ORDINANCE #2014-04

AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE CITY OF SURPRISE, ARIZONA, AMENDING CHAPTER 105 OF THE SURPRISE MUNICIPAL CODE, AND ADOPTING BY REFERENCE THE 2012 INTERNATIONAL CODES AND THE CITY AMENDMENTS USED TO REGULATE CONSTRUCTION WITHIN THE CITY. DECLARING AS A PUBLIC RECORD THE 2012 CODES, INCLUDING CITY OF SURPRISE AMENDMENTS, FILED WITH THE CITY/TOWN CLERK, IMPOSING A PENALTY FOR VIOLATIONS AND SETTING AN EFFECTIVE DATE OF SEPTEMBER 1, 2014.

WHEREAS, The 2012 International Codes, and 2006 International Property Maintenance Code, with amendments, three copies of which are on file in the office of the City/Town clerk, is hereby declared to be a public record;

WHEREAS, said copies are ordered to remain on file with the city clerk;

WHEREAS, the Mayor and Council deem it necessary, in order to protect the public health, safety and welfare and public and private property, to adopt certain rules and regulations to regulate the erection, construction, enlargement, alteration, repair, moving, removal, and demolition, conversion, occupancy, equipment, use, height, area and maintenance of all buildings, structures, or premises;

WHEREAS, in 2004 the Mayor and City Council adopted the 2003 set of International Codes and in 2007 they adopted the 2006 International Codes;

WHEREAS, the 2012 International Codes are meant to replace the 2006 Codes previously adopted by the Mayor and City Council;

WHEREAS, City staff has reviewed the 2012 International Codes and has recommended the following amendments;

WHEREAS, the City desires for the community to have time to review and prepare for the implemented changes in Code and therefore sets the effective date for September 1, 2014; and

WHEREAS, all the 2006 International Codes are being updated to the 2012 versions, except for the 2006 International Property Maintenance Codes, which will remain in effect until brought forward separately for adoption.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Council of the City of Surprise, Arizona, as follows:

Section 1. The 2012 International Codes and appendices as published by the International Code Council, and the amendments to those codes, as contained in this Ordinance #2014-04, are hereby adopted by reference, as amended, and declared to be public records by this Ordinance #2014-04. At least three (3) copies of the Codes and its corresponding amendments shall be filed in the City Clerk's office and kept available for public use and inspection.

Section 2. The following changes are made to the Surprise Municipal Code, Chapter 105, Article II, Division 1, Section 105-19 and imposing a penalty for violation:

Sec. 105-19. Construction codes.
The following codes and appendices as published by the International Code Council, ~~2006 edition~~, and the amendments to those codes, as ~~contained in this~~ adopted by Ordinance ~~No. 07-08~~, are hereby adopted as amended and declared to be public records ~~by this Ordinance No. 07-08~~. At least three copies of each code and its corresponding amendments, if any, shall be filed in the city clerk's office and kept available for public use and inspection.

(a) 2012 International Building Code~~, including Appendix C~~.
(b) 2012 International Residential Code.
(c) 2012 International Electrical Code.
(d) 2012 International Mechanical Code.
(e) 2012 International Plumbing Code.
(f) 2012 International Fuel Gas Code.
(g) 2012 International Energy Conservation Code.
(h) 2006 International Property Maintenance Code.
(i) 2012 International Existing Building~~s~~ Code.
(j) 2012 International Fire Code.

Section 3. The 2012 International Code amendments are adopted by reference, three copies of which are on file in the office of the City Clerk of Surprise, which is made a public record by this Ordinance is hereby referred to, adopted and made a part hereof as if fully set out in this Ordinance, the provisions thereof to become **effective on the 1ST day of SEPTEMBER, 2014.**

Section 4. That if any provision or any portion of any provision of this Ordinance is for any reason held to be unconstitutional or otherwise unenforceable by a court of competent jurisdiction, such provision or portion thereof shall be deemed separate, distinct and independent of the remaining provisions of this Ordinance and shall be severed without affecting the validity of the remaining portions of this Ordinance.

Section 5. This Ordinance shall be codified.

Section 6. Other ordinances or sections of ordinances which are in conflict with the present Ordinance, or any part of the Code adopted herein by reference, are repealed,

including portions of Ordinance 07-08 wherein it adopted the 2006 International Codes and amendments, except wherein it adopted the 2006 International Property Maintenance Code and amendments.

Section 7. Any violation of the 2012 International Codes or amendments, or 2006 International Property Maintenance Code may be enforced by civil or criminal citation as consistent with Surprise City Code.

APPROVED AND ADOPTED this 15 day of April, 2014.

_____
Sharon R. Wolcott, Mayor

Attest:

_____
Sherry Aguilar, City Clerk

Approved as to form:

_____
Misty Leslie, City Attorney

Community and Economic Development
Building Safety Division
16000 N Civic Center Plaza
Surprise, Arizona 85374
Phone: 623-222-3000 / Fax: 623-222-3001
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Proposed 2012 International Building Code
Local Amendments

Including appendices C and R

105.2 Work exempt from permit. Exemptions from *permit* requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. *Permits* shall not be required for the following:

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area is not greater than ~~120~~ 200 square feet (11 18.58 m^2).

2. Fences not over ~~7~~ 6 feet (~~2134 mm~~ 1829 mm) high.

3. Oil derricks.

4. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or IIIA liquids.

5. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1.

6. Platforms, sidewalks and driveways not more than 30 inches (762 mm) above adjacent grade, and not over any basement or *story* below and are not part of an *accessible route*.

7. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

8. Temporary motion picture, television, and theater stage sets and scenery.

9. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than ~~24~~ 18 inches (610 mm) deep.

10. Shade cloth structures constructed for nursery or agricultural purposes, not including service systems.

11. Swings and other playground equipment accessory to detached one- and two-family *dwellings*.

12. Window awnings in Group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.

13. Non-fixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753 mm) in height.

14. Re-roofing with the same type of material as the original roofing and provided not more than two layers of asphalt shingles are applied over an existing asphalt shingle roof.

15. Installation of a nonstructural weatherproof exterior covering over an existing weatherproof covering on an existing structure so long as the new covering will not affect the fire-resistive classification of the existing structure.

Exception: Installation of an Exterior Insulation and Finish System (EIFS).

SECTION 202

DEFINITIONS

PERSONAL CARE SERVICE ~~The care of persons who do not require medical care. Personal care involves responsibility for the safety of persons while inside the building.~~ Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and administration of medications or treatments.

SUPERVISORY CARE SERVICE General supervision, including daily awareness of resident functioning and continuing needs.

DIRECTED CARE SERVICE Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

ASSISTED LIVING FACILITY A residential care institution, including adult foster care, that provides or contracts to provide supervisory care services, personal care services or directed care services on a continuing basis.

ASSISTED LIVING CENTER An assisted living facility that provides resident rooms or residential units to eleven or more residents.

ASSISTED LIVING HOME An assisted living facility that provides resident rooms to ten or fewer residents.

SECTION 308

INSTITUTIONAL GROUP I

308.3 Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment, ~~and~~ receive *custodial care*, and ~~The persons receiving care~~ are capable of self-preservation, except as provided for *assisted living centers*. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living ~~facilities~~ centers
Congregate care facilities

Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities

308.3.2 Six to sixteen persons receiving care. A facility such as above, housing not fewer than six and not more than 16 persons receiving such care, shall be classified as Group R-4, except as provided for *assisted living homes.*

308.4 Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for one or more ~~than five~~ persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
~~*Nursing homes*~~
Assisted Living Centers
Psychiatric hospitals

~~**308.4.1 Five or fewer persons receiving care.** A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

SECTION 310

RESIDENTIAL GROUP R

310.2 Definitions The following terms are defined in Chapter 2:

ASSISTED LIVING FACILITY
ASSISTED LIVING CENTER
ASSISTED LIVING HOME
BOARDING HOUSE
CONGREGATE LIVING FACILITIES.
DIRECTED CARE SERVICES
DORMITORY
GROUP HOME
PERSONAL CARE SERVICE
SUPERVISORY CARE SERVICES
TRANSIENT

310.5.1 Care facilities within a dwelling. Licensed care facilities for ~~five~~ ten (10) or fewer persons receiving care that are within a single-family dwelling are permitted, ~~to comply with the International Residential Code provided an automatic sprinkler system is installed in accordance with Section 903.1.3 or Section P2904 of the International Residential code~~ provided that the requirements of Section 425 of this code are met.

310.6 Residential Group R-4. This occupancy 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*. The persons receiving care are capable of self-preservation, except as provided for *assisted living homes.* This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living ~~facilities~~ homes
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities
Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code and Section 425.

310.6.1. Condition 1. This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition facilities housing more than 10 persons shall be classified as Group I-1

310.6.2 Condition 2. This occupancy condition shall include facilities licensed to provide personal or directed care services , in which occupants are incapable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

SECTION 425

ASSISTED LIVING HOMES

425.1 Applicability. The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment, which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all the applicable provisions of Group R-3.

425.2 General. Building or portions of buildings classified as R-4 may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building and shall not exceed two thousand square feet above the first story, except as provided in Section 506.

425.3 Special Provisions. R-4 occupancies having more than 2000 square feet above the first story shall be of not less than one-hour fire-resistive construction throughout.

425.3.1 Mixed Uses. R-4 occupancies shall be separated from other occupancies as provided in Table 508.4.

425.4 Access and Means of Egress Facilities

425.4.1 Accessibility. R-4 occupancies shall be provided with a concrete landing and ramp outside of the main entrance to comply with sections 1008.1.6, 1010.3, 1010.7.1 and 1010.10. Thresholds at the main entrance shall comply with section 1008.1.7.

425.4.2 Exits

425.4.2.1 Number of Exits. Every story, basement, or portion thereof shall have not less than two exits.
Exception: Basements and stories above the first floor containing no sleeping rooms used by residents may have only one means of egress as provided in Chapter 10.

425.4.2.2 Distance to Exits. The maximum travel distance shall comply with Section 1016, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

425.4.2.3 Emergency Exit Illumination. In event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the International Electric Code.

425.4.2.4 Emergency Escape and Rescue. R-4 occupancies shall comply with the requirements of Section 1029, except that Exception #1 to 1029 does not apply to R-4 occupancies.

425.4.2.5 Delayed Egress Locks. In R-4 Condition 2 occupancies, delayed egress locks shall be permitted in accordance with 1008.1.9.7, Items 1, 2, 4, 5, and 6.

425.5 Smoke Alarms and Sprinkler Systems.

425.5.1 Smoke Alarms. R-4 occupancies shall be provided with smoke alarms installed in accordance with 907.2.11.2, and such alarms shall be installed in all habitable rooms.

425.5.2 Sprinkler Systems. R-4 occupancies shall be provided with a sprinkler system installed in accordance with 903.3.1.3. Sprinkler systems installed under this section shall be installed throughout, including attached garages, and in Condition 2 facilities, shall include concealed spaces ~~of~~ or containing combustible materials. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In Condition 2 occupancies, such systems shall contain water flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

1204.1 Equipment and systems. Habitable spaces ~~Interior spaces~~ intended for human occupancy shall be provided with active or passive space-heating and space-cooling systems capable of maintaining a minimum indoor temperatures between 70 of 68°F (201°C) and 90°F (32°C) at a point 3 feet (914 mm) above the floor on the design heating day. The installation of portable space heaters or coolers shall not be used to achieve compliance with this section.

Exception: Space heating and cooling systems are not required for interior spaces where the primary purpose of the space is not associated with human comfort.

1612.3 Establishment of flood hazard areas. To establish *flood hazard areas*, the applicable governing authority shall adopt a flood hazard map and supporting data. The flood hazard map shall include, at a minimum, areas of special flood hazard as identified by the Federal Emergency Management Agency in an engineering report entitled "The Flood Insurance Study for Maricopa County, Arizona and Incorporated Areas revised on July 19, 2001, as amended or revised with the accompanying Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) and related supporting data along with any revisions thereto. The adopted flood hazard map and supporting data are hereby adopted by reference and declared to be part of this section.

1607.2 Loads not specified.

Table 1607.1

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L_o, AND MINIMUM CONCENTRATED LIVE LOADS[g]

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
25. Residential		-
One- and two-family dwellings		
Uninhabitable attics with storage [i,j,k]	~~20~~ 40	
Habitable attics and sleeping areas [k]	~~30~~ 40	
(no other changes in item 25)		

2106.1 Seismic design requirements for masonry. Masonry structures and components shall comply with the requirements in section 1.18 of TMS 402/ACI 530/ASCE 5 depending on the structure's seismic design category. All new masonry elements, regardless of seismic design category, shall meet the following minimum reinforcement requirements:

1. Connections to columns shall comply with Section 1.18.4.3.2.1 of TMS 402/ACI 530/ASCE 5.

2. Vertical wall reinforcement of at least 0.20 square inch (130 mm^2) in cross-sectional area shall be provided continuously from support to support at each corner, at each side of each opening, at the ends of walls and at maximum spacing of 4 feet (1219 mm) apart horizontally throughout the wall.

3. Horizontal wall reinforcement not less than 0.20 square inch (130 mm^2) in cross-sectional area shall be provided (1) at the bottom and top of wall openings and extend not less than 24 inches (610 mm) or less than 40 bar diameters past the opening, (2) continuously at structurally connected roof and floor levels and at the top of walls, (3) at the bottom of walls or in the top of foundations when doweled in walls, and (4) at maximum spacing of 10 feet (3048 mm) unless uniformly distributed joint reinforcement is provided.

4. Where anchor bolts are used to connect horizontal elements to the tops of columns, anchor bolts shall be placed within lateral ties. Lateral ties shall enclose both the vertical bars in the column and the anchor bolts. There shall be a minimum of two No. 4 (M #13) or three No. 3 (M #10) in the top 5 inches (127 mm) of the column.

SECTION 3109

SWIMMING POOL ENCLOSURES AND SAFETY DEVICES

DELETE section in its entirety

Appendix R
Local Amendment

SOLAR PHOTOVOLTAIC POWER SYSTEMS

SECTION AR101

SOLAR PHOTOVOLTAIC POWER SYSTEMS

AR101 Installation of solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections AM101 through AM101.4, the *International Building Code* and NFPA 70.

Exception: Detached, non-habitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.

AR101.1 Marking. Marking is required on interior and exterior direct -current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.

AR101.1.1 Materials. The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections AM101.1.2 through AM101.1.4 shall have all letters capitalized with a minimum height of 3/8 inch (9.5 mm) white on red background.

AR101.1.2 Marking content. The marking shall contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."

AR101.1.3 Main service disconnect. The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.

AR101.1.4 Location of marking. Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mill) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.

AR101.2 Locations of DC conductors. Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.

AR101.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections AM101.3.1 through AM101.3.3.3.

Exceptions:

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.

2. Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

AR101.3.1 Roof access points. Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not connect with overhead obstructions such as tree limbs, wires, or signs.

AR101.3.2 Residential systems for one- and two- family dwellings. Access to residential systems for one- and two-family dwellings shall be provided in accordance with Sections AM101.3.2.1 through AM101.3.2.4.

AR101.3.2.1 Residential buildings with hip roof layouts. Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.2 Residential buildings with a single ridge. Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two. 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.3 Residential buildings with roof hips and valleys. Panels/modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.4 Residential building smoke ventilation. Panels/modules installed on residential buildings shall be located no higher than 3 feet (914 mm) below the ridge in order to allow for fire department smoke ventilation operations.

AR101.3.3 Other than residential buildings. Access to systems for occupancies other than one- and two family dwellings shall be provided in accordance with Sections AM101.3.3.1 through AM101.3.3.3.

Exception: Where it is determined by the *Building Official* that the roof configuration is similar to that of a one- or two-family dwelling, the residential access and ventilation requirements in Sections AM101.3.2.1 through AM101.3.2.4 shall be permitted to be used.

AR101.3.3.1 Access. There shall be a minimum 6-1 foot-wide (1829 mm) clear perimeter around the edges of the roof.

Exception: Where either axis of the building is 250 feet (76 200 mm) or less, there shall be a minimum 4-foot-wide (1290 mm) clear perimeter around the edges of the roof.

AR101.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of fire fighters accessing the roof.

2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.

3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.

4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.

5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

AR101.3.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.

2. Smoke ventilation options between array sections shall be one of the following:

2.1. A pathway 8 feet (2438 mm) or greater in width.

2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents.

2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.

AR101.4 Ground-mounted photovoltaic arrays. Ground-mounted photo voltaic arrays shall comply with Sections AM101 through AM101.2 and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground mounted photovoltaic arrays.

Proposed 2012 International Residential Code
Local Amendments

Including appendices E, G, H, I, K and R

R105.2 Work exempt from permit. Permits shall not be required for the following. Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction.

Building:

1. One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area is not greater than 200 square feet (18.58 m^2).

   Fences not over ~~7~~ 6 feet (~~2134 mm~~ 1829 mm) high.

3. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge

4. Water tanks supported directly on grade if the capacity is not greater than 5,000 gallons (18 925 L) and the ratio of height to diameter or width is not greater than 2:1.

5. Sidewalks and driveways.

6. Painting, papering, tiling, carpeting, cabinets, counter tops and similar finish work.

7. Prefabricated swimming pools accessory to a Group R-3 occupancy that are less than ~~24~~ 18 inches (610 mm) deep.

8. Swings and other playground equipment.

9. Window awnings supported by an exterior wall that do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.

10. Decks not exceeding 200 square feet (18.58 m^2) in area, that are not more than 30 inches (762 mm) above grade at any point, are not attached to a dwelling and do not serve the exit door required by Section R311.4.

11. Hot water re-circulators.

12. Water Softeners and Soft Water Loops.

13. Replacement of existing water heaters previously installed with a valid building permit.

14. Re-roofing with the same type of material as the original roofing and provided not more than two layers of asphalt shingles are applied over an existing asphalt shingle roof.

14. Installation of a nonstructural weatherproof exterior covering over an existing weatherproof covering on an existing structure so long as the new covering will not affect the fire-resistive classification of the existing structure.

    Exception: Installation of an Exterior Insulation and Finish System (EIFS).

R301.2 Climatic and geographic design criteria. Buildings shall be constructed in accordance with the provisions of this code as limited by the provisions of this section. Additional criteria shall be established by the local jurisdiction and set forth in Table R301.2(1).

Table R301.2(1)
(Due to space limitations the table could not be reproduced; only the values are listed)
Ground snow load: 0
Wind speed (mph): 90 Exposure B (unless otherwise designated by the Building Official)
Seismic design category: B
Weathering: Negligible
Frost line depth: 0"
Termite: Moderate to heavy
Decay: None to slight
Winter design temperature: 32°F
Ice shield underlayment required: N/A
Flood hazards: MCFCD
Air freezing index: 0
Mean annual temperature: 72.3°F

R301.5 Live Load.

The minimum uniformly distributed live load shall be as provided in Table R301.5

TABLE R 301.5

MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (in pounds per square foot)

USE	LIVE LOAD
Attics with storage [b,g]	~~20~~ 40
Sleeping rooms	~~30~~ 40

(No other changes to Table)

SECTION R302

FIRE-RESISTANT CONSTRUCTION

R302.1 Exterior Walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1(1); or dwellings equipped throughout with an automatic sprinkler system installed in accordance with Section P2904 shall comply with Table R302.1(2).

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the fire separation distance.

   Walls of dwellings and accessory structures located on the same lot.

3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line.

4. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm)

5. Foundation vents installed in compliance with code are permitted

6. When the wall is at 5' or greater to the property line, with no attic vents or gable end vents, a maximum of 18" unprotected eave overhang is permitted.

R302.5 Dwelling/garage opening/penetration protection.

R302.5.1 Opening protection. Openings from a private garage or carport directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage or carport and residence shall be equipped with solid wood doors not less than $1\frac{3}{8}$ inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than $1\frac{3}{8}$ inches (35 mm) thick, or 20-minute fire-rated doors, equipped with a self-closing, self latching device.

R302.6 Dwelling/garage fire separation.

Table R302.6 Dwelling/Garage Separation

SEPARATION	MATERIAL
From the residence attics	~~Not less than 1/2" gypsum board applied to the garage side~~ Minimum 5/8" Type X gypsum board applied to the garage side

R303.9 Required heating and cooling. When the winter design temperature in Table R301.2(1) is below 60°F (16°C). Every *dwelling unit* shall be provided with heating and cooling facilities capable of maintaining a minimum room temperatures between of 70°F(21°C) 68°F (20°C) and 90°F (50°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in all habitable rooms at the design temperature. The installation of one or more portable space heaters or portable space coolers shall not be used to achieve compliance with this section.

SECTION R309 GARAGES AND CARPORTS

Section 309.5 Fire Sprinklers.

DELETE section in its entirety.

SECTION R313 AUTOMATIC FIRE SPRINKLER SYSTEMS

DELETE section in its entirety.

SECTION R322 FLOOD-RESISTANT CONSTRUCTION

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas ~~(including A or V Zones) as established in Table R301.2(1)~~ shall be designed and constructed in accordance ~~with Section R322~~ the regulations of the Maricopa County Flood Control District. ~~Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.~~

CHAPTER 11 [RE]

ENERGY EFFICIENCY

N1101.2 Scope. This code applies to *residential buildings* and the building sites and associated systems and equipment. Group R-2 when defined as a *Residential Building* by section R202, shall have the option of complying under the Commercial Provisions of the code, regardless of height. Once defined as such on the submittal documents, all components of the Commercial Provisions shall be followed.

SECTION N1101.9 ALTERNATE MATERIALS-METHOD OF CONSTRUCTION, DESIGN OR INSULATING SYSTEMS

Section N1101.9.1

RESNET Testing & Inspection Protocol. The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections N1102.4.1.1, N1102.4.1.2 and N1103.2.2. and shall meet the following conditions:

1. Third Party Testing and Inspections shall be completed by RESNET certified Raters or Rating Field Inspectors and shall be subject to RESNET Quality Assurance Field Review procedures.

   Sampling in accordance with Chapter 6 of the RESNET Standards shall be performed by Raters or Rating Field Inspectors working under a RESNET Accredited Sampling Provider.

3. Third Party Testing is required for the following items:

   a. 1102.4.1.1 –Building Envelope – Thermal and Air Barrier Checklist
   b. 1102.4.1.2 –Testing – Air Leakage Rate
   c. 1103.2.2 – Sealing – Duct Tightness

4. The other requirements identified as “mandatory” in Chapter 11 shall be met.

5. Alternate testing and inspection programs and protocols shall be allowed when approved by the Building Official.

N1101.15 Compliance. Projects shall comply with Sections identified as "mandatory" and with either sections identified as "prescriptive" or the performance approach in Section R405.

N1101.15.1 Alternative approach for compliance. A Home Energy Rating System ("HERS") Index of 73 or less, confirmed in writing by a Residential Energy Services Network certified energy rater may be used in place of the approach described in section 401.2 above. Compliance may be demonstrated by sampling in accordance with Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standard as adopted by the Residential Energy Services Network.

SECTION N1103 SYSTEMS

N1103.2 Ducts. Ducts and air handlers shall be in accordance with Sections N1103.2.1 through N1103.2.3.

N1103.2.1 Insulation (Prescriptive). Supply ducts in attics shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to a minimum of R-6.

Exceptions: Ducts or portions thereof located completely inside the building thermal envelope.

1. Ducts or portions thereof located completely inside the building thermal envelope.

2. Supply ducts may be insulated to a minimum of R-6 when one or more of the following conditions are met;

2.1 Minimum SEER rating of space heating/cooling system is increased to 15.

2.2 Maximum U-factor is decreased to 0.35 and maximum SHGC is decreased to 0.22 for all fenestration products.

2.3 Wall cavity insulation minimum R-value is increased to R-19.

2.4 Residential buildings that meet the requirements of sections R102.1.1 or R405.

Section N1103.9.3 ~~Covers~~ Variable Speed Pool Pumps

R403.9.3 ~~Heated pools and in-ground permanently installed spas shall be provided with a vapor-resistant cover.~~

~~**Exception:** Pools deriving over 70% of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season~~.

Motors with a total horsepower of one or more for pools and in-ground permanently installed spas shall have the capability of operating at two or more speeds with a low speed having a rotation rate that is no more than one-half of the motor's maximum rotation rate and shall be operated with a pump control with the capability of operating the pump at two or more speeds. Residential pool pump motor controls that are sold for use with a two or more speed motor shall have a default circulation speed setting no more than one-half of the motor's maximum rotation rate. Any high speed override capability shall be for a temporary period not to exceed one twenty-four hour cycle without resetting to the default setting.

Proposed 2012 International Residential Code
Appendix E
Local Amendment

DELETE this appendix in its entirety and REPLACE as follows:

See State Office of Manufactured Housing Regulations

Proposed 2012 International Residential Code
Appendix I
Local Amendment

DELETE this appendix in its entirety and REPLACE as follows:

See State Department of Environmental Quality Regulations.

Proposed 2012 International Residential Code
Appendix G
Local Amendment

SWIMMING POOLS, SPAS AND HOT TUBS

SECTION AG101 GENERAL

AG101.1 General.
The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one- and two-family dwelling.

SECTION AG102 DEFINITIONS

AG102.1 General.
For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

ABOVE-GROUND/ON-GROUND POOL. See "Swimming pool"

BARRIER. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

HOT TUB. See "Swimming pool."

IN-GROUND POOL. See "Swimming pool."

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling or a one-family townhouse not more than three stories in height.

SPA, NONPORTABLE. See "Swimming pool."

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

SWIMMING POOL. Any structure intended for swimming or recreational bathing that contains water over 18 inches (457 mm) deep at any point, and, other than hot tubs and spas is wider than 8 feet (2400 mm) at any point. This includes in-ground, above ground and on-ground swimming pools and, other than the width, hot tubs and spas.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

SECTION AG103 SWIMMING POOLS

AG103.1 In-ground pools.
In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG107.

AG103.2 Above-ground and on-ground pools.

Aboveground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AG107.

SECTION AG104 SPAS AND HOT TUBS

AG104.1 Permanently installed spas and hot tubs.

Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG107.

AG104.2 Portable spas and hot tubs.

Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Section AG107.

SECTION AG105 BARRIER REQUIREMENTS

AG105.1 Application.

The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

AG105.2 Outdoor swimming pool.

An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm). Any decorative design work on a barrier located entirely upon the subject parcel, and on the side away from the swimming pool, such as protrusions, indentations, or cutouts or other fixed or moveable, attached or unattached objects within 24 inches of the pool barrier, which render the barrier easily climbable, are prohibited. The wall, fence, or barrier shall be at least 20 inches from the water's edge.

2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

6. Chain link fencing shall not be used as a barrier.

7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1.75 inches (44 mm).

8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:

8.1. The release mechanism shall be located on the pool side of the gate at least 5 inches (125 mm) below the top of the gate, and

8.2. The gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

8.3. All pedestrian access gates and any other access gates shall have a sign attached to both sides of the gate stating the following: “Protect your children, Keep Gate Closed”. Details of minimum sign size, letter type, and color and other specifications of the sign shall be provided by the ~~Building Safety Division~~ City.

9. Where a wall of a dwelling serves as part of the barrier one of the following conditions shall be met:

9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F1346; or

9.2. Openings in the wall of the residence or living area which constitute part of the barrier will be protected in the following ways:

9.2.1 Doors will be protected in the following ways:

9.2.1.1 Add self-closing, self latching devices installed on all doors with direct access to the pool area, with the release mechanism located minimum of 54 inches above the floor.

9.2.1.2 An alarm shall be installed on all doors with direct access to the pool. The alarm shall sound continuously for a minimum of 30 seconds within seven seconds after the door is opened, and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door.

9.2.1.3 Pet doors which provide direct access to the pool are prohibited.

~~**Exception:** Pet doors fitted with a permanent barrier in compliance with AG105.2, Item 2.~~

9.2.2 Windows with access to the pool area shall be protected in the following ways:

9.2.2.1 Emergency escape or rescue windows from sleeping areas with access to the swimming pool will be equipped with a latching device not less than 54 inches above the floor.

9.2.2.2 All other openable windows with similar access will also be equipped with a latching device not less than 54 inches above the floor or shall be equipped with a key-lock device that prevents opening the window more than 4 inches.

9.3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.

10. Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then:

10.1. The ladder or steps shall be capable of being secured, locked or removed to prevent access, or 10.2. The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

AG105.3 Indoor swimming pool. All walls surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

AG105.4 Prohibited locations. Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

AG105.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

AG 105.6 Retroactivity. The owner of every dwelling with an existing swimming pool or spa which was constructed prior to the effective date of this Appendix G (amended) and to which this Appendix would otherwise apply, must comply with this Appendix not later than one year after the effective date of this Appendix.

AG105.7 Duty to comply. Every person who owns, rents , occupies, or controls a swimming pool or spa to which this Appendix G (amended) applies, shall comply with all the provisions of this Appendix at all times.

AG105.7.1 No person shall construct a swimming pool or spa to which this Appendix applies in a manner, which is not in compliance with this Appendix. No person shall remove, alter, disable, render inoperable, or change, either temporarily or permanently, any device or structure installed or constructed in accordance with this Appendix, in such a manner that the device or structure or the barrier to which it is attached or of which it is a part, is no longer in compliance with this Appendix.

AG105.7.2 Every person who contracts to build a swimming pool or spa to which this Appendix applies, or who contracts to sell, lease or rent a dwelling with a swimming pool or spa to which this Appendix applies, shall, at the time of executing the contract, give to the buyer, lessee, or renter, a copy of this Appendix.

AG105.8 Violations and Penalties. Every person who violates any provision of this Appendix G (amended) is guilty of a misdemeanor, and upon conviction shall be punished by imprisonment for up to six months, or by a fine of not more than two thousand five hundred dollars, or both such fine and imprisonment.

Proposed 2012 International Residential Code
Appendix K
Local Amendment

SOUND TRANSMISSION

Appendix K SOUND TRANSMISSION

AK102.2. Sound Attenuation. In order to achieve an interior noise level of 45 decibels, all residences shall be constructed using the following minimum construction standards:

1. Exterior wall penetrations by pipe ducts or conduits shall be sealed.

2. Mail boxes shall not be used through the door or wall.

3. Windows shall have 2 panes of glass and a sound transmission rating of STC-22. All operable windows shall be weather stripped and air tight in accordance with ASTM E-283-84-T Standard. Perimeter window frames" shall be sealed.

4. All exterior side hinge doors shall be solid core wood or insulated hollow metal, at least 1", inches thick and fully weather stripped. All exterior doors other than side hinge doors shall be solid wood, foam filled fiberglass or metal construction.

5. Fireplaces shall be provided with well fitting dampers.

6. Exterior walls shall achieve a minimum overall thermal resistance rating of ~~19~~ 18. *(Exterior walls shall be at least four inches in nominal thickness and shall be finished on the outside with block, siding, sheathing, or stucco on one inch Styrofoam. A minimum of R-13 fiberglass or cellulose insulation shall be installed continuously throughout the cavity space within the wall.)*

7. All roof spaces shall achieve a minimum overall thermal resistance rating of 30.

AK1 02.2.1. Certification. A certified statement by a licensed architect or engineer certifying that the residence achieves the requirement of a maximum interior noise level of 45 decibels is required for all construction. The certified statement shall include documentation supporting the statement.

Exception. Construction outside the areas designated as having a day-night average sound level 65 decibels or higher as determined by the use of the1988 noise contour lines developed by the Maricopa County Association of Governments that complies with the construction standards of Section 1206.4.1 shall be deemed to have achieved the interior noise level of 45 decibels, and shall not require the certified statement"

Proposed 2012 International Residential Code
Appendix R
Local Amendment

SOLAR PHOTOVOLTAIC POWER SYSTEMS

SECTION AR101

SOLAR PHOTOVOLTAIC POWER SYSTEMS

AR101 Installation of solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections AM101 through AM101.4, the *International Building Code* and NFPA 70.

Exception: Detached, non-habitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.

AR101.1 Marking. Marking is required on interior and exterior direct -current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.

AR101.1.1 Materials. The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections AM101.1.2 through AM101.1.4 shall have all letters capitalized with a minimum height of 3/8 inch (9.5 mm) white on red background.

AR101.1.2 Marking content. The marking shall contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."

AR101.1.3 Main service disconnect. The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.

AR101.1.4 Location of marking. Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mill) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.

AR101.2 Locations of DC conductors. Conduit, wiring systems, and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.

AR101.3 Access and pathways. Roof access, pathways, and spacing requirements shall be provided in accordance with Sections AM101.3.1 through AM101.3.3.3.

Exceptions:

1. Residential structures shall be designed so that each photovoltaic array is no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in either axis.

2. Panels/modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.

AR101.3.1 Roof access points. Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not cont1iet with overhead obstructions such as tree limbs, wires, or signs.

AR101.3.2 Residential systems for one- and two- family dwellings. Access to residential systems for one- and two-family dwellings shall be provided in accordance with Sections AM101.3.2.1 through AM101.3.2.4.

AR101.3.2.1 Residential buildings with hip roof layouts. Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.2 Residential buildings with a single ridge. Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two. 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels/modules are located.

Exception: This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.3 Residential buildings with roof hips and valleys. Panels/modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.

Exception: These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

AR101.3.2.4 Residential building smoke ventilation. Panels/modules installed on residential buildings shall be located no higher than 3 feet (914 mm) below the ridge in order to allow for fire department smoke ventilation operations.

AR101.3.3 Other than residential buildings. Access to systems for occupancies other than one- and two family dwellings shall be provided in accordance with Sections AM101.3.3.1 through AM101.3.3.3.

Exception: Where it is determined by the *Building Official* that the roof configuration is similar to that of a one- or two-family dwelling, the residential access and ventilation

requirements in Sections AM101.3.2.1 through AM101.3.2.4 shall be permitted to be used.

AR101.3.3.1 Access. There shall be a minimum 6-1 foot-wide (1829 mm) clear perimeter around the edges of the roof.

> **Exception:** Where either axis of the building is 250 feet (76 200 mm) or less, there shall be a minimum 4-foot-wide (1290 mm) clear perimeter around the edges of the roof.

AR101.3.3.2 Pathways. The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:

1. The pathway shall be over areas capable of supporting the live load of fire fighters accessing the roof.

2. The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.

3. Shall be a straight line not less than 4 feet (1290 mm) clear to skylights or ventilation hatches.

4. Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes.

5. Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.

AR101.3.3.3 Smoke ventilation. The solar installation shall be designed to meet the following requirements:

1. Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire depm1ment smoke ventilation operations.

2. Smoke ventilation options between array sections shall be one of the following:

   2.1. A pathway 8 feet (2438 mm) or greater in width.

   2.2. A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or smoke and heat vents.

   2.3. A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.

AR101.4 Ground-mounted photovoltaic arrays. Ground-mounted photo voltaic arrays shall comply with Sections AM101 through AM101.2 and this section. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground mounted photovoltaic arrays.

Proposed 2012 International Fire Code
Local Amendments

The International Fire Code, 2012 Edition is hereby amended as follows:

The following Appendices of the International Fire Code, 2012 Edition, are hereby adopted in their entirety.

The most recent Editions of the National Fire Codes and Standards published by the National Fire Protection Association (NFPA) as referenced in Chapter 80 of the International Fire Code 2012 edition and the most recent addition of the NFPA 101 Life Safety Code, together with all errata to those codes as adopted by NFPA from time to time.

Appendix B - Fire-Flow Requirements for Buildings
Appendix C - Fire Hydrant Location and Distribution
Appendix D - Fire Apparatus Access Roads
Appendix E - Hazard Categories
Appendix F - Hazard Ranking
Appendix G - Cryogenic Fluids, Weight and Volume Equivalents
Appendix H - Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) Instructions
Appendix I - Fire Protection Systems-Noncompliant Conditions
Appendix J - Building Information Sign

[A] 101.1 Title.
These regulations shall be known as the Fire Code of ~~[NAME OF JURISDICTION]~~ City of Surprise Fire Code, hereinafter referred to as "this code.

[A] 104.10 Fire investigations.

~~The fire code official, the fire department or other responsible authority shall have the authority to investigate the cause, origin and circumstances of any fire, explosion or other hazardous condition. Information that could be related to trade secrets or processes shall not be made part of the public record, except as directed by a court of law.~~ The Fire Code Official shall investigate or cause to be investigated the cause, origin and circumstance of each and every fire occurring in the jurisdiction involving loss of life or injury to a person or destruction or damage to property, and if it appears to the Fire Investigator that such fire is of suspicious origin, the Fire Investigator shall notify the appropriate law enforcement agency and shall secure the site until the law enforcement agency takes control of the site. Then, the Fire Investigator shall continue to pursue the investigation to its conclusion. Information that could be related to trade secrets or processes shall not be made part of the public record unless directed by a court of law.

[A] 104.10.1 Assistance from other agencies.
Police and other enforcement agencies shall have authority to render necessary assistance in the investigation of fires when requested to do so. It shall be unlawful for any person to enter into a fire scene, or refuse to leave a fire scene when directed to do so by a Police or Fire Officer, when such scene is established by ropes, guards, line tape or any other method.

[A] 105.4.2 Information on construction documents. Construction documents shall be drawn and submitted in accordance with the Arizona State Board of Technical Registration. ~~to scale upon suitable~~

~~material.~~ Re-submittals, modifications or revisions shall include; revision date indentified by a Cloud Area and Delta; and shall include a response letter addressing each item. Electronic media documents are allowed to be submitted when approved by the ~~fire code official~~ Fire Code Official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the ~~fire code official~~ Fire Code Official.

[A] 105.6.47 Trade shows and exhibits in buildings or structures. An operational permit is required to operate a trade show or exhibit in a building or structure.

[A] 106.2.1 Inspection requests.

It shall be the duty of the person doing the work ~~holder of the permit or their duly~~ authorized by a permit ~~agent~~ to notify the Fire Code Official that such work is ready for inspection. ~~fire code official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code.~~

~~**[A] 108.1 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.~~

~~**[A] 108.2 Limitations on authority.** An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent method of protection or safety is proposed. The board shall have no authority to waive requirements of this code.~~

~~**[A] 108.3 Qualifications.** The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or fire protection systems, and are not employees of the jurisdiction.~~

~~**[A] 109.4 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 Marshal, or of a permit or certificate used under provisions of this code, shall be guilty of a [SPECIFY OFFENSE] punishable by a fine of not more than [AMOUNT] dollars or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment. Each day the violation continues after due notice has been served shall be deemed a separate offense.~~

SECTION 202 DEFINITIONS

ASSISTED LIVING CENTER. An assisted living facility that provides resident rooms or residential units to eleven or more residents.

ASSISTED LIVING FACILITY. A residential care institution, including adult foster care, that provides or contracts to provide supervisory care services, personal care services or directed care services on a continuing basis.

ASSISTED LIVING HOME. An assisted living facility that provides resident rooms to ten or fewer residents.

ATTENDANT. A person knowledgeable in the use of portable fire extinguishers, whose duty it is to maintain fire safety measures during public or private events, as prescribed.

AUTHORITY HAVING JURISDICTION. The City of Surprise Fire Marshal or his designated representative.

CHIEF OF THE DIVISION OF FIRE PREVENTION. The Fire Marshal or delegates.

CORPORATION LEGAL COUNSEL. The City Attorney or delegates.

CUSTODIAL CARE. Assistance with day-to-day living tasks; such as assistance with cooking, taking medication, bathing, using toilet facilities and other tasks of daily living. Custodial care includes occupants who evacuate at a slower rate and/or who have mental or psychiatric complications.

DIRECTED CARE SERVICE. Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

DIVISION OF FIRE PREVENTION. The Fire Marshal's Office.

DRIVE LENGTH. The distance from the driveway entrance to the structure measured in feet.

FIRE CODE OFFICIAL. The fire ~~chief~~ marshal ~~or other~~ who is the designated authority charged with the administration and enforcement of the code, or a duly authorized representative.

GRADE. The degree of inclination of a slope, road or other surface (see slope).

HORIZONTAL (YARD) STANDPIPE. Approved water supply piping that extends the source of potable water to remote locations around the exterior of a structure.

HOSE LAY. The maximum length of a hand held hose line (fire hose) extended from fire apparatus 200 feet (60 900 mm) around the perimeter of a structure. If the hose lay is more than 200 feet (60 900 mm) from the road to all portions of the exterior, an Operational Platform is required.

MODIFIED (Mod) NFPA 13D SPRINKLER SYSTEM. In addition to NFPA 13D, sprinkler heads shall be installed in enclosed patios and porches, hidden spaces, attics, spaces under egress stairways, and in garages. A one-inch (25 mm) domestic water meter is required.

MODIFIED (Mod) NFPA 13R FIRE SPRINKLER SYSTEM. In addition to NFPA 13R, sprinkler heads shall be installed in enclosed patios and porches, hidden spaces, attics, spaces under egress stairways, and in garages. A one-inch (25 mm) domestic water meter is required.

OCCUPANCY CLASSIFICATION. For the purposes of this code, occupancies are defined and amended as follows:

Institutional Group I-1. This occupancy shall include buildings, structures or portions thereof for more than 16 persons who reside on a 24 hour basis in a supervised environment, ~~and~~ receive *custodial care*, and the~~ persons receiving care~~ are capable of self-preservation, except as provided for *assisted living centers*. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living ~~facilities~~ centers
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities

Six to sixteen persons receiving care. A facility such as above, housing not fewer than six and not more than 16 persons receiving such care, shall be classified as Group R-4, except as provided for *assisted living homes.*

Institutional Group I-2. This occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for one or more ~~than five~~ persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities
Hospitals
~~Nursing homes~~ Assisted Living Centers
Psychiatric hospitals

~~**Five or fewer persons receiving care.** A facility such as the above with five or fewer persons receiving such care shall be classified as Group R-3 or shall comply with the *International Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Section P2904 of the *International Residential Code*.~~

Residential Group R-4. This occupancy 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*. The persons receiving care are capable of self-preservation, except as provided for *assisted living homes*. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living ~~facilities~~ homes
Congregate care facilities
Convalescent facilities
Group homes
Halfway houses
Residential board and *custodial care* facilities
Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code and the 2012 International Building Code Section 425 (amended).

Condition 1. This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self-preservation by responding to an emergency

situation without physical assistance from staff. Condition facilities housing more than 10 persons shall be classified as Group I-1

Condition 2. This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group I-2.

PAVED SURFACE. A surface of concrete, asphalt, pavers, or other material designed to support fire apparatus in excess of 75,000 pounds GVW under any weather condition.

PERMENANT ALL WEATHER SURFACE (PAWS). A road surface made up of approved materials compacted to 90% with side containment, and capable of supporting fire apparatus vehicles in excess of 75,000 pound gross vehicle weight (GVW) under any weather condition. The permanent all weather surface shall be maintained by the property owner for intended use by the fire department.

SLOPE. The ground, road or other surface that forms a natural or artificial incline. The percentage of slope is determined by dividing the rise by the horizontal run multiplied by 100 [% slope = (Rise/Run) X 100].

STREET VALVE. An ON/OFF valve located in the street used to control the flow of water to a fire hydrant.

SUPERVISORY CARE SERVICE. General supervision, including daily awareness of resident functioning and continuing needs.

TEMPORARY ALL WEATHER SURFACE (TAWS). A road surface made up of an aggregate base or other approved materials compacted to 90% and capable of supporting fire apparatus vehicles in excess of 75,000 pound gross vehicle weight (GVW) under any weather condition. The TAWS shall be maintained by the builder for intended use by the fire department during the construction process.

TURNING RADIUS. ~~2002~~ AASHTO ~~WB-50~~ SU-40 Scale

UNLAWFUL. A violation of this code, which may be punished by a civil penalty or a criminal penalty; however no person may be punished for the same offense by both a civil and criminal penalty.

Chapter 3 GENERAL PRECAUTIONS AGAINST FIRE

308.1.4 Open-flame cooking devices. Charcoal burners and other open-flame cooking devices shall not be 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].~~

308.3.2.1 Audience control. The audience shall be at least 30 feet (9144 mm) away from the closest projection of an open flame device. Audience control shall be established by use of a physical barrier which can be easily moved or removed in the event of an emergency and shall remain in place throughout the entire performance.

308.3.2.2 Attendant. Flame Effects before an Audience. Performances shall be attended by a person knowledgeable in the proper use of fire extinguishers. Each attendant will watch over no more than two (2) active flame devices. Attendants shall remain at the performance until all flames are extinguished and attendant is dismissed.

308.3.2.3 Fire extinguishers. Approved fire extinguishing equipment shall be readily available for use during the performance. Portable fire extinguishers shall be provided at a minimum of one 20BC fire extinguisher for every 4 simultaneous devices.

308.3.2.4 Clearance from combustibles. A 30-foot (9144 mm) clearance from all combustibles shall be maintained in all directions.

311.2.2 Fire protection. Fire alarm, sprinkler and standpipe systems shall be maintained in an operable condition at all times.

~~**Exceptions:**~~

1. ~~When the premises have been cleared of all combustible materials and debris and, in the opinion of the fire code official, the type of construction, fire separation distance and security of the premises do not create a fire hazard.~~

2. ~~Where approved by the fire chief, buildings that will not be heated and where fire protection systems will be exposed to freezing temperatures, fire alarm and sprinkler systems are permitted to be placed out of service and standpipes are permitted to be maintained as dry systems (without an automatic water supply), provided the building has no contents or storage, and windows, doors and other openings are secured to prohibit entry by unauthorized persons.~~

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 720mm)~~ 200 feet (60 960 mm) of all portions of the facility or 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, and within 200 feet (60 960 mm) of the center of the furthest room on the second floor or level from the access road for buildings with two or more floors. Travel shall be measured along normal pedestrian routes. One flight of stairs shall count as 30 feet (9144 mm).

Exceptions: The ~~fire code official~~ Fire Marshal is authorized to increase the dimension of ~~150~~ 200 feet (60 960 mm) where:

1. ~~The building is equipped throughout with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.~~

Fire apparatus access roads cannot be installed due to location on property, *topography, waterways, non-negotiable 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.

503.2.4 Turning radius. The required turning radius of a fire apparatus access road shall be ~~determined by the fire code official~~. in accordance with ~~2002~~ AASHTO ~~WB-50~~ SU-40 Scale.

503.2.5 Dead ends. Dead-end fire apparatus access roads in excess of ~~150 feet (45 720mm)~~ 200 feet (60 960 mm) in length shall be provided with an approved area for turning around fire apparatus. Dead-end fire apparatus access roads located between buildings shall have a 10-foot (3048 mm) setback from the edge of the access road to the structures on each side of the road.

503.3 Marking. Where required by the by the *fire code official*, approved signs with red curb markings and other approved notices ~~or markings that include the words NO PARKING – FIRE LANE~~ shall be provided for fire apparatus access roads to identify such roads and prohibit the obstruction thereof. ~~This means by which fire lances are designated shall be maintained a clean and legible condition at all times and be replace or repaired when necessary to provide adequate visibility.~~ Signs, notices and red curb markings shall be maintained in a clean and legible condition at all times, and be replaced, repaired or repainted when necessary to provide adequate visibility. All signage to be consistent with the requirements in the Surprise Fire Department Emergency Access Detail book.

503.3.1 Maintenance. The person(s) in possession of premises on which a fire apparatus access roadway is required shall be solely responsible for the maintenance of such roadways and all required signs and markers. No owner, manager or other person(s) in charge of premises served by a required fire apparatus access roadway shall abandon or close the fire apparatus roadway or any part thereof without permission of the Fire Chief. The person(s) in possession of the premises shall be responsible for ensuring that fire apparatus roadways are clear at all times.

503.4 Obstruction of fire apparatus access roads. Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles. For the purposes of this section, parking is defined as stopped vehicles with no driver occupying the driver's position. Other occupants of the vehicle do not count as the driver. The minimum widths and clearances established in Section 503.2.1 shall be maintained at all times. The person in possession of the premises shall be responsible to ensure that fire apparatus access roadways are unobstructed at all times.

503.6 Security gates. ~~The installation of security gates across a fire apparatus access road shall be approved by the fire chief. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.~~ Plans to install security gates across fire apparatus access roads shall include Tomar preemption equipment and be submitted to the fire department for review. When security gates are approved all means of emergency operation shall be provided and maintained. All gates shall be consistent with the requirements in the Surprise Fire Department Emergency Access Detail Book.

Gates installed across fire apparatus access roads at gated communities and where required, shall be electronic with battery backup, and shall be provided with approved Tomar preemption equipment, controls, electronic Knox key switch and manual release mechanism.

Existing gates at entry points into gated communities and where required, shall be upgraded to include electronic preemption equipment, as required, within one year of the effective date of this code.

503.6.1 Clear width. Clear width of the roadway shall be minimum of 20 feet (6096 mm) clear width at all entrances. Exit roadways shall be a minimum of 16 feet (4878 mm) clear width, unless otherwise required by the Fire Marshal.

503.6.2 Divided entrance. Sub-divisions may have a combination divided entrance and exit. The Entrance Gate shall have a clear width of 20 feet (6096 mm) and the Exit Gate shall have 16 feet (4878 mm) clear width. Gates shall be designed to fit the opening.

503.6.3 Gates. Gates shall be designed and installed so that the turning radius (SU-40) of the roadway shall not interfere or obstructed the operation of the gate. Minimum set back from the public streets shall be a distance determined by the City Engineering Department and allow the emergency vehicle the ability to safely operate the lock box or panel. Turning radius from the right-of-way onto a public or private access roadway shall be designed utilizing the SU-40 standard.

503.6.4 Location of access controls. The control pedestal shall be located on the approach (ingress) side of the gate and be located and designed for easy activation by the operator without leaving the vehicle. The maximum height of the control box shall be 66 inches measured from the finished grade.

503.6.5 Traffic preemption device. Approved traffic preemption devices (TOMAR) shall be installed on all gates providing security access at gated communities and where required by the Fire Marshal.

503.6.6 Gate timing. Gates must fully open within 15 seconds of activation and remain open until closed by operation of the control device.

503.6.7 Control pedestal. The control pedestal must be identified by a metal sign 6” X 10” with red background-white letters. The sign must be securely fastened to the pedestal and legible from the approaching vehicle. Fire Department access gates shall fail-safe to the open position in the event of a power failure.

503.6.8 Secondary access. In addition to primary gates, secondary access gates, when required, shall be installed for additional Fire Department emergency access. Exit only gates that are not automated shall be installed per the Surprise Fire Department Emergency Access Detail Book. Exit Only Gates shall have a minimum clearance of 20 feet clear width and be posted with a sign that states "Caution Gate Opens Out" and the pavement shall be painted with a 5” wide yellow strip showing the depth of the gate swing.

503.6.9 Preemption device operation. Operation of the gate shall be by electronic preemption equipment installed on fire apparatus and/or by electronic Knox key switch.

503.7 Graphic directories. Approved graphic directories shall be provided at all driveway entrances for all multiple dwelling complexes, mobile home parks, or when required by the Fire Marshal. Directories shall be illuminated internally and consistent with the City of Surprise sign design standards, and be approved by the Fire Marshal. Existing facilities shall provide internally illuminated graphic directories within one year of the effective date of this code.

505.1 Address identification. New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position so that the number is plainly legible and visible from the street or road fronting the property. ~~These numbers shall contrast with their background. Where required by the fire code official, address number shall be provided in additional approved locations to facilitate emergency response. Address numbers shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inches (12.7 mm). 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 numbers shall be maintained.~~ Commercial and Residential address numbers shall be located on the building at a point closest to the street as approved by the Fire Marshal.

Commercial Building address numbers shall be black or contrasting in color. Tenant space numbers or letters shall be black or contrasting color, 4 inches in height, 1 inch in width, and shall be displayed on or above the front door and on or above the rear door so that identification is plainly legible and visible from the street or road fronting the property. See Table 1 for size of commercial address numbers based on distance from the roadway fronting the property.

Table 1 Commercial Address

Table 1

0 to 50 feet (15 240 mm). Numbers shall be a minimum 9 inches (230 mm) in height, 2-inches (50.8 mm) in width.
51 (15 545 mm) to 100 feet (30 480 mm). Numbers shall be a minimum 12 inches (305 mm) in height, 3-inches (76.2 mm) in width.
101 feet (30 785mm) or more. Numbers shall be a minimum 15 inches (375 mm) in height, 4-inches (101.6 mm) in width.

The location of address numbers for a Single-Family dwelling shall be located so that the address is plainly legible and visible from the street or road fronting the property, contrasting in color, and numbers shall be a minimum 4 inches (101.6 mm) in height, ½ inch (12.7 mm) in width, and shall be displayed on the front of the dwelling on “front-loaded properties” and on the rear of “rear-loaded” properties.

Residential (Multi-Family Units). Apartment address numbers shall be color contrasting and located on the building at the closest point to the roadway so that the number is plainly legible and visible from the street or road fronting the property. See Table 2 for residential application.

Table 2 Residential Multi-family Unit Addressing

Table 2

0 to 50 feet (15 240 mm), numbers shall be a minimum 4 inches (101.6 mm) in height.
50 feet (15 240 mm) or more, numbers shall be 6 inches (152.5 mm) in height.

Apartment Building & Door Numbers. Apartment building numbers are to be contrasting in color, a minimum seven inches (177.5 mm) in height with a one inch (25.4 mm) brush stroke. Numbers on apartment doors shall be a minimum of four inches (101.6 mm) in height with a five-eight (5/8) inch (16 mm) brush stroke and contrasting in color. Numbers shall not be repeated. See Table 2.1 for example.

Table 2.1

301 – 310	3rd Floor
201 – 210	2nd Floor
101 – 110	1st Floor

506.1.3 Location. A minimum of one recessed Knox Box is required for each occupancy at the time of construction or when required by the Fire Marshal. Additional Knox Boxes may be required due to the unique design, location, and accessibility, water supply, square-footage, and type of business process.

A key for each tenant space entrance is required at the time of construction but prior to certificate of occupancy. The key provided shall open all exterior and interior doors of the structure, including the fire sprinkler and alarm room and alarm panel. All keys shall be labeled for recognition and placed inside the Knox box.

The Knox box shall be located on the left side of the main entrance, top of the box 60 inches above finished grade, or located as approved by the Fire Marshal.

Exception: If the complex is served by one master key, one key will be sufficient.

506.1.4 Knox box. The Knox Box devices utilized by the Fire Department shall be the Knox Box, Knox Padlock, or Knox Key Switch. Approved devices authorized by the Fire Department are shown on the official Knox Box forms.

506.2 Key box maintenance. The owner, operator, or property manager of the building shall immediately notify the Fire Department ~~fire code official and provide the new key when a lock is changed or rekeyed. The key to such lock shall be secured in the key box.~~ when a lock set and/or key is changed or modified. The new key shall be provided and secured inside the key box by the Fire Inspector.

507.1 Required water supply. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, building or portions of buildings are hereafter constructed or moved into or within the jurisdiction. Where property is subdivided with or without the creation of public or private streets for the express purpose of providing said subdivided parcels for sale or otherwise permitting separate and/or individual development to occur, an approved water supply capable of supplying the projected fire flow for fire protection shall be provided and extended to serve directly any and all subdivided properties. The projected fire flow will be based on the greatest potential demand posed by any type of occupancy allowed by zoning laws on the proposed property. Required water supply shall not be interrupted, for any reason, without prior approval of the Fire Marshal.

507.4.1 Flow Test Documentation. It is the responsibility of Developer/Builder to submit fire flow test data to the Fire Department. Detailed test result data shall be provided to the fire department in an electronic format, acceptable by the Fire Marshal.

Use the following tables and references:

1. Use Table B105.1 2012 IFC for Fire Flow and Duration for buildings.
   Use Table C105.1 2012 IFC for Number and Distribution of Fire Hydrants.
3. Use IFC Section B105.2 Buildings other than one- and two family dwellings.

507.4.2 Certificate of occupancy. Certificate of Occupancy for any structure shall not be issued prior to final approval of the water supply system by the Fire Marshal.

507.5.2 Inspection, testing and maintenance. Fire hydrant systems shall be subject to periodic tests as required by the ~~fire code official~~ Fire Code Official. Fire hydrant systems shall be maintained in an operative condition at all times and shall be promptly repaired or replaced where defective.

All additions, repairs, or alterations ~~and servicing~~ of a water supply and fire hydrant systems shall comply with nationally recognized ~~approved~~ standards and be approved by the Fire Marshal and any other applicable city departments.

507.5.2.1 Required installations. Fire hydrants installed as a result of a permit or work-order shall be spaced so that short hose lines can be utilized and so there is a sufficient number of fire hydrants within a reasonable distance to obtain the required fire flow as determined by Appendix B, IFC 2012 Edition.

In other than single-family residential areas, hydrants shall be spaced so that they are not more than 500 feet (152 400 mm) apart. For one- and two-family dwellings, hydrants shall be spaced so that they are not more than 500 feet (152 400 mm) apart and not more than 400 feet (121 920 mm) hose lay from the center of any structure. Hydrant spacing and hose lay requirements may be modified by the Fire Marshal.

Private and Municipal Fire Hydrants. All fire hydrants shall be flushed and serviced and maintained annually in accordance with the American Water Works Association- Manual of Water Supply Practices, Installation Field Testing and Maintenance of Fire hydrants. With assistance from the water company, the Fire Marshal shall determine the number of fire hydrants to be tested in accordance with test procedures outlined in the American Water Works Association Manual of Water Supply Practices, Distribution System Requirements for Fire Protection, AWWA M31. Results of the testing shall be provided to the fire department in an electronic format acceptable to the Fire Marshal.

Fire Hydrants. All fire hydrants designed and installed shall be in accordance with AWWA recognized standards and shall be capable of delivering the required fire flow, and shall be equipped with two 2½ inch outlets and one 4½ inch outlet. All outlets shall have National Standard Threads (NST).

507.5.3 Private fire service mains and water tanks. Private fire service mains and water tanks shall be periodically inspected, tested and maintained in accordance with NFPA 25; at the following intervals:

1. Private fire hydrants (all types): Inspection annually and after each operation; flow test and ~~maintenance~~ service annually.

   Fire service main piping: Inspection of exposed, annually; flow test every five (5) years.

3. Fire service main piping strainers: Inspection and maintenance after each use.

4. Fire hydrant systems. Plans and specifications for fire hydrant systems shall be submitted to the fire department for review and approval prior to City Council action on the final subdivision plat, or in the case of an individual building or structure, for review and approval prior to issuance of the building permit.

Water service providers, whether municipal or private, shall submit a map identifying the location of fire hydrants within the service area of the water provider. The map required under this subsection shall be submitted on or before December 31, of each year, and shall be updated by the water service provider as new fire hydrants are installed. On May 31, of each subsequent year, a map identifying the location of the fire hydrants within the service area of the water provider shall be submitted to the Fire Marshal. In the event a water service provider fails to submit the map required under subsection 5 of this section, the Fire Marshal is authorized to prepare a map of the fire hydrant locations within the service area of water service provider, and charge the cost of preparation of the map to the water service provider, together with an administrative fee equal to 15 percent of the cost of preparation of the map.

A water service provider, whether municipal or private, having a portion of its service area in which no distribution or service lines are located, shall identify such areas on the map required by this subsection. Such areas shall be exempt from the requirements of Sections 508.1 through 508.4 and Appendix B and C until distribution or service lines are installed by the water service provider.

On or before December 31, of each year, a water service provider, whether municipal or private shall have prepared and filed with the fire department, a plan that: Indicates sufficient hydrants on all streets within its water service area containing water utility distribution or service lines to comply with the requirements of International Fire Code, Appendix C-Fire Hydrant Locations and Distribution, including but not limited to Table C105.1 or, a five year Capital Improvement Plan indicating plans for the construction of sufficient hydrants on all streets within it water service area containing water utility distribution or service lines to comply with the requirements of 2012 International Fire Code, Appendix C Fire Hydrant Locations and Distribution, including but not limited to Table C105.1 within five (5) years from the date of submission of the plan.

On or before January 10, of each year following submission of the plan, the Fire Marshal shall file with the City Clerk, the Director of Community and Economic Development and Division Managers of Water Services, Engineering, and applicable water provider, a written notice indicating each water service provider who is not in compliance with the requirements of subsection 5 of this code. Upon filing of the written notice with the City Clerk, no building permit shall be issued within the service area of a water service provider who is not in compliance with the requirements of subsection 5 of this code.

A water service provider that believes a notice has been improperly issued under this section may appeal the issuance of the notice to the City Manager, by filing a written notice of appeal to the City Manager within ten (10) days after filing of the Notice with the City Clerk. The City Manager or his/her designee shall hold a hearing on the appeal within thirty (30) days after filing of the appeal.

605.1.1 Electrical service shut off access. Where electrical service shut off controls are located inside a building, a door providing direct access from the exterior to the room containing such electrical shut off controls shall be provided, when required by the Fire Marshal.

901.2.1.2. Plans for fire sprinkler systems. Complete plans and hydraulic calculations for fire sprinkler system installation shall be submitted for review and approval prior to installation, modification or

alteration. Plans shall be drawn to an indicated scale, on sheets of uniform size and shall show, as a minimum, the data required by NFPA 13. Manufacturer's cut sheets for all equipment used shall be included with the original submittal. Water supply data for hydraulic calculations shall be based on 90 percent of the available water supply as determined by flow test information. An additional copy of these plans shall be submitted in an electronic format suitable to the Fire Marshal.

901.2.1.3 Plan submittals. Plan submittals shall be in accordance with the standard plan review format and shop drawings shall accompany construction documents at the time of second initial submittal, unless otherwise required.

901.2.1.4 Plan certifications for fire sprinklers. Fire sprinkler plans submitted to the fire department for review and approval shall bear a review certification stamp and signature of an AZ Professional Design Registrant or Level III National Institute for the Certification of Engineering Technologies (NICET) in fire sprinkler systems.

901.2.1.5 Plan certification for all other fire protection systems. Plan certification for all other fire protection systems shall be accompanied by a certification of qualification when required. Shop drawings for all other fire protection systems shall accompany construction documents at the time of second submittal. Shop drawings for tenant improvement plans (TI's) shall accompany the initial submittal.

901.2.1.6 Plan certification for fire alarms and occupant notification. All fire alarm system plans submitted to the fire department for review and approval shall bear a review certification stamp and signature of an Arizona Professional Design Registrant or Level III National Institute for the Certification of Engineering Technologies (NICET) in Fire Alarm Systems. Plan certification for all fire alarm systems shall be accompanied by a certification of competence when required. Shop drawings shall accompany construction documents at the time of second submittal. Shop drawings for tenant improvement plans (TI's) shall accompany initial submittal.

901.2.1.7 On site plans, specifications and permits. Fire department approved plans, specifications and permits shall be retained on the job site, and made available to the fire inspector on each inspection.

~~**901.3 Permits.** Permits shall be required as set forth in Section 105.6 and 105.7~~

901.4.1.1 Fire Equipment Room. The fire sprinkler riser assembly and the fire alarm control panel shall be installed inside the building with a door providing access into the fire equipment room. The fire equipment room shall be used for fire protection equipment and controls only. The fire sprinkler riser shall be equipped with a listed double backflow prevention device sized to match piping. The minimum size of the equipment room shall allow adequate firefighter access and mobility, and be measured not less than 36 inch radius around the riser and not less than 18 inches measured from the back or side of the riser nearest the wall.

901.4.1.2 Electric horn and strobe. A water-proof electric horn and strobe shall be installed on the exterior wall adjacent to the fire riser in lieu of the electric bell and/or water gong.

~~**901.4.2 Nonrequired fire protection systems.** Any fire protection system or portion thereof not required by this code or the International Building Code shall be allowed to be furnished for partial or complete protection provided such installed system meets the applicable requirements of this code and the International Building Code.~~

901.4.2 Inspectors' test valve. The Inspectors' Test Valve shall be located at the end of the most distant sprinkler pipe on each story and shall be equipped with a readily accessible brass shutoff valve and signage per the Surprise Fire Department Emergency Access Book.

901.6 Inspection, testing and maintenance. ~~Fire detection, alarm, and extinguishing systems, mechanical smoke exhaust systems, and smoke and heat vents shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Nonrequired fire protections~~

~~systems and equipments shall be inspected, tested and maintained or removed.~~ All fire and life safety systems including but not limited to: fire extinguishers, fire alarms, water supply and fire hydrant systems, backflow prevention devices, fire sprinklers and standpipes, chemical extinguishing systems and other types of automatic fire extinguishing systems, basement pipe inlets and other fire-protection systems and appurtenances shall be inspected, tested and maintained on an annual basis, after each use or as often as required by the Fire Marshal to ensure operability by nationally recognized standards. Test records and tags shall be retained on site by the occupant of the building and a copy sent electronically to the Surprise Fire Department Fire Prevention Division. The systems shall be inspected, tested and maintained by service personnel holding a valid certificate of qualification to perform service on listed fire protection and life safety systems in accordance with NFPA, Underwriters Laboratories, or Industry Manufacturers.

901.6.2 Records. Records of all system inspections, tests and maintenance required by the referenced standards shall be maintained on the premises for a minimum of three years and copied to ~~fire code official upon request~~ the fire department electronically.

901.6.3 Professional Qualification. To perform work on fire and life safety systems in the City of Surprise, all service personnel shall hold a valid "certificate of qualification" issued by NFPA, Underwriters Laboratories, or Industry Manufacturers. Fire sprinklers or alarms shall not be placed out of service for more than 8 hours in any 24 hour period, without authorization by the Fire Marshal.

901.8.2 Use of fire hydrants during construction. Use of fire hydrants for the purpose of site development must be approved by the Fire Marshal. The contractor shall request, in writing, approval to attach appliances to fire hydrants. Fire hydrants shall be inspected prior to water-meter attachment, and during removal by the fire department.

903.2 Where required. Approved automatic fire sprinkler systems ~~in new buildings and structures shall be provided in the locations described in Sections 903.2.1 through 903.2.12.~~ shall be required in all new commercial structures and buildings for which a permit is required or issued. Installation of the sprinkler system shall be in accordance with the requirements of NFPA 13, unless otherwise approved by the Fire Marshal.

Existing buildings, structures and occupancies will not require retrofitting fire sprinkler systems to current code standards unless:

1. Occupant load is increased without increasing square footage.
   Occupancy classification is changed to a higher hazard
3. Building fire resistance rating is decreased.
4. Original building foot print (square footage) is increased 50% or more

Exception~~s~~: ~~Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic smoke detection system in accordance with Section 907.2 and are separated from the remainder of the building by not less than 1-hour fire barriers constructed in accordance with Section 711 of the International Building Code or not less than 2-hour horizontal assemblies constructed in accordance with Section 711 of the International Building Code, or both.~~

1. Detached gazebos, ramadas, restrooms and guardhouses.

   Detached non-combustible covered parking not exceeding 15,000 square feet.

3. Detached non-combustible canopies used exclusively for automotive, motor fuel-dispensing. Canopies where vehicles are attended, and in place on a temporary basis, for non-maintenance activities.

4. Detached non-combustible non-occupied water supply Booster Pump structures.

For the purposes of this section "TEMPORARY" is defined as any time period of less than 8 hours in any 24 hour time period.

903.2.8.1 Group R-3 or R-4 congregate residences. ~~An automatic~~ A Mod. NFPA 13D sprinkler system shall be required to be installed in accordance with Section 903.3.1.3 shall be permitted in Group R-3 or R-4 congregate living facilities ~~with 16 or fewer residents~~. If any portion of a patio has habitable space directly above the patio, the patio shall be equipped with sprinkler protection.

903.2.8.2 Care facilities. ~~An automatic sprinkler system installed in accordance with Section 903.3.1.3 shall be permitted in care facilities with 5 or fewer individuals in a single family setting.~~ All care facilities in a single-family dwelling, exclusive of the care giver and their family, or day care, shall be required to install a Mod. NFPA 13D Residential Fire Sprinkler System throughout, including attached garages. If any portion of a patio or porch has habitable space directly above the patio or porch, the patio or porch shall have sprinkler protection.

Such systems shall consist of an electronically supervised valve located between the domestic water riser control valve and the sprinklers, and include concealed spaces containing combustible materials, and shall be equipped with a electrically supervised water flow switch and monitored by an approved Central Station, and shall sound an alarm at a constantly attended location inside the facility. The minimum listed electronic components for alarms shall consist of one auto dialer, and one interior horn/strobe connected to the fire riser water-flow switch.

903.2.8.3 Group R, Division 3. A Mod. NFPA 13D Residential Fire Sprinkler System shall be installed in Group R, Division 3 occupancies. If any portion of a patio or porch has habitable space directly above the patio or porch, the patio or porch shall have sprinkler protection.

> **Exception**: Residential sprinklers may be omitted from Group R, Division 3 occupancies as long as the residence meets the required fire flows in accordance with Appendix B Table B105.1 Minimum Required Fire Flow and Flow Duration for Buildings.

903.2.8.4 Group R, Division 3. In lieu of mandatory residential fire sprinklers, each builder or developer shall offer each buyer at the time of purchase, the option to install a residential fire sprinkler system.

> **903.2.8.4.1 Sprinkle cost comparison**. The costs to install residential fire sprinklers shall be listed as one of the available options and show comparative installation costs.

> **903.2.8.4.2 Display of fire sprinkler equipment.** The seller shall provide a full size display model of NFPA 13D automatic fire sprinkler system riser, control valves, and gauges in the sales office of each model home complex. A display model is not required if the sales office is equipped with a sprinkler system.

> **903.2.8.4.3 Educational materials**. The seller shall provide each buyer with a copy of approved Fire Department educational material describing the benefits of a residential fire sprinkler system.

903.2.8.4.4 Affidavit. An affidavit signed by the buyer and the seller indicating a fire sprinkler option was offered and accepted, or refused shall be retained at the sales office and made available to the fire inspector for a period of one year from the date of transferring title to the buyer. A copy of the signed affidavit shall be attached to the application for permit.

903.2.8.5 Special requirements for Group R-1 and R-2 occupancies. Group R-1 and R-2 occupancies, sprinklers shall be installed in bathrooms, closet areas containing any electrical or mechanical equipment, foyers, and attached garages, accessible areas under interior stairs or landings, exterior balconies and covered patios or landings which have habitable space directly above the balconies, patio or porch. In living spaces, sprinklers shall be the concealed type. For the purpose of inspection, testing, or maintenance, 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 depend on the design of the fire riser, controls and gauges. When necessary, access shall be provided through private dwellings or garages so service personnel can maintain the fire sprinkler riser and equipment.

903.2.8.6 Special requirements for Group R-4 occupancies. R-4 occupancies, sprinklers shall be installed in bathrooms, closet areas containing any electrical or mechanical equipment, foyers, attached garages, and accessible areas under interior stairs or landings. State licensed facilities shall be equipped with an approved automatic sprinkler system in accordance with this code.

903.2.8.7 Special requirements for speculative warehouses. Speculative warehouses shall comply with this Chapter, Chapter 23, and NFPA 13. The minimum sprinkler design in speculative warehouses shall be based upon a minimum class IV commodity and maximum allowable storage height in the building. The system shall be hydraulically designed to protect the maximum possible clear height of storage without in-rack sprinklers and/or use an approved alternate design such as Early Suppression Fast Response (ESFR) sprinklers.

903.3.7 Fire department connections. The location of fire department connections shall be approved by the fire code official. All signage shall be consistent with the Surprise Fire Department Emergency Access Book.

906.1 Where required. Portable fire extinguishers shall be installed in the following locations.

1. In new and existing Group A, B, E, F, H, I, M, R-1, R-2, R-4, and S occupancies.

   Exception: ~~In Group R-2 occupancies, portable fire extinguishers shall be required only in locations specified in Items 2 through 6 where each dwelling unit is provided with a portable fire extinguisher having a minimum rating of 1-A; 10-B:C.~~ In new and existing Group A, B, and E occupancies equipped throughout with quick-response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

   Within 30 feet (9144 mm) of commercial cooking equipment.

3. In areas where flammable or combustible liquids are stored, used, or dispensed.

4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 1415.1.

5. Where required by the sections indicated in Table 906.1.

6. Special-hazard areas, including but not limited to laboratories, computer rooms and generator rooms, where required by the fire code official.

907.2 Where required – new buildings and structures. ~~An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.~~

~~A minimum of one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or water-flow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers, a single fire alarm box shall be installed.~~

~~**Exceptions:**~~

~~1. The manual fire alarm box is not required for fire alarm systems dedicated to elevator recall control and supervisory service.~~

~~2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system impairment event. Where provided, the manual fire alarm box shall not be located in an area that is accessible to the public.~~

All new commercial occupancies for which a building or construction permit is obtained shall not require full area smoke detection providing the building is equipped with a fully automatic fire sprinkler system. Duct detection shall be required in accordance with International Mechanical Code. Full area notification shall be required and shall be addressable class A wiring. The fire riser flow switch shall be connected to and monitored by an approved monitoring company.

Self storage facilities will not require the installation of smoke/heat detectors inside the storage compartment, but will require smoke detection in all common areas, and the installation of standpipes in stairwells in accordance with NFPA 13 and NFPA 14.

~~**Section 907.2.1 Group A.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more. Group A occupancies not separated from one another in accordance with Section 707.3.10 of the International Building Code shall considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.~~

~~**Exception:** Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.~~

~~**907.2.1.1 System initiation in Group A occupancies with occupant load of 1,000 or more.** Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with Section 907.5.2.2.~~

~~**Exception:** Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.~~

~~**907.2.1.2 Emergency voice/alarm communication system captions.** Stadiums, arenas and grandstands required to caption audible public announcements shall be in accordance with Section 907.5.2.2.4.~~

~~**Section 907.2.4 Group F.** A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group F occupancies where both of the following conditions exist:~~

~~1. The Group F occupancy is two or more stories in height; and~~

~~The Group F occupancy has a combined occupant load of 500 or more above or below the lowest level of exit discharge.~~

~~**Exception:** Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow~~

907.4.2 Manual fire alarm boxes. ~~Where a manual fire alarm system is required by another section of this code, it shall be activated by fire alarm boxes installed in accordance Sections 907.4.2.1 through 907.4.2.6.~~ Manual fire alarm boxes shall not be installed in occupancies where the building is equipped throughout with an approved automatic sprinkler system, unless otherwise required by the Fire Marshal.

912.2.1 Visible location. Fire department connections shall be located ~~on the street side of buildings~~ on the entrance side of the building, 36 inches above grade, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise *approved* by the Fire ~~Chief~~ Marshal. See Surprise Fire Department Emergency Access Detail Book.

912.4 Signs. A metal sign with raised letters at least 1 inch (25 mm) in size shall be mounted on all Fire Department Connections serving ~~automatic~~ fire sprinklers, standpipes or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION or a combination thereof as applicable. Where the fire department connection does not serve the entire building, a sign shall be provided indicating the portions of the building served. All signage shall be consistent with the Surprise Fire Department Emergency Access Detail Book. When a building is served by multiple Fire Department Connections, each connection shall be provided with an approved sign detailing the area of the building served by each connection.

912.5 Backflow prevention. The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the *International Plumbing Code.*

Backflow prevention devices shall be installed on the main fire sprinkler riser inside the building. Backflow prevention device shall be U.L. 1469 Listed. Backflow prevention devices shall be installed in an orientation in accordance with the listing.

If an additional backflow prevention device is installed on exterior water supply piping, shutoff valves shall be locked in the open position. Backflow prevention device valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72. On all exterior backflow devices a means shall be provided to accommodate measured forward flow testing at the sprinkler system demand. It shall be the responsibility of the property owner to comply with state and local jurisdictional laws regarding testing of the backflow preventers. Forward flow test piping shall be sized the same as the backflow prevention assembly. Piping shall terminate to the building exterior and the terminal connection shall be a test header with a 2½ inch (62.7 mm) national standard thread outlet for each 250 gallons of system demand.

A metal sign with raised letters at least 1 inch (25.2 mm) in size shall be mounted on all test headers. Such signs shall read: TEST CONNECTION. Required water supply for fire protection shall not be interrupted, for any reason, without prior approval of the Fire Marshal.

1016.2.2 Group F-1 and S-1 Increase. The maximum exit access travel distance shall be 400 feet (121 920 mm) in Group F-1 and S-1 occupancies where all of the following are met:

1. The portion of the building classified as Group F-1 or S-1 is limited to one story in height.

   The minimum height from the finish floor to bottom of the ceiling or roof slab or deck is 24 feet (7315 mm); and

3. The building is equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1 and Chapter 32 of this code.

4. Additional building access shall be provided in accordance with Sections 3206.6 through 3206.6.1.3 of this code.

1016.2.2.1 Group F-1 and S-1 with a storage area greater than 500, 000 square feet. Group F-1 and S-1 with a storage area greater than 500, 000 square feet, a Technical Report shall be prepared by an Arizona Professional and shall be submitted to the Fire Marshal for approval.

5601.1.3 Fireworks. ~~The possession, manufacture, storage, sale and 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 displays as allowed in Section 5608~~

~~4. The possession, storage, sale, handling and use of the specific types of Division 1.4G fireworks where allowed by applicable laws, ordinances and regulations, provide such fireworks comply with CPSC 16 CRF Parts 1500 and 1507, and DOTn 49 CFR Parts 100-185, for consumer fireworks.~~

Permissible Consumer Fireworks may be possessed, displayed for sale, and sold by licensed and permitted personnel regulated in accordance with the Arizona Revised Statutes and City of Surprise Municipal Code requirements.

5608.1 ~~General~~ Fireworks Displays and Pyrotechnic Permits. ~~Outdoor fireworks displays, use of pyrotechnics before a proximate audience and pyrotechnic special effects in motion picture, television, theatrical and group entertainment productions shall comply with Sections 5608.2 through 5608.10 and NFPA 1123 or NFPA 1126.~~ Commercial fireworks may be possessed, stored, used and handled by authorized licensed fireworks shooter(s) documentation from the Bureau of Alcohol Tobacco & Firearms (BATF). Pre-squib all commercial fireworks prior to entering City limits. Permits for the public display of fireworks may be granted by the Surprise Fire Department, upon application and after proper inspection, in a manner that does not endanger persons, animals, or property. A permit shall not be issued, and may be revoked, during time periods of wind and/or High Fire Danger warnings. The Fire Marshal, or designee, has authority to impose conditions on any permits granted.

Proposed 2012 International Plumbing Code
Local Amendments

Including appendices B and E

403.2 Separate Facilities. Where plumbing fixtures are required, separate facilities shall be provided for each gender.

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Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.

2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.

3. Separate facilities shall not be required in mercantile and business occupancies in which the maximum occupant load is 50 ~~100~~ or fewer.

Section 405.3.1

Exception. Side Clearances for accessible or ambulatory water closets shall comply with ICC/ANSI A117.1.

Section 410.3 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. ~~In other occupancies, where drinking fountains are required, water coolers or bottled water dispensers shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.~~ In other occupancies, where drinking fountains are required, bottle water dispensers or water coolers shall be permitted to be substituted.

Proposed 2012 International Mechanical Code
Local Amendments

307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. Nonmetallic piping shall not be installed in exposed locations. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 of the International Plumbing Code relative to the material type. Condensate waste and drain line size shall be not less than 3/4-inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 307.2.2.

[B] 309.1 Space-heating systems. Heating and Cooling systems. Habitable spaces ~~Interior spaces~~ intended for human occupancy shall be provided with active or passive space-heating and space-cooling systems capable of maintaining a minimum indoor temperatures between 70 of 68°F (201°C) and 90°F (32°C) at a point 3 feet (914 mm) above the floor on the design heating day. The installation of portable space heaters or coolers shall not be used to achieve compliance with this section.
Exception: Space heating and cooling systems are not required for interior spaces where the primary purpose is not associated with human comfort.

403.7 Balancing. The *ventilation air* distribution system shall be provided with means to adjust the system to achieve at least the minimum ventilation airflow rate as required by Sections 403.3 and 403.4. Ventilation systems shall be balanced Sections 403.3 and 403.4. using a nationally accepted air balancing test by an *approved* method. Such balancing shall verify that the ventilation system is capable of supplying and exhausting the airflow rates required by A final report shall be provided to the engineer of record and the mechanical inspector.

Exception: Residential occupancies shall be exempt from this provision.

502.14 Motor vehicle operation. In areas where motor vehicles operate, mechanical ventilation shall be provided in accordance with Section 403. Additionally, areas in which stationary motor vehicles are operated shall be provided with a *source capture system* that connects directly to the motor vehicle exhaust systems. Makeup air for the required exhaust systems in areas where motor vehicles operate shall be provided through permanent unobstructed openings to the outdoors, such as louvers and grills. Mechanical equipment and louvers used for makeup air purposes shall be electrically interlocked with the exhaust system.

Exceptions:

1. This section shall not apply where the motor vehicles being operated or repaired are electrically powered.
2. This section shall not apply to one- and two-family dwellings.

3. This section shall not apply to motor vehicle service areas where engines are operated inside the building only for the duration necessary to move the motor vehicles in and out of the building.

SECTION 929

WOODSTOVE/FIREPLACE INSTALLATION

929.1 Definitions. For purposes of this section, the following words and terms shall have the meaning ascribed thereto:

Fireplace: A built-in-place masonry hearth and fire chamber or a factory-built appliance, designed to burn solid fuel or to accommodate gas or electric log insert or similar device, and which is intended for occasional recreational or aesthetic use, not for cooking, heating, or industrial processes.

Solid fuel: Includes, but is not limited to, wood, coal, or other non-gaseous or non-liquid fuels, including those fuels defined by the Maricopa County Air Pollution Control Officer as "inappropriate fuel" to burn in residential wood burning devices.

Woodstove: A solid-fuel burning heating appliance including a pellet stove, which is either freestanding or designed to be inserted into a fireplace.

929.2 General. In accordance with Maricopa County regulations, on or after December 31, 1998, no person, firm or corporation shall construct or install a fireplace or a wood stove, and the Building Official shall not approve or issue a permit to construct or install a fireplace or a wood stove, unless the fireplace or wood stove complies with one of the following:

1. A fireplace which has a permanently installed gas or electric log insert;

2. A fireplace, wood stove or other solid fuel burning appliance which has been certified by the United States Environmental Protection Agency as conforming to 40 Code of Federal Regulations part 60, subpart AAA;

3. A fireplace, woodstove or other solid fuel burning appliance that has been tested and listed by a nationally recognized testing agency to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations part 60, subpart AAA;

4. A fireplace, wood stove or other solid fuel burning appliance which has been determined by the Maricopa County Air Pollution Control Officer to meet performance standards equivalent to those adopted by 40 Code of Federal Regulations part 60, subpart AAA, as in effect on July 1, 1990.

5. A fireplace which has a permanently installed wood stove insert which complies with subparagraph 2, 3, or 4 above.

Exceptions: The following installations are not regulated and are not prohibited by this section:

1. Furnaces, boilers, incinerators, kilns, and other similar space heating or industrial process equipment.

2. Cook stoves, barbecue grills, and similar appliances designed primarily for cooking.

3. Fire pits, barbecue grills, and other outdoor fireplaces.

Proposed 2012 International Fuel Gas Code
Local Amendment

404.12 Minimum burial depth. Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade~~, except as provided for in Section 404.12.1~~ for metal piping and 18 inches (457mm) for plastic piping.

~~**404.12.1 Individual outside appliances.** Individual lines to outside lights, grills or other *appliances* shall be installed a minimum of 8 inches (203 mm) below finished grade, provided that such installation is *approved* and is installed in locations not susceptible to physical damage.~~

Proposed 2012 International Energy Conservation Code Local Amendments

SECTION C101 SCOPE AND GENERAL REQUIREMENTS (COMMERCIAL)

C101.2 Scope. This code applies to *commercial buildings* and the building sites and associated systems and equipment. Group R-2 when defined as a *Commercial Building* by section C202, shall have the option of complying under the Residential Provisions of the code, regardless of height. Once defined as such on the submittal documents, all components of the Residential Provisions shall be followed.

SECTION R101 SCOPE AND GENERAL REQUIREMENTS (RESIDENTIAL)

R101.2 Scope. This code applies to *residential buildings* and the building sites and associated systems and equipment. Group R-2 when defined as a *Residential Building* by section R202, shall have the option of complying under the Commercial Provisions of the code, regardless of height. Once defined as such on the submittal documents, all components of the Commercial Provisions shall be followed.

SECTION R102 ALTERNATE MATERIALS-METHOD OF CONSTRUCTION, DESIGN OR INSULATING SYSTEMS

Section R102.1

RESNET Testing & Inspection Protocol. The Residential Energy Services Network (RESNET) Mortgage Industry National Home Energy Rating System Standards Protocol for third party testing and inspections, shall be deemed to meet the requirements of sections R402.4.1.1, R402.4.1.2 and R403.2.2. and shall meet the following conditions:

6. Third Party Testing and Inspections shall be completed by RESNET certified Raters or Rating Field Inspectors and shall be subject to RESNET Quality Assurance Field Review procedures.

7. Sampling in accordance with Chapter 6 of the RESNET Standards shall be performed by Raters or Rating Field Inspectors working under a RESNET Accredited Sampling Provider.

8. Third Party Testing is required for the following items:

    d. 402.4.1.1 –Building Envelope – Thermal and Air Barrier Checklist
    e. R402.4.1.2 –Testing – Air Leakage Rate
    f. R403.2.2 – Sealing – Duct Tightness

9. The other requirements identified as “mandatory” in Chapter 4 shall be met.

10. Alternate testing and inspection programs and protocols shall be allowed when approved by the Building Official.

CHAPTER 4 RESIDENTIAL ENERGY EFFICIENCY

SECTION R401 GENERAL

R401.1 Scope. This chapter applies to residential buildings.

R401.2 Compliance. Projects shall comply with Sections identified as "mandatory" and with either sections identified as "prescriptive" or the performance approach in Section R405.

R401.2.1 Alternative approach for compliance. A Home Energy Rating System ("HERS") Index of 73 or less, confirmed in writing by a Residential Energy Services Network certified energy rater may be used in place of the approach described in section 401.2 above. Compliance may be demonstrated by sampling in accordance with Chapter 6 of the Mortgage Industry National Home Energy Rating Systems Standard as adopted by the Residential Energy Services Network.

SECTION R403 SYSTEMS

R403.2 Ducts. Ducts and air handlers shall be in accordance with Sections R403.2.1 through R403.2.3.

R403.2.1 Insulation (Prescriptive). Supply ducts in attics shall be insulated to a minimum of R-8. Ducts in floor trusses shall be insulated to a minimum of R-6.

Exceptions: Ducts or portions thereof located completely inside the building thermal envelope.

1. Ducts or portions thereof located completely inside the building thermal envelope.

2. Supply ducts may be insulated to a minimum of R-6 when one or more of the following conditions are met;

2.1 Minimum SEER rating of space heating/cooling system is increased to 15.

2.2 Maximum U-factor is decreased to 0.35 and maximum SHGC is decreased to 0.22 for all fenestration products.

2.3 Wall cavity insulation minimum R-value is increased to R-19.

2.4 Residential buildings that meet the requirements of sections R102.1.1 or R405.

Section R403.9.3 ~~Covers~~ Variable Speed Pool Pumps

R403.9.3 ~~Heated pools and in-ground permanently installed spas shall be provided with a vapor-resistant cover.~~

~~**Exception:** Pools deriving over 70% of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season~~.

Motors with a total horsepower of one or more for pools and in-ground permanently installed spas shall have the capability of operating at two or more speeds with a low speed having a rotation rate that is no more than one-half of the motor's maximum rotation rate and shall be operated with a pump control with the capability of operating the pump at two or more speeds. Residential pool pump motor controls that are sold for use with a two or more speed motor shall have a default circulation speed setting no more than one-half of the motor's maximum rotation rate. Any high speed override capability shall be for a temporary period not to exceed one twenty-four hour cycle without resetting to the default setting.

Proposed 2011 National Electric Code
Local Amendment

Article 250 – Grounding and Bonding

250.118 Types of Equipment Grounding Conductors.

The equipment grounding conductor run with or enclosing the circuit conductors shall be one or more or a combination of the following:

(1) A copper, aluminum, or copper-clad aluminum conductor. This conductor shall be solid or stranded; insulated, covered, or bare; and in the form of a wire or a busbar of any shape.

(2) Rigid metal conduit.

(3) Intermediate metal conduit.

(4) Electrical metallic tubing <u>with an additional equipment grounding conductor</u>.

(5) Listed flexible metal conduit meeting all the following conditions:

a. The conduit is terminated in listed fittings.

b. The circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.

c. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).

d. If used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation, an equipment grounding conductor shall be installed.

(6) Listed liquidtight flexible metal conduit meeting all the following conditions:

a. The conduit is terminated in listed fittings.

b. For metric designators 12 through 16 (trade sizes 3/8 through 1/2), the circuit conductors contained in the conduit are protected by overcurrent devices rated at 20 amperes or less.

c. For metric designators 21 through 35 (trade sizes 3/4 through 1-1/4), the circuit conductors contained in the conduit are protected by overcurrent devices rated not more than 60 amperes and there is no flexible metal conduit, flexible metallic tubing, or liquidtight flexible metal conduit in trade sizes metric designators 12 through 16 (trade sizes 3/8 through 1/2) in the ground-fault current path.

d. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).

e. If used to connect equipment where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation, an equipment grounding conductor shall be installed.

(7) Flexible metallic tubing where the tubing is terminated in listed fittings and meeting the following conditions:

a. The circuit conductors contained in the tubing are protected by overcurrent devices rated at 20 amperes or less.

b. The combined length of flexible metal conduit and flexible metallic tubing and liquidtight flexible metal conduit in the same ground-fault current path does not exceed 1.8 m (6 ft).

(8) Armor of Type AC cable as provided in 320.108.

(9) The copper sheath of mineral-insulated, metal-sheathed cable.

(10) Type MC cable that provides an effective ground-fault current path in accordance with one or more of the following:

a. It contains an insulated or uninsulated equipment grounding conductor in compliance with 250.118(1)

b. The combined metallic sheath and uninsulated equipment grounding/bonding conductor of interlocked metal tape–type MC cable that is listed and identified as an equipment grounding conductor

c. The metallic sheath or the combined metallic sheath and equipment grounding conductors of the smooth or corrugated tube-type MC cable that is listed and identified as an equipment grounding conductor

(11) Cable trays as permitted in 392.10 and 392.60.

(12) Cablebus framework as permitted in 370.3.

(13) Other listed electrically continuous metal raceways and listed auxiliary gutters.

(14) Surface metal raceways listed for grounding.

Proposed 2012 International Green Construction Code
Local Amendments

SECTION 101 GENERAL

101.2 General. The use of this code is optional, unless specifically required through ordinance by the City of Surprise. This code is an overlay document to be used in conjunction with the other codes and standards adopted by the jurisdiction. This code is not intended to be used as a standalone construction regulation document and permits are not to be issued under this code. This code is not intended to abridge or supersede safety, health or environmental requirements under other applicable codes or ordinances.