

Minutes of the North Carolina Building Code Council
July 14, 2020
Raleigh, NC

All members of the North Carolina Building Code Council were present for the Council meeting except Ralph Euchner and Robert Morrow.

The following are summary minutes. The official minutes of this meeting are recorded on CD. Anyone desiring verbatim CDs or excerpts from these CDs should contact the Engineering Division of the NC Department of Insurance for information and reproduction costs. The next scheduled NC Building Code Council meeting will be held **Tuesday, September 1, 2020**. The location will be announced 30 days before the meeting.

Before beginning the agenda items, Chairman Davis requested a moment of silence in remembrance of and respect for NC DOI Chief Existing Building Code Consultant, Dan Austin who also served as staff to the Council and passed away unexpectedly.

Part A Administrative Items

Item A – 1 Ethics Statement: Inquire upon conflicts of interest or appearance of conflicts of interest that exist within the Council.

There were no actual or potential conflicts of interest noted.

Item A – 2 Approval of Minutes of the March 10, 2020 NC Building Code Council Meeting.

A motion to accept the March 10, 2020 meeting minutes with the addition to the statement from the Electrical Ad-Hoc Committee under Ad-Hoc Reports was made by K. Humiston. Second by W. Hamilton. Motion approved.

Item A – 3 Request by Greg Stafford, Fire Chief, representing the Town of Valdese for approval to amend the City of Valdese Code of Ordinances for Fire Prevention and Protection.

Due to COVID-19 Greg Stafford was not able to be in attendance. Wayne Hamilton spoke on behalf of this request for the Town of Valdese.

Motion to approve was made by W. Hamilton. Second by D. Priest. Approved.

Item A – 4 Rules Review Commission Meeting Report.

Rules Review passed all “D” items from the March 10, 2020 meeting, except for items D-7, D-8, D-9 and D-11A. The commission received a sufficient quantity of letters opposing the four items such that they were required to send the items to the NC Legislature for review.

The Legislature then issued Session Law 2020-74 that prohibited the adoption of those four items.

Chairman Davis asked Carl Martin to send the ten opposition letters to the Board to review.

Carl Martin requested items D-7, D-8, D-9, and D-11A of the September 10, 2019 meeting be withdrawn by the Council so as to comply with Session Law 2020-74.

**Motion was made to withdraw these items by S. Knight. Second by F. Meads.
Motion passed.**

Item A – 4A Debris Study

This was added by Chairman R. Davis to address the Debris Study requested by the General Assembly.

Nathan Childs, Assistant A.G., explained the background and purpose of the study. Purpose is to reduce the placement of construction waste in landfills.

S. Knight expressed concerns over specific wording used. K. Humiston spoke in support of S. Knight's concerns and that the language might not be clear enough.

D. Smith, speaking from the Residential side, stated the word "inert" might need to be deleted from the summary.

Mr. Childs then clarified that the language reflected what was already existing in the Department of Environmental Resources rules.

**L. Skinner made a motion to accept the document as it is. Second by G. Embler.
Motion passed.**

Item A – 5 Public Comments

There were no public comments.

Before moving forward with the B-items; new Council member Victoria Watlington joined the Council in the conference room from one of the attendee rooms where she had been seated. (The separate rooms were set up as meeting protocol due to COVID-19.) Chairman Robbie Davis gave Ms. Watlington some information about the Building Code Council and Council members introduced themselves. Kathy Williams, of the NC Code Officials Qualification Board, led Ms. Watlington in taking the oath for her position as Council member with the NC Building Code Council.

Part B – New Petition for Rulemaking

The following Petitions for Rulemaking have been received since the last Council meeting. The Council will vote either to deny or grant these Petitions. The Council will give no further

consideration to Petitions that are denied. Petitions that are granted may proceed through the Rulemaking process. The council may send any Petition to the appropriate committee. The hearing will take place during or after the September 2020 meeting.

Item B – 1 Request from Bob Haynes representing the NCBIA Code Revisions Committee to add the 2018 N.C. Administrative code, Section 106.4 as follows:

106.4 Site address signage. It is the responsibility of the permit applicant or designee to post the 911 site address on an active jobsite at the commencement of work regulated by the NC Building Codes. The signage shall be temporary or permanent per 106.4.1 or 106.4.3.

106.4.1 Temporary signage. Signage to identify a construction site location can be temporary. Acceptable temporary signage may include such items as a permit placard, an address written on job box, yard signage or other approved temporary method. Temporary street name markers shall be required if permanent street signs are not in place for new developments or subdivisions.

106.4.2 Temporary Signage Location. Address signage shall be placed such that it is clearly legible from the street or road that fronts the property at all times during construction.

106.4.3 Permanent signage. Address signage meeting the requirements of the International Residential Code Section R319 for One- and Two-family Dwellings, International Building Code Section 501.2 or International Fire Code Section 505.1 for commercial buildings shall be deemed as meeting the requirements of this section.

**Residential Super Committee: Motion to grant made by W. Hamilton. Second by D. Smith.
Motion passed.**

**Commercial Super Committee: Motion to grant made by W. Hamilton. Second by M. Ali.
Motion passed.**

**Building Code Council: Motion to grant made by W. Hamilton. Second by B. Herring.
Motion passed.**

Item B – 2 Request from Jeff Tiller representing Appalachian State University and Robert Privott representing the N.C. Homebuilders Association to amend the 2018 N.C. Energy Code, Section R202 General Definitions as follows:

AIR-IMPERMEABLE INSULATION. An insulation having an air permeance equal to or less than 0.02 L/s-m² at 75 Pa pressure differential tested according to ASTM E2178 or E283.

Cost-Benefit Analysis

Defining “Air-Impermeable Insulation” is for clarification only. It does not add or delete from the cost of construction or energy consumption.

Item withdrawn by proponents.

Item B – 3 Request from Jeff Tiller representing Appalachian State University and Robert Privott representing the N.C. Homebuilders Association to amend the 2018 N.C. Energy Code, Section R406.2 Mandatory Requirements as follows:

R406.2 Mandatory requirements.

Compliance with this section requires that the provisions identified in Sections R401 through R404 labeled as “mandatory” be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table R406.2.1 or Table R406.2.2, Table 402.1.1 or 402.1.3 of the 2012 North Carolina Energy Conservation Code. Minimum standards associated with compliance shall be the ANSI RESNET ICC Standard 301-2014: “Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index.” A North Carolina *registered design professional* or certified *HERS rater* is required to perform the analysis if required by North Carolina Licensure laws.

Exception: Supply and return ducts in unconditioned space and outdoors shall be insulated to a minimum R-8. Supply ducts inside semi-conditioned space shall be insulated to a minimum R-4; return ducts inside conditioned and semi-conditioned space are not required to be insulated. Ducts located inside conditioned space are not required to be insulated other than as may be necessary for preventing the formation of condensation on the exterior of cooling ducts.

TABLE R406.2.1

MINIMUM INSULATION AND FENESTRATION REQUIREMENTS FOR ENERGY RATING INDEX COMPLIANCE^a

CLIMATE ZONE	FENESTRATION VALUES			R-VALUES FOR								
	FENESTRATION U-FACTOR ^{b,j}	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{b,k}	CEILING ^m	UNVENTED ^p ENCLOSED RAFTER ASSEMBLIES AIR-IMPERMEABLE	UNVENTED ^p ENCLOSED RAFTER ASSEMBLIES AIR-PERMIABLE/IMPERMEABLE	WOOD FRAME WALL	MASS WALL ^l	FLOOR	BASEMENT ^{c,o} WALL	SLAB ^d	CRAWL SPACE ^c WALL
3	0.35	0.65	0.3	30	20	20+5 ^q	13	5/10	19	10/13	0	5/13
4	0.35	0.6	0.3	38 or 30ci ⁱ	20	20+15 ^q	15, 13+2.5 ^h	5/10	19	10/13	10	10/13
5	0.35	0.6	NR	38 or 30ci ⁱ	25	15+20 ^q	19 ⁿ , 13+5 ^h , or 15+3 ^h	13/17	30 ^e	10/13	10	10/13

For SI: 1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHGC are maximums.

b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.

c. “10/13” means R-10 continuous insulated sheathing on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall or crawl space wall.

d. For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 18 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix R2) R-5 shall be added to the required slab edge R-values for heated slabs.

e.- Deleted.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.1.

g. Or insulation sufficient to fill the framing cavity, R-19 minimum.

h. The first value is cavity insulation, the second value is continuous insulation so "13+5" means R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

i. The second R-value applies when more than half the insulation is on the interior of the mass wall.

j. In addition to the exemption in R402.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

k. In addition to the exemption in R402.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

l. R-30 shall be deemed to satisfy the ceiling insulation requirement wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise, R-38 insulation is required where adequate clearance exists or insulation must extend either to the insulation baffle or within 1" of the attic roof deck.

m. Table value required except for roof edge where the space is limited by the pitch of the roof; there the insulation must fill the space up to the air baffle.

n. R-19 fiberglass batts compressed and installed in a nominal 2 x 6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall ~~is~~ are not deemed to comply.

o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

p. The air-impermeable insulation shall meet the requirements of the definition in Section 202. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. For one- and two-family dwellings and townhouses, the insulation installation shall meet the requirements of R806.5 of the North Carolina Residential Code. For Residential Buildings other than one- and two-family dwellings and townhouses, the insulation installation shall meet the installation requirements of 1203.3 of the North Carolina Building Code.

q. The value for air-permeable insulation is shown first and that for air-impermeable insulation second. Thus, R-20 + R-5 indicates that the minimum value for air-permeable insulation is R-20, and the minimum value for air-impermeable insulation is R-5. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. The air-permeable insulation shall be installed directly under the air-impermeable insulation.

TABLE R406.2.2

EQUIVALENT U-FACTORS FOR TABLE R406.2.1

CLIMATE ZONE	FENESTRATION ^d	SKYLIGHT	CEILING	UNVENTED ^e ENCLOSED RAFTER ASSEMBLIES AIR-IMPERMEABLE	UNVENTED ^e ENCLOSED RAFTER ASSEMBLIES AIR-PERMEABLE/ IMPERMEABLE	FRAME WALL	MASS WALL ^b	FLOOR	BASEMENT WALL ^d	CRAWL SPACE WALL ^c
3	0.35	0.65	0.0350	0.05	0.04 ^f	0.082	0.141	0.047	0.059	0.136
4	0.35	0.60	0.0300	0.05	0.029 ^f	0.077	0.141	0.047	0.059	0.065
5	0.35	0.60	0.0300	0.04	0.029 ^f	0.061	0.082	0.033	0.059	0.065

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.

b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4 and 0.054 in Climate Zone 5.

c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1.

d. A maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the RESCheck "UA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled

as meeting the U-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products' actual U-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.

e. The air-impermeable insulation shall meet the requirements of the definition in section R202. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. For one- and two-family dwellings and townhouses, the insulation installation shall meet the requirements of R806.5 of the North Carolina Residential Code.

f. For air-permeable/ impermeable applications, Table R406.2.1 shall be followed for minimum insulation values.

Item withdrawn by proponents.

Item B – 4 Request from Jeff Tiller representing Appalachian State University and Robert Privott representing the N.C. Home Builders Association to amend the 2018 N.C. Energy Code, Chapter 6 [RE] REFERENCED STANDARDS as follows:

Chapter 6 [RE] – REFERENCED STANDARDS ASTM E2178-13 Standard Test Method for Air Permeance of Building MaterialsTable R406.2.1, Table R406.2.2

Item withdrawn by proponents.

Item B – 5 Request from Keith Rogers representing the Mechanical/Plumbing Standing committee to amend the 2018 N.C. Plumbing Code, Section 405.3.1 as follows:

405.3.1 Water closets, urinals, lavatories and bidets.

A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction, or closer than 30 inches (762 mm) center to center between adjacent fixtures. There shall be not less than a 21-inch (533 mm) clearance in front of the water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets.

Exceptions:

Exception:

1. For detached one- and two-family dwellings and townhouses, see the North Carolina Residential Code, Figure Section R307.1 for minimum fixture clearances.
2. Private side by side lavatories may be less than 30 inches (762 mm) center to center.

Keith Rogers spoke to explain this item.

Carl Martin also explained the proposal and clarified why this is a commercial request and not a residential request.

Commercial Super Committee: Motion to grant made by D. Priest. Second by K. Humiston.

Motion passed.

Building Code Council: Motion to grant made by D. Priest. Second by K. Humiston. Motion passed.

Item B – 6 Request from Clint Latham representing the City of Raleigh to amend the 2018 N.C. Fuel Gas Code, Section 311.4.2 and add Section 311.4.2.4 as follows:

311.4.2 Locations. Where required by Section 311.4.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 311.4.2.1 through ~~311.4.2.3~~ 311.4.2.4.

311.4.2.4 Group A-2 occupancies. Carbon monoxide detection shall be installed in A-2 occupancies in all the following locations:

1. On the ceiling of the room containing the fuel-burning *appliance* or fuel-burning *fireplace*.
2. In an *approved* location where the room or area is served by a forced air furnace.

Clint Latham presented this item as well as items B-9, B-12, and B-27 as they all have basically the same language.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by M. Ali. Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton. Motion passed.

Item B – 7 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Fuel Gas Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming presented this item as well as items B-8, B-10, B-16, B-17 and B-26 as they all have basically the same language.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest. Motion passed.

Building Code Council: Motion to grant made by W. Hamilton. Second by D. Priest. Motion passed.

Item B – 8 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Mechanical Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming presented this item as well as items B-7, B-10, B-16, B-17 and B-26 as they all have basically the same language.

**Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to grant made by W. Hamilton. Second by D. Priest.
Motion passed.**

Item B – 9 Request from Clint Latham representing the City of Raleigh to amend the 2018 N.C. Mechanical Code, Section 313.4.2 and add Section 313.4.2.4 as follows:

313.4.2 Locations. Where required by Section 313.4.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 313.4.2.1 through ~~313.4.2.3~~ 313.4.2.4.

313.4.2.4 Group A-2 occupancies. Carbon monoxide detection shall be installed in A-2 occupancies in all the following locations:

1. On the ceiling of the room containing the fuel-burning *appliance* or fuel-burning *fireplace*.
2. In an *approved* location where the room or area is served by a forced air furnace.

Clint Latham presented this item as well as items B-6, B-12, and B-27 as they all have basically the same language.

**Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to grant made by C. Conner. Second by K Humiston.
Motion passed.**

Item B – 10 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Existing Building Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming presented this item as well as items B-7, B-8, B-16, B-17 and B-26 as they all have basically the same language.

Residential Super Committee: Motion to grant made by W. Hamilton. Second by D. Smith.

Motion passed.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest.

Motion passed.

Building Code Council: Motion to grant made by W. Hamilton. Second by F. Meads.
Motion passed.

Item B – 11 Request from Clint Latham representing the City of Raleigh to amend the 2018 N.C. Existing Building Code, Section 402.6 as follows:

402.6 Carbon monoxide alarms in existing portions of a building. Where an addition is made to a building or structure of a Group A-2, I-1, I-2, I-4 or R occupancies, or classrooms are added in Group E occupancies, the *existing building* shall be provided with carbon monoxide alarms in accordance with Section 915 of the *North Carolina Building Code*, except that the carbon monoxide alarms shall be allowed to be solely battery operated.

Clint Latham presented this item.

Commercial Super Committee: Motion to grant made by K. Humiston. Second by M. Ali.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton.
Motion passed.

Item B – 12 Request from Clint Latham representing the City of Raleigh to amend the 2018 N.C. Fire Code, Section 915.2 and add Section 915.2.4 as follows:

915.2 Locations. Where required by Section 915.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 915.2.1 through ~~915.2.3~~ 915.2.4

915.2.4 Group A-2 occupancies. Carbon monoxide detection shall be installed in A-2 occupancies in all the following locations:

1. On the ceiling of the room containing the fuel-burning appliance or fuel-burning fireplace.
2. In an approved location where the room or area is served by a forced air furnace.

Clint Latham presented this item as well as items B-6, B-9, and B-27 as they all have basically the same language.

**Commercial Super Committee: Motion to grant made by W. Hamilton. Second by K. Humiston.
Motion passed.**

**Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton.
Motion passed.**

Item B – 13 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Fire Code, Section 315.3.1 as follows:

315.3.1 Ceiling clearance.

Storage shall be maintained 2 feet (610 mm) or more below the ceiling in nonsprinklered areas of buildings or not less than 18 inches (457 mm) below sprinkler head deflectors in sprinklered areas of buildings.

Exceptions:

1. The 2-foot (610 mm) ceiling clearance is not required for storage along walls in nonsprinklered areas of buildings.
2. The 18-inch (457 mm) ceiling clearance is not required for storage along walls in areas of buildings equipped with an automatic sprinkler system in accordance with Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.

Colin Triming presented this item.

**Commercial Super Committee: Motion to grant made by W. Hamilton. Second by K. Humiston.
Motion passed.**

**Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton.
Motion passed.**

Item B – 14 Request from Colin Triming representing the NC Fire code Revision Committee to amend the 2018 N.C. Fire Code, Section 907.2.1 and the 2018 N.C. Building Code, Section 907.2.1 as follows:

907.2.1 Group A.

A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group A occupancies where the occupant load due to the assembly occupancy is 300 or more., or where the Group A occupant load is more than 100 persons above or below the lowest level of exit discharge. Group A occupancies not separated from one another in accordance with Section 707.3.10 and 711.2.4 of the *International Building Code* shall be considered as a single occupancy for the purposes of applying this section. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Colin Triming presented this item.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by K. Humiston.

Motion passed.

Building Code Council: Motion to grant made by W. Hamilton. Second by C. Conner. Motion passed.

Item B - 15 Request from Colin Triming representing the NC Fire Code Revision Committee to add the 2018 N.C. Fire Code, Section 2303.2.1 as follows:

2303.2.1 Height.

The height of the emergency disconnect switch shall be not less than 42 inches (1067 mm) and not more than 48 inches (1372 mm) measured vertically, from the floor level to the activating button.

Colin Triming presented this item.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by K. Humiston.

Motion passed.

Building Code Council: Motion to grant made by W. Hamilton. Second by C. Conner. Motion passed.

Item B - 16 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Fire Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming presented this item as well as items B-7, B-8, B-10, B-17 and B-26 as they all have basically the same language.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by M. Ali.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton. Motion passed.

Item B – 17 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Residential Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming presented this item as well as items B-7, B-8, B-10, B-16 and B-26 as they all have basically the same language.

Residential Super Committee: Motion to grant made by D. Smith. Second by W. Hamilton.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton. Motion passed.

Item B – 18 Request from David Smith representing the Residential Ad Hoc Committee to amend the 2018 N.C Residential Building, Section R404.4 as follows:

R404.4 Retaining walls. Retaining walls ~~that are not laterally supported at the top and that retain in excess of 48 inches (1219 mm) of unbalanced fill, shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. In addition, any retaining wall that meets~~ meet the following shall be designed by a registered design professional.

1. Any retaining wall systems on a residential site that cross over adjacent property lines regardless of vertical height, ~~and~~
2. Retaining walls that support buildings and their accessory structures;
3. Retaining walls exceeding 4 feet (1524 mm) of unbalanced backfill height, or

4. Retaining wall systems providing a cumulative vertical relief greater than 5 feet (1524 mm) in height within a horizontal distance of 50 feet (15 m) or less

Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

**Residential Super Committee: Motion to grant made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to grant made by C. Conner. Second by L. Skinner.
Motion passed.**

Item B – 19 Request from Leon Skinner representing the Residential Ad Hoc Committee to amend the 2018 N.C. Residential Code, Sections R101.2.2 Accessory structures, Section R202 Definitions, and Section R327 Docks, Piers, Bulkheads, and Waterway Structures as follows:

R101.2.2 Accessory structures.

Only the following *accessory structures* shall meet the provisions of this code.

1. Decks, see Appendix M,
2. Gazebos,
3. Retaining walls, see Section R404.4,
4. Detached masonry chimneys located less than 10 feet (3048 mm) from other buildings or lot lines,
5. Swimming pools and spas, see Appendix V,
6. Detached carports,

Exception: Portable lightweight carports not exceeding 400 square feet (37 m²) or 12 foot (3658 mm) mean roof height.

7. *Docks, piers, bulkheads,* and waterway structures, see Section R327.

Section R202 Definitions.

ACCESSORY BUILDING. ~~In one and two family dwellings not more than three stories above grade plane in height with a separate means of egress, a~~ A building that does not contain a sleeping room, the use of which is incidental accessory to that of the ~~main building dwelling~~ and that is detached and located on the same lot as the dwelling. ~~An accessory building and is~~

roofed over ~~and with~~ more than 50 percent of its exterior walls ~~are~~ enclosed. ~~Examples of accessory buildings are garages, storage buildings, workshops, boat houses, treehouses, and similar structures.~~

ACCESSORY STRUCTURE. A structure that is accessory to the dwelling and not defined as an *accessory building*. Examples of accessory structures are fencing, decks, gazebos, arbors, retaining walls, barbecue pits, detached chimneys, playground equipment, yard art, *docks*, piers, etc.

PRIVATE POND. A body of water owned entirely by a single property owner and located on the same parcel of land as a detached single-family dwelling.

SECTION R327 DOCKS, PIERS, BULKHEADS AND WATERWAY STRUCTURES

R327.1 General.

Docks, piers, bulkheads and waterway structures shall be constructed in accordance with Chapter 36 of the *North Carolina Building Code*.

Exceptions: Structures complying with the following are not required to meet the provisions of this code.

1. *Docks* and *& Piers* built over *private ponds*.

2. Fixed in place walkways, *docks*, and *piers* not covered in “Exception a” and not exceeding 144 square feet for single family dwelling.

3. Minor *repairs* to existing *docks*, *piers* and waterway structures.

~~1. Fixed piers associated with a one or two family dwelling meeting all of the following:~~

~~1.1 — A maximum of four boat slips for a single owner of a one or two family dwelling or two adjacent, riparian owners.~~

~~1.2 — A maximum height of 15 feet (4572 mm) measured from deck to mud line at any location along the pier.~~

~~1.3 — A maximum normal pool depth of 13 feet (3962 mm) on lakes and ponds and a maximum mean low water depth of 7 feet (2134 mm) in other locations.~~

~~1.4 — A maximum walkway width of 6 feet (1829 mm).~~

~~1.5 — A maximum pile spacing of 8 feet (2438 mm), in both directions.~~

~~1.6 — A maximum of 576 sq. ft. (53.5 m²) for non-walkways areas.~~

- ~~1.7— A maximum boat slip length of 40 feet (12.2 m).~~
- ~~1.8— A maximum roofed area of 576 sq. ft. (53.5 m²) with an additional maximum 2 foot (610 mm) overhang.~~
- ~~1.9— Constructed with no enclosed or multilevel structures.~~
- ~~1.10— Supports a boatlift with a maximum design capacity no greater than 16,000 pounds (71.2 kN).~~
- ~~1. Floating docks associated with a one or two family dwelling meeting all of the following:
 - ~~a. A maximum of four boat slips for a single owner of a one or two family dwelling or two adjacent, riparian owners.~~
 - ~~b. A maximum normal pool depth of 20 feet (6096 mm) for docks with guide piles on lakes and ponds and a maximum mean low water of 10 feet (3048 mm) for docks with guide piles in other locations.~~
 - ~~c. A maximum boat slip length of 40 feet (12.2 m).~~
 - ~~d. Finger piers, crosswalks or other floating surfaces having a minimum width of 3 feet (914 mm) wide to a maximum of 6 feet (1829 mm) wide, except for a single 8 foot x 16 foot (2438 mm x 4877 mm) section.~~
 - ~~e. When constructed with a roof the following conditions exist:
 - ~~i. Ultimate design wind speed is 115 mph (51 m/s) or less;~~
 - ~~ii. Roof load is 20 psf (0.96 kPa) or less;~~
 - ~~iii. A maximum eave height of 10 feet (3048 mm);~~
 - ~~iv. A maximum roof slope of 4:12;~~
 - ~~v. A maximum roofed area of 576 sq. ft. (53.5 m²) with an additional maximum 2 foot (610 mm) overhang;~~
 - ~~vi. A minimum boat slip width of 12 feet (3658 mm);~~
 - ~~vii. A minimum floating dock width of 4 feet (1219 mm) along both sides of the boat slip;~~
 - ~~viii. A maximum dead load of 12 psf (0.57 kPa);~~
 - ~~ix. Floating structures supporting roof structures are balanced or anchored to reduce the possibility of tipping.~~~~
 - ~~f. Constructed with no enclosed or multilevel structures.~~
 - ~~g. Supports a boat lift with a maximum design capacity no greater than 16,000 pounds (71.2 kN).~~~~

Leon Skinner presented this item.

**Residential Super Committee: Motion to grant made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to grant made by S. Knight. Second by W. Hamilton.
Motion passed.**

Item B – 20 Request from David Smith representing the Residential Ad Hoc Committee to add 2018 N.C. Residential Building Code, Sections R328 Demolition and R 328.1 Demolition as follows:

SECTION R328 DEMOLITION

R328.1 Demolition. Where a building or structure regulated by this code has been demolished or removed, the lot shall not create a new hazard to the site or to adjoining properties. All utilities shall be properly terminated.

David Smith presented on this item.

**Residential Super Committee: Motion to grant made by W. Hamilton. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to grant made by S. Knight. Second by W. Hamilton.
Motion passed.**

There was a break in the meeting to allow for Insurance Commissioner Mike Causey to address the Board and attendees.

Commissioner Causey spoke briefly about department accomplishments and resources and thanked the Board members for what they do. He also welcomed them back into the Albemarle building after it had been closed due to COVID-19.

Item B – 21 Request from Jackie Flemming and Doug Allen P.E. representing Simpson Strong-Tie to amend the 2018 Residential Building Code, Sections R4603.6.1 and R4603.6.2 as follows:

R4603.6.1 Tying at corners. At corners, girders shall be connected to the pile with a minimum 3/16 × 4 × 18-inch (5 × 102 × 467 mm) hot dip galvanized strap bolted with two 5/8 inch (15.9 mm) galvanized through bolts on the exterior and a minimum L4 x 3/16 x 1'-6" (102 × 5 × 467 mm) galvanized steel angle bolted with two 5/8 inch (15.9 mm) galvanized through bolts on the interior in accordance with Figure R4603.6(d1), or with a minimum of (2) 3/16" x 4" x 18" (5x102x467 mm) hot dip galvanized straps installed on the outside of the girders with fasteners per table R4603.6.1 and in accordance with Figure R4603.6 (d2).

Table R4603.6.1 Minimum Fastening of Corner Beams and Girder to Pilings

<u>Amount Piling is Notched</u>	<u>Associated Figure</u>	<u>Hardware</u>	<u>Fasteners</u>
<u>> 50%¹</u>	<u>R4603.6(d)</u>	<u>one 3/16"x4"x18"</u>	<u>six 5/8" bolts²</u>
		<u>one L4x3/16x18"</u>	
	<u>R4603.6 (e)</u>	<u>one 3/16"x4"x18"</u>	<u>eight 0.27"x4" each³</u>

1. Where piling is notched over 50%, use strap as required in Section 4603.6. Install the specified number of bolts or screws in each end of the strap.
2. Bolts shall be 5/8" diameter hot dipped galvanized through bolts with nuts and washers.
3. Screws shall be 0.270" (6.9 mm) minimum in diameter, hot dipped galvanized to a minimum of A153, Class C, and having a minimum length of 4", and also shall be long enough to penetrate at least one inch through the remaining pile and into the girder.

R4603.6.2 Bracing of Pilings. Bracing of pile foundations is required where the clear height from ground to sill, beam or girder exceeds 10 feet (3048 mm) or the dwelling is more than one story above piles. A line of X-bracing is defined as a row of piles with X-bracing provided in at least two bays. A line of X-bracing shall be provided at all exterior pile lines. Where the perimeter lines of X-bracing exceed 40 feet (12 192 mm), an additional line of X-bracing shall be provided near the center of the building. See Figure R4603.6(e)(f). X-bracing shall be with 2 × 10s through bolted with two 3/4-inch (19.1 mm) bolts at each end. The code official is permitted to accept alternate bracing designs if they bear the seal of a registered design professional.

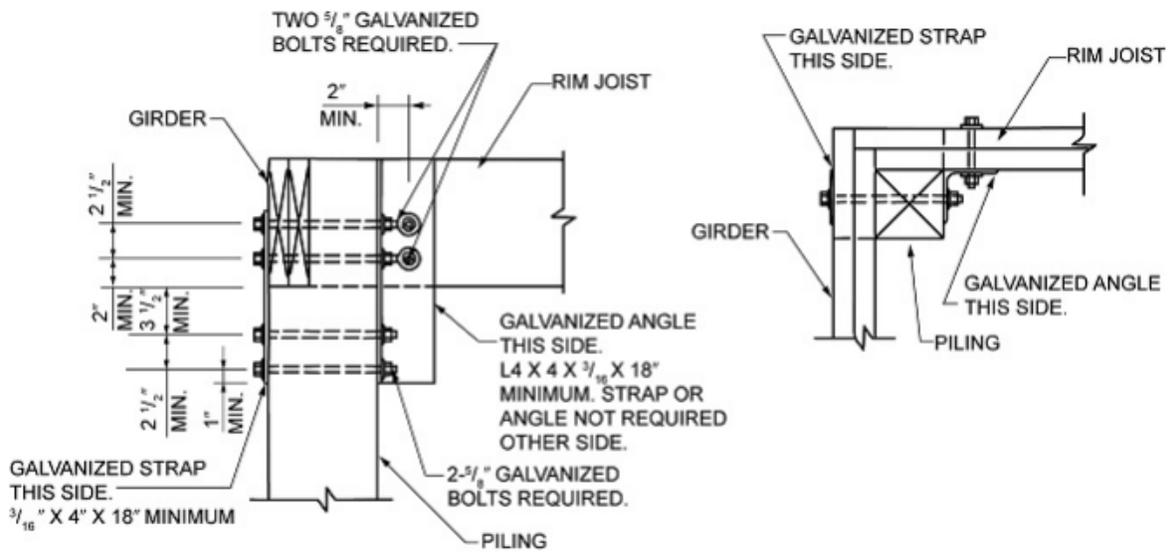


FIGURE R4603.6(d)
CORNER PILE CONNECTION

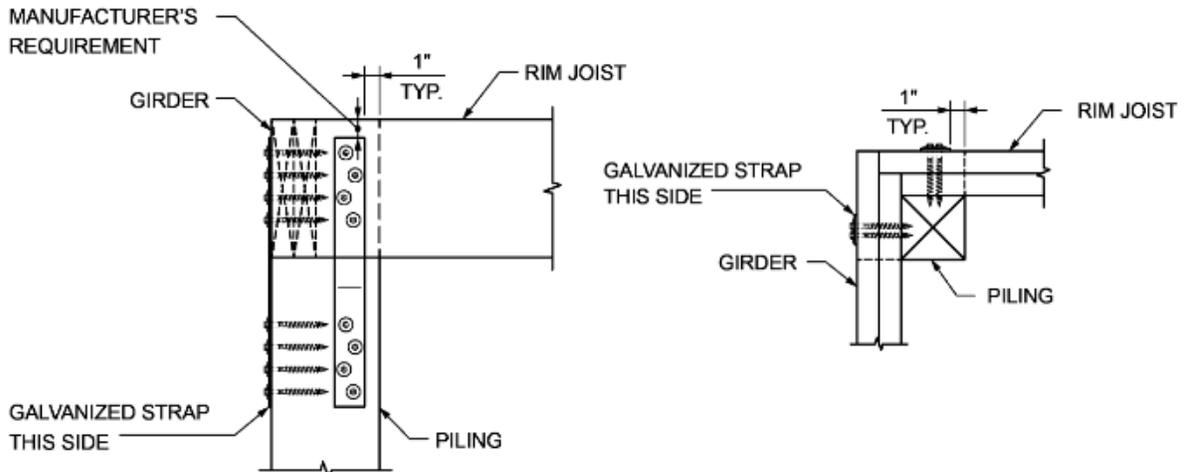


FIGURE R4603.6(e)
CORNER PILE CONNECTION

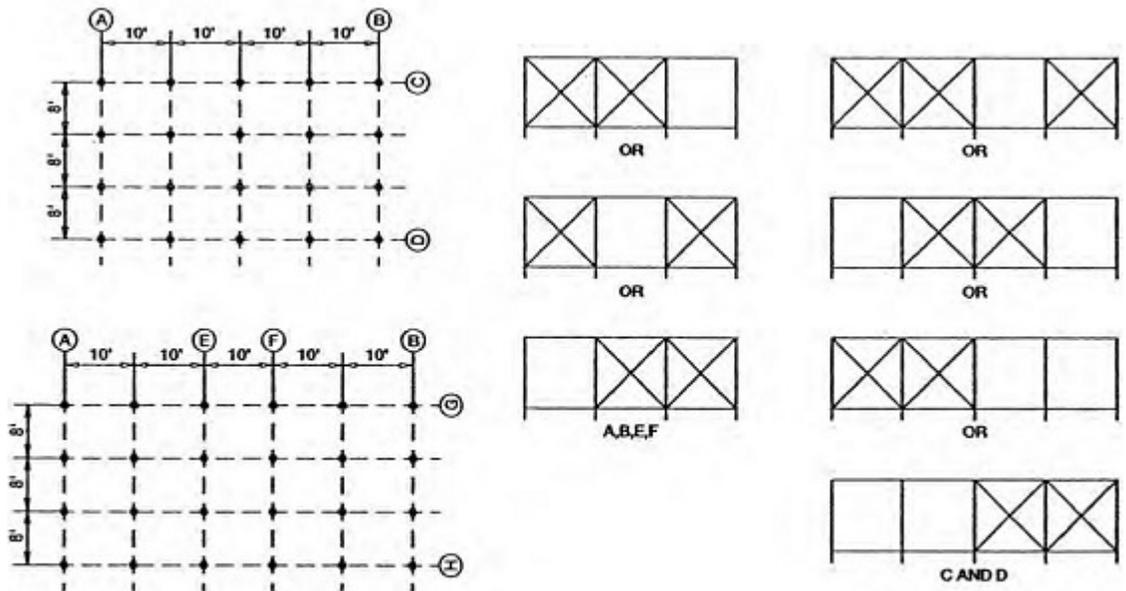


Figure R4603.6(e)(f)

ELEVATIONS (SHOWING POSSIBLE ARRANGEMENT OF X-BRACING IN LINE) (G AND H SIMILAR)

Jackie Flemming presented this item.

Residential Super Committee: Motion to grant made by D. Smith. Second by S. Knight.

Motion passed.

Building Code Council: Motion to grant made by D. Smith. Second by V. Watlington. Motion passed.

Item B – 22 Request from Jeff Tiller representing Appalachian State University and Robert Privott representing the N.C. Home Builders Association to amend the 2018 N.C. Residential Code, Section N1106.2 Mandatory Requirements as follows:

N1106.2 Mandatory requirements.

Compliance with this section requires that the provisions identified in Sections N1101 through N1104 labeled as “mandatory” be met. The building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table N1106.2.1 or Table N1106.2.2. Table 402.2.3 or 402.1.3 of the 2012 North Carolina Energy Conservation Code. Minimum standards associated with compliance shall be the ANSI RESNET ICC Standard 301-2014: “Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index.” A North Carolina *registered design professional* or certified *HERS rater* is required to perform the analysis if required by North Carolina Licensure laws.

Exception: Supply and return ducts in unconditioned space and outdoors shall be insulated to a minimum R-8. Supply ducts inside semi-conditioned space shall be insulated to a minimum R-4; return ducts inside conditioned and semi-conditioned space are not required to be insulated. Ducts located inside conditioned space are not required to be insulated other than as may be necessary for preventing the formation of condensation on the exterior of cooling ducts.

**TABLE N1106.2.1
MINIMUM INSULATION AND FENESTRATION REQUIREMENTS FOR ENERGY RATING INDEX COMPLIANCE^a**

CLIMATE ZONE	FENESTRATION VALUES			R-VALUES FOR								
	FENESTRATION U-FACTOR ^{b,j}	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{b,k}	CEILING ^m	UNVENTED ^p ENCLOSED RAFTER ASSEMBLIES AIR-IMPERMEABLE	UNVENTED ^p ENCLOSED RAFTER ASSEMBLIES AIR-PERMEABLE/IMPERMEABLE	WOOD FRAME WALL	MASS WALL ^l	FLOOR	BASEMENT ^{c,o} WALL	SLAB ^d	CRAWL SPACE ^e WALL
3	0.35	0.65	0.3	30	20	20+5 ^q	13	5/10	19	10/13	0	5/13
4	0.35	0.6	0.3	38 or 30ci ^l	20	20+15 ^q	15 _a 13+2.5 ^h	5/10	19	10/13	10	10/13
5	0.35	0.6	NR	38 or 30ci ^l	25	15+20 ^q	19 ⁿ 13+5 ^h or 15+3 ^h	13/17	30 ^g	10/13	10	10/13

For SI: 1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHGC are maximums-

b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.

c. "10/13" means R-10 continuous insulated sheathing on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall or crawl space wall.

d. For monolithic slabs, insulation shall be applied from the inspection gap downward to the bottom of the footing or a maximum of 18 inches below grade whichever is less. For floating slabs, insulation shall extend to the bottom of the foundation wall or 24 inches, whichever is less. (See Appendix O) R-5 shall be added to the required slab edge R-values for heated slabs.

e.- Deleted.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.

g. Or insulation sufficient to fill the framing cavity, R-19 minimum.

h. The first value is cavity insulation, the second value is continuous insulation so "13+5" means R-13 cavity insulation plus R-5 continuous insulation. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.

i. The second R-value applies when more than half the insulation is on the interior of the mass wall.

j. In addition to the exemption in N1102.3.3, a maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

k. In addition to the exemption in N1102.3.3, a maximum of two glazed fenestration product assemblies having a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty.

l. R-30 shall be deemed to satisfy the ceiling insulation requirement wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Otherwise, R-38 insulation is required where adequate clearance exists or insulation must extend either to the insulation baffle or within 1" of the attic roof deck.

m. Table value required except for roof edge where the space is limited by the pitch of the roof; there the insulation must fill the space up to the air baffle.

n. R -19 fiberglass batts compressed and installed in a nominal 2 × 6 framing cavity is deemed to comply. Fiberglass batts rated R-19 or higher compressed and installed in a 2x4 wall are not deemed to comply.

o. Basement wall meeting the minimum mass wall specific heat content requirement may use the mass wall R-value as the minimum requirement.

p. The air-impermeable insulation shall meet the requirements of the definition in Section R202. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. The insulation installation shall meet the requirements of R806.5.

g. The value for air-permeable insulation is shown first and that for air-impermeable insulation second. Thus, R-20 + R-5 indicates that the minimum value for air-permeable insulation is R-20, and the minimum value for air-impermeable insulation is R-5. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. The air-permeable insulation shall be installed directly under the air-impermeable insulation.

**TABLE N1106.2.2
EQUIVALENT U-FACTORS FOR TABLE N1106.2.1^a**

CLIMATE ZONE	FENESTRATION ^d	SKYLIGHT	CEILING	UNVENTED ^e ENCLOSED RAFTER ASSEMBLIES AIR-IMPERMEABLE	UNVENTED ^e ENCLOSED RAFTER ASSEMBLIES AIR-PERMEABLE/ IMPERMEABLE	FRAME WALL	MASS WALL ^b	FLOOR	BASEMENT WALL ^d	CRAWL SPACE WALL ^c
3	0.35	0.65	0.0350	0.05	0.04 ^f	0.082	0.141	0.047	0.059	0.136
4	0.35	0.60	0.0300	0.05	0.029 ^f	0.077	0.141	0.047	0.059	0.065
5	0.35	0.60	0.0300	0.04	0.029 ^f	0.061	0.082	0.033	0.059	0.065

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source.

b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4 and 0.054 in Climate Zone 5.

c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure N1101.7 and Table N1101.7.

d. A maximum of two glazed fenestration product assemblies having a U-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the RESCheck "UA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the U-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products' actual U-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum U-value requirement and maximum SHGC requirement, as applicable.

e. The air-impermeable insulation shall meet the requirements of the definition in section R202. Air-impermeable insulation shall be installed in direct contact with the underside of the structural roof sheathing. The insulation shall meet the requirements of R806.5.

f. For air-permeable/ impermeable applications, Table N1106.2.1 shall be followed for minimum insulation values.

Item withdrawn by proponents.

Item B – 23 Request from Robert Privott representing the N.C. Home Builders Association to amend the 2018 N.C. Residential Code, Section N1101.13 (R401.2) as follows:

IRC Chapter 11

N1101.13 (R401.2) Compliance

Projects shall comply with one of the following:

1. Sections N1101.14 through N1104.
2. Section N1105 and the provisions of Sections N1101.14 through N1104 labeled "Mandatory."

3. An energy rating index (ERI) approach in Section N1106.
4. North Carolina specific REScheck™ shall be permitted to demonstrate compliance with this code. Envelope requirements may not be traded off against the use of high efficiency heating or cooling equipment. No trade-off calculations are needed for required termite inspection and treatment gaps.
5. Rated in accordance with ANSI/RESNET/ICC 301-2019 Standard for the Calculation and Labeling of Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index with a maximum energy rating index (ERI) less than or equal to the appropriate value indicated in one of the following tables as applicable, when compared to the ERI reference design:

**MAXIMUM ENERGY RATING INDEX
(without calculation of on-site renewable energy)**

<u>CLIMATE ZONE</u>	<u>JAN. 1, 2019 – Dec. 31, 2022</u>	<u>JAN. 1, 2023 AND FORWARD</u>
<u>3</u>	<u>65</u>	<u>61</u>
<u>4</u>	<u>67</u>	<u>63</u>
<u>5</u>	<u>67</u>	<u>63</u>

**MAXIMUM ENERGY RATING INDEX
(including calculation of on-site renewable energy)**

<u>CLIMATE ZONE</u>	<u>JAN. 1, 2019 – Dec. 31, 2022</u>	<u>JAN. 1, 2023 AND FORWARD</u>
<u>3</u>	<u>51</u>	<u>42</u>
<u>4</u>	<u>54</u>	<u>50</u>
<u>5</u>	<u>55</u>	<u>51</u>

Robert Privott spoke in favor of this item.

**Residential Super Committee: Motion to grant made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to grant made by D. Smith. Second by F. Meads.
Motion passed with one opposition.**

Item B – 24 Request from Leon Skinner representing the N.C. Residential Ad-Hoc Committee to amend the 2018 N.C. Residential Code, Sections R905.2.8.5 and R908.3 as follows:

R905.2.8.5 Drip Edge. Deleted. Not required unless required by the roof covering manufacturer installation instructions. The drip edge placed around

the edge of a roof prior to installing the roofing material is designed so that water runs off over the drip edge and falls from a slight projection at the bottom edge of the roof rather than running back under, or along the eaves. Metal, wood or exterior composite materials can be used for the drip edge.

R908.3 Roof replacement. Roof replacement shall include the removal of existing layers of roof coverings down to the roof deck and replacement of up to 15% of the total existing roof deck. Replacement of up to 15% of the total roof deck shall not be considered structural work.

Leon Skinner gave a brief history of this item.

Residential Super Committee: Motion to grant made by W. Hamilton. Second by S. Knight.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by D. Smith.

Motion passed.

Item B – 25 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Building Code, Section 1010.1.9.7 and the 2018 N.C. Fire Code, Section 1010.1.9.7 as follows:

1010.1.9.7 Delayed egress. Delayed egress locking systems, shall be permitted to be installed on doors serving any occupancy except Group A, E and H in buildings that are equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or an *approved* automatic smoke or heat detection system installed in accordance with Section 907. The locking system shall be installed and operated in accordance with all of the following:

Exception: Group E classrooms with an occupant load of less than 50.

Colin Triming spoke in favor of this item.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton.

Motion passed.

Item B – 26 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 N.C. Building Code, Chapter 2 as follows:

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

Colin Triming spoke in favor of this item as well as items B-7, B-8, B-10, B-16 and B- as they all have basically the same language.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by K. Humiston.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton. Motion passed.

Item B - 27 Request from Clint Latham representing the City of Raleigh to amend the 2018 N.C. Building Code, Sections 915.2 and 915.2.4 as follows:

[F] **915.2 Locations.** Where required by Section 915.1.1, carbon monoxide detection shall be installed in the locations specified in Sections 915.2.1 through ~~915.2.3~~ 915.2.4.

[F] **915.2.4 Group A-2 occupancies.** Carbon monoxide detection shall be installed in A-2 occupancies in all the following locations:

1. On the ceiling of the room containing the fuel-burning appliance or fuel-burning fireplace.
2. In an approved location where the room or area is served by a forced air furnace.

Clint Latham spoke in favor of this item as well as items B-6, B-9, and B-12 as they all have basically the same language.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by D. Priest.

Motion passed.

Building Code Council: Motion to grant made by C. Conner. Second by W. Hamilton. Motion passed.

Item B – 28 Request from Bryan Dale Robinson representing the City of Raleigh to amend the 2018 N.C. Building Code, Section 428.2 as follows:

428.2 Residential care homes. Homes keeping no more than six adults or six unrestrained children who are able to respond and evacuate the facility without assistance, determined by the state agency having jurisdiction to be licensable, shall be classified as single-family residential (North Carolina Residential Code) and comply with the requirements of this section and the North Carolina Residential Code for detached one- and two-family dwellings and townhouses.

Bryan Robinson spoke in favor of this item.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by M. Ali.

Motion passed.

Building Code Council: Motion to grant made by F. Meads. Second by W. Hamilton.

Motion passed.

Item B – 29 Request from Bryan Dale Robinson representing the City of Raleigh to amend the 2018 N.C. Building Code, Section 428.3 as follows:

428.3 Licensed Small Residential Care Facilities. The following facilities when determined by the State Agency having jurisdiction to be licensable, shall be classified as Single-Family Residential and comply with the requirements of this section and the North Carolina Residential Code for detached on- and two-family dwellings and townhouses.

1. Residential Care Facilities keeping no more than six adults or six unrestrained children with no more than three who are unable to respond and evacuate without assistance.
2. Residential Care Facilities keeping no more than five adults or five children who are unable to respond and evacuate without assistance, when certifiable for Medicaid reimbursement, and when staffed 24-hours per day with at least two staff awake at all times.
3. Residential Care Facilities keeping no more than nine adults or nine children who are able to respond and evacuate without assistance.

Bryan Robinson spoke in favor of this item.

Commercial Super Committee: Motion to grant made by W. Hamilton. Second by V. Watlington.

Motion passed.

Building Code Council: Motion to grant made by D. Smith. Second by F. Meads.

Motion passed.

Part C – Notice of Rulemaking Proceedings and Public Hearing

The following Petitions for Rulemaking have been granted by the Council. Notice of Rulemaking proceedings has been made. The Public Hearing was held on July 14, 2020 and the Final Adoption meeting may take place on or after September 2020. The written public comment period expires on August 14, 2020.

Item C – 1 Request from Wayne Hamilton representing the NC Building Code Council to amend the 2018 NC Fire Code, Sections 202, 304.4, 304.4.3 and 304.4.4 as follows:

Valet Trash Collection Service. A scheduled trash removal service that collects occupant-generated rubbish, trash, or recyclable materials from dwelling units, where the trash is placed outside of the *dwelling units* for a limited time and in an *approved container*.

304.4 Valet Trash Collection Services for R-2 Apartment Occupancies

304.4.3 Policies and procedures. Apartment management shall have written policies and procedures in place, enforce compliance, and upon request provide a copy of such policies and procedures to the authority having jurisdiction.

304.4.4 Revocation. The use of doorstep refuse and recycling collection containers in apartment occupancies is revocable by the *fire code official* for violations of this section.

Jennae Moore, Government Affairs Director of the Apartment Association of North Carolina spoke in support of this item. She had questions as to what offenses would cause termination and ways to reinstate after such offense.

Item C – 2 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 NC Fire Code, Section 609.2 and Chapter 80 as follows:

[M] 609.2 Where required.

A Type 1 hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease or smoke.

Exceptions:

1. A Type 1 hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5mg/m³ or less of grease when tested at an exhaust flow rate of 500 cfm (0.236m³/s) in accordance with UL 710B.

2. Domestic cooking appliances used for commercial purposes in accordance with Section 507.1.2 of the *International Mechanical Code*.

3. Factory-built commercial exhaust hoods that are listed and labeled in accordance with UL 710, and installed in accordance with Section 304.1 of the International Mechanical Code, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5 of the International Mechanical Code.

4. Factory-built commercial cooking recirculating systems that are listed and labeled in accordance with UL 710B, and installed in accordance with Section 304.1 of the International Mechanical Code, shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4 and 507.5 of the International Mechanical Code. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1 of the International Mechanical Code. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet (9.3m²).

5. Where cooking appliances are equipped with integral down-draft exhaust systems and such appliances and exhaust systems are listed and labeled for the application in accordance with NFPA 96, a hood shall not be required at or above them.

Chapter 80 – Referenced Standards

UL 710-2012

Exhaust Hoods for Commercial Cooking Equipment

Colin Triming spoke in favor of this item.

Item C – 3 Request from Colin Triming representing the NC Fire Code Revision Committee to add the 2018 NC Fire Code, Section 3103.3.1 as follows:

3103.3.1 Special amusement building.

Tents and other membrane structures erected as a special amusement building shall be equipped with an automatic sprinkler system in accordance with Section 411.3 of the International Building Code.

Colin Triming spoke in favor of this item.

Item C – 4 Request from Colin Triming representing the NC Fire Code Revision Committee to amend the 2018 NC Fire Code, Section 3103.6 as follows:

3103.6 Construction documents.

A detailed site and floor plan for tents or membrane structures with an occupant load of 50 or more shall be provided with each application for approval. The tent or membrane structure floor plan shall indicate details of the means of egress facilities, seating capacity, arrangement of the seating and location and type of heating and electrical equipment. The construction documents shall include an analysis of structural stability.

Colin Triming spoke in favor of this item. It will go to the Tent Ad-hoc Committee before it comes back as a D item.

Item C – 5 Request from James Anthony representing the Anthony Property Group to amend the 2018 NC Residential Code, Section 202 Definitions as follows:

Family. Family is an individual, two or more persons related by blood, marriage or law, or a group of not more than any ~~five~~ eight persons living together in a *dwelling unit*. Servants having common housekeeping facilities with a family consisting of an individual, or more persons related by blood, marriage or law, are a part of the family for this code.

Carl Martin spoke explaining the intent of the proposal.

Item C – 6 Request from Carl Martin representing the NC Department of Insurance to amend the 2018 NC Building Code, Section 705.12 as follows:

705.12 Soffit in Group R.

In Group R buildings of combustible construction, the soffit material shall be securely attached to framing members and shall be constructed using one of the following methods:

1. Non-combustible soffit material,
2. Fire retardant treated soffit material,
3. Vinyl soffit installed over 3/4-inch wood sheathing,
4. Vinyl soffit installed over 5/8-inch gypsum board,
5. Aluminum soffit installed over 3/4-inch wood sheathing, or
6. Aluminum soffit installed over 5/8-inch gypsum board.

Venting requirements shall apply to both soffit and underlayment and shall be per Section 1203.2. ~~Vent openings shall not be located within 5 feet horizontally of any unprotected wall opening located within 3 feet vertically below the soffit.~~

Exceptions:

1. Vinyl and aluminum soffit material may be installed without wood sheathing or gypsum backing board if the exterior wall finish is noncombustible for a minimum distance of 10 feet above finished grade or the building is equipped throughout with an automatic sprinkler system in accordance with 903.3.1.1.
2. ~~Location of vent openings in soffits shall not be limited in buildings equipped throughout with an automatic sprinkler system complying with Section 903.3.1.1.~~ Detached one- and two- family dwellings and townhouses.

Carl Martin spoke of the original purpose of this proposal.

Item C – 7 Request from David Smith representing the Residential Ad-hoc Committee to amend the 2018 NC Residential Code, Section R302.1.1 Soffit Protection as follows:

R302.1.1 Soffit protection. In construction using vinyl or aluminum soffit material, the following application shall apply. Soffit assemblies located on buildings with less than a ~~10~~ 5 feet (3048 mm) fire separation distance shall be securely attached to framing members and applied over fire-retardant-treated wood, 23/32-inch (18.3 mm) wood sheathing or 5/8-inch (15.9 mm) exterior grade or moisture resistant gypsum board. Venting requirements shall be provided in both soffit and underlayments. Vents shall be either nominal 2-inch (51 mm) continuous or equivalent intermittent and shall not exceed the minimum net free air requirements established in Section R806.2 by more than 50 percent. *Townhouse* construction shall meet the additional requirements of Sections R302.2.5 and R302.2.6.

Exceptions:

1. Any portion of soffits having ~~10~~ 5 feet (3048 mm) or more *fire separation distance*.
2. Roof rake lines where the soffit does not communicate to the attic are not required to be protected per this section.
3. Soffits with less than 3 feet (914 mm) *fire separation distance* shall meet the projection fire rating requirements of Table R302.1.
4. Soffits between buildings located on the same lot.

No comments.

Item C – 8 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 NC Residential Building Code, Tables R602.3(3), R602.10.1 and R602.10.3 as follows:

**Table R602.10.3
REQUIRED LENGTH OF BRACING ALONG EACH SIDE OF A CIRCUMSCRIBED
RECTANGLE^{a,b,c,d,e,f,g,h}**

7/16-inch Wood Structural Panel Sheathing with 1/2-inch gypsum on inside wall
Panels are blocked
Nails to be 8d common or galvanized box (2-1/2 inches long X 0.113-inch diameter)
6-inch nail spacing on edges and 6-inch nail spacing in field
Each story is 10 feet maximum
Maximum stud spacing of 24 inches
Maximum roof slope 12:12
Building length to width ratio is 2

WIND SPEED	EAVE TO RIDGE HEIGHT (feet)	STORIES SUPPORTED	WALL PERPENDICULAR TO WIND (Wall Wind Loads)															
			Building Width in Feet															
			10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	
			Length (ft) of Braced Panel in Each Exterior Wall															
115	10	Roof Only	2.0 1.6	2.0 1.6	2.5 3.2	3.0 3.2	3.5 4.8	4.0 4.8	4.5 6.4	5.0 6.4	5.5 8.0	6.0 9.6	6.5 9.6	7.0 11.2	7.5 11.2	8.0 12.8	8.5 12.8	
		Roof +1 story	3.0 2.9	4.0 2.9	5.5 5.9	6.5 5.9	8.0 8.8	9.0 8.8	10.0 11.8	11.0 11.8	12.5 14.7	13.5 14.7	14.5 17.7	16.0 17.7	17.0 20.6	18.0 20.6	19.0 23.6	19.0 23.6
		Roof +2 stories	4.5 4.4	6.5 4.4	8.5 8.8	10.5 8.8	12.0 13.2	14.0 13.2	16.0 17.7	17.5 17.7	19.5 22.1	21.0 22.1	23.0 26.5	24.5 26.5	26.5 30.9	28.5 30.9	30.0 35.3	30.0 35.3
	15	Roof Only	2.0 2.4	2.0 2.4	3.0 4.7	3.5 4.7	4.0 7.1	4.5 7.1	5.5 9.4	6.0 9.4	7.0 11.8	8.5 11.8	9.0 14.2	10.0 14.2	10.5 16.5	11.5 16.5	12.0 18.9	12.0 18.9
		Roof +1 story	3.5 3.3	4.5 3.3	6.0 6.6	7.0 6.6	8.5 10.0	9.5 10.0	11.0 13.3	12.0 13.3	13.5 16.6	15.0 16.6	16.0 19.9	17.5 19.9	18.5 23.3	20.0 23.3	21.0 26.6	21.0 26.6
		Roof +2 stories	5.0 4.8	7.0 4.8	9.0 9.6	11.0 9.6	13.0 14.5	15.0 14.5	16.5 19.3	18.5 19.3	20.5 24.1	22.5 24.1	24.5 28.9	26.0 28.9	28.0 33.8	30.0 33.8	32.0 38.6	32.0 38.6
	20	Roof Only	2.0 2.4	2.5 2.4	3.5 4.7	4.0 4.7	4.5 7.1	5.5 7.1	6.0 9.4	7.0 9.4	7.5 11.8	8.5 11.8	9.0 14.2	10.0 14.2	10.5 16.5	11.5 16.5	12.0 18.9	12.0 18.9
		Roof +1 story	3.5 3.7	5.0 3.7	6.5 7.4	8.0 7.4	9.0 11.1	10.5 11.1	12.0 14.8	13.5 14.8	14.5 18.5	16.0 18.5	17.5 22.2	18.5 22.2	20.0 25.9	21.5 25.9	23.0 29.6	23.0 29.6
		Roof +2 stories	5.0 5.2	7.5 5.2	9.5 10.5	11.5 10.5	13.5 15.7	15.5 15.7	17.5 20.9	19.5 20.9	21.5 26.2	23.5 26.2	25.5 31.4	27.5 31.4	29.5 36.6	31.5 36.6	33.5 41.9	33.5 41.9
120	10	Roof Only	2.0 1.8	2.0 1.8	2.5 3.7	3.0 3.7	3.5 5.5	4.0 5.5	5.0 7.4	5.5 7.4	6.0 9.2	6.5 9.2	7.0 11.0	7.5 11.0	8.0 12.9	8.5 12.9	9.0 14.7	9.0 14.7
		Roof +1 story	3.5 3.2	4.5 3.2	6.0 6.4	7.0 6.4	8.5 9.7	9.5 9.7	11.0 12.9	12.0 12.9	13.5 16.1	14.5 16.1	16.0 19.3	17.0 19.3	18.5 22.6	19.5 22.6	21.0 25.8	21.0 25.8
		Roof +2 stories	5.0 4.8	7.0 4.8	9.5 9.6	11.5 9.6	13.0 14.4	15.0 14.4	17.0 19.3	19.0 19.3	21.0 24.1	23.0 24.1	25.0 28.9	27.0 28.9	29.0 33.7	31.0 33.7	32.5 38.5	32.5 38.5
	15	Roof Only	2.0 2.2	2.5 2.2	3.0 4.4	3.5 4.4	4.5 6.6	5.0 6.6	6.0 8.8	6.5 8.8	7.0 11.0	8.0 11.0	8.5 13.2	9.0 13.2	10.0 15.4	10.5 15.4	11.0 17.6	11.0 17.6
		Roof +1 story	3.5 3.6	5.0 3.6	6.5 7.3	8.0 7.3	9.0 10.9	10.5 10.9	12.0 14.5	13.5 14.5	14.5 18.2	16.0 18.2	17.5 21.8	19.0 21.8	20.0 25.4	21.5 25.4	23.0 29.1	23.0 29.1
		Roof +2 stories	5.5 5.3	7.5 5.3	10.0 10.5	12.0 10.5	14.0 15.8	16.0 15.8	18.0 21.0	20.0 21.0	22.5 26.3	24.5 26.3	26.5 31.6	28.5 31.6	30.5 36.8	32.5 36.8	34.5 42.1	34.5 42.1
	20	Roof Only	2.0 2.6	3.0 2.6	3.5 5.1	4.5 5.1	5.0 7.7	6.0 7.7	6.5 10.3	7.5 10.3	8.5 12.8	9.0 12.8	10.0 15.4	10.5 15.4	11.5 18.0	12.5 18.0	13.0 20.5	13.0 20.5
		Roof +1 story	4.0 4.3	5.5 4.3	7.0 8.5	8.5 8.1	10.0 12.1	11.5 12.1	13.0 16.2	14.5 16.2	16.0 20.2	17.5 20.2	19.0 24.3	20.5 24.3	22.0 28.3	23.5 28.3	25.0 32.4	25.0 32.4
		Roof +2 stories	5.5 5.7	8.0 5.7	10.5 11.4	12.5 11.4	14.5 17.1	17.0 17.1	19.0 22.8	21.5 22.8	23.5 28.5	25.5 28.5	28.0 34.2	30.0 34.2	32.0 39.9	34.5 39.9	36.0 45.6	36.0 45.6
130	10	Roof Only	2.0 2.2	2.5 2.2	3.0 4.3	3.5 4.3	4.5 6.5	5.0 6.5	5.5 8.6	6.5 8.6	7.0 10.8	7.5 10.8	8.0 12.9	9.0 12.9	9.5 15.1	10.0 15.1	11.0 17.3	11.0 17.3
		Roof +1 story	4.0 3.8	5.5 3.8	7.0 7.6	8.5 7.6	10.0 11.4	11.5 11.4	13.0 15.1	14.5 15.1	16.0 18.9	17.5 18.9	19.0 22.7	20.0 22.7	21.5 26.5	23.0 26.5	24.5 30.3	24.5 30.3
		Roof +2 stories	6.0 5.7	8.5 5.7	11.0 11.4	13.0 11.4	15.5 17.0	18.0 17.0	20.0 22.7	22.5 22.7	24.5 28.4	27.0 28.4	29.5 34.1	31.5 34.1	34.0 39.8	36.0 39.8	38.5 45.5	38.5 45.5
	15	Roof Only	2.0 2.6	3.0 2.6	3.5 5.2	4.5 5.2	5.0 7.7	6.0 7.7	7.0 10.3	7.5 10.3	8.5 12.9	9.0 12.9	10.0 15.5	10.5 15.5	11.5 18.1	12.5 18.1	13.0 20.7	13.0 20.7
		Roof +1 story	4.0 4.3	6.0 4.3	7.5 8.5	9.0 8.5	11.0 12.8	12.5 12.8	14.0 17.1	15.5 17.1	17.0 21.3	19.0 21.3	20.5 25.6	22.0 25.6	23.5 29.9	25.5 29.9	27.0 34.1	27.0 34.1
		Roof +2 stories	6.0 6.2	9.0 6.2	11.5 12.4	14.0 12.4	16.5 18.6	19.0 18.6	21.5 24.8	23.5 24.8	26.0 31.0	28.5 31.0	31.0 37.2	33.5 37.2	36.0 43.4	38.0 43.4	40.5 49.7	40.5 49.7
	20	Roof Only	2.5 3.0	3.5 3.0	4.5 6.0	5.0 6.0	6.0 9.0	7.0 9.0	8.0 12.0	9.0 12.0	10.0 15.1	10.5 15.1	11.5 18.1	12.5 18.1	13.5 21.1	14.5 21.1	15.5 24.1	15.5 24.1
		Roof +1 story	4.5 4.7	6.5 4.7	8.0 9.5	10.0 9.5	11.5 14.2	13.5 14.2	15.0 19.0	17.0 19.0	18.5 23.7	20.5 23.7	22.0 28.5	24.0 28.5	25.5 33.2	27.5 33.2	29.0 38.0	29.0 38.0
		Roof +2 stories	6.5 6.7	9.5 6.7	12.0 13.5	14.5 13.5	17.5 20.2	20.0 20.2	22.5 26.9	25.0 26.9	27.5 33.7	30.0 33.7	32.5 40.4	35.5 40.4	38.0 47.1	40.5 47.1	43.0 53.8	43.0 53.8

a. If the stud spacing is reduced to 16 inches, table values for 7/16-inch sheathing may be multiplied by 0.93.

b. If the stud spacing is reduced to 16 inches or the sheathing thickness is greater than 7/16-inch, the interior field nail spacing may be increased to 12 inches.

c. If the 1/2-inch gypsum is not applied to the inside of the wall, the table lengths are to be multiplied by 1.22.

d. Table values shall be multiplied by the following values for different wall heights:

8ft. walls 0.87

9ft. walls 0.92

11ft. walls 1.08

12ft. walls 1.15

e. If 3/8-inch wood structural sheathing is used instead of 7/16-inch wood structural sheathing, table lengths are to be multiplied by 1.07.

f. If 1/2-inch structural fiberboard is used instead of 7/16-inch wood structural sheathing, table lengths are to be multiplied by 1.31.

g. Interpolation is permitted, extrapolation is prohibited.

h. For Exposure Category C or D, multiply the required length of bracing by a factor of 1.5 or 1.8 respectively.



TABLE R602.3(3)
REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES^{a b c}

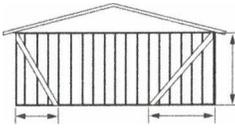
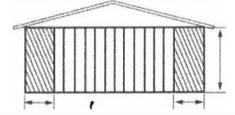
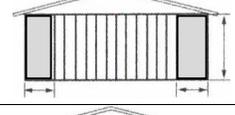
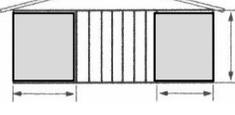
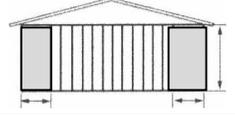
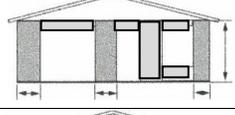
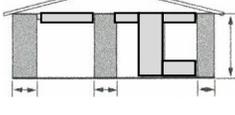
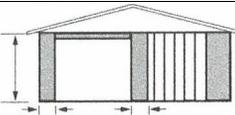
MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		ULTIMATE DESIGN WIND SPEED V _{ult} (mph)		
					Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category		
Size	Penetration (inches)						B	C	D
6d Common (2.0" X 0.113")	1.5	24/0	3/8	16	6	12	140	115	110
8d Common (2.5" x 0.131")	1.75	24/16	7/16	16	6	12	170	140	135
				24	6	12	140	115	110

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

- a. Panel strength axis parallel or perpendicular to supports. 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 pressures 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.

TABLE R602.10.1

BRACING METHODS^{a,b}

METHOD	MINIMUM BRACE MATERIAL THICKNESS	MINIMUM BRACE PANEL LENGTH OR BRACE ANGLE	CONNECTION CRITERIA		FIGURE OF BRACING METHOD, NOT NECESSARILY LOCATION
			Fasteners	Spacing	
LIB Let-in-bracing	1 x 4 wood brace (or approved metal brace installed per manufacturer instructions)	45° angle for maximum 16" o.c. stud spacing	2-8d common nails or 3-8d (2½" long x 0.113" dia.) nails	Per stud and top and bottom plates	
DWB Diagonal wood boards	¾" (1" nominal)	48"	2-8d (2½" long x 0.113" diameter) or 2 - 1¾"-long-staples	Per stud and top and bottom plates	
WSP Wood Structural panel	3/8"	48" ^d	6d common nail or 8d (2½" long x 0.113" diameter) nail [See Table R602.3(3)]	6" edges 12" field	
SFB Structural fiberboard sheathing	1/2"	48" ^d	1½" long x 0.120" diameter galvanized roofing nails	3" edges 6" field	
GB Gypsum board installed on both sides of wall	1/2"	96" for use with R602.10.2 48" for use with R602.10.3	Minimum 5d cooler nails or #6 screws	7" edges 7" field	
PCP Portland cement plaster	3/4" (maximum 16" o.c. stud spacing)	48"	1½" long, 11 gage, 7/16" diameter head nails or 7/8" long 6 gage staples	6" o.c. on all framing members	
CS-WSP^{e,i} Continuously Sheathed SFB	3/8"	24" adjacent to window not more than 67% of wall height: 30" adjacent to door or window greater than 67% and less than 85% of wall height. 48" for taller openings.	Same as WSP	Same as WSP	
CS-SFB^{e,i} Continuously sheathed SFB	1/2"		Same as SFB	Same as SFB	
PF Portal Frame ^{f,g,h}	7/16"	See Figure R602.10.1	See Figure R602.10.1	See Figure R602.10.1	

Notes:

- Alternative bracing materials and methods shall comply with Section 105 of the *North Carolina Administrative Code and Policies*, and shall be permitted to be used as a substitute for any of the bracing materials listed in Table R602.10. 1 provided at least equivalent performance is demonstrated, Where the tested bracing strength or stiffness differs from tabulated materials. the bracing amount required for the alternative material shall be permitted to be factored to achieve equivalence.
- All edges of panel-type wall bracing required from ~~Table Section~~ R602.10.2 ~~and or Section~~ R602.10.3 shall be attached to framing or blocking, except GB bracing horizontal joints shall not be required to be blocked when joints are finished.
- Two LIB braces installed at a 60° angle shall be permitted to be substituted for each 45° angle LIB brace.
- For 8-foot (2483 mm) or 9-foot (2743 mm) wall height. brace panel minimum length shall be permitted to be reduced to 36-inch (914 mm) or 42-inch length (1067 mm). respectively, where not located adjacent to a door opening. A braced wall panel shall be permitted to be reduced to a 32-inch (813 mm.) length when studs at each end of the braced wall panel are anchored to foundation or framing below using hold-down device with minimum 2,800 pounds design tension capacity, For detached single story garages and attached garages supporting roof only. a minimum 24-inch (610 mm) brace panel length shall be permitted on one wall containing one or more garage door openings.
- Bracing methods designated CS-WSP and CS-SFB shall have sheathing installed on all sheathable surfaces above. below, and between wall openings.

- f. For purposes of bracing in accordance with Section R602.10.2, two portal frame brace panels with wood structural panel sheathing applied to the exterior face of each brace panel as shown in Figure R602.10.1 shall be considered equivalent to one braced wall panel.
- g. Structural fiberboard (SFB) shall not be used in portal frame construction.
- h. No more than three portal frames shall be used in a single building elevation.
- i. CS-WSP and CS-SFB cannot be mixed on the same story. Gable ends shall match the panel type of the wall below.

David Smith spoke in favor of this item.

Part D – Final Adoption

The following Petitions for Rulemaking have been granted or denied by the Council. Notice of Rulemaking proceedings and Public Hearing has been made. The Public Hearings were held on March 10, 2020. The Final Adoption meeting took place on July 14, 2020. The Council will give no further consideration to Petitions that are disapproved. Petitions that are approved will proceed through the Rulemaking process. The effective date is January 1, 2021 unless otherwise noted.

Item D – 1 Request by Tommy Rowland representing Mecklenburg County Code Enforcement to amend the 2018 N.C. Mechanical Code, Table 403.3.1.1 as follows:

**TABLE 403.3.1.1
MINIMUM VENTILATION RATES**

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ^{2 a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _a CFM/FT ^{2 a}	EXHAUST AIRFLOW RATE CFM/FT ^{2 a}
Correctional facilities				
Booking/waiting	50	7.5	0.06	—
Cells				
without plumbing fixtures	25	5	0.12	—
with plumbing fixtures ⁹	25	5	0.12	1.0
Day room	30	5	0.06	—
Dining halls (see food and beverage service)	—	—	—	—
Guard stations	15	5	0.06	—
Dry cleaners, laundries				
Coin-operated dry cleaner	20	15	—	—
Coin-operated laundries	20	7.5	0.06	—
Commercial dry cleaner	30	30	—	—
Commercial laundry	10	25	—	—
Storage, pick up	30	7.5	0.12	—
Education				
Art classroom	20	10	0.18	0.7
Auditoriums	150	5	0.06	—
Classrooms (ages 5-8)	25	7.5	—	—
Classrooms (age 9 plus)	35	7.5	—	—
Computer lab	25	10	0.12	—
Corridors (see public spaces)	—	—	—	—

Day care (through age 4)	25	10	0.18	—
Lecture classroom	65	7.5	0.06	—
Lecture hall (fixed seats)	150	7.5	0.06	—
Locker/dressing rooms ^g	—	—	—	0.25
Media center	25	10	0.12	—
Multiuse assembly	100	7.5	0.06	—
Music/theater/dance	35	10	0.06	—
Science laboratories	25	10	0.18	—
Smoking lounges ^b	70	60	—	—
Sports locker rooms ^g	—	—	—	0.5
Wood/metal shops ^g	20	10	0.18	0.5
Food and beverage service				
Bars, cocktail lounges	100	7.5	0.18	—
Cafeteria, fast food	100	7.5	0.18	—
Dining rooms	70	7.5	0.18	—
Kitchens (cooking) ^b	—	—	—	0.7

(continued)

**TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES**

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT^{2 a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R CFM/PERSON _p	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R CFM/FT^{2 a} _a	EXHAUST AIRFLOW RATE CFM/FT^{2 a}
Hotels, motels, resorts and dormitories				
Bathrooms/toilet—private ^g		—	—	25/50 ^f
Bedroom/living room		5	0.06	—
Conference/meeting		5	0.06	—
Dormitory sleeping areas		5	0.06	—
Gambling casinos		7.5	0.18	—
Lobbies/prefunction		7.5	0.06	—
Multipurpose assembly		5	0.06	—
Offices				
Conference rooms	50	5	0.06	—
Main entry lobbies	10	5	0.06	—
Office spaces	5	5	0.06	—
Reception areas	30	5	0.06	—
Telephone/data entry	60	5	0.06	—
Private dwellings, single and multiple				
Garages, common for multiple units ^b	—	—	—	0.75
<u>Garages, below dwelling units^j</u>	—	—	—	<u>100 cfm per car</u>
Kitchens ^b	—	—	—	25/100 ^f
Living areas ^c	Based upon number of bedrooms. First bedroom, 2; each additional bedroom, 1	0.35 ACH but not less than 15 cfm/person	—	—

Toilet rooms and bathrooms ^g	—	—	—	25/50 ^f
Public spaces				
Corridors	—	—	0.06	—
Courtrooms	70	5	0.06	—
Elevator car	—	—	—	1.0
Legislative chambers	50	5	0.06	—
Libraries	10	5	0.12	—
Museums (children's)	40	7.5	0.12	—
Museums/galleries	40	7.5	0.06	—
Places of religious worship	120	5	0.06	—
Shower room (per shower head) ^g	—	—	—	50/20 ^f
Smoking lounges ^b	70	60	—	—
Toilet rooms — public ^g	—	—	—	50/70 ^e
Retail stores, sales floors and showroom floors				
Dressing rooms	—	—	—	0.25
Mall common areas	40	7.5	0.06	—
Sales	15	7.5	0.12	—
Shipping and receiving	—	—	0.12	—
Smoking lounges ^b	70	60	—	—
Storage rooms	—	—	0.12	—
Warehouses (see storage)	—	—	—	—

(continued)

**TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES**

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ^{2 a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT ^{2 a}	EXHAUST AIRFLOW RATE CFM/FT ^{2 a}
Specialty shops				
Automotive motor-fuel dispensing stations ^b	—	—	—	1.5
Barber	25	7.5	0.06	0.5
Beauty salons ^b	25	20	0.12	0.6
Nail salons ^{b,h}	25	20	0.12	0.6
Embalming room ^b	—	—	—	2.0
Pet shops (animal areas) ^b	10	7.5	0.18	0.9
Supermarkets	8	7.5	0.06	—
Sports and amusement				
Bowling alleys (seating areas)	40	10	0.12	—
Disco/dance floors	100	20	0.06	—
Game arcades	20	7.5	0.18	—
Gym, stadium, arena (play area)	—	—	0.30	—
Health club/aerobics room	40	20	0.06	—
Health club/weight room	10	20	0.06	—
Ice arenas without combustion engines	—	—	0.30	0.5
Spectator areas	150	7.5	0.06	—
Swimming pools (pool and deck area)	—	—	0.48	—

Storage				
Repair garages, enclosed parking garages ^{b,d}	—	—	—	0.75
Warehouses	—	—	0.06	—
Theaters				
Auditoriums (see education)	—	—	—	—
Lobbies	150	—	0.06	—
Stages, studios	70	—	0.06	—
Ticket booths	60	5	0.06	—
Transportation				
Platforms	100	7.5	0.06	—
Transportation waiting	100	7.5	0.06	—

(continued)

**TABLE 403.3.1.1—continued
MINIMUM VENTILATION RATES**

OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT^{2 a}	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT^{2 a}	EXHAUST AIRFLOW RATE CFM/FT^{2 a}
Workrooms				
Bank vaults/safe deposit	5	5	0.06	—
Computer (without printing)	4	5	0.06	—
Copy, printing rooms	4	5	0.06	0.5
Darkrooms	—	—	—	1.0
Meat processing ^c	10	15	—	—
Pharmacy (prep. area)	10	5	0.18	—
Photo studios	10	5	0.12	—

For SI: 1 cubic foot per minute = 0.0004719 m³/s, 1 ton = 908 kg, 1 cubic foot per minute per square foot = 0.00508 m³/(s • m²), °C = [(°F)-32]/1.8, 1 square foot = 0.0929 m².

- a. Based upon *net occupiable floor area*.
- b. Mechanical exhaust required and the recirculation of air from such spaces to other spaces is prohibited. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Item 3).
- c. Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.
- d. Ventilation systems in enclosed parking garages shall comply with Section 404.
- e. Rates are per water closet or urinal. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- f. Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- g. Mechanical exhaust is required and recirculation to other spaces is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).
- h. For nail salons, each manicure and pedicure station shall be provided with a *source capture system* capable of exhausting not less than 50 cfm per station. Exhaust inlets shall be located in accordance with Section 502.20. Where one or more required source capture systems operate continuously during occupancy, the exhaust rate from such systems shall be permitted to be applied to the exhaust flow rate required by Table 403.3.1.1 for the nail salon.
- i. *Commentary: Refer to design guidelines, NC Department of Public Instruction School Planning, Z9.5 American National Standard for Laboratory Ventilation.*
- j. If the tenants of the dwelling have exclusive use of the garage below, no exhaust is required.

**Commercial Super Committee: Motion to approve made by D. Priest. Second by K. Rogers.
Motion passed.**

**Building Code Council: Motion to approve made by W. Hamilton. Second by D. Priest.
Motion passed.**

Item D – 2 Request by Reuben E. Clark representing CMI to amend the 2017 NEC, Section 680.26(B)(2)(b) as follows:

(6) This method shall only be permitted for above-ground pools, for in ground pools a copper grid is required as per 680.26(B)(1)(b).

Kim Humiston spoke on this item.

Ad-hoc & Electrical Standing committees recommend this item be accepted.

**Residential Super Committee: Motion made by K. Rogers to send this to the full Building Code Council with the recommendation to table the item for now until it goes to the Residential, Commercial and Electrical committees. Second by W. Hamilton.
Motion passed.**

**Building Code Council: Motion made by K. Rogers to table this item until the next Building Code Council meeting. Second by F. Meads.
Motion passed.**

This item will go to the Residential, Commercial, and Electrical committees before the next meeting.

Item D – 3 Request by Leon Meyers representing BuildSense Inc. to amend the 2018 N.C. Energy Conservation Code, Sections C401.2 and R401.2 as follows:

C401.2 Application

Commercial buildings shall comply with one of the following:

1. The requirements of ANSI/ASHRAE/IESNA 90.1.
2. The requirements of Sections C402 through C405. In addition, commercial buildings shall comply with Section C406 and tenant spaces shall comply with Section C406.1.1.
3. The requirements of Sections C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 and C407. The building energy cost shall be equal to or less than 85 percent of the standard reference design building.

1. ~~North Carolina-specific~~ COMcheck keyed to the 2018 IECC or ASHRAE 90.1—~~2013~~ 2016 COMcheck shall be permitted to demonstrate compliance with this code.

R401.2 Compliance.

Projects shall comply with one of the following:

1. Sections R401 through R404.
2. Section R405 and the provisions of Sections R401 through R404 labeled “Mandatory.”
3. An energy rating index (ERI) approach in Section R406.
4. ~~North Carolina-specific~~ REScheck keyed to the 2018 IECC shall be permitted to demonstrate compliance with this code. Envelope requirements may not be traded off against the use of high efficiency heating or cooling equipment. No tradeoff calculations are needed for required termite inspection and treatment gaps.

The cost/benefit analysis provided with the proposed amendment indicated that this amendment did not present a substantial cost/benefit.

Residential Super Committee: Motion to approve made by L. Skinner. Second by D. Smith.

Motion passed.

Commercial Super Committee: Motion to approve made by K. Humiston. Second by R. Davis.

Motion passed with two opposing votes.

Building Code Council: Motion to approve made by B. Herring. Second by K. Humiston.

Motion passed with three opposing votes.

Item D – 4 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Building Code, Section R102.5 Appendices as follows:

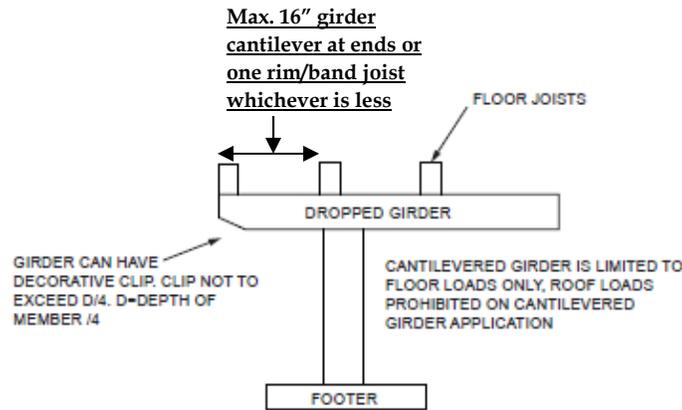
R102.5 Appendices. Provisions in the appendices shall not apply unless specifically referenced in the code text ~~adopting ordinance~~.

Residential Super Committee: Motion to approve made by W. Hamilton. Second by D. Smith.

Motion passed.

Building Code Council: Motion to approve made by W. Hamilton. Second by S. Knight. Motion passed.

Item D – 5 Request by David Smith, representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Building Code, Appendix M as follows:



For SI: 1 inch = 25.4 mm.

**FIGURE AM105.1(4)
CANTILEVERED DROPPED GIRDER**

SECTION AM105 GIRDER SUPPORT AND SPAN

AM105.1 General. Girders shall bear directly on the support post with the post attached at top to prevent lateral displacement or be connected to the side of the posts with two 5/8-inch (16 mm) hot-dip galvanized bolts with nut and washer. Girder spans are per Table R602.7(1) and (2). Girder support is permitted to be installed in accordance with Figure AM105.1(1) for top mount; Figure AM105.1(2) for side mount and Figure AM105.1(3) for split girders. See Figure AM105.1(4) for cantilevered girders. Girders may also be cantilevered off ends of support post no more than one joist spacing or 16 inches, whichever is greater per Figure AM105.1(4).

AM105.2 Girder span for uncovered porches and decks. ~~Maximum allowable spans for wood deck girders, as shown in Figure AM105.2, shall be in accordance with Table AM105.2. Girder plies shall be fastened with two rows of 10d (3-inch x 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Girders shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Splices of multispan beams shall be located at interior post locations.~~

AM105.3 Girder span for roofed porches and decks. ~~Girder spans for covered decks shall be in accordance with Tables R602.7(1) and (2).~~

SECTION AM106 JOIST SPANS AND CANTILEVERS

~~AM106.1 Joist spans for uncovered porches and decks~~ and cantilevers. Joists spans shall be based upon Table R502.3.1(2) with 40lbs per sq ft of live load and 10 lbs per sq ft of dead load. Floor joists for exterior decks may be cantilevered per Table R502.3.3(1). Maximum allowable spans for wood deck joists, as shown in Figure AM106.1, shall be in accordance with Table AM106.1. Deck joists shall be permitted to cantilever not greater than one fourth of the actual, adjacent joist span.

~~AM106.1.1 Lateral restraint at supports.~~ Joist ends and bearing locations shall be provided with lateral restraint to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall equal not less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with not less than (3) 10d (3-inch × 0.128-inch) nails or (3) No. 10 × 3-inch (76 mm) long wood screws.

~~AM106.2. Roofed porches and decks.~~ Joists spans shall be in accordance with Table R502.3.1(2) with 40 pounds per square foot live load and 10 pounds per square foot dead load. Cantilevered floor joists shall be in accordance with Table R502.3.3(1).

**TABLE AM105.2
DECK GIRDER SPAN LENGTHS^{a, b}
(feet – inches)**

SPECIES ^c	SIZE ^d	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	2 – 2 × 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2 – 2 × 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2 – 2 × 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2 – 2 × 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3 – 2 × 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3 – 2 × 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3 – 2 × 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10
Douglas fir-larch ^e , hem-fir ^e , spruce-pine-fir ^e , redwood, western cedars, ponderosa pine ^f , red pine ^f	3 × 6 or 2 – 2 × 6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3 × 8 or 2 – 2 × 8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3 × 10 or 2 – 2 × 10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3 × 12 or 2 – 2 × 12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4 × 6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4 × 8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4 × 10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4 × 12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3 – 2 × 6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3 – 2 × 8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3 – 2 × 10	12-0	10-5	9-4	8-6	7-10	7-4	6-11
	3 – 2 × 12	13-11	12-1	10-9	9-10	9-1	8-6	8-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.

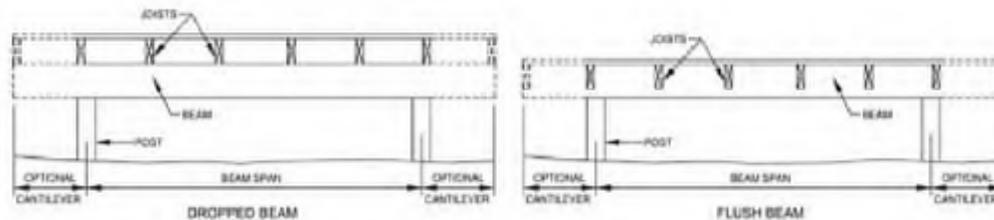
b. Girders supporting deck joists from one side only.

c. No. 2 grade, wet service factor.

d. Girder depth shall be greater than or equal to depth of joists with a flush beam condition.

e. Includes incising factor.

f. Northern species. Incising factor not included.



**FIGURE AM105.2
TYPICAL DECK GIRDER SPANS**

APPENDIX M

TABLE AM106.1
DECK JOIST SPANS FOR COMMON LUMBER SPECIES^f
(feet – inches)

SPECIES ^a	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER ^b (Inches)			SPACING OF DECK JOISTS WITH CANTILEVERS ^c (Inches)		
		12	16	24	12	16	24
Southern pine	2 x 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 x 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 x 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 x 12	18-0	16-6	13-6	18-0	16-6	13-6
Douglas fir-larch ^d , hem-fir ^d , spruce-pine-fir ^d	2 x 6	9-6	8-8	7-2	6-3	6-3	6-3
	2 x 8	12-6	11-1	9-1	9-5	9-5	9-1
	2 x 10	15-8	13-7	11-1	13-7	13-7	11-1
	2 x 12	18-0	15-9	12-10	18-0	15-9	12-10
Redwood, western cedars, ponderosa pine ^e , red pine ^e	2 x 6	8-10	8-0	7-0	5-7	5-7	5-7
	2 x 8	11-8	10-7	8-8	8-6	8-6	8-6
	2 x 10	14-11	13-0	10-7	12-3	12-3	10-7
	2 x 12	17-5	15-1	12-4	16-5	15-1	12-4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. No. 2 grade with wet service factor.

b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360.

c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied to end.

d. Includes incising factor.

e. Northern species with no incising factor.

f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

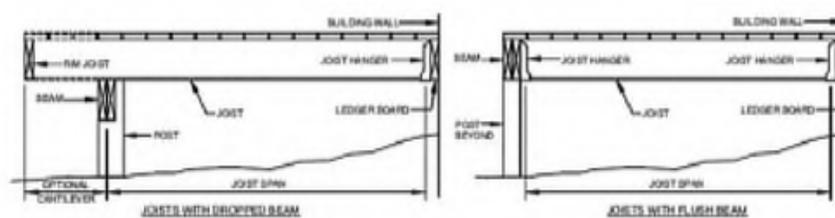


FIGURE AM106.1
TYPICAL DECK JOIST SPANS

TABLE R602.7(3)
GIRDER AND HEADER SPANS* FOR OPEN PORCHES
(Maximum span for Douglas fir-larch, hem-fir, southern pine and spruce-pine-fir^b)

SIZE	SUPPORTING ROOF						SUPPORTING FLOOR	
	GROUND SNOW LOAD (psf)							
	30		50		70			
	DEPTH OF PORCH ^c (feet)							
	8	14	8	14	8	14	8	14
2-2 × 6	7-6	5-8	6-2	4-8	5-4	4-0	6-4	4-9
2-2 × 8	10-1	7-7	8-3	6-2	7-1	5-4	8-5	6-4
2-2 × 10	12-4	9-4	10-1	7-7	8-9	6-7	10-4	7-9
2-2 × 12	14-4	10-10	11-8	8-10	10-1	7-8	11-11	9-0

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. Spans are given in feet and inches.

b. Tabulated values assume #2 grade lumber, wet service and incising for refractory species. Use 30 psf ground snow load for cases in which ground snow load is less than 30 psf and the roof live load is equal to or less than 20 psf.

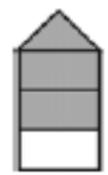
c. Porch depth is measured horizontally from building face to centerline of the header. For depths between those shown, spans are permitted to be interpolated.

**Motion made by D. Smith to table this item until the next Building Code Council meeting. Second by S. Knight.
Motion passed.**

Item D – 6 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 Residential Code, Tables R602.3(5) & R602.7.5 as follows:

Attachment A:

**TABLE R602.3(5)
SIZE, HEIGHT AND SPACING OF WOOD STUDS^{a,d}**

STUD SIZE (inches)	BEARING WALLS					NONBEARING WALLS	
	Laterally unsupported stud height ^a (feet)	Maximum spacing when supporting ^a a roof-ceiling assembly or a habitable attic assembly, only (inches)	Maximum spacing when supporting one floor, plus a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting two floors, plus a roof-ceiling assembly or a habitable attic assembly (inches)	Maximum spacing when supporting one floor height ^a (inches)	Laterally unsupported stud height ^a (feet)	Maximum spacing (inches)
							
2 x 3 ^b	—	—	—	—	—	10	16
2 x 4	10	24 ^c	16 ^c	e d	24	14	24
3 x 4	10	24	24	16	24	14	24
2 x 5	10	24	24	—	24	16	24
2 x 6	10	24	24	16	24	20	24

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. Listed heights are distances between points of lateral support placed perpendicular to the plane of the wall. 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.
- b. Shall not be used in exterior walls.
- c. A habitable attic assembly supported by 2 x 4 studs is limited to a roof span of 32 feet. Where the roof span exceeds 32 feet, the wall studs shall be increased to 2 x 6 or the studs shall be designed in accordance with accepted engineering practice.
- d. ~~One half of the studs interrupted by a wall opening shall be placed immediately outside the jack studs on each side of the opening as king studs to resist wind loads. King studs shall extend full height from sole plate to top plate of the wall.~~
- e d. 2 x 4 studs at 12 inches maximum spacing are permitted in accordance with Table R4505(b).

Attachment A (continued):

TABLE R602.7.5
MINIMUM NUMBER OF FULL HEIGHT KING STUDS
AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (feet)	MAXIMUM STUD SPACING (inches) [per Table R602.3(5)]	
	16	24
≤ 3'	1	1
4'	2	1
8'	3	2
12'	5	3
16'	6	4

<u>HEADER SPAN (feet)</u>	<u>MINIMUM NUMBER OF FULL HEIGHT STUDS (King)</u>
<u>Up to 3'</u>	<u>1</u>
<u>>3' to 6'</u>	<u>2</u>
<u>>6' to 9'</u>	<u>3</u>
<u>>9' to 12'</u>	<u>4</u>
<u>>12' to 15'</u>	<u>5</u>

**Residential Super Committee: Motion to approve made by D. Smith. Second by S. Knight.
 Motion passed.**

**Building Code Council: Motion to approve made by L. Skinner. Second by D. Smith.
 Motion passed.**

Item D – 7 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.2 Egress door as follows:

R311.2 Egress door. Not less than one exterior egress door shall be provided for each *dwelling* unit. 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 be not less than 78 inches (1981 mm) in height measured from the top of the threshold to the bottom of the stop. Other exterior doors shall not be required to comply with these minimum dimensions. ~~Egress doors shall be readily~~

~~openable from inside the dwelling.~~ All interior egress doors and a minimum of one exterior egress door shall be readily openable from the side from which egress is to be made without the use of a key or special knowledge or effort.

Residential Super Committee: Motion to approve made by D. Smith. Second by S. Knight.
Motion passed.

Building Code Council: Motion to approve made by D. Smith. Second by F. Meads.
Motion passed.

Item D – 8 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.7.5.3, R312.1.2 and R312.1.3 as follows:

R311.7.5.3 Nosings. The radius of curvature at the nosing shall be not greater than 9/16 inch (14 mm). A nosing projection not less than 3/4 inch (19 mm) and not more than 1 1/4 inches (32 mm) shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch (9.5 mm) between two stories, including the nosing at the level of floors and landings. Beveling of nosings shall not exceed 1/2 inch (12.7 mm).

Exceptions:

1. A nosing projection is not required where the tread depth is not less than 11 inches (279 mm).
- ~~2. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.~~

R312.1.2 Height. Required *guards* at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than 36 inches (914 mm) in height as measured vertically above the adjacent walking surface or the line connecting the leading edges of the treads. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch diameter (102 mm) sphere.

Exceptions:

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

3. Open risers that prevent the passage of a 4-inch (102 mm) diameter sphere.

R312.1.3 Opening limitations. Required *guards* shall not have openings from the walking surface to the required *guard* height that allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions:

1. The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a *guard*, shall not allow passage of a sphere 6 inches (153 mm) in diameter.

2. *Guards* on the open side of stairs shall not have openings that allow passage of a sphere 4 3/8 inches (111 mm) in diameter.

3. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less.

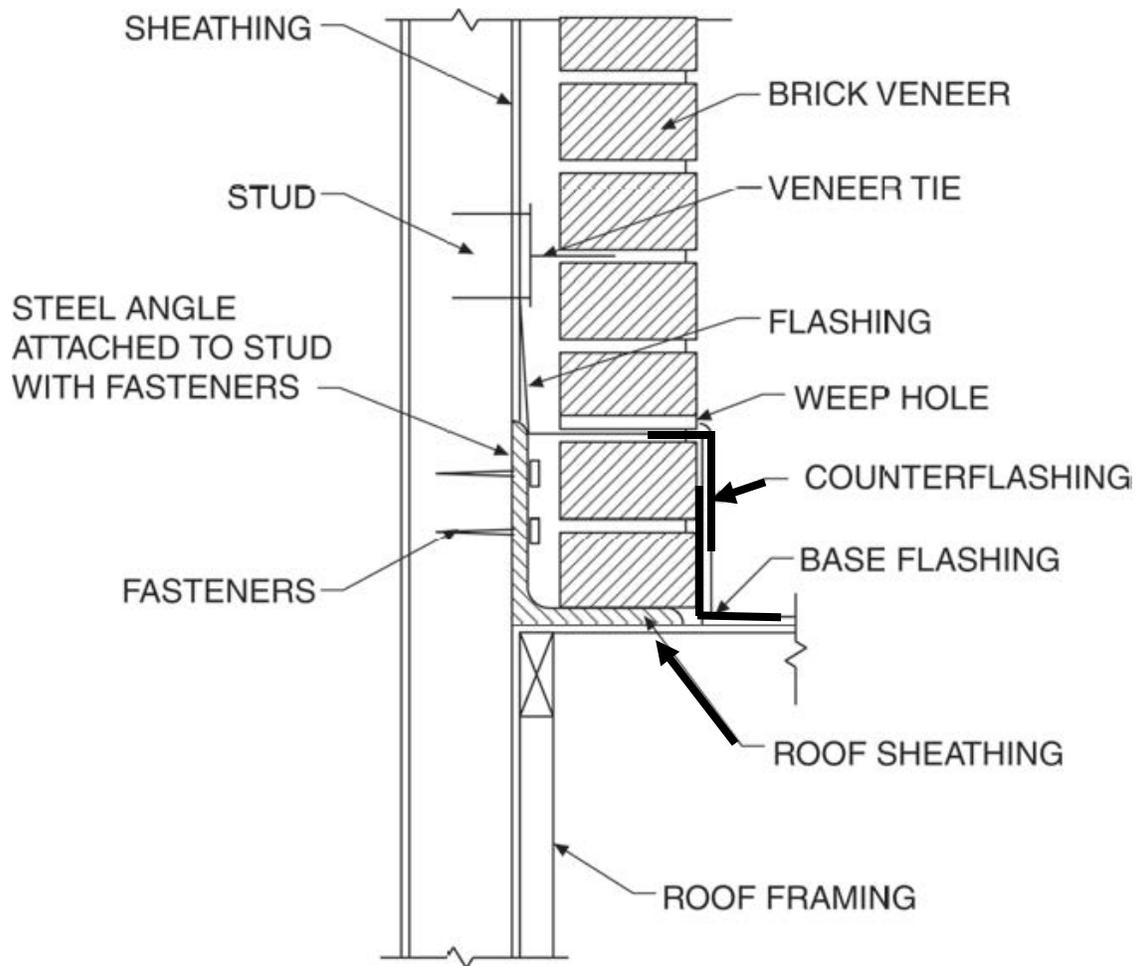
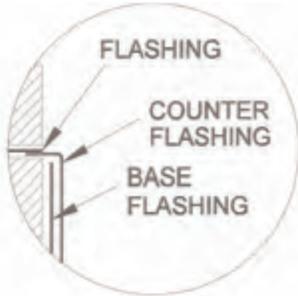
**Residential Super Committee: Motion to approve made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to approve made by D. Smith. Second by L. Skinner.
Motion passed.**

Item D – 9 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R703.8.2.1 as follows:

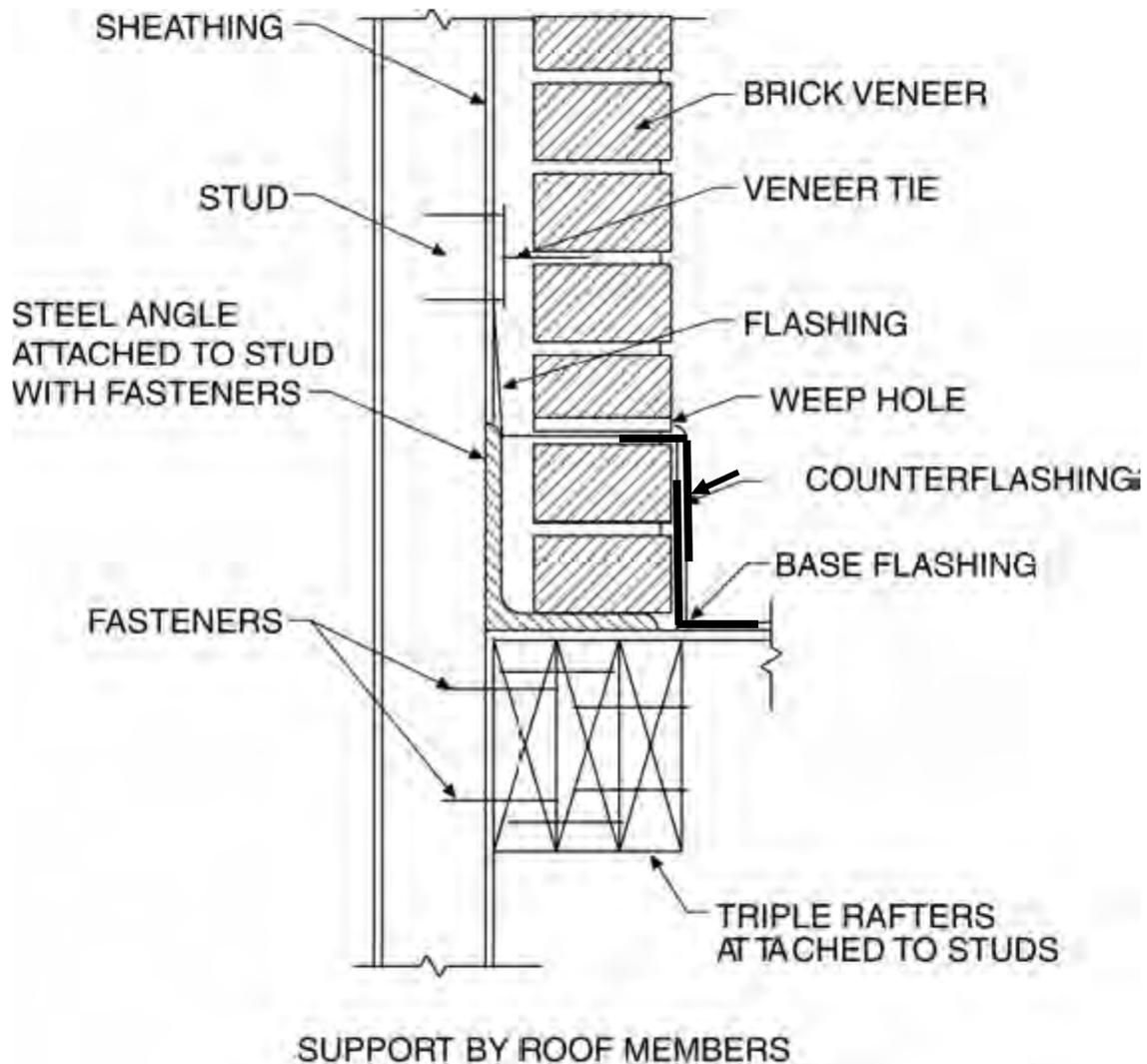
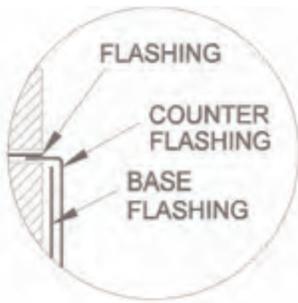
R703.8.2.1 Support by steel angle. A minimum 6-inch by 4-inch by 5/16-inch (152 mm by 102 mm by 8 mm) steel angle, with the long leg placed vertically, shall be anchored to double 2-inch by 4-inch (51 mm by 102 mm) wood studs at a maximum on-center spacing of 16 inches (406 mm). Anchorage of the steel angle at every double stud spacing shall be a minimum of ~~not less than~~ two 7/16-inch diameter (11 mm) by 4-inch (102 mm) lag screws for wood construction at every double stud or shall be a minimum of two 7/16-inch diameter (11.1 mm) by 4 inches (102 mm) lag screws into solid double blocking with each pair of lag screws spaced at horizontal intervals not to exceed 16 inches (406 mm). The steel angle shall have a minimum clearance to underlying construction of 1/16 inch (1.6 mm). ~~Not less than~~ A minimum of two-thirds the width of the masonry veneer thickness shall bear on the steel angle. Flashing and weep holes shall be located in the masonry veneer in accordance with Figure R703.8.2.1. The maximum height of masonry veneer above the steel angle support shall be 12 feet 8 inches (3861 mm). The airspace separating the masonry veneer from the wood backing shall be in accordance with Sections R703.8.4 and R703.8.4.2. The method of support for the masonry veneer on ~~wood construction~~ steel angle shall be constructed in accordance with Figure R703.8.2.1.

The maximum slope of the roof construction without stops shall be 7:12. Roof construction with slopes greater than 7:12 but not more than 12:12 shall have stops of a minimum 3-inch by 3-inch by 1/4-inch (76 mm by 76 mm by 6.4 mm) steel plate welded to the angle at 24 inches (610 mm) on center along the angle or as approved by the building official.



SUPPORT BY STEEL ANGLE

**FIGURE R703.8.2.1
EXTERIOR MASONRY VENEER SUPPORT BY STEEL ANGLES**



**FIGURE R703.8.2.2
EXTERIOR MASONRY VENEER SUPPORT BY ROOF MEMBER**

**Residential Super Committee: Motion to approve made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to approve made by C. Conner. Second by W. Hamilton.
Motion passed.**

Item D – 10 Request by David Smith representing the Residential Ad-hoc Committee to amend the 2018 N.C. Residential Code, Section R311.7.4 Walkline and R311.7.5.2.1 Winder Treads as follows:

R311.7.4 Walkline.~~Deleted~~ The walkline across winder treads shall be concentric to the curved direction of travel through the turn and located 12 inches (305 mm) from the side where the winders are narrower. The 12 inch (305 mm) dimension shall be measured from the widest point of the clear stair width at the walking surface of the winder. If winders are adjacent within the flight, the point of the widest clear stair width of the adjacent winders shall be used.

R311.7.5.2.1 Winder treads. Winder treads shall have a minimum tread depth of ~~not less than~~ 9 inches (229 mm) ~~measured between the vertical planes of the foremost projection of adjacent treads at the intersection with the walkline as above a point 12 inches (305 mm) from the side where the treads are narrower.~~ Winder treads shall have a minimum tread depth of ~~not less than~~ 4 inches (102 mm) at any point ~~within the clear width of the stair.~~ Within any flight of stairs, the ~~largest~~ greatest winder tread depth at the 12 inch (305 mm) walkline shall not exceed the smallest ~~winder tread~~ by more than 3/8 inch (9.5 mm).

**Residential Super Committee: Motion to approve made by D. Smith. Second by S. Knight.
Motion passed.**

**Building Code Council: Motion to approve made by C. Conner. Second by K. Rogers.
Motion passed.**

Item D – 11 Request from Keith Rogers representing the Building Code Council Plumbing Standing Committee to amend the 2018 N.C. Building Code, Section 2902.6 as follows:

[P] 2902.6 Small occupancies. Drinking fountains shall not be required for an occupant load of ~~45~~ 30 or fewer.

**Commercial Super Committee: Motion to approve made by L. Skinner. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by F. Meads. Second by C. Conner.
Motion passed.**

Item D – 12 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Section 410.2 as follows:

410.2 Small occupancies. ~~Deleted.~~ Drinking fountains shall not be required for an occupant load of 30 or fewer.

**Commercial Super Committee: Motion to approve made by L. Skinner. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by L. Skinner. Second by F. Meads.
Motion passed.**

Item D – 13 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Section 2902.2, Exception 2 as follows:

2. Separate facilities shall not be required in business occupancies with a total occupant load, including both employees and customers, of 30 or fewer. Separate facilities shall not be required in all other structures or tenant spaces with a total occupant load, including employees and customers, of 25 or fewer.

**Commercial Super Committee: Motion to approve made by D. Priest. Second by L. Skinner.
Motion passed.**

**Building Code Council: Motion to approve made by C. Conner. Second by L. Skinner.
Motion passed.**

Item D – 14 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Section 403.2, Exception 2 as follows:

2. Separate facilities shall not be required in business occupancies with a total occupant load, including both employees and customers, of 30 or fewer. Separate facilities shall not be required in all other structures or tenant spaces with a total occupant load, including employees and customers, of 25 or fewer.

**Commercial Super Committee: Motion to approve made by L. Skinner. Second by F. Meads.
Motion passed.**

**Building Code Council: Motion to approve made by C. Conner. Second by D. Priest.
Motion passed.**

Item D – 15 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Footnotes to Table 2902.1, footnote o as follows:

o. For business and mercantile occupancies with an occupant load of ~~25~~ 30 or fewer, service sinks shall not be required.

**Commercial Super Committee: Motion to approve made by L. Skinner. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by F. Meads. Second by L. Skinner.
Motion passed.**

Item D – 16 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Table 403.1, footnote o as follows:

o. For business and mercantile occupancies with an occupant load ~~25~~ 30 or fewer, service sinks shall not be required.

**Commercial Super Committee: Motion to approve made by D. Priest. Second by M. Ali.
Motion passed.**

**Building Code Council: Motion to approve made by L. Skinner. Second by C. Conner.
Motion passed.**

Item D – 17 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Building Code, Table 2902.1, line 2 as follows:

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (Urinals SEE SECTION 419.2 OF THE IPC)
2	Business	B	(no changes to this section)	1 per 25 <u>30</u> for the first 50 <u>30</u> and 1 per 50 for the remainder exceeding 50 <u>30</u>

**Commercial Super Committee: Motion to approve made by L. Skinner. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by D. Priest. Second by F. Meads.
Motion passed.**

Item D – 18 Request from Keith Rogers representing the Building Code Council Mechanical Standing Committee to amend the 2018 N.C. Plumbing Code, Table 403.1, line 2 as follows:

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (Urinals SEE SECTION 419.2 OF THE IPC)
2	Business	B	(no changes to this section)	1 per 25 <u>30</u> for the first 50 <u>30</u> and 1 per 50 for the remainder exceeding 50 <u>30</u>

**Commercial Super Committee: Motion to approve made by K. Rogers. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by C. Conner. Second by D. Smith.
Motion passed.**

Item D – 19 Request by Tim Henshaw representing the N.C. Fire Code Revision Committee to add the 2018 N.C. Fire Code, Sections 1031.10, 1031.10.1, 1031.10.2 and 1031.10.3 as follows:

Section 1031.10 Fire Escape Stairways.

All fire escape stairways and ladders shall be kept clear and unobstructed at all times and shall be maintained in good working order. All fire escape stairways that need to be replaced or repaired shall comply with the requirements of the International Existing Building Code.

Section 1031.10.1 Examination.

Fire escape stairways, balconies, and ladders shall be examined for structural adequacy and safety in accordance with Section 1031.10 by a registered design professional every 5 years, or as required by the fire code official.

Section 1031.10.2 Examination Report.

Records of inspections, testing and maintenance shall be maintained in accordance with Section 107.3.

Section 1031.10.3 Marking.

The open space under fire escape stairways or ladders shall not be used for any purpose. Approved signs or other approved markings that include the words FIRE ESCAPE – KEEP CLEAR shall be provided to prohibit the obstruction thereof.

**Commercial Super Committee: Motion to approve made by W. Hamilton. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by W. Hamilton. Second by D. Priest.
Motion passed.**

Item D – 20 Request by Tim Henshaw representing the N.C. Fire Code Revision Committee to add the 2018 Existing Building Code, Section 405.6 as follows:

405.6 Marking

The open space under fire escape stairways shall not be used for any purpose. Approved signs or other approved markings that include the words FIRE ESCAPE – KEEP CLEAR shall be provided to prohibit the obstruction thereof.

**Commercial Super Committee: Motion to approve made by W. Hamilton. Second by D. Priest.
Motion passed.**

**Building Code Council: Motion to approve made by W. Hamilton. Second by D. Priest.
Motion passed.**

Part E – Reports

❖ Ad-Hoc Committee Reports

There are three active committees at this time.

David Smith reported that the Residential Committee has not been able to meet due to the limitations brought by COVID-19. Hoping to set a date soon.

Kim Humiston reported the Electrical Committee is studying some items to bring back to the Council. They have completed the 2020 NEC codes.

The Tent Ad-Hoc Committee is hoping to meet soon.

❖ Standing Committee Reports

Wayne Hamilton is looking at updating some of the reference standards and bringing those to the Committee's attention.

❖ Staff Reports

Nathan Childs, Assistant Attorney General did not have anything new to report.

Cliff Isaac informed the Council the August 31\September 1 meeting will be held in Raleigh.
He said there is an interest in having a Residential Change-out book for inspectors.
The Debris Study will be given to the Legislature. He added that he will look into iPads for the Council members.

❖ **Chairman's Report**

Chairman Robbie Davis thanked everyone for being in attendance.

He noted there are a few members who are out of compliance and need to take the ethics training.

❖ **Public Comments**

None.

Part F – Appeals

The Chad Askew and Fountains at Endhaven Appeal is scheduled for 10:00am, Wednesday, July 29, 2020 in Raleigh. This will be a hybrid appeal of in-person and remote attendance. The in-person attendance will take place in the Albemarle Building, 325 North Salisbury Street, Raleigh, NC 27603, 2nd Floor Training Room 240

The Danny Geoff Appeal is scheduled for 10:00am, August 19, 2020 in Raleigh. This will be a hybrid appeal of in-person and remote attendance.

The Cory Albright and 24/7/365, Inc. Appeal is scheduled for 10:00am, Wednesday, October 28, 2020 in Raleigh. This will be a hybrid appeal of in-person and remote attendance. The in-person attendance will take place in the Albemarle Building, 325 North Salisbury Street, Raleigh, NC 27603, 2nd Floor Training Room 240

Adjourned.