



Oklahoma Uniform Building Code Commission

Residential Building Technical Committee

Recommendations for the 2015 Edition of the International Residential Code®

Presented: October 20, 2015

By: Mr. Todd Booze (Vice-Chairman)

Commission Liaison: Mr. Curtis McCarty

Committee Members: Chris Ramseyer (Professional Engineer/Chairman), Todd Booze (Residential Production Builder/Vice-Chairman), Larry Cagel (Residential Custom Builder), Sam Gresham (Residential Designer), John Moore (Inspector Small Jurisdiction), David Reed (Architect), John Taylor (Fire Representative), Joe Williford (Inspector Large Jurisdiction)

Alternate Members: Greg Clark (Inspector Large/Small Jurisdiction), Mike Gilles (Residential Builder)

General Commentary:

The Residential Building Technical Committee conducted a thorough formal review of the 2015 Edition of the International Residential Code®; Chapters: Three , Four, Five, Six, Seven, Eight, Nine, Ten, and Eleven at the request of the Oklahoma Uniform Building Code Commission. The review process commenced on Wednesday, February 11, 2015; in the Construction Industries Board/Oklahoma Uniform Building Code Commission boardroom at Shepherd Mall, 2401 NW 23rd Street, Suite 2F, Oklahoma City, OK 73107.

Public Comment Forms:

Sixty-eight (68) public comment forms were received, plus two (2) revised forms for a total of seventy (70) forms. Forty-four (44) public comment forms were approved as submitted; eight (8) were approved with amendments; eight (8) were withdrawn and ten (10) were denied.

2009 Rule Modifications Reviewed

Twenty-two (22) 2009 rule modifications were reviewed by the committee. Seven (7) rule modifications have been recommended to be carried over as is. Fourteen (14) rule modifications have been recommended to be carried over but modified. One (1) rule modification has been recommended to be deleted from the current rules.

Chapter One – Scope and Administration
Unanimous vote to “Recognize Chapter One as written”
(3/24/2015 and 09/09/2015)

Chapter Two – Definitions
Unanimous vote to “Recognize Chapter Two subject to bringing it into alignment
with the Commercial Committee changes” (3/24/2015)
Unanimous vote to “Recognize Chapter Two as written” (6/8/2015)
Unanimous vote to “Recognize Chapter Two and approve as modified ”
(9/09/2015)

Proposed Code Change: Public Comment Form B64, R202 Definitions (submitted 9/8/2015, page 23). The proposed change read:

SAFE ROOM. A building or structure or portions thereof, constructed in accordance with ICC/NSSA Standard for the design and construction of Storm Shelters®, (ICC 500®), and constructed to provide near-absolute protection for its occupants from severe wind storm events such as tornados or hurricanes.

1. Community safe room. A safe room designed and constructed in accordance with the Federal Emergency Management Agency (FEMA) document P-361 entitled “Design and Construction Guidance for Community Safe Rooms® (FEMA P-361®), intended to provide life-safety protection for more than 16 persons.

2. Other safe room. A safe room designed and constructed in accordance with FEMA P-361® Design and Construction Guidance for Community Safe Rooms or FEMA-320® entitled “Taking Shelter from the Storm: Building a Safe Room for your Home or Small Business®”, located in a residence or non-residential building or structure, intended to provide life-safety protection for 16 people or less.

STORM SHELTER. A building, structure or portions thereof, constructed in accordance with ICC 500 and designated for use during a severe wind storm event, such as a hurricane or tornado.

1. Community storm shelter. A storm shelter not defined as a “Residential storm shelter.”
2. Residential storm shelter. A storm shelter serving occupants of dwelling units and having an occupant load not exceeding 16 persons.

Summary of Proposed Change: The submitter noted the additions would align the IRC with the adoption of the 2015 edition of the International Building Code by the OUBCC.

Committee Commentary: The committee reviewed the proposed comment form and felt it was a good idea.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B64 as Written” (9/9/2015)

Proposed Code Change: Public Comment Form B43, Section 202, Definitions.

As part of the proposed modifications to Chapter Eleven, the submitter of B43 made the following changes to Chapter Two. For the details on comment form B43, please see information on the Summary of Change and Committee Discussion on tiles 88 to 90 of this presentation.

[RE] HIGH-EFFICACY LAMPS. ~~See Section N1101.6 for definition applicable to Chapter 11.~~ Compact fluorescent, T-8 or smaller diameter linear fluorescent lamps or lamps with a minimum efficacy of:

1. 60 lumens per watt for lamps over 40 watts,
2. 50 lumens per watt for lamps over 15 watts to 40 watts
3. 40 lumens per watt for lamps 15 watts or less.

[RE] INSULATED SHEATHING. An insulating board having a thermal resistance of not less than R-2 of the core material.

~~For definition applicable in Chapter 11, see Section N1101.6~~

[RB] ROOF RECOVER. The process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering.

~~For definition applicable in Chapter 11, see Section N1101.6.~~

[RE] SKYLIGHT. ~~See Section N1101.6 for definition applicable in Chapter 11.~~

~~[RE] SLEEPING UNIT. See section N1101.6 for definition applicable in Chapter 11.~~

[RB] SUNROOM. A one-story structure attached to a dwelling with a glazing area in excess of 40 percent of the gross area of the structure's exterior walls and roof.

~~For definition applicable in Chapter 11, see Section N1101.6~~

[RB] THERMAL ISOLATION. Physical and space conditioning separation from conditioned space(s) consisting of existing or new walls, doors or windows. The conditioned space(s) shall be controlled as separate zones for heating and cooling or conditioned by separate equipment.

~~For definition applicable in Chapter 11, see Section N1101.6.~~

~~[RE] U-FACTOR, THERMAL TRANSMITTANCE. See Section N1101.6 for definition applicable in Chapter 11. The coefficient of heat transmission (air to air) through a building envelope component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cool side air films (Btu/h * square feet * Fahrenheit).~~

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

~~For definition applicable in Chapter 11, see Section N1101.6.~~

WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM. An exhaust system, supply system or combination thereof that is designed to mechanically exchange indoor air for outdoor air where operating continuously or through a programmed intermittent schedule to satisfy the whole-house ventilation rate.

~~For definition applicable in Chapter 11, see Section N1101.6~~

Chapter 3 – Building Planning

Unanimous vote to “Approve Chapter Three as Published” (3/24/2015);

Unanimous vote to “Approve Chapter Three as Modified” (09/09/2015)

Commission Action Taken: The Commission voted at the October 20, 2015 meeting to accept Chapter three with the proposed modifications discussed regarding Table R302.1(1) and the denial of public comment form B11.

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-6(1) and Public Comment Form B6, Table R302.1(1) Exterior Walls (submitted 05/27/2015, page 51). The proposed changes read:

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 <u>3</u> feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	≥ 2 feet to 5 <u>3</u> feet
	(Not fire-resistance rated)	0 hours	5 feet
Openings in walls	Not allowed	NA	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.3	< 5 feet
		None required	5 feet

Summary of Change: The 2009 modification changed the minimum fire separation distance for walls from 5 feet to 3 feet and modified the minimum fire separation distance for projections from greater than or equal to 2 to 5 feet to equal to or greater than 2 feet to 3 feet. This was done as multiple cities requested the revision to accept current practice and zoning requirements of individual municipalities. Also, there was confusion on how building inspectors would enforce a 5 foot minimum fire separation distance on lots with a 5 foot building setback, i.e. the roof eave, a projection, would not meet a 5 foot minimum fire separation distance.

Public Comment Form B-6

R302.1 Table - Remove and replace the table R302.1(1) with the attached table.

<u>EXTERIOR WALL ELEMENT</u>		<u>MINIMUM FIRE RESISTANCE RATING</u>	<u>MINIMUM FIRE SEPARATION DISTANCE</u>
Walls	Fire resistance rated	1 hour — tested in accordance with ASTM E-119 or UL 263 with exposure from both sides	< 5 feet
	Not fire resistance rated	0 hours	≥ 5 feet
Projections	Not allowed	N/A	< 2 feet
	Fire resistance rated	1 hour on the underside ^{a,b}	≥ 2 feet to < 5 feet
	Not fire resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet

Amended Table

<u>EXTERIOR WALL ELEMENT</u>		<u>MINIMUM FIRE RESISTANCE RATING</u>	<u>MINIMUM FIRE SEPARATION DISTANCE</u>
<u>Walls</u>	<u>(Fire-resistance rated)</u>	<u>1 hour with exposure from both sides</u>	<u>0 feet</u>
	<u>(Not fire-resistance rated)</u>	<u>0 hours</u>	<u>> 3 feet</u>
<u>Projections</u>	<u>(Fire-resistance rated)</u>	<u>1 hour on the underside</u>	<u>0 feet</u>
	<u>(Not fire-resistance rated)</u>	<u>0 hours</u>	<u>>3 feet</u>
<u>Openings</u>	<u>Not allowed</u>	<u>N/A</u>	<u>< 3 feet</u>
	<u>25% maximum of wall area</u>	<u>0 hours</u>	<u><3 feet but >5</u>
	<u>Unlimited</u>	<u>0 hours</u>	<u>> 3 feet</u>
<u>Penetration</u>	<u>ALL</u>	<u>Comply with Section R317.3</u>	<u>< 3 feet</u>
		<u>None Required</u>	<u>> 3 feet</u>

Summary of Proposed Change: The submitter noted per the discussion by the committee on March 9, 2015, the intent of the modification was to allow for structures to be built as close as three feet to the property lines without requiring additional fire resistant protection.

Committee Commentary: The committee discussed the change reflected the modifications made by the 2009 IRC committee and the City of Norman's wording for the section.

Committee Action Taken: Unanimous vote to “Accept the 2009 Table R302.1 in lieu of the 2015 Table R302.1 and strike through the requirement of what is not allowed in the column for the projections table section.” (3/9/2015). Unanimous vote to “Approve Public Comment Form B6 as Written” (06/10/2015)

Proposed Code Change: Public Comment Form B7, Section R302.5.1 Opening Protection (submitted 05/27/2015, page 53). The proposed change read:

R302.5.1 Opening protection. 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 3/8 inches (35mm) in thickness, solid or honeycomb-core steel doors not less than 1 3/8 inches (35 mm) thick, or 20- minute fire-rated doors. ~~equipped with a self-closing device.~~

Summary of Proposed Change: The item was first discussed at the March 9, 2015 meeting. A motion was made and vote taken, after which a comment form was submitted. The submitter noted the committee discussed the section and felt the new addition of installing self-closing devices would ultimately be a burden to homeowners and that in many cases the closers would be removed, modified, or not maintained and would be largely ineffective.

Committee Commentary: The committee discussed the modification at the March 9, 2015 meeting. The proposed comment form was submitted as a result of that discussion. When the comment form was brought up for review, there was no additional discussion.

Committee Action Taken: Unanimous vote to “Remove the wording ‘equipped with a self-closing device’ ” (3/09/2015) Unanimous vote to “Approve as Public Comment Form B-7 as Written” (06/10/2015)

Proposed Code Change: Public Comment Form B43, Section 303.1, Habitable Rooms.

As part of the proposed modifications to Chapter Eleven, the submitter of B43 made the following changes to Chapter Two. For the details on comment form B43, please see information on the Summary of Change and Committee Discussion on tiles 88 to 90 of this presentation.

R303.1 Habitable Rooms. Habitable rooms shall have an aggregate glazing area of not less than 8 percent of the floor area of such rooms. Natural ventilation shall be through windows, skylights, doors, louvers or other approved openings to the outdoor air. Such openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. The openable area to the outdoors shall not be less than 4 percent of the floor area being ventilated.

Exceptions:

1. The glazed areas need not be openable where the opening is not required by Section R310 and an approved mechanical ventilation system capable of producing 0.35 air change per hour in the room is installed or a whole-house mechanical ventilation system is installed in accordance with M1507 capable of supplying outdoor ventilation air of 15 cubic feet per minute (cfm) per occupant computed on the basis of two occupants for the first bedroom and one occupant for each additional bedroom.
2. The glazed areas need not be installed in rooms where Exception 1 is satisfied and artificial light is provided that is capable of producing an average illumination of 6 footcandles (65 lux) over the area of the room at a height of 30 inches (762 mm) above the floor level.
3. Use of sunroom and patio covers, as defined in Section R202, shall be permitted for natural ventilation if in excess of 40 percent of the exterior sunroom walls are open, or are enclosed only by insect screening.

Proposed Code Change: Public Comment Form B43, Section R303.4, Mechanical ventilation.

As part of the proposed modifications to Chapter Eleven, the submitter of B43 made the following changes to Chapter Two. For the details on comment form B43, please see information on the Summary of Change and Committee Discussion on tiles 88 to 90 of this presentation.

~~**Section R303.4 Mechanical ventilation.** Where the air infiltration rate of a dwelling unit is 5 air changes per hour or less where tested with a blower door at a pressure of 0.2 inch w.e. (50 Pa) in accordance with Section N1102.4.1.2, the dwelling unit shall be provided with whole-house mechanical ventilation in accordance with Section M1507.3.~~

Proposed Code Change: Public Comment Form B31, Section R311.1 Means of Egress. (submitted 07/22/2015, page 63). The proposed change read:

R311.1 Means of egress. Dwellings and garages (attached or detached from the dwelling) shall be provided with a means of egress in accordance with this section. The means of egress shall provide a continuous and unobstructed path of vertical and horizontal egress travel from all portions of the dwelling to the required egress door without requiring travel through a garage. The means of egress from the garage may travel through the adjacent dwelling. The required egress door shall open directly into a public way or to a yard or court that opens to a public way.

R311.2 Egress door. Not less than one egress door shall be provided for each dwelling unit or garage. The egress door shall be side-hinged, and shall provide a clear width of not less than 32 inches (813 mm) where measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). The clear height of the door opening shall not be less than 78 inches (1981 mm) in height measured from the top of the threshold to the bottom of the stop. Other doors shall not be required to comply with these minimum dimensions. Egress doors shall be readily openable from inside the dwelling or garage without the use of a key or special knowledge or effort.

Summary of Proposed Change : The submitter noted most overhead garage doors were equipped with electric garage door openers and it would seem to be a prudent idea to require another way out of the garage when the power went out or the opener became inoperable or jammed. He noted it would be especially important for a young or disabled person who might not be able to reach the pull cord to disengage the opener.

Committee Commentary: The committee discussed the form and noted the problem was more of an issue with a detached garage. They discussed the current code requirements for means of egress and if the code already required means of egress other than into the dwelling and if a window could be an option.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B31 as Written”
(08/12/2015)

Proposed Code Change: Review of 2009 rule modification 748:20-5-6(2) and Public Comment Forms B8 (withdrawn) & B18, Section R311.7.5.1 Risers (submitted 05/27/2015 and 06/26/2015, page 64). The proposed modifications read:

2009 Modification:

Section 311.7.4.1 Riser height. The maximum riser height shall be 7 3/4 inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm) at rough-in. Top and bottom riser may vary by 3/4 inch at final inspection, not to exceed 7 3/4 of an inch (196 mm).

Summary of Change: The 2009 Residential Building Technical Committee made the change to increase the tolerance at the top and bottom landing area of a staircase to 3/4" due to varying types of flooring material that can be used at those locations. The committee determined it was not always possible to maintain 3/8" tolerance in those areas due to homes that sell at various stages of construction with new homeowners changing the flooring materials throughout the process. The committee determined the amendment did not affect the safety intent of the code. The code required minimum variation between risers of 3/8" through the risers while a person was in rhythm walking up and down stairs. The variation at the top and bottom did not affect safety due to the landing areas when the rhythm is already changing. The amendment further clarified the measuring of the riser height in the section should be done at the rough-in stage, prior to flooring materials becoming an influence to the riser height.

B-18

R311.7.5.1 Risers. The riser height shall be not more than 7 3/4 inches (196 mm). The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

1. The opening between adjacent treads is not limited on spiral stairways.
2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1
3. The top and bottom riser in each flight of stairs may vary by 3/4 inch.

Summary of Proposed Change: The submitter stated the 2015 Building Residential Technical Committee felt this language was more concise than what was provided by the code.

Committee Commentary: The committee discussed Public Comment Form B8 at both the May 9, 2015, and June 10, 2015 meetings. The consensus was to revise the form and the submitter withdrew the form. The committee discussed B18, which was a revision to the Section based on the previous discussion, at the July 8, 2015 meeting.

Committee Action Taken: Unanimous vote to modify Section 311.7.5.1 Risers by moving the last sentence of the paragraph into the Exception as item 3” (3/9/2015) Unanimous vote to “Approve Public Comment Form B-18 as Written” (07/08/2015)

Proposed Code Change: Review of Rule Modifications 748:20-5-6(3), 748:20-5-6(4) and Public Comment Form B9, Section R313.2 One and two-family dwellings automatic fire systems and its exception and Section R313.2.1 Design and installation, (submitted 05/27/2015, page 66). The proposed change read:

2009 ORIGINAL CODE LANGUAGE:

R313.2 One- and two-family dwellings automatic fire systems. Effective January 1, 2011, an automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

2009 ORIGINAL CODE LANGUAGE:

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed in accordance with Section P2904 or NFPA 13D.

2009 Modifications: The sections were moved into a created appendix and were not adopted as a minimum standard for residential construction within the state.

Summary of Change: The 2009 Residential Building Technical Committee discussed the issue of residential fire sprinkler systems and ultimately decided they were not in best interest of the State. Some of the issues discussed by the committee were:

1. The national trend to remove the section by other states that had adopted the 2009 IRC because they were an unnecessary burden and were an unreliable measure in one- and two-family dwellings.
2. The local jurisdiction's ability to determine if the requirement was needed.
3. The lack of significant safety enhancement vs. hardwired smoke alarms. They discussed it was an unnecessary redundancy when considering it as an egress system on top of the current requirement for hardwired smoke alarms with battery backup.
4. New homes were much more fire resistant.
5. Durability of the systems and sprinkler performance.

B-9

R313.2 – One and two-family dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings. **Exception:** An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

R313.2.1 Design and installation. Automatic residential fire sprinkler system shall be designed and installed in accordance with Section P2904 or NFPA 13D.

Summary of Proposed Change: The submitter noted, consistent with the prior Technical Committee, he felt that requiring Automatic Sprinklers on all new Single Family Dwellings was ultimately too costly and constraining.

Committee Commentary: The committee reviewed Public Comment Form B9 and determined moving the sections to an appendix was the correct thing to do.

Committee Action Taken: Unanimous vote to “Move Sections R313.2 One- and two-family dwellings automatic fire systems and R313.2.1 Design and installation into an appendix” (3/9/2015) Unanimous vote to “Approve Public Comment Form B9 as Written” (06/10/2015)

Proposed Code Change: Public Comment Form B10, Section R314.2.2 Alterations, repairs and additions (submitted 05/27/2015, page 67). The proposed change read:

R314.2.2 – Alterations, repairs and additions. Where alterations, repairs or additions requiring a permit occur, or where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exceptions:

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

Summary of Proposed Change: The submitter stated the change that was made with the comment form was to add electrical installation, alterations or repairs to the section.

Committee Commentary: The committee reviewed the B10 and felt that obligating compliance with this section when the scope of work was minor electrical work was not reasonable.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B10 as Written” (06/10/2015)

Proposed Code Change: Public Comment Form B11, Section R314.3 # 4 Location (submitted 05/27/2015, page 67). The proposed change read:

R314.2.3 Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room.
2. Outside each separate sleeping area in the immediate vicinity of the bedrooms.
3. On each additional story of the dwelling, including basements and habitable attics and not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.
- ~~4. Smoke alarms shall be installed not less than 3 feet (914 mm) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section R314.3.~~

Summary of Proposed Change: The submitter felt the new addition, (specifically Item 4), was confusing. He stated while there were published code interpretations stating the section was to clarify that required smoke detectors should not be placed closer than three feet to bathrooms with tubs and showers, the language was confusing. He noted it could be easily interpreted that smoke detectors were required within three feet of bathrooms with tubs and showers. He noted that installation instructions for the products provide requirements for installation.

Committee Commentary: The committee initially discussed the section at the March 9, 2015 meeting and made a motion to delete item 4 from the list of locations. A subsequent comment form was submitted and reviewed. The committee discussed that the current language was confusing and the intent was hard to figure out, if the language should be kept and reworded or if it should be completely deleted and how that would effect enforcement.

Committee Action Taken: Unanimous vote to “Remove Item 4” (03/09/2015), Vote to “Strike the language, and approve Public Comment Form B-11” (06/10/2015)

Proposed Code Change: Review of Rule Modification 748:20-5-6(5) on Section R315.1 Carbon monoxide alarms (page 68). The original modification read as follows:

2009 Modification:

For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages. **Exception:** If a residence with an attached garage has a sealed door between the residence and the garage; and no fuel burning appliances in the residence, then carbon monoxide detection is not required within the residence.

Summary of Change: The 2009 IRC committee added the exception to remove the need for a carbon monoxide alarms in homes where there were no fuel burning appliances within the conditioned envelope of the structure, i.e. no source of carbon monoxide. The committee noted carbon monoxide alarms had been used in homes in recent years and were problematic with false alarms being caused by common household products used in the homes. In addition to their sensitivity to dust particles pulled across their sensors from HVAC operation created an unacceptable nuisance to the homeowner and many times lead to the occupant disabling them. The committee hoped in the next code cycle they would be reviewed, and the industry would have made improvements to product performance and acceptance could be determined at that time.

Committee Commentary: The 2015 committee reviewed the rule modification and discussed the section. They determined the section had been revised and the exception was no longer needed.

Committee Action Taken: Unanimous vote to “Delete the 2009 rule modification and revert to 2015 code language” (3/09/2015)

Proposed Code Change: Public Comment Form B12, Section R315.2.2 Alterations, repairs and addition (submitted 05/27/2015, page 68). The proposed change read:

R315.2.2 Alterations, repairs and addition. Where alterations, repairs or additions requiring a permit occur, or where one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with carbon monoxide alarms located as required for new dwellings.

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, is exempt from the requirements of this section.
2. Installation, alteration or repairs of electrical, plumbing or mechanical systems are exempt from the requirements of this section.

Summary of Proposed Change: The submitter noted after discussion the committee felt requiring compliance with this section when the scope of work was minor electrical work was not reasonable.

Committee Commentary: The committee discussed the section and a subsequent Public Comment Form was submitted. The committee reviewed the form and there was no further discussion.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B12 as Written” (06/10/2015)

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-6(6) and Public Comment Form B65, Section R323, Storm Shelters (submitted 09/08/2015, page 76). The proposed change read:

2009 Modification:

R323.1 General. This section applies to the construction of storm shelters when constructed as separate detached buildings or when constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with one of the following: ICC/NSSA 500 or FEMA 320 or other equivalent engineered system.

Summary of Change: The 2009 committee felt that consumers chose to build safe areas in homes for varying purposes and the specification levels should not be required in all cases to achieve such a high level of construction. They felt there were many other standards that met the intent of the section and those should be allowed to be utilized. They noted the 2009 IRC did not dictate that a storm shelter had to be built in a home, therefore the code should not dictate what type of construction should be achieved if the consumer chose to build one.

B65

R323 STORM SHELTERS AND SAFE ROOMS

R323.1 General. This section applies to the construction of above or below ground storm shelters and safe rooms ~~where~~ constructed as separate detached buildings ~~or where constructed as safe rooms within buildings~~ or rooms within buildings, structures, or portions thereof for the purpose of

providing refuge from storms that produce high winds, such as tornados ~~and hurricanes~~. Any room or structure, as may be used as a place of refuge during a severe wind storm event, shall not be defined as a storm shelter or safe room unless specifically designed to the requirements as listed in Section 323. In addition to other applicable requirements in this code storm shelters shall be constructed in accordance with ICC/NSSA 500.

R323.2 Definitions. The following terms are defined in Chapter 2 of this code:

SAFE ROOM.

Community safe room.

Other safe room.

STORM SHELTER.

Community storm shelter.

Residential storm shelter.

Summary of Proposed Change: The submitter sought to align the section with the adoption of the 2015 International Building Code® by the OUBCC.

Committee Commentary: The committee reviewed rule modification and felt the comment form would better align the section to the 2015 IBC adoption.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B65 as Written” (9/9/2015)

Proposed Code Change: Motion from March 9, 2015 meeting and Public Comment Forms B2 and B14, Section R326 Swimming Pools, Spas and Hot Tubs (submitted 04/27/2015 and 05/27/2015, page 77). The proposed changes read:

B14 Modification (B2 and B14 were the same except B14 corrected the section heading from 324 to 326):

Section 326 SWIMMING POOLS, SPAS AND HOT TUBS

R326.1 General. ~~The design and construction of pools and spas shall comply with the International Swimming Pool and Spa Code.~~ Residential Swimming Pools, spas and hot tubs requiring a permit shall comply with R326.2 through R326.4.

R326.2 Enclosure. Swimming pools shall be completely enclosed by a fence or barrier not less than 4 feet (1290 mm) in height or a screen enclosure. Openings in the fence or barrier shall not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

1. Swimming pools, spas and hot tubs on lots in excess of 2 acres are exempt from the requirements.
2. A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F 1346 need not comply with this section.

R326.3 Gates. Exterior pedestrian access doors or gates shall be self-closing and have a self-latching device. Doors or gates other than pedestrian access doors or 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 door or gate, the release mechanism shall be located on the pool side of the

door or gate 3 inches (76 mm) or more, below the top of the door or gate, and the door or gate and barrier shall be without openings greater than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism. **Exception:** Gates equipped with a locking device.

R326.4 Entrapment avoidance. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

2009 Appendix G (to be added to the newly created Appendix in the 2015 code for Swimming Pools, Spas and Hot Tubs:

Summary of Proposed Change: The committee discussed the section during the March 9, 2015 meeting. During the discussion one of the members made a motion that was voted on to put the 2009 IRC Appendix G into the Appendix of the 2015 code. The submitter of B2 noted historically, there had been no adopted standard for Swimming Pool Barriers in the state and it appeared likely the new Section 326 would not be adopted and the following was a reasonable alternative. He added the requirements were generally consistent with many Home Owners Insurance Providers and largely consistent with the IBC requirements for Public Pools. The submitter of B14 noted the committee felt that the International Swimming Pool and Spa Code would require a lot more deliberation before such a standard was suddenly imposed on the contractors and homeowners in the state. In order to create a standard, it was agreed the proposed requirements which are largely consistent with the IBC would be a good minimum standard for pools

Committee Commentary: The Residential Building Technical Committee first discussed the issue at the March 9, 2015 meeting. A motion was made and unanimously approved to move the entire section into the next available appendix. The committee also voted to bring forward the 2009 Appendix G and add it to the next available appendix in the 2015 code. Two comment forms were then submitted, B2 & B14. The committee reviewed comment form B2 at the May 11, 2015 meeting. They discussed that the language came from the commercial code; that the modification added a standard for the pool installer to provide an entrapment device; that the comment form added safety to the pool owners at a minimum cost, and the fencing requirements. Form B14 was reviewed at the August 12, 2015 meeting. The committee noted it was strictly a clean-up item and no discussion took place.

Committee Action Taken: Unanimous vote to “move Section R326 Swimming Pools, Spas and Hot tubs to the next available appendix” (3/9/2015), Unanimous vote to “Add the 2009 Appendix G to the new appendix for Swimming Pools, Spas and Hot tubs (3/9/2015) Unanimous vote to “Approve Public Comment Form B2 as Written” (06/10/2015); Unanimous vote to “Approve B14 as Written” (8/12/2015)

Chapter 4 – Foundation

Unanimous vote to “Approve Chapter Four as Published” (3/24/2015)

Unanimous vote to “Approve Chapter Four as Modified” (8/12/2015)

Unanimous vote to “Approve Chapter Four as Modified” (9/09/2015)

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-7(1) and Public Comment Form B24, Addition to Section 402.2 Concrete (submitted 07/20/2015, page 80). The proposed change read:

2009 Modification:

Section 402.2 Concrete. Concrete shall have a minimum specified compressive strength of f'_c , as shown in Table 402.2. Concrete subject to moderate or severe weathering as indicated in Table 301.2(1) shall be air entrained as specified in Table R402.2. The maximum weight of fly ash, other pozzolans, silica fume, slag or blended cements that is included in concrete mixtures for garage floor slabs and for exterior porches, carport slabs and steps that will be exposed to deicing chemicals shall not exceed the percentages of the total weight of cementitious materials specified in Section 4.2.3 or ACI 318. Materials used to produce concrete and testing thereof shall comply with the applicable standards listed in Chapter 3 of ACI 318 or ACI 332. **Exception: Interior concrete slabs on grade and enclosed garage slabs are not required to be air entrained.**

Summary of Change: The 2009 building committee noted the primary reason for air entrainment in the slabs was that freeze-thaw damage to concrete is directly related to the number of cycles of freezing and thawing the concrete was subjected to. They noted for concrete that was only exposed to freezing and thawing during the construction period of the structure, the number of freeze-thaw cycles was inconsequential to the long term durability of the concrete. They noted air entrainment additives counteract the performance of other additives to the concrete. They noted an example of water repellent additives used to prevent subsurface migration of moisture and vapor that was counteracted when the concrete was entrained with air. They noted air entrainment caused many finishing issues that prohibit the desire of consumers for smooth trowel floors that may remain exposed stained and sealed.

B24

R402.2 – Concrete. Concrete shall have a minimum specified compressive strength of f'_c , as shown in Table R402.2. Concrete subject to moderate or severe weathering as indicated in Table R301.2(1) shall be air entrained as specified in Table R402.2. The maximum weight of fly ash, other pozzolans, silica fume, slag or blended cements that is included in concrete mixture for garage floor slabs and for exterior porches, carport slabs and steps that will be exposed to deicing chemicals shall not exceed the percentages of the total weight of cementitious materials specified in Section 19.3.3.4 of ACI 318. Materials used to produce concrete and testing thereof shall comply with the applicable standards listed in Chapters 19 and 20 of ACI 318 or ACI 332. **Exception:** Interior concrete slabs on grade and enclosed garage slabs are not required to be air-entrained.

Summary of Proposed Change: The submitter noted, in the climate zone there has not been any historic problems with freezing and thawing of garage floors. He added, hard steel trowel finish of slabs generally removed the air entrainment.

Committee Commentary: The committee initially discussed the section in reference to the 2009 rule modification at the meeting on April 15, 2015. They discussed modifying some of the footnotes associated with Table R402.2 Minimum Specified Compressive Strength of Concrete, or if the 2009 modification that added an exception to Section 402.2 should be carried forward. The committee unanimously voted to carry forward the 2009 modification. A subsequent public comment form was submitted for the change and was also unanimously voted on.

Committee Action Taken: Unanimous vote to “Add an exception to Section 402.2” (04/15/2015), Unanimous vote to “Approve Public Comment Form B-24 as Written” (08/12/2015)

Proposed Code Change: Motion from April 15, 2015 meeting, Table 403.1(1) Minimum width and Thickness for Concrete Footings for Light-frame Construction (inches)^{a,b}, Table 403.1(2) Minimum Width and Thickness for Concrete Footings for Light-frame Construction with Brick Veneer (Inches)^{a,b}, and Table 403.1(3) Minimum Width and Thickness for Concrete Footings with Cast-in-place Concrete or Fully Grouted Masonry Wall Construction (inches)^{a,b}. (page 81)The proposed change read:

Remove footnote “B” from each of the tables:

a. Interpolation allowed. Extrapolation is not allowed.

~~b. Based on 32 foot wide house with load bearing center wall that carries half of the tributary attic, and floor framing. For every 2 feet of adjustment to the width of the house add or subtract 2 inches of footing width and 1 inch of footing thickness (but not less than 6 inches thick).~~

Summary of Change: The issue was brought forward by a committee member during discussion on the chapter. His concern was the footnote could change the design of the house.

Committee Commentary: The committee discussed how the footnote would address the width of the house and the span of the roof; examples of different size homes and how the footnote could effect the build, if designers actually designed buildings totally within the prescriptive and not to an engineering design; ways the code could be interpreted; amendments to foundation systems by cities to meet local needs, if a new footnote “b” should be added to define minimum rebar requirements, and if the tables should be replaced with something else.

Committee Action Taken: Unanimous vote to “Remove footnote “b” from tables 403.1(1) through 403.1(3)” (04/15/2015)

Proposed Code Change: Public Comment Forms B3 & B25, Figure R403.1(1) Plain and concrete footings with Masonry and concrete stem walls in SDC A, B and C^{a,b,c,d,e,f} (submitted 05/08/2015 and 07/21/2015, page 85). The proposed changes read:

B3 Modification:

Figure R403.1 (1) PLAIN AND CONCRETE FOOTINGS WITH MASONRY AND CONCRETE STEM WALLS IN SDC A, B AND C^{a,b,c,d,e,f}

Revised Figure drawing to incorporate a footnote on minimum steel requirements

Summary of Proposed Change: The submitter of form B3 developed the comment form based on the discussion over the section at the April 15,2015 meeting

B25 Modification:

Figure R403.1 (1) PLAIN AND CONCRETE FOOTINGS WITH MASONRY AND CONCRETE STEM WALLS IN SDC A, B AND C^{a,b,c,d,e,f,g}

Add footnote g after “A, B and C” to Figure R403.1(1)

Footnote g to state “Add two #4 rebar to all footings. Additionally all cold joints between footings and foundation walls (stem walls) shall be tied together by a #4 rebar at every corner and not to exceed 6’ o.c. with embedment of 12” into each footing and wall.”

Summary of Proposed Change: The submitter of comment form B25 stated, currently the codes did not obligate reinforcement in footings in most soil conditions in Oklahoma. Most cities have unique requirements for addressing this. With soils, seismic, and wind concerns reinforcement was prudent.

Committee Commentary: The committee tabled item B3 when it was up for discussion at the July 8, 2015 meeting. At the August 12, 2015 meeting, comment form B3 was not listed. Comment form B25 was reviewed with a notation that it was a “clean-up” item. There was no further discussion on the section.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B25 as Written” (08/12/2015)

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-7(2) and Public Comment Form B26, Section 403.1.6 Foundation anchorage (submitted 07/21/2015 page 89). The proposed change read:

2009 Modification:

R403.1.6 Foundation anchorage. Sill plates and walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with the anchor bolts spaced a maximum of 6 feet (1829 mm) on center. Bolts shall be at least 1/2 inch (12.7 mm) in diameter and shall extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Section R317 and R318. Cold-formed steel framing systems shall be fastened to wood sill plates or anchored directly to the foundation as required in Section R505.3.1 or R603.3.1.

Exceptions:

1. Foundation anchorage, spaced as required to provide equivalent anchorage to 1/2-inch diameter (12.7 mm) anchor bolts.
2. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the

plate section and shall be attached to adjacent braced wall panels at corners shown in Figure R602.10.4.4(1).

3. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent braced wall panels at corners as shown in Figure R602.10.4.4(1).

4. Wood sole plates of braced wall panels at building interiors on monolithic slabs may be anchored using connector(s) with a shear capacity of 2300 pounds and a tensile capacity of 800 pounds over a maximum span of 6 feet.

Summary of Change: The 2009 committee established minimum values to allow the use of alternative anchorage systems due to the difficulty of installation of concrete imbedded J-bolts in the interior of the slabs. Placement of the imbedded J-bolt would need to be within 1" of tolerance for a 3 1/2" plate. This is almost unachievable without use of other anchorage systems. The amendment allowed code officials and builders to use alternative methods that meet the prescribed strengths noted above when using other fastening systems. The committee noted the alternative systems were not prescriptively referenced in the IRC 2009 code and by providing minimum values the need for job specific engineered designs was not required. The committee felt there was a lack of logic for anchorage systems used for concrete slabs and those wood framed foundations such as crawl spaces and second and third floors of multi-storied buildings. They felt the prescribed braced wall anchorage in wood frame floor called for 3 16d nails driven together and spaced every 16" in the braced wall line. The capacity of 3 16d nails was far less than described in 403.1.6 foundation anchorage. They noted there should not be such a difference in capacity depending on whether the floor system is concrete or a wood system. They noted they chose the much higher values, consistent with the shear value of 1/2" diameter steel anchor bolt and the tensile capacity mentioned in R602.10.5.3 as a hold down device.

B26

R403.1.6 – Foundation Anchorage. Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Cold formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation. Anchorage of cold-formed steel framing shall be in accordance with this section and Section R505.3.1 or R603.3.1.

Wood sole plates at the exterior walls on monolithic slabs, wood sole plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum ½-inch-diameter (12.7 mm) anchor bolts spaced a maximum of 6 feet (1829 mm) on center or approved anchors or anchor straps spaced as required to provide equivalent anchorage to ½-inch-diameter (12.7 mm) anchor bolts. Bolts shall extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior load bearing wall sole plates on monolithic slab foundation that are not part of a braced wall panel shall be positively anchored with approved fasteners. Hand driven cut nails or concrete nails are not approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Section R317 and R318.

Exceptions:

1. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).

2. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted. The wall shall be attached at corners as show in in Item 9 of Table R602.3(1).
3. Wood sole plates of braced wall panels at building interiors on monolithic slabs may be anchored using connector(s) with a shear capacity of 2300 pounds and a tensile capacity of 800 pounds over a maximum span of 6 feet.

Summary of Proposed Change: The submitter noted hand driven fasteners had a low probability of properly attaching a bearing sole plate to a concrete floor.

Committee Commentary: The committee reviewed the proposed change. They discussed how the change would prevent the use of a hand driven cut nails as an approved fastener. There was concern the wording was too ambiguous. There was further discussion and as a result the wording was slightly modified.

Committee Action Taken: Unanimous vote to “Approve public comment form B26 as modified by including the word ‘load’ between the words ‘interior’ and ‘bearing’ and striking the word ‘nails’ between the words ‘cut’ and ‘or’” (8/12/2015)

Proposed Code Change: Public Comment Form B27, Section 403.1.7.3 Foundation Elevation (submitted 07/21/2015, page 89). The proposed change read:

~~**R403.1.6 Foundation Elevation.** On graded sites, the top of any exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved drainage device a minimum of 12 inches (305 mm) plus 2 percent. Alternate elevations are permitted subject to the approval of the building official, provided it can be demonstrated that required drainage to the point of discharge and away from the structure is provided at all locations on the site.~~

Summary of Proposed Change: The submitter noted the section was not always practical, and proper drainage could be achieved by a number of methods depending on topography.

Committee Commentary: The issue was first discussed at the April 15, 2015 meeting. The committee discussed the section and determined it was not needed in the code. A motion was made and approved to remove the section. A subsequent comment form was submitted and reviewed by the committee at the August 12, 2015 meeting.

Committee Action Taken: Vote of 6 to 1, with one abstention to “Remove Section 403.1.7.3 Foundation elevation” (04/15/2015); Unanimous vote to “Approve the Public Comment Form B27” (08/12/2015)

Proposed Code Change: Public Comment Form B1, Section 403.1.9.1 Protection of footings, (submitted 04/15/2015, page 91). The proposed change read:

R403.1.9.1 Protection of footings. Trenching for work including but not limited to plumbing, electrical, storm shelters, and pools shall comply with this section. Trenching installed parallel to footings and walls shall not extend into the bearing plane of a footing wall. The upper boundary of the bearing plane is a line that extends downward, at an angle of 45 degrees from horizontal. From the outside bottom edge of the footing or wall.

Summary of Proposed Change: The submitter, one of the committee members, did not include a written justification in the comment form, however did discuss it with the committee when reviewing the comment form.

Committee Commentary: The committee reviewed the proposed change. They discussed if French drains were included; that the requirement was already in the code in Section 2604.4, but directed towards plumbers; that the request came from the City of Norman building official, who wanted the requirement to be in the building portion of the code, and if it would apply to pools, storm shelters and parallel pipes.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B1 as Written” (05/11/2015)

Proposed Code Modification: Review of 2009 Rule Modification: 748:20-5-7(3), Section R406.2 Concrete and masonry foundation waterproofing (page 120).

2009 Modification:

R406.2 Concrete and masonry foundation waterproofing. In areas where a high water table or other severe soil-water conditions are known to exist, exterior foundation walls that retain earth and enclose interior spaces and floors below grade shall be waterproofed from the top of the footing to the finished grade. Walls shall be waterproofed in accordance with one of the following:

1. Two-ply hot-mopped felts.
2. Fifty five pound (25 kg) roll roofing.
3. Six-mil (0.15 mm) polyvinyl chloride.
4. Six-mil (0.15 mm) polyethylene.
5. Forty-mil (1 mm) polymer-modified asphalt.
6. Sixty-mil (1.5 mm) flexible polymer cement.
7. One-eighth inch (3 mm) cement-based, fiber-reinforced waterproof coating.
8. Sixty-mil (0.22 mm) solvent-free liquid-applied synthetic rubber.
9. Bentonite

Exception: Organic-solvent-based products such as hydrocarbons, chlorinated hydrocarbons, ketones and esters shall not be used for ICF walls with expanded polystyrene foam material. Use of plastic roofing cements, acrylic coatings, latex coatings, mortars and parings to seal ICF

walls is permitted. Cold-setting asphalt or hot asphalt shall conform to type C of ASTM D 449. Hot asphalt shall be applied at temperature of less than 200 degrees Fahrenheit (93 degrees Celsius).

All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.

Reason for modification: The 2009 committee identified that the additional option of Bentonite was a product commonly used in Oklahoma for waterproofing that was not prescriptively addressed in the IRC 2009.

Committee Commentary: The committee did not review this rule change.

Committee Action Taken: No action was taken so the modification to section will carry forward and remain in the rules.

Chapter 5 – Floors

Unanimous vote to “Approve Chapter Five as Published” (3/24/2015)

Unanimous vote to “Approve Chapter Five as Modified” (09/09/2015)

Proposed Code Change: Public Comment Forms B4 (withdrawn) and B5, Section R506.2.1 Fills (submitted 05/08/2015 and 05/11/2015, page 149). The proposed change read:

B-5

R506.2.1- Fill. Fill material shall be free of vegetation and foreign material. The fill shall be compacted in 8 to 12 inch lifts to ensure uniform support of the slab, and except where approved, the fill depths shall not exceed ~~24 inches (610 mm)~~ 48 inches (1220 mm) for clean sand or gravel and 8 inches (203 mm) for earth. ~~Where fill depths exceed 48 inches (1220 mm), the slab and stem wall system shall be designed by accepted engineering practice/standards by a design professional.~~

Summary of Proposed Change: The submitter noted, many slabs located in hilly terrain require fill depths exceeding 24" in height. As written, Section R506.2.1 required prior approval by the code official or forced the builder to employ crawl space construction with associated venting problems, etc. Since some jurisdictions did not perform preconstruction plan reviews, the "*where approved*" provision did not always apply. Moreover, the cost of implementing crawl space construction was, in many cases, higher than slab construction with elevated fills.

Committee Commentary: The committee reviewed and discussed both comment forms. The submitter of comment form B5 noted the differences between the two forms was that B5 allowed an option of using sand compacted in eight to twelve inch lifts and B4 used rock and stated the rock was self-compacting as it was installed by the builder. The committee consensus was to utilize comment form B5 but discussed modifying it to remove the last sentence. The submitter of comment form B4 noted he would withdraw his comment form.

Committee Action Taken: Unanimous vote to “Approve the Public Comment Form B5 as modified” (05/11/2015)

Proposed Code Change: Motion in meeting on April 15, 2015, Review of 2009 Rule Modification, and Public Comment Form B28, Section 506.2.3 Vapor retarder (submitted 07/21/2015, page 149). The proposed change read:

2009 Rule Modification and Public Comment Form B26

506.2.3 Vapor retarder. A 6-mil (0.006 inch; 152 micrometers) polyethylene sheeting, other industry accepted vapor retarder products installed per manufacturer specifications or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

Exception: The vapor retarder is not required for the following:

1. Garages, utility buildings and other unheated accessory structures.
2. For unheated storage rooms having an area less than 70 square feet (6.5 square meters) and carports.
3. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
4. Where approved by the building official, based on local site conditions.

Summary of Proposed Change: The submitter of B28 noted the code limited vapor retarders to particular products while there were a number of options available on the market.

Committee Commentary: The section was first discussed in the April 15, 2015 meeting while looking at the modification made to the 2009 adopted code. The committee determined the modification should be brought forward and a unanimous vote to do so was taken. A comment form was submitted with the same modification and was reviewed and voted on at the August 12, 2015 meeting.

Committee Action Taken: Unanimous vote to “Bring forward the 2009 modification” (04/15/2015); Unanimous vote to “Approve Public Comment Form B28” (08/12/2015)

Chapter 6 – Wall Construction

Unanimous vote to “Approve Chapter Six as Published” (3/24/2015)

Unanimous vote to “Approve Chapter Six as Modified” (8/12/2015)

Unanimous vote to “Approve Chapter Six as Modified” (09/09/2015)

Proposed Code Change: Public Comment Form B36, Table 602.3(1) Fastening Schedule (submitted 07/22/2015, page 159). The proposed change read

Table 602.3(1) Fastening Schedule. Add the following to Item 16: Footnote: When 7/16 inch structural sheathing is used with a minimum nailing spacing of 6 inch on the edge and 12 inch in the field, 2 – 3 inch x 0.131 inch nails are acceptable for end nail conditions for the top and bottom plate to stud connection.

Summary of Proposed Change: The submitter noted the form met good engineering practices and properly reflected the top and bottom plate to stud connection typically used in Oklahoma home construction.

Committee Commentary: The committee first discussed the section in the May 11, 2015 meeting. Concern was expressed by one member that the most dramatic change was if the contractor toe-nailed the stud, they would need to use three-inch nails. There was discussion on the different interpretations of the section; modifying the number of nails required; alternative fastener requirements; and different fastener requirements for interior and exterior sheathing, but no action was taken at that meeting. A subsequent comment form B36 was submitted for review.

The committee reviewed comment form B36 at the August 12, 2015 meeting and determined the modifications proposed were sufficient, however one typo was noted, the word “foe” in the comment form should have been “for.”

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B36 as modified” (08/12/2015)

Proposed Code Change: Public Comment Form B37, Table 602.3(3) Requirement for wood structural panel wall sheathing used to resist wind pressures (submitted 07/22/2015, page 163). The proposed change read:

Table 602.3(3) Requirements for wood structural panel wall sheathing used to resist wind pressures^{a,b,c,d}

- a. Panel strength axis parallel or perpendicular to support. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.
- b. Table is based on wind pressure acting toward and away from building surfaces in accordance with Section R301.2. Lateral bracing requirements shall be in accordance with Section R602.10.
- c. Wood structural panels with span ratings of Wall-16 or Wall-24 shall be permitted as an alternate to panels with a 24/0 span rating. Plywood siding rated 16 o.c. or 24 o.c. shall be permitted as an alternate to panels with a 24/16 span rating. Wall-16 and Plywood siding 16 o.c. shall be used with studs spaced not more than 16 inches on center.
- d. The following alternative fasteners will be acceptable with a wind expose category of C or D. 0.099 inch x 2 1/4 inch at 3 inch on edge and 6 inch in the field. Or 0.113inch x 2 3/8 inch at 6 inch on edge and 12 inch in the field

Summary of Proposed Change: The submitter stated these nails and spacing meet the 115 mph wind expose category for a wind expose category of C or D.

Committee Commentary The committee reviewed the proposed change and noted it would allow for alternative fasteners. There was discussion on if the fasteners were sold by local suppliers, that the change would clean up common practice so that it was no longer illegal; and if the nails were typically coil nails.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B37 as Written” (08/12/2015)

Proposed Rule Change: Review of 2009 Rule Modification 748:20-5-9(1), Section 602.4 Interior load-bearing walls (page 166).

2009 Rule Modification:

Section 602.4 Interior load-bearing walls. Interior load-bearing walls shall be constructed, framed and fireblocked as specified for exterior walls. Table R602.3(5) shall be used to establish stud spacing of walls up to 10 feet (3048 mm) high, and Table R602.3.1 shall apply to walls over 10 feet (3048 mm) high.

Summary of Change: The 2009 committee noted the commentary clarified the same information and brought the language from the commentary into the code.

Committee Commentary: The committee reviewed the modification and determined the 2015 language should be kept and the modification deleted. No action was initially taken; however the deletion of the 2009 modification was included as part of the electronic vote to approve the committee presentation.

Committee Action Taken: Vote of 7 to 3 to “Delete the 2009 modification and revert to the 2015 code language” (10/19/2015).

Proposed Code Change: Public Comment Form B38, Section 602.7.5 Supports for headers (submitted 07/22/2015, page 174). The proposed change read:

Section 602.7.5 Supports for headers. Headers shall be supported on each end with one or more jack studs or with approved framing anchors in accordance with Table R602.7(1) or R602.7(2). The full-height stud adjacent to each end of the header shall be end nailed to each end of the header with four- 16d nails (3.5 inches x 0.135 inches). The minimum number of full-height studs at each end of a header shall be in accordance with Table R602.7.5. **Exception: This section only applies for buildings with eave heights above 22 feet.**

Summary of Proposed Change: The submitter stated the section was new to the code. If this section was enforced for a standard 5 foot or 6 foot sliding glass door the builder would need to add 3 full-height studs at each end of the header if the framing was on 16 inch stud spacing. With a total of 6 full-height studs for this condition. He noted the change made structural sense if the structure was greater than two stories tall.

Committee Commentary: The committee reviewed the proposed change and did not have any discussion on it.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B38 as written” (8/12/2015)

Proposed Code Change: Public Comment Form B39, Section 602.10.5 Minimum length of a braced wall panel (submitted 07/22/2015, page 177). The proposed change read:

Section 602.10.5 Minimum length of a braced wall panel. The minimum length of a braced wall panel shall comply with Table R602.10.5. For Methods CS-WSP and CS-SFB, the minimum panel length shall be based on the adjacent clear opening height in accordance with Table R602.10.5 and Figure R602.10.5. Where a panel has an opening on either side of differing heights, the taller opening height shall be used to determine the panel length. For methods CS-PF it is permissible to begin the portal frame at 12.5 feet from the wall line end.

Summary of Proposed Change: The submitter noted this addition allowed a single car garage to be braced by a two car garage CS-PF, allowing the CS-PF to begin 12.5 feet from the edge of the single car garage. He noted the change was consistent with prior codes and the simplified bracing method which most garage designs fall within.

Committee Commentary: The committee first discussed the section at the May 11, 2015 meeting. The committee discussed when the section would have to be used, changing the requirements, changing the wall height and simplifying the section for everyone. A comment form was submitted and reviewed at the 8/12/2015 meeting.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B-39 as written” (8/12/2015)

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-9(2), Section 602.10.6 (in 2009) and Section 602.10.8 (in 2015, page 194), Braced wall panel connections.

2009 Modification:

Section 602.10.6 Braced wall panel connections. Braced wall panels shall be connected to the floor framing or foundations as follows:

1. Where joists are perpendicular to a braced wall panel above or below, a rim joist, band joist or blocking shall be provided along the entire length of the braced wall panel in accordance with Figure R602.10.6(1). Fastening of top and bottom wall plates to framing, rim joist, band joist and/or blocking shall be in accordance with Table R602.3(1).2.
2. Where joists are parallel to a braced wall panel above or below, a rim joist, end joist or other parallel framing member shall be provided directly above and below the braced wall panel in accordance with Figure R602.10.6(2). Where a parallel framing member cannot be located directly above and below the panel, full-depth blocking at 16-inch (406 mm) spacing shall be provided between the parallel framing members to each side of the braced wall panel in accordance with Figure 602.10.6(2). Fastening of blocking and wall plates shall be in accordance with Table R602.3(1) and Figure R602.10.6(2).
3. Connections of braced wall panels to concrete or masonry shall be in accordance with Section R403.1.6.
4. Wood sole plates of braced wall panels at building interiors on monolithic slabs may be anchored using connectors(s) with a shear capacity of 2300 pounds and a tensile capacity of 800 pounds over a maximum span of 6 feet.

Reason for modification: The 2009 committee established minimum values to allow for the use of alternative anchorage systems due to the difficulty of installation of concreted imbedded J-bolts in the interior of slabs. They noted placement of the imbedded J-bolt would need to be within 1 inch of tolerance for a 3 1/2 inch plate; which was almost unachievable without the use of other anchorage systems. They noted the amendment allowed for code officials and builders to use alternative methods that met the prescribed strengths noted above when using other fastening systems. They noted there was a lack of logic in anchorage systems used for concrete slabs and those of wood framed foundations systems such as crawl spaces and second and third floors.

Committee Commentary: The committee did not review the 2009 rule modification.

Committee Action Taken: No action was taken, so the modification will be carried forward in the rules. Please note, the heading change and table citations will be updated to match the 2015 code headers.

Proposed Code Change: Public Comment Form B41, Section 602.12 Simplified wall bracing (submitted 07/22/2015, page 200). The proposed change read:

Section 602.12. Simplified wall bracing. Buildings meeting all of the conditions listed below shall be permitted to be braced in accordance with this section as an alternate to the requirements in Section R602.10. The entire building shall be braced in accordance with this section; the use of other bracing provisions of Section R602.10, except as specified herein, shall not be permitted.

1. There shall be not more than three stories above the top of a concrete or masonry foundation or basement wall. Permanent wood foundations shall not be permitted.
2. Floors shall not cantilever more than 24 inches (607 mm) beyond the foundation or bearing wall below.
3. Wall height shall not be greater than ~~40~~ 12 feet (~~3048~~ 3658 mm).
4. The building shall have a roof eave-to-ridge height of ~~45~~ 20 feet (~~4572~~ 6096 mm) or less.
5. Exterior walls shall have gypsum board with a minimum thickness of ½ inch (12.7 mm) installed on the interior side fastened in accordance with Table R702.3.5.
6. The structure shall be located where the ultimate design wind speed is less than or equal to ~~130~~ 115 mph (~~58~~ 51.4 m/s), and the exposure category is B or C.
7. The structure shall be located in Seismic Design Category A, B, or C for detached one- and two-family dwellings or Seismic Design Category A or B for townhouses.
8. Cripple walls shall not be permitted in three-story buildings.

Summary of Proposed Change: The submitter noted in Oklahoma the design wind speed is 115 mph, not 130 mph. This change is also linked to the change to Section 602.12.2 Sheathing materials, changing 3/8” sheathing to 7/16”. These two items allow for these increases.

Committee Commentary: The committee reviewed the proposed change and did not have any comments.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B41 as Written” (08/12/2015)

Proposed Code Change: Public Comment Form B40, Section 602.12.2 Sheathing materials (submitted 07/22/2015, page 200). The proposed change read:

Section 602.12.2 Sheathing materials. The following sheathing materials installed on the exterior side of exterior walls shall be used to construct a bracing unit as defined in Section R602.12.3. Mixing materials is prohibited.

1. Wood structural panels with a minimum thickness of $\frac{3}{8}$ $\frac{7}{16}$ inch (~~9.5~~ 11.11 mm) fastened in accordance with Table R602.3(3).
2. Structural fiberboard sheathing with a minimum thickness of $\frac{1}{2}$ inch (12.7 mm) fastened in accordance with Table R602.3(1).

Summary of Proposed Change: The submitter noted in Oklahoma the typical wood structural panel is $\frac{7}{16}$ inch. This change allows the change to 602.12 increasing the allowable wall height and roof eave-to-ridge height increase for simplified wall bracing.

Committee Commentary: The committee reviewed the change. They commented the code currently stated three eighths inch plywood for structural paneling and the code would go to seven sixteenths inch, and it was just another option for use but then the simplified method could not be used.

Committee Action Taken: Unanimous vote to “Approve as Written”(08/12/2015)

Chapter 7 – Wall Covering

Unanimous vote to “Approve Chapter Seven as Published” (3/24/2015)

Unanimous vote to “Approve Chapter Seven as Modified” (09/09/2015)

Proposed Code Change: Review of 2009 Rule Modification 748:20-5-10 and Public Comment Form B19, Section 703.4 Flashing (submitted 06/26/2015, page 349). The proposed change read:

2009 Rule Modification

Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. 6-mil polyethylene sheeting is an approved corrosion-resistant flashing when not exposed to UV rays. Self-adhered membranes use as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage.
2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.

6. At wall or roof intersections
7. At built-in gutters.

Reason for modification: The 2009 committee noted in rural areas where there had been no residential construction code, finding "approval" for a product may be difficult. The committee was trying to provide guidance for one approved flashing product for walls. The committee noted the intent was to allow for the 6-mil polyethylene to be used behind the finished facade materials of a building where metal flashings would be unable to be used and create continuity of the flashing system. They noted a product that could be utilized to create a path to the exterior of the building, if required. The committee noted the modification did not allow for the use of the product on roof and wall intersections or other areas that were exposed to UV light.

B19

Section 703.4 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. 6-mil polyethylene sheathing is an approved corrosion-resistant flashing when not exposed to UV rays. Self-adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier, barrier complying with Section 703.2 for subsequent drainage. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:

1.1 The fenestration manufacturer's installation and flashing instructions, or for applications not addressed in the fenestration manufacturer's instructions, in accordance with the flashing manufacturer's instructions. Where flashing instructions or details are not provided flashing to be installed per 1.2, 1.3, 1.4 or pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides.

1.2 In accordance with the flashing design or method of a registered design professional.

1.3 In accordance with other approved methods or standard industry practices.

1.4 Flashings above doors are not required where it is unlikely to have rain or other moisture accumulation occur above the door.

2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.
3. Under and at the ends of masonry, wood or metal copings and sills.
4. Continuously above all projecting wood trim.
5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.
6. At wall and roof intersections.
7. At built-in gutters.

Summary of Proposed Change: The submitter noted the committee wanted to incorporate several historically approved practices regarding flashing into the code. There are many effective methods to properly flash around doors and windows and the current wording in the code does not address many of the door and window products used locally. These amendments allow for currently used materials and industry practices used in single family construction in Oklahoma.

Committee Commentary: The committee discussed B19 noting it added 6-mil polyethylene sheathing as an approved corrosion resistant flashing when not exposed to UV rays and it added more verbiage to Section 703.4. They noted it was done to address other design methods to protect doors from the elements.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B19 as Written”
(07/08/2015)

Proposed Code Change: Public Comment Form B20, Figure 703.8 Typical Masonry Veneer Wall Details (submitted 06/26/2015, page 353). The proposed change read:

Figure 703.8. Typical Masonry Veneer Wall Details -Add new footnotes f. and g. to Figure R703.8. The proposed change read as follows:

f. Flashing to be done per section R703.4 or in accordance with a design from a registered design professional or in accordance with other approved methods or standard industry practices.

g. Flashing depicted under sill and above windows are not required with windows that have nailing flanges for their primary attachment. Flange type windows should be counter flashed into the weather resistant barrier or installed per R703.4.

Footnote should be placed after the title - FIGURE R703.8 TYPICAL MASONRY WALL DETAILS^{e,f,g}

Summary of Proposed Change: The submitter noted the committee wanted to incorporate several historically approved practices regarding flashing into the code. The codes details depict windows not typically seen in this market in single family construction. Most windows in single family construction having nailing flanges which can be flashed over to accomplish the requirements of section R703.4. In order to give builders and installers a better idea of the requirements the committee felt the amendment was appropriate.

Committee Commentary: The committee reviewed the comment form and felt it was a good modification.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B20 as Written” (07/08/2015)

Proposed Code Change: Public Comment Form B21, Figure 703.8.2.1, Exterior Masonry Veneer Support by Steel Angles and Figure 703.8.2.2, Exterior Masonry Veneer Support by Roof Members (submitted 06/26/2015, page 356). The proposed addition requested the same footnote to be added to both figures and read:

Figure 703.8.2.1 Exterior Masonry Veneer Support by Steel Angles and Figure 703.8.2.2 Exterior Masonry Veneer Support by Roof Members

a. Flashing to be done per section R703.4 or in accordance with a design from a registered design professional or in accordance with other approved methods or standard industry practices.

Footnote should be placed after “FIGURE R703.8.2.1 EXTERIOR MASONRY VENEER SUPPORT BY STEEL ANGLES”^a and Footnote should be placed after “FIGURE R703.8.2.2 EXTERIOR MASONRY VENEER SUPPORT BY ROOF MEMBERS”^a

Summary of Proposed Change: The submitter stated the committee wanted to incorporate several historically approved practices regarding flashing into the code. The flashing details as depicted in the details are not readily constructible methods. The verbiage in the code text and detail only allowed for the exact methodology shown in the details while current flashing methods are as effective and more practical installations.

Committee Commentary: The committee reviewed the comment form. There was concern the form was a duplicate of B20, however the submitter noted it was not - it addressed different figures, and explained the form gave builders more flexibility to build.

Committee Action Taken: Unanimous vote to “Approve as Written” (07/08/2015)

Proposed Code Change: Public Comment Form B62, Section 703.8.3.1, Allowable span (Submitted 9/8/2015, page 357). The proposed change read:

R703.8.3.1 Allowable span. The allowable span shall not exceed the values set forth in Table R703.8.3.1. Additionally, a 3" x 3" x 3/16" steel angle 6'-0" long may be used to support 3 vertical feet of masonry veneer, and a 3" x 3" x 3/16" steel angle 5'-0" long may be used to support 4'-3" vertical feet of masonry veneer.

Summary of Proposed Change: The submitter stated the change would provide guidance to builders using this typical (for Oklahoma) lintel.

Committee Commentary: The committee reviewed the proposed form. One of the members noted they ran an analysis and it would work fine.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B62 as Written” (9/9/2015)

Chapter 8 – Roof Ceiling Construction

Unanimous vote to “Approve Chapter Eight as Published” (3/24/2015)

Unanimous vote to “Approve Chapter Eight as Modified” (09/09/2015)

Proposed Code Change: Review of Rule Modification 748:20-5-11(1) and Public Comment Form B34, Section 801.3 Roof drainage (submitted 07/22/2015, page 365). The proposed change read:

2009 Modification and Public Comment Form B34

~~**R801.3 Roof drainage.** In areas where expansive or collapsible soils are known to exist, all dwellings shall have a controlled method of water disposal from roofs that will collect and discharge roof drainage to the ground surface at least 5 feet (1524 mm) from foundation walls or to an approved drainage system.~~

Summary of Proposed Change: The 2009 committee felt like surface drainage was addressed in Section R401.3 Drainage with an established method for how surface water is to be directed away from a structure by grading with minimum slopes and swales to divert water away from the structure. The committee felt the section was poorly written and prone to misinterpretation, especially the portion stating "where expansive or collapsible soils are known to exist". They noted that language could apply to all of the State of Oklahoma or it may only include areas with soils that show a high plasticity index. They further noted that information was not "common" knowledge throughout the State and felt Section 401.3 adequately handled the issue. The submitter of B34 noted, the reason for the change was as detailed with the 2009 IRC amendment modifications by the OUBCC.

Committee Commentary: The committee first reviewed the section in the July 8, 2015 meeting. They determined the modification was still applicable and made a motion to bring forward the 2009 modification. A subsequent comment form was then submitted and voted on at a following meeting.

Committee Action Taken: Unanimous vote to “Bring forward the 2009 rule modification” (7/8/2015); Unanimous vote to “Approve Public Comment Form B34 as Written” (08/12/2015)

Proposed Code Change: Review of Rule 748:20-5-11(2) and Public Comment Forms B32 and B32 (Revised), Section R802.3 Framing details (submitted 07/22/2015, page 366).

2009 Rule Modification:

Section 802.3 Framing details. Rafters shall be framed to ridge board or to each other with a gusset plate as a tie. Ridge board shall be at least 1-inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter. At all valleys and hips there shall be a valley or hip rafter not less than 2-inch (51 mm) nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Definition of a brace includes 1) a triangular configuration of framing members with a horizontal tie and rafter members, 2) king post or similar. Where the roof pitch is less than three units vertical in 12 units horizontal (25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams. **Exception:** The use of a "Blind Valley", also known as a "Farmers Valley" or "California Valley" will be allowed. In this type of valley the main roof is framed as usual, it may or may not be sheathed, and the intersecting roof is framed on top of the main roof. The two valley plates or sleeps lie on top of the main roof rafters or sheathing and provide a nailing base for the jack rafters and ridge board of the intersecting roof.

Summary of Change: The 2009 committee noted the intent of the modification was to clarify how a brace can be constructed. They noted the code was ambiguous in this area and just says "members shall be braced to interior partition or be designed to carry and distribute loads at that point". They noted that left code officials and builders in a predicament of trying to determine whether where

and how loads were being distributed and trying to support in a vertical manner which was sometimes impossible depending on the design of the building. The committee noted adding the "Blind Valley" method would address situations where due to the design of the building, bracing was not achievable. They noted, this was a common practice in the industry and the same application was used to fill in truss roof construction where two perpendicular planes of roof tie to one another.

B32

R802.3 Framing details. Rafters shall be framed to ridge board or to each other with a gusset plate as a tie. Ridge board shall be at least 1-inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter. Where a 1-inch nominal thickness ridge is used all rafters shall be framed not more than 1.5- inches offset from each other at the ridge board or if no ridge is used they should be framed directly opposite from each other with a gusset plate as a tie, when a nominal 2-inch rafter is used they may be offset with no limitations. At all valleys and hips there shall be a valley or hip rafter not less than 2-inch (51 mm) nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. ~~Where the roof pitch is less than three units vertical in 12 units horizontal (25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.~~

Definition of brace includes:

1. a triangular configuration of framing members with a horizontal tie and rafter members,
2. king post or similar. Where the roof pitch is less than three units vertical in 12 units horizontal (25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.

Exception: This exception helps address many situations where due to the design, building bracing is not achievable. This exception shall read: The use of a "Blind Valley", also known as a "Farmers Valley" or "California Valley" will be allowed. In this type of valley the main roof is framed as usual, it may or may not be sheathed, and the intersecting roof is framed on top of the main roof. The two valley plates or sleeps lie on top of the main roof rafters or sheathing and provide a nailing base for the jack rafters and ridge board of the intersecting roof.

B32 Revised- Revise approved comment form B-32 to reflect the following changes.

R802.3 Framing Details. Rafters shall be framed to a ridge board or to each other with a gusset plate as a tie. Ridge board shall be either at least 1-inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter or at least 2-inch nominal thickness and one size greater than the rafters attached to it.

Where a 1- inch nominal thickness ridge is used all rafters shall be framed not more than 1.5- inches offset from each other at the ridge board or if no ridge is used they should be framed directly opposite from each other with a gusset plate as a tie, when a nominal 2-inch rafter is used they may be offset with no limitations. At all valleys and hips there shall be a valley or hip rafter not less than 2-inch (51 mm) nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or beam or be designed to carry and distribute the specific load at that point.

Definition of brace includes:

1. a triangular configuration of framing members with a horizontal tie and rafter members,
2. king post or similar. Where the roof pitch is less than three units vertical in 12 units horizontal

(25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.

Exception: This exception helps address many situations where due to the design, building bracing is not achievable. This exception shall read: The use of a "Blind Valley", also known as a "Farmers Valley" or "California Valley" will be allowed. In this type of valley the main roof is framed as usual, it may or may not be sheathed, and the intersecting roof is framed on top of the main roof. The two valley plates or sleeps lie on top of the main roof rafters or sheathing and provide a nailing base for the jack rafters and ridge board of the intersecting roof.

Summary of Proposed Change: The submitter of the original B32 form stated: This section of the code has been modified for several reasons. The 2015 IRC required that all rafters be offset from each other by no more than 1.5". As almost all framing involves at least 2" nominal members there has been no historical evidence that ridges are deflecting with rafters being offset. The code is being amended to allow the practice of rafters being offset from each other as quite often rafters on one side of the ridge are at 24" spacing and the other side might be at 16" spacing.

Additionally the code has not historically provided for a definition of a brace. With a myriad of methods to properly brace roof framing members the committee felt this clarification might eliminate some ambiguous interpretations in the building community with what is considered proper bracing.

The IRC has also not provided or acknowledged framing methods which have been historically constructed in Oklahoma and many surrounding states. The practice of framing what is often referred to as a Blind Valley, Farmers Valley, or California Valley has been accepted by most all jurisdictions. The amendment provides basis for builders and jurisdictions to continue to accept the practice.

The same submitter sent in a revised B32 due to discussion during the initial review. He stated: In discussions regarding roof framing it was brought up in committee that at times the ends of the common rafters were a greater depth than the ridge they attached to because of the higher sloped roof pitch cuts. With these connections still having plenty of bearing surface and nominal 2x ridges being used on these connections it was agreed that so long as the ridge was of a greater nominal depth than the attaching rafter small projections by the common rafter should not be problematic.

Committee Commentary: When the committee first reviewed the section, they noted the only thing changed was the inch and a half offset. There was discussion on the definition of a “brace.” Concern was expressed that the modifications made to the section could be a problem later in the chapter. The committee determined not to bring forward the entire 2009 Rule Modification, however they did chose to vote to bring forward the definition of a “brace” from that modification. A comment form was created to modify the section, but there was concern with the wording and that it would cause issues. The comment form was tabled and the submitter noted he would revise the form. The revised form was reviewed and approved at the September 9, 2015 meeting.

Committee Action Taken: Motion to bring forward the definition of a “brace” from the 2009 rule modification (7/8/2015); Vote to “Approve the Revised Public Comment Form B32 as Written” (9/9/2015)

Proposed Code Change: Public Comment Form B22, Section 802.3.1 Ceiling joist and rafter connections (submitted 07/15/2015, page 366). The proposed change read:

R802.3.1 Ceiling joist and rafter connections. Ceiling joists and rafters shall be nailed to each other every 4 feet (1219mm) on center in accordance with Table R802.5.1(9), and the rafter shall be nailed to the top wall plate in accordance with Table R602.3(1). Ceiling joists shall be continuous or securely joined in accordance with Table R802.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to the rafters.

Where ceiling joists are not connected to the rafters at the top wall plate, joists connected higher in the attic shall be installed as rafters ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed every 4 feet (1219 mm) on center. Rafter ties shall be a minimum of 2 inches by 4 inches (51 mm by 102 mm) (nominal), installed in accordance with the connection requirements in Table R802.5.1(9), or connections of equivalent capacities shall be provided. Where ceiling joists or rafter ties are not provided, the ridge formed by these rafters shall be supported by a wall, beam or girder designed constructed in accordance with ~~accepted engineering practice~~ this code.

Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the attic space in accordance with Table R602.3(1).

Collar ties shall be ~~not less than~~ a minimum of 1 inch by 4 inches (25mm by 102mm) (nominal), spaced not more than 4 feet (1219mm) on center.

Summary of Proposed Change: The submitter noted the Technical Committee agreed these changes would make the code reflect current framing practices.

Committee Commentary: The committee reviewed the public comment form and there were no changes or modifications.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B22 as Written” (08/12/2015)

Summary of Proposed Change: Public Comment Forms B63 and B66, Section 802.5 Allowable rafter spans (submitted 9/8/2015, page 367). The proposed changes read:

B63

802.5 Allowable rafter spans. Spans for rafters shall be in accordance with Tables R802.5.1(1) through R802.5.1(8). For other grades and species and for other loading conditions, refer to the AWC STJR. The span of each rafter shall be measured along the horizontal projection of the rafter. Exception: Collar Ties. Installation of collar ties to reduce the span of rafters is permitted as shown in Figure R802.5.1. Collar ties shall be sized not less than the required size of the rafters they are connected to.

Summary of Proposed Change: The submitter stated the change was to provide guidance to Oklahoma builders using this typical (for Oklahoma) framing system.

B66

802.5 Allowable rafter spans. Spans for rafters shall be in accordance with Tables R802.5.1(1) through R802.5.1(8). For other grades and species and for other loading conditions, refer to the AWC STJR. The span of each rafter shall be measured along the horizontal projection of the rafter. The tabulated rafter spans in Tables R802.5.1(1) through R802.5.1(8) assume ceiling joists are located at the bottom of the attic space or some other method of resisting the outward push of the rafters on the bearing walls, such as rafter ties, is provided at that location. Where ceiling joists or rafter ties are located higher in the attic space, the rafter spans in these tables shall be multiplied by the following rafter reduction factors: Where ceiling joists or rafter ties are located

at one third the span of the rafter the adjustment factor is 0.67, at one quarter the span of the rafter the adjustment factor is 0.76, at one fifth the span of the rafter the adjustment factor is 0.83, at one sixth the span of the rafter the adjustment factor is 0.90 and at two fifteenth of the rafter or less, there is no need for adjusting the rafter capacity.

Summary of Change: The submitter noted the change was to provide guidance to Oklahoma builders framing rafters above the top sill of the wall system. This is a typical framing method to increase the height of the room. It also happens to increase the loading on the rafter. The tables point this out in footnote a, but it has not been widely or properly used. The description above, converting the vertical measuring into horizontal span lengths is much simpler for an inspector to check.

Committee Commentary: The committee discussed the proposed changes, noting the language for B66 was from a footnote, brought into the code to give inspectors an alternate way of looking at the allowable rafter spans and that the change would alter the way the rafters were measured. They discussed if the collar tie would be the point of support or a point of inflection on the binding of the rafter and if it should be an exception.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B63 as written”; Unanimous vote to “Approve Public Comment Form B66 as written” (9/9/2015)

Proposed Code Change: Review of rule modification 748:20-5-11(3) and Public Comment Form B33, Section 802.5.1 Purlins (submitted 07/22/2015, page 367). The proposed changes read:

2009 Rule Modification

Installation of purlins to reduce the span of rafters is permitted as shown in Figure R802.5.1 Purlins shall be sized no less than the required size of the rafters that they support. Purlins shall be continuous and shall be supported by 2-inch by 4-inch (51 mm by 102 mm) braces installed to bearing walls at a slope not less than 45 degrees from the horizontal. The braces shall be spaced not more than 4 feet (1219 mm) on center and the unbraced length of braces shall not exceed 8 feet (2438 mm). Braces may be spaced not more than 6 feet (1829 mm) on center if 1) the purlin brace is 2-inch by 6-inch (51 mm by 153 mm); 2) purlins shall be sized one nominal size larger than the rafter they support; and 3) Unbraced length of braces shall not exceed 8 feet (2438 mm).

Summary of Change: The 2009 committee proposed the modification as an alternative method for how purlins were braced. They noted in many cases due design and interior partition wall layouts, the increased spacing of the braces in a purlin system may be required. They noted the exception allowed for the spacing of bracing supporting the purlin to be increased from 4 feet to 6 feet if the three conditions were met.

B33

Section 802.5.1– Purlins. Installation of purlins to reduce the span of rafters is permitted as shown in Figure 802.5.1. Purlins shall be sized not less than the required size of the rafters that they support. Purlins shall be continuous and shall be supported by 2-inch by 4-inch (51 mm by 102 mm) braces installed to bearing walls at a slope not less than 45 degrees (0.79 rad) from the horizontal. The braces shall be spaced not more than 4 feet (1219 mm) on center and the

unbraced length of braces shall not exceed 8 feet (2438 mm). **Exception:** Braces may be spaced not more than 6 feet (1829 mm) on center if: 1. the purlin brace is 2-inch by 6-inch (51 mm by 153 mm) 2. Purlins shall be sized one nominal size larger than the rafter they support, and 3. unbraced length of braces shall not exceed 8 feet (2438 mm).

Summary of Proposed Change: The submitter noted the IRC only made provisions for purlins to be supported at 4' on center. Adding with modern home designs that had wider spans and more open floor plans made it a challenging requirement. The exception allowed for spacing of supports at 6 foot on center so long as certain framing details are followed.

Committee Commentary: The committee first reviewed the section at the July 8, 2015 meeting. They noted there was additional language in the 2015 code that included braces installed to bearing walls at a slope no less than 45 degrees from horizontal. The committee voted to bring forward the 2009 modification. A subsequent comment form was then submitted, reviewed and approved at the August 12, 2015 meeting.

Committee Action Taken: Unanimous vote “Bring forward the 2009 Code Modification” (7/8/2015); Unanimous vote to “Approve Public Comment Form B33 as Written” (08/12/2015)

Proposed Code Change: Public Comment Form B52, Section R802.7.1.2, Ceiling joist taper cut. (submitted 9/4/15, page 388). The proposed change read:

R802.7.1.2 Ceiling joist taper cut. Taper cuts at the ends of the ceiling joist shall not exceed one-fourth the depth of the member in accordance with Figure R802.7.1.2. **Exception:** For ceiling joist not carrying more than 25 lb. tributary load (Limited Attic Storage) then taper cut at end of joist maybe able to be increased to D/2.

Summary of Proposed Change: The submitter stated the code was prescriptive to address a potential 3-story structure with joist supporting all levels so taper cut had to be severely limited. On single story structures that have 2 x 10 or 2 x 12 joists with less than 8/12 pitches this requirement would be unachievable. So putting a maximum tributary load on joist system and increasing taper cut end of joist is reasonable and practical way to address this issue.

Committee Commentary: The committee discussed the proposed change, noting historically speaking, builders did not build the types of homes the section was addressing.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B52 as Written” (9/9/2015)

Chapter 9 – Roof Assemblies

Unanimous vote to “Approve Chapter Nine as Modified” (09/09/2015)

Proposed Code Change: Public Comment Forms B15, B23, B29, and B30, Section R905.2.1 Sheathing Requirements (submitted 06/24/2015, 07/15/2015, 07/21/2015 and 07/21/2015). The proposed changes read:

B15

R905.2.1 Sheathing Requirements. Asphalt shingles shall be fastened to solidly sheathed decks in accordance to Section R803 or to the asphalt shingles manufacturer’s installation instructions.

Summary of Proposed Change: The submitter stated there seemed to be confusion with the section, some think the word sheathed means a structural panel. Sheathed is not defined in the code so one must refer to Webster Dictionary (a tight fitting covering). This interpretation is being spread throughout the state indicating that sawed lumber decking does not conform to code and during reroofs all sawed lumber decking is required to be replaced with a structural panel. Section R803 allows sawed lumber as a roof decking or roof sheathing.

B-23

905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks. Plank decking wider than 6 inches is not considered a solid deck and does not meet manufacturer's specifications.

Summary of Proposed Change: The submitter noted the use of plank decking required detailed supervision to insure that it did not have gapes that were too wide or narrow. He noted the gaps often prevented the roofer from installing the shingle in the correct nail line specified by the manufacturer. He noted sheet decking took that out of the equation. He added wrapping and cupping of plank decking was frequently a source of leakage and the practice of plank decking was nearly obsolete.

B-29

R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks consisting of the minimum of 3/8 inch or 7/16 inch plywood or OSB decking. Existing structures with skip decking/resawn 1x6 or 1x8 are required to be covered with the aforementioned plywood or OSB.

Summary of Proposed Change: The submitter noted the practice of 1x6 or 1x8 decking is almost obsolete and requested the change so as to not void warranties from shingle manufacturers if there were leaks due to the buckling issues associated with the practice.

B-30

R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks.

The submitter did not submit any proposed language, rather asked for clarification language to be added to the section to define “Plank Decking, Spaced Decking, and Skip Decking” and that the language include anything “wider than 6 inches is not considered a solid decking which fails to meet manufacture’s specifications.” He also requested language to say “any dimensional lumber not installed using the tongue and groove application or with gaps greater than 1/8 inch would fail to meet the manufacture's specifications.”

Summary of Proposed Change. The submitter noted the application of asphalt shingles regardless of the manufacturer is consistent with the process. Nailed with the “nail strip” meeting the manufactures specifications. There was little to no difference in the manufacturing process of Laminated Shingles” between the top five manufactures, GAF, Certain Teed, Owens Corning, Malarkey, and IKO represented more than 80% of the total US business. He noted there was one consistent element in the application process between all five companies, was “OSB or Plywood or nominal tongue and groove lumber”, indicating 4x8 fully sheathed decking or non-gapped tongue and groove lumber. He noted the expansion and contraction of spaced decking within the seasons continually put homeowners at risk for warping and cupping. This roof system failure created an unprecedented number of roofing issues and claims against manufactures, contractors and insurance companies.

Committee Commentary: The committee reviewed public comment form B15 at the July 8, 2015 meeting. They discussed the change would direct the user back to Section 803 for decking requirements; the industry issues with one by six (1 x 6) and one by eight (1 x 8) decking; a GAF advisory bulletin regarding wood planking and if used it would not void warranties, and how jurisdictions could interpret the code differently.

The committee reviewed comment forms B23, B29 and B30 at the August 12, 2015 meeting, noting all three comment forms addressed the same section. They discussed shingle manufacturer installation requirements; intent of B23's change was to prevent overlay of OSB over sawed lumber decking; securing the deck nailing correctly; and the modifications proposed in the other two comment forms.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B15” (7/8/2015); Unanimous vote to “Deny Public Comment Form B23”; Unanimous vote to “Deny Public Comment Form B29”; and Unanimous Vote to “Deny Public Comment Form B30” (8/12/2015)

Proposed Code Change: Public Comment Form B47, Section 905.2.8.5 Drip edge (submitted 8/21/15, page 418). The proposed change read:

R905.2.8.5 Drip edge. A drip edge shall be provided at eaves and raked edges of shingle roofs. Adjacent segments of drip edge shall be overlapped not less than 2 inches (51 mm). Drip edges shall extend not less than ¼ inch (6.4 mm) below the roof sheathing and extend up back onto the roof deck not less than 2 inches (51 mm). Drip edges shall be mechanically fastened to the roof deck at not more than 12 inches (305 mm) o.c. with fasteners as specified in Section R905.2.5. Underlayment shall be installed over the drip edge along eaves and under the underlayment along rake edges. **Exception:** If a nominal 1" x 2" shingle mold is used, attached to the fascia and the starter course of shingles is extended a minimum of ¼" and not more than 1" then a metal drip edge is not required.

Summary of Proposed Change: The submitter note it was common across the state and country for shingle molds and starter shingles to be used instead of a metal drip edge. Flashing of the fascia board is achieved by felt paper being installed to the outer edge of the roof and further by extending the starter course of shingles an additional ¼" to ¾" from the fascia which keeps the water running off the fascia board which is the intent of installing a metal drip edge. This method also addresses aesthetic issues with metal drip edges which often deform due to thermal expansion creating a wavy look on the edge of the roof.

Committee Commentary: The committee reviewed the comment form and felt it was a good idea. They did note a typo using the word "Mould" instead of "Mold."

Committee Action Taken: Unanimous vote to "Approve Public Comment Form B47 as Modified to correct the wording typo" (9/9/15)

Proposed Code Change: Public Comment Forms B17 (withdrawn) and B45, Section 908.3.1.1 Roof re-cover (submitted 6/25/15 and 8/18/15, page 426). The proposed change read:

908.3.1.1 A roof re-cover shall not be permitted where any of the following conditions occur:

1. Where the existing roof or roof covering is water soaked or has deteriorated to the point that the existing roof or roof covering is not adequate as a base for additional roofing.
2. Where the existing roof covering is slate, clay , cement or asbestos-cement tile.
3. Where the existing roof has two or more applications of any type of roof covering.
4. Where the existing roof has one or more applications of asphalt shingles additional applications of asphalt shingles shall not be permitted.

Summary of Proposed Change: The submitter noted the proposal was a result of a discussion during the August 12, 2015 meeting.

Committee Commentary: The committee discussed the section at the August 12, 2015 meeting when language was proposed with form B17 that was withdrawn. Comment form B45 was the revised version. One of the committee members stated he had contacted several shingle manufacturers and they did not recommend laying down three tabs, but it was allowed by them.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B45 as Written” (9/9/2015)

Chapter 10 – Chimneys and Fireplaces

Unanimous vote to “Approve Chapter Ten as Modified” (09/09/2015)

Proposed Code Change: Public Comment Form B46, Section 1005.7 Factory-built chimney offsets (submitted 8/18/2015, page 436). The proposed change read:

Section 1005.7 Factory-built chimney offsets. Where a factory-built chimney assembly incorporates offsets, no part of the chimney shall be at an angle of more than 30 degrees (0.52 rad) from vertical at any point in the assembly and the chimney assembly shall not include more than four elbows. **Exception:** Where chimneys are part of a listed and labeled Factory Built Fireplace they can be installed in accordance with the fireplace and chimney manufacturer’s installation instructions.

Summary of Proposed Change: The submitter noted it appeared the intent of the section was to regulate factory-built chimneys being installed on masonry site built fireplaces. But the wording was ambiguous enough to suggest it would apply to manufactured fireplaces which quite often have offsets of more than 30 degrees.

Committee Commentary: The committee reviewed the form and felt it was a good idea.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B46 as Written” (9/9/2015)

Chapter 11 – Energy Efficiency
Unanimous vote to “Approve Chapter Eleven as Modified” (09/09/2015)

Proposed Code Change: Public Comment Form B35, Chapter 11 Energy Efficiency (submitted 07/22/2015, page 437). The proposed change read:

Chapter 11 Energy Efficiency – Move to an appendix.

Summary of Proposed Change: Move the entire chapter to an appendix and leave the adoption of the chapter to the local Authority Having Jurisdiction.

Committee Commentary: The committee reviewed the comment form and asked if the submitter was present to speak to the committee. The submitter was not present. There were several other comment forms that dealt with Chapter Eleven and the committee determined the chapter should stay in the code.

Committee Action Taken: Unanimous vote to “ Deny the Public Comment Form B35” (08/12/2015)

Proposed Code Change: Public Comment Forms B42 and B43, Chapter 11 Energy Efficiency (submitted 08/03/2015 and 08/06/2015, page 437). The two proposals were extensive modifications of Chapter Eleven. *Please see attached public comment forms for complete details.*

B42:

Delete all of Chapter Eleven from the 2015 International Residential Code® and replace with language from the 2009 and 2012 Editions of the International Residential Code®.

Summary of Proposed Change (B42): The submitter noted his proposal would use some language from the 2009 and 2012 Chapter Eleven, Energy Efficiency. The submitter felt the code needed to be better defined and more stringent to be effective for Oklahoma. Oklahoma citizens deserve an efficient built home.

B43:

Delete Chapter Eleven from the 2015 IRC in its entirety. Replace with the 2009 Chapter Eleven language with some modifications. Additionally, as part of this proposal were changes to Chapter 2 definitions and Chapter 3 to provide for continuity between the 2009 IRC language and the 2015 IRC.

(Note: Modifications in B43 address 2009 Rule Changes 748:20-5-12(1), Section N1101.9 Certificate; 748:20-5-12(2), Section N1102.4.3 Fireplaces; 748:20-5-12(4) Section N1103.2.2 Sealing; and 748:20-5-12(5) Section N1103.8.3 Pool covers).

Summary of Proposed Change (B43): The submitter noted the amendment effectively brought forward the 2009 IRC Chapter Eleven on Energy Efficiency and in some instances strengthened it. He stated the 2009 IRC Chapter Eleven has proven to be a very effective, quality and prescriptive code for Oklahoma. Many of the requirements in the 2015 IRC will be real cost additions with limited proven evidence for reducing energy in our climate zone.

Committee Commentary: The submitter of B43 addressed the committee. He stated his form brought forward all of the modifications made by the 2009 committee with a few exceptions. He noted his proposal provides for a more prescriptive code and would align the Chapter with current construction materials and methods in use and his changes would not add a lot of cost to the builder or the consumer. The submitter of B42 addressed the committee and explained some of his key points were to eliminate a visual inspection, increase duct tightness testing (in a year from now) and testing for air tightness in two years (blower door test). He stated he combined the 2009 and 2012 language. He added a recent newspaper article which indicated OG&E would be increasing rates from 15 to 19 percent over the next few years and his changes would help combat those costs. He touched on a need to make statewide enforcement of the requirements a priority.

The committee discussed the proposed changes with the submitters and several others in the audience. They discussed several items within the chapter, including Duct Testing; can lights, CFLs and florescent bulbs; the ability to enforce the code in small jurisdictions; wording changes; simulations used to come up with projected savings; HERS scores and ratings; the use of liquid mastic; cost increase to implement the changes; protection of the consumer; and focusing on the elements of installation instead of the maintenance of the home. There was further discussion on B43 at the September meeting.

Committee Action Taken:

August 12, 2015 meeting: A vote to “Approve Public Comment Form B42 as the baseline to start the Chapter Eleven discussion” failed due to a lack of a second. A motion was made to “Deny Public Comment Form B42 as the baseline to start the discussion of Chapter Eleven” but a vote was not taken. A motion was made to “Approve Public Comment Form B43 as written” was made but no vote was taken. A unanimous vote was made to “Approve Public Comment Form B43 as the baseline to start discussion of Chapter Eleven”; a second Unanimous vote to “Approve Public Comment Form B43 was made to “Approve Public Comment Form B43 as the base line to start from on discussing chapter eleven with the possibility of modification to the comment form”

September 9, 2015 meeting: Unanimous vote to “Use Public Comment Form B43 as the version the Committee should review”, Unanimous vote to “Approve Public Comment Form B43”

NOTE: Both comment forms B42 and B43 sought to replace the current chapter with the previous 2009 version. For rules, the 2015 chapter numbering (which was very different from the 2009 version), needed to be kept in line so there is a marked up version of Chapter Eleven with all the modifications approved in B43 made in legislative format in the appropriate sections in the 2015 version is behind this presentation, as well as comment forms B43 and B42.

Proposed Code Change: Public Comment Form B53, Chapter Eleven, Energy Efficiency (submitted 9/4/2015, page 437). The proposed change read:

Chapter 11 Energy Efficiency: Retain all language IRC 2015 Chapter Eleven, review sections of chapter individually and revise as deemed necessary.

Summary of Proposed Change: The submitter stated the Residential Electrical Technical Committee felt that PCF43 with its amendments did not address all the sections of IRC 2015 Chapter Eleven adequately. Second, the committee felt that deleting Chapter Eleven was not the correct action, that Chapter Eleven text should be revised, deleted, added to, or deleted with substitution. Once the IRC 2015 Chapter was deleted, could it be replaced? Placed in “Reserve” would retain the IRC 2015 Chapter.

Committee Commentary: The committee reviewed the comment form noting that comment form B43 had already been voted on and questioning if that vote needed to be rescinded before addressing comment form B53. They discussed the versions submitted to be reviewed and the conversion of the changes into rules format. Further, the 2015 IRC Chapter Eleven had already been reviewed and discussed at great length during the August 12, 2015 meeting.

Committee Action Taken: Vote of 8 to 1 to “Deny Public Comment Form B53” (9/9/2015)

Proposed Code Change: Public Comment Form B57, Section N1101.6, Defined Terms, High-efficacy lamps (submitted 9/4/2015, page 438). The proposed change read:

HIGH-EFFICACY LAMPS. Compact fluorescent lamps, Light Emitting Diode (L.E.D.) type lamps, T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of:

1. 60 lumens per watt for lamps over 40 watts;
2. 50 lumens per watt for lamps over 15 watts to 40 watts;
3. 40 lumens per watt for lamps 15 watts or less.

Summary of Proposed Change: The submitter noted the change was provided to give code language more clarity, without referring to items 1 through 3. PCF-E12 was submitted to the Electrical Technical Committee. The proposed change was discussed and passed unanimously. The wording submitted was exactly the same as PCF E8. LED lamps were not readily available to consumers when the 2009 IRC was published. Dimmable compact fluorescent lamps were not readily available either. Both are now readily available at electrical wholesale, home improvement stores and the internet.

Committee Commentary: The committee reviewed the proposed change. They discussed with the submitter that the location of the change should be in Chapter Two of the code with the rest of the definitions, because with the version adopted by the Committee, there were no longer any definitions listed in Chapter Eleven, they were collated with all definitions in Chapter Two.

Committee Action Taken: Vote of 8 to 1 to “Approve Public Comment Form B57 as modified by changing the reference to the Chapter Two definition” (9/9/2015)

Proposed Code Change: Public Comment Form B48, Table 1102.1.2 Insulation and Fenestration Requirements by Component^a (submitted 9/1/2015, page 456). The proposed change read:

TABLE N1102.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a

Add footnote L to state:

l. If foundation/slab insulation is used and slab ledge exists, ½” insulation in Vertical position is allowed as thermal break between slab edge and foundation wall so that slab can still bear on horizontal ledge.

Summary of Proposed Change: The submitter stated due to foundation designs that are non monolithic often have a slab ledge of an 1-1/2” which is formed on the stem wall for slab to bear and often steel is extended from the Stem wall into slab. Meeting the R-5 requirement of slab insulation (1”) would not leave sufficient bearing width. This will have minimal impact on reducing that 3-1/2” area around the foundation by only having R-3.

Committee Commentary: The committee reviewed the form and thought it was a good idea.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B48 as Written” (9/9/2015)

Proposed Code Change: Public Comment Form B68 (B43 Revision 1), Table N1102.1.2 Insulation and Fenestration Requirements by Component^a (submitted 9/8/2015, page 456). The proposed change read:

TABLE N1102.1 INSULATION AND FENSTRATION REQUIREMENTS BY COMPONENT^a

Modify language on the approved comment form B43. Add footnote “m” behind the word Component in the table Heading as follows: “...by COMPONENT^{a,m}”

On Table N1102.1 add a new footnote M to state:

m. In addition to the requirements in Table N1102.1 ~~two~~ one of the following improvements are required:

1. Fenestration U Factors to be .35
2. Wood Frame Wall R-Value to be R15
3. Slab R-Value and Depth to be 5,2 ft.
4. Ceiling R-Value to be R38
5. ~~In section N1104.1 a minimum of 75 percent of the lamps permanently installed luminaries shall be high-efficacy lamps.~~

Exception: If duct testing is performed and passed in accordance with N1103.2.2 by either the Post-construction test or Rough-in test no further upgrade is required from the Values in Table N1102.1.

Summary of Proposed Change: The submitter noted after modeling and evaluating the approved Public Comment Form B43, it was determined that the proposal did not quite meet the equivalency with the 2009 IECC. Being proposed in this amendment is a flexible method builders can model their homes while not readily effecting the cost and design. Some of the items for consideration were increased U-Values for windows from .40 to .35. .35 windows or better are already on the market and have been for awhile. Window manufacturers have largely responded to the national codes and are providing products in excess of this standard. R-15 wall insulation is often achieved by installations where the walls have blown-in insulation. In the case of batt insulation most all manufacturers do produce these batts and they can be used in a 3.5” wall. In markets that require R-15 the product is readily available. Slab insulation provides a good form of insulation creating a thermal break associate with exterior stem and slabs and is a cost effective measure to install. All of these options provide a code that meets or very slightly exceeds equivalency with the 2009 IECC but it must be noted that the biggest impact, in efficiency, comes from duct testing. Duct testing is twice as effective as any of the other two options put together. That is why the exception is written as is.

Committee Commentary: The form was initially labeled as B-43 revised, but at the request of the Chairman, the form was renumbered to B68. The committee reviewed the comment form and noted the requirements would make the code more stringent than the current code. They determined a section reference should be added to item to reference N1102.2.8 for installation details.

Committee Action Taken: Unanimous vote to “Approve comment form B68 as modified by adding to Item 3 a reference N1102.2.8 for installation details” (9/9/2015); Unanimous vote to “Modify B68 by changing the word “two” to “one” and striking through Item 5 due to the approval of Public Comment Form B56” (9/9/2015)

Proposed Code Change: Public Comment Form B49, Table N1102.4.1.1 (402.4.1.1) Air Barrier and Insulation Installation (submitted 9/1/2015, page 460). The proposed change read:

TABLE N1102.4.1.1 (402.4.1.1) AIR BARRIER AND INSULATION INSTALLATION

Component	Criteria
Walls	Corners and headers are insulated <u>where space is available</u> . Junction of foundation and sill plate is sealed.

Summary of proposed change: The submitter noted using insulation was an impractical requirement if framing with 2 x 4 walls if space between header components are filled with OSB or Plywood for structural and dimension purposes. This can be achieved if walls are built from 2 x 6 having a 2-1/2” gap between header members. There are provisions in the code to allow for single header components that can be insulated if structurally appropriate.

Committee Commentary: The committee discussed the change would bring some clarity as to how and when a builder was to insulate corners and headers; ambiguousness of the current code language; and how important it was for the headers to be insulated.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B49 as modified by adding the wording ‘where space is available’” (9/9/2015)

Proposed Code Change: Public Comment Form B51, Section 1102.4.1.2 Testing (submitted 9/4/2015, page 459). The proposed change read:

Revise Public Comment Form B43 as follows:

N1102.4.2.2 Visual inspection option. The items listed in the Residential Data Collection Checklist and Examples (Appendix ?) applicable to the method of construction, are field verified. Where required by the code official, or where the code official does not have adequate resources available, an approved third party, independent from the installer of the insulation, shall inspect the air barrier and insulation. The third party shall be a home energy rater certified by the Residential Energy Service Network (RESNET) or the Building Performance Institute (BPI). Where building sites are located over 100 miles from the nearest third party energy rater, the builder (remodeler or contractor) has the option to verify compliance using the Checklist. In all cases, the completed Residential Data Collection Checklist shall be submitted to the code official for final approval.

Summary of Proposed Change: The submitter sent in several pages of documentation to justify the proposed change and noted for an explanation, to see the documentation attached to the form.

Committee Commentary: The committee discussed the proposal noting it would provide a checklist and require an independent review. Concern was express regarding jurisdictional manpower and modifying the proposed language by using proprietary documents.

Committee Action Taken: Vote of 2 to 9 to “Approve Public Comment Form B51 as written”; Unanimous vote to “Modify Public Comment Form B43, Section N1102.4.2.2 by moving the comma from behind insulation to after contractor” (9/9/2015)

Proposed Code Change: Public Comment Form B50, N1103.3.2 (R403.3.2) Sealing (submitted 9/1/2015, page 461). The proposed change read:

N1103.3.2 (R403.3.2) Sealing (Mandatory). ~~Ducts, air handlers, and filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with either the International Mechanical Code or Section M1601.4.1 of this code, as applicable. For Duct systems with sheet metal plenums, Y's and supply boots only liquid applied sealants complying with 181 BM (Mastic or similar) shall be used to seal inner liners and start collars to plenum and any other seams in system. Duct tightness shall be verified by either of the following:~~ **Exceptions:**

- ~~1. Air impermeable spray foam products shall be permitted to be applied without additional joint seals.~~
- ~~2. For ducts having a static pressure classification of less than 2 inches of water column (500 Pa) additional closure systems shall not be required for continuously welded joints and seams, and locking type joints and seams of other than the snap lock and button lock types.~~
1. Post-construction test: Leakage to outdoors shall be less than or equal to 8 cfm (3.78 L/s) per 100 square feet (9.29 square meters) of conditional floor area or a total leakage less than or equal to 12 cfm (5.66 L/s) per 100 square feet (9.29 square meters) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler end closure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 6 cfm (2.83 L/s) per 100 square feet (9.29 square meters) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the roughed in enclosure. All register boots shall be taped or otherwise sealed during the test, total leakage shall be less than or equal to 4 cfm (1.89 L/s) per 100 square feet (9.29 square meters) of conditioned floor area. **Exception:** Duct tightness test is not required if the air handler and all ducts are located within conditioned space.

Summary of Proposed Change: The submitter stated the text was being added to require a liquid sealant of metal connections of the supply and return duct distribution system because it is the only effective and long lasting way to ensure the HVAC system duct leakage can be reduced to acceptable levels to comply with the 2009 IRC Chapter 11. It has been found that duct tapes over time lose their adhesiveness in the attic space where exposed to high temperatures and are difficult to get wrapped properly with the inner liner of the insulated ducts. Cost impacts are minimal if compared to the proper installation using duct tape products and proper execution is rarely achieved in use of those products and life expectancy of duct tapes is not acceptable

Committee Commentary: The committee discussed the proposed change. During the discussion they determined the language needed to be slightly modified.

COMMITTEE Action Taken: Unanimous vote to “Approve Public Comment Form B50 as Modified by adding the wording ‘comply with 181 BM’ after the word ‘sealants’” (9/9/2015)

COMMISSION ACTION TAKEN: The Commission voted at the October 20, 2015 meeting to “Accept public comment form B50, adding the wording “or equivalent method” behind the wording “(mastic or similar)”; adding visual inspection as an option on Number three as shown in the FGMP presentation; removing the exception on item number two and listing it under all three options; striking the word “either” and adding the word “one” in its place and including the wording “UL” before the wording “181 BM.”

Proposed Code Change: Public Comment Form B54, Section 1103.5 Service hot water systems (submitted 9/4/2015, page 462). The proposed change read:

Retain Sections: N1103.5; N1103.5.1; N1103.5.1.1, N1103.5.1.2, and N1103.5.2

N1103.5 (R403.5) Service Circulation service hot water systems from 1103.5.1 to 1103.5.2.

Energy conservation measures for circulation service potable hot water system shall be in accordance with Sections N1103.5.1 and N1103.5.2.

N1103.5.1 (R403.5.1) Heated water circulation and temperature maintenance systems

(Mandatory). Heated water circulation systems shall be in accordance with Section R1103.5.1.1. Heat trace temperature maintenance systems shall be in accordance with Section R1103.5.1.2. Automatic controls, temperature sensors and pumps shall be accessible. Manual controls shall be readily accessible.

N1103.5.1.1 (R403.5.1.1.) Circulation systems Pumps. Heated water circulation systems shall be provided with a circulation pump. The system return pipe shall be dedicated return pipe or a cold water supply pipe. Gravity and thermo-syphon circulation systems shall be prohibited. Controls for circulating hot water system pumps shall start the pump based on identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.

N1103.5.1.2 (R403.5.1.2) Heat trace systems. Electric heat trace systems shall comply with IEEE 515.1 or UL 515. Controls for such systems shall automatically adjust the energy input to the heat tracing to maintain the desired water temperature in the piping accordance with the times when heated water is used in the occupancy.

N1103.5.2 (R403.5.2) Demand recirculation systems. A water distribution system having one or more recirculation pumps that pump water from a heated water supply pipe back to the heated water

source through a cold water supply pipe shall be a demand recirculation water system. Pumps shall have controls that comply with both of the following:

1. The control shall start the pump upon receiving a signal from the action of a user of a fixture or appliance, sensing the presence of a user of a fixture or sensing the flow of hot or tempered water to a fixture fitting or appliance.
2. The control shall limit the temperature of the water entering the cold water piping to 104 degrees Fahrenheit (40 degrees Celsius)

Summary of Proposed Change: The submitter stated: Updated from Oklahoma adopted IRC-2009, the IRC Electrical Technical Committee unanimously accepts these sections as published in the IRC-2015. The ETC determined through formal discussion and action, these sections need to be retained or otherwise accepted as published in the 2015 IRC. These sections address electrical controls for equipment and wiring methods that would have a direct effect in energy consumption and savings in the cost of energy. Any additional cost for the installation should be offset by the savings of energy consumption.

Committee Commentary: The committee reviewed the comment forms, noting there was some language that did not exist in the 2009 code; the requirements would have minimal impact on new an existing construction and these systems were used sparingly in the current market; the main impact is it would add a shut-off device to the circulation pump if it was not in use; and modifying the language in the header.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B54 with the addition of the wording ‘Circulating potable hot water system from 1103.5.1 to 1103.5.2’ to the front of the section title ‘Circulating service hot water system’.” (9/9/15)

Commission Action Taken: The Commission voted at the October 20, 2015 meeting to accept public comment form B54 as modified by underlining “circulation service potable” in the second line of N1103.5; Changing in Section N1103.5.3 $\frac{3}{4}$ nominal to 1 inch nominal pipe; and required an R3 Value instead of an R2 value in Section N1103.4.

Proposed Code Change: Review of Rule Modification 748:20-5-12(3), Section N1103.1.1, Programmable thermostat (page 461).

2009 Modification read as follows:

~~Section N1103.1.1 Programmable thermostat. Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain zone temperatures down to 55 degrees Fahrenheit (13 degrees Celsius) or up to 85 degrees Fahrenheit (29 degrees Celsius). The thermostat shall initially be programmed with a heating temperature set point no higher than 70 degrees Fahrenheit (21 degrees Celsius) and a cooling temperature set point no lower than 78 degrees Fahrenheit (26 degrees Celsius).~~

Reason for Modification: The 2009 committee felt a programmable thermostat was something that could be added by the homeowner at any time and shouldn't be a requirement. They noted that they can actually have a negative savings especially in the summer as a truly efficient system sized correctly for the home can only recover two degrees an hour. They recommended keeping the structure at one temperature that was maintained at that setting consistently for the best energy efficiency.

Committee Commentary: The committee reviewed the 2009 modification and discussed the improper use of thermostats; the customers choice to have one installed; if it was an industry requirement to educate the public on the proper cost efficient way to operate the thermostat, indoor air quality, and other technologies available.

Committee Action Taken: Vote of 3 to 6 to “Bring forward the 2009 rule modification which struck the requirement for programmable thermostats” (08/12/2015)

(Note: The 2009 modification will be stricken based on the vote above)

Proposed Code Change: Motion made during meeting on Section N1104.1 (R404.1), Electrical Lighting equipment (Mandatory) (page 463). The proposed change read:

N1104.1 (R404.1) Lighting equipment (Mandatory). Not less than 75 percent of the lamps in permanently installed ~~lighting fixtures~~ luminaires shall be high-efficacy lamps or not less than 75 percent of the permanently installed ~~lighting fixtures~~ luminaires shall contain only high-efficacy lamps. **Exception:** Low-voltage lighting.

Summary of Proposed Change: To Align the 2015 IRC® Code language with the NEC® code language.

Committee Commentary: During the discussion over Chapter Eleven, Mr. Ross Barrick introduced himself as the Commission Liaison for the Electrical Technical Committee. He noted he wanted to address Section N1104.1. He stated the electrical committee voted on some wording changes. He noted in the section the words “lighting fixtures” was changed to “luminaires.” He noted the language was changed in either 2005 or 2008 NEC so the committee would be bringing the code into alignment with the NEC. Mr. Barrick stated in regards to Mr. Clark’s comment form over the exception for can lights and recess lights. He stated he agreed with Mr. Morgan, the expectation was not needed due to the different options that were now available. He stated with using the CFL’s and the LED’s there was more light output with less heat.

Committee Action Taken: Unanimous vote to “Approve the Motion to change the wording lighting fixtures to luminaires throughout Chapter Eleven” (08/12/2015)

Proposed Code Change: Review of Rule Modification 748:20-5-12(6), Motion made during meeting and Public Comment Form B56 Section N1104.1 Lighting equipment (Mandatory) (submitted 9/4/2015, page 463):

2009 Modification:

Section N1104.1 Lighting equipment. A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps. ~~**Exception:** Can or recessed lights are exempt from this section of the code.~~

Summary of 2009 Change: The 2009 modification was made because the committee noted no one made a high-efficiency lamp with reasonable durability and lighting characteristics, for example dimmable with reasonable longevity.

B56

N1104.1 Lighting equipment (Mandatory). Not less than 75 percent of the lamps in permanently installed lighting fixtures luminaries shall be high-efficacy lamps or not less than 75 percent of the permanently installed lighting fixtures luminaries shall contain only high-efficacy lamps. **Exception:** Low-voltage lighting.

Summary of Proposed Change: The submitter noted the Residential Electrical Technical Committee discussed and unanimously approved PCF E11, an exact duplicate of this comment form. The term lighting fixture was replaced with “luminaire” in the 2008 NFPA-70, National Electrical Code, the source of IRC-2015 Chapters 34 through 43, addressed in the introduction to Chapter 34. The ETC discussed the percentage ratio factor, Public Law 110-140 – Dec. 19, 2007 US Energy Independence and Security Act of 2007, lamp manufacturer's product data, and current types and styles of lamps available to the consumer. The ETC concluded that the 75 percent

requirement appears to be in alignment with US EISA-20-7, the requirements manufacturers are meeting, the numerous energy savings programs electric utilities and the lamps that are readily available to consumers.

Committee Commentary: The committee discussed the removal of the exception for can lighting from the requirements. They noted removing the exception would mean can lights could now be used as the market was changing and the installation of any incandescent lights would be outlawed and it would really self-correct. The committee discussed B56 at the September 9, 2015 meeting. They discussed how the market had now responded to having lots of options for high efficacy lighting and the products were not as cost prohibitive as they were in the past.

Committee Action Taken: Unanimous vote to “Remove the exception for can lights proposed by the electrical committee” (08/12/2015); Unanimous vote to “Approve Public Comment Form B56 as Written” (9/9/2015)

Proposed Code Change: Public Comment Form B58, Section N1107.4 Compliance (submitted 9/4/2015, page 469). The proposed change read:

Retain Section N1107.4 (R501.4) Compliance.

N1107.4 (R501.4) Compliance. Alterations, repairs, additions, and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions, and changes of occupancy or relation respectively in this code, and the International Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code and NFPA 70.

Summary of Proposed Change: The submitter stated: Updated form Oklahoma adopted IRC-2009, the IRC-Electrical Technical Committee unanimously accepts this section as published in the 2015 IRC. The ETC determined, through formal discussion and action, this section needs to be retained or otherwise accepted as published in the IRC-2015. This section recognizes NFPA 70 National Electrical Code and lists the additional ICC codes.

Committee Commentary: The committee discussed that leaving the section stricken as previously approved would not change the code books listed in Chapter One and did not have any impact on the referenced code books.

Committee Action Taken: Unanimous vote to “Deny Public Comment Form B58” (9/9/2015)

Proposed Code Change: Public Comment Form B59, Section 1108.1.1.4 (R502.1.1.4) Lighting (submitted 9/4/2015, page 469). The proposed change read:

Retain Section N1108.1.1.4 (R502.1.1.4) Lighting.

N1108.1.1.4 (R502.1.14) Lighting. New lighting systems that are part of the addition shall comply with Section N1104.1.

Summary of Proposed Change: The submitter stated: Updated from Oklahoma adopted IRC-2009, the IRC-Electrical Technical Committee unanimously accepts this section as published in the 2015 IRC. The ETC determined, through formal discussion and action, this section needs to be retained or otherwise accepted as published in the IRC-2015. This section recognizes IRC-2015 Chapter Eleven, Section N1104.1 Lighting equipment requirements for high-efficacy.

Committee Commentary: The committee reviewed the form and felt the issue had been previously addressed.

Committee Action Taken: Unanimous vote to “Deny Public Comment Form B59” (9/9/2015)

Proposed Code Change: Public Comment Form B60, Section 1109.1.1.4 (R503.1.4) Lighting (submitted 9/4/2015, page 470). The proposed change read:

Retain Section N1109.1.1.4 (R503.1.4) Lighting.

N1109.1.1.4 (R503.1.4) Lighting. New lighting systems that are part of the alteration shall comply with Section N1104.1. **Exception:** Alterations that replace less than 50 percent of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.

Summary of Proposed Change: The submitter stated: Updated from Oklahoma adopted IRC-2009, the IRC-Electrical Technical Committee unanimously accepts this section as published in the 2015 IRC. The ETC determined, through formal discussion and action, this section needs to be retained or otherwise accepted as published in the IRC-2015. This section recognizes IRC-2015 Chapter Eleven, Section N1104.1 Lighting equipment requirements for high-efficacy. This section also provides an exception for alterations with replacement luminaires.

Committee Commentary: The committee reviewed the form, discussed alterations, and determined that the form should not be approved. The committee felt the code and the adopted amendments adequately addressed the items.

Committee Action Taken: Unanimous vote to “Deny Public Comment Form B60” (9/9/2015)

Proposed Code Change: Public Comment Form B61, Section 1110.2 (R504.2) Application (submitted 9/4/2015, page 470). The proposed change read:

Retain Section N1110.2 (R504.2) Application

N1110.2 (R504.2) Application. For the purposes of this code, the following shall be considered repairs:

1. Glass-only replacement in an existing sash and frame.
2. Roof repairs.
3. Repairs where only the bulb and/or ballast within the existing luminaires in a space are replaced provided that the replacement does not increase the installed interior lighting power.

Summary of Proposed Change: The submitter stated: Updated from Oklahoma adopted IRC-2009, the IRC-Electrical Technical Committee unanimously accepts this section as published in the 2015 IRC. The ETC determined, through formal discussion and action, this section needs to be retained or otherwise accepted as published in the IRC-2015. This section provides a definition for “repairs” as relating to repairs to luminaires and their energy efficiency addressed in IRC-2015, Chapter Eleven, Section N1104.1.

Committee Commentary: The committee reviewed the form and felt the issue had been previously addressed. The committee felt the code and adopted amendments adequately addressed the items.

Committee Action Taken: Unanimous vote to “Deny Public Comment Form B61” (9/9/2015)

Proposed Code Change: Motion from March 9, 2015 meeting and Public Comment Forms B2 and B14, Section R326 Swimming Pools, Spas and Hot Tubs (submitted 04/27/2015 and 05/27/2015). The proposed changes read:

As part of the proposed modifications to Chapter Eleven, the submitter of B43 made the following changes to Chapter Two. For the details on comment form B43, please see information on the Summary of Change and Committee Discussion on tiles 88 to 90 of this presentation.

2009 Appendix G (to be added to the newly created Appendix in the 2015 code for Swimming Pools, Spas and Hot Tubs:

Appendix V

SWIMMING POOLS, SPAS AND HOT TUBS

(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)

Section AV101 General

AV101.1 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- or two-family dwelling.

AV101.2 Pools in flood hazard areas. Pools that are located in flood hazard areas established by Table 301.2(1), including above-ground pools, on-ground pools, and in-ground pools that involve placement of fill, shall comply with Sections AV101.2.1 or AV101.2.2. Exception: Pools located in riverine flood hazard areas which are outside of designated floodways.

AV101.2.1. Pools located in designated floodways. Where pools are located in designated floodways, documentation shall be submitted to the building official, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction.

AV101.2.2. Pools located where floodways have not been designated. Where pools are located where design flood elevations are specified by floodways have not been designated the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

SECTION AG102 DEFINITIONS

AV102. 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 24 inches (610 mm deep). This includes in-ground, above-ground, and on-ground swimming pools, hot tubs and spas.

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

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

SECTION AV103 SWIMMING POOLS

AV103.1. In-ground pools. In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AV108.

AV103.2 Above-ground and on-ground pools. Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AV108.

AV103.3 Pools in flood hazard areas. In flood hazard areas established by Table R301.2(1), pools in costal high hazard areas shall be designed and constructed in conformance with ASCE 24.

SECTION AV104 SPAS AND HOT TUBS

AV104.1 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 AV108.

AV104.2 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 AV108.

SECTION AV105 BARRIER REQUIREMENTS

AV105.1 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.

AV105.2 Outdoor swimming pool. An outdoor swimming pool, including an in-ground, above-ground, or on-ground pool, hot tub or spa shall comply with one of 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 (51mm) 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 above-ground 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).

2. Openings in the barrier shall not allow passage of a 4-inch-diameter 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 ¾ inches (44 mm), in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ 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 the 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 ¾ inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be 2 ¼ inch (57 mm) square unless the fence has slats fastened at the top or bottom which reduce the openings to not more than 1 ¾ inches (44 mm).

Where the barrier is composed of diagonal members, such as lattice fence, the maximum opening formed by the diagonal members shall not be more than 1 ¾ inches (44 mm).

8 Access gates shall comply with the requirements of Section AV105.2 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 3 inches (76 mm) below the top of the gate; and

8.2 The gate and barrier shall have no opening larger than ½ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

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 F 1346; or

9.2 Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present are opened. The alarms shall be listed and labeled in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches (1372mm) above the threshold of the door; or

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 as long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 as described above.

10. Where an above-ground 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;
- 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 AV105.2, 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 (102 mm) sphere.

AV105.3 Indoor swimming pool. Wall surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

AV105.4 Prohibited locations. Barriers shall be located to prohibit permanent structures, equipment or similar objects from being used to climb them.

AV105.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1345, as listed in Section AG107, shall be exempt from the provisions of this appendix.

SECTION AV106 ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS.

AV106.1 General. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

SECTION AV107 ABBREVIATIONS

AV107.1 GENERAL.

ANSI – American National Standards Institute, 11 West 42nd Street, New York, NY 10036

APSP – Association of Pool and Spa Professionals

NSPI – National Spa and Pool Institute, 2111 Eisenhower Ave, Alexandria, VA 22314

ASCE – American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, VA 98411-0700

ASTM – ASTM International, 1000 Barr Harbor Drive, West Conshohocken, PA 19428

UL – Underwriters Laboratories, Inc., 333 Pfingsten Rd., Northbrook, IL 60062-2096

SECTION AV108 STANDARDS

AV108.1 General.

ANSI/NSPI-3-99 Standard for Permanently Installed Residential Spas..... AV104.1

ANSI/NSPI-4-99 Standard for Above-ground/On-ground Residential Swimming Pools... AV103.2

ANSI/NSPI-5-2003 Standard for Residential In-ground Swimming Pools.....AV103.1

ANSI/NSPI-6-99 Standard for Residential Portable Spas.....AV104.2

ANSI/APSP-7-06 Standard for Suction Entrapment avoidance in Swimming Pools, Wading Pools,
Spas, Hot Tubs and Catch Basins.....AV106.1

ASCE/SEI-24-05 Flood Resistant Design and Construction.....AV103.3

ASTM F-1346-91 (2003) Performance Specification for Safety Covers and Labeling

Requirements for All Covers for Swimming Pools, Spas and Hot Tubs.....AG105.2, AV105.5

UL 2017-2000 Standard for General-purpose Signaling Devices and Systems – with Revisions
through June 2004.....AV105.1

Proposed Code Change: Public Comment Form B67 Appendix W, Residential Tornado Provisions (submitted 9/8/2015). The proposed change read:

APPENDIX W RESIDENTIAL TORNADO PROVISIONS

(The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.)

SECTION AW101 SCOPE

AW101.1 General. These provisions shall be applicable for new construction where residential tornado provisions are required. This appendix provides prescriptive based requirements for construction of a residential structure meeting or exceeding a 135 mph wind event corresponding to an EF-2 tornado rating. The single most important objective in protecting a structure against high wind is achieving a continuous load path from the roof to the foundation. Based on the findings of this study and failures associated with various construction types, a group of 11 building practices (each associated with a different aspect of the structure) are summarized in this section.

AW101.2 Application. In addition to the general administration requirements of Chapter 1, the administrative provisions of this chapters shall also apply to the building Planning and construction requirements of Chapters 1 through 10.

AW101.3 Wind design criteria. Modifying R301.2.1 Buildings and portions thereof shall be constructed in accordance with the wind provisions of this code using the ultimate design wind speed 135 mph.

AW101.4 Lumber sheathing. Only OSB or plywood sheathing is permitted. Dimensional lumber sheathing may not be used. Allowable spans and attachment for lumber used as roof or exterior wall sheathing shall conform to the following:

AW101.4.1 16” Framing. For rafter, stud, or beam spacing of 16 inches the minimum nominal sheathing panel thickness will be 7/16”, the minimum wood structural panel span rating 24/16, to be nailed with 8d ring shank (0.131” x 2.5”) or 10d (0.148” x 3”) nails on 4” on center along the edges and 6” on center in the field.

AW101.4.2 24” Framing. For rafter, stud or beam spacing of 24 inches the minimum nominal sheathing panel thickness will be 23/32”, the minimum wood structural panel span rating 24/16 to be nailed with 8d ring shank (0.131” x 2.5”) or 10d (0.148” x 3”) nails on 4” on center along the edges and 4” on center in the field.

AW101.5 Ceiling joist and rafter connections. In addition to the provisions of Chapter 8, ceiling joists and rafters shall be nailed to each other in a manner to achieve a connection that can transfer a 500 lb. force in both compression and tension across the connection.

AW101.6 Rafter uplift resistance. Individual rafters shall be attached to supporting wall assemblies by connections capable of resisting uplift forces of 500 lb..

AW101.7 Gable end walls. Gable end walls will be sheathed per AW101.4 and will have connections to both a.) supporting wall assemblies and b.) roof framing by connections capable of resisting uplift forces of 500 lb. in both compression and tension across the connection.

AW101.8 Exterior wall bracing. Only continuous sheathing methods per R602.10.4.2 may be

used to brace exterior walls. Frame garage doors using the sheathed portal frame method CS-PF. Lumber sheathing and attachment per AF101.4. Any form of intermittent bracing is not allowed on an exterior wall. Intermittent bracing may only be used for interior braced wall lines.

AW101.9 Multi story construction. Nail upper and lower story wall sheathing to common rim board in order to maintain continuity between stories.

AW101.10 Wood floor above crawl space construction. Extend structural wood sheathing to lap the sill plate. Nail to sill plate using a 4” on center along the edges. Nail to rim board if present with 8d ring shank (0.131” x 2.5”) or 10d (0.148” x 3”) nails on 4” on center along both the top and bottom edges of the rim board.

AW101.11 Garage doors. Garage doors are to be wind rated to 135 mph.

Summary of Change: The submitter noted the proposal was to allow communities in Oklahoma the option of adopting a wind code that addressed Tornados through EF2 (up to 135 mph), which accounts for 90 to 95 percent of tornados and up to 80 to 85 percent of the damage due to an EF5 tornado. (Reference: May 20, 2013 NSF report by Graettinger and Ramseyer et.al.)

Committee Commentary: The committee reviewed the comment form and felt it was a good proposal.

Committee Action Taken: Unanimous vote to “Approve Public Comment Form B67 as Written” (9/9/2015)

Commission Action Taken: The Commission voted at the October 20, 2015 meeting to approve the presentation as presented except for the specific modifications made by the Commission.