Mid-rise building plans are reviewed to determine compliance with Fire Marshals requirements as they relate to building construction and layout, fire department access, protection in place, exiting, and other issues as designated. These requirements can be found in the 2003 International Fire Code, as adopted and amended by City of Marble Falls. In an effort to expedite the Fire Marshals plan review process, please ensure the following list of items are incorporated into the building construction plans.

It is recommended by the Fire Marshal’s Office that a pre-construction meeting is requested to discuss your project in detail.

Since these structures vary in design and present unique fire and life safety concerns, additional requirements may be requested by the Fire Marshal.

1. All residential portions of the building shall be fully protected with automatic fire sprinkler systems. NFPA 13R systems may be used in these residential areas, but sprinkler protection shall be provided for common corridors, balconies, attic spaces (roof attic only), bathrooms, closets exceeding 6 square feet, and closets with a minimum dimension exceeding 18 inches. NFPA 13 systems shall be provided for retail areas or enclosed parking structures. Sprinkler protection is not required for retail areas or enclosed parking structures satisfying other requirements of the code.
2. The automatic fire sprinkler system shall be designed so it can be “zoned” with floor isolation valves in locations approved by the Fire Department.
3. A standpipe system (designed in accordance with NFPA and IFC) shall be installed in every stairwell. The standpipe system shall be interconnected to the automatic fire sprinkler system.
4. Automatic fire alarm systems shall be analog intelligent addressable fire detection systems designed in accordance with NFPA and IFC.
5. Each residential unit shall be equipped with fire alarm horns (mini-horns) to provide the adequate decibel level in accordance with NFPA 72.
6. At least one elevator shall be designed so it can accommodate a medical stretcher. Minimum size shall be in accordance with the IBC.
7. All egress points from common corridors to the outside, if secured, shall be designed with KNOX key switch access.
8. A Texas Department of Insurance licensed fire alarm contractor must install the Fire Alarm System. Plans must be submitted to the Fire Marshals for review and approval.
9. A Texas Department of Insurance licensed fire sprinkler contractor must install the overhead Fire Sprinkler System. Plans must be submitted to the Fire Department for review and approval.
10. A Texas Department of Insurance licensed fire sprinkler contractor must install the underground Fire Sprinkler System. Plans must be submitted to the Fire Department for review and approval.
11. All access controlled egress doors shall meet the requirements of IFC 1003.3.1.3.4, “Access — controlled egress doors.” Access control doors are required to be reviewed, approved, and permitted by the Fire Marshal.

When a Fire Protection System is required

GENERAL REQUIREMENTS for ALL Occupancies

1. Fire Sprinkler UNDERGROUND Plan

Submittal Required For:

- a. Buildings with new sprinkler system installations.
- b. Existing sprinkler systems where sprinkler underground piping must be modified.

2. Automatic Fire Sprinkler Plan Submittal Required For:

- a. Building area (sq. ft) meets sprinkler requirement for occupancy type.
- b. Remodels to existing buildings with automatic sprinklers.
- c. A building addition where the cumulative total area of the building exceeds occupancy type requirements.
- d. Stages.
- e. Buildings with a floor level that is 30 feet or more above the lowest level of fire department vehicle access, automatic sprinkler systems are required.
- f. Atriums.
- g. Buildings, where floor level of the lowest story is located more than 30 feet above or below fire department access, standpipe systems are required.
- h. Buildings 10,000 sq.ft. or greater where interior area is more than 150 feet of travel from the nearest point of fire department vehicle access, standpipe systems are required.
- i. High piled storage area is 500 sq.ft. or larger.
- j. All buildings with FM 200, Intergen, or other alternate agent system.
- k. New and existing spray booths and spraying rooms.
- l. All above ground tank installations with tanks over 500 gallons.
- m. Stories or basements without openings: Sprinklers required throughout every story or basement of all buildings where the floor area exceeds 1,500 sq.ft. and where there is not one of the following types of exterior wall openings:
 - i. Openings below grade that lead directly to ground level by an

exterior stairway complying with Section 1003.3.3 or an outside ramp complying with Section 1003.3.4. Openings shall be located in each 50 linear feet or fraction thereof, of exterior wall in the story on at least one side.

ii. Openings entirely above the adjoining ground level totaling at least 20 sq.ft. in each 50 linear feet, or fraction thereof, of exterior wall in the story on at least one side.

3. Fire Alarm Plan Submittal Required For:

- a. All buildings equipped with fire sprinkler systems must be provided with monitoring.
- b. Remodels, fire alarm panel changes, or addition of monitoring to existing buildings with Fire Alarms.
- c. The complete building fire alarm must meet current code requirements if remodeled, expanded or if system deficiencies interfere with the effectiveness of the system.
- d. Atriums.
- e. High-rise buildings.
- f. Lead Acid Battery rooms with greater than 100-gallon liquid capacity.
- g. Buildings where elevator recall is required.

4. Flammable Liquid Storage Tank Submittal Required For:

- a. Portable tank 500 gallons or larger.
- b. Fixed above ground storage tanks and underground storage tanks.
- c. Propane tank installations.

5. Smoke Control Plan Submittal: Required For:

- a. Stage larger than 1,000 square feet in floor area.
- b. Stage with height greater than 50 feet.
- c. High-rise buildings.
- d. Atriums.
- e. High piled storage area 12,000 sq.ft. or larger. (Note: will also have to meet building access requirements).

6. Emergency Generator Test Report Submittal Required For:

- a. All buildings requiring or installing an emergency generator.

Additional requirement for specific occupancies

A-1

7. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 12,000 square feet.
- b. Occupant Load of 300 or more.
- c. Floor above or below exit discharge.
- d. Has Multi Theater complex.

8. Fire Alarm Plan Submittal Required For:

- a. Occupant Load of 300 or more.
- b. Buildings equipped with a fire sprinkler system.

A-2

9. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 5,000 square feet.
- b. Occupant Load of 300 or more.
- c. Floor above or below exit discharge.

10. Fire Alarm Plan Submittal: Required For:

- a. Occupant Load of 300 or more.
- b. Buildings equipped with a fire sprinkler system.

A-3

11. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 12,000 square feet.
- b. Occupant Load of 300 or more.
- c. Floor above or below exit discharge (Exception: Sports areas where main floor is a level of Exit Discharge).

12. Fire Alarm Plan Submittal: Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Occupant Load of 300 or more.

A-4

13. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 12,000 square feet.
- b. Occupant Load of 300 or more.
- c. Floor above or below exit discharge (Exception: Sports areas where main floor is a level of Exit Discharge).

14. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Occupant Load of 300 or more.

A-5

15. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Concession stands, retail areas, press boxes and other accessory use areas 1,000 square feet or larger.

16. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Occupant Load of 300 or more.

B

17. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 12,000 square feet.

18. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Building with total occupant load of 500 or more.
- c. Occupant load of 100 or more above or below lowest level of exit discharge.

E

19. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 20,000 square feet.
- b. Any portion below level of exit discharge.

20. Fire Alarm Plan Submittal Required For:

- a. All "E" occupancies

F-1

21. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 12,000 square feet.
- b. More than three stories in height.
- c. Has woodworking area 2500 sq.ft. or larger.
- d. Where the combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet.

22. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Building two or more stories in height and with total occupant load of 500 or more above or below lowest level of exit discharge.

F-2

23. Automatic Fire Sprinkler Plan Submittal

Required For:

- a. Building area exceeds 10,000 square feet.

24. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.

- b. Building two or more stories in height and with total occupant load of 500 or more above or below lowest level of exit discharge.

H-1, H-2, H-3, H-4, & H-5

25. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All "H" occupancies.

26. Fire Alarm Plan Submittal Required For:

- a. All "H-5" occupancies.

I-1, I-2, I-3, & I-4

27. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All "I" occupancies.

28. Fire Alarm Plan Submittal Required For:

- a. All "I" occupancies.

M

29. Automatic Fire Sprinkler Plan Submittal Required For:

- a. Where building area exceeds 12,000 square feet (1115 m²);
- b. Where building area is located more than three stories above grade; or
- c. Where the combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

30. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Building with total occupant load of 500 or more.
- c. Occupant load of 100 or more above or below lowest level of exit discharge.

R-1

31. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All buildings with an R-1 fire area.

32. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. All "R-1" occupancies
- c. See Exceptions 1 & 2.

R-2

33. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All "R-2" occupancies.

34. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.

- b. Dwelling unit is located three or more stories above the lowest level of exit discharge.
- c. Any dwelling unit located more than one story below the highest level of exit discharge of exits serving the dwelling unit.
- d. Building contains more than 16 dwelling units.
- e. See Exceptions 1, 2, & 3.

R-3

- a. More than three stories above the lowest level of exit discharge.
- b. More than two dwellings.

R-4

35. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All "R-4" occupancies.

36. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.

S-1

37. Automatic Fire Sprinkler Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Building area exceeds 12,000 square feet (1115 m²);
- c. Where a Group S-1 fire area is located more than three stories above grade; or
- d. Where the combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
- e. Repair garages with two or more stories in height including basements.
- f. Building with tire storage greater than 20,000 cubic feet.

38. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.

S-2

39. Automatic Fire Sprinkler Plan Submittal Required For:

- a. Enclosed parking garages exceeding 5,000 square feet.

40. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.

Stories and basements without openings

41. Automatic Fire Sprinkler Plan Submittal Required For:

a. all buildings where the floor area exceeds 1,500 square feet (139.4m²) and where there is not provided at least one of the following types of exterior wall openings:

- i. Openings below grade that lead directly to ground level by an exterior stairway complying with Section 1009 or an outside ramp complying with Section 1010. Openings shall be located in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side.
- ii. Openings entirely above the adjoining ground level totaling at least 20 square feet (1.86 m²) in each 50 linear feet (15 240 mm), or fraction thereof, of exterior wall in the story on at least one side.

b. Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet from such openings.

42. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. All underground buildings 60 feet or more below fire department access
- c. All underground buildings must have detection for smoke exhaust system.

43. Smoke Control Plan Submittal Required For:

- a. All underground buildings.

Covered Mall Buildings

44. Automatic Fire Sprinkler Plan Submittal Required For:

- a. All Covered Mall Buildings.

45. Fire Alarm Plan Submittal Required For:

- a. Buildings equipped with a fire sprinkler system.
- b. Covered Mall Buildings exceeding 50,000 sq.ft. in total floor area (Voice evac.).

46. Smoke Control Plan Submittal Required For:

- a. All Covered Mall Buildings.

Special Amusement Buildings

47. Fire Alarm Plan Submittal Required For:

- a. All special amusement buildings.

Buildings more than 55 feet in height.

48. Automatic Fire Sprinkler Plan Submittal Required For:

- a. buildings with a floor level having an occupant load of 30 or more that is located 55 feet (16 764mm) or more above the lowest level of fire department vehicle access.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

49. Fire Alarm Plan Submittal Required For:

Buildings having floors used for human occupancy located more than 75 feet above the lowest level of fire department vehicle access.

Exceptions:

1. Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the *International Building Code*.
2. Open parking garages in accordance with Section 406.3 of the *International Building Code*.
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the *International Building Code*.
4. Low-hazard special occupancies in accordance with Section 503.1.2 of the *International Building Code*.
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415 of the *International Building Code*.

Fire Sprinkler Underground Submittal

These guidelines are to be followed when a business, facility, or organization proposes to install or modify an underground water supply serving an automatic fire sprinkler system within the City of Marble Falls. These guidelines are not to be interpreted as containing all data required for proper design, installation, or approval. All underground water supply serving an automatic fire sprinkler system for the purposes of this guideline and any other guidelines or requirements shall conform to the 2003 International Fire Code, as adopted and amended by the City of Marble Falls and applicable NFPA standards.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Marble Falls Fire Marshal.

General Requirements

1. All underground lines shall begin at the point of connection to the underground circulating public/private water main. A valve shall be provided at the point of connection such that the fire sprinkler underground service line can be isolated from the public/private water distribution system.
2. Underground piping shall have a 10-foot minimum separation from all other utilities and placed in a separate trench. Underground piping within 5-feet of the building may be combined with other utilities for entrance into the building.
3. All underground lines shall terminate at the top of the spigot no more than 5 ft. inside the building and 1-foot above finished floor.
4. All ductile iron, retaining rods, and other non-corrosive resistant components shall be externally coated for corrosion or poly wrapped.
5. All underground piping shall be a minimum of Class 200 DRI4 or greater.
6. Fire Department Connections (FDC) shall be a separate and independent service main from the underground water line.
7. A single point for FDCs shall be provided for buildings with multiple risers.
8. A Vaulted Backflow preventer must be installed at the tap.
9. Systems must be designed with a 10-psi safety factor margin with a 20-psi residual on all City mains.

Submittal Requirements

10. A minimum of three (3) sets of plans and minimum of one (1) set of specifications/cut sheets shall be submitted. Plans shall contain sufficient detail to enable the plan reviewer to accomplish a complete review.
11. Each submittal shall have a:
 1. Marble Falls Development Services Fire Protection System Permit for Sprinkler System.
 2. A copy of State of Texas Fire Sprinkler RME-Underground license is required for the installing contractor.
 3. If System is designed by a RME-G: A copy of State of Texas Fire Sprinklers General- RME license is required for the designing contractor.

4. If System is designed by a PE: A State of Texas Engineers stamp is required on all pages.
5. A copy of State of Texas Fire Sprinkler SCR license is required for the installing company.
12. Plans shall be clear and legible and all sheets shall be in a common and appropriate scale.
13. The following items shall be provided on the plans:
 - a. Both "Wet" RME-U and RME-G or PE signatures.
 - b. Project name and address.
 - c. A scaled copy of the **approved** Site Plan that indicates the location of all fire hydrants and fire lanes servicing the building or site.
 - d. The size and type of building shall be clearly indicated.
 - e. Size and location of all water supplies and/or water lines servicing the building or site.
 - f. Flow test data.
 - g. Size and type of all piping.
 - h. Standard Details. See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - i. Location and size of all thrust blocks. See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - j. Thrust block details. See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - k. Detail of the spigot piece and/or and in-building riser turn.
 - l. Embedment detail. See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - m. Depth of bury. See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - n. Pit/valve arrangement See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - o. Type of fittings/joints, See City of Marble Falls Standard Specification manual, City of Marble Falls Standard Details manual.
 - p. Location and type of Fire Department Connection (FDC), if installed.
 - q. Location and type of backflow prevention.

r. Provide information on the transition stability of different types of piping (e.g. transition from PVC to ductile iron, retainer glands).

Additional Information

14. Plans approved by the City of Marble Falls, Fire Prevention Division gives authorization for construction and/or operation. Final approvals are subject to field verification. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.

15. Installation, fabrication, or otherwise construction of the system is prohibited without approved plans and permit.

16. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division.

17. All fire department inspection forms and permits shall be kept in a permit packet on the job site until final inspection.

18. Submittals that do not conform to the minimum requirements will not be approved.

Inspection Requirements

19. *Visual:* All underground piping and joints must be uncovered and exposed, with labeling of the pipe legible

from grade. All thrust blocks will be visually inspected and must be uncovered and exposed to grade. Depth of bury of the pipe shall be measured and verified. All ductile iron, retaining rods, and other non-plastic components shall be externally coated for corrosion and poly wrapped.

20. *Hydrostatic Test:* Underground piping will have to have passed the visual inspection. The test will be at 200 psi or at 50-psi pressure in excess of the maximum static pressure when the maximum static pressure exceeds 150 psi, for a minimum of two hours. Testing to be from the gate valve to the top of the spigot, no pressure drop or gain allowed.

21. *Flush:* Upon completion of the underground hydrostatic test, the underground piping will be flushed, witnessed by the Fire Marshals Office.

Proper methods and equipment to perform the flush must be used. All piping used to flush must be properly secured or restrained. Hoses may not be used. Field Fire Inspector must approve of flushing method and equipment.

The flushing must be completed prior to stacking the riser to the overhead piping.

22. *Fire Sprinkler Underground Final:* Final Fire Department sign-off of completion of all inspections and the receipt of all State required paperwork.

Fire Sprinkler Overhead System Plan Submittal Requirements

These guidelines are to be followed when a business, facility, or organization proposes to install or modify an automatic fire sprinkler system within the City of Marble Falls; assist in the preparation of an automatic fire sprinkler system submittal for permit; and aid the contractor in being successful. These guidelines are not to be interpreted as containing all data required for proper design, installation, or approval.

All automatic sprinkler systems for the purposes of this guideline and any other guidelines or requirements of the Fire Marshal shall conform to the 2003 International Fire Code, as adopted and amended by the City of Marble Falls and all applicable NFPA standards.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Marble Falls Fire Marshal.

Performance and installation Requirements

For the purpose of this provision, firewalls shall not define separate buildings.

- a. When determining the requirement for sprinkler protection, the total area contained within the exterior walls, including mezzanines and basements and the total area under any roof overhangs, canopies, projections, or other horizontal structures that are used to protect storage or use areas, is include the total area determination.

Submittal Requirements

Plans shall contain sufficient detail to enable the plan reviewer to accomplish a complete review.

1. Each submittal shall have a:
 - a. Marble Falls Fire Protection System Permit for Sprinkler System.
 - b. A copy of State of Texas Fire Sprinkler RME-General license is required for the installing contractor.
 - c. If System is designed by a PE: A State of Texas Engineers stamp is required on all pages.
 - d. A copy of State of Texas Fire Sprinkler SCR license is required for the installing company.
51. Plans shall be clear and legible and all sheets shall be in a common and appropriate scale.
2. The following information shall be provided on the plans:
 - a. "Wet" RME signature
 - b. The title block shall contain the following.
 1. Location of the installation
 2. Name and complete address of the business
 3. Name and complete address of the installing company
 4. Licensing information
 5. Date
 6. Drawn by

7. Building permit number
8. Authority Having Jurisdiction as the City of Marble Falls
9. Designed in accordance with the 2003 International Fire Code, and NFPA 13.
- c. Scaled Floor plan
- d. Square footage
- e. Location of doors
- f. Intended use of each room is identified
- g. North arrow provided
- h. Location of the Fire Department Connection (FDC)
- i. Occupancy classification
- j. Site plan to include the all fire hydrants, fire lanes, fire department connections and the fire service lead-in
- k. A legend shall be provided to include
 1. Symbol, sprinkler description, manufacturer, model number, and quantity for each device
 2. Pipe and fittings type
- l. A complete full-height cross section of the building
- m. Area of coverage of each sprinkler head
- n. Total area protected by each system
- o. Capacity of the dry system or antifreeze system
- p. Hydraulic node symbols and schedule
- q. Elevations of sprinkler lines and node points
- r. Hanger details
- s. Hanger locations
- t. Sprinkler riser diagram
- u. Inspectors test connection detail
- v. Auxiliary drain details
- w. Size and location of hose stations
- x. Graphical scale
- y. Description of the design area
- z. Design density of each design area
- aa. Adjustments to design area methodology

- bb. Clearly indicate each remote area
 - cc. Provide notes to indicate the Responsible party concerning freeze protection
 - dd. Water supply test information
3. Specification booklet shall contain the following:
- a. Scope of Work.
 - b. Equipment List
 - c. Hydraulic calculations for each design area.
 - d. Specific materials in the specification booklet are to be identified by an arrow or highlighter
54. Hydraulic Calculations shall include:
- a. "Wet" RME signature
 - b. Summary sheet
 - c. Water supply graph sheet
 - d. Supply analysis
 - e. Node analysis
 - f. Worksheets

Additional Information

4. Plans approved by the City of Marble Falls, Fire Marshal gives authorization for construction and/or operation. Final approvals are subject to field verification. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project.
5. Installation, fabrication or otherwise construction of the system is prohibited without approved plans and permit.
6. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division.
7. All fire Marshal inspection forms and permits shall be kept in a permit packet on the job site until final inspection.

Inspection Requirements

8. Do not stack the riser until the underground flushing has been completed. Check Fire Sprinkler Underground permit for verification of completion.

Visual: All overhead piping and joints must be uncovered and exposed, with labeling of the pipe legible from the floor. All hangers will be visually inspected and must be uncovered and exposed to the floor.

9. *Overhead Hydrostatic Test:* Overhead piping will be visually inspected with all joints exposed and labeling of the pipe turned downward. The test will be at 200 psi for a minimum of two hours. No pressure drop or gain allowed.

- a. A hydrostatic test is required for all new installations.
- b. A hydrostatic test is required for all modifications/tenant finish-out with twenty or more sprinkler heads added and/or relocated.

10. *Riser Room:* Verify riser room requirements, including floor drain for fire pumps, heat, light, markings, spare sprinkler head box and wrench, etc.

11. *Standpipe and Fire Department Connection (FDC):*

Hydrostatic testing if not already done, the test will be at 200 psi for a minimum of two hours. No pressure drop or gain allowed. A flow test at hydraulically most remote standpipe through FDC to verify required pressure and flow.

12. *Fire Sprinkler Final:* Final Fire Marshal sign-off at completion of all inspections and the receipt of all State require paperwork. *The inspection shall be conducted when all sheet rock and millwork is completed. The objective of this inspection is to verify that coverage is adequate after the initial hydrostatic test. This will give the Fire Department and the contractor(s) the opportunity to make any changes before there is a request for a CO.*

Sprinkler heads must be clean and free from paint, construction debris, or other conditions that would affect the proper operation of the sprinkler heads.

Commercial Kitchen Suppression Systems

These guidelines are to be followed when a business, facility, or organization proposes to perform cooking operations that will involve grease-laden vapors or smoke, within the City of Marble Falls.

This guideline identifies protection for cooking surfaces which include; deep fat fryers, griddles, upright broilers, char broilers, range tops and grills, open face ovens, salamanders, cheese melters, woks, open face pizza ovens, and other similar equipment. The plenum space within the hood, above the filters, and exhaust ducts servicing the hood shall also be protected.

All commercial cooking operations for the purposes of this guideline and any other guidelines or requirements of the Fire Department shall conform to the 2003 International Fire Code, as adopted and amended by the City of Marble Falls, and all applicable NFPA standards.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Fire Chief or Fire Marshal.

Performance and installation Requirements

1. The piping shall be rigidly supported to prevent excessive movement and shall be protected from mechanical or other damage.
2. Both a manual and automatic means of activation shall be provided. A minimum of one manual activation pull station shall be provided in the path of egress, and shall be located no more the five feet above the floor. The manual actuation device shall be located a minimum of 10-feet and a maximum of 20-feet from the kitchen exhaust system;
3. Where multiple manual actuators are installed for protection of separate extinguishing systems, they shall be clearly identified as to the hood being protected.
4. Distinctive audible and/or visual alarms shall be provided to indicate system operation and activation. Specifically, an audible/visual notification device shall be provided to indicate system operation, requiring personnel attention, and system recharge.
5. The fire suppression system shall be interconnected to the building fire alarm system. Activation of the Kitchen Hood Fire Suppression System shall cause the fire alarm to activate throughout the building.
6. Activation of the fire suppression system shall automatically shut-off the fuel supply, ventilation controls if required, fans, and any

other equipment necessary. Shut-off valves and switches shall be of the types that require a manual action to reset.

7. A sodium bicarbonate or potassium bicarbonate dry-chemical-type portable fire extinguisher having a minimum rating of 40-B shall be installed at an approved location, and within 30 feet of commercial food heat-processing equipment, as measured along an unobstructed path of travel.
8. A Type-K extinguisher may be required due to the type of cooking operations.
9. Pre-engineering fire suppression systems shall be installed only by companies and individuals licensed by the State of Texas State Fire Marshal's Office.
To expedite the plan review and inspection processes, please refer to the information listed below.

Submittal Requirements

10. The plans will be reviewed based on the requirements in the International Fire Code, 2003 Edition and NFPA 17A;
11. A "Wet" FEL signature is required;
12. Plans shall contain sufficient detail to enable the plan reviewer to accomplish a complete review. The following information shall be provided on the plans:
 - a. Indicated scale or suitable dimensions;

- b. Include manufacturer's data sheets;
- c. Include hood dimensions;
- d. Include duct perimeter;
- e. Include appliance dimensions;
- f. Include piping schematic;
- g. Include floor plan;
- h. Indicate nozzle type and number;
- i. Indicate the location and temperature of the fusible links;
- 13. Scope of Work;
- 14. A minimum of one (1) set of specifications shall be provided.
- 15. Equipment List;
- 16. Plans shall indicate the interconnection to the building fire alarm system;
- 17. Plans shall indicate the interconnection to the fuel supply shut-off and indicate the type of fuel supply.
- 18. The title block shall contain the following:
 - a. Location of the installation;
 - b. Name and complete address of the business;
 - c. Name and complete address of the installing company;
 - d. Licensing information;
 - e. "Wet" signature of the ECR, EPL, EEL;
- 19. Provide a copy of your State of Texas State Fire Marshal's Office license.

General Requirements

- 20. Each submittal shall have a:
 - a. Marble Falls Fire Department Plan Review/Permit Application
 - b. Copy of Contractors Texas Department of Insurance License
- 21. Plans approved by the City of Marble Falls, Fire Prevention Division give authorization for construction and/or operation. Final approvals are subject to field verification. Any approval issued by the Fire Prevention Division does not release the contractor or property owner from the responsibility of full compliance with all applicable codes and ordinances relating to the construction project;
- 22. Installation, fabrication or otherwise construction of the system is prohibited without approved plans and permit;
- 23. All installations and/or operations must concur with the approved plans. Any deviation from the approved plans requires a re-submittal to the Fire Prevention Division;
- 24. All Fire Marshals inspection forms and permits shall be kept in a permit packet on the job site until final inspection.

Section V

Fire Lane Guidelines

This guide is intended to be a resource for when a building, structure, or facility, within the City of Marble Falls, is required to be provided with fire apparatus access roads or emergency access easement, commonly referred to as “Fire Lane” for Fire Department Access.

All fire lanes for the purposes of this guide and any other guidelines or requirements of the Fire Marshal shall conform to the 2003 International Fire Code, as adopted and amended by the City of Marble Falls.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Fire Chief or Fire Marshal.

Fire Access Roads

1. Fire access roads are required when any portion of a building, structure or facility’s first story exterior wall is located more than 150 feet from a point of fire department access as measured by an approved route (as the hose lays) around the exterior of the building, structure or facility.
2. All structures and subdivisions shall provide two points of access. The two points of access shall be a minimum of 140 feet apart. The maximum cul-de-sac length shall not exceed 600’ in length as measured from the centerline of the intersection, street to the center point of the radius.
3. More than one access road may be required when deemed necessary due to potential for impairment of a single road by vehicle congestion, terrain, climatic conditions, or other factors.

Fire Apparatus Access Roads during Construction

4. When fire apparatus access roads and water supplies for fire protection are required to be installed, such protection shall be installed and made serviceable prior to vertical construction, and shall remain serviceable during the time of construction.

Specifications

5. Fire lanes must meet the following criteria:

- a. Fire lanes must have a width of 24 feet
- b. A turning radius of 20-feet for buildings less than 30-feet in height or less than 3 stories
- c. A turning radius of 39-feet for buildings 30-feet or above in height and/or 3 or more stories in height.
6. Minimum clear vertical height clearance of 14 feet.
7. Cannot exceed 10 percent in grade slope and not exceeding 5 percent on cross-slope.
8. Fire lanes shall be constructed of concrete surface capable of supporting the imposed loads of a 2- axle, 75,000 lb. fire apparatus. The design shall be based on the geotechnical investigation of the site, but shall meet the stated minimums, as follows: Those portions of the fire lane shall be constructed with 6-inch thick, 3600 psi concrete with No. 3 bars spaced 24 inches on centers both ways and with sub-grade to a density not less than 95 percent standard density.
9. Fire lanes may be required to be located within thirty (30’) feet of a building if deemed reasonably necessary by the Fire Chief to enable proper protection of the building.
10. A five (5’) foot wide level pathway shall be provided unobstructed through all barriers. A continuous row of parking between the fire lane and the structure shall be considered a barrier.

Marking

11. Striping — Fire apparatus access roads shall be marked by painted lines of red traffic paint six inches (6") in width to show the boundaries of the lane. The words "NO PARKING FIRE LANE" or "FIRE LANE NO PARKING" shall appear in four inch (4") white letters at 25 feet intervals on the red border markings along both sides of the fire lanes. Where a curb is available, the striping shall be on both the vertical and horizontal faces of the curb.

12. Signs — Signs shall read "NO PARKING FIRE LANE" or "FIRE LANE NO PARKING" and shall be 12" wide and 18" high. Signs shall be painted on a white background with letters and borders in red, using not less than 2" lettering.

Signs shall be permanently affixed to a stationary post and the bottom of the sign shall be six feet, six inches (6'6") above finished grade. Signs shall be spaced not more than fifty feet (50') apart. Signs may be installed on permanent buildings or walls or as approved by the Fire Chief.

Fire Lane Turnarounds

13. An approved hammerhead, cul-de-sac, or deadend hammerhead turnaround must be provided for all dead end fire access roads in excess of 150 feet in length. Unless specifically approved by the Fire Department, parking or other obstruction within the required turnarounds is prohibited.

14. All approved turnarounds shall be marked and platted as fire lanes.

15. Cul-De-Sac. 47.5 foot minimum radius/ 95-foot diameter. Corner radius shall be per the fire lane width required.

16. Hammerhead. 60-foot minimum legs along the "T," as measured from centerline of the fire lane.

Corner radius shall be per the fire lane width required.

17. Dead-End Hammerhead. 60-foot minimum intersection leg, as measured from centerline of the fire lane. Corner radius shall be per the fire lane width required.

18. Please see the *Approved Fire Lane Turnarounds* for representative graphics.

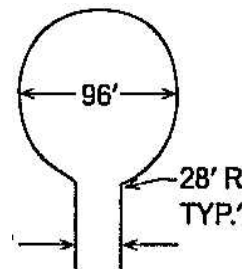
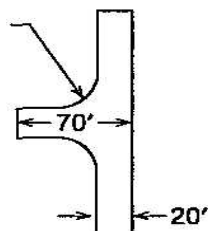
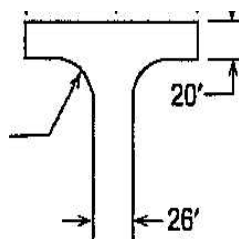
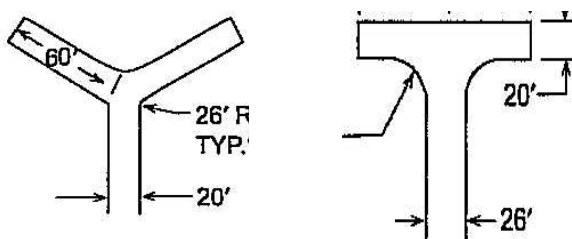
Plan Review

19. Fire lanes provided during the platting process shall be so indicated on the plat as an easement.

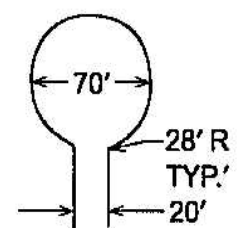
Where fire lanes are provided and a plat is not required, the limits of the fire lane shall be shown on a site plan and placed on permanent file with the Fire Marshal and City Planning Department.

20. Plans for fire lanes must be submitted to the fire department for review and approval prior to construction.

21. Fire lane and access easements shall be provided to serve all buildings through parking areas, to service entrances of buildings, loading areas and trash collection areas, and other areas deemed necessary to be available to fire and emergency vehicles. The Fire Chief is authorized to designate additional requirements for fire lanes where the same is reasonably necessary to provide access for fire and rescue personnel.



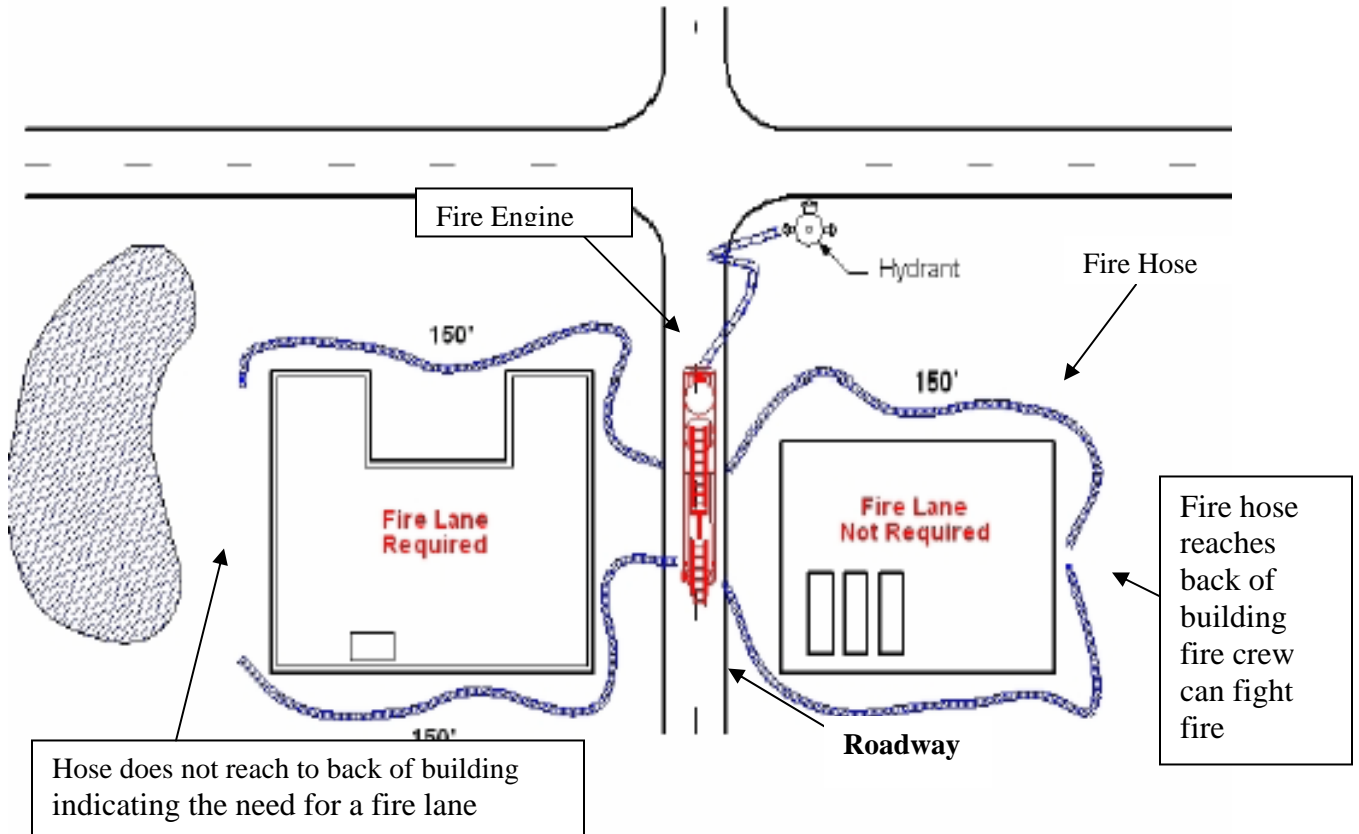
26' Fire lane



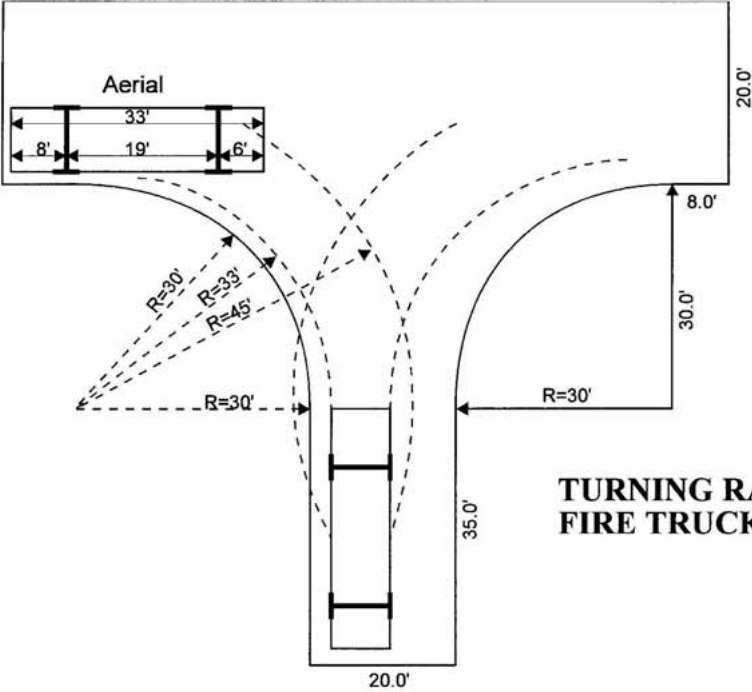
20' Fire lane

150 ft. Rule Example

Below is a representative example of a method to determine if a fire lane is required based upon the 150 feet.

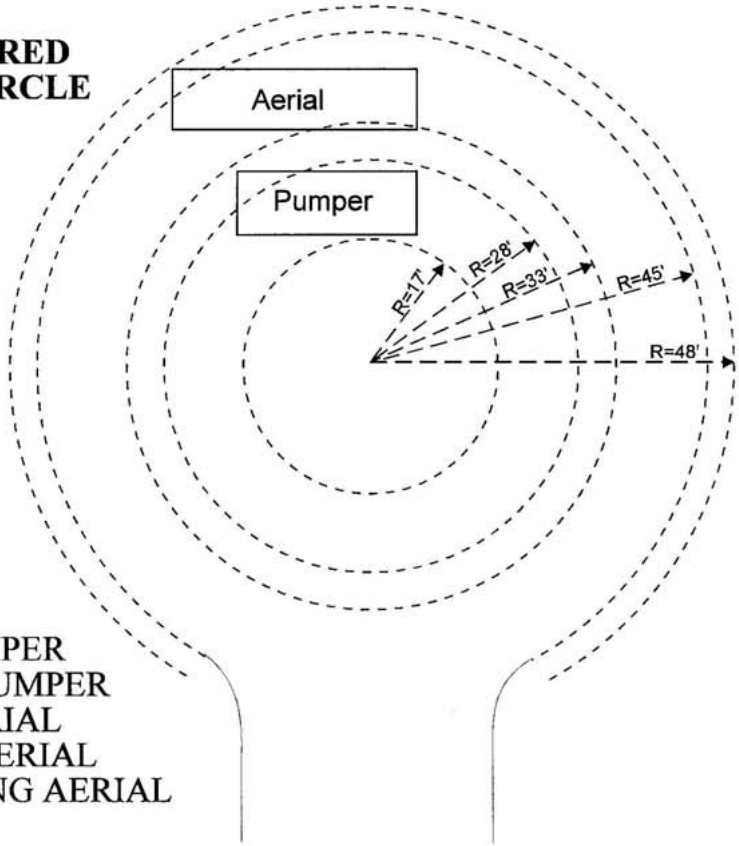


TURNING RADIUS SPECIFICATIONS



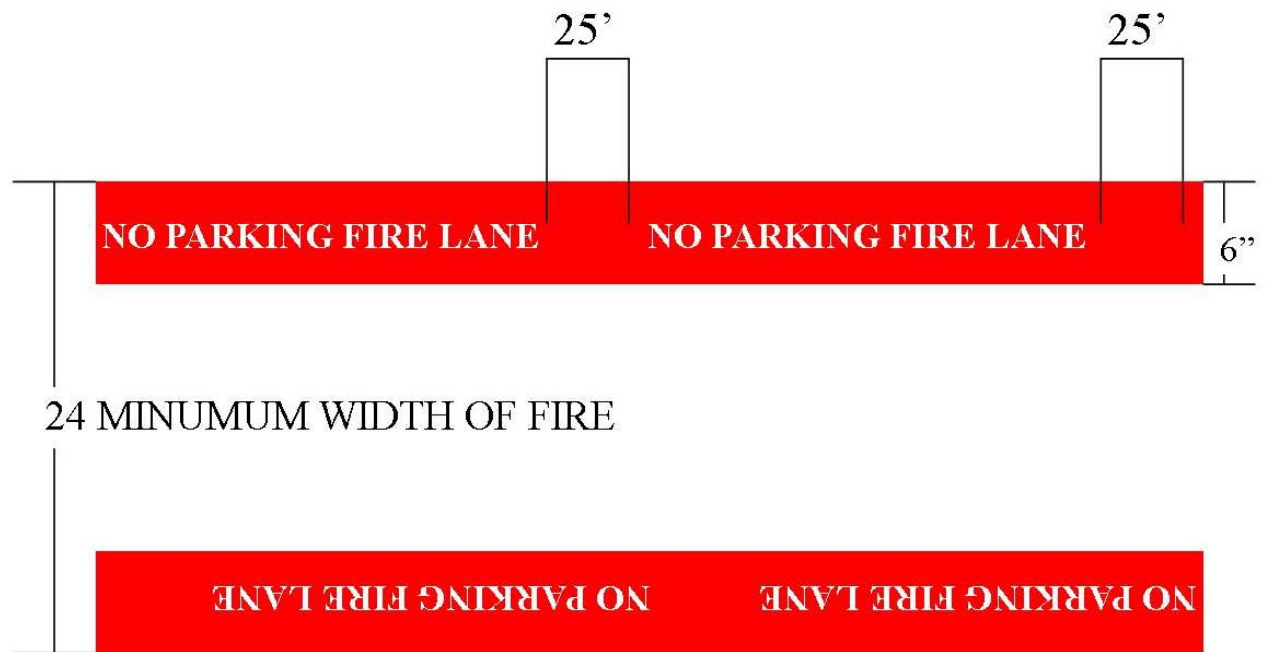
TURNING RADIUS REQUIRED FOR FIRE TRUCKS IN A TEE TURNAROUND

TURNING RADIUS REQUIRED FOR FIRE TRUCKS IN A CIRCLE TURNAROUND



- R-17': INSIDE WHEEL PUMPER
- R=28': OUTSIDE WHEEL PUMPER
- R=33': INSIDE WHEEL AERIAL
- R=45': OUTSIDE WHEEL AERIAL
- R=48': OUTSIDE OVERHANG AERIAL

FIRE LANE MARKING



- All fire lane markings must be legible from the center of the fire lane.
- 6-inch red strip with 4-inch white letters
- “NO PARKING FIRE LANE”
—spaced every 25-feet

Fire Hydrants

These guidelines are to be followed when a building, facility, residential subdivision, or multi-family dwelling units, within the City of Marble Falls, is required to provide approved fire hydrants. All fire hydrant criteria for the purposes of this guideline and any other guidelines or requirements of the Fire Marshal shall conform to the 2003 International Fire Code, as adopted and amended by the City of Marble Falls and the City of Marble Falls Engineering Standards.

This guide does not replace, nor supersede any adopted codes and/or ordinances adopted by the City of Marble Falls, or determinations and positions of the Fire Chief or Fire Marshal.

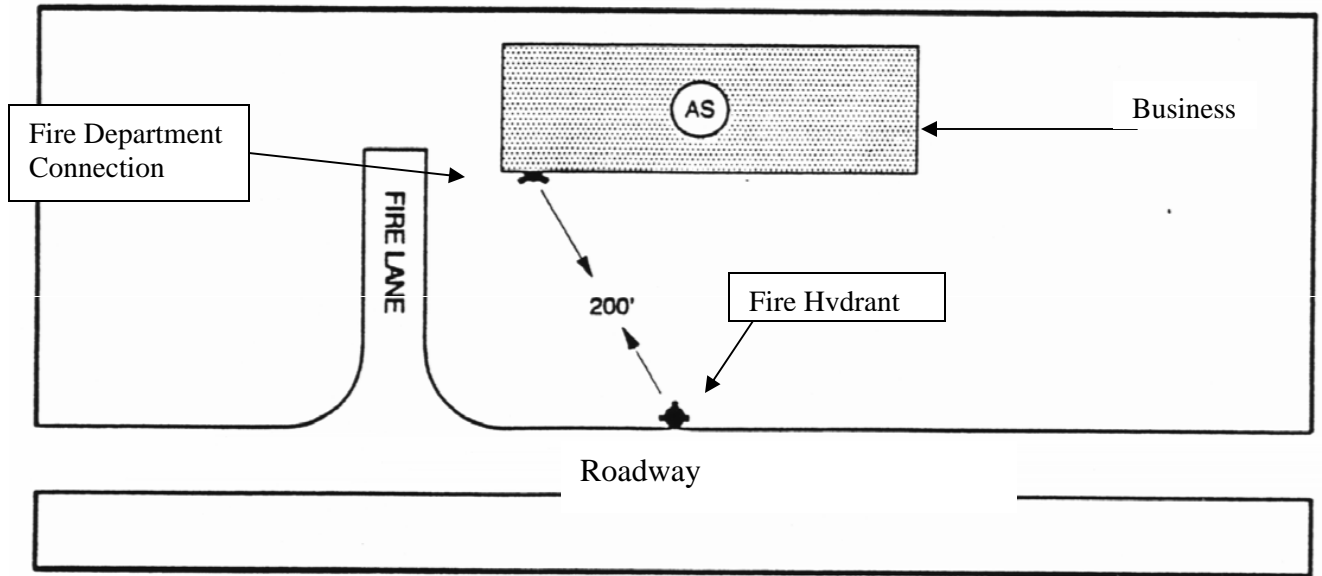
Water Supply

1. An approved water supply capable of supplying required fire flow for fire protection shall be provided to all buildings, as set forth in Appendix B of the IFC.
2. Total Fire Flow requirements depend upon the type of construction and number of square feet.
3. Fire flow for one- and two-family dwellings, which do not exceed 3,600 square feet, shall be 1,000 gallons per minute. Fire flow and flow duration for dwellings having a fire area in excess of 3,600 square feet shall not be less than that specified in Appendix B of the IFC.
4. An additional fire hydrant will be required for every 1,000 Gallons per Minute (GPM), or portion of fire flow required. (Example: Fire flow of 1,100 gpm. is required. Two fire hydrants will be required to supply this amount).
5. In general, fire hydrants shall be located at each street intersection and at intervals on the interior of each block.
6. Fire Hydrants shall be within 20-feet of fire lane.
7. Fire Hydrants shall be required on the same side of the street that the building is being built upon, when the street is designated as a minor arterial or larger. All streets with median strips, regardless of size, shall have required fire hydrants on the same side of the street as the construction.
8. All required fire hydrants shall be in place and accepted before any construction continues above the slab.

9. A five-foot (5') clear space shall be maintained around the circumference of all fire hydrants.
10. The location and number of fire hydrants connected to a water supply capable of delivering the required fire flow shall be provided as follows:
 - a. For all occupancies, excluding multifamily, Group R-3 and U, fire hydrants shall be installed when any portion of the building protected is in excess of one hundred and fifty feet (150'), as measured by the laying distance for fire apparatus hose lines along an approved route around the exterior of the buildings.
 - b. For all occupancies, excluding multifamily, Group R-3 and U, fire hydrants shall be spaced along fire apparatus access roads every three hundred feet (300').
 - c. For all Group R-3 and U occupancies, including one- and two-family residences, excluding townhouses and apartments, fire hydrants shall be installed when any portion of the building protected is in excess of four hundred feet (400'), as measured by the laying distance for fire apparatus hose lines along an approved route around the exterior of the buildings.
 - d. For all Group R-3 developments, fire hydrants shall be spaced along fire apparatus access roads every 400 hundred feet (400') and located at each intersection.
 - e. For all multi-family, including townhouses and apartments, fire hydrants shall be installed when any portion of the building protected is in excess of two hundred and

- f. For all multi-family developments, fire hydrants shall be spaced along fire apparatus access roads every 300 hundred feet (300') and located at each intersection.

11. A fire hydrant shall be installed no more than one hundred feet (100') from the Fire Department connection for a standpipe or automatic sprinkler system. The Fire Department Connection (FDC) shall be within fifty feet (50') of a fire lane.



A fire hydrant shall be installed no more than one hundred feet (100') from the Fire Department connection for a standpipe or automatic sprinkler system. The Fire Department Connection (FDC) shall be within fifty feet (50') of a fire lane or street.

Section VI

Inspection Requests and Procedures

The following guidelines shall be used when calling for inspection requests:

1. All inspection requests shall be coordinated by dialing (830) 693-3615. **Contact our office at least 24 hours in advance of the requested inspection date and time.**
3. The following information must be provided when requesting an inspection:
 - a. Fire Department issued permit number *if applicable*.
 - b. Name of project.
 - c. Address of project.
 - d. Fire protection contractor's company name.

- e. Fire protection contractor contact name and telephone number.
- f. Type of inspection requested.
- g. Other information as required, or requested.
4. A representative of the requesting company must be present at time of inspection.
5. Permit must be kept on the job site, and presented to the inspector upon request.
6. FD approved, stamped, and signed plans must be kept on the job site and presented to the inspector upon request. Contractor shop drawings are not considered approved plans.

On-Site Inspection Requirements

Keep Plans and Information on the Job Site during the Construction Process

1. One (1) set of approved plans, permit and plan review letter shall be maintained on-site at all times.
2. Fire Protection System Permits shall be kept in the permit jacket in the construction trailer at

- all times until the Certificate of Occupancy is issued.
3. Provide all previous inspection forms within the permit jacket.

The Inspection Process Details

The Fire Marshal may request additional inspections as needed. See Inspection Requests and Procedures, for the guidelines to use when calling for inspection requests.

Governing Documents

All tests and installation must comply with, but not limited to, City of Marble Falls Ordinance, the International Fire Code 2006 Edition, and applicable NFPA Codes.

1. Fire Sprinkler Underground

a. *Visual*: All underground piping and joints must be uncovered and exposed, with labeling of the pipe legible from grade. All thrust blocks will be visually inspected and must be uncovered and exposed to grade.

Depth of bury of the pipe shall be measured and verified. All ductile iron, retaining rods, and other non-plastic components shall be externally coated for corrosion and poly wrapped.

b. *Hydrostatic Test*: Underground piping will have to have passed the visual inspection. The test will be at 200 psi or at 50-psi pressure in excess of the maximum static pressure when the maximum static pressure exceeds 150 psi, for a minimum of two hours. Testing to be from the gate valve to the top of the spigot, no pressure drop or gain allowed.

c. *Flush*: Upon completion of the underground hydrostatic test, the underground piping will be flushed, witnessed by the Fire Department. Proper methods and equipment to perform the flush must be used. All piping used to flush must be properly secured or restrained.

Hoses may not be used. Field Fire Inspector must approve of flushing method and equipment. The flushing must be completed prior to stacking the riser to the overhead piping.

d. *Fire Sprinkler Underground Final*: Final Fire Department sign-off of completion of all inspections and the receipt of all State required paperwork.

2. Fire Sprinkler Overhead

Do not stack the riser until the underground flushing has been completed. Check Fire Sprinkler Underground permit for verification of completion.

a. *Visual*: All overhead piping joints and hangers.

b. *Overhead Hydrostatic Test*: Overhead piping will be visually inspected with all joints exposed. The test will be at 200 psi for a minimum of two hours. No pressure drop or gain allowed.

1. A hydrostatic test is required for all new installations.

2. A hydrostatic test is required for all modifications/tenant finish-out with twenty or more sprinkler heads added and/or relocated.

c. *24-hour air test*: The test will be conducted at 40 psi of air for 24-hours with less than 1.5 psi loss.

d. *Trip Test*: Operational test of the dry-pipe valve is performed and the quick opening device (500+ gallon systems) is tested, 750+ gallon systems must trip within 60 seconds.

e. *Compressor Test*: Dry system compressor fills the system within 30 minutes.

f. *Riser Main Flush*: Upon completion of the overhead hydrostatic test, the overhead piping will be drained and witnessed by the Fire Marshals Office.

g. *Riser Room*: Verify riser room requirements, including floor drain for fire pumps, heat, light, markings, spare sprinkler head box and wrench, etc.

h. *Standpipe and Fire Department Connection (FDC)*: Hydrostatic testing if not already done, the test will be at 200 psi for a minimum of two hours.

No pressure drop or gain allowed. A flow test at hydraulically most remote standpipe through FDC to verify required pressure and flow.

i. *Fire Pump*: Hydrostatic testing (if not already done, the test will be at 200 psi for a minimum of two hours. No pressure drop or gain allowed.), all piping flushed, pump room requirements verified, and operational test conducted by manufacture witnessed by the fire Marshal.

j. *Fire Sprinkler Final*: Final Fire Marshal sign-off at completion of all inspections and the receipt of all State required paperwork. *The inspection shall be conducted when all sheet rock and millwork is completed. The objective of this inspection is to verify that coverage is adequate after the initial hydrostatic test.*

This will give the Fire Marshal and the contractor(s) the opportunity to make any changes before there is a request for a CO.

Sprinkler heads must be clean and free from paint, construction debris, or other conditions that would affect the proper operation of the sprinkler heads.

3. Fire Alarm

- a. *Rough Wiring/ above ceiling:* All fire alarm wiring will be inspected for proper installation and penetration of any firewalls. *Fire alarm wiring shall not be tied to ceiling grid wire.*
- b. *Audible Device Test:* Ensure audible notification devices provide occupant notification for all areas without strobe devices.
- c. *Visual Device Test:* Ensure that all areas that do not have audible notification have visual coverage.
- d. *Initiating Device Test:* Test all smoke detectors and/or fire alarm initiating devices for Alarm and/or Standby conditions.
- e. *Waterflow:* The waterflow alarm will be tested by opening the inspectors test connection. The time delay feature on the flow switch switches must be set to a minimum delay of 30 seconds.
- f. *Central Station Monitoring:* Alarms and/or trouble signals are required to be monitored by a UL listed Central Station. Standard response to contact Fire Department shall be within 3 minutes.
- g. *Device Address Test:* All analog or addressable system will have all devices pulled and/or activated. The print out must comply with the devices that were pulled.
- h. *Final:* Final inspection.

4. Kitchen Hood

- a. *Air Test:* The nozzles protecting the cooking appliance shall be tested with compressed air to simulate activation.
- b. *Utility Shut-off Test:* All utilities connected to the protected cooking devices, shall have automatic shut-off valves.
- c. *Manual Pull Station Test:* Operation of the manual pull station shall bring about full system operation.
- d. *Audible/Visual Notification:* Audible and/or visual notification devices shall be tested.
- e. *Fire Alarm Connection:* Automatic fire extinguishing systems shall be monitored by the building fire alarm system in accordance with NFPA 72.
- f. *Final:* Final inspection.

5. Underground Storage Tank

- a. See **Installation Checklist for Underground Storage Tanks** for all required inspections.

6. Aboveground Storage Tank

- a. See **Installation Checklist for**

Aboveground Storage Tanks for all required inspections.

7. Access Control Gates

- a. *Fire Lane Unobstructed.*
- b. *Fail-Safe/Manual mode Verified.* Test operation of Fail-safe/manual mode.
- c. *Knox Box Key Switch.* Test the operation of the Knox Box Key switch.
- d. *Emergency Ingress system Tested.* Test openers and receivers.
- e. *Access Control Gates Final:* Final inspection.

8. Access Control

- a. *Magnetic-Lock/Push bar Test:* Magnetic locks will be tested.
- b. *Back-up Power Verification:* Test emergency backup power to the access control system, where provided
- c. *Fail Safe Verification:* Loss of power, or function to that part of the access control system, which locks the doors, shall automatically unlock.
- d. *Connection to Fire Sprinkler/Alarm System:* Activation of the building fire alarm or automatic sprinkler system, if provided, shall automatically unlock the doors. In addition, remain unlocked until the fire alarm system is reset.
- e. *Manual Operation:* Manual operation of the access control system, independent of any automatic function, will be tested.
- f. *Egress:* Electric strike, or designated access doors shall be tested to verify free egress

9. Hazardous Materials

- a. *Permit Posted:* Permit is clearly posted near the entrance to the occupancy.
- b. *Permitted Quantity is not exceeded:* The quantities permitted are not exceeded.
- c. *Controls in Place:* Administrative and/or containment controls are in place. Proper storage requirements are provided for the quantity of materials stored. Non compatible materials shall be properly segregated.
- d. *Placard:* Required NFPA 704 diamond placard posted.
- e. *Date of Issue:* Permit is valid for one year from date of issue.

10. High-Piled/High-Racked Storage

- a. *Permit Posted:* Permit is clearly posted near the entrance to the occupancy.
- b. *Permitted Quantity is not exceeded:* The quantities permitted are not exceeded.
- c. *Controls in Place:* Administrative and/or containment controls are in place. Proper storage requirements are provided for the quantity of materials stored. Non compatible materials shall be properly segregated.

d. *Date of Issue*: Permit is valid for one year from date of issue.

11. **Building Construction Items**

a. *Fire rated walls and sealant*. Inspect all fire rated walls and sealant at the deck.

b. *Fire Wall penetrations*. Inspect all fire rated wall penetrations and sealant of those penetrations.

c. *Fire curtains or smoke barriers*. Inspect any fire curtains or smoke barriers.

d. *Fire/Smoke Dampers*. Inspect all fire/smoke dampers in fire rated walls.

e. *Labeling*. Inspect labeling on ceiling grid, which indicates fire, and smoke dampers.

(Fire Damper / Smoke Damper)

f. *Fire Rated Doors*. Inspect all fire rated doors jambs, doors, smoke seals, and door closures on fire rated doors.

g. *Stage Curtains*. Inspect any stage curtains for fire rating.

h. *Exit Signs*. Inspect all exit signs and test.

i. *Emergency Lighting*. Inspect all emergency lighting and test.

j. *Portable Fire Extinguishers*. Inspect all portable fire extinguishers size, location of devices, and for state tag.

k. *Door Hardware*. Inspect all door hardware on means of egress. (Panic hardware, thumb latch, locks, etc.)

l. *Fire Lane*. Inspect fire lane striping.

m. *Fire Hydrants*. Inspect all fire hydrants for color-coding, obstructions, and protective barriers if applicable.

n. *Knox Box*. Inspect Knox box placement and place master key and all other emergency keys inside it.

o. *Elevator*. Inspect elevator and all operational equipment. Firefighter re-call tested. Must have State Elevator inspection record and certificate posted.

p. *Boilers*. Inspect any boilers and boiler room. Must have State boiler inspection posted.

12. **Certificate of Occupancy (C.O.)**

a. *Completed Inspections*: All required fire protection inspections completed.

b. *Additional Information*: As-built drawings or additional requested material provided.

c. *Project Complete*: Project is 100% completed. See the C.O. Inspection requirements.

Summary of Required Inspections

The Fire Marshal and/or Fire Inspector may request additional inspections as needed.
Only those pertaining to your particular project will be required.

1. Fire Sprinkler Underground

- a. Visual
- b. Hydrostatic Test
- c. Flush
- d. Fire Sprinkler Underground Final

2. Fire Sprinkler Overhead

- a. Visual
- b. Hydrostatic Test/Pressure Test
- c. Flush
- d. Fire Sprinkler Final

3. Fire Alarm

- a. Rough Wiring/Above ceiling
- b. Audible Device Test
- c. Visual Device Test
- d. Initiating Device Test
- e. Waterflow Test
- f. Central Station Monitoring
- g. Device Address Test
- h. Fire Alarm Final

4. Kitchen Hood

- a. Air Test
- b. Utility Shut-off Test
- c. Manual Pull Station
- d. Audible/Visual Notification
- e. Fire Alarm System Connection
- f. Kitchen Hood Final

5. Underground Storage Tank

- a. Line Test
- b. Anchors In Place
- c. Diking/Containment
- d. Foundation
- e. Leak Detection
- f. Dry Sumps
- g. Underground Final

6. Above ground Storage Tank

- a. Line Test
- b. Tank Label Visible
- c. Anchors In Place
- d. Diking/Containment
- e. Foundation
- f. Leak Detection

7. Access Control Gates

- a. Fire Lane Unobstructed
- b. Fail-Safe/manual mode Verified

- c. Know Box Key Switch
- d. Emergency Ingress System Tested
- e. Access Control Gates Final

8. Access Control

- a. Mag-Lock/Push Bar Test
- b. Back-Up Power Verified
- c. Fail-Safe Verification
- d. Connected to Fire Alarm System
- e. Access Control Final

9. Hazardous Materials

- a. All Fire Protection Systems Operable
- b. Permit is Posted
- c. Permitted Quantity is not exceeded
- d. Controls in Place
- e. Date of Issue

10. High-Piled Storage

- a. All Fire Protection Systems Operable
- b. Permit is Posted
- c. Storage Height Not Exceeded
- d. Signage and Stripping
- e. All Exits and Access Doors Clear

11. Building Construction Items

- a. Fire rated walls and sealant
- b. Fire rated wall penetrations
- c. Fire curtains or smoke barriers
- d. Fire/Smoke dampers
- e. Labeling
- f. Fire rated doors
- g. Stage curtains
- h. Exit signs
- i. Emergency lighting
- j. Portable fire extinguishers
- k. Door hardware
- l. Fire lane
- m. Fire hydrants
- n. Knox box
- o. Elevator
- p. Designated smoking areas
- q. Boilers and boiler room

12. Certificate of Occupancy (C.O.)

- a. All required inspections must be completed and signed off, prior to C.O. approval.

Certification of Occupancy/Fire Department Final

Listed below are the most commonly found fire code violations. The below listed items must be in compliance prior to making an appointment for Fire prevention personnel to inspect the facility.

An annual Fire Prevention Inspection will also be conducted at the business using these same guidelines.

Exterior Features

1. All fire lanes are clear, unobstructed, and striped per City of Marble Falls standards.
2. Fire hydrants shall be completed and in working order prior to construction. Storz connection in place.
3. No accumulation of waste material.
4. Fire Department Connection (FDC) unobstructed with Knox caps in place, and within 100 ft. of a fire hydrant and 50 of fire lane.
5. Address on front visible from the roadway and rear addressing legible from the street and fire lane.
6. Address listing on electric and gas meters and/or disconnecting means.
7. Knox Box located at the main entrance and/or riser room.

General

8. Storage clearance: unsprinklered 24" to ceiling; sprinklered 18" to sprinkler heads
9. Sprinkler heads clear of paint / overspray
10. All ceiling panels in place
11. Clearance in front of electrical panel (36").
12. Slots in electrical panels must be filled by blanks and all electrical receptacles have cover plates.
13. Occupancy load posted.
14. Fire rated assemblies properly constructed and penetrations sealed.
15. Extension Cord / multiple adapters utilized per code.
16. Abatement of electrical hazards.
17. Mechanical/electrical/boiler rooms free from storage and combustibles.
18. Gasoline stored in proper location / container.
19. General housekeeping and precautions against fire.
20. Wall and ceiling finishes shall be in accordance with the 2003 International Fire Code, Table 806.3, for all corridors, rooms and enclosed spaces. Field tests on interior finishes may be required.
21. All required tenant separation wall/demising wall shall be a minimum of 1hr fire rated construction.
22. All fire rated assemblies and fire doors intact.

Exits

23. Accessible means of egress.
24. Exits unlocked.
25. Exits are not blocked
26. Exit lights operational
27. Emergency lighting operational
28. All exit doors located in the means of egress that are capable of locking or latching shall be operable from the inside without the use of a key, tool or any special knowledge or effort, or provided with approved panic hardware.

Fire Protection Equipment

29. Portable fire extinguisher serviced within 1 year or manufactured in current calendar year
30. Minimum 2A-10:BC fire extinguishers per 3000 sq. ft, with a maximum travel distance of 75 ft. from any point within the building.
31. Sprinkler system "Green Tagged," in-service and deemed operational.
32. Alarm system "Green Tagged," in-service and deemed operational.
33. Kitchen hood and/or spray booth system "Green Tagged," in-service and deemed operational.
34. Other fire protection systems "Green Tagged," in-service and deemed operational.
35. Approved plans and permits on-site.
36. All devices installed according to plans.
37. Fire protection equipment room(s), riser room, labeled and access provided.
38. Access control system/gates in-service and deemed operational.
39. Arrangement of interior walls and/or drop ceiling shall not interfere with the operation of the fire sprinkler system.
40. Fire doors unblocked/operational.
41. Provide spare sprinklers and wrench in cabinet
42. All fire department inspection forms and permits shall be kept in a permit packet on the job site until final CO inspection.
43. Will any type of special protection system be required? (I.e. ventilation, smoke dampers, fire alarm, fire sprinkler, kitchen hood, storage tank).
44. Additional criteria as required by the Fire Marshal.