

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF MESA, MARICOPA COUNTY, ARIZONA, RELATING TO PUBLIC HEALTH AND SAFETY, REPEALING TITLE 7, CHAPTER 2, SECTION 1 AND SECTION 2 OF THE MESA CITY CODE; PRESERVING RIGHTS AND DUTIES THAT HAVE ALREADY MATURED AND PROCEEDINGS THAT HAVE ALREADY BEGUN THEREUNDER; ADOPTING THE 2018 INTERNATIONAL FIRE CODE BY REFERENCE; ADOPTING AMENDMENTS TO CERTAIN PROVISIONS IN THE 2018 INTERNATIONAL FIRE CODE; ADDING A NEW TITLE 7, CHAPTER 2, SECTION 1 AND SECTION 2; PROVIDING PENALTIES FOR VIOLATIONS; AND AN EFFECTIVE DATE OF FEBRUARY 10, 2019.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MESA, MARICOPA COUNTY, ARIZONA as follows:

Section One. **REPEAL.**

That Title 7, Chapter 2, Section 1 and Section 2 as amended, of the Mesa City Code is repealed.

Section Two. **ADOPTION BY REFERENCE.**

SECTION 7-2-1. That Title 7, Chapter 2, Section 1 of the Mesa City Code shall now read as follows:

The following publications are hereby adopted by reference as if set out at length in this Code, three copies of which shall be filed in the office of the City Clerk and kept available for public use and inspection:

The 2018 International Fire Code, including:

Appendix B – FIRE-FLOW REQUIREMENTS FOR BUILDINGS
Appendix C – FIRE HYDRANT LOCATIONS AND DISTRIBUTION
Appendix E – HAZARD CATEGORIES
Appendix F – HAZARD RANKING
Appendix I – FIRE PROTECTION SYSTEMS – NONCOMPLAINT CONDITIONS
Appendix L – REQUIREMENTS FOR FIRE FIGHTER AIR REPLENISHMENT SYSTEMS
Appendix N – INDOOR TRADE SHOWS AND EXHIBITIONS

Section Three. **AMENDMENTS TO THE 2018 INTERNATIONAL FIRE CODE.**

SECTION 7-2-2. That Title 7, Chapter 2, Section 2 of the Mesa City Code shall now read as follows:

Note: Underlined indicates proposed addition and ~~Strikethrough~~ indicates deletions to the text of the 2018 International Fire Code.

(A) CHAPTER 1 ADMINISTRATION

(1) Section 101.1 of the 2018 International Fire Code is amended to read, in its entirety, as follows:

101.1 Title. These regulations shall be known as the ~~Fire Code~~ of [NAME OF JURISDICTION] Mesa Fire Code, hereinafter referred to as “this code.”

(2) Section 102.3 of the 2018 International Fire Code is amended to read, in its entirety, as follows:

102.3 Change of use or occupancy. A change of occupancy shall not be made unless the use or occupancy is made to comply with the requirements of this code and the ~~International Existing Building Code~~ Mesa Existing Building Code.

Exception: Where approved by the fire code official, a change of occupancy shall be permitted without complying with the requirements of this code and the ~~International Existing Building Code~~ Mesa Existing Building Code, provided that the new or proposed use or occupancy is less hazardous, based on life and fire risk, than the existing use or occupancy.

(3) Section 102.4 of the 2018 International Fire Code is amended to read, in its entirety, as follows:

102.4 Application of building code. The design and construction of new structures shall comply with the ~~International Building Code~~ Mesa Building Code, and any alterations, additions, changes in use or changes in structures required by this code, which are within the scope of the ~~International Building Code~~ Mesa Building Code, shall be made in accordance therewith.

(4) New section 102.7.3 is added to the 2018 International Fire Code, as follows:

102.7.3 International codes references. Within the technical codes and the referenced codes and standards therein, specific references to the following International Codes shall be deemed and interpreted to mean the specific City of Mesa Codes as listed herein:

1. International Building Code = Mesa Building Code.
2. International Residential Code for One- and Two- Family Dwellings = Mesa Residential Code.
3. International Electrical Code = Mesa Electrical Code.
4. International Plumbing Code = Mesa Plumbing Code.
5. International Mechanical Code = Mesa Mechanical Code.
6. International Fuel Gas Code = Mesa Fuel Gas Code.
7. International Fire Code = Mesa Fire Code.
8. International Existing Building Code = Mesa Existing Building Code

(5) Section 105.1.2 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

105.1.2 Types of permits. There shall be ~~two~~ three types of permits as follows:

1. Operational permit. An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 105.6 for either:

- 1.1. A prescribed period.
- 1.2. Until renewed or revoked.

2. Construction permit. A construction permit allows the applicant to install or modify systems and equipment for which a permit is required by Section 105.7.

3. Fire Safety operational permit. Fire Safety operational permit is required for any inspectable occupancy within the City of Mesa and requires the applicant to provide contact information annually as required by the fire code official. The permit is valid for one year from the date of issuance.

Exception: Home-based businesses are not required to obtain a Fire Safety Operational Permit.

(6) Section 105.4.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

105.4.1 Submittals. Construction documents and supporting data shall be submitted ~~in two or more sets with each application~~ electronically for a permit and in such form and detail as required by the fire code official. The construction documents shall be prepared by a registered design professional licensed by the State of Arizona to design fire protection systems ~~where required by the statutes of the jurisdiction in which the project is to be constructed.~~

Exception: The fire code official is authorized to waive the submission of construction documents and supporting data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that review of construction documents is not necessary to obtain compliance with this code.

105.4.1.1 Examination of documents. The code official shall examine or cause to be examined the accompanying construction documents and shall ascertain by such examinations whether the work indicated and described is in accordance with the requirements of the code.

(7) Section 105.4.2 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

105.4.2 Information on construction documents. Construction documents shall be drawn to scale. ~~on suitable material. Electronic media documents are allowed to be submitted where approved by the fire code official.~~ Construction documents shall be submitted electronically and be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in detail it will conform to the provisions of this code, relevant laws, ordinances, rules and regulations as determined by the fire code official. Fire sprinkler shall comply with NFPA 13 and fire alarm shall comply with NFPA 72 regarding the content required in construction document submittals.

(8) Section 105.7 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

105.7 Required construction permits. The *Mesa Administrative Code* shall apply to fire code official is authorized to issue construction permits for work as set forth in Sections 105.7.1 through 105.7.13. Any conflicts with the provisions of Sections 105.7.1 through 105.7.13 and the *Mesa Administrative Code*, the *Mesa Administrative Code* shall take precedence.

- (9) **Section 109.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

109.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The fire code official shall be an ex-officio member of said board but shall have no vote on any matter before the board. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official. Orders, decisions, or determinations made by the fire code official may, within thirty (30) days of the receipt of the notice of the decision, be appealed to the Building Board of Appeals, Section 2-11 of the Mesa City Code. The request for an appeal shall be in writing, shall set forth the specific objections to the decision of the fire code official, and this shall form the basis of the appeal. A hearing shall be set as soon as practicable. The decision of the Building Board of Appeals shall be based on the evidence presented.

- (10) **Deleted Sections 109.2 and 109.3.**

- (11) **Section 110.4 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

110.4 Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall be guilty of a {SPECIFIC OFFENSE} Class 1 misdemeanor, punishable by a fine of not more than {AMOUNT} two thousand five hundred dollars (\$2,500.00) and/or by imprisonment not exceeding {NUMBER OF DAYS} six (6) months, or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

- (12) **Section 112.4 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than {AMOUNT} five hundred dollars (\$500) or more than {AMOUNT} two thousand five hundred dollars (\$2,500.00).

(B) CHAPTER 2 DEFINITIONS

- (1) **The following definitions are added to the 2018 International Fire Code, as follows:**

DIRECTED CARE SERVICE. The care of residents who are incapable of recognizing danger, summoning assistance, expressing need or making basic care decisions. Directed care services include providing life sustaining programs and services and may include personal care or supervisory care services.

GAZEBO. Detached, open-sided, roofed structure.

(2) The following definitions of the 2018 International Fire Code is amended to state, as follows:

Institutional Group I-4, day care facilities. Institutional Group I-4 shall include buildings and structures occupied by more than ~~ten five~~ persons, including not more than 5 infants 2 ½ years of age or less, of any age who receive custodial care for less than 24 hours by persons other than parents or guardians, relatives by blood, marriage, or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

- Adult day care
- Child day care

Classification as Group E. A child day care facility that provides care for more than ~~ten five~~ but not more than 100 children 2 ½ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

Within a place of religious worship. Rooms and spaces within places of religious worship providing such care during religious functions shall be classified as part of the primary occupancy.

Five or fewer occupants receiving care. A facility having ~~ten five~~ or fewer persons receiving custodial care shall be classified as part of the primary occupancy.

Five or fewer occupants receiving care in a dwelling unit. A facility such as the above within a *dwelling unit* and having ~~ten five~~ or fewer persons receiving custodial care shall be classified as a Group R-3 or R-5 occupancy as applicable ~~or shall comply with the International Residential Code.~~

Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I ~~or when not regulated by the International Residential Code in accordance with Section 101.2 of the International Building Code.~~

(3) The following definitions of the 2018 International Fire Code is amended to state, as follows:

Residential Group R-4 Residential Group R-4. Residential Group R-4 shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. Building of Group R-4 shall be classified as one of the occupancy conditions indicated below. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Group Home
- Halfway Houses
- Residential board and care facilities
- Social rehabilitations

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 or R-5, except as otherwise in provided in the Mesa Building Code.

Assisted living homes located in residentially zoned districts in accordance with Title 11 (Zoning) of the Mesa City Code licensed by the State of Arizona Department of Health Services with more than 5 but not more than 10 residents.

Assisted living centers located in commercially zoned districts in accordance with Title 11 (Zoning) of the Mesa City Code licensed by the State of Arizona Department of Health with more than 5 but not more than 16 residents.

(4) New definitions added to the 2018 International Fire Code is amended to state, as follows:

Residential Group R-5. Residential Group R-5 occupancies where the occupants are primarily permanent as detached one- and two-family dwellings and multiple single-family dwellings (townhouses) and their accessory structures conforming with the Mesa Residential Code. R-5 occupancies may include:

Adult care facilities providing accommodations for ten or fewer persons of any age for less than 24 hours within a single residence.

Childcare facilities providing accommodations for ten or fewer persons of any age for less than 24 hours within a single residence.

Assisted living homes with 5 or fewer residents capable of self-preservation or responding to an emergency situation without physical assistance from staff.

Assisted living homes including facilities providing directed care services, with 5 or fewer residents that are not capable of self-preservation or responding to an emergency situation without physical assistance from staff. Such assisted living homes shall be protected with automatic sprinkler systems in accordance with section 903.3 and a smoke alarm system in accordance with section 907.2.10.1.3.

Congregate living facilities with 16 or fewer occupants.

PERSONAL CARE SERVICE. The care of residents who do not require chronic or convalescent medical or nursing care. Personal care service includes assisting with activities of daily living that can be performed by persons without professional skills or professional training and may include the coordination or provision of intermittent nursing services and the administration of medications and treatments by a nurse who is licensed by the State.

RAMADA. See definition for Gazebo.

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES. A building or part thereof housing persons on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care, supervisory care or directed care services. This classification shall include, but not be limited to, the following: assisted living facilities, residential board and care facilities, halfway houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug abuse centers and convalescent facilities.

SUPERVISORY CARE SERVICE. The care of residents who require general supervision, including providing daily awareness of resident functioning and continuing needs, the ability to intervene in a crisis and assistance in the self-administration of prescribed medications. Provision of any of the following services shall constitute supervisory care: cooking or meal service, laundry

service, linen or maid service.

(C) CHAPTER 3 GENERAL REQUIREMENTS

(1) New section 315.3.5 is added to the 2018 International Fire Code, as follows:

315.3.5 Storage Under Stairways. Storage is prohibited under stairways.

Exception: Storage is allowed under interior or exterior stairways when spaces are protected below by one-hour fire-resistance-rated construction as specified in the MBC or are protected by fire sprinklers. A minimum of 18 inches (457 mm) clearance from the sprinkler head plane to the combustible storage shall be maintained.

(D) CHAPTER 5 FIRE SERVICE FEATURES

(1) New section 501.5 is added to the 2018 International Fire Code, as follows:

501.5 Fire protection in Recreational Vehicle, Mobile Home and Manufactured Housing Parks, Sales Lots and Storage Lots. Recreational vehicle, mobile home and manufactured housing parks, sales lots and storage lots shall provide and maintain fire hydrants and access roads in accordance with Sections 503 through 508.

Exception: Recreational vehicle parks located in remote areas shall be provided with fire hydrant protection and access roadways as required by the Fire Code Official.

(2) Section 503.1.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

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

Exceptions:

1. The fire code official is authorized to increase the dimension to 300 feet (91 400 mm) where any of the following conditions occur:
 - 1.1. The building is equipped throughout with approved automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 (This is an exception that the applicant may select and is not intended to be a direct or indirect requirement to install automatic fire sprinklers)
 - 1.2. 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.
 - 1.3. ~~There are not more than two~~ Group R-3/R-5 or Group U occupancies.
 - 1.4. When the applicant selects and receives approval by the fire code official for alternative means outlined (or “as prescribed”) in Sections 104.6.4 through 104.9 of the Mesa Fire Code.
2. Where approved by the fire code official, fire apparatus access roads shall be permitted to be exempted or modified for solar photovoltaic power generation facilities.

(3) New section 503.1.4 is added to the 2018 International Fire Code, as follows:

503.1.4 Storage Yards. Approved fire access shall be provided where required by the fire official for all new and existing, outdoor storage areas. This includes, but is not limited to, storage piles throughout automotive wrecking yards, junkyards, and recycling facilities.

(4) Section 503.2.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 15 feet (4572 mm) ~~13 feet 6 inches (4115 mm)~~.

(5) Section 503.2.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

503.2.3 Surface. Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities as determined by the fire code official.

(6) Section 503.2.7 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

503.2.7 Grade. ~~The grade of the fire apparatus access road shall be within the limits established by the fire code official based on the fire department's apparatus.~~ Whether temporary or permanent, fire apparatus access roads with grades equal to or less than 6% may be designed with materials such as materials or compacted ABC or compacted decomposed granite. All fire apparatus access roads that exceed 6% shall be designed with paved materials such as concrete or asphalt. All fire apparatus access roads with grades that exceed 12% shall be subject to the approval of the Fire Code Official.

(7) New section 503 is added to the 2018 International Fire Code, as follows:

503.7 Commercial and Industrial Developments

503.7.1 Building exceeding three stories or 30 feet in height. Buildings or facilities exceeding 30 feet (9144 mm) or three stories in height shall have not few than two means of fire apparatus access for each structure.

503.7.2 Buildings exceeding 62,000 square feet (5760 m²) in area. Buildings or facilities having a gross building area of more than 62,000 square feet (5760 m²) shall be provided with two separate and approved fire apparatus access roads.

503.7.3 Remoteness. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

(8) New sections 503.8 through 503.10 is added to the 2018 International Fire Code, as follows:

503.8 Aerial Fire Apparatus Access Roads

503.8.1 Where required. Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), approved aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

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

503.8.3 Proximity to building. One or more of the required access routes meeting this condition shall be located not less than 15 feet (4572 mm) and not greater than 30 feet (9144 mm) from the building, and shall be positioned parallel to one entire side of the building, the side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.

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

503.9 Residential Access Roads. Access to residential developments shall comply with this section. A residential development may have public or private streets.

503.9.1 Multiple access roads. Residential developments where the number of dwelling units exceeds 30 shall be provided with a minimum of two separate and approved fire apparatus access roads.

503.9.2 Parking. Fire department access shall have an unobstructed width of not less than 20 feet (6096 mm). Road widths shall be as follows:

1. No parking on either side of the roadway when the road is at least 20 feet (6096 mm) to less than 28 feet (8,534 mm) wide.
2. No parking on one side of the roadway when the road is between at least 28 feet (8534 mm) and less than 34 feet (10 363 mm) wide.
3. Parking is not restricted when a road is 34 feet (10 363 mm) wide or greater.

503.9.2.1 Maintenance of parking restrictions. Maintenance of fire department access parking restrictions as initiated by the Fire Department will be the responsibility of the homeowners' association or individual property owner of the property affected by the restriction. If there is not a homeowners' association or individual property owner, the City of Mesa shall be responsible for the maintenance of the fire department access parking restrictions.

503.9.3 Queuing distance. The queuing distance between the open gate swing and aerial roadway shall be no less than 50 feet (15 240 mm) in length to accommodate a fire apparatus. This distance is not required for automatic gates when no manual action is required to close and lock the gate.

503.9.4 Fire Lane Turning Radius. Residential developments shall comply with Mesa Fire and Medical Detail.

503.10 Multiple-Family Residential Developments. Multiple-family residential projects having more than 30 dwelling units shall be equipped throughout with two separate and approved fire apparatus access roads.

(9) New section 504.4 is added to the 2018 International Fire Code, as follows:

504.4 Ladder access to the roof. Buildings 3 stories above grade and less, shall have approved flat stable area 10 feet (3048 mm) wide by 30 percent building height at the exterior building corners on two sides.

(10) Section 505.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

505.1 Address identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 12-4 inches (402 304.8 mm) high with a minimum stroke width of 2 ½ inches (12.7 mm). Numbers shall not be spelled out. Each character shall be not less than 12 4 inches (102 mm) high with a minimum stroke width of 2 ½ inches (42.7 50.8 mm). Address identification shall be approved, and where required by the fire code official, ~~address identification~~ shall be provided in additional approved locations to facilitate emergency response. Where access is by means of a private road and the building cannot be viewed from the public way a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

(11) New section 505.1.1 and 505.1.2 is added to the 2018 International Fire Code, as follows:

505.1.1 Suite identification. New and existing buildings shall be provided with approved suite identification. Suite identification shall be legible and stenciled on or near the outside portion of all entrance and exit doors. Suite identification characters shall contrast with their background and shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 3 inches (76.2 mm) tall with a minimum stroke width of ½ inch (12.7 mm). Numbers shall not be spelled out. Suite identification shall be approved, and where required by the fire code official, shall be provided in additional approved locations to facilitate emergency response.

505.1.2 Multiple Tenant Buildings. Strip malls and other multiple tenant buildings shall their address and suite number posted on all rear doors of each tenant space.

(12) Sections 506.1.1 and 506.1.2 of the 2018 International Fire Code remain unchanged.

(13) New section 507.2.1.1 is added to the 2018 International Fire Code, as follows:

507.2.1.1 Detectible Underground Locator Device. Underground nonmetallic water piping larger than two (2) inches (50.8 mm) in diameter shall be installed with insulated copper tracer wire or other approved conductor located adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.

(14) Section 507.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

507.3 Fire flow. Fire-flow requirements for buildings or portions of buildings and facilities shall be determined in accordance with Appendix B ~~by an approved method.~~

507.3.1. Residential developments. The plat for residential sub-divisions shall have the following completed statement:

“Fire hydrant spacing:

This sub-division has fire hydrants spaced at an average spacing of () feet.

This allows the largest home on the lots to be a maximum of () square feet under roof.

Constructed per the Mesa Building Code of at least Type () construction.”

(15) New section 507.5.1.2 is added to the 2018 International Fire Code, as follows:

507.5.1.2 Phased systems. Phased systems with piping looped through a future phase shall have the complete looped piping system installed prior to any combustible construction above ground. The loop connection may be installed with the next phase of the development if it can be shown through calculation that the system can deliver the required fire flow without the loop connection.

(16) Section 510.13 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

510.1 Emergency responder radio coverage in new buildings. New buildings shall have approved radio coverage for emergency responders within the building based on the existing coverage levels of the public safety communication systems utilized by the jurisdiction, measured at the exterior of the building. This section shall not require improvement of the existing public safety communication systems. All buildings and structures with the following characteristics shall comply with Section 510:

1. Buildings or structures more than 3 stories above ground level;
2. Buildings or structures totaling 45,000 square feet (13 716 m²) or more on any single floor;
3. Buildings or structures that include a basement or other subterranean space totaling 250 square feet (76.2 m²) or more; or
4. Buildings or structures where fire code official has determined to have been constructed in a manner or with materials likely to limit the ability of emergency response personnel to effectively use radio communication while within that building or structure.

Exceptions:

1. Where approved by the building official and the fire code official, a wired communication system in accordance with Section 907.2.13.2 shall be permitted to be installed or maintained in lieu of an approved radio coverage system.
2. Where it is determined by the fire code official that the radio coverage system is not needed.
3. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency responder radio coverage system.
4. Groups R-3, R-4, R-5, and U occupancies
5. Buildings and structures utilizing only wood framing
6. Buildings and structures less than thirty-five (35) feet (10 668 mm) above ground level and do not utilize any metal framing or metal roofing.

(17) Section 510.4.1.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

510.4.1.1 Minimum signal strength into the building. The minimum inbound signal strength shall be sufficient to provide usable voice communications throughout the coverage area as specified by

the fire code official. The inbound signal level shall be sufficient to provide not less than a minimum signal strength of -95 dBm in 95% of the area on each floor when transmitting to and from a Public Safety Radio System. ~~Delivered Audio Quality (DAQ) of 3.0 or an equivalent Signal to Interference-Plus Noise Ratio (SINR)~~ Applicable to the technology for either analog or digital signals.

(18) New section 510.4.1.1.1 is added to the 2018 International Fire Code, as follows:

510.4.1.1.1 Minimum Delivered Audio Quality (DAQ). A minimum DAQ of 3.4 for signal strength and intelligibility when utilizing the Public Safety Radio System. For public safety, the accepted objective is to provide DAQ 3.4 over the service area. DAQ 3.4 is defined as “speech understandable with repetition only rarely required, and with some noise and/or distortion” and represents a Bit Error Rate (BER) of 2%.

(19) Section 510.4.2.2 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

510.4.2.2 Technical criteria. The fire code official shall maintain a document providing the specific technical information and requirements for the emergency responder communications coverage system. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, the effective radiated power of radio sites, the maximum propagation delay in microseconds, the applications being used and other supporting technical information necessary for system design.

1. The Topaz Regional Wireless Cooperative (TRWC) will provide which donor site will be utilized for any installation of a 700/800 MHz BDA/DAS system that will be using the TRWC public safety network.
2. The TRWC Administration Manager will approve any enhancements for Simplex VHF Hazard Zone Fire network.

(E) CHAPTER 7 FIRE-RESISTANCE-RATED CONSTRUCTION

(1) Section 703.4 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

703.4 Testing. Horizontal and vertical sliding and rolling fire doors, smoke and/or fire dampers, fire shutters and smoke vents shall be inspected and tested annually to confirm proper operation and full closure. Resetting of the release mechanism shall be done in accordance with the manufacturer’s written instructions. A written record shall be maintained and be available to the fire code official.

(F) CHAPTER 9 FIRE PROTECTION AND LIFE SAFETY SYSTEMS

(1) Deleted sections 903.2 through 903.2.11.5, in its entirety, from the 2018 International Fire Codes.

(2) New section 903.2 is added to the 2018 International Fire Code, as follows:

Section 903 Where Required. Approved automatic sprinkler systems shall be provided in the locations described in this Section.

903.2.1 New buildings or structures. All areas of new buildings or structures, and other locations required by this Chapter or the Mesa Fire Code, shall be provided with an automatic fire sprinkler system complying with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3 as applicable.

Exceptions: Unless the use of the facility otherwise requires automatic fire sprinkler protection, fire sprinkler systems shall not be required for the following:

1. R-3 and R-5 not including residential care or assisted living facilities.
2. Detached, non-residential buildings not exceeding 500 square feet (152.4 m²) in floor area and not closer than 5 feet (1524 mm) to any building or property line.
3. Detached, gazebos, ramadas, and canopies not greater than 5,000 square feet (1524 m²) in roof area, no combustible storage, or cooking beneath, and not closer than five feet to any building, property line, or other shade canopy.
4. Other buildings or structures accessory to and located on the same lot with R-3, R-4, or R-5 occupancies.
5. Portable storage containers used for storage purposes and not closer than 5 feet (1524 mm) to any building, property line or other container.
6. Exterior covered/enclosed walkways of Type I, II or III construction, not greater than 12 feet (3657.6 mm) in width, no combustible storage beneath, and with enclosing walls that are at least 50 percent open.

903.2.2 One and Two-Family Dwelling Sprinkler Option (R5). All home builders of one and two-family dwellings (R5 occupancies) shall provide an option for residential fire sprinklers. The contractor or their agent shall provide an informational packet containing educational materials approved by the Fire Code Official, including a form explaining the option for residential sprinklers, to all prospective buyers and shall obtain a signed receipt for the educational material from the prospective buyer. Copies of the signed forms shall be kept on file and available for review upon request by the Mesa Fire Department. Upon the request and execution of a purchase agreement by the homebuyer, the home builder shall install the residential fire sprinklers. Such fire sprinkler systems shall comply with the requirements of Section 903.3.1.1 or 903.3.1.3.

903.2.3 Group H-5 occupancies. An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the sprinkler system shall not be less than that required under the *Mesa Building Code* for the occupancy hazard classifications in accordance with Table 903.2.5.2.

Where the design area of the sprinkler system consists of a corridor protected by one row of sprinklers, the maximum number of sprinklers required to be calculated is 13.

TABLE 903.2.3

GROUP H-5 SPRINKLER DESIGN CRITERIA

<u>LOCATION</u>	<u>OCCUPANCY HAZARD CLASSIFICATION</u>
<u>Fabrication areas</u>	<u>Ordinary Hazard Group 2</u>
<u>Service corridors</u>	<u>Ordinary Hazard Group 2</u>
<u>Storage rooms without dispensing</u>	<u>Ordinary Hazard Group 2</u>
<u>Storage rooms with dispensing</u>	<u>Extra Hazard Group 2</u>
<u>Corridors</u>	<u>Ordinary Hazard Group 2</u>

903.2.4 Change of occupancy. An existing building or portion thereof undergoing a change of occupancy shall provide an automatic sprinkler system complying with the requirements of this

chapter.

903.2.5 Additions. All additions to existing buildings shall be provided with an automatic fire protection system throughout the existing building and addition compliant with Section 903.3 as applicable.

Exceptions:

1. Additions of 1,000 sq. ft. (304.8 m²) or less. The aggregate of multiple additions shall not exceed 1,000 sq. ft. (304.8 m²).
2. Additions to R-3 and R-5 occupancies, not including residential care or assisted living facilities.

903.2.6 Rubbish and linen chutes. An automatic sprinkler system shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes shall have additional sprinkler heads installed at alternate floors and at the lowest intake. Where a rubbish chute extends through a building more than one floor below the lowest intake, the extension shall have sprinklers installed that are recessed from the drop area of the chute and protected from freezing in accordance with Section 903.3.1.1. Such sprinklers shall be installed at alternate floors beginning with the second level below the last intake and ending with the floor above the discharge. Access to sprinklers in chutes shall be provided for servicing

903.2.7 Other hazards. Automatic sprinkler protection shall be provided for the hazards indicated in Sections 903.2.8.1 and 903.2.8.3.

903.2.7.1 During construction. Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with Section 3313.

903.2.7.2 Ducts conveying hazardous exhausts. Where required by the Mesa Mechanical Code, automatic sprinklers shall be provided in ducts conveying hazardous exhaust, flammable or combustible materials.

Exceptions: Ducts in which the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).

903.2.7.2.1 Protection of sprinklers. Automatic sprinklers installed in flammable vapor areas shall be protected from the accumulation of residue from spraying operations in an approved manner. Bags used as a protective covering shall be 0.003-inch-thick (0.076 mm) cellophane or shall be thin paper bag. Automatic sprinklers contaminated by overspray particles shall be replaced with new automatic sprinklers.

903.2.7.3 Commercial cooking operations. An automatic sprinkler system shall be installed in commercial kitchen exhaust hood and duct system where an automatic sprinkler system is used to comply with Section 904.

903.2.8 Other required suppression systems. In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.11.6 also require the installation of a suppression system for certain buildings and areas.

(3) Renumbered Table 903.2.11.6 to Table 903.2.9 of the 2018 International Fire Code.

(4) Section 903.3.1.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1 and 903.3.1.1.2.

Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas, when approved by the fire code official, are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. A room or space where sprinklers are considered undesirable because of the nature of the contents, where approved by the fire code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. Rooms or areas that are of noncombustible construction with wholly noncombustible contents.
5. Fire service access elevator machine rooms and machinery spaces.
6. Machine rooms, machinery spaces, control rooms and control spaces associated with occupant evacuation elevators designed in accordance with Section 3008 of the International Building Code.

(5) New section 903.3.1.1.3 is added to the 2018 International Fire Code, as follows:

903.3.1.1.3 Minimum design requirements. The minimum design requirements for fire sprinkler systems shall be as determined by the Mesa Fire Code or as defined in Section 903.3.1.1.3 whichever is greater.

903.3.1.1.3.1 Shell buildings. The minimum fire sprinkler system design for shell buildings shall be Ordinary Group II as defined in 903.3.1.1.

903.3.1.1.3.2 Buildings with roof structure over 20 feet (6096 mm). The minimum design requirements for buildings with the roof structure over 20 feet (6096 mm) above the finished floor shall be for rack storage of Group IV commodities as defined in Chapter 32 and Section 903.3.1.1.

(6) Section 903.3.1.2.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

903.3.1.2.3 Attics. Attic protection shall be provided as follows:

1. Attics that are used or intended for living purposes or storage shall be protected by an automatic sprinkler system.
2. Where fuel-fired equipment is installed in an unsprinklered attic, not fewer than one quick-response intermediate temperature sprinkler shall be installed above the equipment.
3. Where located in a building of Type III, Type IV or Type V construction designed in

accordance with Section 510.2 or 510.4 of the International Building Code, attics not required by Item 1 to have sprinklers shall comply with one of the following ~~if the roof assembly is located more than 55 feet (16 764 mm) above the lowest level of required fire department vehicle access:~~

- 3.1. Provide automatic sprinkler system protection.
- 3.2. Construct the attic using noncombustible materials.
- 3.3. Construct the attic using fire- retardant-treated wood complying with Section 2303.2 of the International Building Code.
- 3.4. Fill the attic with noncombustible insulation.

The height of the roof assembly shall be determined by measuring the distance from the lowest required fire vehicle access road surface adjacent to the building to the eave of the highest pitched roof, the intersection of the highest roof to the exterior wall, or the top of the highest parapet, whichever yields the greatest distance. For the purpose of this measurement, required fire vehicle access roads shall include only those roads that are necessary for compliance with Section 503.

4. Group R4, Condition 2 occupancy attics not required by Item 1 to have sprinklers shall comply with one of the following:
 - 4.1. Provide automatic sprinkler system protection.
 - 4.2. Provide a heat detection system throughout the attic that is arranged to activate the building fire alarm system.
 - 4.3. Construct the attic using noncombustible materials.
 - 4.4. Construct the attic using fire- retardant-treated wood complying with Section 2303.2 of the International Building Code.
 - 4.5. Fill the attic with noncombustible insulation.

(7) New sections 903.3.1.2.4 and 903.3.1.2.5 is added to the 2018 International Fire Code, as follows:

903.3.1.2.4 Required fire protection systems. For the purpose of inspection, testing, or maintenance of NFPA 13R fire protection systems in R-1 and R-2 occupancies, there shall be provided, at the time of construction, an exterior access door on the side of the building next to the fire sprinkler riser of adequate size to allow for valves and gauges to be accessed, repaired and viewed from the exterior for testing and maintenance purposes. The dimensions of the access door will be dependent upon the design of the riser and system devices but shall, in no case, require that service personnel must enter a private dwelling or garage to reach the riser for service and/or repair.

903.3.1.2.5. Attached garages and carports. Attached garages and carports shall be provided with sprinkler protection.

(8) Section 903.3.5 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

903.3.5 Water supplies. Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of City of Mesa Standard Detail M-31.06 ~~this section and the International Plumbing Code~~. For connections to public waterworks systems, the water supply test used for design of fire protection systems shall be adjusted to account for seasonal and daily pressure fluctuations based on information from the water supply authority and as approved by the fire code official.

(9) New section 903.3.5.3 is added to the 2018 International Fire Code, as follows:

903.3.5.3 Detectible Underground Locator Device. Underground nonmetallic water and irrigation system piping larger than two (2) inches (50.8 mm) in diameter shall be installed with insulated copper tracer wire or other approved conductor located adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.

- (10) **Section 903.3.6 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

903.3.6 Hose threads. Fire hose threads and fittings used in connection with automatic sprinkler systems shall be National Standard Thread ~~as prescribed by the fire code official.~~

- (11) **New section 903.3.7.1 is added to the 2018 International Fire Code, as follows:**

903.3.7.1. Fire department connection sizing. The size of the fire department connection and piping is dependent on the automatic sprinkler design flow. The maximum design flow for a 2-½ inch Siamese connection is 500 GPM (1892.71 LPM). For design flows greater than 500 GPM (1892.71 LPM) install a single 2-½ inch (63.5 mm) Siamese connection and 5-inch (127 mm) Storz connection.

- (12) **New sections 903.3.9 through 903.3.11 is added to the 2018 International Fire Code, as follows:**

903.3.9 Safety Factor. All fire sprinkler designs shall have a 10 percent (pressure) safety margin.

903.3.10 Remodel. Fire sprinkler design drawings shall be required for tenant improvement or remodeling projects when 10 or more sprinkler heads are relocated and/or added.

Exception. Group F, H, I, and S or as required by the fire official.

903.3.11 Freeze Protection. Exterior sprinkler piping with a minimum of 2 inches (50.8 mm) may be used in lieu of freeze protection required by Section 903.3.1.1.

- (13) **Sections 903.4 through 903.4.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

903.4 Sprinkler system supervision and alarms. Valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures and waterflow switches on all sprinkler systems shall be electrically supervised by a listed fire alarm control unit.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings, other than R-4.
2. ~~Limited area sprinkler systems in accordance with Section 903.3.8.~~
3. Group R occupancies containing 15 or less dwelling or sleeping units and not exceeding an aggregate area of 12,000 square feet. ~~Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic water and the automatic sprinkler system, and a separate shutoff valve for the automatic sprinkler system is not provided.~~
4. Jockey pump control valves that are sealed or locked in the open position.
5. ~~Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.~~

~~6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.~~

7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

903.4.1 Monitoring. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an ~~approved~~ Underwriters Laboratory listed or Factory Mutual approved supervising station or, where approved by the fire code official, shall sound an audible signal at a constantly attended location.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves located in limited area sprinkler system supply piping shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

(14) New section 905.13 is added to the 2018 International Fire Code, as follows:

905.13 Standpipe Hose. The fire hose and nozzle as part of Class II or Class III wet standpipe system(s) may be removed or eliminated with written approval of the Fire Code Official.

(15) Section 912.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

912.3 Fire hose threads. Fire hose threads used in connection with standpipe systems shall be National Standard Thread (NST) ~~approved and shall be compatible with fire department hose threads.~~

(16) Section 912.6 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

912.6 Backflow protection. The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the Mesa Standard Details ~~International Plumbing Code.~~

(G) CHAPTER 11 CONSTRUCTION REQUIREMENTS FOR EXISTING BUILDINGS

(1) Section 1103.5.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

1103.5.3 Group I-2 Condition 2. In addition to the requirements of Section 1103.5.2, existing buildings of Group I-2 Condition 2 occupancy shall be equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. The automatic sprinkler system shall be installed as established by the adopting ordinance. This shall become effective eighteen (18) months from the adoption date of this ordinance. ~~[DATE BY WHICH SPRINKLER SYSTEM MUST BE INSTALLED]~~

(H) CHAPTER 24 FLAMMABLE FINISHES

(1) New section 2404.10 is added to the 2018 International Fire Code, as follows:

2404.10 Exterior finishing operations. Flammable spray-finishing operations shall not be conducted outside of approved structures.

(I) CHAPTER 28 LUMBER YARDS AND WOODWORKING FACILITIES

- (1) Section 2809.5 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

2809.5 Fire protection. An approved hydrant ~~and hose system~~ or portable fire-extinguishing equipment suitable for the fire hazard involved shall be provided for open storage yards. Hydrant ~~and hose~~ systems shall be installed in accordance with NFPA 24. Portable fire extinguishers complying with Section 906 shall be located so that the travel distance to the nearest unit does not exceed 75 feet (22 860 mm).

(J) CHAPTER 31 TENTS, TEMPORARY SPECIAL EVENT STRUCTURES AND OTHER MEMBRANE STRUCTURES

- (1) Section 3103.2 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

3103.2 Approval required. Tents and membrane structures having an area in excess of 400 square feet (37 m²) and tents without walls (canopies) in excess of 1200 square feet (148 m²) shall not be erected, operated or maintained for any purpose without first obtaining a permit and approval from the fire code official.

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides that comply with all of the following:
 - 2.1. Individual tents having a maximum size of 700 square feet (65 m²) total.
 - 2.2. The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet (3658 mm), not exceeding 700 square feet (65 m²) total.
 - 2.3. A minimum clearance of 12 feet (3658 mm) to all structures and other tents.

(K) CHAPTER 32 HIGH-PILED COMBUSTIBLE STORAGE

- (1) Section 3206.4 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

3206.4 Automatic sprinklers. Automatic sprinkler systems shall be provided in accordance with Sections 3207, 3208 and 3209.

3206.4.1 Identification of sprinkler system capabilities and limitations. An adhesive label shall be permanently installed at or adjacent to each sprinkler riser. When a building contains more than four risers, the sign shall be located at an approved location inside the building. When sprinkler risers are located outside of the building, the sign shall be stamped metal. The minimum sign dimension is 6-inches (152.4 mm) high by 4-inches (101.6 mm) wide. The sign shall specify the capabilities and limitations of the automatic sprinkler system. The sign shall include the following information:

1. The design base or basis, including the edition used
2. A statement indicating if the sprinkler design is control mode density area method, control mode specific application, suppression mode, or any combination thereof.

3. When used, all of the storage conditions stipulated NFPA 13, Section 12.7 for special designs.
4. The maximum storage height
5. The minimum required aisle width
6. If storage is in racks, the maximum rack width and minimum transverse and longitudinal flue widths.
7. Commodities that can be protected by the automatic sprinkler system
8. Commodities that cannot be protected by the automatic sprinkler system
9. Limits on storage heights of idle wood and plastic storage
10. Limits on storage heights of miscellaneous Group A plastic, tire and rolled paper storage
11. Locations where in-rack sprinklers are required
12. Locations where horizontal and/or vertical barriers are required
13. Information explaining the manufacturer, sprinkler identification number, k-factor, and operating temperature of the overhead sprinklers protecting the high pile storage.

The following example illustrates a suggested format label or sign:

Automatic Sprinkler System Capabilities & Limitations	
Stored Commodity	Class I water miscible flammable liquid in 1 & 5 gallon polyethylene containers in fiberboard cartons
Design Documents	NFPA 13, 2019 edition & NFPA 30, 2018 edition, Table 4.8.2 (g) and section 4.8.6.2 (Scheme B)
Design Type	25 feet
Min. Aisle Width	8 feet
Max. Rack Width	9 feet
Flue Dimensions	Longitudinal: min. 6 inches Transverse: Min. 3 inches
System Capabilities	Class I-IV commodities, stored commodity, solid pile or palletized Group A plastics to 12 feet; rack storage of Group A plastics to 25 feet.
System Limitations	No level 2 or 3 aerosols, Class 2, 3, or 4 oxidizers
Idle Pallets	6 feet maximum storage height
Tire Storage	5 feet maximum storage height
Roll Paper Storage	5 feet maximum storage
In-Rack Sprinklers	In-rack sprinklers are required at each of 3 rack tiers containing the storage commodity. In-rack sprinklers are Tyco/Central FS-B, 17/32-inch orifice, QR 155°F elements, SIN TY0041
Horizontal Barriers	Required at each rack tier containing the stored commodity.
Ceiling Sprinklers	Tyco ELO-231B, 3/4-inch orifice, SR 286°F element, upright, SIN TY0030

3206.4.2 Pallets. Automatic sprinkler system requirements based on the presence of pallets shall be in accordance with NFPA 13.

3206.4.2.1 Plastic pallets. Plastic pallets listed and labeled in accordance with FM 4996 or UL 2335 shall be treated as wood pallets for determining required sprinkler protection.

(L) CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

(1) Section 3310.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

3310.1 Required access. Approved vehicle access for firefighting shall be provided to all construction or demolition sites and shall comply with Mesa Fire and Medical Department standard detail FPD 3310.1. ~~Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or~~

~~permanent roads, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.~~

- (2) **Section 3312.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

3312.1 When required. ~~An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible material arrives on the site~~ construction site shall meet the requirements of Appendix Chapters B and C. The minimum fire flow requirement when contractor or developer brings combustible materials on site is 1,500 GPM (5678.12 LPM) at 20 psi. At least one fire hydrant shall be within 500 feet (152.4 m) of any combustible materials and capable of delivering the minimum fire flow requirement. This hydrant or hydrants may be either temporary or permanent as the project schedule permits.

(M) CHAPTER 50 HAZARDOUS MATERIALS - GENERAL PROVISIONS

- (1) **New section 5001.5.2.1 is added to the 2018 International Fire Code, as follows:**

5001.5.2.1 Changes to Hazardous Materials Inventory Statements. An amended hazardous materials inventory statement shall be provided to the fire official by facilities that store or handle hazardous materials within thirty (30) days of a change or addition of hazard class, or in amounts sufficient to cause an increase or decrease in the aggregate quantity that exceeds five percent (5%) for any physical or health class.

(N) CHAPTER 56 EXPLOSIVES AND FIREWORKS

- (1) **Section 5601.1.3 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

5601.1.3 Fireworks. The possession, manufacture, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as allowed in Section 5604.
2. Manufacture, assembly, and testing of fireworks as allowed in Section 5605.
3. The use of fireworks fire fireworks displays as allowed in Section 5608.
4. The possession, storage, sale, handling and use of specific types of Division 1.4G fire fireworks where allowed by applicable laws, ordinances and regulations, providing that such fireworks and facilities comply with NFPA 1124, CPSC 16 CFR Parts 1500 and 1507, and DOTn 49 CFR Parts 100-185, as applicable for customer fireworks.
5. The use, discharge or ignition of fireworks are prohibited except as allowed under Mesa City Code 6-21.

- (2) **New section 5601.9 is added to the 2018 International Fire Code, as follows:**

5601.9 Abandonment. Explosive materials shall not be abandoned per sections 311.4 and 5001.6.

(O) CHAPTER 57 FLAMMABLE AND COMBUSTIBLE LIQUIDS

- (1) **New section 5706.5.1.19 is added to the 2018 International Fire Code, as follows:**

5706.5.1.19 Time limit for unloading. Tank vehicles and tank cars shall be unloaded as soon as

possible after arrival at point of delivery and shall not be used as storage tanks. Tank cars shall be unloaded only on private sidings or railroad siding facilities equipped for transferring the liquid between tank cars and permanent storage tanks. Unless otherwise approved, a tank car shall not be allowed to remain on a siding at the point of delivery for more than 24 hours while connected for transfer operations.

(P) CHAPTER 80 REFERENCED STANDARDS

(1) Revised the following NFPA Standards of the 2018 International Fire Code:

- 11 - ~~19~~ ~~46~~ Low Medium- and High-Expansion Foam
- 13 - 19 ~~46~~ Installation of Sprinkler Systems
- 13D - 19 ~~46~~ Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes
- 13R - 19 ~~46~~ Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.
- 14 - 19 ~~46~~ Installation of Standpipe, Private Hydrants and Hose Systems
- 20 - 19 ~~46~~ Installation of Stationary Pumps for Fire Protection
- 24 - 19 ~~46~~ Installation of Private Fire Service Mains and their Appurtenances
- 52 - 19 ~~46~~ Compressed Natural Gas (CNG) Vehicular Fuel Systems
- 72 - ~~19~~ ~~46~~ National Fire Alarm Code
- 110 - 19 ~~46~~ Emergency and Standby Power Systems
- 111 - 19 ~~43~~ Standard on Storage Electrical Energy Emergency and Standby Power Systems
- 211 - 19 ~~46~~ Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances
- ~~484 – 15~~ 19 Standard for Combustible Metals

(Q) APPENDIX B FIRE-FLOW REQUIREMENTS FOR BUILDINGS

(1) Table B105.2 of the 2018 International Fire Code is amended to state, in its entirety, as follows:

Table B105.2:

Required fire flow for buildings other than one- and two-family dwellings, Group R-3, R-4, and <u>R-5</u> buildings and townhouses		
AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the <u>Mesa Fire</u>	<u>50%</u> 25% of the value in	Duration in Table 105.1(2) at the

Code International Fire Code	Table B105.1(2) ^a	reduced flow rate
Section 903.3.1.2 of the <u>Mesa Fire Code</u>	<u>50%</u> 25% of the value in Table B105.1(2) ^b	Duration in Table 105.1(2) at the reduced flow rate

Footnote:

- a. The reduced fire flow shall be not less than 1,000 gallons (3785.41 L) per minute.
- b. The reduced fire flow shall be not less than 1,500 gallons (5678.12 L) per minute.

(R) APPENDIX C FIRE HYDRANT LOCATIONS AND DISTRIBUTION

- (1) Table C105.1 footnotes of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

Table C105.1 Footnotes:

- a. Reduce by 100 feet (30 480 mm) for dead-end streets or roads.
- b. Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet (15 240 mm) on each side of the street and be arranged on an alternating basis.
- c. Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 500 ~~4,000~~ feet (152.4 m²) to provide for transportation hazards.
- d. Reduce by 50 feet (15 240 mm) for dead-end streets or roads.
- e. One hydrant for each 1,000 gallons (3785.41 L) per minute or fraction thereof.
- f. A 5-percent spacing increase shall be permitted where the buildings is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 of the Mesa Fire Code ~~International Fire Code~~.
- g. A 25-percent spacing increase shall be permitted where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.2 or 903.3.1.3 of the Mesa Fire Code International Fire Code or Section P2904 of the Mesa Residential Code ~~International Residential Code~~.
- h. The fire official is authorized to modify the location, number and distribution of fire hydrants based on site-specific constraints and hazards.

(S) APPENDIX CHAPTER L – REQUIREMENTS FOR FIRE FIGHTER AIR REPLENISHMENT SYSTEMS

- (1) New section L104.1.2 is added to the 2018 International Fire Code, as follows:**

L104.1.2 When Required. Buildings and structures five (5) floors or more above grade or high-rise buildings as defined by the Mesa Building Code; or underground buildings and structures, or components thereof, totaling ten thousand (10,000) square feet (3048 m²) or more that are either more than two (2) floors below grade or more than thirty (30) feet (9144 mm) below grade.

- (2) Section L104.13.1 of the 2018 International Fire Code is amended to state, in its entirety, as follows:**

L104.13.1 Location. Fill stations for refilling breathing air cylinders shall be located as follows:

1. Fill stations shall be provided at the fifth floor above and below the ground level floor and every third level thereafter.

2. On floor levels requiring fill stations, one fill station shall be provided adjunct to a required exit stair at a location designated by the fire code official. In buildings required to have multiple ~~three or more~~ exits, additional fill stations shall be provided at ~~a ratio of one fill station for every three~~ stairways.

(3) New section L108.1 is added to the 2018 International Fire Code, as follows:

L108.1 Markings and record keeping. The fire department air connection panel and the remote air fill panels shall be clearly identified by means of permanently installed signage which says: “FIREFIGHTER AIR SYSTEM” in minimum letters 1½ inch high with a ¼ inch stroke and be located where plainly visible. The building or structure owner shall keep the area in and around the fire department air connection panel and the remote air fill panels free of objects that may block use of these panels and shall maintain and test the FBAR System in accordance with NFPA Standards and manufacturer specifications. Records of all maintenance and testing of the FBAR System shall be kept on-site for a minimum of three (3) years and be available to fire department personnel upon request.

Section Four. DIGITAL/ELECTRONIC DRAWING FILE SUBMISSIONS

SECTION 7-2-3. That Title 7, Chapter 2, Section 3 of the Mesa City Code shall now read as follows:

(A) General. Projects requiring a construction permit from Development Services, including projects performed under annual facilities permits shall be submitted in digital/electronic format. Other than construction permits, drawing shall not be required for the following:

- (1) R3 occupancies.
 - (2) R4 occupancies.
 - (3) Single family residences.
 - (4) Other buildings or structures accessory to and located on the same lot with one- and two-family dwellings.
 - (5) Projects not required to submit drawings to obtain a permit. (Refer to Title 4, Chapter 1, Mesa Administrative Code)
- The digital/electronic copy of the permit drawings shall be submitted to Mesa Fire and Medical Department (MFMD) through Development Services DIMES database for approval by MFMD Technical Services prior to the issuance of the certificate of occupancy/completion by the Development Services Director.

(B) Required Format. All submittals shall be digital/electronic files in one of the following formats: (.dwg) or (.dxf). If submitted files are embedded with external references (example: .xref), such drawings shall also be uploaded in DIMES. Cryptic naming of layers/files shall include a "definition key." All digital/electronic files shall be drawn in "feet" at a 1:1 scale.

(1) Required Information. At minimum, each file shall contain the following information:

(a) Floor Plans:

- (i) One plan for each building floor.
- (ii) All exterior and interior walls.
- (iii) All door locations (ingress/egress) throughout the building, including roll up doors and roof hatch/doors.
- (iv) Stairs and elevator locations.
- (v) Room/suite's names and/or numbers.
- (vi) Utility shutoff locations (water, electric and gas).
- (vii) Special hazards and high-piled stock/racks, if any.
- (viii) Fire Department items shall include, but are not limited to, standpipes, fire sprinkler risers, alarm panels, fire department connections, and Knox boxes.

(b) Site Plan:

Including parking lot, building numbers, parking garages, fire lanes and hydrants.

(c) Roof Plan:

Layout and access (ladder/hatch locations).

(2) Not Required. Layers listing furnishings, floor coverings, ceiling styles/grids, plumbing fixtures, electrical (lights, switches, outlets), wall coverings, or landscape information.

PASSED AND ADOPTED by the City Council of the City of Mesa, Maricopa County, Arizona,
this 7th day of January, 2019.

APPROVED:

Mayor

ATTEST:

City Clerk