

**A SUPPLEMENTAL DOCUMENT AMENDING 1) THE SOUTHERN NEVADA FIRE
CODE AMENDMENTS, WHICH AMEND THE INTERNATIONAL FIRE CODE,
2009 EDITION, AND 2) THE INTERNATIONAL FIRE CODE, 2009 EDITION**

For local purposes, certain chapters, parts, sections, subsections and other subdivisions of the International Fire Code, 2009 Edition (IFC) have been amended, modified, deleted or added to by the Southern Nevada Fire Code Amendments (the Southern Nevada Amendments). For City purposes:

–Certain provisions of the Southern Nevada Amendments are deleted or amended as provided for in this Supplemental Document; and

–Certain provisions of the IFC are deleted, modified or added to as is provided for in this Supplemental Document.

Except as otherwise indicated, City amendments to the Southern Nevada Amendments or the IFC are shown below by the use of strikethrough for matter deleted and underlining for matter being added. Matter that was underlined or shown with strikethrough in the Southern Nevada Amendments for purposes of showing Southern Nevada amendments to the IFC is not so shown in this Supplemental Document, in order to show how City amendments differ from the Southern Nevada Amendments.

If a conflict exists between any provisions of this Supplemental Document and any provisions of the Southern Nevada Amendments or the IFC, the provisions of this Supplemental Document shall prevail.

The following provisions of the Southern Nevada Amendments are deleted in their entirety:

- Section 105.6.49 (Fire Pumps)
- Section 105.6.50 (Fire Suppression and Extinguishing Systems)
- Section 105.6.57 (Proprietary /self-monitoring)
- Section 105.7.17 (Fire apparatus access road plan)
- Section 105.7.18 (Fire Protection Report)
- Section 105.7.19 (Proprietary (self) monitoring facilities)
- Section 105.7.21 (Refrigeration systems)
- Section 105.7.24 (Water tanks)
- Section 108 (Board of Appeals) (NOTE: The effect of this deletion is to restore the applicability of Section 108 of the IFC)
- Section 903.3.8 (Antifreeze systems and systems with chemical additives)
- Section 1108 (Emergency Helicopter Landing Pad)
- Section 3006.5 (Medical gas system plan submittal)
- Section 3006.6 (Medical gas systems, testing)
- Section E102.2.2.4 (Radioactive materials)
- Appendix H and Appendix K, as shown in the entry for Section 101.2.1 below
- NFPA 13, Section 8.15.19.1.4 (relating to flexible sprinkler hose drops)

Section 101.2.1 of the IFC is amended to read as follows:

101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

The following appendices are hereby adopted and are a part of this code:

Appendix A – Board of Appeals

Appendix B – Fire-flow requirements for buildings, as amended

Appendix C – Fire hydrant locations and distribution, as amended

Appendix F – Hazard Ranking

Appendix H – Hazardous materials management plan (HMMP) and hazardous materials inventory statement (HMIS) instructions

Appendix J – Emergency responder radio coverage system, as amended

Appendix K – Proprietary(self) monitoring, as amended

Appendices L and M, as added by this Supplemental Document

Section 105.6.62 is added to the IFC as follows:

105.6.62 Battery Systems. An operational permit is required for stationary lead-acid battery systems having a liquid capacity of more than 100 gallons in sprinklered buildings, or 50 gallons in non-sprinklered buildings. See Section 608.

Section 105.6.63 is added to the IFC as follows:

105.6.63 Commercial Barbecue. An operational permit is required for a commercial barbecue in a fixed outdoor location, as referred to in Section 307.4.4 of the Southern Nevada Amendments.

Section 105.7.3 of the Southern Nevada Amendments is amended to read as follows:

105.7.3 Compressed gases. When the compressed gases in use or storage exceed the amounts listed in Table 105.6.8, a construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service or close or substantially modify a *compressed gas system*.

Exceptions:

1. Routine maintenance.
2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

~~A construction permit is required to install, extend, alter, or modify a medical gas system.~~
~~Exception: Level 3 compressed air and/or piped vacuum systems as defined by NFPA 99,~~

~~Standard for Health Care Facilities.~~

Section 105.7.10 of the IFC is amended to read as follows:

105.7.10 LP-Gas. A construction permit is required for the installation of or modification to an LP-Gas system.

Exception: Installations with an aggregate water capacity of less than 288 gallons (1090L) serving one- and two-family dwellings.

Section 308.1.4 of the IFC is amended to read as follows:

308.1.4 Open-flame cooking devices. Charcoal burners and other open-flame cooking devices shall not be located above the first story, or operated on combustible balconies or within 10 feet (3048 mm) of combustible construction.

Exceptions:

1. One- and two-family *dwellings*.
2. ~~Where buildings, balconies and decks are protected by an automatic sprinkler system.~~
3. ~~LP-gas cooking devices having LP-gas container with a water capacity not greater than 2 ½ pounds [nominal 1 pound (0.454 kg) LP-gas capacity]~~

Section 401.3.2 of the Southern Nevada Amendments is amended to read as follows:

401.3.2 Alarm activations. Upon activation of a water flow signal, employees or staff shall immediately notify the fire department.

~~**Exception:** For approved proprietary supervising station systems (self-monitoring systems), the fire department shall be notified as required by the fire code official.~~

Section 503.1.1 of the Southern Nevada Amendments is amended to read as follows:

503.1.1 Buildings and facilities. Approved fire apparatus roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of this section and shall extend to within 150 feet (45 720 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building as measured by an approved route around the exterior of the building or facility.

~~**Exception:** The fire code official is authorized to increase the dimension of 150 feet (45 720 mm) where:~~

1. ~~The building, except for a Group II and/or high-pile storage occupancy, is~~

equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2, or 903.3.1.3.

- a. ~~Where the building is protected with an approved automatic sprinkler system in accordance with minimum requirements, the fire apparatus roads shall extend to within 250 feet (76 420 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building.~~
- b. ~~Where the building is protected with an approved upgraded automatic sprinkler system in accordance with the minimum requirements for the upgraded sprinkler system design, the fire apparatus roads shall extend to within 350 feet (106 680 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building. For the purposes of this section, an upgraded sprinkler system shall be in accordance with the following table:~~

Minimum Code-Required System	Upgraded System for 350 feet from fire apparatus lanes
NFPA 13D	NFPA 13R
NFPA 13R	NFPA 13, Light Hazard
NFPA 13, Light Hazard	NFPA 13, Ordinary Hazard Group 1, with quick-response sprinklers
NFPA 13, Ordinary Hazard Group 1	NFPA 13, Ordinary Hazard Group 2
NFPA 13, Ordinary Hazard Group 2	NFPA 13, Extra Hazard Group 1
NFPA 13, Extra Hazard Group 1	NFPA 13, Extra Hazard Group 2
NFPA 13, Extra Hazard Group 2	As approved by the <i>fire code official</i>

- 2. ~~Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.~~
- 3. ~~There are not more than two Group R-3 or Group U occupancies or single-family dwellings built under the IRC.~~

Exceptions:

- 1. The *fire code official* is authorized to increase the dimension of 150 feet (45 720 mm) where the circumstances described in both Paragraphs a and b below are met:
 - a. Fire apparatus access roads cannot be installed because of location on property, topography, waterways, nonnegotiable grades or other

similar conditions, and an approved alternative means of fire protection is provided. Such approved alternatives may include standpipes or secondary water supplies.

- b. The building, except for a Group H and/or high-pile storage occupancy, is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
 - i. Where the building is protected with an approved automatic sprinkler system in accordance with minimum requirements, the fire apparatus roads shall extend to within 250 feet (76 420 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building. For R-3 Occupancies, see Section 903.2.8.2.3.
 - ii. Where the building is protected with an approved upgraded automatic sprinkler system in accordance with the minimum requirements for the upgraded sprinkler system design, the fire apparatus roads shall extend to within 350 feet (106 680 mm) of all portions of the facility and all portions of the exterior walls of the first story of the building. For the purposes of this subparagraph, an upgraded sprinkler system shall be in accordance with the following table:

<u>Minimum Code-Required System</u>	<u>Upgraded System for 350 feet from fire apparatus lanes</u>
<u>NFPA 13D</u>	<u>NFPA 13R (See Section 903.2.8.2.3)</u>
<u>NFPA 13R (Group R-1, R-2 Occupancies)</u>	<u>NFPA 13, Light Hazard</u>
<u>NFPA 13, Light Hazard</u>	<u>NFPA 13, Ordinary Hazard Group 1, with quick-response sprinklers</u>
<u>NFPA 13, Ordinary Hazard Group 1</u>	<u>NFPA 13, Ordinary Hazard Group 2</u>
<u>NFPA 13, Ordinary Hazard Group 2</u>	<u>NFPA 13, Extra Hazard Group 1</u>
<u>NFPA 13, Extra Hazard Group 1</u>	<u>NFPA 13, Extra Hazard Group 2</u>
<u>NFPA 13, Extra Hazard Group 2</u>	<u>As approved by the <i>fire code official</i></u>

- 2. The 150 foot requirement of this Section does not apply to the following:
 - a. Detached gazebos for residential and public uses.
 - b. Independent buildings, such as restrooms or snack shops, that are associated with golf courses, parks and similar uses and that do not exceed 400 square feet (37 m²) in size.

- c. Detached equipment or storage buildings for commercial use that do not exceed 400 square feet (37 m²) in size.

Section 503.1.2 of the IFC is amended to read as follows:

503.1.2 Additional secondary access. ~~The fire code official is authorized to require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.~~ Approved secondary access shall be provided for developments with more than 100 dwelling units, road(s) with dead ends or with a single point of access in excess of 600 ft, and for all commercial and multi-family residential developments.

Section 503.2.1 of the Southern Nevada Amendments is amended to read as follows:

~~**503.2.1 Dimensions.** Fire apparatus access roads shall have an unobstructed width of not less than 24 feet (7315 mm), exclusive of shoulders, except for approved access gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm).~~

503.2.1 Dimensions for Access Roads Serving R-1 and R-2 Occupancies. Fire apparatus access roads serving R-1 and R-2 occupancies as defined in IBC Section 310 shall have an unobstructed width of not less than 36 ft (10.97 m) flow-line to flow-line except for approved security access gates installed in accordance with Section 503.6 which can be reduced to 20 feet (6096 mm), and shall have an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm). Parking will be permitted on both sides of the fire apparatus access road.

Exception: Private drive aisles, driveways, etc. shall be allowed to be reduced to a minimum width of 24 ft (7.32 m) wide when serving no more than 6 residences, and when there will be no on-street parking allowed.

Section 503.2.1.1 is added to the IFC to read as follows:

503.2.1.1 Dimensions for Access Roads Serving Occupancies Other than R-1 and R-2 Occupancies. Fire apparatus access roads in R-3 occupancies as defined in IBC Section 310 may be reduced to 24 ft (7.32m) wide if all buildings fronting the street are provided with an automatic sprinkler system installed in accordance with Section 903.2.8.2.3, and shall have an unobstructed vertical clearance of not less than 13 feet 6 inches (4115mm). Parking will be permitted on both sides of the fire apparatus access road.

For all other occupancy types as defined in Chapter 3 of the IBC, the unobstructed width of fire apparatus access roads shall be as follows:

1. Not less than 40 ft (12.19 m) wide, flow-line to flow-line, where parking is permitted on both sides of fire apparatus access road.
2. Not less than 32 ft (9.75 m) wide, flow-line to flow-line, where parking is

- permitted only on one side of the fire apparatus access road.
3. Not less than 24 ft (7.32 m) wide, flow-line to flow-line, where no parking is permitted on either side.
 4. Not less than 24 ft (7.32 m), for designated fire apparatus access roads through parking lots.

Section 503.2.3 of the Southern Nevada Amendments is amended to read as follows:

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus, with a minimum vehicle load of ~~18,000~~ 20,000 pounds per axle, and shall be surfaced and paved so as to provide all-weather driving capabilities.

Exception: Temporary access roads serving only buildings under construction shall not be required to be paved, but shall comply with all other requirements of Section 503.2.3.

Section 503.2.5 of the IFC is amended to read as follows:

503.2.5 Dead Ends. Dead end fire apparatus access roads in excess of 150 feet (45 720mm) in length shall be provided with an approved area for turning around fire apparatus: turn around having a minimum diameter of 81 feet (24 690 mm) flow line to flow line.

Section 503.3 of the Southern Nevada Amendments is amended to read as follows:

503.3 Marking. Fire apparatus access roads shall be marked where required to prohibit parking and other obstructions. Marking shall consist of painting the curb, or the side of the street, where no curb is present, with a suitable coat of industrial red enamel along the entire length of road where parking is prohibited. Each section of curb that is painted red shall also be marked by signage stating "NO PARKING FIRE LANE." Signs are to be installed no higher than 10 feet or less than 6 feet from the surface of the roadway. Signs shall be located at each end of painted curb, and additionally in between so that the maximum separation between signs is 100 feet, as measured along the centerline of the fire apparatus access road. (See Type "A" sign in Appendix M.)

In lieu of providing multiple signs, where a minimum of one sign is provided at every entrance stating "ON-STREET PARKING IN MARKED FIRE LANES PROHIBITED" (See Type "B" sign in Appendix M), required fire lanes may be marked by painting the words "NO PARKING FIRE LANE," over the face of the red-painted curbs. The words on the curbs shall be painted in white letters not less than 4 inches in height with a brush stroke of not less than 3/4 inch. The maximum separation between words shall be 50 feet, as measured along the centerline of the fire apparatus access lane. (See Type "C" sign in Appendix M.)

Section 510.3 of the Southern Nevada Amendments is amended to read as follows:

510.3 Emergency responder radio coverage in existing buildings. Existing buildings that do not have approved radio coverage for emergency responders within the building shall be equipped with such coverage as required by this section and Appendix J, ~~according to one of the following:~~

- ~~1. Wherever existing wired communication system cannot be repaired or is being replaced, or where not approved in accordance with Section 510.1, Exception 1.~~
- ~~2. Within a time frame established by the adopting authority.~~

~~**Exception:** Where a building is provided with an existing wired communication system that can be expanded to cover areas lacking radio coverage in accordance with Section 510.2.~~

Section 610 is added to the IFC to read as follows:

SECTION 610

AUTOMATIC EXTERNAL DEFIBRILLATORS

610.1 Where required. Automatic External Defibrillators (AED's) shall be provided in the following new and existing locations:

1. Assembly occupancies that can accommodate more than 1,000 occupants.
Exception: Assembly occupancies used primarily for worship.
2. Government-owned or government employee-occupied buildings that can accommodate more than 100 occupants.
3. All high-rise buildings.

610.2 Distribution of AED's. AED's shall be provided and distributed so that an AED will be within a three minute travel distance to any location on the property (approximately 300 ft).

610.3 Other requirements. AED's shall be conspicuously located where they will be readily accessible and immediately available when needed, both for site employees and the general public.

610.4 Owner/occupant responsibility. It shall be the responsibility of the owner/occupant of the facility to provide and maintain AED's as required by Section 610.1 and to provide training to designated employees on the proper use of the AED's.

Section 903.2 of the Southern Nevada Amendments is amended to read as follows:

903.2 Where required. Approved automatic sprinkler systems in new buildings and

structures shall be provided, in accordance with this Section, throughout all buildings, regardless of occupancy type, including buildings built under the IRC, exceeding 5,000 sq ft (464 m²) in building area, and ~~additionally~~ in locations described in Section 903.2.1 through 903.2.12. In addition, the requirements of this Section apply to all new buildings and structures that are greater than two stories in height, including any height added by usable floor space.

Exceptions:

1. R-3 Occupancies (See Section 903.2.8)
- ~~2.~~ 2. Open parking garages for vehicle storage only, with no other occupancy above any part of the open parking garage structure, ~~are not required to be protected with automatic sprinklers.~~
2. 3. Buildings, structures, or service equipment and installations directly used in utility generation or distribution which are installed on properly recorded easements belonging to water, gas, power, telephone, or other utility companies that are preemptively regulated by the Nevada ~~Public Service~~ Public Utilities Commission, a State of Nevada charter, or other public franchise. This Exception does not apply to non-exempted buildings are structures containing occupiable spaces such as offices, meeting rooms, service counters, public restrooms, or other normally occupied space.

If any fire area in a building or structure is provided with fire sprinklers, whether required or not, all fire areas in the building or structure shall be provided with fire sprinklers.

Exceptions:

1. Where a building is subdivided into separate buildings, each having a total building area of less than 5,000 sq ft (464 m²), by 4-hour rated fire walls with no openings constructed in accordance with the IBC.
2. Special hazard areas that require sprinklers for certain uses, such as medical gas rooms, may be fire sprinklered without requiring additional fire sprinklers, when approved by the code official.

For new construction expanding existing buildings, where an addition to any existing non-sprinklered building or structure expands the total area to greater than 5,000 square feet (464 m²), the entire building, including the existing portions, shall be provided with fire sprinklers.

Exceptions:

1. Group R-3 occupancies and single-family dwellings built under the IRC with fire flow in accordance with Appendix B.
2. Where the area of the addition does not exceed 25% of the original building area at the time of construction and the area of the addition does not exceed 5,000 square feet (464 m²).

Section 903.2.8 of the Southern Nevada Amendments is amended to read as follows:

903.2.8 Group R. *An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area: in accordance with Sections 903.2.8.1 through 903.2.8.2.3.*

When required by Nevada Administrative Code Section 449.211, residential facilities for groups shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2 (NFPA 13-R).

Section 903.2.8.1 through 903.2.8.2.3 are added to the IFC to read as follows:

903.2.8.1 Group R-1 and R-2 Occupancies. *An automatic sprinkler system shall be provided for all Group R-1 and R-2 occupancies in accordance with Section 903.3.*

903.2.8.2 Group R-3 Occupancies Generally. *Automatic sprinkler systems shall be provided for Group R-3 occupancies in accordance with Sections 903.2.8.2.1 and 903.2.8.2.2.*

903.2.8.2.1 Group R-3 Occupancies–International Building Code. *Buildings constructed under the International Building Code shall be protected throughout by an automatic sprinkler system in accordance with NFPA 13, 13R, or 13D, as permitted by the International Building Code. The automatic sprinkler system shall also meet the requirements of Section 903.2.8.2.3.*

903.2.8.2.2 Group R-3 Occupancies–International Residential Code. *Buildings constructed under the International Residential Code shall be protected throughout by an automatic sprinkler system when required by the International Residential Code or under either of the following circumstances:*

- 1. Where required by Sections 503 or 507 of this code, in which case automatic fire sprinklers shall be installed in accordance with Section 903.2.8.2.3.*
- 2. When the total area of the building exceeds 10,000 ft² (929 m²) or is more than two stories in height, including any height added by usable floor space, in which case an automatic sprinkler system meeting the minimum requirements of NFPA 13D and Section 903.2.8.2.3 shall be installed.*

903.2.8.2.3 Mitigation Matrix. *When an automatic sprinkler system is being installed, or the type of system is upgraded to mitigate the minimum requirements for fire department access or water supply as required by Sections 503 or 507, the automatic sprinkler system design requirements in Table 903.2.8.2.3 shall apply.*

Table 903.2.8.2.3
Mitigation Matrix for Group R-3 Occupancies ⁴

<u>Building Area Size Range in Square Feet (sf) ⁶</u>	<u>Mitigation Residential System Type ^{1,3}</u>	<u>Separate Sprinkler Lead-in Required ⁵</u>	<u>Minimum Underground Pipe Size ⁵</u>	<u>Minimum Water Meter Size ⁵</u>	<u>Sprinklers Required in Areas Subject to Freezing</u>
<u>< 3,600 sf</u>	<u>Standard NFPA 13D ¹</u>	<u>No</u>	<u>1"</u>	<u>3/4"</u>	<u>No</u>
<u>≥ 3,600 sf and < 10,000 sf</u>	<u>Enhanced NFPA 13D ^{1,2}</u>	<u>No</u>	<u>1"</u>	<u>3/4"</u>	<u>No</u>
<u>≥ 10,000 sf and < 15,000 sf</u>	<u>Enhanced NFPA 13R ¹</u>	<u>Yes</u>	<u>N/A</u>	<u>N/A</u>	<u>Yes</u>
<u>≥ 15,000 sf</u>	<u>Modified NFPA 13 ¹</u>	<u>Yes</u>	<u>N/A</u>	<u>N/A</u>	<u>Yes</u>

N/A = Not Applicable

¹ This mitigation constitutes a building "completely protected with an approved fire sprinkler system."

² Domestic demand of 5 gpm is required to be added to the sprinkler demand in the hydraulic calculations.

³ Free-standing detached buildings with one or more sleeping rooms shall be protected by an Enhanced NFPA 13D system.

⁴ Excluding occupancies used as Group Care Homes.

⁵ U.G. lead-in shall be the minimum size required hydraulically as proven by the sprinkler contractor and shall be hydrostatically tested and flushed, witnessed by the fire department.

⁶ "Building area" is defined as all areas under roof except for porches, patios, balconies, carports and porte-cocheres.

Section 903.2.9 of the Southern Nevada Amendments is amended to read as follows:

903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds ~~12,000 square feet (1115 m²); 2,500 square feet (279 m²).~~
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).
4. A Group S-1 fire area used for the storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).
5. A Group S-1 fire area used for self-storage where the fire area exceeds 2,500 square feet (279 m²).

Section 903.2.13 is added to the IFC to read as follows:

903.2.13 Fire Stations. All new fire stations shall be protected throughout by an approved automatic sprinkler system.

Section 907.2.13.1.1.2 is added to the IFC to read as follows:

907.2.13.1.1.2 Sounder Base Smoke Detectors. In a structure classified as a high-rise building with R-1, R-2 or R-3 occupancies, in lieu of installing stand-alone smoke alarms, system-type smoke detectors with sounder bases shall be installed in every guest room, living area and sleeping room within the guest suite or unit.

Activation of said devices shall send a supervisory alarm signal to the building fire alarm control unit. The smoke detector sounder shall sound only within the individual dwelling unit, suite of rooms, or similar area and shall not actuate the building fire alarm occupant notification system, unless otherwise permitted by the *fire code official*.

Section 907.7.5 of the Southern Nevada Amendments is amended to read as follows:

907.7.5 Monitoring. Fire alarm systems required by this chapter or by the IBC shall be monitored by an approved supervising station in accordance with NFPA 72. Home care facilities that are licensed by the State of Nevada are also required to be monitored per this section. ~~Proprietary Supervising Station Systems (also called self-monitoring systems), when allowed by the fire code official, shall be in accordance with the IFC, with NFPA 72, and with the fire code official guidelines.~~

Exception: Monitoring by a supervising station is not permitted unless specifically approved by the *fire code official* for:

1. Single- and multiple station smoke alarms required by Section 907.2.11.
2. Automatic sprinkler systems in one- and two-family dwellings.
3. ~~Manual fire alarm systems, when provided with approved signs in the following locations: directly below the horn and strobe located on the exterior of the building and adjacent to each manual pull station. The signs shall read as follows: WHEN ALARM SOUNDS - CALL 911. The signs below the horns and strobes shall be of durable material with permanent lettering having a 2" minimum height and minimum 1/2" stroke on a contrasting background. The sign adjacent to each pull station shall be of durable material with permanent lettering having a 1/4" minimum height on a contrasting background.~~

In occupancies provided with a fire alarm system, the following five distinctly different alarm signals shall be transmitted to an approved supervising station:

1. Water Flow Alarm, if provided with a fire sprinkler system.
2. Fire Alarm.
3. System Trouble.
4. Supervisory, when applicable.
5. Valve Tamper Supervisory, if provided with a fire sprinkler system.

The supervising station shall only retransmit Water Flow Alarm signals to the Fire

Department, unless otherwise required by the *fire code official*.

Section 909.20 of the Southern Nevada Amendments is amended to read as follows:

909.20 Maintenance. Smoke control systems shall be maintained in an operable condition at all times to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required.

Inspection and periodic testing of existing smoke control systems shall be performed in accordance with the ~~Southern Nevada Fire Code Committee's Uniform Guideline for smoke control testing & recertification~~, City of Las Vegas "Smoke Control System Testing & Recertification" policy, the manufacturer's instructions, and Sections 909.20.1 through 909.20.5.

Section 914.7.1 of the IFC is amended to read as follows:

914.7.1 Automatic sprinkler system. Special amusement buildings shall be equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. Where the special amusement building is temporary, the sprinkler water supply shall be of an *approved* temporary means.

~~**Exception:** Automatic sprinklers are not required where the total floor area of a temporary special amusement building is less than 1,000 square feet (93 m²) and the travel distance from any point to an exit is less than 50 feet (15 240 mm).~~

Section 1412.3.1 of the Southern Nevada Amendments is amended to read as follows:

1412.3.1 Separation up to 20 feet (6.1 m). Where the structure is separated 20 feet (6.1 m) or less from ~~property lines against property lines that has an existing structure or otherwise can be constructed upon~~, adjacent property lines or assumed lot lines as determined in accordance with Chapter 7 of the IBC, a fire flow of no less than 100% of the required fire flow, including all required hydrant locations, shall be provided.

Section 1412.3.2 of the Southern Nevada Amendments is amended to read as follows:

1412.3.2 Separation greater than 20 feet (6.1 m) up to 60 feet (18.3 m). Where the structure is separated greater than 20 feet (6.1 m) and up to 60 feet (18.3 m) from ~~property lines against property that has an existing structure or otherwise can be constructed upon~~, adjacent property lines or assumed lot lines as determined in accordance with Chapter 7 of the IBC, a fire flow of no less than 50% of the required fire flow shall be provided: ~~, and in no event less than 1,500 gpm.~~ Sufficient hydrants to accommodate the required flow shall be provided, subject to approval by the *fire code official*.

Section 1412.3.3 of the Southern Nevada Amendments is amended to read as follows:

1412.3.3 Separation greater than 60 feet (18.3 m). Where the structure is separated greater than 60 feet (18.3 m) from ~~property lines against property that has an existing structure or otherwise can be constructed upon,~~ fire flow shall be provided in accordance with Section 1412.2: adjacent property lines or assumed lot lines as determined in accordance with Chapter 7 of the IBC, fire flow no less than 1,500 gpm shall be provided. The fire hydrant(s) shall be within 300 feet of the structure protected.

Section 2206.2.3 of the Southern Nevada Amendments is amended so that the material before Paragraphs 1-4 reads as follows, with Paragraphs 1-4 of the section as found in the IFC remaining intact:

2206.2.3 Above-ground tanks located outside, above grade. Above-ground tanks shall not be used for the storage of Class I, II, or IIIA liquid motor fuels except ~~as provided by this section: when the tank is located within a parcel that is zoned for industrial use (M Zoning District)~~ in accordance with the Title 19 of the Las Vegas Municipal Code. The applicant is responsible for obtaining any use permits as required by the planning or zoning authority. Fuel tanks shall be installed in accordance Paragraphs 1-4 of this section.

Section 2306 of the IFC is amended by deleting from Table 2306.2 that appears therein (relating to general fire protection and life safety requirements) the entries on the following rows:

- Option 2 for Commodity Class I-IV
- Option 2 for Commodity Class High Hazard

Section 3303.8 of the Southern Nevada Amendments is amended to read as follows:

~~**3303.8 Shot reports.** Shot reports shall be maintained for every blast and for every pyrotechnical event. These reports shall be available to the fire code official upon request within 48 hours. The report shall at a minimum contain the following information:~~

- ~~1. Date and time of the blast or pyrotechnical event.~~
- ~~2. Company name and contact information.~~
- ~~3. Location of the blast or pyrotechnical event.~~
- ~~4. Weather conditions including temperature and wind speed.~~
- ~~5. Quantity and description of all materials used.~~
- ~~6. A list of any unspent or misfired products.~~
- ~~7. A list of all personnel present.~~
- ~~8. The license type and card number of the blaster or shooter.~~
- ~~9. The signature of the blaster or shooter in charge.~~
- ~~10. For blasting operations the report shall include the seismic data.~~

3303.8 Development-related blasting reports. Reports shall be maintained for every development-related blasting event. These reports shall be available to the *fire code official* upon request within 48 hours. The report shall at a minimum contain the following information:

1. Date and time of the blasting.
2. Company name and contact information.
3. Location of the blast.
4. Weather conditions including temperature and wind speed.
5. Quantity and description of all materials used.
6. A list of all personnel present.
7. The license type and card number of the blaster or shooter.
8. The signature of the blaster or shooter in charge.
9. For blasting operations the report shall include the seismic data.

Section 3404.2.9.6.1 of the IFC is amended to read as follows:

3404.2.9.6.1 Locations where above-ground tanks are prohibited. Storage of Class I, II and III liquids in above-ground tanks outside of buildings is prohibited, ~~within the limits established by law as the limits of districts in which such storage is prohibited (see Section 3 of the Sample Ordinance for Adoption of the *International Fire Code* on page v).~~

Exceptions:

1. Fuel tanks for emergency generators and fire pumps installed in accordance with Section 3404.5.
2. Fuel tanks located within a parcel that is zoned for industrial use (M Zoning District) in accordance with the Title 19 of the Las Vegas Municipal Code. The applicant is responsible for obtaining any use permits as required by the planning or zoning authority.

Section 3406.2.4.4 of the Southern Nevada Amendments is amended to read as follows:

3406.2.4.4 Locations where above-ground tanks are prohibited. ~~The storage of class I, II, and class III liquids in above-ground tanks outside of buildings is prohibited.~~

~~**Exception:** When approved by the planning or zoning authority (in jurisdictions requiring this specific approval) and when *approved by the fire code official*.~~

See Section 3404.2.9.6.1

Section 3801.2.1 is added to the IFC to read as follows:

3801.2.1 Special use permit. A special use permit must be obtained in accordance with

Chapter 19.04 of the Las Vegas Municipal Code for liquefied petroleum gas storage containers with an aggregate water capacity exceeding 288 gallons (1090 L).

Section 3804.2 of the Southern Nevada Amendments is amended to read as follows:

~~**3804.2 Liquefied petroleum gas storage containers.** The storage of liquefied petroleum gas is prohibited.~~

~~**Exception:** When *approved* by the planning or zoning authority (in jurisdictions requiring this specific approval) and when *approved* by the *fire code official*.~~

3804.2 Maximum capacity within established limits. The aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L).

Exception: Installations located within a parcel that is zoned for industrial use (M Zoning District) in accordance with the Title 19 of the Las Vegas Municipal Code. Additionally, when required by the *fire code official*, additional fire protection shall be provided for such installations in accordance with NFPA 58, Section 6.25.

Section 4603.4.2 of the IFC is amended to read as follows:

~~**4603.4.2 Group I-2.** An *automatic sprinkler system* shall be provided throughout existing Group I-2 fire areas. The sprinkler system shall be provided throughout the floor where the Group I-2 occupancy is located, and in all floors between the Group I-2 occupancy and the level of exit discharge.~~

4603.4.2 Group I. An *automatic sprinkler system* shall be provided throughout all existing Group I Fire areas.

Section 4603.4.3 is added to the IFC to read as follows:

4603.4.3 Group R-4 residential care/assisted living facilities. Each existing residential care/assisted living facility that is required to be licensed by the State of Nevada shall be provided with an automatic sprinkler system in accordance with NFPA 13R. Each existing facility shall be brought into compliance within the time frame established for that facility by the *fire code official*.

Section 4603.6 of the Southern Nevada Amendments is amended to read as follows:

4603.6 Fire alarm systems. An approved fire alarm system shall be installed in existing buildings and structures in accordance with Sections 4603.6.1 through 4603.6.7 and provide occupant notification in accordance with Section 907.6 unless other requirements are provided by other sections of this code. When required by the *fire code official*, when a fire

alarm control unit is upgraded, or when a fire alarm control unit is replaced by a different model, the fire alarm system shall be upgraded in accordance with Sections 4603.6.1 through 4603.6.7 and provide occupant notification in accordance with Section 907.6 unless other requirements are provided by other sections of this code.

~~**Exception:** Occupancies with an existing previously approved fire alarm system.~~

Section B105.2 of Appendix B, as adopted in the Southern Nevada Amendments, is amended to read as follows:

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exceptions:

- ~~1. When a building is provided with an approved automatic sprinkler system throughout, a reduction in the required fire flow of 50% is permitted.~~
- ~~2. A reduction in the required fire flow of 25% is permitted in buildings with: floors used for human occupancy more than 3 stories in height or more than 55 feet above the lowest level of fire apparatus access; OR containing high-piled combustible storage protected by other than ESFR fire sprinklers; OR flammable/combustible liquids in excess of the maximum allowable quantity; OR hazardous materials in excess of the maximum allowable quantity.~~
- ~~3. A reduction in the required fire flow of 50% is permitted in buildings with high-piled combustible storage protected by ESFR fire sprinklers.~~
- ~~4. The resulting fire flow for all buildings shall not be less than 1,500 gallons per minute (95678 L/min) for the prescribed duration as specified in table B105.1.~~

The following exceptions apply to the extent specified, but in no case shall the reduction in required fire flow result in fire flow that is less than 1,500 gallons per minute (95678 L/min) for the prescribed duration as specified in Table B105.1.

1. When a building is provided with an approved NFPA 13 or NFPA 13R automatic sprinkler system throughout, a reduction in the required fire flow of 50% is permitted.
2. A reduction in the required fire flow of 25% is permitted in buildings that qualify under any of the following:
 - a. Buildings with floors used for human occupancy more than 3 stories in height or more than 55 feet above the lowest level of fire apparatus access.
 - b. Buildings containing high-piled combustible storage.
 - c. Buildings containing flammable/combustible liquids in excess of the

- maximum allowable quantity.
- d. Buildings that contain hazardous materials in excess of the maximum allowable quantity.

Section C105 of Appendix C, as adopted in the Southern Nevada Amendments, is amended by adding a new Section C105.3 to read as follows:

C105.3 Hydrants to provide required fire flow for developments proposed to be located on major streets and highways. Hydrants intended to deliver required fire flow to developments proposed to be located on major streets and highways shall be located on the same side of the street or highway as the proposed development.

Appendix L is added to the IFC to read as follows:

APPENDIX L EMERGENCY ACCESS GATES AND BARRIERS

Unless otherwise noted, the provisions contained in this appendix are mandatory.

L101.1 Scope. Where a new gate or barrier is installed on a fire access roadway, the installation shall comply with the specifications of this Appendix and Section 503.6.

L102.1 Definitions. For the purposes of Appendix L, certain terms are defined as follows:

“Gate or barrier” means a gate, crossbar, door or other obstructive device which is utilized for the purpose of restricting, controlling or obstructing entry or exit by motor vehicles or pedestrians to or from a private roadway and which is not manned on a twenty-four hour, seven day per week basis by a person capable of providing immediate access to a police or fire safety vehicle or person.

“Private street or roadway” means any roadway (not dedicated as public right-of-way) that is owned and maintained by abutting property owners, or association of property owners, that is utilized for the purpose of providing vehicular or pedestrian access to a subdivision, apartment complex, condominiums or other residential development or wild land, excluding off-street parking areas, driveways, and driveways to off-street parking areas.

“Private driveway” means a private way for vehicular travel that provides access from an off-street parking area to a public or private drive.

“Ultimate edge of right-of-way” means the right-of-way line furthest from the centerline of a street right-of-way that has been approved by the County of Clark, Nevada and recorded on a parcel or subdivision map for existing or future street improvements.

L103.1 Permit. Construction permits in accordance with Section 105 shall be obtained for the applicable scope of work.

L104.1 Submittals. Three sets of plans and specifications for fire apparatus access road gates shall be submitted for review and approval prior to construction. The plans and specifications shall include, indicate or show the following:

1. Civil plans, which must be approved the Fire Department, Planning and Development Department, and Department of Public Works.
2. The respective stamp(s) for the contractor(s) installing any gates.
3. The stamp of a structural engineer for all structural plans and calculations pertaining to gates over 6 ft. (1.83 m.) in height.
4. The business name, address, phone number and contact person for each contractor.
5. Assessors Parcel Number (located on the property owners tax bill).
6. Depiction of proposed fences, pedestrian gates, vehicle gates.
7. Existing vehicular access.
8. Proposed location of any Knox key switch(es) or Knox box(s).
9. The exact physical street address of the gated entry, or property, as assigned by the Planning Department.
10. Location of pavement loops.

L105.1 Product specifications. Specifications shall be provided that include:

1. Method of operation.
2. UL listing numbers of equipment used.
3. Manufacturer's specification sheets for all equipment.

L106.1 Plan review and inspection fees. Applicable fees will be collected per each agency's approved fee schedule.

L107.1 Minimum Design Requirements

1. Gates shall not be installed within a required turning radius of a fire access roadway.
2. Access for single- and bi-direction traffic shall be unobstructed 20 ft. (6.1 m.) wide and 13.5 ft. (4.1 m.) high.
3. Swinging gates for single direction traffic shall swing in the direction of vehicle travel.
4. Swing gates for bi-directional traffic shall swing into the property being entered.
5. Gated entry designs shall be in accordance with Clark County Area Standard Drawing #222A.
6. All gates shall be accessible from the driving lane nearest the edge of the street by turning radii of at least 28 ft. (18.5 m.) inside and 52 ft. (15.85 m.) outside.
7. Gates must be located so that the face of the gate is at least 40 feet (12.2 m.) from the nearest curb of any cross street.
8. For gates on private driveways that serve only one single-family residence on a moderate and heavily traveled street, the driveway shall:

- a. Meet the setback requirements of this Appendix. If existing conditions prevent gate installation with 40 ft. (12.2 m.) of clearance to the face of the gate, a letter documenting an acceptable alternative that would facilitate emergency ingress without endangering emergency response personnel and apparatus will be required for review and approval by the fire code official.
- b. Meet the operational requirements of electrically operated gates.

L108.1 Operation of Gates

1. Electric gate operators, where provided, shall include the installation of a "free exit" loop and shall be operated for entry and exit by means of a key override switch (Knox) in combination with one of the following approved fire department methods:
 - a. Ground loop gate operator;
 - b. Radio operated controller (click 2 enter); or
 - c. Other approved equipment.
2. Gates installed utilizing a radio-controlled exit shall be provided with an approved 2 in. (50.8 mm) by 2 in. (50.8 mm), blue, reflective marker visible to the exiting traffic, located in the center of the exit gate.
3. Where applicable, Knox Company authorization forms are required for orders of key switches, boxes and padlocks. The forms may be obtained by calling the fire department or items can be ordered via the Internet at www.knoxbox.com.
4. Electrically operated gates shall fail to the full open position upon the loss of power. They shall remain fully open until such time the power is restored.
5. Gates shall reverse direction to full open position upon contact with an obstruction.

L109.1 Manual gates, barriers or crash gates. Manual gates, barriers or crash gates may be approved by the fire code official on a case-by-case basis for nighttime security of business properties or gated communities, subject to the following:

1. Such gates or barriers shall be constructed in a manner that reflects good construction practices acceptable to the fire code official.
2. Such gates or barriers shall be accessible by means of an approved fire department padlock where applicable (Knox) or by the installation of an approved key box (Knox).
3. Approved manual gates or barriers across emergency access roadways shall be provided with an 18-gauge metal sign in the center of and on both sides of the gate that shall read "FIRE LANE-NO PARKING." Letters shall be red on a white background and be a minimum of 4 in. (76 mm) high with a ½ in. (12.7 mm) stroke.
4. Gates to close off a fire lane behind strip malls/stores in order to minimize dumping and vandalism shall be approved with padlock access (Knox).

L110.1 Prohibitions

1. No gate shall be installed where access requires the use of a proximity reader or card.

- unless a "turn-out" is provided for its use.
2. Direction-limiting devices, such as fixed tire spikes, are prohibited.
 3. The total number of vehicle access control devices or systems through which emergency vehicles must pass to reach any address shall not exceed one.
 4. No commercial property owner shall install fences and gates where more than one gate must be opened in order to reach within 150 ft. (46 m.) of the rear portion of any building.

L112.1 Pedestrian Gates. All vehicle gates obstructing pedestrian access to a public way (street) shall have an approved pedestrian gate installed within 10 ft. (3.05 m.) of the vehicle gate, subject to the following:

1. Gates shall be handicap accessible and comply with exit door requirements of the building code as adopted by the City of Las Vegas.
2. An approved key box (Knox) shall be installed at least 4 ft. (1.22 m.) above grade on the outside of the gate. It shall be provided with a key to open the pedestrian gate.
3. No pedestrian gate shall be located in the median between two vehicle gates.

Exception: Gates accessing private driveways that serve only one single-family residence are exempt from this requirement.

L113.1 Maintenance. Emergency access gates and barriers shall be maintained, which maintenance shall include:

1. Batteries required for operation of the system during power failure.
2. Lubrication of moving parts and hinges per manufacturer's specifications.
3. Any subsequent attention required to maintain the original list of frequencies for emergency operation of the gate in the controller, if applicable.

L114.1 Installation Approval. The fire code official shall conduct inspections on all gates and barriers for proper installation and operation prior to activation or use.

L115.1 Additional Requirements

1. Because of the delays caused by vehicle access control devices or systems, additional fire protection requirements may be applied based on other access limitations, such as narrow or winding streets or dead-end streets without an approved turnaround available for fire apparatus.
2. Other than the obstruction and the reduced width controlled within this standard, no other requirement of the fire authority having jurisdiction shall be adversely affected by the placement of any vehicle access control device or system in any required fire apparatus access road.
3. Fire department or fire code official approval does not waive any requirement by other authorities having jurisdiction.

Appendix M is added to the IFC to read as follows:

APPENDIX M FIRE LANE SIGN SPECIFICATIONS

M101.1 Sign Specifications. Where required or authorized by the Fire Code or the *fire code official*, fire lane signs shall be in accordance with the following:

Type A: Minimum dimension of 24" (610 mm) high by 18 inches (457 mm) wide. Red letters on a reflective white background with 3/8 inch red trim around entire outer edge of sign. Sign lettering shall be as follows:

"FIRE LANE"

Type B: Minimum dimension of 24" (610 mm) wide by 18 inches (457 mm) high. Red letters on reflective white background with 3/8 inch red trim strip around the entire outer edge of sign. Sign lettering shall be as follows:

"ON-STREET PARKING IN MARKED FIRE LANES PROHIBITED"

Type C: Minimum dimension of 36" (914 mm) wide by 4 inches (101 cm) high. White letters on red enamel background. Curb lettering shall be as follows:

"NO PARKING FIRE LANE"

Signs shall be installed not less than 7 feet (2134 mm) and not more than 10 feet (3048 mm) from the ground level. Posts for signs, shall be metal and securely mounted, unless written permission for alternatives is obtained prior to installation from the *fire code official*.

Illustrations of the sign types are as follows:



TYPE A SIGN



TYPE B SIGN

NO PARKING FIRE LANE

TYPE C SIGN

NFPA 13 AMENDMENTS

Section 8.15.5.1 of NFPA 13 (relating to sprinklers in elevator hoistways and machine rooms), as amended by the Southern Nevada Amendments, is amended to read as follows:

8.15.5.1 Sidewall spray sprinklers shall be installed at the bottom of each elevator hoistway not more than 2 ft (0.61 m) above the floor of the pit. ~~Sprinklers are prohibited at the top of the hoistway and in the machine room, unless otherwise approved by the Authority Having Jurisdiction.~~

Section 8.15.5.2 of NFPA 13 (relating to sprinklers in elevator hoistways and machine rooms), as deleted by the Southern Nevada Amendments, is replaced by a new Section 8.15.5.2 to read as follows:

8.15.5.2 Automatic sprinklers shall be installed in elevator machine rooms containing hydraulic fluids.

Section 8.15.5.3 of NFPA 13 (relating to sprinklers in elevator hoistways and machine rooms), as deleted by the Southern Nevada Amendments, is restored to read as follows:

8.15.5.3 Automatic sprinklers in elevator machine rooms or at the tops of hoistways shall be of ordinary- or intermediate-temperature rating.

Section 8.15.7.2 of NFPA 13 (relating to sprinklers under exterior roofs or canopies), as amended by the Southern Nevada Amendments, is amended to read as follows:

8.15.7.2 Sprinklers shall be permitted to be omitted where ~~the canopy, roof, or porte-cochere~~ a canopy or roof is constructed entirely with materials that are noncombustible, and where the canopy or roof; ~~or porte-cochere~~ does not support occupancy above.

Section 8.15.7.4 of NFPA 13 (relating to automatic sprinkler protection in certain areas) is amended to read as follows:

8.15.7.4 When permitted by Section 1018.1 of the International Building Code, Sprinklers ~~sprinklers~~ shall be permitted to be omitted from exterior exit corridors when the exterior walls of the corridor are at least 50 percent open and when the corridor is entirely of noncombustible construction.

Section 8.17.4.2 of NFPA 13 (relating to wet pipe systems) is amended by amending Section 8.17.4.2.4 thereof to read as follows:

8.17.4.2.4 ~~The alarm test connection shall be permitted to be installed in any location on the fire sprinkler system down-stream of the waterflow alarm.~~ The alarm test connection valve

shall be piped from the most hydraulically demanding area and shall be readily accessible.

Section 8.17.4.2 of NFPA 13 (relating to wet pipe systems) is amended by adding thereto a new section 8.17.4.2.5 to read as follows:

8.17.4.2.5 Buildings 3 or more stories in height do not require the inspector test valve to be piped from the most hydraulically demanding area.

Section 21.38 of NFPA 13, as added by the Southern Nevada Amendments, which section functions as a heading, is amended to read as follows:

21.38 Protection Mitigation Matrix for Group R Division 3 Occupancies. and buildings built under the IRC.

Section 21.38.1 of NFPA 13, as added by the Southern Nevada Amendments, is amended to read as follows:

21.38.1 General. When a sprinkler system is being installed to mitigate the minimum Fire Code requirements for fire flow, number of fire hydrants, or fire department access, for a Group R Division 3 Occupancy, the design requirements in Table 21.37.1 shall be applied: upgraded to mitigate the minimum Fire Code requirements for fire flow, number of fire hydrants, or fire department access, the sprinkler system shall be designed in accordance with Section 21.38.2.

Table 21.38.1 of NFPA 13, as added by the Southern Nevada Amendments, is amended to read as follows:

Table 21.38.1 Mitigation Protection Matrix for Group R Division 3 Occupancies and buildings built under the IRC ⁴

Building Area Size Range ⁶	<u>Protection Mitigation</u> Residential System Type ^{1,3}	Separate Sprinkler Lead-in Required ⁵	Minimum Underground Pipe Size ⁵	Minimum Water Meter Size ⁷	Sprinklers Required in Areas Subject to Freezing
< 3,600 sq.ft.	Standard NFPA 13D ²	See NFPA 13D for design requirements			
≥ 3,600 sq.ft. and < 10,000 sq.ft.	Enhanced NFPA 13D ^{1,2}	See NFPA 13D for design requirements			
≥ 10,000 sf and < 15,000 sf	Enhanced NFPA 13R ¹	See NFPA 13 for design requirements			
≥ 15,000 sf	Modified NFPA 13 ¹	Yes	N/A	N/A	Yes

N/A = Not Applicable

¹ This mitigation constitutes a building "completely protected with an approved fire sprinkler system" per the IFC.

² Domestic demand of 5 gpm is required to be added to the sprinkler demand in the hydraulic calculations.

³ Free-standing detached guest houses or garages shall be protected by an Enhanced NFPA 13D system.

⁴ Excluding Group R Division 3 occupancies used as Group Care Homes.

⁵ U.G. lead-in shall be the minimum size required hydraulically as proven by the sprinkler contractor and shall be hydrostatically tested and flushed, witnessed by the fire dept.

⁶ Building area is defined as all areas under roof except for porches, patios, balconies, carports and porte-cocheres.

⁷ Water meters used for residential sprinkler systems shall be residential fire service meters or other meters approved by the water purveyor.

Section 21.38.2 of NFPA 13, as added by the Southern Nevada Amendments, is amended to read as follows:

21.38.2 Modified 13 Design Criteria. When Table 21.38.1 requires a Modified 13 Design, the sprinkler system shall be installed to meet the requirements of this code, with the exception of the following items:

1. Fire Department Connections (FDC): A 2 ½-inch fire department connection is required. A single snoot connection will be accepted. The FDC shall be located on the garage wall facing the street except for special circumstances where the FDC may be freestanding and located adjacent to the street or private drive. A freestanding FDC in these circumstances may be designed into the mailbox column.
2. Riser Room: Risers shall be located in either the garage or within a dedicated room with an exterior door. Provided the garage/room is fully insulated the requirement for maintaining 40°F will not require a source of heat.
3. Inspectors Test Connection: The inspectors test location may be piped off the system riser.
4. Piping in locations less than 40°F: Dry pipe systems are not permitted for the protection of living spaces, anti-freeze systems shall be used. The protection of non-living spaces such as attics may be protected by dry-pipe systems.
5. Anti-Freeze Loops: The capacity shall not exceed 80 gallons.
6. Separate Water Supply: A separate water lead-in for the fire sprinkler system along with an approved (by the local water authority) back-flow prevention device is required. The back-flow prevention device shall be located at the street with in an approved insulated enclosure. The lead-in shall be sized using the minimum pipe size available that provides the calculated flow.
7. Control Valves: All valves used to control the sprinkler system are required to be indicating. A Post Indicator Valve (PIV) is not permitted.
8. Electrical Supervision: When required by the fire code official, the main control valves shall be electrically supervised. The back-flow valves are not required to be electrically supervised.
9. Fire Pumps: Electric fire pumps normally accepted in NFPA 13D systems for residential use (UL listed jockey pump) are acceptable.
10. Notification Devices: Interior – One (1) interior horn/strobe shall be installed

- in a location specified by the homeowner. Exterior – One (1) exterior horn/strobe shall be located above the FDC or other acceptable location. The sprinkler flow switch shall activate both of the required devices.
11. Residential Sprinkler Heads: Residential sprinkler heads shall be utilized and the design allowances specified in section 11.2.3.2.3.1 (reduction to design area) may be applied.
 12. Hangers and Earthquake Bracing: The hanging of sprinkler pipe shall be in accordance Chapter 9. Earthquake bracing is not required.
 13. Garages: Garages shall be classified as Ordinary Hazard Group I. Commercial style QR sprinkler heads are required.
 14. Location of Sprinklers: Sprinklers shall be installed in all areas except where omissions are permitted as follows:
 - a. Inaccessible attic spaces: of less than 15,000 sq. ft.
 - b. Exterior overhangs, porches, and carports.
 - c. ~~Rooms not provided with environmental control.~~

Section 21.38.3 of NFPA 13, as added by the Southern Nevada Amendments, is amended to read as follows:

21.38.3 Other Protection Designs: For the other protection designs listed in Table ~~21.37.1~~, 21.38.1, see the respective revised codes for NFPA 13D and NFPA 13R design requirements.

NFPA 13D AMENDMENTS

Section 6.2.2 of NFPA 13D is amended to read as follows:

6.2.2 Where a ~~pump and tank well-pump, city-pump, or tank-pump combination~~ is the source of supply for a fire sprinkler system but is not a portion of the domestic water system, the following shall be met:

1. A test connection shall be provided downstream of the pump that creates a flow of water equal to ~~the smallest sprinkler on the system: two sprinkler flow rate established by the hydraulic calculation.~~ the smallest sprinkler on the system: two sprinkler flow rate established by the hydraulic calculation. The connection shall return water to the tank: when provided.
2. Pump motors using AC power shall be connected to a 240V normal circuit.
3. ~~Any disconnecting means for the pump shall be approved. The circuit shall be hardwired with approved disconnect as required by the National Electrical Code.~~
4. When a tank is provided, A a method for refilling the tank shall be piped to the tank.
5. When a tank is provided, A a method of seeing the water level in the tank shall be provided without having to open the tank.
6. The pump shall not be permitted to sit directly on the floor.
7. Pumps fed by a city or well supply shall be provided with a pump by-pass.

Section 8.4.11 is added to NFPA 13D to read as follows:

8.4.11 Hydraulic Calculations. Where this standard requires the sprinkler system to be hydraulically calculated in accordance with NFPA 13, the calculations shall be performed in accordance with NFPA 13, Chapter 22 with the amended requirements.

Exception: Sprinkler systems that do not have any pressure reducing devices are not required to provide the 10 psi safety factor.

Section 8.7 of NFPA 13D, as added by the Southern Nevada Amendments, which section functions as a heading, is amended to read as follows:

8.7 Protection Mitigation Matrix for Group R Division 3 Occupancies. and buildings built under the IRC.

Section 8.7.1 of NFPA 13D, as added by the Southern Nevada Amendments, is amended to read as follows:

8.7.1 General. When a sprinkler system is being installed or upgraded to mitigate the minimum Fire Code requirements for fire flow, number of fire hydrants, or fire department access, ~~the design requirements in Table 8.7 shall be applied:~~ sprinkler system shall be designed in accordance with Table 8.7.

Table 8.7 of NFPA 13D, as added by the Southern Nevada Amendments, is amended to read as follows:

Table 8.7 Mitigation Protection Matrix for Group R-3 Occupancies ⁴

Building Area Size Range ⁶	Mitigation Residential System Type ^{1,3}	Separate Sprinkler Lead-in Required ⁵	Minimum Underground Pipe Size ⁷	Minimum Water Meter Size ⁵	Sprinklers Required in Areas Subject to Freezing
< 3,600 sq.ft.	Standard NFPA 13D ²	No	1"	3/4 "	No
≥ 3,600 sq.ft. and < 10,000 sq.ft.	Enhanced NFPA 13D _{1,2}	No	1"	3/4 "	No
≥ 10,000 sf and <15,000 sf	Enhanced NFPA 13R ¹	See NFPA 13R for design requirements (Section 6-8.5 <u>7.5</u>)			
≥ 15,000 sf	Modified NFPA 13 ¹	See NFPA 13 for design requirements (Section 21.37 <u>21.38</u>)			

N/A = Not Applicable

¹ This mitigation constitutes a building "completely protected with an approved fire sprinkler system" per the IFC.

² Domestic demand of 5 gpm is required to be added to the sprinkler demand in the hydraulic calculations.

³ Free-standing detached guest houses or garages shall be protected by an Enhanced NFPA 13D system.

⁴ Excluding Group R Division 3 occupancies and buildings built under the IRC used as Group Care Homes.

⁵ U.G. lead-in shall be the minimum size required hydraulically as proven by the sprinkler contractor and shall be hydrostatically tested and flushed, witnessed by the fire dept.

⁶ Building area is defined as all areas under roof except for porches, patios, balconies, carports and porte-cocheres.

⁷ Water meters used for residential sprinkler systems shall be residential fire service meters or other meters approved by the water purveyor.

Section 1.1 of NFPA 13R, as amended by the Southern Nevada Amendments, is amended to read as follows:

1.1 Scope

This standard covers the design and installation of automatic sprinkler systems for protection against fire hazards in residential occupancies up to and including two four stories in height. Residential occupancies three or more stories in height shall be protected throughout in accordance with NFPA 13.

When sprinkler protection is being provided to mitigate the minimum Fire Code requirements for fire flow, number of fire hydrants, or fire department access for single-family residential occupancies, the minimum design criteria shall be as outlined in ~~Section 6.8.5 Protection Matrix for Group R Division 3 Occupancies and buildings built under the IRC.~~ 7.5 Mitigation Matrix for Group R Division 3 Occupancies.

Section 7.5 of NFPA 13R, as added by the Southern Nevada Amendments, is amended to read as follows:

7.5 Protection Mitigation Matrix for Group R Division 3 Occupancies. When a sprinkler system is being installed to mitigate the minimum Fire Code requirements for fire flow, number of fire hydrants, or fire department access, the design requirements in Table 6.8.5 7.5 shall be applied.

Table 7.5 of NFPA 13R, as added by the Southern Nevada Amendments, is amended to read as follows:

Table 7.5 Mitigation Protection Matrix for Group R-3 Occupancies ⁴

Building Area Size Range⁶	Mitigation Residential System Type ^{1,3}	Separate Sprinkler Lead-in Required ⁵	Minimum Underground Pipe Size ⁵	Minimum Water Meter Size ⁵	Sprinklers Required in Areas Subject to Freezing
< 3,600 sq.ft.	Standard NFPA 13D ²	See NFPA 13D for design requirements (Section 8.7)			
≥ 3,600 sq.ft. and < 10,000 sq.ft.	Enhanced NFPA 13D ^{1,2}	See NFPA 13D for design requirements (Section 8.7)			

≥ 10,000 sf and <15,000 sf	Enhanced NFPA 13R ¹	Yes	N/A	N/A	Yes
≥ 15,000 sf	Modified NFPA 13 ¹	See NFPA 13 for design requirements (Section 21.37 <u>21.38</u>)			

N/A = Not Applicable

¹ This mitigation constitutes a building “completely protected with an approved fire sprinkler system” per the IFC.

² Domestic demand of 5 gpm is required to be added to the sprinkler demand in the hydraulic calculations.

³ Free-standing detached guest houses or garages shall be protected by an Enhanced NFPA 13D system.

⁴ Excluding Group R Division 3 occupancies used as Group Care Homes.

⁵ U.G. lead-in shall be the minimum size required hydraulically as proven by the sprinkler contractor and shall be hydrostatically tested and flushed, witnessed by the fire dept.

⁶ Building area is defined as all areas under roof except for porches, patios, balconies, carports and porte-cocheres.

Section 7.5.1 of NFPA 13R, as added by the Southern Nevada Amendments, is amended to read as follows:

7.5.1 Enhanced 13R Design. When Table 6.8.5 7.5 requires an Enhanced 13R design, the sprinkler system shall be designed and installed in accordance with NFPA 13R, except that sprinklers shall be installed throughout the structure except where omissions are permitted by the following:

1. Unheated attic spaces that do not contain fuel fired equipment.
2. Floor/ceiling spaces.
3. Concealed combustible spaces with no access for storage or living purposes.

Section 7.5.2 of NFPA 13R, as added by the Southern Nevada Amendments, is amended to read as follows:

7.5.2 Other Protection Designs. For other protection designs listed in Table 6.8.5 7.5, see the respective revised codes for NFPA 13 and NFPA 13D minimum design requirements.

NFPA 14 AMENDMENTS

Section 7.2.4 of NFPA 14, as amended by the Southern Nevada Amendments, is amended to read as follows:

7.2.4 System Pressure Regulating Devices. The fire code official shall be consulted regarding the use of system pressure regulating devices. When system pressure-regulating devices are used in lieu of providing separate pumps, multiple zones shall be permitted to be supplied by a single pump and pressure regulating device(s) under the following conditions:

1. Pressure-regulating device(s) shall be permitted to control pressure in the lower zone(s). When the result of a system configuration is that a pressure-regulating device is the single source of water to a structure, ~~A~~ a redundant pressure-regulating device shall be provided in parallel configuration for the

full range of anticipated system flow. ~~Where multiple sizes of pressure-regulating devices are required to achieve flow through the entire range of anticipated system flow, each size shall have a redundant pressure-regulating device installed.~~

- ~~2.~~ ~~A method to isolate each of the pressure-regulating device(s) shall be provided for maintenance and repair by providing control valves on the supply and discharge side of each pressure-regulating device, in a manner where only the device being maintained and repaired is out of service.~~
- ~~3.~~ ~~Regulating devices shall be arranged so that the failure of any single device does not allow pressure in excess of 200-175 psi (13.9-12.1 bar) to not more than two hose connections.~~
- ~~4.~~ ~~An equally sized bypass around the pressure regulating device(s), with a normally closed valve, shall be installed.~~
- ~~5.~~ 2. Pressure-regulating devices and the bypass valve shall be installed not more than 7ft 6in (2.31 m) above the floor.
- ~~6.~~ 3. The pressure-regulating device shall be provided with inlet and outlet pressure gauges.
- ~~7.~~ 4. The fire department connection(s) shall be connected between the system fire pump(s) and the pressure-regulating device(s) and shall be sized and designed to allow the fire department connection to provide full back-up for the system fire pump to all pressure zones. The fire code official shall be consulted regarding the fire department connection(s) configuration with the standpipe system.
- ~~8.~~ 5. The pressure-regulating device shall be provided with a pressure relief valve sized for the full anticipated system flow and capable of maintaining downstream system pressures below the maximum pressure ratings for all system components in accordance with manufacturer recommendations.
- ~~9.~~ 6. Remote monitoring and supervision for detecting high pressure failure of the pressure of the pressure-regulating device shall be provided in accordance with NFPA 72, National Fire Alarm Code. ~~Such failure shall be detected by providing a flow switch downstream on the pressure relief valve.~~
- ~~10.~~ 7. A drain sufficient to allow flow of the full anticipated system flow shall be provided adjacent to the pressure-regulating devices. Use of this drain line for discharge from the pressure relief valve shall be permitted.

NFPA 72 AMENDMENTS

Section 18.5.6 of NFPA 72, as amended by the Southern Nevada Amendments, is amended to read as follows:

18.5.6 In rooms and areas used for exhibition purposes, or in rooms and areas where racks or shelving that exceed 5' in height are expected to be installed, or in rooms and areas where wall-mounted devices may become obstructed, ceiling-mounted visual appliances shall be

provided.

Exceptions:

1. When approved by the Authority Having Jurisdiction, wall mounted appliances may be installed above the visible obstruction height.
2. When approved by the Authority Having Jurisdiction, visible notification appliances may be installed in accordance with the requirements of the approved design documents (Fire Protection report) and the manufacturer's instructions in order to achieve the required performance objective.