BOARD OF APPEALS January 7, 2016

Members Present: Mr. Harold Thompsen

Others Present: Ron Strand, Melissa Gaulrapp, Ryan Erickson, Clinton Hildebrand, Luke Olson, and Gretchen Morlan.

Item 1: Mr. Thompsen noted that business would not be conducted at this hearing as a quorum was not present. Mr. Strand agreed that a public hearing could still be held. Mr. Thompsen stated that unfinished business would be postponed until the February 4, 2016 meeting. Mr. Strand introduced Mr. Olson, Mr. Hildebrand and Ms. Morlan to the Board.

Item 2: Unfinished Business: Table 301.2(1) Topographical Effect and Special Wind Region. POSTPONED UNTIL THE FEBRUARY 4, 2016 HEARING

Item 3 – Review of changes to the 2015 International Residential Code, Chapters 4-10

Mr. Hildebrand reviewed changes to Chapter 4 of the 2015 International Residential Code.

Chapter 4

Section R401.1 Application. Staff recommends keeping existing local AMENDMENT.

Section R401.3 Drainage. Staff recommends keeping existing local AMENDMENT.

Section R402.2.1 Added "Materials for Concrete". Section R608.5.1 is referenced.

Section R403.1.1 New tables have been added showing the minimum width and thickness for concrete footings. Footing for fireplaces shall be in accordance with Section R1001.2.

 Table R403.1(1) a new table was added: "Concrete footings for Light-Frame Construction".

 Table R403.1(2) a new table was added: "Concrete footings for Light-Frame Construction with Brick Veneer".

Table R403.1(3) a new table was added: "Concrete footings with Cast-In-Place Concrete or Fully Grouted Masonry Wall Construction".

Figure R403.1(1) *"Plain Concrete Footings with Masonry and Concrete Stem Walls in Seismic Design Categories: A, B, and C".* Retitled and additional text and section references have been added.

Figure R403.1.3 New figure: "*Reinforced Concrete Footings and Masonry and Concrete Stem Walls in SDC D, D1 and D2.*" This figure is similar to Figure R403.1(1) as the placement of required reinforcement is identified.

Section R403.1.4.1 Frost protection. Staff recommends keeping the existing local **AMENDMENT** removing references to the size of buildings.

Section R403.1.6 Foundation anchorage. Exception 1 in the 2012 code has been integrated into the section. Exceptions 2 & 3 have been renumbered 1 & 2.

Table R403.3(1) Minimum Footing Depth & Insulation Requirements for Frost-Protected Footings in Heated Buildings.Text: "Expanded Polystyrene" has been added to footnote E.

Table R403.4 Minimum Depth of Crushed Stone Footings. Added footnote A: *"Linear interpolation of stone depth is permitted"*. The first 2 columns of the table were labeled for clarity.

Section R404.1.1 Design Required. This section has been relocated. (Section R404.1.3 2012).

Section R404.1.2 Design of Masonry Foundation Walls. The reference to NCMA TR68-A was deleted.

Section R404.1.2 Masonry Foundation Walls. Deleted reference to Sections R607 & R608.

Sections R404.1.2.1 – R404.1.3.4 have been renumbered.

 Table R404.1.1(1) Plain Masonry Foundation Walls. Added clarification between "hollow" and "solid" units.

 Table R404.1.1(2) 8" Masonry Foundation Walls with Reinforcing. Reference to Seismic Design Category was added.

 Table R404.1.1(3) 10" Masonry Foundation Walls with Reinforcing. Reference to Seismic Design Category was added.

 Table R404.1.1(4) 12" Masonry Foundation Walls with Reinforcing. Reference to Seismic Design Category was added.

Section R404.1.3.2 Reinforcement for Foundation Walls. Staff recommends keeping existing local AMENDMENT.

Section R404.1.4.1 Masonry Foundation Walls Requirement 4. Vertical rebar has changed from #3 to #4. Reference to Seismic Design Category has been deleted from last paragraph.

Section R404.4 Retaining Walls. Increased unbalanced backfill height to 48". Added text: "*This section shall not apply to foundation walls supporting buildings*".

Section R405.2.3 Drainage System. Staff recommends keeping existing local AMENDMENT.

Mr. Olson introduced Chapter's 5 through 10 of the 2015 International Residential Code. He noted that there have been numerous verbiage changes and updated standards throughout the chapters.

Chapter 5

Section R501.3 Moved Fire protection of floors from Section R501.3 to its new location: Section R302.13.

Section R502.1 Changed section title from *"Identification"* to *"General"*. Replaced term "Load Bearing Dimension Lumber" with "Sawn Lumber".

Section R502.1.1.1 Added ".1" to the section number.

Section R502.1.2 Moved "Blocking and Subflooring" from Section R502.1.2 to its new location: Section R502.2.2.

Section R502.1.2 Retitled: "Prefabricated wood I-Joists".

Section R502.1.3 R-titled: "Structural glued laminated timbers".

Section R502.1.4 Structural log members now only refer to provisions of the ICC-400.

Section R502.1.5 Retitled: "Structural composite lumber".

Section R502.1.6 Added Section: "Cross-laminated timber".

Section R502.1.7 Added Section: "Engineered wood rim board".

Section R502.3.1(1) Southern Pine, Douglas Fir Larch, and Hemlock Fir Lumber capacities have changed (span lengths).

Section R502.3.1(2) Southern Pine, Douglas Fir Larch, and Hemlock Fir Lumber capacities have changed (span lengths).

Section R502.3.3(1) Footnote B added: "No.1 or better shall be used for Southern Pine".

Section R502.3.3(1) Footnote G added: "Where the cantilever length is 24" or less, and the building is assigned to Seismic Design Category A, B, or C, solid blocking at the support for cantilever shall not be required".

Section R502.3.3(2) Footnote E added "Where the cantilever length is 24" or less, and the building is assigned to Seismic Design Category A, B, or C, solid blocking at the support for cantilever shall not be required".

Section R502.5(1) Table R502.5(1) Girder Spans, Moved to Section R602.7.

Section R502.8.2 Added "Cross Laminated Timber Members".

Section R502.10 Removed "approved hanger" verbiage as the language was conflicting regarding support of framing member at floor openings.

Section R503.2.1 Removed the word "All" from "All panels".

Section R503.2.1.1(2) Footnote A: added "fiber cement underlayment, and its conforming agencies".

Section R503.2.1.1(1) Footnotes (j) & (k): added fiber cement underlayment and its conforming agencies.

Section R505.1.1 Increased allowable design criteria for wind speed from 110 MPH (2012 IRC) to 139 MPH (2015 IRC).

Section R505.2 Added text: "Accordance with this section".

Section R505.2.1 Added the listings agencies into the current paragraph.

Section R505.2.3 Added section: "Dimension, thickness and material grade" and references a new table titled "cold-formed steel joist sizes and thickness".

Section R505.2.5 Section number changed from R505.2.4. Also, changed from three paragraphs to one.

Section R505.2.6.1 Web Holes. Reference table with updated section number of R505.2.6.1.

Section R505.2.6.3 Updated section reference numbers.

Section R505.3.1 Updated section reference numbers.

Section R505.3.1(1) Increased allowable wind speed from 110 MPH to 139 MPH.

Section R505.3.2 Updated section reference numbers.

Section R505.3.3.1 Updated section reference numbers.

Table R505.3.2 Added footnote "e": "Minimum grade 33 ksi steel shall be used for 33 mil and 43 mil thickness. Minimum grade 50 ksi steel shall be used for 54 and 68 mil thickness".

Section R505.3.4 Subsection 3 was deleted.

Section R506.2.2 Added "crushed concrete" to the allowable base for concrete floors.

Section R507 "Exterior" added as the prefix for decks.

Section R507.2 References specific tables (507.2, 507.2.1) for connection details.

Section R507.2.1 Details ledger connection requirements and references table 507.2.

Section R507.2.2 Details band joist requirements and references 507.2.

Section R507.2.4 Details lateral load connections and references requirements of 507.1.

Section R507.3 Clarifies wording.

Section R507.3.1 Added section: "Labeling of plastic composite deck boards, and stair treads, shall bear label indicating compliance to ASTM D 7032 and include the allowable load and maximum spans".

Section R507.3.2 Added Section: "Flame spread index. Not to exceed 200 on plastic deck equipment."

Section R507.2 Table updated.

Section R507.2.3(2) New table, deck attachment for lateral loads.

Section R507.4- R507.7.1 New tables, and figures, Sets the maximum spacing of joists, and other deck related materials. Installation also determines the spacing and spans of select materials. Included are additional details for decks, to allow for prescriptive methods. Must comply with ASTM D 7032 and references Section R507.3 Added provisions for deck post sizing, and heights.

Section R507.8.1 Staff recommends keeping existing local **AMENDMENT** removing the section: "*Deck post to deck footing*".

Mr. Strand stated that the wind speed change would be subject to the conversion table in Section 301, which returns the value to the standard used in the last several code cycles.

Chapter 6

Section R602.1 Changed section name to "General" instead of "Identification".

Section R602.1.1 Added "Sawn lumber" and its associated requirements

Section R602.1.2 Changed End-jointed lumber section number.

Section R602.1.4 Added Structural log member section.

Section R602.1.5 Structural composite lumber updated section number.

Section R602.1.6 Added Cross-Laminated timber section.

Section R602.1.7 Added Engineered wood rim board section.

Section R602.1.8 Added Wood structural panels section.

Section R602.1.9 Added Particleboard section.

Section R602.1.10 Added Fiberboard section.

Section R602.3 Added the approval of the testing agency AWC NDS, and got rid of the testing agencies previously listed in 2012 IRC: DOC PS1, DOC PS2 and Canadian agencies.

Section R602.3 Exception, Updated code section numbers.

Section R602.3 (1) Changed name of the table to Fastening Schedule. Added descriptions of spacing and locations for required fasteners.

Section R602.3 (1) Footnote "f": updated wind speed from 110MPH to 130MPH or less. Footnote "g": updated wording on gypsum sheathing and fiberboard sheathing. Footnotes "h" and "i": updated letters.

Section R602.3.1 Added Exception: Where snow loads are less than or equal to 25 pounds per square foot, and the ultimate design wind speed is less than or equal to 130 MPH, 2-inch by 6-inch studs supporting a roof load with not more than 6 feet of tributary length shall have a maximum height of 18 feet where spaced 16 inches on center, or 20 feet where spaced at 12 inches on center. Studs shall be minimum No. 2 grade lumber. Mr. Olson noted that this exception would not apply.

Section R602.3.2 Broke out the exceptions into three easy to read statements for clarity.

Section R602.3.2 New Table: Single Top-Plate Splice Connection Details. Clarifies top-plate splice location connections and allowable fastening requirements.

Section R602.3(3) Updated wind speed category/wind exposure category. Values increased.

Section R602.3(5) Update to footnote a: "Bearing walls shall be sheathed on not less than one side or bridging shall be installed not greater than 4 feet apart measured vertically from either end of the stud. Increases in unsupported height are permitted where in compliance with Exception 2 of section R602.3.1 or designed in accordance with accepted engineering practice."

Section R602.3.5 Increased ultimate design wind speed to 115 MPH of footnote 1.1. Footnote 3. Updated to read: "Wall sheathing and fasteners designed to resist combined uplift and shear forces in accordance with accepted engineering practices."

Section R602.7 Updated section reference numbers and moved from Chapter 5 to Chapter 6.

Section R602.7.1 Single member headers added text: "face nailed to the top and bottom of header with 10d box nails (3 inches x 0.128 inches) spaced 12 inches on center."

Section R602.7.3 Updated section number.

Section R602.7.4 Updated section number.

Section R602.7(1) Section moved from Chapter 5 2012 IRC to Chapter 6 in the 2015 IRC. Single-ply Girder and Header Spans have changed values.

Section R602.7(2) Relocated table and updated section number.

Section R602.7(3) New table: "Girder and Header Spans for Open Porches."

Section R602.7.2 New figures, More detailed figures. Single member header in exterior bearing wall. Alternative single member header without cripple. And Rim board header construction.

Section R602.7.3 Updated table section number and updated section reference in footnote "b".

Section R602.7.3 Updated figure section reference number.

Section R602.7.5 New Section. 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 nailed to each end of the header with 4-16d nails. The minimum number of full height studs at each end of the header shall be in accordance with table R602.7.5.

Section R602.10.1.3 Updated the condition for the ultimate design speed, 100 MPH to < 140 MPH.

Section R602.10 Is hereby AMENDED to read as follows: R602.10 Wall Bracing. Buildings shall be braced in accordance with this section or, when applicable, Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section. These portions shall be designed and constructed in accordance with Section R301.1 Exception: The wall bracing requirements of section R602.10 of the 2006 International Residential Code may be used as an alternative to this section.

Mr. Thompson clarified that Section 602.10 starts on page 174. Mr. Strand clarified that either the 2015 or the 2006 provisions could be used under the proposed amendment.

Section R606 Major Consolidation, Masonry Walls, Section R606, R607, R608, and R609 have been combined into one section, containing information requirements for masonry construction of single and two family dwellings and townhouses. Updated section reference numbers and table locations. Clarifying and consolidation of the masonry design and construction requirements is the main change in these chapters. Provisions in section R606, covering above ground masonry wall construction, evolved independently resulting in conflicting and disconnected code provisions.

Section R606.2-R606.3 New Sections, defining requirements for masonry materials. These mirror material requirements of the IBC.

Section R606.3.2.2 – Section R606.3.4.1 Updated Section Numbers.

Section R606.3.5 New Section. Grouting Requirements.

Section R606.3.6 Updated Section Number/Section Reference Numbers, Sections R606.3.6-R606.4.2.

Section R606.4.3 New Section, Change in thickness.

Section R606.5 Updated Section Number/ Section Reference Numbers, Sections R606.5-R606.6.1.

Section R606.6.2 New Section, Support at foundation.

Chapter 7

Section R702.3 Title added: "Gypsum board and gypsum panel products".

Section R702.3.1 Added gypsum panel product to materials.

Section R702.3.2 Added "gypsum panel products" to wood framing section.

Section R702.3.3 Added "gypsum panel products" to cold-formed steel framing.

Section R702.3.5 Added "gypsum panel products" to application.

Section R702.3.5 Table, added "gypsum panel products" to the table title. Added 5/8" type x at garage ceiling beneath habitable rooms in the application column. Added "gypsum panel products" to the applications with adhesive descriptions.

Section R702.3.5 Footnotes added "Gypsum panel products" to footnotes: "b, c and d".

Section R702.3.5.1 Added the words "Gypsum panel products".

Section R702.3.6 Added the words "Gypsum panel products" and updated the section number.

Section R702.3.7 Added the words "*Gypsum panel products*" and updated the section number.

Table R702.3.6 Updated and added the words "Gypsum panel products" to the title and materials listed.

Section R702.4.2 Changed section name to "Backer Boards", from "Fiber cement, fiber mat reinforced cementious backer units, glass mat gypsum backers and fiber reinforced gypsum backers." Now the removed titles have a breakdown table entitled "*Backer Board Materials*".

Section R702.5 Added the words "Gypsum panel products".

Section R702.7.1 Climate zone "Marine 4" added "continuous insulation with R-Value greater than or equal to 3.75 over 2x6 wall". Climate zone "7 and 8" added "Continuous insulation with R-value greater than or equal to 10 over 2x4 wall" and Continuous insulation with R-value greater than or equal to 15 over 2x6 wall. Footnotes updated to read, A. Spray foam with a max perm. Or 1.5 perms at the installed thickness, applied to the interior cavity side of wood structural panels, fiberboard, insulating sheathing or gypsum is deemed to meet the continuous insulation requirement where the spray foam r-value meets or exceeds the specified continuous insulation r-value.

Section R703.1 Updated section reference number from R703.8 to Section R703.4 Also added an exception, "log walls designed and constructed in accordance with the provisions of ICC 400".

Section R703.1.1 Exception 1 and 2 section reference numbers updated.

Section R703.3 Changed section to specify the inclusion of nominal thickness and change the fastener requirements to the manufactures installation instructions.

Section R703.3.1 Changed wind speed requirements from 110 MPH, to having a design wind pressure exceeding 30 PSF or limits of table 703.3.1 are exceeded. For the determination of wall covering attachment, component and cladding loads shall be determined using an effective wind area of 10 ft squared.

Table R703.3(1) Updated title: *"Siding minimum attachment and minimum thickness"*. The table was simplified and the addition of new code words to Section R703 were simplified as well as the limitations and use of the table. Also the descriptions of fastener type, length, and penetrations were made more clear. Footnotes were shortened up and new code language was added. Provisions related to siding attachment were added.

Section R703.3.2 New section title: "*Fasteners*" used to be "Attachments" and new section number. Section describes corrosion resistant, durability, and length of required fasteners. It combines 2012 IRC Table 703.4 and describes wood, hardboard, and wood structural panel siding. Section references Table 703.3.2 and also lists approved testing agencies for alternate fastening "ASTM F 1667, ANSI/ APA-PRP 210".

Section R703.3.3 Describes required fasteners and the different products they are attaching to. 1. Horizontal Alum Siding, Steel Siding Particle board siding, wood structural panel siding. 2. Hardboard panel and lap siding. 3. Vinyl siding insulated vinyl siding installed over wood or wood structural panel sheathing. The shank and head diameters for hardboard siding are moved from the footnotes M and O into the new table.

Section R703.4 Footnotes Q and S on fiber cement board are now located in their respective material listings. Footnote W references TMS402 and is now in the adhered veneer section, Section 703.12.

Section R703.5 Minimum spacing based on siding thickness moved from 2012IRC Table 703.4 footnote I, siding attachment and minimum thickness, to 2015 IRC section 703.5.2 panel siding. Requirements for vertical wood siding have been moved from 2012 IRC footnote J to 2015 IRC 703.5.1, vertical wood siding.

Section R703.5.1 Vertical wood siding, applied vertically shall be nailed to horizontal nailing strips or blocking set no more than 24" on center.

Section R703.5.2 Was section R703.3.1 in 2012 IRC. Describes, 3/8" W.S.P. shall not be applied directly to studs spaced more than 16" o.c. where the long dimension is parallel to studs. W.S.P. siding 7/16" or thinner shall not be applied directly to studs spaced more than 24" o.c. the stud spacing shall not exceed the panel span rating provided by the Manuf. unless panels are installed with the face grain perpendicular, to the studs or over the sheathing approved for that stud spacing.

Section R703.5.3 Where there are no recommendations the siding shall be lapped "not less than" 1" or ½" if rabbeted and shall have the ends caulked. Described the new subsections for stud spacing and minimum siding lap relevant to horizontal wood siding, vertical wood siding, and panel siding products.

Section R703.6.3 Now states "Wood *shakes or shingles shall be applied as per manufactures installation instructions*". As well as stating the correct fastener per different types of wood shakes/shingle application.

Mr. Thompsen asked Mr. Olson if he requires manufacture instructions to be on site during an inspection. Mr. Olson stated no, the inspectors try to stay up-to-date on manufacturer instructions.

Section R703.6.3 Clarifies the fastener required for attachment of wood shakes and shingles for wood cladding. Fastener type is determined by environmental factors. Shingles may not be applied with the vertical edges tight together, there is simply no room for expansion. Code determines minimum and max spacing of gaps.

Section R703.7.2 Staff recommends keeping existing local **AMENDMENT** adding the following sentence to the end of the section: <u>Approved decorative coatings applied to a concrete or masonry surface shall be installed in accordance with the manufacture's installation instructions.</u>

Section R703.13 New Section: Insulated Vinyl Siding. Setting minimum requirements for insulated vinyl siding and polypropylene siding. It is based on the current ASTM standard for insulated vinyl siding (ASTM D7793). This change provides a method for building officials to verify that insulated vinyl is compliant. The insulated siding provides an adequate water screen that reduces the amount of water reaching the underlying barrier.

Section R703.14 New Section: Polypropylene Siding. Sets the performance minimum requirements for polypropylene siding and requires a third party inspection agency to verify compliance (ASTM). Use of polypropylene siding is limited to walls with a fire separation distance of 5' or more and walls 10' or more from a building on another lot.

Section R703.15 - Section R703.17 New Sections: Cladding attachment over foam sheathing in various conditions.

Chapter 8

Updated section numbers and references.

Section R802.1.6 Omitted Structural composite lumber from IRC 2012 and added Cross-Laminated Lumber IRC 2015. And reference the approved agencies.

Section R802.1.7 New Section, Engineered wood rim board, lists conforming agencies, and approved markings of those boards.

Section R802.3.3 New Section, Blocking, stating the grade should be a minimum of utility lumber.

Section R802.11.1.1 Added a table R301.2(2) to reference of design for ultimate wind speed. Also states uplift forces shall be permitted to be determined by table R802.11.

 Table R802.11
 New Table, Rafter or truss uplift connection forces from wind (ASD) (pounds per connection).

Section R804 Changed Steel roof framing (2012 IRC) to Cold-formed steel roof framing (2015 IRC).

Section R804.2 Cleared up wording for clarity and broke the original section into 2 subsections, Material, and Corrosion Protection.

Section R804.2.3 New Section, Dimension, thickness and material grade, defines cold-formed steel roof framing requirements.

Section R804.3.1.1(1)&(2) Cleared up title of table, and put title into footnote. C. Minimum grade 33 KSI steel shall be used for 33 mil and 43 mil thicknesses. Minimum grade 50 KSI steel shall be used for 54 and 68 mil thicknesses.

Section R806.1 is hereby **AMENDED** to read as follows: The 2012 IRC exception allowing the building official to waive ventilation requirements due to atmospheric or climatic conditions has been deleted. The following exception has been removed in the 2015 IRC "Exception: Attic ventilation shall not be required when determines not necessary by the code official due to atmospheric or climatic conditions" the removed clause was based on climatic conditions with no direction to the building official on matters related to construction methods or materials.

Section R807.1 Reworded for clarity.

Chapter 9

Section R902.3 and Section R902.4 New Sections.

Section R905.1 – R905.15.3 The multiple provisions placed into the 2012 IRC for underlayment have been combined into Section R905.1.1, with three tables listing underlayment type, application, and attachment. Sections on ice barriers from the 2012 IRC are reorganized and combined into Section R905.1.2. combining the underlayment requirements into a single section makes provisions easier to locate and highlights key differences between requirements for underlayment for different types of roof coverings.

Section R905.16-R905.16.7 Updated section reference agencies of photovoltaic shingles to Section R324, and NFPA70. This section is expanded to now contain requirements for roof decks, minimum roof deck slope, underlayment, underlayment application, ice barrier, and underlayment for high-wind areas. The new requirements are consistent with similar other non-flat, shingle type coverings. The word "modules" is deleted because it is not defined for photovoltaic shingles.

Section R905.2.5 is hereby **AMENDED** to read as follows, R905.2.5 Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12 gage [0.105 inch (3 mm)] shank with a minimum 3/8 inch diameter head, ASTM F 1667, of a length to penetrate through the roofing materials and a minimum of 3.4 inch (19mm) into the roof sheathing or other fasteners as approved by the building official and shingle manufacturer. Where the roof sheathing is less than ¾ inch (19mm) thick, the fasteners shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.

Section R908.1 Exception Added: 2. For roofs that provide positive drainage, re-covering or replacing an existing roof covering shall not require the secondary drains or scuppers of section R903.4.1 to be added to an existing roof.

Section R909 New Section: Rooftop-Mounted Photovoltaic Panel Systems, stating the approval agencies and testing standards required, for use. As well as install requirements (by manufacture).

Chapter 10

Section R1001.4.1.1 New Section: Cold-Formed Steel Framing states parameters for using cold-formed steel framing for a chimney/ fireplace.

Section R1003.4.1.1 New Section: Cold-Formed Steel Framing states parameters for using cold-formed steel framing for a masonry chimney/ fireplace.

Section R1003.18 Clarified wording at the end of sub note 3. Removed the wording "*Combustible material and trim shall not overlap the corners of the chimney by more than 1 inch*"

Section R1004.5 New Section: Gasketed Fireplace Doors. A gasketed fireplace door shall not be installed on a factorybuilt fireplace except where the fireplace system has been specifically tested, listed and labeled for such use in accordance with UL 127.

Mr. Thompsen noted that the January 21, 2016 meeting has been cancelled and Mr. Strand confirmed. He explained that the energy provisions have been grouped into a single meeting.

Respectfully submitted,

Ron C. Strand Board Secretary