C. INTERNATIONAL RESIDENTIAL CODE DATA ENTRY; TABLE R301.2(1).
TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA. Table R301.2(1) shall include the following data:

GROUND SNOW LOAD	WIND SPEED[d] (mph)	SESMIC DESIGN CATEGORY[f]	SUBJECT TO DAMAGE FROM		
			Weathering[a]	Frost line depth[b]	Termite[c]
20 psf	90	A	Severe	36"	Moderate to Heavy

WINTER DESIGN TEMP[e]	ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARD[g]	AIR FREEZING INDEX[i]	MEAN ANNUAL TEMP[j]
6°F	NO	See Chapter 410	1000°F days	55.8°

D. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R302.2 TOWNHOUSES. Section R302.2 Townhouses is hereby amended to read as follows: Each townhouse shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of section R302.1 for exterior walls.

Exception: A common 2-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and to the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with section R302.4.

E. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R302.5.1 OPENING PROTECTION. Section R302.5.1 Opening Protection is amended to read as follows: Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8ths inches (35mm) in thickness, solid or honeycomb core steel doors not less than 1 1/8ths inches (35mm) thick, or 20 minute fire-rated doors, equipped with a self closing device.

Exception: Attic access openings are not required to have a self-closing device.

F. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R303.3 BATHROOMS. Section R303.3 is hereby amended to read as follows: Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet (0.279 m2), one-half of which must be openable.

Exception: The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cfm (23.6L/s) for

intermittent ventilation or 20 cfm (9.4 L/s) for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside or to an attic ventilated in accordance with Section R806. The point of discharge of the exhaust air shall be at least 3 feet from any opening into the building. Bathrooms which contain only a water closet or lavatory, or combination thereof, and similar rooms, may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

G. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION R303.4 MECHANICAL VENTILATION. Section R303.4 Mechanical Ventilation is hereby deleted.

H. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R303.5.2 EXHAUST OPENINGS. Section R303.5.2 is hereby amended to read as follows: Outside exhaust openings shall be located so that exhaust air is not directed onto public walkways.

I. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R303.7 STAIRWAY ILLUMINATION. Section R303.7 is hereby amended to read as follows: All interior stairways and any exterior stairways that are part of the required means of egress shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. For interior stairs the artificial light sources shall be capable of illuminating treads and landings to levels not less than 1 foot-candle (11 lux) measured at the center of treads and landings. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway.

Exception: An artificial light source is not required at the top and bottom landing, provided an artificial light source is located directly over each stairway section.

J. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R305.1. MINIMUM HEIGHT. Section R305.1 is hereby amended to read as follows: Habitable rooms, hallways, corridors, the required bathroom and/or toilet room, laundry rooms and basements shall have a ceiling height of not less than 7 feet (2134 mm). The required height shall be measured from the finish floor to the lowest projection from the ceiling.

EXCEPTIONS:

1. Beams and girders spaced not less than 4 feet (1219mm) on center may project not more than 6 inches (152 mm) below the required ceiling height.
2. Ceilings in basements without habitable spaces may project to within 6 feet, 8 inches (2032 mm) of the finished floor; and beams, girders, ducts or other obstructions may project to within 6 feet, 4 inches (1931mm) of the finished floor.
3. Not more than 50 percent of the required floor area of a room or space is permitted to have a sloped ceiling less than 7 feet (2134mm) in height with no portion of the required floor area less than 5 feet (1524 mm) in height.
4. The required bathroom and/or toilet room shall have a minimum ceiling height of 6 feet 8 inches (2036 mm) over the fixtures and at the front clearance area for fixtures as shown in Figure R307.2. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6 feet 8 inches (2036 mm) above a minimum area 30 inches (762 mm) by 30 inches (762 mm) at the showerhead.

K. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R310.1 EMERGENCY ESCAPE AND RESCUE REQUIRED. Section R310.1 Emergency escape and rescue required is hereby amended to read as follows:
Basements, and every sleeping room shall have at least one operable emergency and rescue opening. Such opening shall open directly into a public street, public alley, yard or court. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor or adjacent interior standing surface. The adjacent interior standing surface shall be permanent in nature; the full width of the opening; consist of a minimum (10) ten inch tread; have a maximum rise of (7 3/4) seven and three-quarter inches. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

> **Exception:** Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m2).

L. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R311.3 FLOORS AND LANDINGS AT EXTERIOR DOORS. Section R311.3 Floors and landings at exterior doors is hereby amended to read as follows: There shall be a landing or floor on each side of the exterior door. The width of each landing shall not be less than the door served. Every landing shall have a minimum dimension of 36 inches (914 mm) measured in the direction of travel. Exterior landings shall be permitted to have a slope not to exceed ¼ units vertical in 12 units horizontal (2 percent).

> **Exceptions:**
> 1. Exterior balconies less than 60 square feet (5.6m^2) and only accessible from a door are permitted to have a landing less than 36 inches (914 mm) measured in the direction of travel.
> 2. A landing is not required where a stairway of four or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

M. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R311.3.2 FLOOR ELEVATIONS FOR OTHER EXTERIOR DOORS. Section R311.3.2 Floor elevations for other exterior doors is hereby amended to read as follows: Doors other than the required egress door shall be provided with landings or floors not more than 7 ¾ inches (196 mm) below the top of the threshold.

> **Exception:** A landing is not required where a stairway of four or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway.

N. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R311.7.8.2 CONTINUITY. Section R311.7.8.2 Continuity is hereby amended to read as follows: Handrails for stairways shall be provided for the full length of the flight, from a point directly above the top riser of the

flight to a point directly above lowest riser of the flight. Handrail ends shall be returned into a wall or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1-1/2 inches (38mm) between the wall and the handrail.

EXCEPTIONS:

1. Handrails shall be permitted to be interrupted by a newel post.
2. The use of a volute, turnout, starting easing or starting newel shall be allowed over the lowest tread.

O. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R311.7.8.3 HANDRAIL GRIP SIZE. Section R311.7.8.3 is hereby amended to read as follows; All required handrails shall be of one of the following types or provide equivalent graspability.

1. Type I. Handrails with a circular cross section shall have an outside diameter of at least 1-1/4 inches (32mm) and not greater than 2 inches (51 mm). If the handrail is not circular it shall have a perimeter dimension of at least 4 inches (102 mm) and not greater than 6-1/4 inches (160 mm) with a maximum cross section of dimension of 2-1/4 inches (57 mm).

2. Type II. Handrails with a perimeter greater than 6-1/4 inches (160mm) shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin within a distance of 3/4 inch (19 mm) measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16 inch (8mm) within 7/8 inch (22mm) below the widest portion of the profile. This required depth shall continue for at least 3/8 inch (10mm) to a level that is not less than 1-3/4 inches (45 mm) below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1-1/4 inches (32 mm) to a maximum of 2-3/4 inches (70mm). Edges shall have a minimum radius of 0.01 inches (0.25 mm).

Exception: Handrails provided at other non-required exterior stairs may have a maximum horizontal cross-sectional dimension of 3-1/2 inches and shall be easily graspable.

P. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R312.1.2. HEIGHT. Section R312.1.2 Height is hereby amended to read as follows: Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings shall be not less than 36 inches in height (914mm) high measured vertically above the adjacent walking surface, or the line connecting the leading edges of the treads.

Exceptions:

1. Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from the line connecting the leading edges of the treads.
2. Where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864mm) and not more than 38 inches (965mm) measured vertically from a line connecting the leading edges of the treads.

Q. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R313 AUTOMATIC FIRE SPRINKLER SYSTEMS. Section R313 is hereby amended to read as follows: A builder of a one-and two family dwelling or townhouse shall offer to any purchaser, on or before the time of entering into the purchase contract the option, at the purchaser's cost, to install or equip fire sprinklers in the one-and two-family dwelling or townhouse. Notwithstanding any other provision of law to the contrary, no purchaser of such one- and two family dwelling or townhouse shall be denied the right to install a fire sprinkler system in such dwelling or

townhouse being purchased. The provisions of this section, which are intended to mirror the requirements of section RSMo 67.281, shall expire on December 31st, 2019.

R. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION R313.1 TOWNHOUSE AUTOMATIC FIRE SPRINKLER SYSTEMS. Section R313.1 Townhouse automatic fire sprinkler systems is hereby deleted.

S. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION R313.2 ONE- AND TWO FAMILY DWELLING AUTOMATIC FIRE SYSTEMS. Section R313.2 One- and two family dwellings automatic fire systems is hereby deleted.

T. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R315.3 WHERE REQUIRED IN EXISTING DWELLINGS. Section R315.3 Where required in existing dwellings is hereby amended to read as follows: When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings with attached garages or in existing dwellings within which fuel burning appliances exist, the individual dwelling unit shall be equipped with carbon monoxide alarms in accordance with Section R315.1.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing, mechanical or electrical systems are exempt from the requirements of this section.

U. INTERNATIONAL RESIDENTIAL CODE DELETED; R317.1.1 FIELD TREATMENT. Section R317.1.1 is hereby deleted.

V. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION R318.1.2 FIELD TREATMENT. Section R318.2.1 is hereby deleted.

W. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R320.1 SCOPE. Section R320.1 is hereby amended to read as follows; Where there are four or more dwelling units in a single structure, the provisions of Chapter 11 of the *International Building Code* for Group R-3 shall apply.

X. INTERNATIONAL RESIDENTIAL CODE ADDED; SECTION R401.3.1 MINIMUM STANDARDS. Section R401.3.1 is hereby added to read as follows: A. Minimum standards: All drainage facilities shall be designed to carry waters to the nearest drainage way, storm sewer conveyance, or other approved point of collection and conveyance. Erosion of ground in the area of discharge shall be prevented by installation of erosive control devices. Unless specified drainage ways and swales are specifically approved by the building official, abutting property lines between structures shall be designed to function as drainage ways. The toe of slopes shall set back from the property line a minimum of one foot. The area surrounding the building foundation shall have a drainage gradient as provided for in the International Residential Code, as amended from time to time with a draining gradient thereafter of not less than two percent toward approved drainage facilities unless waived by the building official.

B. Prohibited conduct: No person shall allow or cause any:

(1) Obstruction to be created, installed or maintained within any drainage way, detention facility, or engineered swale which will create ponding on adjacent property, divert water

onto the adjoining property, or impede drainage. Fences may be erected in such areas provided they do not unnecessarily restrict the flow of water.

(2) Water from intermittent sources such as discharges from sump pumps, downspouts, foundation drains, swimming pools, swimming pool backwashes, or other similar sources excluding lawn sprinklers to be discharged closer than five feet to any adjoining property line.

C. Enforcement: Where such conditions exist and the code official has given written notice of the violation, the owner of the property shall take appropriate measures to eliminate the problems caused on the adjacent property, within the time period stated in the notice, and failure to do so shall be a violation of this chapter.

Y. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R403.1. GENERAL. Section R403.1 is hereby amended to read as follows; All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill.

Exception: One story detached accessory structures used as tool and storage sheds, playhouses, and similar uses, provided the floor area does not exceed 120 sq. ft., and the structure is associated with one or two-family dwelling units or townhouses.

Z. INTERNATIONAL RESIDENTIAL CODE ADDED; SECTION R403.1.1.1 FOOTING REINFORCEMENT. Section R403.1.1.1 is hereby added to read as follows; Footings for basement foundation walls shall have a minimum reinforcement consisting of not less than two No. 4 bars, uniformly spaced, located a minimum of 3 inches clear from the bottom and edges of the footing.

aa. INTERNATIONAL RESIDENTIAL CODE ADDED. SECTION R403.1.1.2 COLUMN PADS. Section R403.1.1.2 is hereby added and reads as follows; Unless specified otherwise, column pads shall be a minimum of 24 inches by 24 inches and 8 inches deep (24” x 24” x 8”). Reinforcement shall consist of a minimum of three No. 4 bars each way, uniformly spaced, within each column pad.

bb. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R404.1.3. DESIGN REQUIRED. Section R404.1.3 is hereby amended to read as follows; A design in accordance with accepted engineering practice shall be provided for concrete or masonry foundation walls when any of the following conditions exist:

1. Walls are subject to hydrostatic pressure from ground-water.

2. Walls supporting more than 48 inches (1219 mm) of unbalanced backfill that do not have permanent lateral support at the top and bottom.

3. Foundation Walls over 10 feet in height measured from the top of the footing to the top of the wall.

cc. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R404.1.7 BACKFILL PLACEMENT. Section R404.1.7 is hereby amended to read as follows; Backfill shall not be

placed against the wall until the wall has sufficient strength or has been sufficiently braced to prevent damage by the backfill.

> **Exception:** Such bracing is not required for walls supporting less than 4 feet (1219 mm) of unbalanced backfill.

dd. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R405.1 CONCRETE OR MASONRY FOUNDATIONS. Section R405.1 is hereby amended to read as follows: Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot (305 mm) beyond the outside edge of the footing and 6 inches (152 mm) above the top of the footing and be covered with an approved filter membrane material. The top of open joints of drain tiles shall be protected with strips of building paper. Perforated drains shall be surrounded with an approved filter membrane or the filter membrane shall cover the washed gravel or crushed rock covering the drain. Drainage tiles or perforated pipe shall be placed on a minimum of 2 inches (51 mm) of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation and covered with not less than 6 inches (152 mm) of the same material.

> **Exceptions:**
> 1. A filter membrane is not required where perforated drains are covered with at least eighteen inches (18") of washed gravel or crushed stone.
> 2. For washed gravel or crushed stone drains a filter membrane is not required when the washed gravel or crushed stone drain extends at least eighteen inches (18") above the top of the footing.

ee. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R405.2.3 DRAINAGE SYSTEM. Section R405.2.3 is hereby amended to read as follows: A sump shall be provided to drain the porous layer, footings, and foundations that retain earth and enclose habitable or usable space located below grade that do not drain and discharge by gravity to an approved storm sewer system or to daylight. The sump shall be at least 24 inches (610mm) in diameter or 20 inches square (0.0129 m^2), shall extend at least 24 inches (610mm) below the bottom of the basement floor and shall be capable of positive gravity or mechanical drainage to remove any accumulated water. Sumps receiving storm water from any exposed exterior drain(s) or opening(s) shall be provided with back-up system(s) capable of assuring proper sump operation in case of power failure. The drainage system shall discharge into an approved storm sewer system or to daylight.

ff. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R506.2.1 FILL. Section R506.2.1 is hereby amended to read as follows; Fill material shall be free of vegetation and foreign material. The fill shall be compacted to assure uniform support of the slab, and except where approved, the fill depths shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth.

> **Exception:** Concrete floor slabs may be engineered to span soils not in compliance with the R506.2.1, however all fills under buildings shall be free from vegetation and foreign material.

gg. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R506.2.3 VAPOR RETARDER. Section R506.2.3 is hereby amended to read as follows: A 6 mil (0.006 inch)

polyethylene or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the prepared sub-grade where no base course exists.

EXCEPTIONS: The vapor retarder may be omitted:
1. From garages, utility buildings and other unheated accessory structures.
2. From driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
3. Where approved by the building official, based on local site conditions.

hh. INTERNATIONAL RESIDENTIAL CODE ADDED; SECTION R506.2.5 INTERIOR UNDERSLAB DRAINS. Section R506.2.5 is hereby added to read as follows: Where foundations retain earth and enclose habitable or usable space located below grade, drains shall be provided below the floor slab. Drainage tiles, perforated pipe or other approved systems or materials shall be installed at or below the area(s) to be protected; shall be placed with positive or neutral slope to minimize the accumulation of deposits in the drainage system; and shall discharge by gravity or mechanical means to an approved storm water drainage system. The underslab drainage system shall be installed around the inner perimeter of the area(s) to be protected, or, in a manner that will provide adequate drainage for all area(s) to be protected and is approved by the building official. Interior underslab drains installed on uncompacted fill material shall be supported by mechanical means which are adequately tied into the concrete slab to ensure proper drainage throughout the underslab drain(s).

ii. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R602.1 DRILLING AND NOTCHING OF THE TOP PLATE. Section R602.1 Drilling and notching of the top plate is amended to read as follows: When piping or ductwork is placed in or partly in an exterior wall or interior load bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie not less than 0.054 inch thick (1.37 mm) (16 ga) and 1 ½ inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than four 10d (0.148 inch diameter) having a minimum length of 1 ½ inches (38 mm) at each side or equivalent. The metal tie must extend a minimum of 6 inches past the opening. See figure R602.6.1

Exception: When the entire side of a wall with the notch or cut is covered by wood structural panel sheathing.

jj. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R703.6.2 PLASTER. Section R703.6.2 is hereby amended and reads as follows: Plastering with portland cement plaster shall be not less than three coats when applied over metal lath or wire lath and shall be not less than two coats when applied over masonry, concrete, pressure-preservative treated wood or decay-resistant wood as specified in Section R319.1 or gypsum backing. If the plaster surface is completely covered by veneer or other facing material or is completely concealed, plaster application need be only two coats, provided the total thickness is as set forth in Table R702.1(1).

Exception: Decorative coatings consisting of a cementitious material applied to a concrete or masonry surface for cosmetic purposes only shall be approved materials and installed in accordance with the manufacturer's installation instructions.

kk. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R801.3 ROOF DRAINAGE. Section R801.3 is hereby amended to read as follows: All dwellings shall have a controlled method of water disposal from roofs that will collect and discharge all roof drainage to the ground surface at least three (3) feet from foundation walls or to an approved drainage system.

ll. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R902.1. ROOF COVERING MATERIALS. Section R902.1 Roofing covering materials is hereby amended to read as follows: Roofs shall be covered with materials as set forth in Sections R904 and R905*.* Except where the code requires greater protection, roof coverings for new buildings or structures or additions thereto, or roof coverings utilized for re-roofing shall be a minimum of Class C. Class A, B or C roofing shall be installed in areas designated by law as requiring their use or when the edge of the roof is less than 3 feet (914 mm) from a property line. Classes A, B and C roofing required to be listed by this section shall be tested in accordance with UL 790 or ASTM E 108. Roof assemblies with coverings of brick, masonry, slate, clay or concrete roof tile, exposed concrete roof deck, ferrous or copper shingles or sheets, and metal sheets and shingles, shall be considered Class A roof coverings.

mm. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION R907.1 GENERAL. Section R907.1 is hereby amended to read as follows: Materials and methods of application used for re-covering or replacing an existing roof covering shall comply with the requirements of Chapter 9 as amended. Re-roofing includes any repairs of more than 10% or less of the total roof covering in any three year period. A repair of 10% or less of the total roof covering in any three year period may utilize approved roofing materials comparable to the existing roofing materials.

> **Exception:** Re-roofing shall not be required to meet the minimum design slope requirement of one-quarter unit vertical in 12 units horizontal (2-percent slope) in Section R905 for roofs that provide positive roof drainage.

nn. INTERNATIONAL RESIDENTIAL CODE DELETED; CHAPTER 11.
Chapter 11 is hereby deleted.

oo. INTERNATIONAL RESIDENTIAL CODE DELETED; CHAPTER 12. MECHANICAL ADMINISTRATION. Chapter 12 is hereby deleted. (See article 1 of this chapter)

pp. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION M1501.1 OUTDOOR DISCHARGE. Section M1501.1 is hereby amended to read as follows: The air removed by every mechanical exhaust system shall be discharged to the outdoors. Air shall not be exhausted into an attic, soffit, ridge vent or crawl space.

> **Exceptions:**
> 1.) Whole-house ventilation-type attic fans that discharge into the attic space of dwelling units having private attics shall be permitted.
> 2.) Bathroom exhaust fans installed in accordance with amended section R303.3.

qq. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION M1502.4.5 LENGTH IDENTIFICATION. Section M1502.4.5 Length Identification is hereby deleted.

rr. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION M1507.2 RECIRCULATION OF AIR. Section M1507.2 is hereby amended to read as follows: Exhaust

air from bathrooms and toilet rooms shall not be recirculated within a residence or to another dwelling unit and shall be exhausted in accordance with amended section R303.3.

ss. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION M1602.2 PROHIBITED SOURCES. Section M1602.2 is amended to read as follows; Outside or return air for a forced-air heating or cooling system shall not be taken from the following locations:

1. Closer than 10 feet (3048 mm) from an appliance vent outlet, a vent opening from a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet (914 mm) above the outside air inlet.
2. Where there is the presence of flammable vapors; or where located less than 10 feet (3048 mm)above the surface of any abutting public way or driveway; or where located at grade level by a sidewalk, street, alley or driveway.
3. A room or space, the volume of which is less than 25 percent of the entire volume served by such system. Where connected by a permanent opening having an area sized in accordance with ACCA Manual D, adjoining rooms or spaces shall be considered as a single room or space for the purpose of determining the volume of such rooms or spaces.

    Exception: The minimum volume requirement shall not apply where the amount of return air taken from a room or space is less than or equal to the amount of supply air delivered to such room or space.

4. A closet, bathroom, toilet room, kitchen, garage, mechanical room, furnace room or other dwelling unit.

    Exception 1: Closets of such size that are provided with a supply duct(s) may have return air opening(s).

    Exception 2: Dedicated forced-air systems serving only a garage shall not be prohibited from obtaining return air from the garage.

5. A room or space containing a fuel-burning appliance where such room or space serves as the sole source of return air.

    Exceptions:

    1. The fuel-burning appliance is a direct-vent appliance or an appliance not requiring a vent in accordance with Section M1801.1 or Chapter 24.
    2. The room or space complies with the following requirements:
        2.1. The return air shall be taken from a room or space having a volume exceeding 1 cubic foot for each 10 Btu/h (9.6 L/W) of combined input rating of all fuel-burning appliances therein.
        2.2. The volume of supply air discharged back into the same space shall be approximately equal to the volume of return air taken from the space.
        2.3. Return-air inlets shall not be located within 10 feet (3048 mm) of a draft hood in the same room or space or the combustion chamber of any atmospheric-burner appliance in the same room or space.
    3. Rooms or spaces containing solid-fuel burning appliances, provided that return-air inlets are located not less than 10 feet (3048mm) from the firebox of such appliances.

6. An unconditioned crawl space by means of direct connection to the return side of a forced air system. Transfer openings in the crawl space enclosure shall not be prohibited.

tt. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION M1804.2.6 MECHANICAL DRAFT SYSTEMS; Section M1804.2.6 is hereby amended to read as follows; Mechanical draft systems shall be installed in accordance with their listing, the manufacturer's installation instructions and, except for direct vent appliances, the following requirements:

1. The vent terminal shall be located not less than 3 feet (914 mm) above a forced air inlet located within 10 feet (3048 mm).

2. The vent terminal shall be located not less than 4 feet (1219 mm) below, 4 feet (1219 mm) horizontally from, or 1 foot (305 mm) above any door, window or gravity air inlet into a dwelling.
3. The vent termination point shall not be located closer than 3 feet (914 mm) to an interior corner formed by two walls perpendicular to each other.
4. The bottom of the vent terminal shall be located at least 12 inches (305mm) above finished ground level.
5. The vent termination shall not be mounted directly above or within 3 feet (914 mm) horizontally from an oil tank vent or gas meter.
6. Power exhauster terminations shall be located not less than 10 feet (3048 mm) from adjacent buildings.
7. The discharge shall be directed away from the building.

uu. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION M2302.2 REQUIREMENTS: Section M2302.2 Requirements is hereby amended to read as follows: The installation, inspection, maintenance, repair and replacement of photovoltaic systems and all system components shall comply with the manufacturer's installation instructions, Sections M2302.2.1 through M2302.2.3 and NFPA 70 and sections 605.11.3.2.1 through 605.11.3.2.4 of the 2012 International Fire Code.

vv. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION G2414.5. METALLIC TUBING. Section G2414.5 is hereby amended to read as follows: Seamless copper, aluminum alloy or steel tubing shall not be utilized for the distribution of fuel gas.

Exception: Corrugated stainless steel tubing as referenced in section 2414.5.3.

ww. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION G2414.5.2 COPPER TUBING. Section G2414.5.2 is hereby amended to read as follows: Copper tubing shall comply with standard Type K or L of ASTM B 88 or ASTM B 280. Copper and brass tubing shall not be utilized to distribute natural gas nor shall it be utilized to distribute any other fuel gas within a building or structure.

xx. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION G2417.4.1 TEST PRESSURE. Section G2417.4.1 is hereby amended to read as follows; The test pressure to be used shall be not less than one and one-half times the proposed maximum working pressure, but not less than 10 psig (68.9kPa) irrespective of design pressure. For welded piping, and for piping carrying gas at pressures in excess of fourteen (14) inches water column pressure, the test pressure shall not be less than 60 psig. Where the test pressure exceeds 125 psig (862 kPa gauge), the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

yy .- INTERNATIONAL RESIDENTIAL CODE DELETED; CHAPTER 25. PLUMBING ADMINISTRATION. Chapter 25 is hereby deleted. (See Article 1 of this chapter)

zz. INTERNATIONAL RESIDENTIAL CODE ADDED; SECTION P2601.2.1 PROHIBITED DRAINAGE AND CONNECTIONS. Section P2601.2.1 is hereby added to read as follows: Sanitary sewer systems shall be designed, built and maintained in such a manner to prevent all storm or ground water from draining, discharging or entering into the sanitary sewer system. Connection of sump pumps, foundation drains, yard drains, gutter downspouts and any other storm water drainage receptacle(s) or system(s) are specifically prohibited from being connected to the sanitary sewer system.

aaa. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P2603.5 FREEZING. Section P2603.5 is hereby amended to read as follows: Water, soil or waste pipe shall not be installed outside of a building, in exterior walls, in attics or crawl spaces, or in any other place subjected to freezing temperature unless adequate provision is made to protect it from freezing by insulation or heat or both. Water service pipe shall be installed not less than 36 inches in depth below grade.

bbb. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P2603.5.1 SEWER DEPTH. Section P2603.5.1 is hereby amended to read as follows: Building sewers shall be a minimum of 12 inches below grade.

ccc. INTERNATIONAL RESIDENTIAL CODE ADDED; SECTION P2604.5 INSPECTION. Section P2604.5 is hereby added to read as follows: Excavations required for the installation of a building drainage system shall be open trench work and shall be kept open until the piping has been inspected and approved to cover.

ddd. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P2902.5.3 LAWN IRRIGATION SYSTEMS. Section P2902.5.3 is hereby amended to read as follows: The potable water supply to lawn irrigation systems shall be protected against backflow by a device approved by the Missouri Department of Natural Resources. Backflow devices installed within structures shall be installed a minimum of 6 inches away from any wall or vertical obstruction. The backflow device shall be installed between 12 inches and 48 inches above the floor and shall be accessible.

eee. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P2902.6.2 PROTECTION OF BACKFLOW PREVENTERS. Section P2902.6.2 Protection of backflow preventers is hereby amended to read as follows: Backflow preventers shall not be located in areas subject to freezing except where they can be removed by means of unions, or are protected by heat, insulation or both.

Exception: In-ground backflow preventers installed for lawn irrigation systems.

fff. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P3002.2 BUILDING SEWER. Section P3002.2 is hereby amended to read as follows: Building sewer piping shall be as shown in Table P3002.2. Forced main sewer piping shall conform to one of the standards for ABS plastic pipe, cast-iron pipe, copper or copper-alloy tubing, PVC plastic pipe, or pressure-rated pipe listed in Table P3002.2. In addition, building sewer piping shall be a minimum of schedule 40 PVC/ABS or equivalent unless otherwise approved by the building official.

ggg. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P3005.4.2 BUILDING DRAIN AND SEWER SIZE AND SLOPE. Section P3005.4.2 is hereby amended to read as follows: Pipe sizes and slope shall be determined from Table P3005.4.2 on the basis of drainage load in fixture units (d.f.u.) computed from Table P3004.1. The minimum size of a building sewer serving a dwelling unit shall be four inches.

hhh. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION P3008.1. SEWAGE BACKFLOW. Section P3008.1 is hereby deleted.

iii. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P3103.1 ROOF EXTENSION. Section P3103.1 is hereby amended to read as follows: All open vent pipes which extend through a roof shall be terminated at least 6 inches above the roof, except that

where a roof is to be used for any purpose other than weather protection, the vent extensions shall be run at least 7 feet (2134 mm) above the roof.

jjj. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION P3114.3 WHERE PERMITTED. Section P3114.3 is hereby amended to read as follows: Individual vents, branch vents, circuit vents and stack vents shall be permitted to terminate with a connection to an air admittance valve only when approved by the Administrative Authority.

kkk. INTERNATIONAL RESIDENTIAL CODE DELETED; CHAPTER 33 STORM DRAINAGE. Chapter 33 Storm Drainage is hereby deleted.

lll. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION E3601.6.2 SERVICE DISCONNECT LOCATION. Section E3601.6.2 is hereby amended to read as follows: The service disconnecting means shall be installed at a readily accessible location either outside of a building or inside nearest the point of entrance of the service conductors. When service conductors are more than 10 feet in length from the point of entry to the service panel, a separate means of disconnect shall be installed at the service cable entrance to the building or structure. Service disconnecting means shall not be installed in bathrooms. Each occupant shall have access to the disconnect serving the dwelling unit in which they reside.

mmm. INTERNATIONAL RESIDENTIAL CODED AMENDED; SECTION E3902.2 GARAGE AND ACCESSORY BUILDING RECEPTACLES. Section E3902.2 Garage and accessory building receptacles is hereby amended to read as follows: All 125-volt, single-phase, 15- and 20- ampere receptacles installed in garages and grade level portions of unfinished accessory buildings used for storage or work areas shall have ground-fault circuit interrupter protection for personnel.

Exceptions:

1. Receptacles that are not readily accessible such as a ceiling mounted receptacle for a garage door opener.
2. A single receptacle supplied by a dedicated branch circuit that is located and identified for a specific use by a cord-and-plug-connected appliance such as a refrigerator, freezer or sump pump.
3. A receptacle supplying only a permanently installed fire alarm or burglar alarm system.

nnn. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION E3902.5 UNFINISHED BASEMENT RECEPTACLES. Section E3902.5 Unfinished basement receptacles is hereby amended to read as follows: All 125-volt, single phase, 15- and 20- ampere receptacles installed in unfinished basements shall have ground fault circuit interrupter protection for personnel. For the purposes of this section, unfinished basements are defined as portions or areas of the basement not intended as habitable rooms and limited to storage areas, work areas, and the like.

Exceptions:

1. Receptacles that are not readily accessible such as a ceiling mounted receptacle for a garage door opener.
2. A single receptacle supplied by a dedicated branch circuit that is located and identified for a specific use by a cord-and-plug-connected appliance such as a refrigerator, freezer or sump pump.
3. A receptacle supplying only a permanently installed fire alarm or burglar alarm system.

ooo. INTERNATIONAL RESIDENTIAL CODE AMENDED; SECTION E3902.12 ARC-FAULT CIRCUIT-INTERRUPTER PROTECTION. Section E3902.12 Arc-fault circuit-interrupter

protection is hereby amended to read as follows: All branch circuits that supply 120-volt, single-phase, 15- and 20-ampere outlets installed in bedrooms, shall be protected by a combination type or branch/feeder type arc-fault circuit interrupter installed to provide protection of the entire branch circuit.

Exceptions:

1. Where an outlet branch-circuit type AFCI is installed at the first outlet to provide protection for the remaining portion of the branch circuit, the portion of the branch circuit, the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet shall be installed with metal outlet and junction boxes and RMC, IMC, EMT, type MC, or steel armored type AC cables meeting the requirements of Section E3908.8.
2. Where an outlet branch circuit type AFCI is installed at the first outlet to provide protection for the remaining portion of the branch circuit, the portion of the branch circuit between the branch circuit overcurrent device and the first outlet shall be installed with metal or nonmetallic conduit or tubing that is incased in not less than 2 inches (51mm) of concrete.
3. AFCI protection is not required for an individual branch circuit supplying only a fire alarm system where the branch circuit is wired with metal outlet and junction boxes and RMC, IMC, EMT or steal sheathed cable Type AC, or Type MC meeting the requirements of Section E3908.8.

ppp. INTERNATIONAL RESIDENTIAL CODE DELETED; SECTION E4002.14 TAMPER-RESISTANT RECEPTACLES. Section E4002.14 Tamper-resistant receptacles is hereby deleted.