IMPORTANT DISCLAIMER
THE ENCLOSED INFORMATION IS INTENDED TO ASSIST AND INFORM YOU THROUGH THE CONSTRUCTION OF YOUR HOME. YOUR CONSTRUCTION PLANS HAVE BEEN DRAWN TO PRESCRIBE TO INDUSTRY STANDARDS. THESE PROFESSIONAL STANDARDS DETERMINE HOW CONSTRUCTION PLANS ARE DRAWN AND WHAT INFORMATION THEY INCLUDE. CONSTRUCTION PLANS ARE INTENDED AS A TECHNICAL GUIDE TO PROFESSIONAL CONTRACTORS AND ARE NOT INTENDED TO BE A SET OF STEP-BY-STEP INSTRUCTIONS. THEREFORE, IF YOU ARE PLANNING TO BUILD YOUR HOME WITHOUT THE SERVICE OF A PROFESSIONAL BUILDER, WE SUGGEST THAT YOU BECOME THOROUGHLY FAMILIAR WITH READING CONSTRUCTION PLANS OR CONSIDER CONSULTING A CONSTRUCTION SPECIALIST. GREAT CARE AND EFFORT GOES INTO THE DESIGN AND CREATION OF THE CONSTRUCTION PLANS; HOWEVER, BECAUSE OF THE IMPOSSIBILITY OF PROVIDING ANY PERSONAL AND/OR "ON-SITE" CONSULTATION, SUPERVISION AND CONTROL OVER THE ACTUAL CONSTRUCTION, AND BECAUSE OF THE GREAT VARIANCES IN LOCAL BUILDING CODE REQUIREMENTS AND OTHER GEOGRAPHIC LOCATION AND WEATHER CONDITIONS, HOUSE PLAN ZONE, LLC. NOR THE AGENTS OR EMPLOYEES ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCLUDING BUT NOT LIMITED TO, ANY DEFICIENCIES, OMISSIONS, OR ERRORS IN THE DESIGN. IN ANY CASE, ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS IN THE DIMENSIONS, AND/OR DRAWINGS CONTAINED IN THE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ATTENTION OF HOUSE PLAN ZONE, LLC. PRIOR TO COMMENCEMENT OF CONSTRUCTION. PROCEEDING WITH CONSTRUCTION CONSTITUTES THE ACCEPTANCE OF THE CONSTRUCTION DOCUMENTS 'AS IS' AND ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS BECOME THE SOLE RESPONSIBILITY OF THE PURCHASER. IF ANY ERRORS ARE DISCOVERED PRIOR TO CONSTRUCTION HOUSE PLAN ZONE, LLC. WILL BE GIVEN FULL OPPORTUNITY TO CORRECT ANY ERRORS AND/OR OMISSIONS TO THE CONSTRUCTION PLANS. IN ANY OR ALL CIRCUMSTANCES, THE MAXIMUM FINANCIAL LIABILITY TO HOUSE PLAN ZONE, LLC. CAN NOT EXCEED THE TOTAL PLAN PURCHASE.

PROFESSIONAL SEAL/ ADDITIONAL DRAWINGS
THOUGH EVERY EFFORT WAS MADE TO MAKE THE CONSTRUCTION DOCUMENTS FOLLOW THE I.R.C. NATIONAL CODE METHODOLOGIES, A FEW STATES AND CITIES HAVE PASSED BI-LAWS REGARDING CONSTRUCTION PLANS THAT WOULD BE SUBMITTED TO YOUR LOCAL MUNICIPALITY AND USED FOR THE CONSTRUCTION OF YOUR HOME. THESE BI-LAWS REQUIRE THE CONSTRUCTION PLANS TO BE REVIEWED AND/OR PREPARED, INSPECTED, AND SEALED (OR STAMPED) BY A LICENSED ARCHITECT/ ENGINEER IN YOUR STATE. IT IS ADVISED THAT YOU CONTACT YOUR MUNICIPALITY'S BUILDING DEPARTMENT FOR INSTRUCTIONS TO COMPLY WITH THEIR CONSTRUCTION PLANS REVIEW PROCESS. FURTHERMORE, ADDITIONAL ITEMS SUCH AS STRUCTURAL, HVAC, PLUMBING, SITE, ENERGY EFFICIENCY DOCUMENTATION, ETC. MAY BE REQUIRED AND THESE SHALL BE PROVIDED BY A LOCAL PROFESSIONAL THAT IS FAMILIAR WITH THE REQUIREMENTS AND THESE SHALL BE PROVIDED AT THE OWNERS EXPENSE.

OTHER IMPORTANT INFORMATION
MATERIALS LIST DISCLAIMER - IF A MATERIALS LIST WAS ORDERED, IT WILL ONLY CONFORM TO THE PLAN IN ITS ORIGINAL FORMAT. ADDITIONAL OPTIONS SUCH AS 2X6 EXTERIOR WALLS, BASEMENT, OR WALKOUT BASEMENT FOUNDATIONS, THREE CAR GARAGE VERSIONS, ETC. WILL NOT BE REFLECTED IN THE LIST. WHILE IT WILL NOT MATCH THESE OPTIONS, THE LIST IS STILL A GREAT REFERENCE DOCUMENT FOR THE MATERIALS THAT WILL BE REQUIRED TO CONSTRUCT YOUR HOME.
FOUNDATIONS - MOST OF OUR FOUNDATIONS ARE DESIGNED WITH CONCRETE BLOCK STEM WALLS AND NOT POURED-IN-PLACE CONCRETE. ADDITIONALLY, THE MAJORITY OF OUR SLAB FOUNDATIONS ARE DESIGNED WITH A CHAIN WALL (RAISED) SLAB AND NOT MONOLITHIC (SLAB ON GRADE). CONTRACTOR/ LOCAL ENGINEER SHALL ADJUST DESIGN AS NEEDED FOR YOUR SPECIFIC AREA/ NEED.
SQUARE FOOTAGES - BONUS ROOMS (WHERE APPLICABLE) ARE NOT INCLUDED IN THE HEATED AREA OF THE DESIGN UNLESS SPECIFICALLY NOTED. GARAGE PLANS ARE EXCLUDED. SQUARE FOOTAGES SHOWN ARE CALCULATED TO THE OUTSIDE OF THE STUD WALL AND DO NOT INCLUDE THE EXTERIOR MATERIALS SUCH AS BRICK, STONE, OR SIDING.
DIMENSIONS - OUR PLANS ARE DIMENSIONED TO THE OUTSIDE OF THE STUD WALL ONLY AND NOT TO THE OUTSIDE OF THE BRICK LEDGE (WHERE APPLICABLE).

GENERAL SITE NOTES
1. CONTRACTOR TO VERIFY LOCATIONS OF SITE UTILITIES, REQUIREMENTS, AND CONNECTION FEES. OWNER, CONTRACTOR AND SUB-CONTACTORS TO PAY ALL OF THEIR RELATED CONSTRUCTION PERMIT FEES AS AGREED UPON BETWEEN THE OWNER AND CONTRACTOR.
2. BEFORE EXCAVATION, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, MAPS, AND BUILDING SITE TO DETERMINE THE ROUTES OF ALL UNDERGROUND UTILITIES.
BEFORE DIGGING COMMENCES, IT IS ADVISED THAT THE OWNER AND OR CONTRACTOR CALL THEIR STATE'S UTILITY LOCATOR FACILITATOR.
3. IT IS RECOMMENDED THAT THE SITE'S SOIL BE TESTED FOR COMPRESSION RATING TO DETERMINE FOUNDATION AND FOOTING DESIGN. CONCRETE FOUNDATIONS AND FOOTING DESIGN SHALL BE IN ACCORDANCE TO CHAPTER 4 OF THE I.R.C. CODE. FOUNDATION DESIGN TO BE VERFIED BY A LOCAL PROFESSIONAL OR ENGINEER. CONSULT A LOCAL CIVIL ENGINEER FOR SITE PLANS AND SURVEYS OF EXISTING PROPERTY. A LANDSCAPE ARCHITECT SHOULD BE CONSULTED FOR MORE EXTENSIVE LANDSCAPE DESIGNS.

House Plan Zone, LLC.

www.HPZplans.com Phone: 601.336.3254

PLAN #: 2500-3R

FOUNDATION TYPE: SLAB
EXTERIOR WALL SIZE: 2x6 EXT. WALLS

STANDARD ABBREVIATIONS

@	AT
#	POUND(S)
APPROX.	APPROXIMATELY
BASE.	BASEMENT
BT	BETWEEN
BLK.	BLOCK
BLK'G	BLOCKING
BD.	BOARD
BRD.	BOARD
BOT.	BOTTOM
BLDG.	BUILDING
CAB.	CABINET
CLG.	CEILING
CLR.	CLEAR
CLOS.	CLOSET
COL.	COLUMN
COLS.	COLUMNS
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
C.U.	CONDENSOR UNIT
CONN.	CONNECTION
CONT.	CONTINUOUS
COVER'G	COVERING
CS	CRAWL SPACE
DECO.	DECORATIVE
DET	DETAIL
DIA.	DIAMETER
DW	DISHWASHER
DBL.	DOUBLE
DF	DOUGLAS FIR
D	DRYER
EA.	EACH
ELEV.	ELEVATION
ENG.	ENGINEER
FT.	FEET
F.F.L.	FINISHED FLOOR LINE
FIN.	FINISH
F.C.	FIRE CODE
FLR.	FLOOR
FTG.	FOOTING
FOUND.	FOUNDATION
FND.	FOUNDATION
FR.	FREEZER
GA.	GAUGE
GALV.	GALVANIZED
GYP.	GYPSUM
HDR.	HEADER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HT.	HEIGHT
HTS.	HEIGHTS
HORIZ.	HORIZONTAL
IN.	INCHES
INCL.	INCLUDE
INSUL.	INSULATION
JT.	JOINT
JST.	JOIST
JSTS.	JOISTS
LT.	LIGHT
LIN.	LINEN
MANUF.	MANUFACTURER
MAS.	MASONRY
MAX.	MAXIMUM
MTL.	METAL
MIN.	MINIMUM
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
O/C	ON CENTER
OPT.	OPTIONAL
O.S.B.	ORIENTED STRAND BOARD
OTS	OWNER TO SELECT
O.T.S	OWNER TO SELECT
PG.	PAGE
PAN.	PANTRY
PL.	PLATE
#	PLATE
PLY'WD	PLYWOOD
PLY'D	PLYWOOD
POLY.	POLYETHYLENE
PSI	POUNDS PER SQUARE INCH
PRE-FAB	PREFABRICATED
RE:	REFERENCE
REF	REFRIGERATOR
REINF.	REINFORCED
R	RESISTANCE
R.A.	RETURN AIR
R.A.G.	RETURN AIR GRILLE
REQ'D	REQUIRED
SCR.	SCREEN
SHLVS.	SHELVES
SHR.	SHOWER
SHWR.	SHOWER
SST.	SIMPSON STRONG TIE
SP	SOUTHERN PINE
SPECS.	SPECIFICATIONS
SQ.	SQUARE
S.F.	SQUARE FOOTAGE
STL.	STEEL
THK.	THICK
THK.	THICKNESS
TBD.	TO BE DETERMINED
TR.	TRANSOM
TYP.	TYPICAL
U.T.C.	UNDER THE COUNTER
UTIL.	UTILITY
VAN.	VANITY
VERT.	VERTICAL
WH	WATER HEATER
W	WASHER
WT.	WEIGHT
WIN.	WINDOW
W.M.	WIRE MESH
W/	WITH
WD.	WOOD
WFCM	WOOD FRAME CONSTRUCTION MANUAL

SHEET INDEX:

DESIGN DATA

MINIMUM SOIL BEARING CAPACITY = 2000 P.S.F. FOR GROUP II
CONCRETE MINIMUM (28 DAYS) f'c:
FOOTERS = 3000 P.S.I.
SLABS & WALLS = 3000 P.S.I.
REINFORCING STEEL: A.S.T.M. A615-60
ROOF LIVE LOAD (GROUND SNOW LOAD) = 30 P.S.F.
ROOF DEAD LOAD = 10 P.S.F.
FLOOR LIVE LOAD = 40 P.S.F.
30 P.S.F. SLEEPING AREAS
FLOOR DEAD LOAD = 10 P.S.F.
DECK LIVE LOAD = 40 P.S.F.
DECK DEAD LOAD = 10 P.S.F.
NOTE: ALL REQUIRED BRACE WALL PANELS LOCATED BY CONTRACTOR PER LOCAL CODE REQUIREMENTS.

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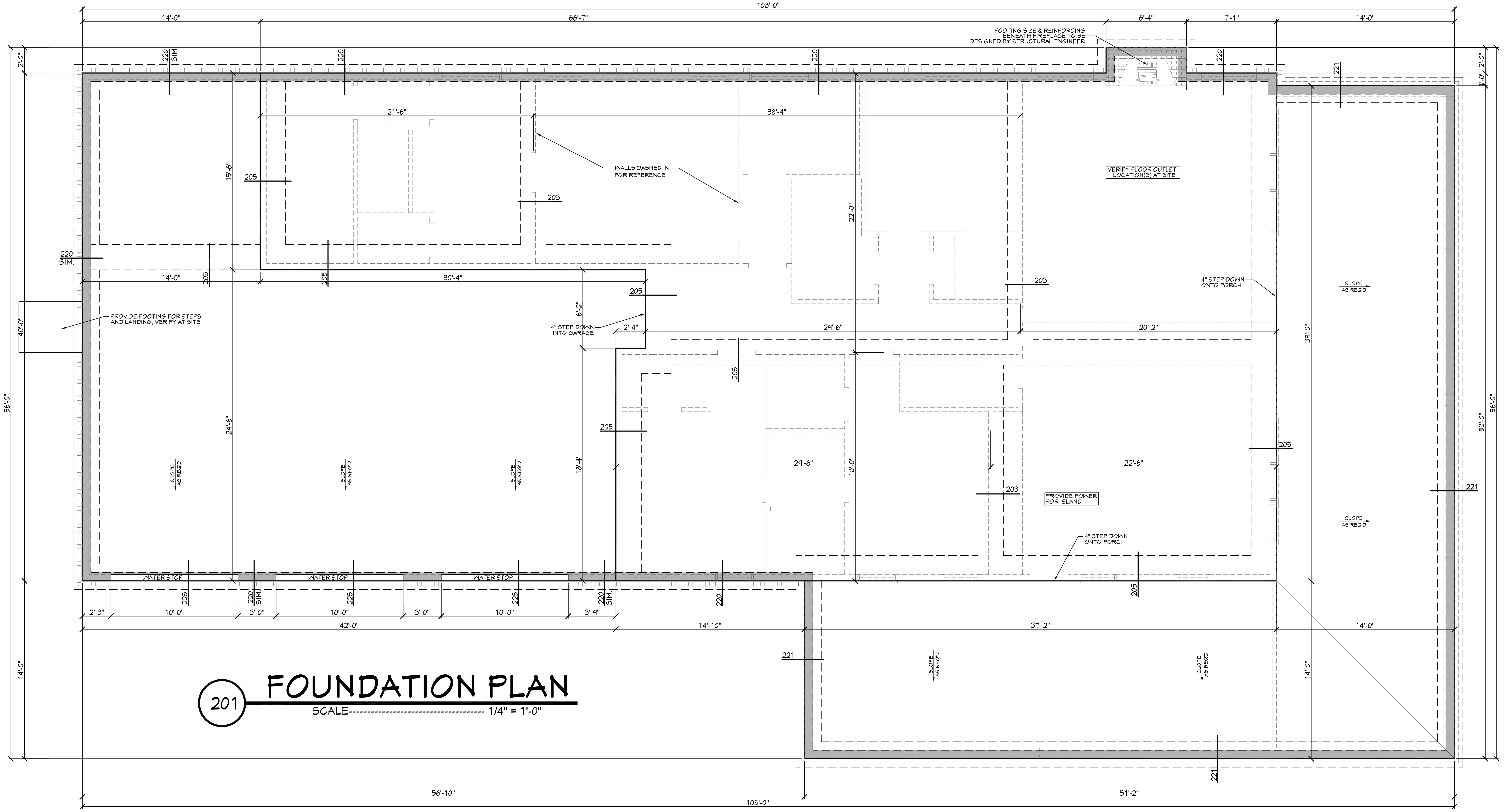
NATIONAL COUNCIL OF BUILDING DESIGNERS CERTIFICATION
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

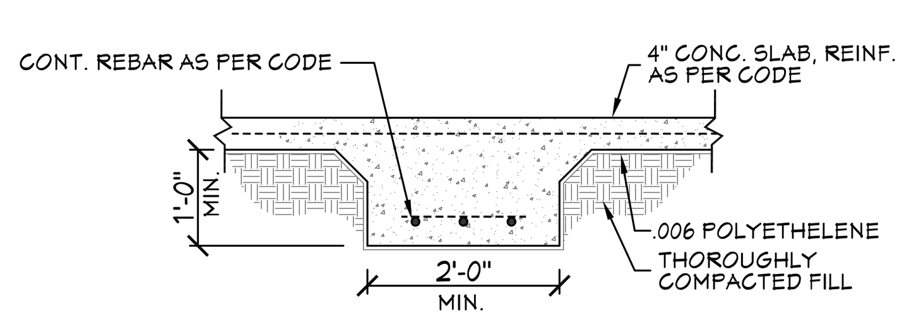
Date: 07.26.23
Drawn By: J.L.B.

SHEET NUMBER 1

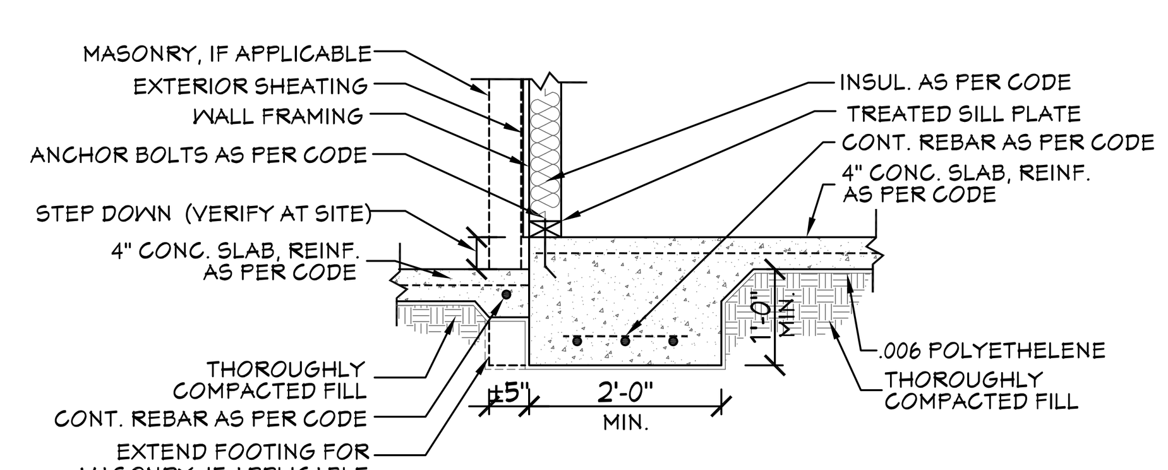


FOUNDATION PLAN

201 — SCALE------------------------------------ 1/4" = 1'-0"



203 FTG. DET.



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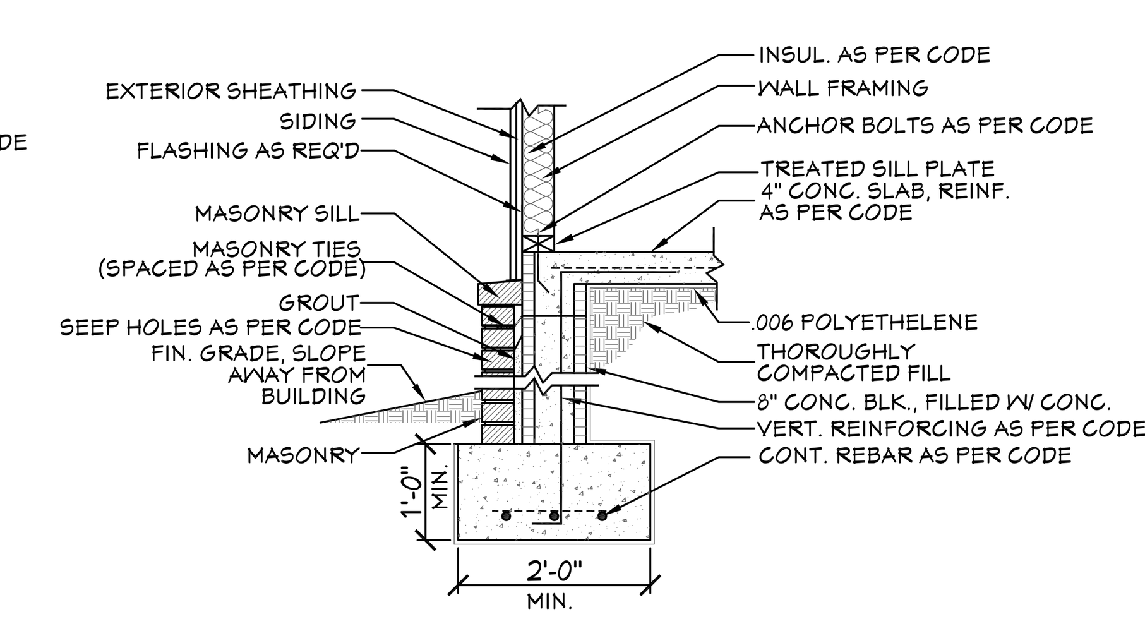

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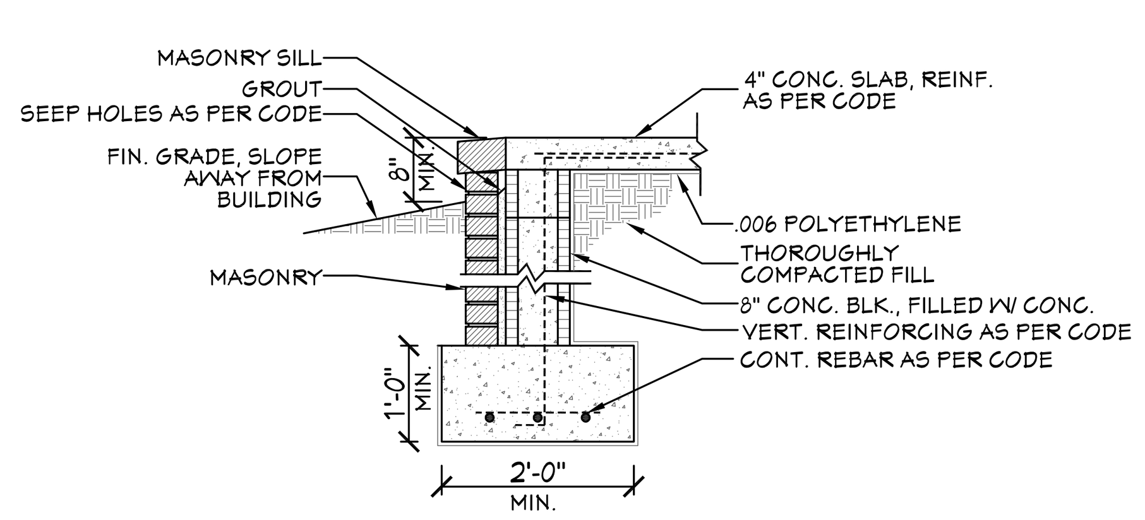
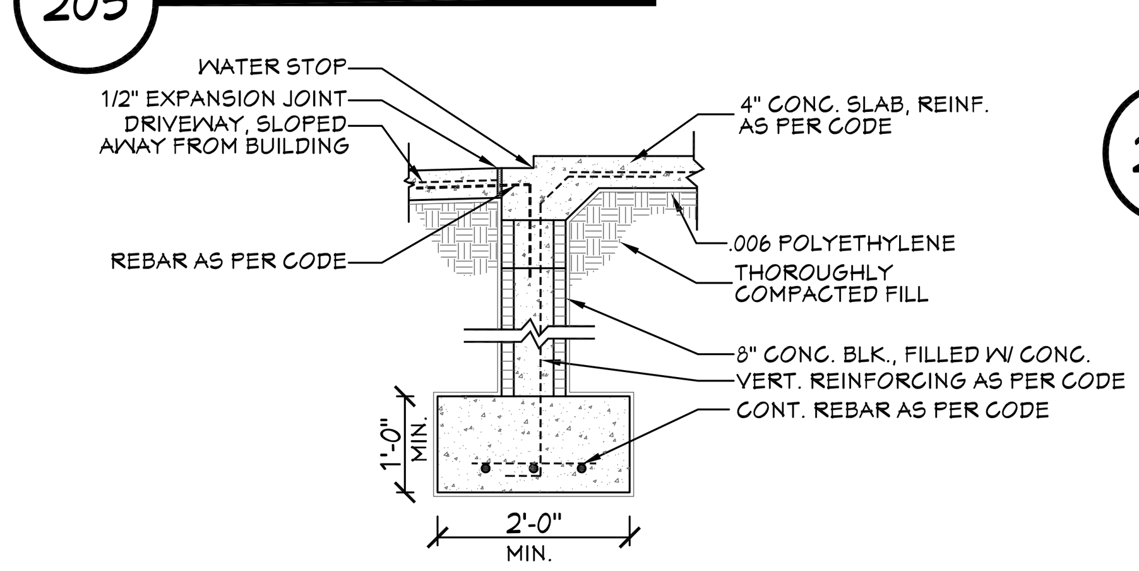


221 FTG. DET.



223 FTG. DET.

SLAB FOUNDATION NOTES:

1. ALL FOOTING SIZES AND LOCATIONS TO BE VERIFIED BY A LICENSED STRUCTURAL ENGINEER.
2. CONTRACTOR TO ADAPT PLANS AS REQUIRED TO MEET ALL APPLICABLE CODES AT SITE.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH FLOOR PLAN PRIOR TO CONSTRUCTION AND MAKE ANY NECESSARY ADJUSTMENTS.
4. CONTRACTOR TO PROVIDE WATERPROOFING AS REQ'D TO MEET ALL APPLICABLE CODES AND TYPICAL BUILDING PRACTICES.
5. CONCRETE SLABS TO BE 4" (3000 psi MIN.), REINFORCED AS PER CODE OR AS DETERMINED BY LICENSED ENGINEER.
6. ALL EXTERIOR DIMENSIONS ARE TO THE OUTSIDE OF THE STUDWALL AND DO NOT INCLUDE THE BRICK LEDGE (IF APPLICABLE)

REV. 07.06.22

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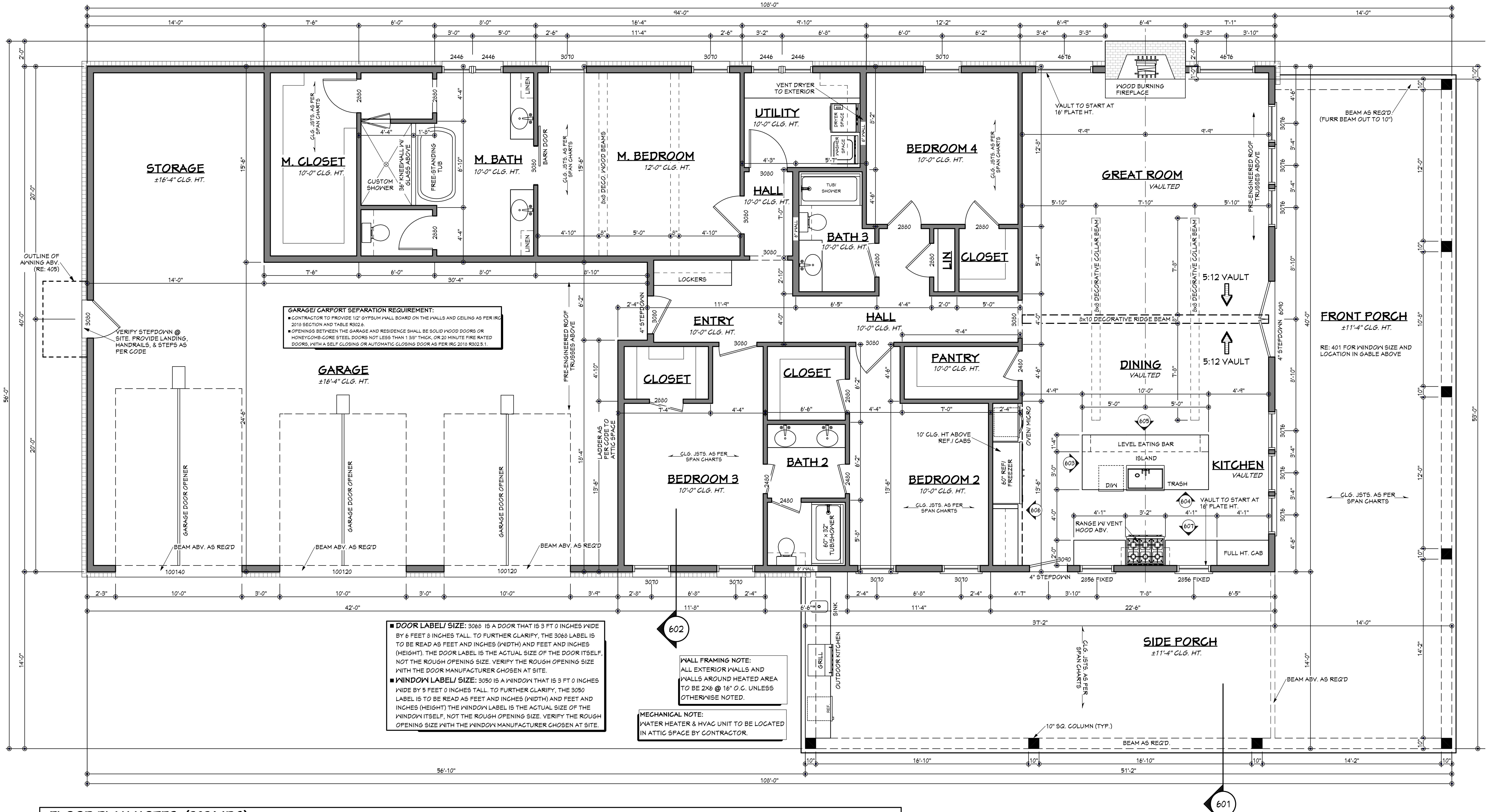

FLOOR PLAN NOTES: (2021 IRC)

1. ALL DIMENSIONS & SITE CONDITIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
2. ALL EXTERIOR DIMENSIONS ARE TO THE OUTSIDE FACE OF THE STUD AND DO NOT INCLUDE EXTERIOR FINISHES SUCH AS SIDING, BRICK, STUCCO, ETC.
3. ALL FINISHES (INTERIOR & EXTERIOR) TO BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
4. VERIFY ALL DOOR AND WINDOW STYLES AND SIZES WITH OWNER PRIOR TO CONSTRUCTION. MANUFACTURER TO SUPPLY ALL ROUGH OPENING SIZES.
5. CONTRACTOR TO VERIFY ALL CLEARANCES OF ALL DOORS, WINDOWS AND OTHER ITEMS THAT ARE CRITICAL, PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO ADAPT PLANS AS REQUIRED TO MEET ALL APPLICABLE CODES AT SITE.
7. ALL BEAMS TO BE SIZED BY A LICENSED STRUCTURAL ENGINEER.
8. GUARDS SHALL BE PROVIDED FOR THOSE PORTIONS OF OPEN-SIDED WALKING SURFACES, INCLUDING FLOORS, STAIRS, RAMPS AND LANDINGS THAT ARE LOCATED MORE THAN 30 INCHES MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. INSECT SCREENING SHALL NOT BE CONSIDERED AS A GUARD. REQUIRED GUARDS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES OR LANDINGS, SHALL BE NOT LESS THAN 36 INCHES IN HEIGHT AS MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE OR THE LINE CONNECTING THE NOSINGS. IRC 2021, R312.1.1 & R312.1.2
9. M1305.1 APPLIANCES IN ATTICS. ATTICS CONTAINING APPLIANCES SHALL BE PROVIDED WITH AN OPENING AND A CLEAR AND UNOBSTRUCTED PASSAGEWAY LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE, BUT NOT LESS THAN 30 INCHES HIGH AND 22 INCHES WIDE AND NOT MORE THAN 20 FEET LONG MEASURED ALONG THE CENTERLINE OF THE PASSAGEWAY FROM THE OPENING TO THE APPLIANCE. THE PASSAGEWAY SHALL HAVE CONTINUOUS SOLID FLOORING IN ACCORDANCE WITH CHAPTER 5 NOT LESS THAN 24 INCHES WIDE. A LEVEL SERVICE SPACE AT LEAST 30 INCHES DEEP AND 30 INCHES WIDE SHALL BE PRESENT ALONG ALL SIDES OF THE APPLIANCE WHERE ACCESS IS REQUIRED. THE CLEAR ACCESS OPENING DIMENSIONS SHALL BE A MINIMUM OF 20 INCHES BY 30 INCHES, AND LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE. EXCEPTIONS: (A) THE PASSAGEWAY AND LEVEL SERVICE SPACE ARE NOT REQUIRED WHERE THE APPLIANCE CAN BE SERVICED AND REMOVED THROUGH THE REQUIRED OPENING. (B) WHERE THE PASSAGEWAY IS UNOBSTRUCTED AND NOT LESS THAN 6 FEET HIGH AND 22 INCHES WIDE FOR ITS ENTIRE LENGTH, THE PASSAGEWAY SHALL BE NOT MORE THAN 50 FEET LONG.
10. APPLIANCE ACCESS FOR INSPECTION SERVICE, REPAIR AND REPLACEMENT. APPLIANCES SHALL BE LOCATED TO ALLOW FOR ACCESS FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION, OTHER APPLIANCES, OR ANY OTHER PIPING OR DUCTS NOT CONNECTED TO THE APPLIANCE BEING INSPECTED, SERVICED, REPAIRED OR REPLACED. A LEVEL WORKING SPACE NOT LESS THAN 30 INCHES DEEP AND 30 INCHES WIDE SHALL BE PROVIDED IN FRONT OF THE CONTROL SIDE TO SERVICE AN APPLIANCE. M1305.1
11. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEYS, TOOLS OR SPECIAL KNOWLEDGE. WINDOW OPENING CONTROL DEVICES COMPLYING WITH ASTM F 2090 SHALL BE PERMITTED FOR USE ON WINDOWS SERVING AS A REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING AND SHALL BE NOT MORE THAN 70 INCHES ABOVE THE FINISHED FLOOR. BASEMENTS, HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL HAVE NOT LESS THAN ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. OPENINGS SHALL HAVE A MINIMUM OF 5.7 SQUARE FEET NET CLEAR OPENING AS PER IRC 2021 R310.2. EXCEPTION: GRADE FLOOR OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5 SQUARE FEET. MAXIMUM HEIGHT TO THE BOTTOM OF THE CLEAR OPENING TO BE 44 INCHES. MINIMUM NET CLEAR OPENING HEIGHT TO BE 24 INCHES. MINIMUM NET CLEAR OPENING WIDTH TO BE 20 INCHES.
12. ALL RETURN AIR GRILLS ARE TO BE LOCATED TO COMPLY WITH SECTION M1602 OF THE IRC 2021.
13. ALL SQUARE FOOTAGE MEASUREMENTS ARE APPROXIMATE AND MAY DIFFER FROM ACTUAL CONSTRUCTED RESIDENCE OR BUILDING. FOOTAGES SHOWN ARE TO THE OUTSIDE OF THE STUDWALL AND DO NOT INCLUDE THE EXTERIOR FINISH MATERIAL SUCH AS SIDING, BRICK, STONE ETC.
14. FIRE SPRINKLER SYSTEM TO BE DESIGNED AND INSTALLED (IF REQUIRED BY LOCAL CODES) AS PER THE IRC 2021 AND BY A LICENSED PROFESSIONAL IN THE AREA OF CONSTRUCTION.
15. ALL BATHROOM EXHAUST VENTS SHALL BE VENTED DIRECTLY TO THE EXTERIOR OF THE HOME AND NOT INTO THE ATTIC. IRC 2021, M1505.2

FLOOR PLAN

SCALE: 1/4" = 1'-0"

AREAS:	2500	S.F. HEATED - NOT INCLUDING MASONRY
	1260	S.F. UNHEATED - GARAGE
	1262	S.F. UNHEATED - FRONT/ SIDE PORCHES
	2522	S.F. UNHEATED - TOTAL
	5022	S.F. TOTAL

FRAMING SQUARE FOOTAGE CALCULATION NOTES:
1. SQUARE FOOTAGE OF HEATED AREA IS FIGURED TO THE OUTSIDE OF THE STUDWALL OF THE EXTERIOR WALLS (DOES NOT INCLUDE MASONRY OR OTHER EXTERIOR MATERIALS).
2. FIREPLACES THAT PROTRUDE FROM THE EXTERIOR FOOTPRINT ARE NOT INCLUDED IN THE HEATED AREA.
3. STAIRWELLS ARE ONLY INCLUDED IN THE FIRST FLOOR CALCULATIONS AND NOT THE SECOND FLOOR CALCULATIONS (IF APPLICABLE).

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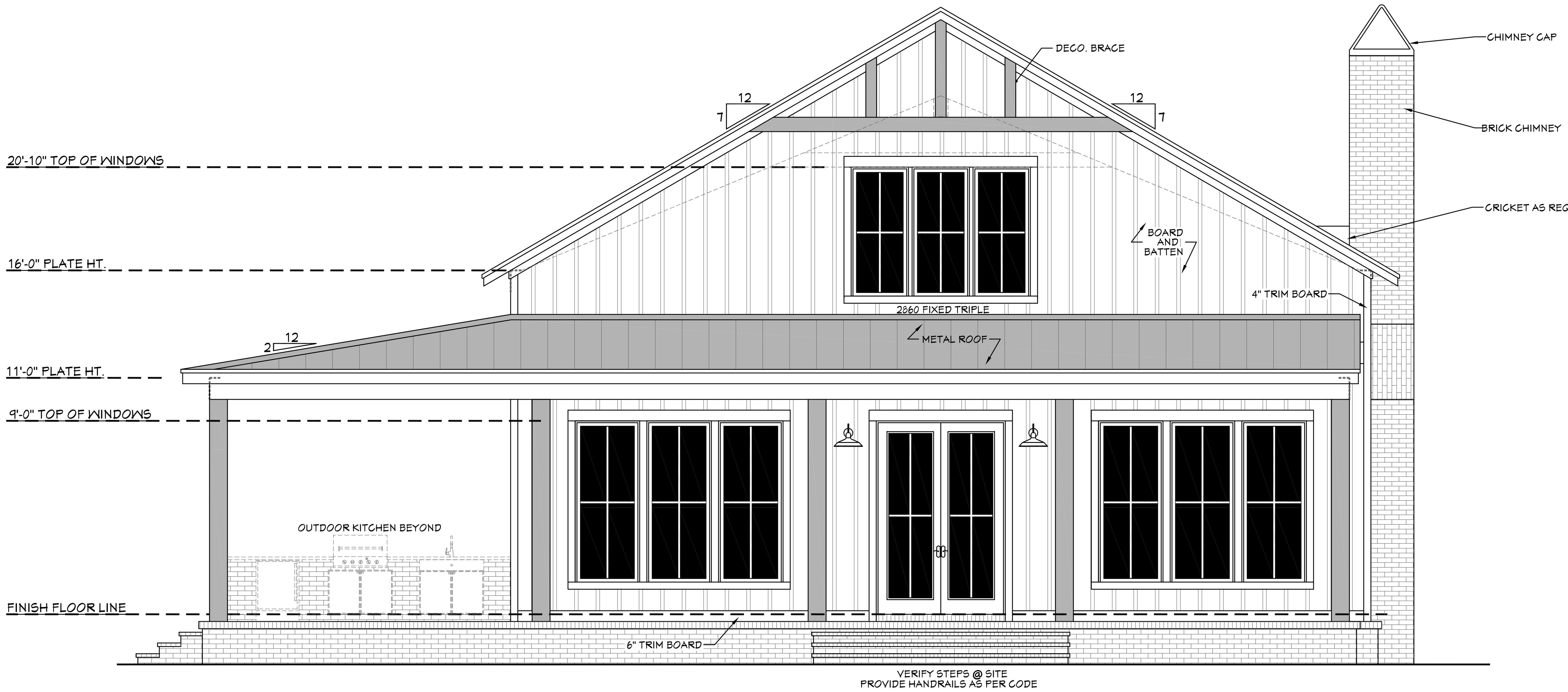
NATIONAL COUNCIL OF BUILDING DESIGNER CERTIFICATION
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

Pre-Drawn Plan ID:
2500-3R

Date: 07.26.23

Drawn By: J.L.B.

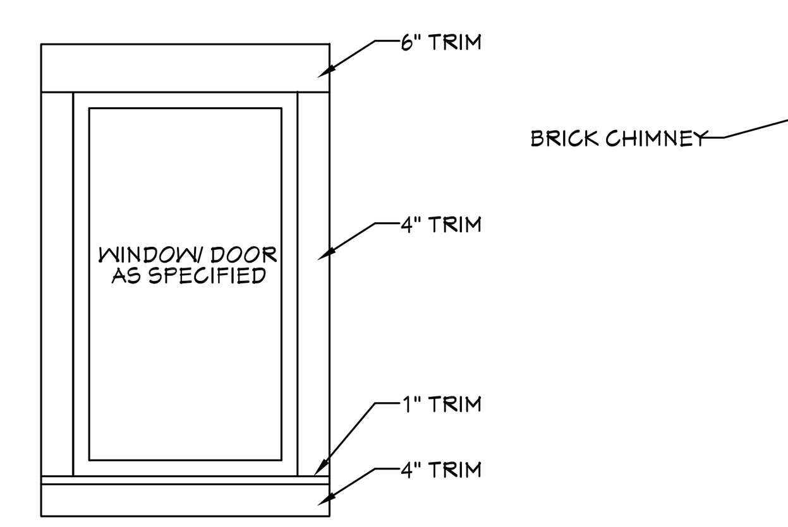
SHEET NUMBER
3



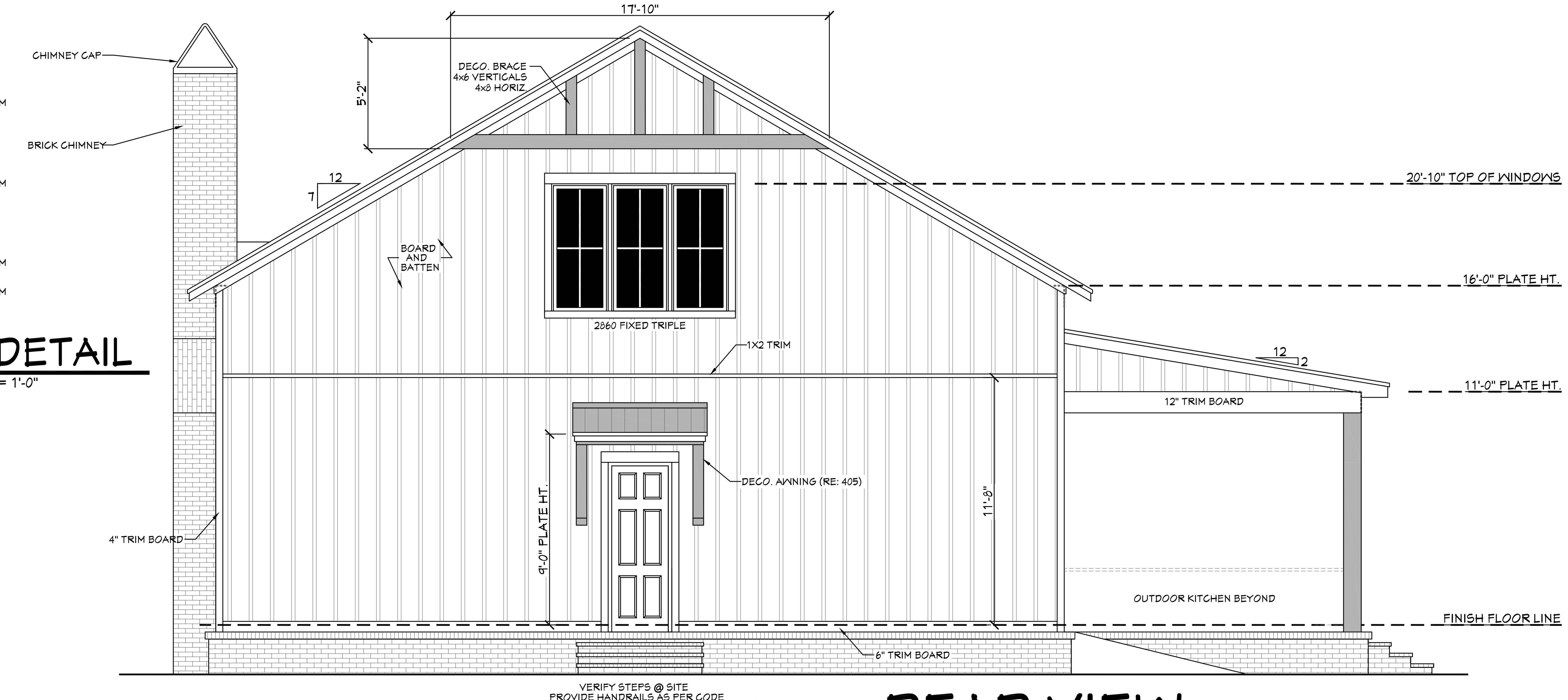
401 **FRONT VIEW**
SCALE-- 1/4" = 1'-0"

MAXIMUM HEADER SPANS		
HEADER SPANS FOR EXTERIOR BEARING WALLS *SOUTHERN PINE #2 OR BETTER* LIVE LOAD=30psf *ALL SPANS ARE ASSUMING A MAXIMUM OF 24 FEET OF SUPPORTED ROOF FRAMING.*		
SUPPORTING ROOF AND CEILING ONLY		
SIZE *NUMBER OF PLIES IN ( )*	MAXIMUM SPAN (FEET AND INCHES)	JACK STUDS
(2) 2 × 6	4-7	1
(2) 2 × 8	5-9	1
(2) 2 × 10	6-10	2
(2) 2 × 12	8-1	2
(3) 2 × 8	7-3	1
(3) 2 × 10	8-7	1
(3) 2 × 12	10-1	2
SUPPORTING ROOF, CEILING AND ONE CENTER BEARING FLOOR		
SIZE *NUMBER OF PLIES IN ( )*	MAXIMUM SPAN (FEET AND INCHES)	JACK STUDS
(2) 2 × 10	5-8	2
(2) 2 × 12	6-8	2
(3) 2 × 10	7-2	2
(3) 2 × 12	8-5	2

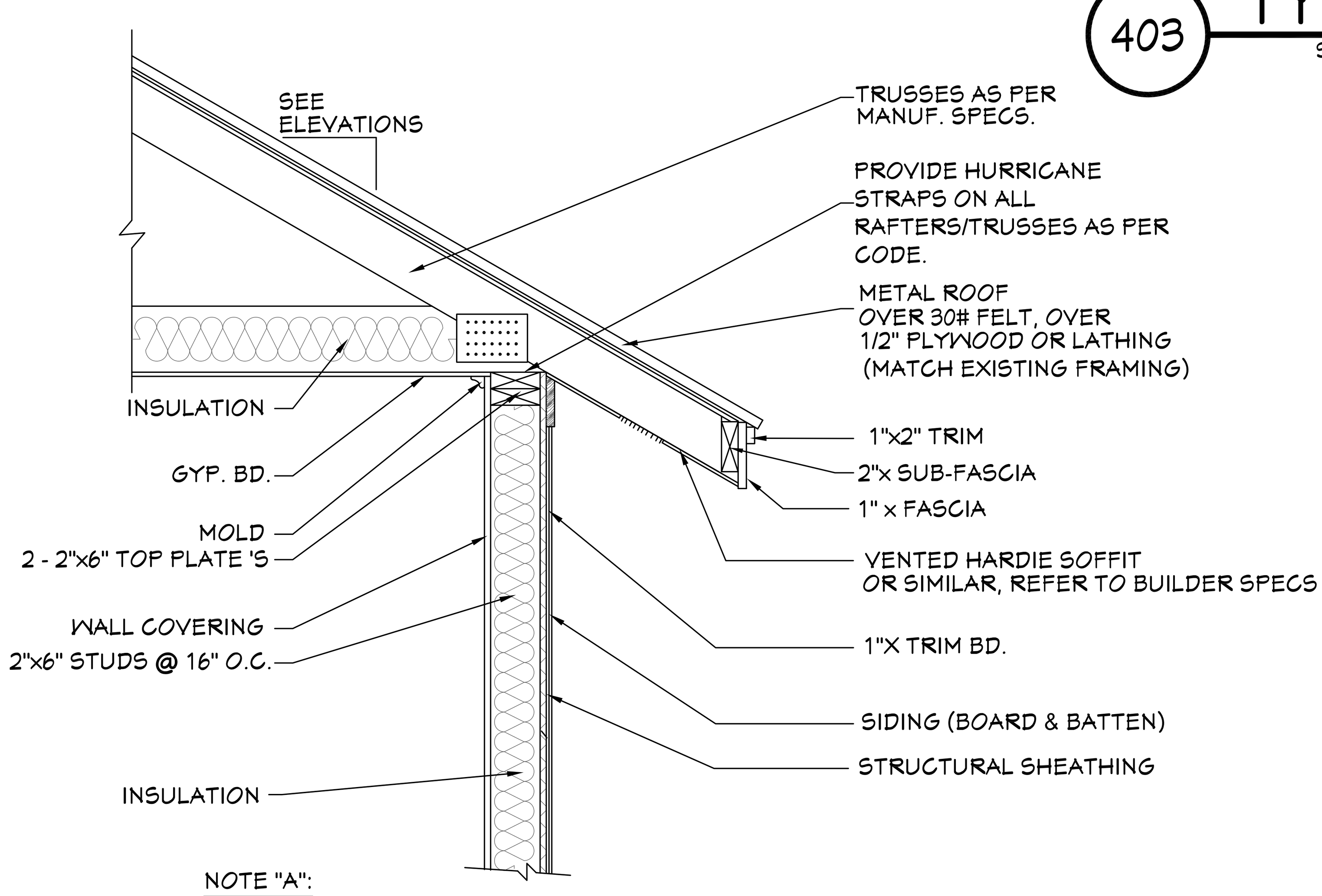
NOTES:
1. THE ABOVE INFORMATION IS FROM THE 2021 IRC TABLE R602.7(1).
2. PLEASE REFER TO THE IRC 2018 FOR ADDITIONAL LUMBER SPECIES AND HEADER OPTIONS.
3. ALL HEADER SIZES SHALL BE DESIGNED/ VERIFIED BY A LOCAL PROFESSIONAL.



403 **TYPICAL TRIM DETAIL**
SCALE------------------------------------ 1/2" = 1'-0"



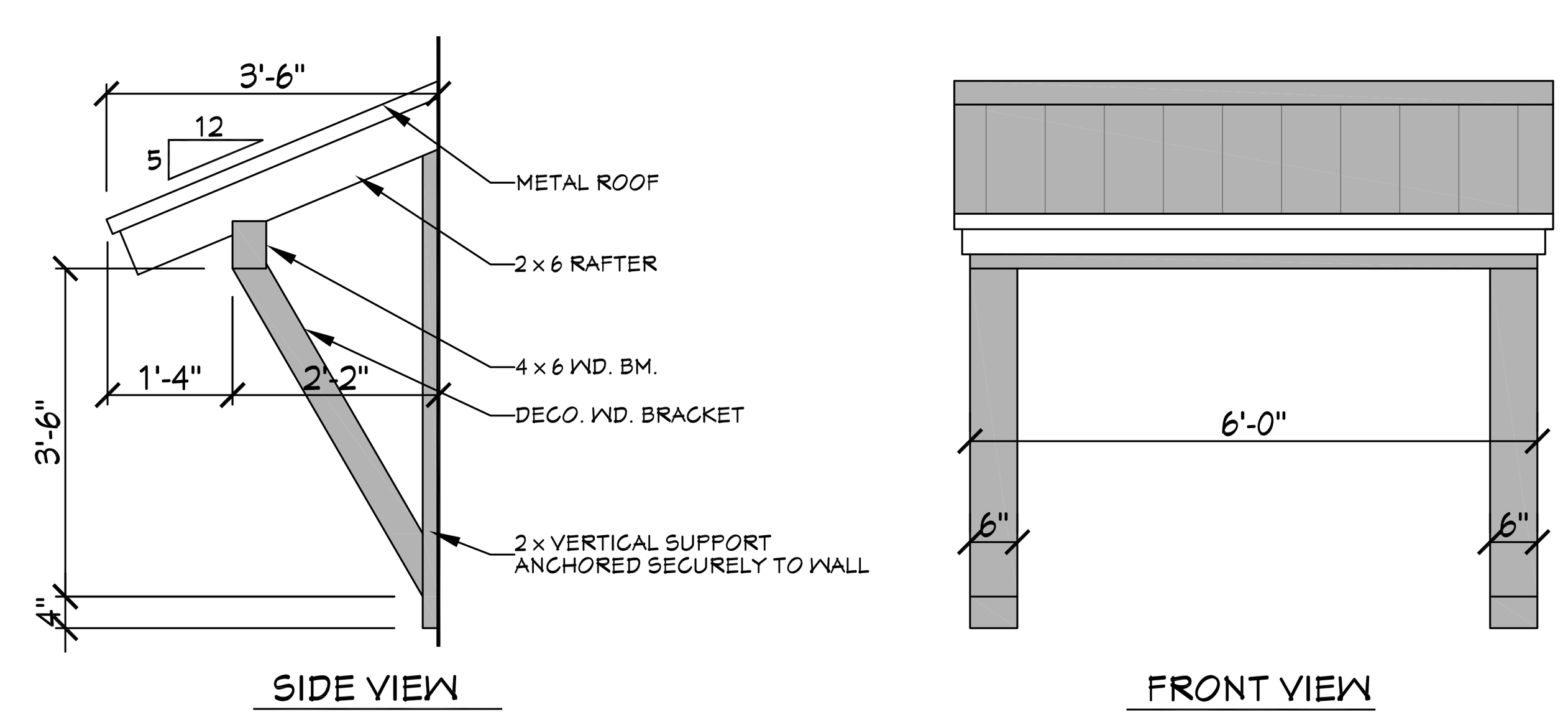
402 **REAR VIEW**
SCALE-- 1/4" = 1'-0"



NOTE "A":
PROVIDE A MINIMUM OF 7/16" STRUCTURAL WOOD PANEL ATTACHED w/ 8d COMMON OR 10d BOX NAILS AT 4" SPACING ON EDGE AND 12" IN FIELD.

NOTE "B": CORNICE DETAIL FOR REFERENCE ONLY. REFER TO BUILDER SPECS FOR ACTUAL MATERIALS.

404 **TYP. CORNICE DETAIL**
SCALE-------------------------------------3/4"=1'-0"



405 **AWNING DETAIL**
SCALE------------------------------------ 1/2" = 1'-0"

EXTERIOR ELEVATION NOTES:
1. CONTRACTOR TO VERIFY ALL WINDOW AND DOOR STYLES AND SIZES WITH OWNER PRIOR TO CONSTRUCTION.
2. PROVIDE STEPS AND GUARD RAILS AS PER CODE BASED ON SITE CONDITIONS.
3. GROUND LINES SHOWN FOR REFERENCE ONLY AND VARY DEPENDING ON SITE CONDITIONS.
4. ALL FINISH MATERIALS TO BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
5. REFER TO TYPICAL WALL DETAIL FOR FRAMING METHODS AND OTHER MISC. INFORMATION.
6. CONTRACTOR TO PROVIDE ADEQUATE ROOF VENTILATION AS REQ'D BY CURRENT CODES.

REV. 07.06.22

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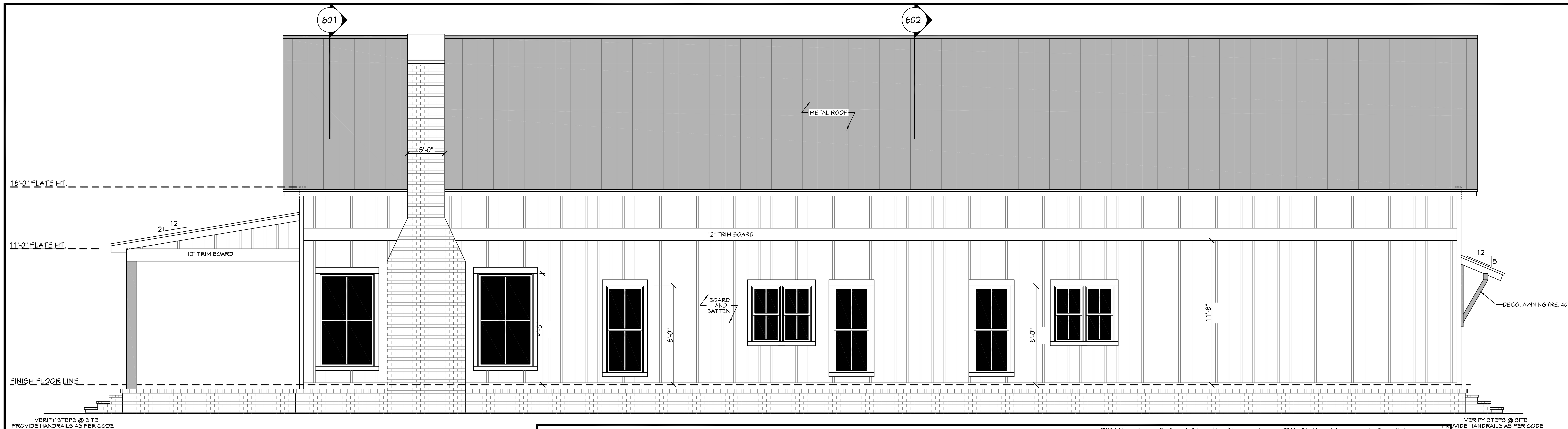
4



501 **RIGHT VIEW**

SCALE------------------------------------ 1/4" = 1'-0"

EXTERIOR ELEVATION NOTES:

1. CONTRACTOR TO VERIFY ALL WINDOW AND DOOR STYLES AND SIZES WITH OWNER PRIOR TO CONSTRUCTION.
2. PROVIDE STEPS AND GUARD RAILS AS PER CODE BASED ON SITE CONDITIONS.
3. GROUND LINES SHOWN FOR REFERENCE ONLY AND VARY DEPENDING ON SITE CONDITIONS.
4. ALL FINISH MATERIALS TO BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
5. REFER TO TYPICAL WALL DETAIL FOR FRAMING METHODS AND OTHER MISC. INFORMATION.
6. CONTRACTOR TO PROVIDE ADEQUATE ROOF VENTILATION AS REQ'D BY CURRENT CODES.

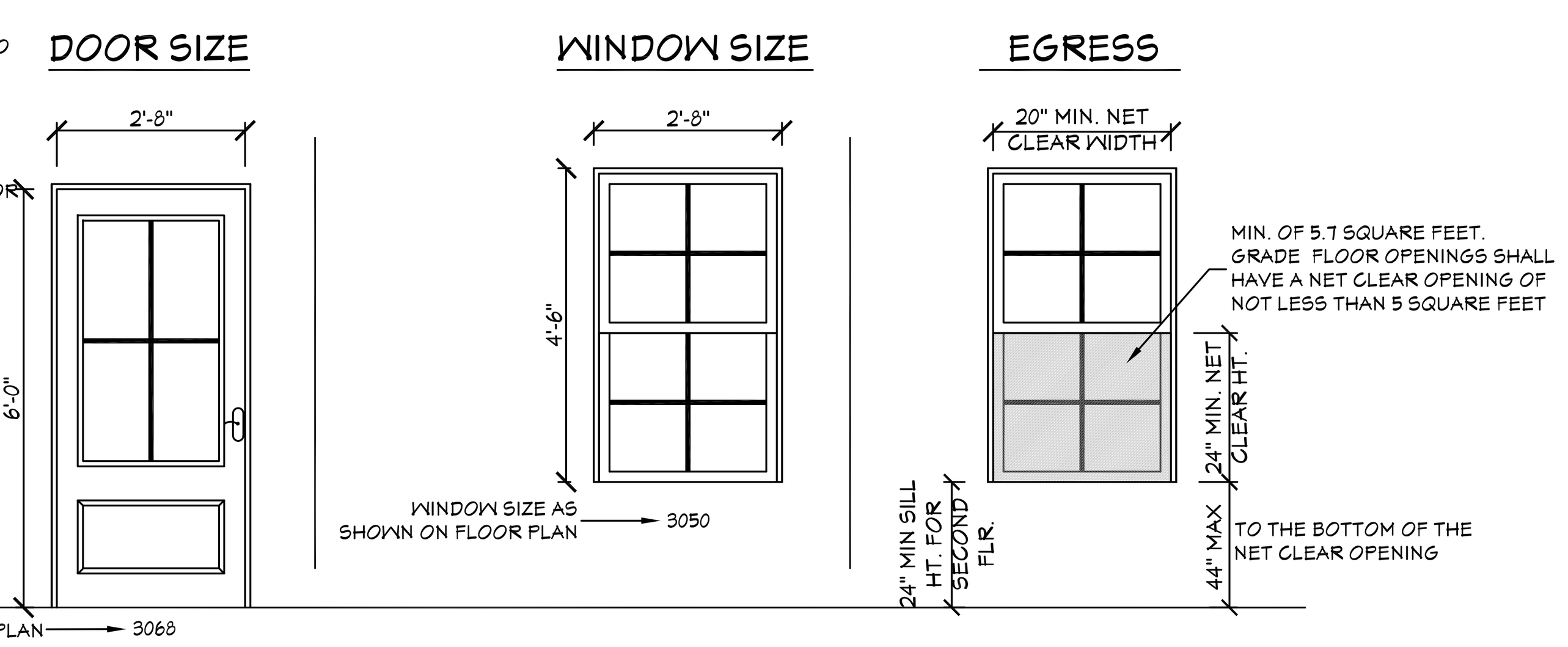
REV. 07.06.22

3068 (DOOR LABEL ON FLOOR PLAN) IS A DOOR THAT IS 3 FT 0 INCHES WIDE BY 6 FEET 8 INCHES TALL. TO FURTHER CLARIFY, THE 3068 LABEL IS TO BE READ AS FEET AND INCHES (WIDTH) AND FEET AND INCHES (HEIGHT)

THE DOOR LABEL IS THE ACTUAL SIZE OF THE DOOR ITSELF, NOT THE ROUGH OPENING SIZE. VERIFY THE ROUGH OPENING SIZE WITH THE DOOR MANUFACTURER CHOSEN AT SITE.

3050 (WINDOW LABEL ON FLOOR PLAN) IS A WINDOW THAT IS 3 FT 0 INCHES WIDE BY 5 FEET 0 INCHES TALL. TO FURTHER CLARIFY, THE 3050 LABEL IS TO BE READ AS FEET AND INCHES (WIDTH) AND FEET AND INCHES (HEIGHT)

THE WINDOW LABEL IS THE ACTUAL SIZE OF THE WINDOW ITSELF, NOT THE ROUGH OPENING SIZE. VERIFY THE ROUGH OPENING SIZE WITH THE WINDOW MANUFACTURER CHOSEN AT SITE.



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

R310.2.1 Minimum size. Emergency escape and rescue openings shall have a net clear opening of not less than 5.7 square feet. **Exception:** The minimum net clear opening for grade floor emergency escape and rescue openings shall be 5 square feet. **R310.2.2 Minimum dimensions.** The minimum net clear opening height dimension shall be 24 inches (610 mm). The minimum net clear opening width dimension shall be 20 inches (508 mm). The net clear opening dimensions shall be the result of normal operation of the opening.

R310.2.3 Maximum height from floor. Emergency escape and rescue openings shall have the bottom of the clear opening not greater than 44 inches (1118 mm) above the floor.

R310.2.4 Emergency escape and rescue openings under decks, porches and cantilevers. Emergency escape and rescue openings installed under decks, porches and cantilevers shall be fully penable and provide a path not less than 36 inches (914 mm) in height and 36 inches (914 mm) in width to a yard or court.

R310.4 Area wells. An emergency escape and rescue opening where the bottom of the clear opening is below the adjacent grade shall be provided with an area well in accordance with Sections R310.4.1 through R310.4.4.

R310.4.1 Minimum size. The horizontal area of the area well shall be not less than 9 square feet (0.9 m2), with a horizontal projection and width of not less than 36 inches (914 mm). The size of the area well shall allow the emergency escape and rescue opening to be fully opened. Exception: The ladder or steps required by Section R310.4.2 shall be permitted to encroach not more than 6 inches (152 mm) into the required dimensions of the area well.

R310.4.2 Ladder and steps. Area wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with an approved, permanently affixed ladder or steps. The ladder or steps shall not be obstructed by the emergency escape and rescue opening where the window or door is in the open position. Ladders or steps required by this section shall not be required to comply with Section R311.7.

R310.4.2.1 Ladders. Ladders and rungs shall have an inside width of not less than 12 inches (305 mm), shall project not less than 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the area well.

R310.4.2.2 Steps. Steps shall have an inside width of not less than 12 inches (305 mm), a minimum tread depth of 5 inches (127 mm) and a maximum riser height of 18 inches (457 mm) for the full height of the area well.

R312.2 Window fall protection. Window fall protection shall be provided in accordance with Sections R312.2.1 and R312.2.2.

R312.2.1 Window opening height. In dwelling units, where the bottom of the clear opening of an operable window opening is located less than 24 inches (610 mm) above the finished floor and greater than 72 inches above the finished grade or other surface below on the exterior of the building, the operable window shall comply with one of the following:

1. *Operable window openings will not allow a 4- inch-diameter (102 mm) sphere to pass through where the openings are in their largest opened position.*
2. *Operable windows are provided with window opening control devices or fall prevention devices that comply with ASTM F2090.*

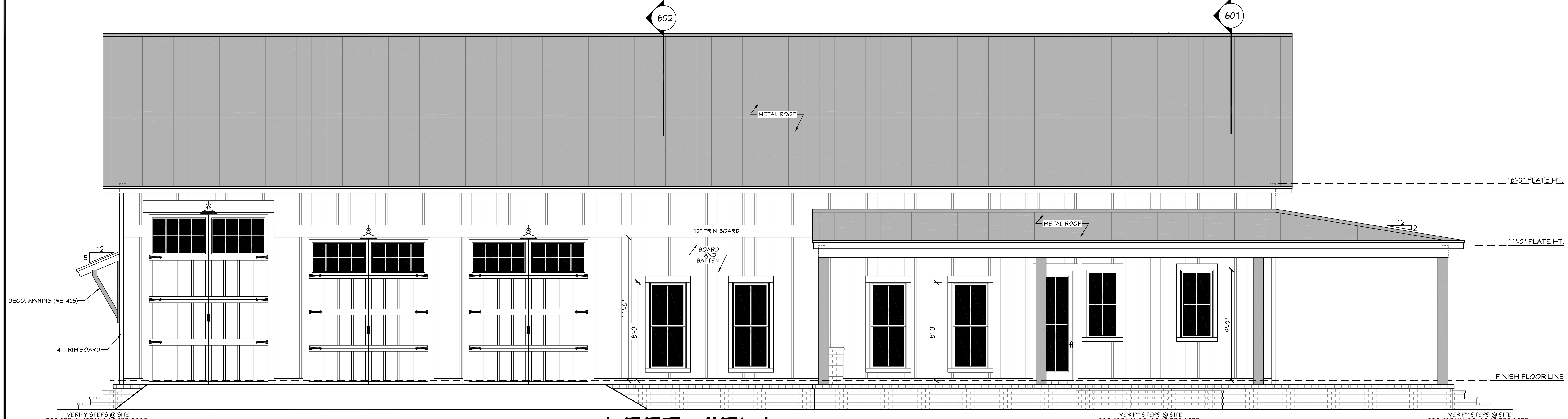
R312.2.2 Emergency escape and rescue openings. Where an operable window serves as an emergency escape and rescue opening, a window opening control device or fall prevention device, after operation to release the control device or fall prevention device allowing the window to fully open, shall not reduce the net clear opening area of the window unit to less than the area required by Sections R310.2.1 and R310.2.2.

IRC 2021

REV. 07.06.22

OPENING SIZES/ EGRESS

SCALE---------------------------------- NTS



502 **LEFT VIEW**

SCALE------------------------------------ 1/4" = 1'-0"

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NATIONAL COUNCIL OF BUILDING DESIGNER CERTIFICATION
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

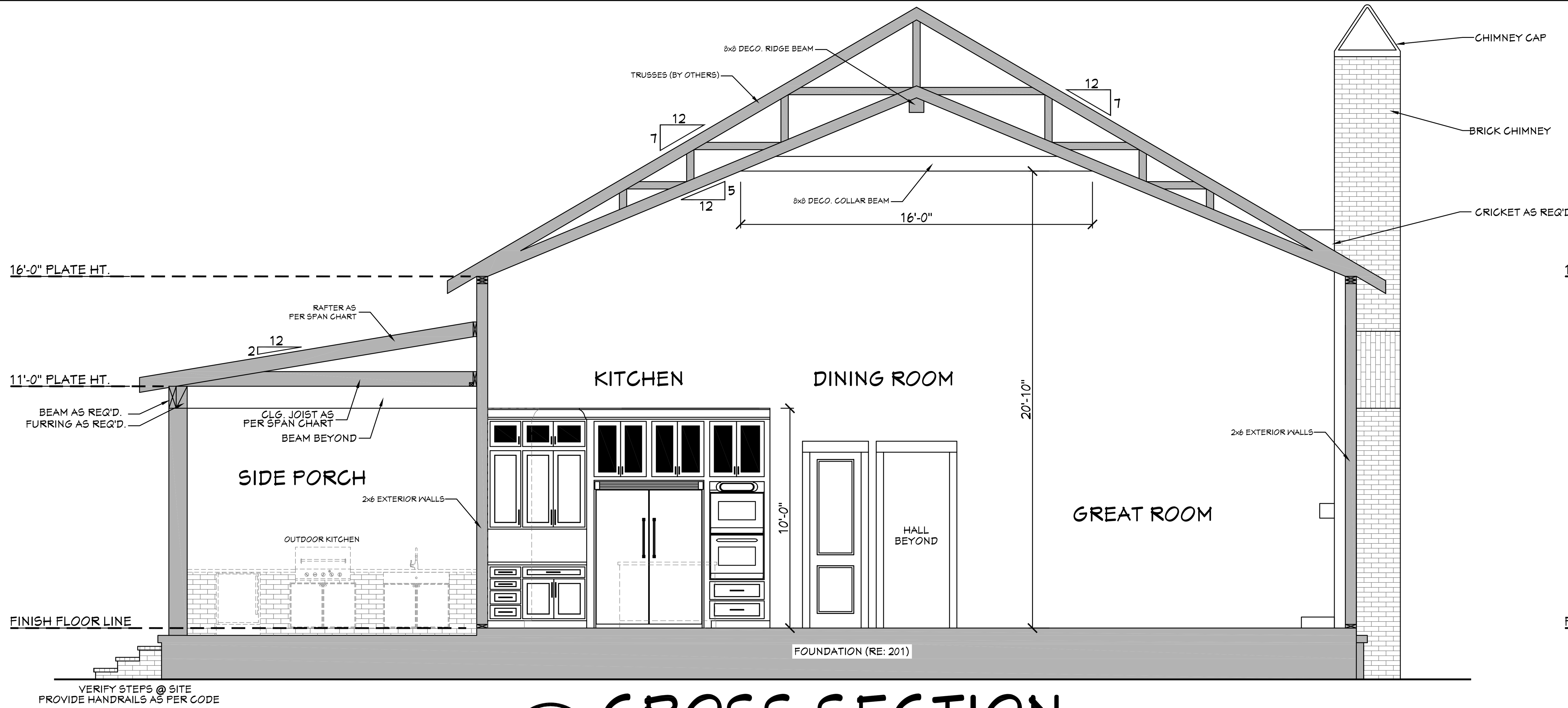
Pre-Drawn Plan ID:
2500-3R

House Plan Zone, LLC. has exercised great care and effort in the development of these plans and the completion of these construction documents. However, due to the great variance in building codes and site specific conditions, House Plan Zone, LLC. assumes no responsibility for any damages, including structural failures resulting from errors, omissions or deficiencies in the design. House Plan Zone, LLC. highly recommends that these plans be reviewed by a licensed structural engineer in the area of construction, in addition to your local building officials prior to construction. Additional engineering may be required to comply to seismic, wind and other special conditions required by local building codes. All dimensions to be verified on site prior to construction. If a foundation plan has been included in these plans, it is general in nature and shall be verified by a licensed engineer prior to construction.

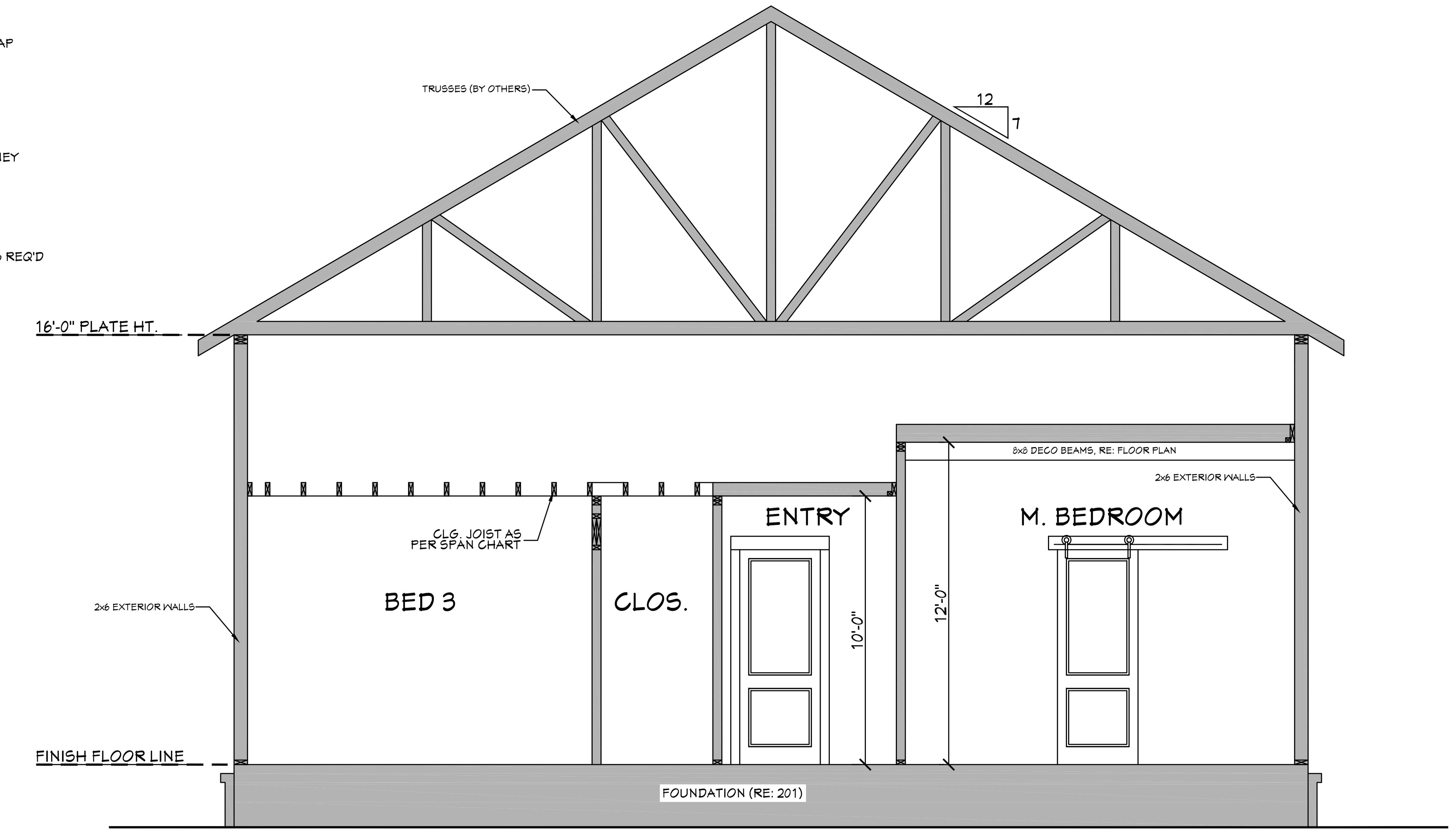
Date: 07.26.23

Drawn By: J.L.B.

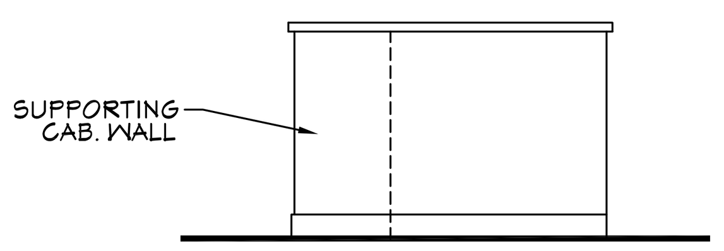
SHEET NUMBER
5



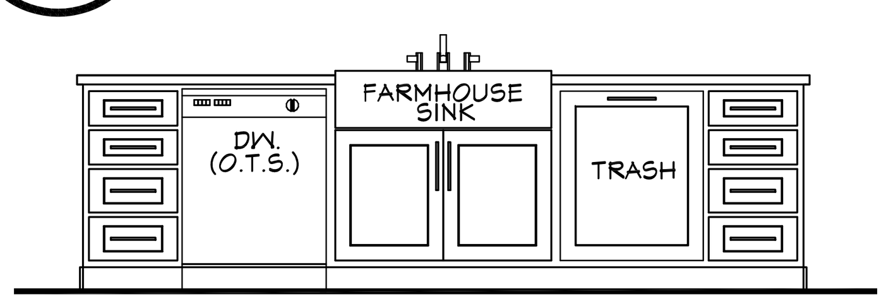
601 **CROSS SECTION**
SCALE------------------------------------ 1/4" = 1'-0"



602 **CROSS SECTION**
SCALE------------------------------------ 1/4" = 1'-0"



603 **KITCHEN**
SCALE------------- 3/8" = 1'-0"



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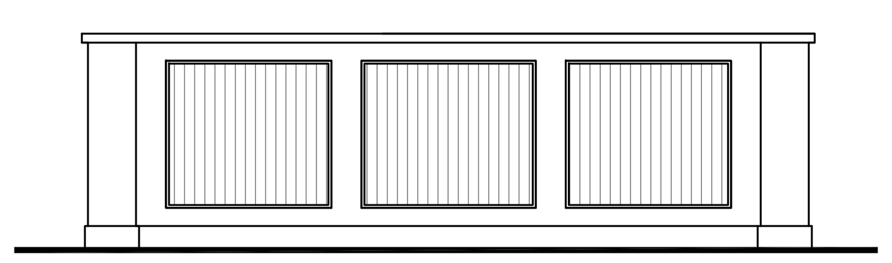
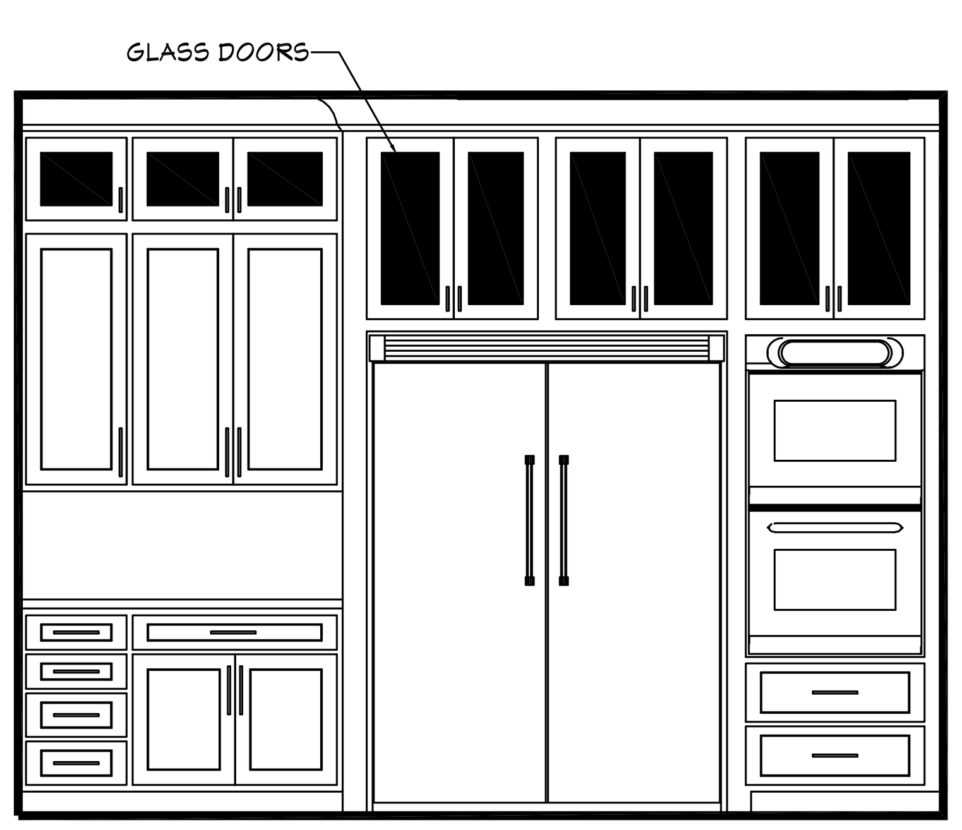
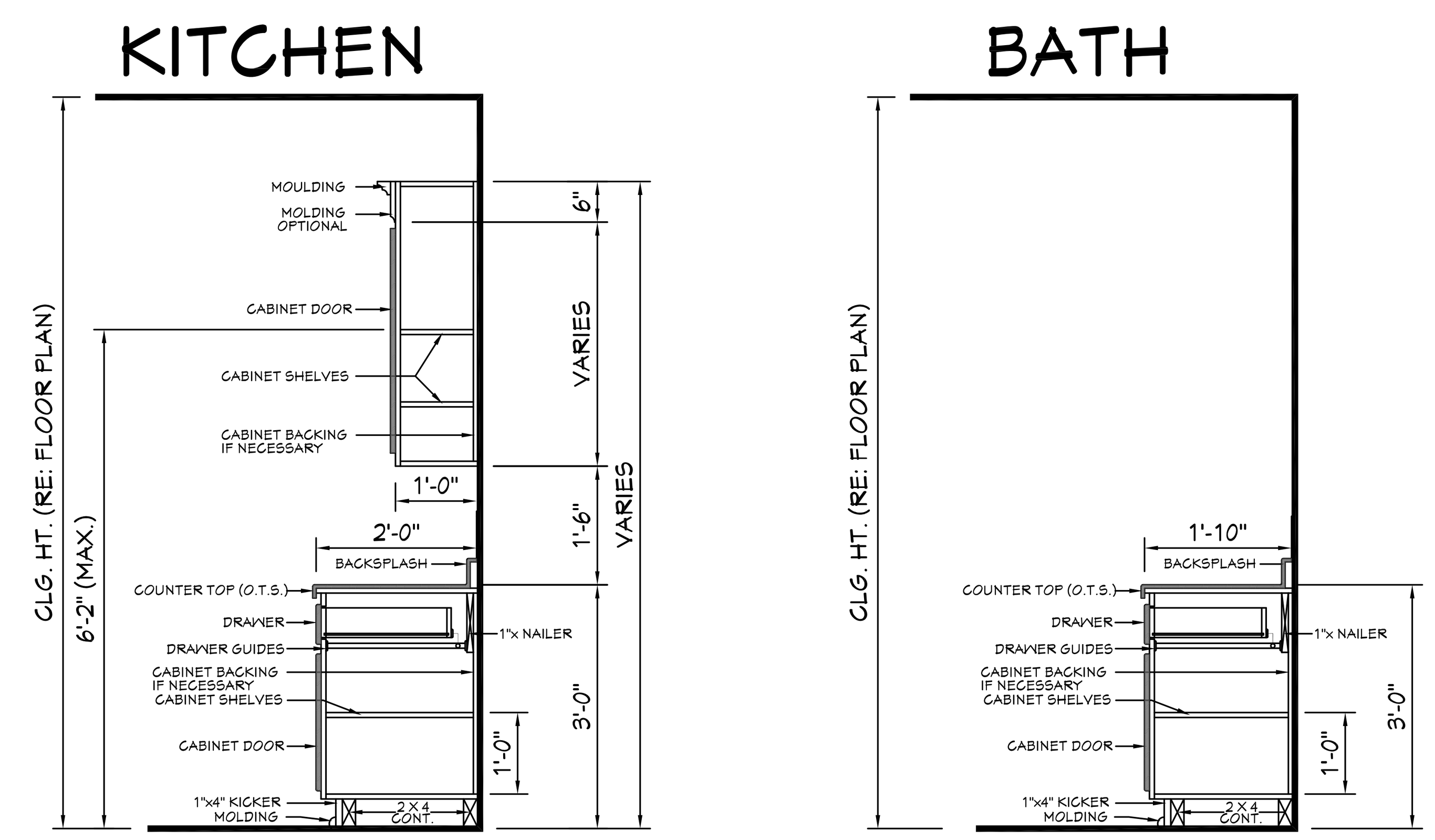
SCALE------------- 3/8" = 1'-0"



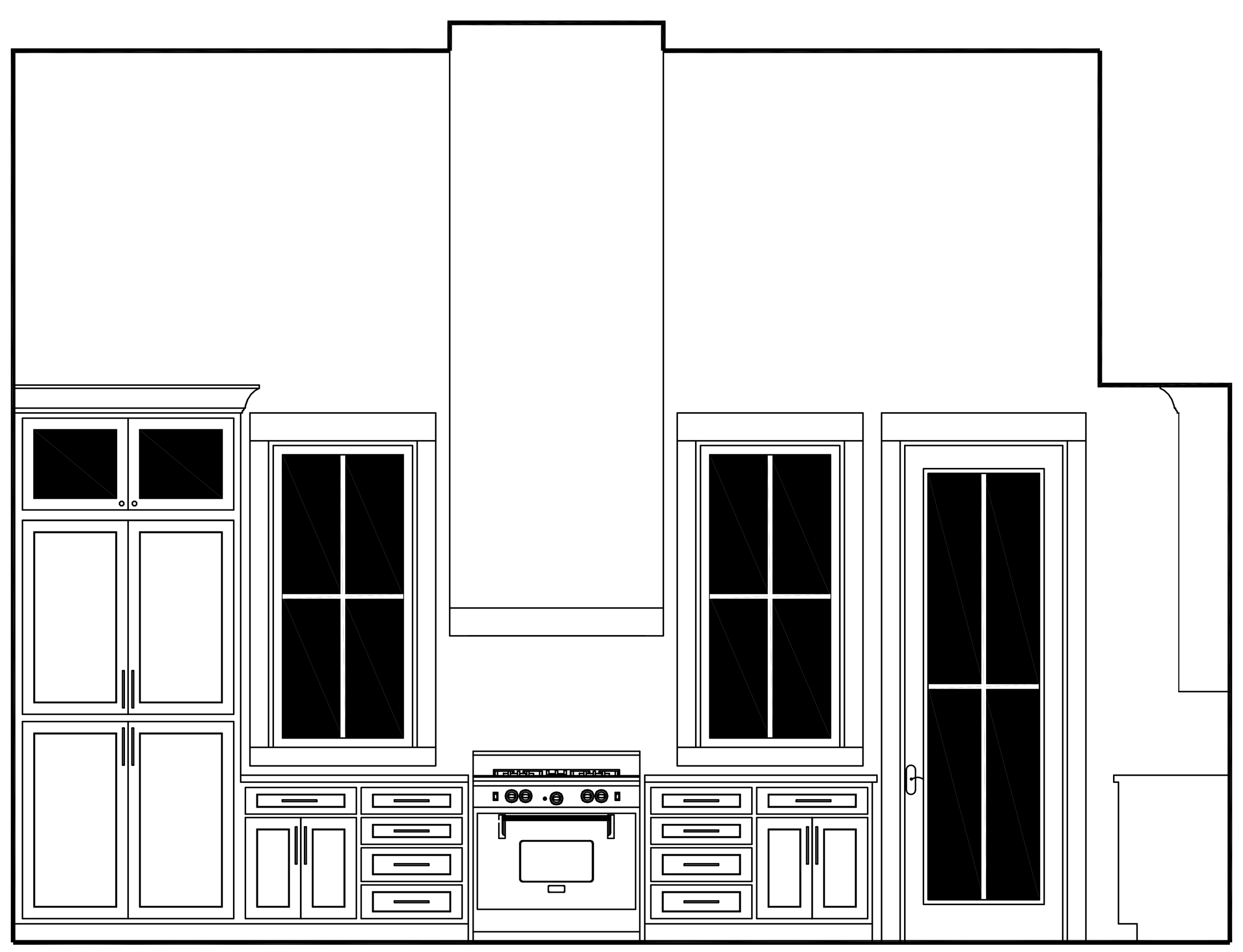
605 **KITCHEN**
SCALE------------- 3/8" = 1'-0"



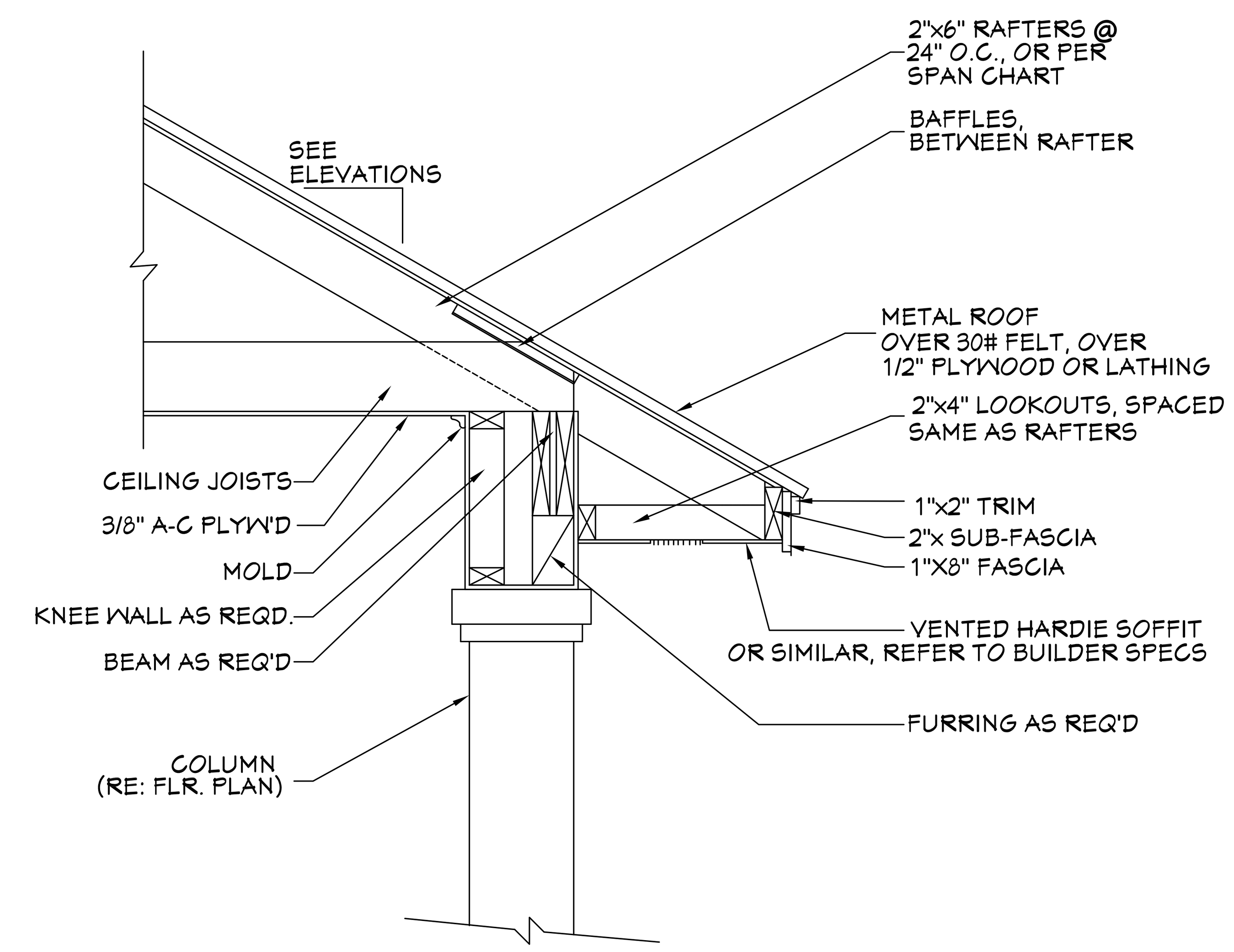
606 **KITCHEN**
SCALE------------- 3/8" = 1'-0"



608 **TYP. CAB DETAIL**
SCALE------------- N.T.S.



607 **KITCHEN**
SCALE------------- 3/8" = 1'-0"



609 **TYP. CORNICE DETAIL**
SCALE------------------------------------3/4"=1'-0"

NOTE "B": CORNICE DETAIL FOR REFERENCE ONLY. REFER TO BUILDER SPECS FOR ACTUAL MATERIALS.

CROSS SECTION NOTES:

1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AT SITE.
2. ALL RIDGE BEAMS, HIP RAFTERS, & VALLEY RAFTERS TO BE 2" x10", OR AS REQ'D. BY ENGINEER.
3. TRUSSES FOR MAIN HOUSE TO BE DESIGNED BY TRUSS MANUFACTURER.
4. CONTRACTOR TO PROVIDE RAFTER BRACING TO MEET APPLICABLE CODES.
5. CONTRACTOR TO THOROUGHLY WATERPROOF ALL EXTERIOR INTERSECTIONS AS PER CODE AND TYPICAL BUILDING PRACTICES.
6. ALL BEAMS TO BE SIZED BY A LICENSED STRUCTURAL ENGINEER.
7. ALL LUMBER SIZES AND SPACING TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO PROVIDE ADEQUATE ROOF VENTILATION AS REQ'S. BY CURRENT CODES.

REV. 07.06.22

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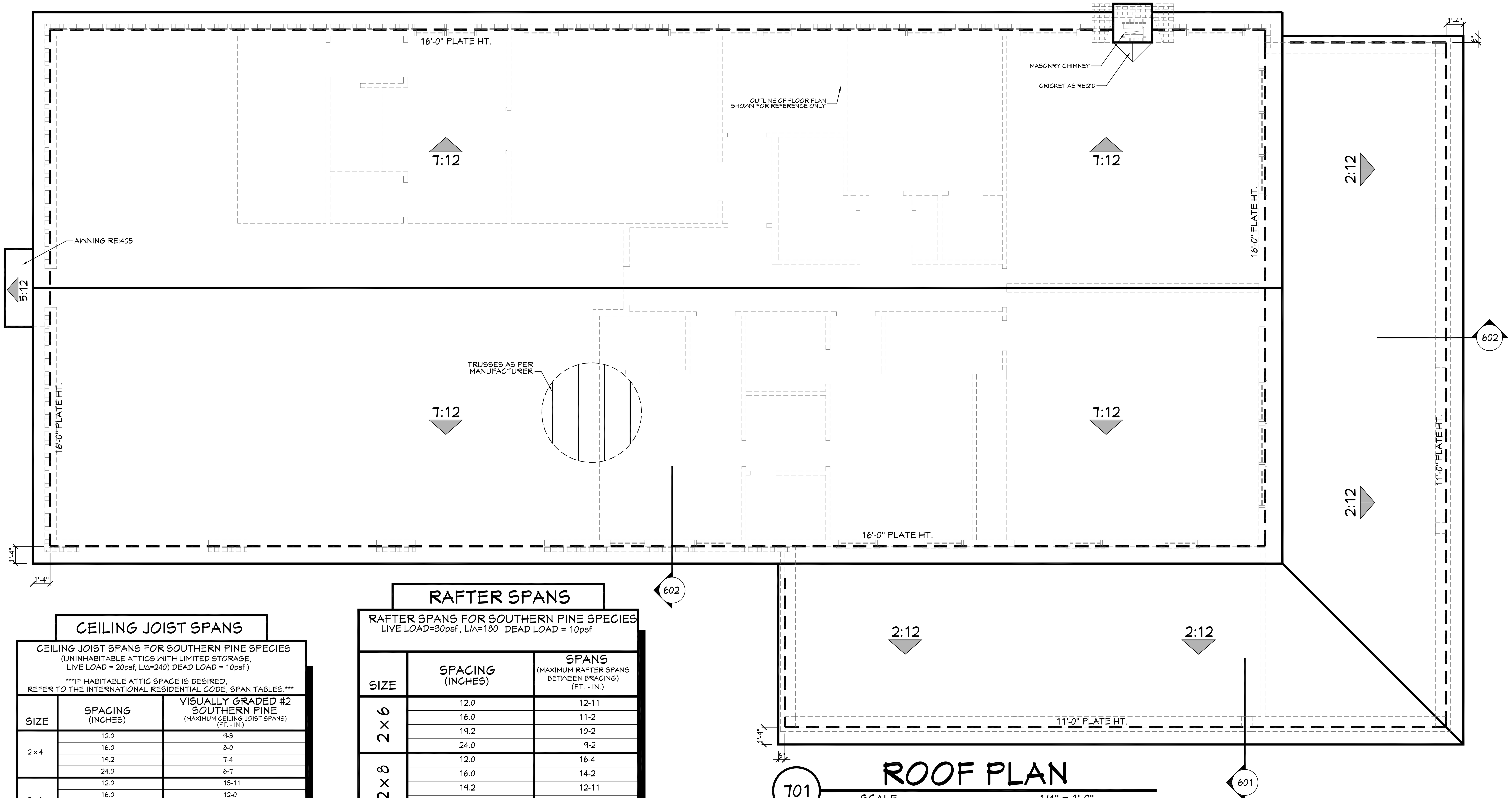
NATIONAL COUNCIL OF BUILDING DESIGNER CERTIFICATION
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

Pre-Drawn Plan ID:
2500-3R

Date:
07.26.23
Drawn By:
J.L.B.

SHEET NUMBER
6



701 **ROOF PLAN**

SCALE------------------------------------ 1/4" = 1'-0"

CEILING JOIST SPANS

CEILING JOIST SPANS FOR SOUTHERN PINE SPECIES
(UNINHABITABLE ATTICS WITH LIMITED STORAGE,
LIVE LOAD = 20psf, L/△=240) DEAD LOAD = 10psf)

***IF HABITABLE ATTIC SPACE IS DESIRED,
REFER TO THE INTERNATIONAL RESIDENTIAL CODE, SPAN TABLES.***

SIZE	SPACING (INCHES)	VISUALLY GRADED #2 SOUTHERN PINE (MAXIMUM CEILING JOIST SPANS) (FT. - IN.)
2×4	12.0	9-3
	16.0	8-0
	19.2	7-4
	24.0	6-7
2×6	12.0	13-11
	16.0	12-0
	19.2	11-0
	24.0	9-10
2×8	12.0	17-7
	16.0	15-3
	19.2	13-11
	24.0	12-6
2×10	12.0	20-11
	16.0	18-1
	19.2	16-6
	24.0	14-9

NOTES:
The above tables are based on the IRC 2021 TABLE R802.5.1(2)

RAFTER SPANS

RAFTER SPANS FOR SOUTHERN PINE SPECIES
LIVE LOAD=30psf , L/△=180 DEAD LOAD = 10psf

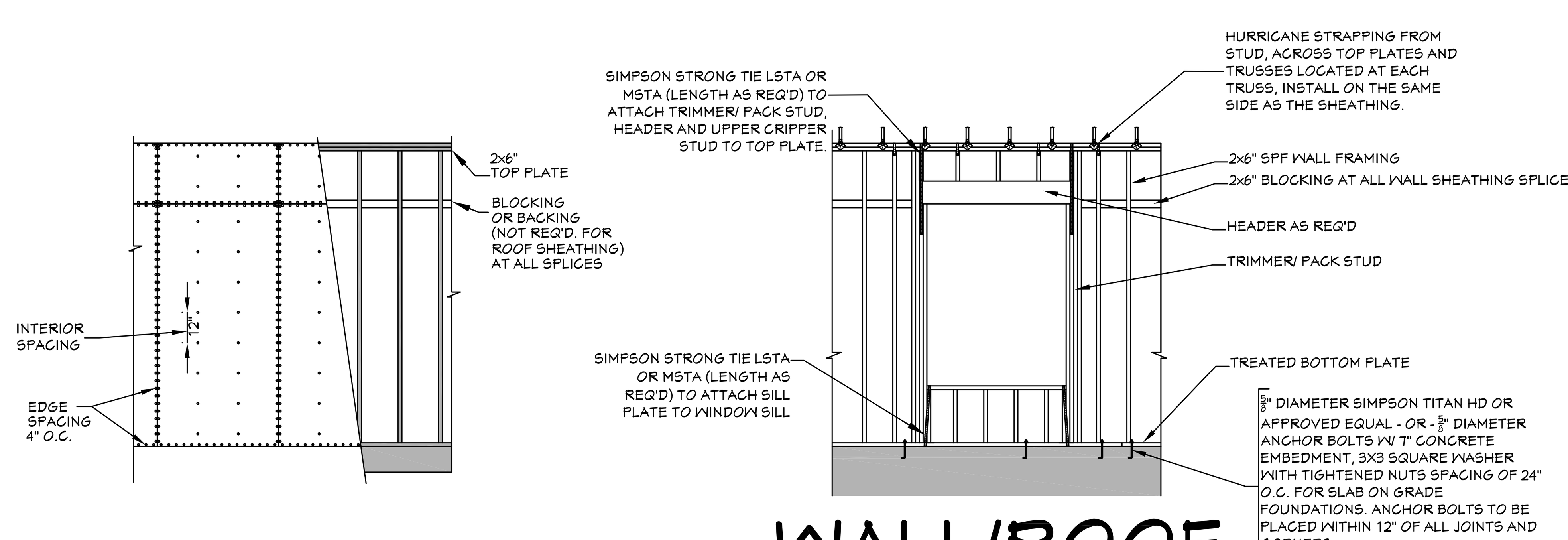
SIZE	SPACING (INCHES)	SPANS (MAXIMUM RAFTER SPANS BETWEEN BRACING) (FT. - IN.)
2×6	12.0	12-11
	16.0	11-2
	19.2	10-2
	24.0	9-2
2×8	12.0	16-4
	16.0	14-2
	19.2	12-11
	24.0	11-7
2×10	12.0	19-5
	16.0	16-10
	19.2	15-4
	24.0	13-9
2×12	12.0	22-10
	16.0	19-10
	19.2	18-1
	24.0	16-2

NOTES:
The above tables are based on the IRC 2021 TABLE R802.4.1(3)

ROOF PLAN NOTES:

1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES
2. MAIN ROOF SYSTEM TO BE PRE-ENGINEERED TRUSSES. REFER TO MANUFACTURER FOR TRUSS DESIGN.
3. ALL RAFTERS AND CLG JOISTS FOR PORCHES TO BE SIZED AS PER SPAN CHART.
4. CONTRACTOR TO WATERPROOF ALL ROOF INTERSECTIONS AS PER CODE.
5. CONTRACTOR TO VERIFY ALL ROOF PITCHES WITH EXTERIOR ELEVATIONS PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO PROVIDE ADEQUATE ROOF VENTILATION AS PER CODE.

REV. 07.06.22



702 **WALL/ROOF FASTENING DETAILS**

SCALE------------------------- 1/4" = 1'-0"

NOTE: DETAIL IS TYPICAL FOR HIGH WIND AREAS. ADAPT AS REQUIRED FOR YOUR LOCAL AREA

NAIL SIZE SPACING FOR WALL SHEATHING
8d NAILS MIN. OF 7/16" O.S.B. EDGE SPACING = 4" O.C. INTERIOR SPACING = 12" O.C.

NAIL SIZE SPACING FOR ROOF SHEATHING
8d NAILS MIN. OF 7/16" O.S.B. EDGE SPACING = 4" O.C. INTERIOR SPACING = 4" O.C.

NOTES:
1. ALL EXTERIOR SHEATHING TO EXTEND FROM BOTTOM OF BOTTOM PLATE TO THE TOP OF THE TOP PLATES.
2. PROVIDE 2X4 OR GREATER COLLAR TIES ON EACH RAFTER IN THE UPPER THIRD OF ATTIC AND ATTACHED TO RAFTERS WITH 5 - 10d NAILS ON EACH SIDE
3. SHINGLES OR OTHER ROOF MATERIALS TO BE FASTENED AS PER MANUFACTURERS INSTRUCTIONS FOR HIGH WIND APPLICATIONS.
4. EXTERIOR WALL FINISHES TO BE INSTALLED AS PER MANUFACTURERS INSTRUCTIONS BASED ON HIGH WIND APPLICATIONS.

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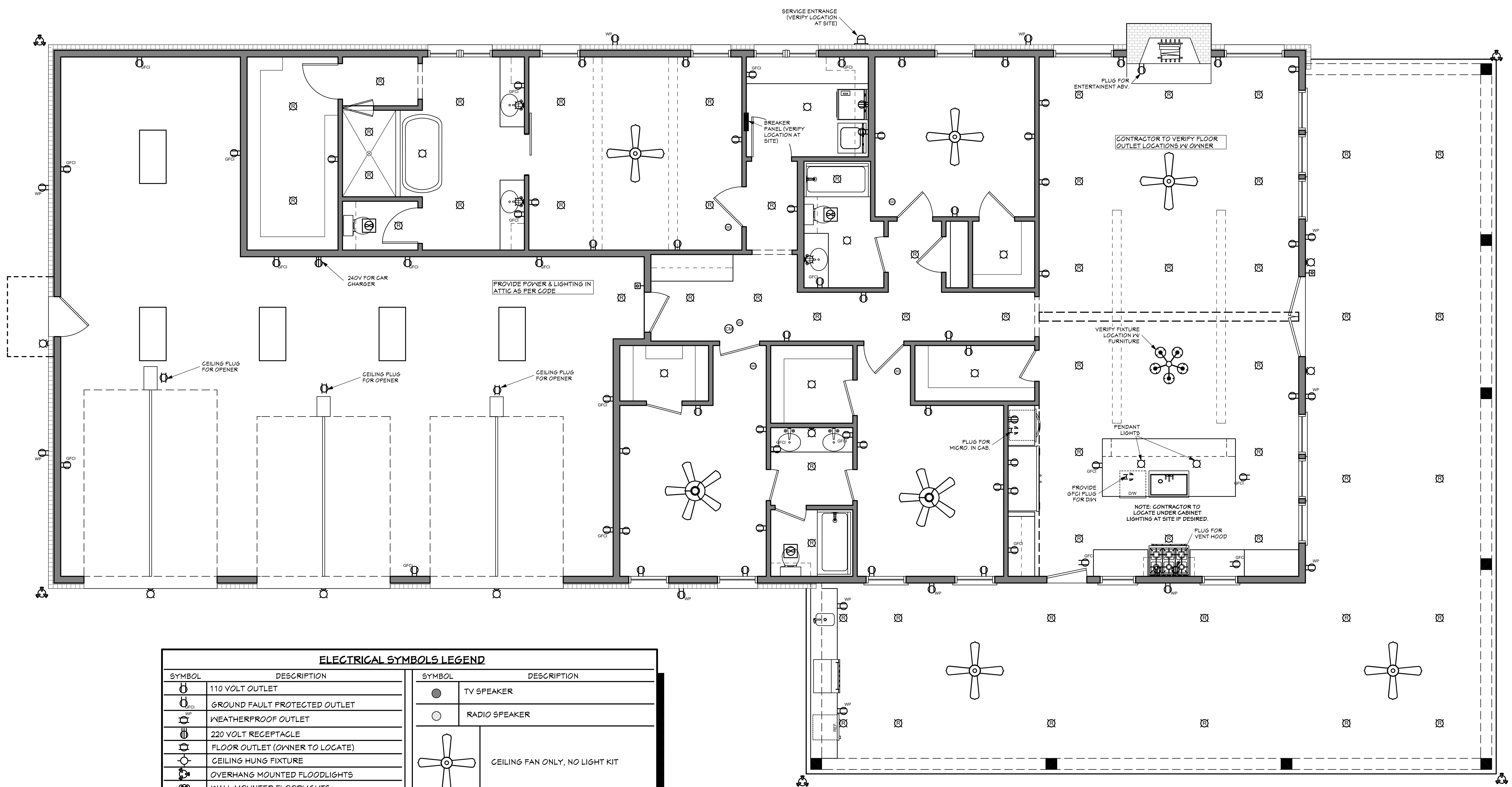
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

Pre-Drawn Plan ID:
2500-3R

House Plan Zone, LLC. has exercised great care and effort in the development of these plans and the completion of these construction documents. However, due to the great variance in building codes and site specific conditions, House Plan Zone, LLC. assumes no responsibility for any damages, including structural failures resulting from errors, omissions or deficiencies in the design. House Plan Zone, LLC. highly recommends that these plans be reviewed by a licensed structural engineer in the area of construction, in addition to your local building officials prior to construction. Additional engineering may be required to comply to seismic, wind and other special conditions required by local building codes. All dimensions to be verified on site prior to construction. If a foundation plan has been included in these plans, it is general in nature and shall be verified by a licensed engineer prior to construction.

Date:
07.26.23
Drawn By:
J.L.B.

SHEET NUMBER
7



ELECTRICAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	110 VOLT OUTLET
	GROUND FAULT PROTECTED OUTLET
	WEATHERPROOF OUTLET
	220 VOLT RECEPTACLE
	FLOOR OUTLET (OWNER TO LOCATE)
	CEILING HUNG FIXTURE
	OVERHANG MOUNTED FLOODLIGHTS
	WALL MOUNTED FLOODLIGHTS
	RECESSED CEILING FIXTURE
	FLUORESCENT LIGHT
CM	CARBON MONOXIDE DETECTOR
	SMOKE DETECTOR
$	SWITCH
$	THREE WAY SWITCH
	WALL MOUNTED LIGHT
$	DIMMER SWITCH (OWNER TO LOCATE)
$	DOOR ACTIVATED SWITCH
	WEATHERPROOF OUTLET
	CAT5 NETWORKING JACK (OWNER TO LOCATE)
	TELEPHONE OUTLET (OWNER TO LOCATE)
TV	TELEVISION OUTLET (OWNER TO LOCATE)
	DOORBELL BUTTON (CONTRACTOR TO LOCATE)
T	THERMOSTAT (CONTRACTOR TO LOCATE)
	CEILING EXHAUST FAN, VENT TO EXTERIOR

SYMBOL	DESCRIPTION
	TV SPEAKER
	RADIO SPEAKER
	CEILING FAN ONLY, NO LIGHT KIT
	CEILING FAN WITH LIGHT KIT
	TRACK LIGHTING (OWNER TO LOCATE)
	WALL SCONCE (OWNER TO LOCATE)
	CHANDELIER 1 (O.T.S.)
	CHANDELIER 2 (O.T.S.)
	UNDER COUNTER LIGHTING
	EMERGENCY LIGHTING/ EXIT SIGN

ELECTRICAL NOTES: (2021 IRC)

1. ALL WORK SHALL COMPLY WITH ALL CODES APPLICABLE AT SITE.
2. SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS: EACH SLEEPING ROOM, OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS, ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS. WHEN MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN A DWELLING THE ALARM DEVICES SHALL BE INTERCONNECTED IS SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE UNIT. SMOKE ALARMS SHALL BE HARD WIRED WITH A BATTERY BACK UP.
3. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS IN DWELLING UNITS WITHIN WHICH FUEL-FIRED APPLIANCES ARE INSTALLED AND IN DWELLING UNITS WITH ATTACHED GARAGES.
4. A 125 VOLT, SINGLE PHASE, 15-20 AMPERE RATED RECEPTACLE OUTLET SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION FOR THE SERVICING OF HEATING, AIR CONDITIONING AND REFRIGERATION EQUIPMENT. THE RECEPTACLE SHALL BE LOCATED ON THE SAME LEVEL AND WITHIN 25 FEET OF THE EQUIPMENT. THE RECEPTACLE OUTLET SHALL NOT BE CONNECTED TO THE LOAD SIDE OF THE HVAC EQUIPMENT DISCONNECTING MEANS.

ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

NOTE: SWITCHES AND ELECTRICAL CONNECTIONS NOT SHOWN. OWNER TO LOCATE THESE ITEMS DURING ELECTRICAL WALK-THROUGH WITH ELECTRICAL CONTRACTOR.

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Date: 07.26.23

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SHEET NUMBER
8

2021 International Residential Code® Construction Specifications and Methodologies

IMPORTANT DISCLAIMER

THE ENCLOSED INFORMATION IS INTENDED TO ASSIST AND INFORM YOU THROUGH THE CONSTRUCTION OF YOUR HOME. YOUR CONSTRUCTION PLANS HAVE BEEN DRAWN TO PRESCRIBE TO INDUSTRY STANDARDS. THESE PROFESSIONAL STANDARDS DETERMINE HOW CONSTRUCTION PLANS ARE DRAWN AND WHAT INFORMATION THEY INCLUDE. CONSTRUCTION PLANS ARE INTENDED AS A TECHNICAL GUIDE TO PROFESSIONAL CONTRACTORS AND ARE NOT INTENDED TO BE A SET OF STEP-BY-STEP INSTRUCTIONS. THEREFORE, IF YOU ARE PLANNING TO BUILD YOUR HOME WITHOUT THE SERVICE OF A PROFESSIONAL BUILDER, WE SUGGEST THAT YOU BECOME THOROUGHLY FAMILIAR WITH READING CONSTRUCTION PLANS OR CONSIDER CONSULTING A CONSTRUCTION SPECIALIST. GREAT CARE AND EFFORT GOES INTO THE CREATION OF THE DESIGN OF YOUR CONSTRUCTION PLANS. HOWEVER, BECAUSE OF THE IMPOSSIBILITY OF PROVIDING ANY PERSONAL AND/OR "ON-SITE" CONSULTATION, SUPERVISION AND CONTROL OVER THE ACTUAL CONSTRUCTION, AND BECAUSE OF THE GREAT VARIANCES IN LOCAL BUILDING CODE REQUIREMENTS AND OTHER GEOGRAPHIC LOCATION AND WEATHER CONDITIONS, HOUSE PLAN ZONE, LLC. NOR THE AGENTS OR EMPLOYEES ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCLUDING BUT NOT LIMITED TO, ANY DEFICIENCIES, OMISSIONS, OR ERRORS IN THE DESIGN. IN ANY CASE, ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS IN THE DIMENSIONS, AND/OR DRAWINGS CONTAINED IN THE CONSTRUCTION PLANS SHALL BE BROUGHT TO THE ATTENTION OF HOUSE PLAN ZONE, LLC. PRIOR TO COMMENCEMENT OF CONSTRUCTION. PROCEEDING WITH CONSTRUCTION CONSTITUTES THE ACCEPTANCE OF THE CONSTRUCTION DOCUMENTS 'AS IS' AND ANY DISCREPANCIES, ERRORS, AND/OR OMISSIONS BECOME THE SOLE RESPONSIBILITY OF THE PURCHASER. IF ANY ERRORS ARE DISCOVERED PRIOR TO CONSTRUCTION, HOUSE PLAN ZONE, LLC. WILL BE GIVEN FULL OPPORTUNITY TO CORRECT ANY ERRORS AND/OR OMISSIONS TO THE CONSTRUCTION PLANS. IN ANY OR ALL CIRCUMSTANCES, THE MAXIMUM FINANCIAL LIABILITY TO HOUSE PLAN ZONE, LLC. CAN NOT EXCEED THE TOTAL PLAN PURCHASE.

PROFESSIONAL SEAL/ ADDITIONAL DRAWINGS

THOUGH EVERY EFFORT WAS MADE TO MAKE THE CONSTRUCTION DOCUMENTS FOLLOW THE I.R.C. NATIONAL CODE METHODOLOGIES, A FEW STATES AND CITIES HAVE PASSED BI-LAWS REGARDING CONSTRUCTION PLANS THAT WOULD BE SUBMITTED TO YOUR LOCAL MUNICIPALITY AND USED FOR THE CONSTRUCTION OF YOUR HOME. THESE BI-LAWS REQUIRE THE CONSTRUCTION PLANS TO BE REVIEWED AND/OR PREPARED, INSPECTED, AND SEALED (OR STAMPED) BY A LICENSED ARCHITECT/ ENGINEER IN YOUR STATE. IT IS ADVISED THAT YOU CONTACT YOUR MUNICIPALITY'S BUILDING DEPARTMENT FOR INSTRUCTIONS TO COMPLY WITH THEIR CONSTRUCTION PLANS REVIEW PROCESS. FURTHERMORE, ADDITIONAL ITEMS SUCH AS STRUCTURAL, HVAC, PLUMBING, SITE, ENERGY EFFICIENCY DOCUMENTATION, ETC. MAY BE REQUIRED AND THESE SHALL BE PROVIDED BY A LOCAL PROFESSIONAL THAT IS FAMILIAR WITH THE REQUIREMENTS AND THESE SHALL BE PROVIDED AT THE OWNERS EXPENSE.

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GENERAL SITE NOTES

1. CONTRACTOR TO VERIFY LOCATIONS OF SITE UTILITIES, REQUIREMENTS, AND CONNECTION FEES. OWNER, CONTRACTOR AND SUB-CONTACTORS TO PAY ALL OF THEIR RELATED CONSTRUCTION PERMIT FEES AS AGREED UPON BETWEEN THE OWNER AND CONTRACTOR.
2. BEFORE EXCAVATION, THE CONTRACTOR SHALL EXAMINE ALL DRAWINGS, MAPS, AND BUILDING SITE TO DETERMINE THE ROUTES OF ALL UNDERGROUND UTILITIES. BEFORE DIGGING COMMENCES, IT IS ADVISED THAT THE OWNER AND OR CONTRACTOR CALL THEIR STATE'S UTILITY LOCATOR FACILITATOR.
3. IT IS RECOMMENDED THAT THE SITE'S SOIL BE TESTED FOR COMPRESSION RATING TO DETERMINE FOUNDATION AND FOOTING DESIGN. CONCRETE FOUNDATIONS AND FOOTING DESIGN SHALL BE IN ACCORDANCE TO CHAPTER 4 OF THE I.R.C. CODE. SEE FOUNDATION SECTION FOR MORE DETAIL.
4. CONSULT A LOCAL CIVIL ENGINEER FOR SITE PLANS AND SURVEYS OF EXISTING PROPERTY. A LANDSCAPE ARCHITECT SHOULD BE CONSULTED FOR MORE EXTENSIVE LANDSCAPE DESIGNS.

OTHER IMPORTANT INFORMATION

MATERIALS LIST DISCLAIMER - IF A MATERIALS LIST WAS ORDERED, IT WILL ONLY CONFORM TO THE PLAN IN ITS ORIGINAL FORMAT. ADDITIONAL OPTIONS SUCH AS 2X6 EXTERIOR WALLS, BASEMENT, OR WALKOUT BASEMENT FOUNDATIONS, THREE CAR GARAGE VERSIONS, ETC. WILL NOT BE REFLECTED IN THE LIST. WHILE IT WILL NOT MATCH THESE OPTIONS, THE LIST IS STILL A GREAT REFERENCE DOCUMENT FOR THE MATERIALS THAT WILL BE REQUIRED TO CONSTRUCT YOUR HOME.

FOUNDATIONS - MOST OF OUR FOUNDATIONS ARE DESIGNED WITH CONCRETE BLOCK STEM WALLS AND NOT POURED-IN-PLACE CONCRETE. ADDITIONALLY, THE MAJORITY OF OUR SLAB FOUNDATIONS ARE DESIGNED WITH A CHAIN WALL (RAISED) SLAB AND NOT MONOLITHIC (SLAB ON GRADE). CONTRACTOR/ LOCAL ENGINEER SHALL ADJUST DESIGN AS NEEDED FOR YOUR SPECIFIC AREA/ NEED.

SQUARE FOOTAGES - BONUS ROOMS (WHERE APPLICABLE) ARE NOT INCLUDED IN THE HEATED AREA OF THE DESIGN UNLESS SPECIFICALLY NOTED. GARAGE PLANS ARE EXCLUDED. SQUARE FOOTAGES SHOWN ARE CALCULATED TO THE OUTSIDE OF THE STUD WALL AND DO NOT INCLUDE THE EXTERIOR MATERIALS SUCH AS BRICK, STONE, OR SIDING.

DIMENSIONS - OUR PLANS ARE DIMENSIONED TO THE OUTSIDE OF THE STUD WALL ONLY AND NOT TO THE OUTSIDE OF THE BRICK LEDGE (WHERE APPLICABLE).

CHAPTER 3 :: BUILDING PLANNING

SECTION R304 MINIMUM ROOM AREAS

R304.1 MINIMUM AREA.
HABITABLE ROOMS SHALL HAVE A FLOOR AREA OF NOT LESS THAN 70 SQUARE FEET (6.5 M2).
EXCEPTION: KITCHENS.

R304.2 MINIMUM DIMENSIONS.
HABITABLE ROOMS SHALL BE NOT LESS THAN 7 FEET (2134 MM) IN ANY HORIZONTAL DIMENSION.

EXCEPTION: KITCHENS.

R304.3 HEIGHT EFFECT ON ROOM AREA.
PORTIONS OF A ROOM WITH A SLOPING CEILING MEASURING LESS THAN 5 FEET (1524 MM) OR A FURRED CEILING MEASURING LESS THAN 7 FEET (2134 MM) FROM THE FINISHED FLOOR TO THE FINISHED CEILING SHALL NOT BE CONSIDERED AS CONTRIBUTING TO THE MINIMUM REQUIRED HABITABLE AREA FOR THAT ROOM.

SECTION R305 CEILING HEIGHT

R305.1 MINIMUM HEIGHT.
HABITABLE SPACE, HALLWAYS AND PORTIONS OF BASEMENTS CONTAINING THESE SPACES SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7 FEET (2134 MM). BATHROOMS, TOILET ROOMS AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6 FEET 8 INCHES (2032 MM).

NOTE: SEE SECTION R305.1 FOR EXCEPTIONS

R305.1.1 BASEMENTS.
PORTIONS OF BASEMENTS THAT DO NOT CONTAIN HABITABLE SPACE OR HALLWAYS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 6 FEET 8 INCHES (2032 MM).

EXCEPTION: AT BEAMS, GIRDERS, DUCTS OR OTHER OBSTRUCTIONS, THE CEILING HEIGHT SHALL BE NOT LESS THAN 6 FEET 4 INCHES (1931 MM) FROM THE FINISHED FLOOR.

SECTION R306 SANITATION

R306.1 TOILET FACILITIES.
EVERY DWELLING UNIT SHALL BE PROVIDED WITH A WATER CLOSET, LAVATORY, AND A BATHTUB OR SHOWER.

R306.2 KITCHEN.
EACH DWELLING UNIT SHALL BE PROVIDED WITH A KITCHEN AREA AND EVERY KITCHEN AREA SHALL BE PROVIDED WITH A SINK.

R306.3 SEWAGE DISPOSAL.
PLUMBING FIXTURES SHALL BE CONNECTED TO A SANITARY SEWER OR TO AN APPROVED PRIVATE SEWAGE DISPOSAL SYSTEM.

R306.4 WATER SUPPLY TO FIXTURES.
PLUMBING FIXTURES SHALL BE CONNECTED TO AN APPROVED WATER SUPPLY. KITCHEN SINKS, LAVATORIES, BATHTUBS, SHOWERS, BIDETS, LAUNDRY TUBS AND WASHING MACHINE OUTLETS SHALL BE PROVIDED WITH HOT AND COLD WATER.

SECTION R307 TOILET, BATH, AND SHOWER SPACES

R307.1 SPACE REQUIRED. FIXTURES SHALL BE SPACED IN ACCORDANCE WITH FIGURE R307.1, AND IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION P2705.1.

R307.2 BATHTUB AND SHOWER SPACES. BATHTUB AND SHOWER FLOORS AND WALLS ABOVE BATHTUBS WITH INSTALLED SHOWER HEADS AND IN SHOWER COMPARTMENTS SHALL BE FINISHED WITH A NONABSORBENT SURFACE. SUCH WALL SURFACES SHALL EXTEND TO A HEIGHT OF NOT LESS THAN 6 FEET (1829 MM) ABOVE THE FLOOR.

SECTION R308 GLAZING

R308.4 HAZARDOUS LOCATIONS.
THE LOCATIONS SPECIFIED IN SECTIONS R308.4.1 THROUGH R308.4.7 SHALL BE CONSIDERED TO BE SPECIFIC HAZARDOUS LOCATIONS FOR THE PURPOSES OF GLAZING.

R308.4.1 GLAZING IN DOORS.
GLAZING IN FIXED AND OPERABLE PANELS OF SWINGING, SLIDING AND BI-FOLD DOORS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

NOTE: SEE SECTION 308.4.1 FOR EXCEPTIONS

R308.4.2 GLAZING ADJACENT TO DOORS.
GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL ADJACENT TO A DOOR SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES (1524 MM) ABOVE THE FLOOR OR WALKING SURFACE AND IT MEETS EITHER OF THE FOLLOWING CONDITIONS:
1. WHERE THE GLAZING IS WITHIN 24 INCHES (610 MM) OF EITHER SIDE OF THE DOOR IN THE PLANE OF THE DOOR IN A CLOSED POSITION.
2. WHERE THE GLAZING IS ON A WALL LESS THAN 180 DEGREES (3.14 RAD) FROM THE PLANE OF THE DOOR IN A CLOSED POSITION AND WITHIN 24 INCHES (610 MM) OF THE HINGE SIDE OF AN IN-SWINGING DOOR.

EXCEPTIONS:
1. DECORATIVE GLAZING.
2. WHERE THERE IS AN INTERVENING WALL OR OTHER PERMANENT BARRIER BETWEEN THE DOOR AND THE GLAZING.
3. WHERE ACCESS THROUGH THE DOOR IS TO A CLOSET OR STORAGE AREA 3 FEET (914 MM) OR LESS IN DEPTH. GLAZING IN THIS APPLICATION SHALL COMPLY WITH SECTION R308.4.3.
4. GLAZING THAT IS ADJACENT TO THE FIXED PANEL OF PATIO DOORS.

R308.4.3 GLAZING IN WINDOWS.
GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION:
1. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS LARGER THAN 9 SQUARE FEET (0.836 M2).
2. THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 18 INCHES (457 MM) ABOVE THE FLOOR.
3. THE TOP EDGE OF THE GLAZING IS MORE THAN 36 INCHES
4. (914 MM) ABOVE THE FLOOR.
5. ONE OR MORE WALKING SURFACES ARE WITHIN 36 INCHES (914 MM), MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE GLAZING.

NOTE: SEE SECTION R308.4.3. FOR EXCEPTIONS

R308.4.4 GLAZING IN GUARDS AND RAILINGS.
GLAZING IN GUARDS AND RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOVE A WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

R308.4.4.1 STRUCTURAL GLASS BALUSTER PANELS.
GUARDS WITH STRUCTURAL GLASS BALUSTER PANELS SHALL BE INSTALLED WITH AN ATTACHED TOP RAIL OR HANDRAIL. THE TOP RAIL OR HANDRAIL SHALL BE SUPPORTED BY NOT LESS THAN THREE GLASS BALUSTER PANELS, OR SHALL BE OTHERWISE SUPPORTED TO REMAIN IN PLACE SHOULD ONE GLASS BALUSTER PANEL FAIL.

NOTE: SEE SECTION 308.4.4.1 FOR EXCEPTIONS.

R308.4.5 GLAZING AND WET SURFACES.
GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR ADJACENT TO HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES (1524 MM) MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE SHALL BE CONSIDERED A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE GLAZING.

NOTE: SEE SECTION 308.4.5 FOR EXCEPTIONS.

R308.4.6 GLAZING ADJACENT TO STAIRS AND RAMPS.
GLAZING WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE OF STAIRWAYS, LANDINGS BETWEEN FLIGHTS OF STAIRS AND RAMPS SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

NOTE: SEE SECTION 308.4.6 FOR EXCEPTIONS.

R308.4.7 GLAZING ADJACENT TO THE BOTTOM STAIR LANDING.
GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF A STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES (914 MM) ABOVE THE LANDING AND WITHIN A 60-INCH (1524 MM) HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION.

SEE SECTION 308.4.7 FOR EXCEPTION

R308.5 SITE-BUILT WINDOWS.
SITE-BUILT WINDOWS SHALL COMPLY WITH SECTION 2404 OF THE INTERNATIONAL BUILDING CODE.

R308.6 SKYLIGHTS AND SLOPED GLAZING.
SKYLIGHTS AND SLOPED GLAZING SHALL COMPLY WITH THE FOLLOWING SECTIONS.

R308.6.1 DEFINITIONS. THE FOLLOWING TERMS ARE DEFINED IN CHAPTER 2:
-SKYLIGHT, UNIT.
-SKYLIGHTS AND SLOPED GLAZING.
-TUBULAR DAYLIGHTING DEVICE (TDD).

SECTION R309 GARAGES AND CARPORTS

R309.1 FLOOR SURFACE.
GARAGE FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL. THE AREA OF FLOOR USED FOR PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

R309.2 CARPORTS.
CARPORTS SHALL BE OPEN ON NOT LESS THAN TWO SIDES. CARPORT FLOOR SURFACES SHALL BE OF APPROVED NONCOMBUSTIBLE MATERIAL. CARPORTS NOT OPEN ON TWO OR MORE SIDES SHALL BE CONSIDERED TO BE A GARAGE AND SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION FOR GARAGES. THE AREA OF FLOOR USED FOR PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.

EXCEPTION: ASPHALT SURFACES SHALL BE PERMITTED AT GROUND LEVEL IN CARPORTS.

R309.4 AUTOMATIC GARAGE DOOR OPENERS.
AUTOMATIC GARAGE DOOR OPENERS, IF PROVIDED, SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 325.

R309.5 FIRE SPRINKLERS.
PRIVATE GARAGES SHALL BE PROTECTED BY FIRE SPRINKLERS WHERE THE GARAGE WALL HAS BEEN DESIGNED BASED ON TABLE R302.1(2), NOTE A. SPRINKLERS IN GARAGES SHALL BE CONNECTED TO AN AUTOMATIC SPRINKLER SYSTEM THAT COMPLIES WITH SECTION P2904. GARAGE SPRINKLERS SHALL BE RESIDENTIAL SPRINKLERS OR QUICK-RESPONSE SPRINKLERS, DESIGNED TO PROVIDE A DENSITY OF 0.05 GPM/FT2. GARAGE DOORS SHALL NOT BE CONSIDERED OBSTRUCTIONS WITH RESPECT TO SPRINKLER PLACEMENT.

SECTION R310 EMERGENCY ESCAPE AND RESCUE OPENINGS

R310.1 EMERGENCY ESCAPE AND RESCUE OPENING REQUIRED.
BASEMENTS, HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL HAVE NOT LESS THAN ONE OPERABLE EMERGENCY ESCAPE AND RESCUE OPENING. WHERE BASEMENTS CONTAIN ONE OR MORE SLEEPING ROOMS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE REQUIRED IN EACH SLEEPING ROOM. EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL OPEN DIRECTLY INTO A PUBLIC WAY, OR TO A YARD OR COURT HAVING A MINIMUM WIDTH OF 36 INCHES (914 MM) THAT OPENS TO A PUBLIC WAY.

NOTE: SEE SECTION R310.1 FOR EXCEPTION

R310.1.1 OPERATIONAL CONSTRAINTS AND OPENING CONTROL DEVICES.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM WITHOUT THE USE OF KEYS, TOOLS OR SPECIAL KNOWLEDGE. WINDOW OPENING CONTROL DEVICES AND FALL PREVENTION DEVICES COMPLY WITH ASMF F2090 SHALL BE PERMITTED FOR USE ON WINDOWS SERVING AS A REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING AND SHALL BE NOT MORE THAT 70 INCHES (178 CM) ABOVE THE FINISHED FLOOR.

R310.2 EMERGENCY ESCAPE AND RESCUE OPENINGS.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE MINIMUM DIMENSIONS IN ACCORDANCE WITH SECTIONS R310.2.1 THROUGH R310.2.4.

R310.2.1 MINIMUM SIZE.
EMERGENCY AND ESCAPE RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET (0.530 M2).

EXCEPTION: THE MINIMUM NET CLEAR OPENING FOR GRADE-FLOOR EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE 5 SQUARE FEET (0.465 M2)
HAVE A NET CLEAR OPENING AREA OF NOT LESS THAN 5 SQUARE FEET (0.465 M2).

R310.2.2 MINIMUM DIMENSIONS.
THE MINIMUM NET CLEAR OPENING HEIGHT DIMENSION SHALL BE 24 INCHES (610 MM). THE MINIMUM NET CLEAR OPENING WIDTH DIMENSION SHALL BE 20 INCHES (508 MM). THE NET CLEAR OPENING DIMENSIONS SHALL BE THE RESULT OF NORMAL OPERATION OF THE MOMENT.

R310.2.3 MAXIMUM HEIGHT FROM FLOOR.
EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL HAVE THE BOTTOM OF THE CLEAR OPENING NOT GREATER THAN 44 INCHES (1118 MM) ABOVE THE FLOOR.

R310.2.4 EMERGENCY ESCAPE AND RESCUE OPENINGS UNDER DECKS AND CANTILEVERS.
EMERGENCY ESCAPE AND RESCUE OPENINGS INSTALLED UNDER DECKS,PORCHES AND CANTILEVERS SHALL BE FULLY OPENABLE AND PROVIDE A PATH NOT LESS THAN 36 INCHES (914 MM) IN HEIGHT AND 36 INCHES (914 MM) IN WIDTH TO A YARD OR COURT.

NOTE: SEE SECTION 310.2.4 FOR EXCEPTION

R310.2.4 EMERGENCY ESCAPE AND RESCUE OPENINGS UNDER DECKS AND PORCHES.
EMERGENCY ESCAPE AND RESCUE OPENINGS INSTALLED UNDER DECKS AND PORCHES SHALL BE FULLY OPENABLE AND PROVIDE A PATH NOT LESS THAN 36 INCHES (914 MM) IN HEIGHT TO A YARD OR COURT.

R310.3 EMERGENCY ESCAPE AND RESCUE DOORS
WHERE A DOOR IS PROVIDED AS THE REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL BE A SIDE-HINGED DOOR OR A SLIDING DOOR.

R310.4 AREA WELLS.
AN EMERGENCY ESCAPE AND RESCUE OPENING WHERE THE BOTTOM OF THE CLEAR OPENING IS BELOW THE ADJACENT GRADE SHALL BE PROVIDED WITH AN AREA WELL IN ACCORDANCE WITH SECTIONS R310.4.1 THROUGH R310.4.4.

R310.4.1 MINIMUM SIZE.
THE HORIZONTAL AREA OF THE AREA WELL SHALL BE NOT LESS THAN 9 SQUARE FEET (0.9 M2), WITH A HORIZONTAL PROJECTION AND WIDTH OF NOT LESS THAN 36 INCHES (914 MM). THE SIZE OF THE AREA WELL SHALL ALLOW THE EMERGENCY ESCAPE AND RESCUE OPENING TO BE FULLY OPENED.

NOTE: SEE SECTION 310.4.1 FOR EXCEPTION

R310.4.2 LADDER AND STEPS.
AREA WELLS WITH A VERTICAL DEPTH GREATER THAN 44 INCHES (1118 MM) SHALL BE EQUIPPED WITH AN APPROVED, PERMANENTLY AFFIXED LADDER OR STEPS. THE LADDER OR STEPS SHALL NOT BE OBSTRUCTED BY THE EMERGENCY ESCAPE AND RESCUE OPENING WHERE THE WINDOW OR DOOR IS IN THE OPEN POSITION. LADDERS OR STEPS REQUIRED BY THIS SECTION SHALL NOT BE REQUIRED TO COMPLY WITH SECTION R311.7.

R310.4.2.1 LADDER.
LADDERS AND RUNGS SHALL HAVE AN INSIDE WIDTH OF NOT LESS THAN 12 INCHES (305 MM), SHALL PROJECT NOT LESS THAN 3 INCHES (76 MM) FROM THE WALL AND SHALL BE SPACED NOT MORE THAN 18 INCHES (457 MM) ON CENTER VERTICALLY FOR THE FULL HEIGHT OF THE AREA WELL.

R310.4.2.2 STEPS.
STEPS SHALL HAVE AN INSIDE WIDTH OF NOT LESS THAN 12 INCHES (305 MM), A MINIMUM TREAD DEPTH OF 5 INCHES (127 MM) AND A MAXIMUM RISER HEIGHT OF 18 INCHES (457 MM) FOR THE FULL HEIGHT OF THE AREA WELL.

R310.4.3 DRAINAGE.
AREA WELLS SHALL BE DESIGNED FOR PROPER DRAINAGE BY CONNECTING TO THE BUILDING'S FOUNDATION DRAINAGE SYSTEM REQUIRED BY SECTION R405.1

NOTE: SEE SECTION 310.4.3 FOR EXCEPTION

R310.4.4 BARS, GRILLES, COVERS AND SCREENS.
WHERE BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS, AREA WELLS BULKHEAD ENCLOSURES OR AREA WELLS THAT SERVE SUCH OPENINGS, THE MINIMUM NET CLEAR OPENING SIZE SHALL COMPLY WITH SECTIONS R310.2 THROUGH R310.2.2 AND R310.4.1. SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, OR TOOL, OR FORCE GREATER THAN THAT REQUIRED FOR THE NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING.

R310.5 REPLACEMENT WINDOWS FOR EMERGENCY ESCAPE AND RESCUE OPENINGS.
REPLACEMENT WINDOWS INSTALLED IN BUILDINGS MEETING THE SCOPE OF THIS CODE SHALL BE EXEMPT FROM SECTIONS R310.2 AND R310.4.4, PROVIDED THAT THE REPLACEMENT WINDOW MEETS THE FOLLOWING CONDITIONS:

1. THE REPLACEMENT WINDOW IS THE MANUFACTURER'S LARGEST STANDARD SIZE WINDOW THAT WILL FIT WITHIN THE EXISTING FRAME OR EXISTING ROUGH OPENING. THE REPLACEMENT WINDOW IS OF THE SAME OPERATING STYLE AS THE EXISTING WINDOW OR A STYLE THAT PROVIDES FOR AN EQUAL OR GREATER WINDOW OPENING AREA THAN THE EXISTING WINDOW.
2. THE REPLACEMENT WINDOW IS NOT PART OF A CHANGE OF OCCUPANCY.

R310.6 DWELLING ADDITIONS.
WHERE DWELLING ADDITIONS CONTAIN SLEEPING ROOMS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE PROVIDED IN EACH NEW SLEEPING ROOM. WHERE DWELLING ADDITIONS HAVE BASEMENTS, AN EMERGENCY ESCAPE AND RESCUE OPENING SHALL BE PROVIDED IN THE NEW BASEMENT.

NOTE: SEE SECTION 310.6 FOR EXCEPTIONS

R310.7 ALTERATIONS OR REPAIRS OF EXISTING BASEMENTS.
NEW SLEEPING ROOMS CREATED IN AN EXISTING BASEMENT SHALL BE PROVIDED WITH EMERGENCY ESCAPE AND RESCUE OPENINGS IN ACCORDANCE WITH SECTION R310.1. OTHER THAN NEW SLEEPING ROOMS, WHERE EXISTING BASEMENTS UNDERGO ALTERATIONS OR REPAIRS, AN EMERGENCY ESCAPE AND RESCUE OPENING IS NOT REQUIRED.

NOTE: SEE SECTION 310.7 FOR EXCEPTION

SECTION R311 MEANS OF EGRESS

R311.1 MEANS OF EGRESS.
DWELLINGS SHALL BE PROVIDED WITH A MEANS OF EGRESS IN ACCORDANCE WITH THIS SECTION. THE MEANS OF EGRESS SHALL PROVIDE A CONTINUOUS AND UNOBSTRUCTED PATH OF VERTICAL AND HORIZONTAL EGRESS TRAVEL FROM ALL PORTIONS OF THE DWELLING TO THE REQUIRED EGRESS DOOR WITHOUT REQUIRING TRAVEL THROUGH A GARAGE. THE REQUIRED EGRESS DOOR SHALL OPEN DIRECTLY INTO A PUBLIC WAY OR TO A YARD OR COURT THAT OPENS TO A PUBLIC WAY.

R311.2 EGRESS DOOR.
NOT LESS THAN ONE EGRESS DOOR SHALL BE PROVIDED FOR EACH DWELLING UNIT. 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 DOORS SHALL NOT BE REQUIRED TO COMPLY WITH THESE MINIMUM DIMENSIONS. EGRESS DOORS SHALL BE READILY OPENABLE FROM INSIDE THE DWELLING WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

R311.3 FLOORS AND LANDINGS AT EXTERIOR DOORS.
THERE SHALL BE A LANDING OR FLOOR ON EACH SIDE OF EACH EXTERIOR DOOR. THE WIDTH OF EACH LANDING SHALL BE NOT LESS THAN THE DOOR SERVED.
LANDINGS SHALL HAVE A DIMENSION OF NOT LESS THAN 36 INCHES (914 MM) MEASURED IN THE DIRECTION OF TRAVEL. THE SLOPE AT EXTERIOR LANDINGS SHALL NOT EXCEED 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2 PERCENT).

NOTE: SEE SECTION 311.3. FOR EXCEPTION

R311.3.1 FLOOR ELEVATIONS AT THE REQUIRED EGRESS DOORS.
LANDINGS OR FINISHED FLOORS AT THE REQUIRED EGRESS DOOR SHALL BE NOT MORE THAN 1 1/2 INCHES (38 MM) LOWER THAN THE TOP OF THE THRESHOLD.

NOTE: SEE SECTION 311.3.1 FOR EXCEPTION

R311.3.2 FLOOR ELEVATIONS AT OTHER EXTERIOR DOORS.
DOORS OTHER THAN THE REQUIRED EGRESS DOOR SHALL BE PROVIDED WITH LANDINGS OR FLOORS NOT MORE THAN 7 3/4 INCHES (196 MM) BELOW THE TOP OF THE THRESHOLD.

NOTE: SEE SECTION 311.3.2. FOR EXCEPTION

R311.3.3 STORM AND SCREEN DOORS.
STORM AND SCREEN DOORS SHALL BE PERMITTED TO SWING OVER EXTERIOR STAIRS AND LANDINGS.

R311.4 VERTICAL EGRESS.
EGRESS FROM HABITABLE LEVELS INCLUDING HABITABLE ATTIC AND BASEMENTS THAT ARE NOT PROVIDED WITH AN EGRESS DOOR IN ACCORDANCE WITH SECTION R311.2 SHALL BE BY A RAMP IN ACCORDANCE WITH SECTION R311.8 OR A STAIRWAY IN ACCORDANCE WITH SECTION R311.7.

R311.5 LANDING, DECK, BALCONY AND STAIR CONSTRUCTION, AND ATTACHMENT
EXTERIOR LANDINGS, DECKS, BALCONIES, STAIRS AND SIMILAR FACILITIES SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE TO RESIST BOTH VERTICAL AND LATERAL FORCES OR SHALL BE DESIGNED TO BE SELF-SUPPORTING. ATTACHMENT SHALL NOT BE ACCOMPLISHED BY USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL.

R311.6 HALLWAYS.
THE WIDTH OF A HALLWAY SHALL BE NOT LESS THAN 3 FEET (914 MM).

R311.7 STAIRWAYS. WHERE REQUIRED BY THIS CODE OR PROVIDED, STAIRWAYS SHALL COMPLY WITH THIS SECTION.

EXCEPTIONS:
1. STAIRWAYS NOT WITHIN OR SERVING A BUILDING, PORCH OR DECK.
2. STAIRWAYS LEADING TO NONHABITABLE ATTICS.
3. STAIRWAYS LEADING TO CRAWL SPACES.

R311.7.1 WIDTH.
STAIRWAYS SHALL BE NOT LESS THAN 36 INCHES (914 MM) IN CLEAR WIDTH AT ALL POINTS ABOVE THE PERMITTED HANDRAIL HEIGHT AND BELOW THE REQUIRED HEADROOM HEIGHT. THE CLEAR WIDTH OF STAIRWAYS AT AND BELOW THE HANDRAIL HEIGHT, INCLUDING TREADS AND LANDINGS, SHALL BE NOT LESS THAN 31 1/2 INCHES (787 MM) WHERE A HANDRAIL IS INSTALLED ON ONE SIDE AND 27 INCHES (698 MM) WHERE HANDRAILS ARE INSTALLED ON BOTH SIDES.

NOTE: SEE SECTION 311.7.1 FOR EXCEPTION

R311.7.2 HEADROOM.
THE HEADROOM IN STAIRWAYS SHALL BE NOT LESS THAN 6 FEET 8 INCHES (2032 MM) MEASURED VERTICALLY FROM THE SLOPED LINE ADJOINING THE TREAD NOSING OR FROM THE FLOOR SURFACE OF THE LANDING OR PLATFORM ON THAT PORTION OF THE STAIRWAY.

NOTE: SEE SECTION 311.7.2 FOR EXCEPTIONS

R311.7.3 VERTICAL RISE.
A FLIGHT OF STAIRS SHALL NOT HAVE A VERTICAL RISE GREATER THAN 12 FEET 7 INCHES (3835 MM) BETWEEN FLOOR LEVELS OR LANDINGS

R311.7.4 WALK-LINE.
THE WALK-LINE ACROSS WINDER TREADS AND LANDINGS SHALL BE CONCENTRIC TO THE TURN AND PARALLEL TO THE DIRECTION OF TRAVEL ENTERING AND EXITING THE TURN. THE WALKLINE SHALL BE LOCATED 12 INCHES (305 MM) FROM THE INSIDE OF THE TURN. THE 12-INCH (305mm) DIMENSION SHALL BE MEASURED FROM THE WIDEST POINT OF THE CLEAR STAIR WIDTH AT THE WALKING SURFACE. WHERE WINDERS ARE ADJACENT WITHIN A FLIGHT, THE POINT OF THE WIDEST CLEAR STAIR WIDTH OF THE ADJACENT WINDERS SHALL BE USED.

R311.7.5 STAIR TREADS AND RISERS.
STAIR TREADS AND RISERS SHALL MEET THE REQUIREMENTS OF THIS SECTION. FOR THE PURPOSES OF THIS SECTION, DIMENSIONS AND DIMENSIONED SURFACES SHALL BE EXCLUSIVE OF CARPETS, RUGS OR RUNNERS.

R311.7.5.1 RISERS.
THE RISER HEIGHT SHALL BE NOT MORE THAN 7 3/4 INCHES (196 MM). THE RISER HEIGHT SHALL BE MEASURED VERTICALLY BETWEEN LEADING EDGES OF THE ADJACENT TREADS. THE GREATEST RISER HEIGHT WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8 INCH (9.5 MM). RISERS SHALL BE VERTICAL OR SLOPED FROM THE UNDERSIDE OF THE NOSING OF THE TREAD ABOVE AT AN ANGLE NOT MORE THAN 30 DEGREES (0.51 RAD) FROM THE VERTICAL. AT OPEN RISERS, OPENINGS LOCATED MORE THAN 30 INCHES (762 MM), AS MEASURED VERTICALLY, TO THE FLOOR OR GRADE BELOW SHALL NOT PERMIT THE PASSAGE OF 4-INCH-DIA (102 MM) SPHERE.

NOTE: SEE SECTION 311.5.1 FOR EXCEPTIONS

R311.7.5.2 TREADS.
THE TREAD DEPTH SHALL BE NOT LESS THAN 10 INCHES (254 MM). THE TREAD DEPTH SHALL BE MEASURED HORIZONTALLY BETWEEN THE VERTICAL PLANES OF THE FOREMOST PROJECTION OF ADJACENT TREADS AND AT A RIGHT ANGLE TO THE TREAD'S LEADING EDGE. THE GREATEST TREAD DEPTH WITHIN ANY FLIGHT OF STAIRS SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8 INCH (9.5 MM).

R311.7.5.2.1 WINDER TREADS.
WINDER TREADS SHALL HAVE A TREAD DEPTH OF NOT LESS THAN 10 INCHES (254MM) MEASURED BETWEEN THE VERTICAL PLANES OF THE FOREMOST PROJECTION OF ADJACENT TREADS AT THE INTERSECTIONS WITH THE WALK-LINE. WINDER TREADS SHALL HAVE A TREAD DEPTH OF NOT LESS THAN 6 INCHES (152 MM) AT ANY POINT WITHIN THE CLEAR WIDTH OF THE STAIR. WITHIN ANY FLIGHT OF STAIRS, THE LARGEST WINDER TREAD DEPTH AT THE WALK-LINE SHALL NOT EXCEED THE SMALLEST WINDER TREAD BY MORE THAN 3/8 INCH (9.5 MM). CONSISTENTLY SHAPED WINDERS AT THE WALK-LINE SHALL BE ALLOWED WITHIN THE SAME FLIGHT OF STAIRS AS RECTANGULAR TREADS AND SHALL NOT BE REQUIRED TO BE WITHIN 3/8 INCH (9.5 MM) OF THE RECTANGULAR TREAD DEPTH.

NOTE: SEE SECTION 311.7.5 .2.1 FOR EXCEPTION

R311.7.5.3 NOSINGS.
NOSINGS AT TREADS, LANDINGS AND FLOORS OF STAIRWAYS SHALL HAVE A RADIUS OF CURVATURE AT THE NOSING NOT GREATER THAN 9/16 INCH (14 MM) OR A BEVEL NOT GREATER THAN 1/4 INCH (12.7 MM). A NOSING PROJECTION NOT LESS THAN 3/4 INCH (19 MM) AND NOT MORE THAN 11/4 INCHES (32 MM) SHALL BE PROVIDED ON STAIRWAYS. THE GREATEST NOSING PROJECTION SHALL NOT EXCEED THE SMALLEST NOSING PROJECTION BY MORE THAN 3/8 INCH (9.5 MM) WITHIN A STAIRWAY.

NOTE: SEE SECTION 311.7.5.3 FOR EXCEPTION

R311.7.5.4 EXTERIOR PLASTIC COMPOSITE STAIR TREADS.
PLASTIC COMPOSITE EXTERIOR STAIR TREADS SHALL COMPLY WITH THE PROVISIONS OF THIS SECTION AND SECTION R507.2.2.

R311.7.6 LANDINGS FOR STAIRWAYS.
THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH STAIRWAY. THE WIDTH PERPENDICULAR TO THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN THE WIDTH OF THE FLIGHT SERVED. FOR LANDINGS OF SHAPES OTHER THAN SQUARE OR RECTANGULAR, THE DEPTH AT THE WALK LINE AND THE TOTAL AREA SHALL BE NOT LESS THAN THAT OF A QUARTER CIRCLE WITH A RADIUS EQUAL TO THE REQUIRED LANDING WIDTH. WHERE THE STAIRWAY HAS A STRAIGHT RUN, THE DEPTH IN THE DIRECTION OF TRAVEL SHALL BE NOT LESS THAN 36 INCHES (914 MM).

NOTE: SEE SECTION 311.7.6 FOR EXCEPTION

R311.7.7 STAIRWAY WALKING SURFACE.
THE WALKING SURFACE OF TREADS AND LANDINGS OF STAIRWAYS SHALL BE SLOPED NOT STEEPER THAN ONE UNIT VERTICAL IN 48 UNITS HORIZONTAL (2-PERCENT SLOPE).

NOTE: SEE SECTION 311.7.7 FOR EXCEPTION

R311.7.8 HANDRAILS.
HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF EACH FLIGHT OF STAIRS WITH FOUR OR MORE RISERS.

R311.7.8.1 HEIGHT.
HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL BE NOT LESS THAN 34 INCHES (864 MM) AND NOT MORE THAN 38 INCHES (965 MM).

NOTE: SEE SECTION 311.7.8.1 FOR EXCEPTIONS

R311.7.8.2 HANDRAIL PROJECTION.
HANDRAILS SHALL NOT PROJECT MORE THAN 4 1/2 INCHES (114 MM) ON EITHER SIDE OF THE STAIRWAY.

NOTE: SEE SECTION 311.7.8.2 FOR EXCEPTIONS

R311.7.8.3 HANDRAIL CLEARANCE.
HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES (38 MM) BETWEEN THE WALL AND THE HANDRAILS.

R311.7.8.4 CONTINUITY.
HANDRAILS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. HANDRAIL ENDS SHALL BE RETURNED TOWARD A WALL, GUARD WALKING SURFACE CONTINUOUS TO ITSELF, OR TERMINATE TO A POST

NOTE: SEE SECTION 311.7.8.4 FOR EXCEPTIONS

R311.7.8.5 GRIP-SIZE.
REQUIRED HANDRAILS SHALL BE OF ONE OF THE FOLLOWING TYPES OR PROVIDE EQUIVALENT GRASPABILITY.

NOTE: SEE R3117.8.3 FOR TYPE I AND TYPE II HANDRAILS.

R311.7.8.6 EXTERIOR PLASTIC COMPOSITE HANDRAILS.
PLASTIC COMPOSITE EXTERIOR HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R507.2.2.

R311.7.9 ILLUMINATION.
STAIRWAYS SHALL BE PROVIDED WITH ILLUMINATION IN ACCORDANCE WITH SECTION R303.7 AND R303.8.

R311.7.10 SPECIAL STAIRWAYS.
SPIRAL STAIRWAYS AND BULKHEAD ENCLOSURE STAIRWAYS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R311.7 EXCEPT AS SPECIFIED IN SECTIONS R311.7.10.1 AND R311.7.10.2.

R311.7.10.1 SPIRAL STAIRWAYS.
THE CLEAR WIDTH AT AND BELOW THE HANDRAILS AT SPIRAL STAIRWAYS SHALL BE NOT LESS THAN 26 INCHES (660 MM) AND THE WALK-LINE RADIUS SHALL BE NOT GREATER THAN 24 1/2 INCHES (622 MM). EACH TREAD SHALL HAVE A DEPTH OF NOT LESS THAN 6 3/4 INCHES (171 MM) AT THE WALK-LINE. TREADS SHALL BE IDENTICAL, AND THE RISE SHALL BE NOT MORE THAN 9 1/2 INCHES (241 MM). HEADROOM SHALL BE NOT LESS THAN 6 FEET 6 INCHES (1982 MM).

R311.7.10.2 BULKHEAD ENCLOSURE STAIRWAYS.
STAIRWAYS SERVING BULKHEAD ENCLOSURES, NOT PART OF THE REQUIRED BUILDING EGRESS, PROVIDING ACCESS FROM THE OUTSIDE GRADE LEVEL TO THE BASEMENT SHALL BE EXEMPT FROM THE REQUIREMENTS OF SECTIONS R311.3 AND R311.7 WHERE THE HEIGHT FROM THE BASEMENT FINISHED FLOOR LEVEL TO GRADE ADJACENT TO THE STAIRWAY IS NOT MORE THAN 8 FEET (2438 MM) AND THE GRADE LEVEL OPENING TO THE STAIRWAY IS COVERED BY A BULKHEAD ENCLOSURE WITH HINGED DOORS OR OTHER APPROVED MEANS.

NOTE: SEE SECTION R311.7.11 THROUGH R311.7.12.2 FOR ALTERNATING TREAD DEVICES AND SHIPS LADDERS.

R311.8 RAMPS. WHERE REQUIRED BY THIS CODE OR PROVIDED, RAMPS SHALL COMPLY WITH THIS SECTION.

EXCEPTION: RAMPS NOT WITHIN OR SERVING A BUILDING, PORCH OR DECK.

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NATIONAL COUNCIL OF BUILDING DESIGNER CERTIFICATION
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

Code Year: 2021
International Residential Code
Construction Specifications and Methodologies

IMPORTANT NOTE: THESE NOTES AND SPECIFICATIONS ARE PROVIDED BY HOUSE PLAN ZONE, LLC. AS A SERVICE TO THEIR CUSTOMERS TO PROVIDE THE MOST POPULAR CODE TOPICS. THE INFORMATION AND METHODOLOGIES PREPARED HEREIN ARE IN ACCORDANCE TO AND REFERENCED TO THE 2018 INTERNATIONAL RESIDENTIAL CODE®. THE INFORMATION IS ALSO A GENERAL SUMMARIZATION OF THE CODE AND IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH THE FULL EXTENT OF THE ACTUAL CODE. THE NOTES AND SPECIFICATIONS MAY HAVE TO BE AMENDED DUE TO VARIATIONS IN LOCAL CODES AND GEOLOGICAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR HOMEOWNER TO MAKE THE NECESSARY MODIFICATIONS TO ENSURE CODE COMPLIANCE AND STRUCTURAL INTEGRITY. IT IS RECOMMENDED THAT YOU CONSULT A LOCAL ARCHITECT OR ENGINEER OF YOUR CHOICE AND CHECK WITH LOCAL BUILDING OFFICIALS PRIOR TO THE START OF ACTUAL CONSTRUCTION. SPECIAL ENGINEERING MAY REQUIRE THAT THESE SPECIFICATIONS BE CHANGED OR AMENDED TO COMPLY WITH SEISMIC, WIND, OR OTHER SPECIAL CONDITIONS AS REQUIRED BY LOCAL CONSTRUCTION METHODOLOGIES AND LOCAL CODES.

Date:
08.10.22

SHEET NUMBER
N1

R311.8.1 MAXIMUM SLOPE.
RAMPS SERVING THE EGRESS DOOR REQUIRED BY SECTION R311.2 SHALL HAVE A SLOPE OF NOT MORE THAN 1 UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.3-PERCENT SLOPE). OTHER RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1 UNIT VERTICAL IN 8 UNITS HORIZONTAL (12.5 PERCENT).

EXCEPTION: WHERE IT IS TECHNICALLY INFEASIBLE TO COMPLY BECAUSE OF SITE CONSTRAINTS, RAMPS SHALL HAVE A SLOPE OF NOT MORE THAN 1 UNIT VERTICAL IN 8 UNITS HORIZONTAL (12.5 PERCENT).

R311.8.2 LANDINGS REQUIRED.
THERE SHALL BE A FLOOR OR LANDING AT THE TOP AND BOTTOM OF EACH RAMP, WHERE DOORS OPEN ONTO RAMPS, AND WHERE RAMPS CHANGE DIRECTIONS. THE WIDTH OF THE LANDING PERPENDICULAR TO THE RAMP SLOPE SHALL BE NOT LESS THAN 36 INCHES (914 MM).

R311.8.3 HANDRAILS REQUIRED.
HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF RAMPS EXCEEDING A SLOPE OF ONE UNIT VERTICAL IN 12 UNITS HORIZONTAL (8.33-PERCENT SLOPE).

R311.8.3.1 HEIGHT.
HANDRAIL HEIGHT, MEASURED ABOVE THE FINISHED SURFACE OF THE RAMP SLOPE, SHALL BE NOT LESS THAN 34 INCHES (864 MM)AND NOT MORE THAN 38 INCHES (965 MM).

R311.8.3.2 GRIP SIZE.
HANDRAILS ON RAMPS SHALL COMPLY WITH SECTION R311.7.8.5.

R311.8.3.3 CONTINUITY.
HANDRAILS WHERE REQUIRED ON RAMPS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE RAMP. HANDRAIL ENDS SHALL BE RETURNED OR SHALL TERMINATE IN NEWEL POSTS OR SAFETY TERMINALS. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES (38 MM) BETWEEN THE WALL AND THE HANDRAILS.

SECTION R312
GUARDS AND WINDOW FALL PROTECTION

R312.1 GUARDS.
GUARDS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.1.1 THROUGH R312.1.4.

R312.1.1 WHERE REQUIRED.
GUARDS SHALL BE PROVIDED FOR THOSE PORTIONS OF OPEN-SIDED WALKING SURFACES, INCLUDING FLOORS, STAIRS, RAMPS AND LANDINGS, THAT ARE LOCATED MORE THAN 30 INCHES (762 MM) MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES (914 MM) HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. INSECT SCREENING SHALL NOT BE CONSIDERED AS A GUARD.

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 NOSINGS.

NOTE: SEE SECTION 312.1.2 FOR EXCEPTIONS

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.

NOTE: SEE SECTION 312.1.3 FOR EXCEPTIONS

R312.1.4 EXTERIOR PLASTIC COMPOSITE GUARDS.
PLASTIC COMPOSITE EXTERIOR GUARDS SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R317.4.

R312.2 WINDOW FALL PROTECTION.
WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2.

R312.2.1 WINDOW OPENING HEIGHT.
IN DWELLING UNITS, WHERE THE BOTTOM OF THE CLEAR OPENING OF AN OPERABLE WINDOW OPENING IS LOCATED LESS THAN 24 INCHES (610 MM) ABOVE THE FINISHED FLOOR AND GREATER THAN 72 INCHES (1829 MM) ABOVE THE FINISHED GRADE OR OTHER SURFACE BELOW ON THE EXTERIOR OF THE BUILDING, THE OPERABLE WINDOW SHALL COMPLY WITH ONE OF THE FOLLOWING:

1. OPERABLE WINDOW OPENINGS WILL NOT ALLOW A 4-INCH-DIAMETER (102 MM) SPHERE TO PASS THROUGH WHERE THE OPENINGS ARE IN THEIR LARGEST OPENED POSITION.
2. OPERABLE WINDOWS ARE PROVIDED WITH WINDOW OPENING CONTROL DEVICES OR FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F2090.

R312.2.2 WINDOW OPENING CONTROL DEVICES.
WINDOW OPENING CONTROL DEVICES SHALL COMPLY WITH ASTM F2090. THE WINDOW OPENING CONTROL DEVICE, AFTER OPERATION TO RELEASE THE CONTROL DEVICE ALLOWING THE WINDOW TO FULLY OPEN, SHALL NOT REDUCE THE NET CLEAR OPENING AREA OF THE WINDOW UNIT TO LESS THAN THE AREA REQUIRED BY SECTION R310.2.1.

SECTION R313
AUTOMATIC FIRE SPRINKLER SYSTEMS

313.1 TOWNHOUSE AUTOMATIC FIRE SPRINKLER SYSTEMS.
AN AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN TOWNHOUSES.

NOTE: SEE SECTION 313.1 FOR EXCEPTION

R313.1.1 DESIGN AND INSTALLATION.
AUTOMATIC SPRINKLER SYSTEMS FOR TOWNHOUSES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION P2904 OR NFPA 13D.

R313.2 ONE- AND TWO-FAMILY DWELLINGS AUTOMATIC FIRE SPRINKLER SYSTEMS.
AN AUTOMATIC SPRINKLER SYSTEM SHALL BE INSTALLED IN ONE- AND TWO-FAMILY DWELLINGS.

NOTE: SEE SECTION 313.2 FOR EXCEPTION

R313.2.1 DESIGN AND INSTALLATION.
AUTOMATIC SPRINKLER SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SECTION P2904 OR NFPA 13D.

SECTION R314 SMOKE ALARMS

R314.1 GENERAL.
SMOKE ALARMS SHALL COMPLY WITH NFPA 72 AND SECTION R314.

R314.1.1 LISTINGS.
SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217. COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND UL 2034.

R314.2 WHERE REQUIRED.
SMOKE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH THIS SECTION.

R314.2.1 NEW CONSTRUCTION.
SMOKE ALARMS SHALL BE PROVIDED IN DWELLING UNITS.

R314.2.2 ALTERATIONS, REPAIRS AND ADDITIONS.
WHERE ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH SMOKE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS.

NOTE: SEE SECTION 314.2.2 FOR EXCEPTIONS

R314.3 LOCATION.
SMOKE ALARMS SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS:
1. IN EACH SLEEPING ROOM.
2. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.
3. ON EACH ADDITIONAL STORY OF THE DWELLING, INCLUDING BASEMENTS AND HABITABLE ATTICS AND NOT INCLUDING CRAWL SPACES AND UNINHABITABLE ATTICS. IN DWELLINGS OR DWELLING UNITS WITH SPLIT LEVELS AND WITHOUT AN INTERVENING DOOR BETWEEN THE ADJACENT LEVELS, A SMOKE ALARM INSTALLED ON THE UPPER LEVEL SHALL SUFFICE FOR THE ADJACENT LOWER LEVEL PROVIDED THAT THE LOWER LEVEL IS LESS THAN ONE FULL STORY BELOW THE UPPER LEVEL.
4. SMOKE ALARMS SHALL BE INSTALLED NOT LESS THAN 3 FEET (914 MM) HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM REQUIRED BY THIS SECTION.
5. IN THE HALLWAY AND IN THE ROOM OPEN TO THE HALLWAY IN DWELLING UNITS WHERE THE CEILING HEIGHT OF A ROOM OPEN TO A HALLWAY SERVING BEDROOMS EXCEEDS THAT OF THE HALLWAY BY 24 INCHES (610 MM) OR MORE.

R314.3.1 INSTALLATION NEAR COOKING APPLIANCES.
SMOKE ALARMS SHALL NOT BE INSTALLED IN THE FOLLOWING LOCATIONS UNLESS THIS WOULD PREVENT PLACEMENT OF A SMOKE ALARM IN A LOCATION REQUIRED BY SECTION R314.3.

1. IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 20 FEET (6096 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
2. IONIZATION SMOKE ALARMS WITH AN ALARM-SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FEET (3048 mm) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
3. PHOTOELECTRIC SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 6 FEET (1828 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
4. SMOKE ALARMS LISTED AND MARKED "HELPS REDUCE COOKING NUISANCE ALARMS" SHALL NOT BE INSTALLED LESS THAN 6 FEET (1828 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.

R314.4 INTERCONNECTION.
WHERE MORE THAN ONE SMOKE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R314.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.

R314.5 COMBINATION ALARMS.
COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS.

R314.6 POWER SOURCE.
SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.

NOTE: SEE SECTION 314.6 FOR EXCEPTIONS

R314.7 FIRE ALARM SYSTEMS
FIRE ALARM SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS AND SHALL COMPLY WITH SECTIONS R314.7.1 THROUGH R314.7.4.

R314.7.1 GENERAL.
FIRE ALARM SYSTEMS SHALL COMPLY WITH THE PROVISIONS OF THIS CODE AND THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72. SMOKE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 268.

R314.7.2 LOCATION.
SMOKE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R314.3.

R314.7.3 PERMANENT FIXTURE.
WHERE A HOUSEHOLD FIRE ALARM SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY, OWNED BY THE HOMEOWNER.

R314.7.4 COMBINATION DETECTORS.
COMBINATION SMOKE AND CARBON MONOXIDE DETECTORS SHALL BE PERMITTED TO BE INSTALLED IN FIRE ALARM SYSTEMS IN LIEU OF SMOKE DETECTORS, PROVIDED THAT THEY ARE LISTED IN ACCORDANCE WITH UL 268 AND UL 2075.

SECTION R315 CARBON MONOXIDE ALARMS

R315.1 GENERAL.
CARBON MONOXIDE ALARMS SHALL COMPLY WITH SECTION R315.

R315.1.1 LISTINGS.
CARBON MONOXIDE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034. COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 2034 AND UL 217.

R315.2 WHERE REQUIRED.
CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R315.2.1 AND R315.2.2.

R315.2.1 NEW CONSTRUCTION.
FOR NEW CONSTRUCTION, CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN DWELLING UNITS WHERE EITHER OR BOTH OF THE FOLLOWING CONDITIONS EXIST.

1. THE DWELLING UNIT CONTAINS A FUEL-FIRED APPLIANCE.
2. THE DWELLING UNIT HAS AN ATTACHED GARAGE WITH AN OPENING THAT COMMUNICATES WITH THE DWELLING UNIT.

R315.2.2 ALTERATIONS, REPAIRS AND ADDITIONS.
WHERE ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT OCCUR, THE INDIVIDUAL DWELLING UNIT SHALL BE EQUIPPED WITH CARBON MONOXIDE ALARMS LOCATED AS REQUIRED FOR NEW DWELLINGS.
EXCEPTIONS:

NOTE: SEE SECTION 315.2.2 FOR EXCEPTIONS

R315.3 LOCATION.
CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

R315.4 COMBINATION ALARMS.
COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS.

R315.5 INTERCONNECTIVITY.
WHERE MORE THAN ONE CARBON MONOXIDE ALARM IS REQUIRED TO BE INSTALLED WITHIN AN INDIVIDUAL DWELLING UNIT IN ACCORDANCE WITH SECTION R315.3, THE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE INDIVIDUAL DWELLING UNIT. PHYSICAL INTERCONNECTION OF CARBON MONOXIDE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.

NOTE: SEE SECTION 315.5 FOR EXCEPTIONS

R315.6 POWER SOURCE.
CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVER-CURRENT PROTECTION.

NOTE: SEE SECTION 315.5 FOR EXCEPTIONS

R315.7 CARBON MONOXIDE DETECTION SYSTEMS.
CARBON MONOXIDE DETECTION SYSTEMS SHALL BE PERMITTED TO BE USED IN LIEU OF CARBON MONOXIDE ALARMS AND SHALL COMPLY WITH SECTIONS R315.7.1 THROUGH R315.7.4.

R315.7.1 GENERAL.
HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEMS SHALL COMPLY WITH NFPA 720. CARBON MONOXIDE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 2075.

R315.7.2 LOCATION.
CARBON MONOXIDE DETECTORS SHALL BE INSTALLED IN THE LOCATIONS SPECIFIED IN SECTION R315.3. THESE LOCATIONS SUPERSEDE THE LOCATIONS SPECIFIED IN NFPA 720.

R315.7.3 PERMANENT FIXTURE.
WHERE A HOUSEHOLD CARBON MONOXIDE DETECTION SYSTEM IS INSTALLED, IT SHALL BECOME A PERMANENT FIXTURE OF THE OCCUPANCY AND OWNED BY THE HOMEOWNER.

R315.7.4 COMBINATION DETECTORS.
COMBINATION CARBON MONOXIDE AND SMOKE DETECTORS INSTALLED IN CARBON MONOXIDE DETECTION SYSTEMS IN LIEU OF CARBON MONOXIDE DETECTORS SHALL BE LISTED IN ACCORDANCE WITH UL 268 AND UL 2075 .

SECTION R321
ELEVATORS AND PLATFORM LIFTS

R321.1 ELEVATORS.
WHERE PROVIDED, PASSENGER ELEVATORS, LIMITED- USE AND LIMITED-APPLICATION ELEVATORS OR PRIVATE RESIDENCE ELEVATORS SHALL COMPLY WITH ASME A17.1/CSA B44.

SECTION R322
FLOOD-RESISTANT CONSTRUCTION

R322.1 GENERAL.
BUILDINGS AND STRUCTURES CONSTRUCTED IN WHOLE OR IN PART IN FLOOD HAZARD AREAS, INCLUDING A OR V ZONES AND COASTAL A ZONES, AS ESTABLISHED IN TABLE R301.2(1), AND SUBSTANTIAL IMPROVEMENT AND REPAIR OF SUBSTANTIAL DAMAGE OF BUILDINGS AND STRUCTURES IN FLOOD HAZARD AREAS, SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS CONTAINED IN THIS SECTION. BUILDINGS AND STRUCTURES THAT ARE LOCATED IN MORE THAN ONE FLOOD HAZARD AREA SHALL COMPLY WITH THE PROVISIONS ASSOCIATED WITH THE MOST RESTRICTIVE FLOOD HAZARD AREA. BUILDINGS AND STRUCTURES LOCATED IN WHOLE OR IN PART IN IDENTIFIED FLOODWAYS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASCE 24.

R322.1.2 STRUCTURAL SYSTEMS.
STRUCTURAL SYSTEMS OF BUILDINGS AND STRUCTURES SHALL BE DESIGNED, CONNECTED AND ANCHORED TO RESIST FLOTATION, COLLAPSE OR PERMANENT LATERAL MOVEMENT DUE TO STRUCTURAL LOADS AND STRESSES FROM FLOODING EQUAL TO THE DESIGN FLOOD ELEVATION.

R322.1.3 FLOOD-RESISTANT CONSTRUCTION.
BUILDINGS AND STRUCTURES ERECTED IN AREAS PRONE TO FLOODING SHALL BE CONSTRUCTED BY METHODS AND PRACTICES THAT MINIMIZE FLOOD DAMAGE.

R322.1.4 ESTABLISHING THE DESIGN FLOOD ELEVATION.
THE DESIGN FLOOD ELEVATION SHALL BE USED TO DEFINE FLOOD HAZARD AREAS. AT A MINIMUM, THE DESIGN FLOOD ELEVATION SHALL BE THE HIGHER OF THE FOLLOWING:

1. THE BASE FLOOD ELEVATION AT THE DEPTH OF PEAK ELEVATION OF FLOODING, INCLUDING WAVE HEIGHT, THAT HAS A 1 PERCENT (100-YEAR FLOOD) OR GREATER CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR.
2. THE ELEVATION OF THE DESIGN FLOOD ASSOCIATED WITH THE AREA DESIGNATED ON A FLOOD HAZARD MAP ADOPTED BY THE COMMUNITY, OR OTHERWISE LEGALLY DESIGNATED.

FOR DETERMINING DESIGN FLOOD ELEVATIONS AND IMPACTS REFER TO SECTIONS R322.1.4.1 AND R322.1.4.2

R322.1.5 LOWEST FLOOR.
THE LOWEST FLOOR SHALL BE THE LOWEST FLOOR OF THE LOWEST ENCLOSED AREA, INCLUDING BASEMENT, AND EXCLUDING ANY UNFINISHED FLOOD-RESISTANT ENCLOSURE THAT IS USEABLE SOLELY FOR VEHICLE PARKING, BUILDING ACCESS OR LIMITED STORAGE PROVIDED THAT SUCH ENCLOSURE IS NOT BUILT SO AS TO RENDER THE BUILDING OR STRUCTURE IN VIOLATION OF THIS SECTION.

R322.1.6 PROTECTION OF MECHANICAL, PLUMBING AND ELECTRICAL SYSTEMS.
ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS; HEATING, VENTILATING, AIR CONDITIONING; PLUMBING APPLIANCES AND PLUMBING FIXTURES; DUCT SYSTEMS; AND OTHER SERVICE EQUIPMENT SHALL BE LOCATED AT OR ABOVE THE ELEVATION REQUIRED IN SECTION R322.2 OR R322.3. IF REPLACED AS PART OF A SUBSTANTIAL IMPROVEMENT, ELECTRICAL SYSTEMS, EQUIPMENT AND COMPONENTS; HEATING, VENTILATING, AIR CONDITIONING AND PLUMBING APPLIANCES AND PLUMBING FIXTURES; DUCT SYSTEMS; AND OTHER SERVICE EQUIPMENT SHALL MEET THE REQUIREMENTS OF THIS SECTION. SYSTEMS, FIXTURES, AND EQUIPMENT AND COMPONENTS SHALL NOT BE MOUNTED ON OR PENETRATE THROUGH WALLS INTENDED TO BREAK AWAY UNDER FLOOD LOADS.

NOTE: SEE SECTION 322.1.6 FOR EXCEPTION

R322.1.7 PROTECTION OF WATER SUPPLY AND SANITARY SEWAGE SYSTEMS.
NEW AND REPLACEMENT WATER SUPPLY SYSTEMS SHALL BE DESIGNED TO MINIMIZE OR ELIMINATE INFILTRATION OF FLOOD WATERS INTO THE SYSTEMS IN ACCORDANCE WITH THE PLUMBING PROVISIONS OF THIS CODE. NEW AND REPLACEMENT SANITARY SEWAGE SYSTEMS SHALL BE DESIGNED TO MINIMIZE OR ELIMINATE INFILTRATION OF FLOODWATERS INTO SYSTEMS AND DISCHARGES FROM SYSTEMS INTO FLOODWATERS IN ACCORDANCE WITH THE PLUMBING PROVISIONS OF THIS CODE AND CHAPTER 3 OF THE INTERNATIONAL PRIVATE SEWAGE DISPOSAL CODE.

R322.1.8 FLOOD-RESISTANT MATERIALS.
BUILDING MATERIALS AND INSTALLATION METHODS USED FOR FLOORING AND INTERIOR AND EXTERIOR WALLS AND WALL COVERINGS BELOW THE ELEVATION REQUIRED IN SECTION R322.2 OR R322.3 SHALL BE FLOOD DAMAGE- RESISTANT MATERIALS THAT CONFORM TO THE PROVISIONS OF FEMA TB-2.

SEE SECTION R322.2 FOR FLOOD HAZARD AREAS (INCLUDING A ZONES).

R322.2.2 ENCLOSED AREA BELOW REQUIRED ELEVATION.
ENCLOSED AREAS, INCLUDING CRAWL SPACES, THAT ARE BELOW THE ELEVATION REQUIRED IN SECTION R322.2.1 SHALL:
1. BE USED SOLELY FOR PARKING OF VEHICLES, BUILDING ACCESS OR STORAGE.
2. BE PROVIDED WITH FLOOD OPENINGS THAT MEET THE FOLLOWING CRITERIA AND ARE INSTALLED IN ACCORDANCE WITH SECTION R322.2.2.1 SECTIONS 2.1 THROUGH 2.3, AS WELL AS, SECTIONS:

-R322.2.2.1 FOR INSTALLATION OF OPENINGS.
-R322.2.3 FOUNDATION DESIGN AND CONSTRUCTION.
-R322.2.4 TANKS.

REFER TO SECTION R322.3 FOR COASTAL HIGH-HAZARD AREAS (INCLUDING V ZONES AND COASTAL A ZONES, WHERE DESIGNATED). INCLUDING:

R322.3.1 LOCATION AND SITE PREPARATION
R322.3.2 ELEVATION REQUIREMENTS
R322.3.3 FOUNDATIONS
R322.3.4 CONCRETE SLABS
R322.3.5 WALLS BELOW REQUIRED ELEVATION
R322.3.6 ENCLOSED AREAS BELOW REQUIRED ELEVATION.
R322.3.7 STAIRWAYS AND RAMPS
R322.3.8 DECKS AND PORCHES
R322.3.9 CONSTRUCTION DOCUMENTS
R322.3.10 TANKS

SECTION R323 STORM SHELTERS

R323.1 GENERAL.
THIS SECTION APPLIES TO STORM SHELTERS WHERE CONSTRUCTED AS SEPARATE DETACHED BUILDINGS OR WHERE CONSTRUCTED AS SAFE ROOMS WITHIN BUILDINGS FOR THE PURPOSE OF PROVIDING REFUGE FROM STORMS THAT PRODUCE HIGH WINDS, SUCH AS TORNADOS AND HURRICANES. IN ADDITION TO OTHER APPLICABLE REQUIREMENTS IN THIS CODE, STORM SHELTERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ICC/NSSA-ICC 500.

R323.1.1 SEALED DOCUMENTATION.
THE CONSTRUCTION DOCUMENTS FOR ALL STRUCTURAL COMPONENTS AND IMPACT PROTECTIVE SYSTEMS OF THE STORM SHELTER SHALL BE PREPARED AND SEALED BY A REGISTERED DESIGN PROFESSIONAL INDICATING THAT THE DESIGN MEETS THE CRITERIA OF ICC 500.

EXCEPTION: STORM SHELTERS, STRUCTURAL COMPONENTS AND IMPACT-PROTECTIVE SYSTEMS

SECTION R327 SWIMMING POOLS, SPAS AND HOT TUBS

R327.1 GENERAL.
THE DESIGN AND CONSTRUCTION OF POOLS AND SPAS SHALL COMPLY WITH THE INTERNATIONAL SWIMMING POOL AND SPA CODE.

SECTION R326 HABITABLE ATTICS

R326.1 GENERAL.
HABITABLE ATTICS SHALL COMPLY WITH SECTIONS R326.2 AND R326.3.

R326.2 MINIMUM DIMENSIONS.
A HABITABLE ATTIC SHALL HAVE A FLOOR AREA IN ACCORDANCE WITH SECTION R304 AND A CEILING HEIGHT IN ACCORDANCE WITH SECTION R305.

R326.3 STORY ABOVE GRADE PLANE.
A HABITABLE ATTIC SHALL BE CONSIDERED A STORY ABOVE GRADE PLANE.

NOTE: SEE SECTION 326.3 FOR EXCEPTION

R326.4 MEANS OF EGRESS.
THE MEANS OF EGRESS FOR HABITABLE ATTICS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF SECTION R311.

CHAPTER 4 :: FOUNDATIONS

SECTION R401 GENERAL

R401.1 APPLICATION. THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE FOUNDATION AND FOUNDATION SPACES FOR BUILDINGS. IN ADDITION TO THE PROVISIONS OF THIS CHAPTER, THE DESIGN AND CONSTRUCTION OF FOUNDATIONS IN FLOOD HAZARD AREAS AS ESTABLISHED BY TABLE R301.2 SHALL MEET THE PROVISIONS OF SECTION R322. WOOD FOUNDATIONS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH AWC PWF.

NOTE: SEE SECTION R401.1 FOR EXCEPTIONS

R401.2 REQUIREMENTS.
FOUNDATION CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING SOIL. FILL SOILS THAT SUPPORT FOOTINGS AND FOUNDATIONS SHALL BE DESIGNED, INSTALLED AND TESTED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

R401.3 DRAINAGE.
SURFACE DRAINAGE SHALL BE DIVERTED TO A STORM SEWER CONVEYANCE OR OTHER APPROVED POINT OF COLLECTION THAT DOES NOT CREATE A HAZARD. LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL NOT FEWER THAN 6 INCHES (152 MM) WITHIN THE FIRST 10 FEET (3048 MM).

NOTE: SEE SECTION R401.3 FOR EXCEPTIONS

R401.4 SOIL TESTS.
WHERE QUANTIFIABLE DATA CREATED BY ACCEPTED SOIL SCIENCE METHODOLOGIES INDICATE EXPANSIVE SOILS, COMPRESSIBLE SOILS, SHIFTING SOILS, OR OTHER QUESTIONABLE SOIL CHARACTERISTICS ARE LIKELY TO BE PRESENT, THE BUILDING OFFICIAL SHALL DETERMINE WHETHER TO REQUIRE A SOIL TEST TO DETERMINE THE SOIL'S CHARACTERISTICS AT A PARTICULAR LOCATION. THIS TEST SHALL BE DONE BY AN APPROVED AGENCY USING AN APPROVED METHOD.

SECTION R402 MATERIALS

R402.1 WOOD FOUNDATIONS.
WOOD FOUNDATION SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE.

R402.1.1 FASTENERS.
FASTENERS USED BELOW GRADE TO ATTACH PLYWOOD TO THE EXTERIOR SIDE OF EXTERIOR BASEMENT OR CRAWLSPACE WALL STUDS, OR FASTENERS USED IN KNEE WALL CONSTRUCTION, SHALL BE OF TYPE 304 OR 316 STAINLESS STEEL. FASTENERS USED ABOVE GRADE TO ATTACH PLYWOOD AND ALL LUMBER-TOLUMBER FASTENERS EXCEPT THOSE USED IN KNEE WALL CONSTRUCTION SHALL BE OF TYPE 304 OR 316 STAINLESS STEEL, SILICON BRONZE, COPPER, HOT-DIPPED GALVANIZED (ZINC COATED) STEEL NAILS, OR HOT-TUMBLED GALVANIZED (ZINC COATED) STEEL NAILS. ELECTRO-GALVANIZED STEEL NAILS AND GALVANIZED (ZINC COATED) STEEL STAPLES SHALL NOT BE PERMITTED.

R402.1.2 WOOD TREATMENT.
LUMBER AND PLYWOOD SHALL BE PRESSURE-PRESERVATIVE TREATED AND DRIED AFTER TREATMENT IN ACCORDANCE WITH AWPA U1 (COMMODITY SPECIFICATION A, SPECIAL REQUIREMENT 4.2), AND SHALL BEAR THE LABEL OF AN ACCREDITED AGENCY. WHERE LUMBER OR PLYWOOD IS CUT OR DRILLED AFTER TREATMENT, THE TREATED SURFACE SHALL BE FIELD TREATED WITH COPPER NAPHTHENATE, THE CONCENTRATION OF WHICH SHALL CONTAIN NOT LESS THAN 2-PERCENT COPPER METAL, BY REPEATED BRUSHING, DIPPING OR SOAKING UNTIL THE WOOD CANNOT ABSORB MORE PRESERVATIVE.

R402.2 CONCRETE.
CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH, AS SHOWN IN TABLE R402.2. CONCRETE SUBJECT TO MODERATE OR SEVERE WEATHERING AS INDICATED IN TABLE R301.2(1) SHALL BE AIR ENTRAINED AS SPECIFIED IN TABLE R402.2. THE MAXIMUM WEIGHT OF FLY ASH, OTHER POZZOLANS, SILICA FUME, SLAG OR BLENDED CEMENTS THAT IS INCLUDED IN CONCRETE MIXTURES FOR GARAGE FLOOR SLABS AND FOR EXTERIOR PORCHES, CARPORT SLABS AND STEPS THAT WILL BE EXPOSED TO DEICING CHEMICALS SHALL NOT EXCEED THE PERCENTAGES OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS SPECIFIED IN SECTION 19.3.3.4 OF ACI MATERIALS USED TO PRODUCE CONCRETE AND TESTING THEREOF SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN CHAPTERS 19 AND 20 OF ACI 318 OR ACI 332. R402.2.1

R402.3 PRECAST CONCRETE.
PRECAST CONCRETE FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R404.5 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE AND THE MANUFACTURER'S INSTRUCTIONS.

R402.4 MASONRY.
MASONRY SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THIS CHAPTER AND SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 1,500 PSI (10.3 MPA).

SECTION 403 FOOTINGS

R403.1 GENERAL.
ALL EXTERIOR WALLS SHALL BE SUPPORTED ON CONTINUOUS SOLID OR FULLY GROUTED MASONRY OR CONCRETE FOOTINGS, CRUSHED STONE FOOTINGS, WOOD FOUNDATIONS, OR OTHER APPROVED STRUCTURAL SYSTEMS THAT SHALL BE OF SUFFICIENT DESIGN TO ACCOMMODATE ALL LOADS ACCORDING TO SECTION R301 AND TO TRANSMIT THE RESULTING LOADS TO THE SOIL WITHIN THE LIMITATIONS AS DETERMINED FROM THE CHARACTER OF THE SOIL. FOOTINGS SHALL BE SUPPORTED ON UNDISTURBED NATURAL SOILS OR ENGINEERED FILL. CONCRETE FOOTINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R403 OR IN ACCORDANCE WITH ACI 332.

R403.1.1 MINIMUM SIZE.
THE MINIMUM WIDTH, W, AND THICKNESS, T, FOR CONCRETE FOOTINGS SHALL BE IN ACCORDANCE WITH TABLES R403.1(1) THROUGH R403.1(3) AND FIGURE R403.1(1) OR R403.1.3, AS APPLICABLE, BUT NOT LESS THAN 12 INCHES (305MM) IN WIDTH AND 6 INCHES (152) IN DEPTH. THE FOOTING WIDTH SHALL BE BASED ON THE LOAD-BEARING VALUE OF THE SOIL IN ACCORDANCE WITH TABLE R401.4.1. FOOTING PROJECTIONS, P, SHALL BE NOT LESS THAN 2 INCHES (51 MM) AND SHALL NOT EXCEED THE THICKNESS OF THE FOOTING. FOOTING THICKNESS AND PROJECTION FOR FIREPLACES SHALL BE IN ACCORDANCE WITH SECTION R1001.2. THE SIZE OF FOOTINGS SUPPORTING PIERS AND COLUMNS SHALL BE BASED ON THE TRIBUTARY LOAD AND ALLOWABLE SOIL PRESSURE IN ACCORDANCE WITH TABLE R401.4.1. FOOTINGS FOR WOOD FOUNDATIONS SHALL BE IN ACCORDANCE WITH THE DETAILS SET FORTH IN SECTION R403.2, AND FIGURES R403.1(2) AND R403.1(3). FOOTINGS FOR PRECAST FOUNDATIONS SHALL BE IN ACCORDANCE WITH THE DETAILS SET FORTH IN SECTION R403.4, TABLE R403.4, AND FIGURES R403.4(1) AND R403.4(2).

REFER TO THESE SECTIONS FOR THE FOLLOWING TOPICS:
-R403.1.2 CONTINUOUS FOOTING IN SEISMIC DESIGN CATEGORIES D0, D1 AND D2.
-R403.1.3 FOOTING AND STEM WALL REINFORCING IN SEISMIC DESIGN CATEGORIES D0, D1, AND D2.
-R403.1.3.4 INTERIOR BEARING AND BRACED WALL PANEL FOOTINGS IN SEISMIC DESIGN CATEGORIES D0, D1 AND D2.
-R403.1.3.5 REINFORCEMENT.
-R403.1.3.6 ISOLATED CONCRETE FOOTINGS.

R403.1.4 MINIMUM DEPTH.
EXTERIOR FOOTINGS SHALL BE PLACED NOT LESS THAN 12 INCHES (305 MM) BELOW THE UNDISTURBED GROUND SURFACE. WHERE APPLICABLE, THE DEPTH OF FOOTINGS SHALL ALSO CONFORM TO SECTIONS R403.1.4.1. DECK FOOTINGS SHALL BE IN ACCORDANCE WITH SECTION R507.3.

R403.1.4.1 FROST PROTECTION.
EXCEPT WHERE OTHERWISE PROTECTED FROM FROST, FOUNDATION WALLS, PIERS AND OTHER PERMANENT SUPPORTS OF BUILDINGS AND STRUCTURES SHALL BE PROTECTED FROM FROST BY ONE OR MORE OF THE FOLLOWING METHODS:
1. EXTENDED BELOW THE FROST LINE SPECIFIED IN TABLE R301.2.(1).
2. CONSTRUCTED IN ACCORDANCE WITH SECTION R403.3.
3. CONSTRUCTED IN ACCORDANCE WITH ASCE 32.
4. ERECTED NO SOLID ROCK.

FOOTINGS SHALL NOT BEAR ON FROZEN SOIL UNLESS THE FROZEN CONDITION IS PERMANENT.

NOTE: SEE SECTION R403.1.4.1 FOR EXCEPTIONS

R403.1.5 SLOPE.
THE TOP SURFACE OF FOOTINGS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOOTINGS SHALL NOT HAVE A SLOPE EXCEEDING ONE UNIT VERTICAL IN 10 UNITS HORIZONTAL (10-PERCENT SLOPE). FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTINGS OR WHERE THE SLOPE OF THE BOTTOM SURFACE OF THE FOOTINGS WILL EXCEED ONE UNIT VERTICAL IN 10 UNITS HORIZONTAL (10-PERCENT SLOPE).

R403.1.6 FOUNDATION ANCHORAGE.
WOOD SILL PLATES AND WOOD WALLS SUPPORTED DIRECTLY ON CONTINUOUS FOUNDATIONS SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH THIS SECTION.

COLD-FORMED STEEL FRAMING SHALL BE ANCHORED DIRECTLY TO THE FOUNDATION OR FASTENED TO WOOD SILL PLATES IN ACCORDANCE WITH SECTION R505.3.1 OR R603.3.1, AS APPLICABLE. WOOD SILL PLATES SUPPORTING COLD-FORMED STEEL FRAMING SHALL BE ANCHORED TO THE FOUNDATION IN ACCORDANCE WITH THIS SECTION.

WOOD SOLE PLATES AT ALL EXTERIOR WALLS ON MONOLITHIC SLABS, WOOD SOLE PLATES OF BRACED WALL PANELS AT BUILDING INTERIORS ON MONOLITHIC SLABS AND ALL WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH MINIMUM 1/2-INCH DIAMETER (12.7 MM) ANCHOR BOLTS SPACED NOT GREATER THAN 6 FEET (1829 MM) ON CENTER OR APPROVED ANCHORS OR ANCHOR STRAPS SPACED AS REQUIRED TO PROVIDE EQUIVALENT ANCHORAGE TO 1/2-INCH-DIAMETER (12.7 MM) ANCHOR BOLTS. BOLTS SHALL EXTEND NOT LESS THAN 7 INCHES (178 MM) INTO CONCRETE OR GROUTED CELLS OF CONCRETE MASONRY UNITS. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE. A NUT AND WASHER SHALL BE TIGHTENED ON EACH ANCHOR BOLT. THERE SHALL BE NOT FEWER THAN TWO BOLTS PER PLATE SECTION WITH ONE BOLT LOCATED NOT MORE THAN 12 INCHES (305 MM) OR LESS THAN SEVEN BOLT DIAMETERS FROM EACH END OF THE PLATE SECTION. INTERIOR BEARING WALL SOLE PLATES ON MONOLITHIC SLAB FOUNDATION THAT ARE NOT PART OF A BRACED WALL PANEL SHALL BE POSITIVELY ANCHORED WITH APPROVED FASTENERS. SILL PLATES AND SOLE PLATES SHALL BE PROTECTED AGAINST DECAY AND TERMITES WHERE REQUIRED BY SECTIONS R317 AND R318. ANCHOR BOLTS SHALL BE PERMITTED TO BE LOCATED WHILE CONCRETE IS STILL PLASTIC AND BEFORE IT HAS SET. WHERE ANCHOR BOLTS RESIST PLACEMENT OR THE CONSOLIDATION OF CONCRETE AROUND ANCHOR BOLTS IS IMPEDED, THE CONCRETE SHALL BE VIBRATED TO ENSURE FULL CONTACT BETWEEN THE ANCHOR BOLTS AND CONCRETE.

NOTE: SEE SECTION 403.1.6 FOR EXCEPTIONS

R403.1.6.1 FOUNDATION ANCHORAGE IN SEISMIC DESIGN CATEGORIES C, D0, D1 AND D2.
IN ADDITION TO THE REQUIREMENTS OF SECTION R403.1.6, THE FOLLOWING REQUIREMENTS SHALL APPLY TO WOOD LIGHT-FRAME STRUCTURES IN SEISMIC DESIGN CATEGORIES D0, D1 AND D2 AND WOOD LIGHT-FRAME TOWNHOUSES IN SEISMIC DESIGN CAT. C.

NOTE: SEE SECTION 403.1.6.1 FOR REQUIREMENTS

R403.1.7 FOOTINGS ON OR ADJACENT TO SLOPES.
THE PLACEMENT OF BUILDINGS AND STRUCTURES ON OR ADJACENT TO SLOPES STEEPER THAN ONE UNIT VERTICAL IN THREE UNITS HORIZONTAL (33.3-PERCENT SLOPE) SHALL CONFORM TO SECTIONS R403.1.7.1 THROUGH R403.1.7.4

R403.1.8 FOUNDATIONS ON EXPANSIVE SOILS.
FOUNDATION AND FLOOR SLABS FOR BUILDINGS LOCATED ON EXPANSIVE SOILS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION 1808.6 OF THE INTERNATIONAL BUILDING CODE.

NOTE: SEE SECTION 403.1.8 FOR EXCEPTION AND EXPANSIVE SOILS CLASSIFICATIONS.

R403.2 FOOTINGS FOR WOOD FOUNDATIONS.
FOOTINGS FOR WOOD FOUNDATIONS SHALL BE IN ACCORDANCE WITH FIGURES R403.1(2) AND R403.1(3). GRAVEL SHALL BE WASHED AND WELL GRADED. THE MAXIMUM SIZE STONE SHALL NOT EXCEED 3/4 INCH (19.1 MM). GRAVEL SHALL BE FREE FROM ORGANIC, CLAYEY OR SILTY SOILS. SAND SHALL BE COARSE, NOT SMALLER THAN 1/16-INCH (1.6 MM) GRAINS AND SHALL BE FREE FROM ORGANIC, CLAYEY OR SILTY SOILS. CRUSHED STONE SHALL HAVE A MAXIMUM SIZE OF 1/2 INCH (12.7 MM).

R403.3 FROST-PROTECTED SHALLOW FOUNDATIONS.
FOR BUILDINGS WHERE THE MONTHLY MEAN TEMPERATURE OF THE BUILDING IS MAINTAINED AT NOT LESS THAN 64°F (18°C), FOOTINGS ARE NOT REQUIRED TO EXTEND BELOW THE FROST LINE WHERE PROTECTED FROM FROST BY INSULATION IN ACCORDANCE WITH FIGURE R403.3(1) AND TABLE R403.3(1). FOUNDATIONS PROTECTED FROM FROST IN ACCORDANCE WITH FIGURE R403.3(1) AND TABLE R403.3(1) SHALL NOT BE USED FOR UNHEATED SPACES SUCH AS PORCHES, UTILITY ROOMS, GARAGES AND CARPORTS, AND SHALL NOT BE ATTACHED TO BASEMENTS OR CRAWL SPACES THAT ARE NOT MAINTAINED AT A MINIMUM MONTHLY MEAN TEMPERATURE OF 64°F (18°C).

REFER TO SECTION 403 FOR THE FOLLOWING AREAS:

-R403.3.1 FOUNDATIONS ADJOINING FROST-PROTECTED SHALLOW FOUNDATIONS
-R403.3.2 PROTECTION OF HORIZONTAL INSULATION BELOW GROUND.
-R403.3.3 DRAINAGE.
-R403.3.4 TERMITE PROTECTION.

R403.4 FOOTINGS FOR PRECAST CONCRETE FOUNDATIONS.
FOOTINGS FOR PRECAST CONCRETE FOUNDATIONS SHALL COMPLY WITH SECTION R403.4.

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International Residential Code

Construction Specifications and Methodologies

IMPORTANT NOTE: THESE NOTES AND SPECIFICATIONS ARE PROVIDED BY HOUSE PLAN ZONE, LLC. AS A SERVICE TO THEIR CUSTOMERS TO PROVIDE THE MOST POPULAR CODE TOPICS. THE INFORMATION AND METHODOLOGIES PREPARED HEREIN ARE IN ACCORDANCE TO AND REFERENCED TO THE 2018 INTERNATIONAL RESIDENTIAL CODE®. THE INFORMATION IS ALSO A GENERAL SUMMARIZATION OF THE CODE AND IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH THE FULL EXTENT OF THE ACTUAL CODE. THE NOTES AND SPECIFICATIONS MAY HAVE TO BE AMENDED DUE TO VARIATIONS IN LOCAL CODES AND GEOLOGICAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR HOMEOWNER TO MAKE THE NECESSARY MODIFICATIONS TO ENSURE CODE COMPLIANCE AND STRUCTURAL INTEGRITY. IT IS RECOMMENDED THAT YOU CONSULT A LOCAL ARCHITECT OR ENGINEER OF YOUR CHOICE AND CHECK WITH LOCAL BUILDING OFFICIALS PRIOR TO THE START OF ACTUAL CONSTRUCTION. SPECIAL ENGINEERING MAY REQUIRE THAT THESE SPECIFICATIONS BE CHANGED OR AMENDED TO COMPLY WITH SEISMIC, WIND, OR OTHER SPECIAL CONDITIONS AS REQUIRED BY LOCAL CONSTRUCTION METHODOLOGIES AND LOCAL CODES.

Date:
08.10.22

SECTION 404
FOUNDATION AND RETAINING WALLS

R404.1 CONCRETE AND MASONRY FOUNDATION WALLS.
REFER TO SECTION 404.1 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR CONCRETE AND MASONRY FOUNDATION WALLS.

R404.2 WOOD FOUNDATION WALLS.
REFER TO SECTION 404.2 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR WOOD FOUNDATION WALLS.

R404.3 WOOD SILL PLATES.
WOOD SILL PLATES SHALL BE NOT LESS THAN 2-INCH BY 4-INCH (51 MM BY 102 MM) NOMINAL LUMBER. SILL PLATE ANCHORAGE SHALL BE IN ACCORDANCE WITH SECTIONS R403.1.6 AND R602.11.

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, OR RETAINING WALLS EXCEEDING 24 INCHES (610 MM) IN HEIGHT THAT RESIST LATERAL LOADS IN ADDITION TO SOIL, SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE TO ENSURE STABILITY AGAINST OVERTURNING, SLIDING, EXCESSIVE FOUNDATION PRESSURE AND WATER UPLIFT. RETAINING WALLS SHALL BE DESIGNED FOR A SAFETY FACTOR OF 1.5 AGAINST LATERAL SLIDING AND OVERTURNING. THIS SECTION SHALL NOT APPLY TO FOUNDATION WALLS SUPPORTING BUILDINGS.

R404.5 PRECAST CONCRETE FOUNDATION WALLS.
REFER TO SECTION 404.5 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR PRECAST CONCRETE FOUNDATION WALLS.

SECTION R405 FOUNDATION DRAINAGE

R405.1 CONCRETE OR MASONRY FOUNDATIONS.
DRAINS SHALL BE PROVIDED AROUND CONCRETE OR MASONRY FOUNDATIONS THAT RETAIN EARTH AND ENCLOSE HABITABLE OR USABLE SPACES LOCATED BELOW GRADE. DRAINAGE TILES, GRAVEL OR CRUSHED STONE DRAINS, PERFORATED PIPE OR OTHER APPROVED SYSTEMS OR MATERIALS SHALL BE INSTALLED AT OR BELOW THE TOP OF THE FOOTING OR BELOW THE BOTTOM OF THE SLAB AND SHALL DISCHARGE BY GRAVITY OR MECHANICAL MEANS INTO AN APPROVED DRAINAGE SYSTEM. GRAVEL OR CRUSHED STONE DRAINS SHALL EXTEND NOT LESS THAN 1 FOOT (305 MM) BEYOND THE OUTSIDE EDGE OF THE FOOTING AND 6 INCHES (152 MM) ABOVE THE TOP OF THE FOOTING AND BE COVERED WITH AN APPROVED FILTER MEMBRANE MATERIAL. THE TOP OF OPEN JOINTS OF DRAIN TILES SHALL BE PROTECTED WITH STRIPS OF BUILDING PAPER. EXCEPT WHERE OTHERWISE RECOMMENDED BY THE DRAIN MANUFACTURER, PERFORATED DRAINS SHALL BE SURROUNDED WITH AN APPROVED FILTER MEMBRANE OR THE FILTER MEMBRANE SHALL COVER THE WASHED GRAVEL OR CRUSHED ROCK COVERING THE DRAIN. DRAINAGE TILES OR PERFORATED PIPE SHALL BE PLACED ON NOT LESS THAN 2 INCHES (51 MM) OF WASHED GRAVEL OR CRUSHED ROCK NOT LESS THAN ONE SIEVE SIZE LARGER THAN THE TILE JOINT OPENING OR PERFORATION AND COVERED WITH NOT LESS THAN 6 INCHES (152 MM) OF THE SAME MATERIAL.

REFER TO SECTION 405 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR PRECAST CONCRETE FOUNDATION WALLS.

SECTION R406
FOUNDATION WATER-PROOFING AND DAMP-PROOFING

REFER TO SECTION 406 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR WATER-PROOFING AND DAMP-PROOFING FOUNDATIONS INCLUDING THE FOLLOWING AREAS:

-R406.1 CONCRETE AND MASONRY FOUNDATION DAMPPROOFING.
-R406.2 CONCRETE AND MASONRY FOUNDATION WATERPROOFING.
-R406.3 DAMPPROOFING FOR WOOD FOUNDATIONS.
-R406.4 PRECAST CONCRETE FOUNDATION SYSTEM DAMPPROOFING.

SECTION R407 COLUMNS

REFER TO SECTION 407 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR COLUMNS INCLUDING THE FOLLOWING AREAS:

-R407.1 WOOD COLUMN PROTECTION.
-R407.2 STEEL COLUMN PROTECTION.
-R407.3 STRUCTURAL REQUIREMENTS.

SECTION R408 UNDER-FLOOR SPACE

REFER TO SECTION 408 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR UNDER-FLOOR SPACE INCLUDING THE FOLLOWING AREA:

-R408.1 MOISTURE CONTROL.
-R408.2 OPENINGS FOR UNDER-FLOOR VENTILATION.
-R408.3 UN-VENTED CRAWL SPACE.
-R408.4 ACCESS.
-R408.5 REMOVAL OF DEBRIS.
-R408.6 FINISHED GRADE.
-R408.7 FLOOD RESISTANCE.
-R408.8 UNDER-FLOOR VAPOR RETARDER.

CHAPTER 5 :: FLOORS

SECTION R501 GENERAL

R501.1 APPLICATION.
THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF THE FLOORS FOR BUILDINGS, INCLUDING THE FLOORS OF ATTIC SPACES USED TO HOUSE MECHANICAL OR PLUMBING FIXTURES AND EQUIPMENT.

R501.2 REQUIREMENTS.
FLOOR CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS.

SECTION R502 WOOD FLOOR FRAMING

R502.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD-SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION. SEE SECTIONS 502.1.1 THROUGH 502.1.7 FOR FURTHER SPECIFICATIONS.

R502.2 DESIGN AND CONSTRUCTION.
FLOORS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER, FIGURE R502.2 AND SECTIONS R317 AND R318 OR IN ACCORDANCE WITH ANSI AWC NDS. SEE SECTIONS 502.2.1 THROUGH 502.2.2 FOR FURTHER SPECIFICATIONS.

R502.3 ALLOWABLE JOIST SPANS.
SPANS FOR FLOOR JOISTS SHALL BE IN ACCORDANCE WITH TABLES R502.3.1(1) AND R502.3.1(2). FOR OTHER GRADES AND SPECIES AND FOR OTHER LOADING CONDITIONS, REFER TO THE AWC STJR. SEE SECTIONS 502.3.1 THROUGH 502.3.3 FOR FURTHER SPECIFICATIONS.

R502.4 JOISTS UNDER BEARING PARTITIONS.
JOISTS UNDER PARALLEL BEARING PARTITIONS SHALL BE OF ADEQUATE SIZE TO SUPPORT THE LOAD.DOUBLE JOISTS, SIZED TO ADEQUATELY SUPPORT THE LOAD, THAT ARE SEPARATED TO PERMIT THE INSTALLATION OF PIPING OR VENTS SHALL BE FULL DEPTH SOLID BLOCKED WITH LUMBER NOT LESS THAN 2 INCHES (51 MM) IN NOMINAL THICKNESS SPACED NOT MORE THAN 4 FEET (1219 MM) ON CENTER. BEARING PARTITIONS PERPENDICULAR TO JOISTS SHALL NOT BE OFFSET FROM SUPPORTING GIRDERS, WALLS OR PARTITIONS MORE THAN THE JOIST DEPTH UNLESS SUCH JOISTS ARE OF SUFFICIENT SIZE TO CARRY THE ADDITIONAL LOAD.

R502.5 ALLOWABLE GIRDER AND HEADER SPANS.
THE ALLOWABLE SPANS OF GIRDERS AND HEADERS FABRICATED OF DIMENSION LUMBER SHALL NOT EXCEED THE VALUES SET FORTH IN TABLES R602.7(1), R602.7(2) AND R602.7(3).

R502.6 BEARING.
THE ENDS OF EACH JOIST, BEAM OR GIRDER SHALL HAVE NOT LESS THAN 1 1/2 INCHES (38 MM) OF BEARING ON WOOD OR METAL, NOT LESS THAN 3 INCHES (76 MM) OF BEARING ON MASONRY OR CONCRETEOR BE SUPPORTED BY APPROVED JOIST HANGERS. ALTERNATIVELY, THE ENDS OF JOISTS SHALL BE SUPPORTED ON A 1-INCH BY 4-INCH (25 MM BY 102 MM) RIBBON STRIP AND SHALL BE NAILED TO THE ADJACENT STUD. THE BEARING ON MASONRY OR CONCRETE SHALL BE DIRECT, OR A SILL PLATE OF 2-INCH-MINIMUM (51 mm) NOMINAL THICKNESS SHALL BE PROVIDED UNDER THE JOIST, BEAM OR GIRDER. THE SILL PLATE SHALL PROVIDE A MINIMUM NOMINAL BEARING AREA OF 48 SQUARE INCHES (30 865 MM2). SEE SECTIONS 502.6.1 THROUGH 502.6.2 FOR FURTHER SPECIFICATIONS.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

-R502.7 LATERAL RESTRAINT AT SUPPORTS.
-R502.8 CUTTING, DRILLING AND NOTCHING.
-R502.9 FASTENING.
-R502.10 FRAMING OF OPENINGS.
-R502.11 WOOD TRUSSES.
-R502.12 DRAFTSTOPPING REQUIRED.
-R502.13 FIREBLOCKING REQUIRED.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS:

SECTION 503 FLOOR SHEATHING
SECTION 504 PRESSURE PRESERVATIVE TREATED WOOD FLOORS
SECTION 505 COLD-FORMED STEEL FLOOR FRAMING

SECTION R506 CONCRETE FLOORS (ON GROUND)

R506.1 GENERAL.
CONCRETE SLAB-ON-GROUND FLOORS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS SECTION OR ACI 332. FLOORS SHALL BE A MINIMUM 3 1/2 INCHES (89 MM) THICK (FOR EXPANSIVE SOILS, SEE SECTION R403.1.8). THE SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE SHALL BE AS SET FORTH IN SECTION R402.2.

R506.2 SITE PREPARATION.
THE AREA WITHIN THE FOUNDATION WALLS SHALL HAVE ALL VEGETATION, TOP SOIL AND FOREIGN MATERIAL REMOVED.

R506.2.1 FILL.
FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. THE FILL SHALL BE COMPACTED TO ENSURE UNIFORM SUPPORT OF THE SLAB, AND EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24 INCHES (610 MM) FOR CLEAN SAND OR GRAVEL AND 8 INCHES (203 MM) FOR EARTH.

R506.2.2 BASE.
A 4-INCH-THICK (102 MM) BASE COURSE CONSISTING OF CLEAN GRADED SAND, GRAVEL, CRUSHED STONE, CRUSHED CONCRETE OR CRUSHED BLAST-FURNACE SLAG PASSING A 2- INCH (51 MM) SIEVE SHALL BE PLACED ON THE PREPARED SUBGRADE WHERE THE SLAB IS BELOW GRADE.

NOTE: SEE SECTION 506.2.2 FOR EXCEPTION

R506.2.3 VAPOR RETARDER.
A 10-MIL (0.010 INCH; 0.254 MM) VAPOR RETARDER CONFORMING TO ASTM E1745 CLASS A REQUIREMENTS WITH JOINTS LAPPED NOT LESS THAN 6 INCHES (152 MM) SHALL BE PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR THE PREPARED SUBGRADE WHERE A BASE COURSE DOES NOT EXIST.

NOTE: SEE SECTION R506.2.3 FOR EXCEPTIONS

R506.2.4 REINFORCEMENT SUPPORT.
WHERE PROVIDED IN SLABS-ON-GROUND, REINFORCEMENT SHALL BE SUPPORTED TO REMAIN IN PLACE FROM THE CENTER TO UPPER ONE-THIRD OF THE SLAB FOR THE DURATION OF THE CONCRETE PLACEMENT.

SECTION R507 DECKS

R507.1 DECKS.
WOOD-FRAMED DECKS SHALL BE IN ACCORDANCE WITH THIS SECTION. DECKS SHALL BE DESIGNED FOR THE LIVE LOAD REQUIRED IN SECTION R301.5 OR THE GROUND SNOW LOAD INDICATED IN TABLE R301.2, WHICHEVER IS GREATER. FOR DECKS USING MATERIALS AND CONDITIONS NOT PRESCRIBED IN THIS SECTIONS, REFER TO SECTION R301.

R507.2 MATERIALS.
MATERIALS USED FOR THE CONSTRUCTION OF DECKS SHALL COMPLY WITH THIS SECTION.

R507.2.1 WOOD MATERIALS.
WOOD MATERIALS SHALL BE NO. 2 GRADE OR BETTER LUMBER ,PRESERVATIVE-TREATED IN ACCORDANCE WITH SECTION R317, OR APPROVED, NATURALLY DURABLE LUMBER, AND TERMITE PROTECTED WHERE REQUIRED IN ACCORDANCE WITH SECTION R318. WHERE DESIGN IN ACCORDANCE WITH SECTION R301 IS PROVIDED, WOOD STRUCTURAL MEMBERS SHALL BE DESIGNED USING THE WET SERVICE FACTOR DEFINED IN AWC NDS. CUTS, NOTCHES, AND DRILLED HOLES OF PRESERVATIVE TREATED WOOD MEMBERS SHALL BE TREATED IN ACCORDANCE WITH SECTION R317.1.1. ALL PRESERVATIVE-TREATED WOOD PRODUCTS IN CONTACT WITH THE GROUND SHALL BE LABELED FOR SUCH USAGE.

R507.2.1.1 ENGINEERED WOOD PRODUCTS.
ENGINEERED WOOD PRODUCTS SHALL BE IN ACCORDANCE WITH SECTION R502.

R507.2.2 PLASTIC COMPOSITE DECK BOARDS, STAIR TREADS, GUARDS, OR HANDRAILS.
PLASTIC COMPOSITE EXTERIOR DECK BOARDS, STAIR TREADS, GUARDS AND HANDRAILS SHALL COMPLY WITH THE REQUIREMENTS OF ASTM D7032 AND SECTION R507.3. SEE SECTIONS R507.2.2.1 THROUGH R507.2.2.5 AND SECTIONS R507.2.3 THOUGHT R507.2.5 FOR FURTHER SPECIFICATIONS.

R507.2.3 FASTENERS AND CONNECTORS.
METAL FASTENERS AND CONNECTORS USED FOR ALL DECKS SHALL BE IN ACCORDANCE WITH SECTION R317.3 AND TABLE R507.2.3.

R507.3 FOOTINGS
DECKS SHALL BE SUPPORTED ON CONCRETE FOOTINGS OR OTHER APPROVED STRUCTURAL SYSTEMS DESIGNED TO ACCOMMODATE ALL LOADS IN ACCORDANCE WITH SECTION R301. DECK FOOTINGS SHALL BE SIZED TO CARRY THE IMPOSED LOADS FROM THE DECK STRUCTURE TO THE GROUND AS SHOWN IN FIGURE R507.3.

NOTE: SEE SECTION R507.3 FOR EXCEPTION

R507.4 DECK POSTS.
FOR SINGLE-LEVEL DECKS, WOOD POST SIZE SHALL BE IN ACCORDANCE WITH TABLE R507.4.

R507.4.1 DECK POST TO FOOTING CONNECTION.
WHERE POSTS BEAR ON CONCRETE FOOTINGS IN ACCORDANCE WITH SECTION R403 AND FIGURE R507.4.1, LATERAL RESTRAINT SHALL BE PROVIDED BY MANUFACTURED CONNECTORS OR A MINIMUM POST EMBEDMENT OF 12 INCHES (305 MM) IN SURROUNDING SOILS OR CONCRETE PIERS. OTHER FOOTING SYSTEMS SHALL BE PERMITTED.

NOTE: SEE SECTION R507.4.1 FOR EXCEPTIONS

R507.5 DECK BEAMS.
MAXIMUM ALLOWABLE SPANS FOR WOOD DECK BEAMS, AS SHOWN IN FIGURE R507.5, SHALL BE IN ACCORDANCE WITH TABLES R507.5(1) THROUGH R507.5(4). BEAM PLIES SHALL BE FASTENED TOGETHER WITH TWO ROWS OF 10D (3-INCH X 0.128-INCH) NAILS MINIMUM AT 16 INCHES (406 MM) ON CENTER ALONG EACH EDGE. BEAMS SHALL BE PERMITTED TO CANTILEVER AT EACH END UP TO ONE-FOURTH OF THE ACTUAL BEAM SPAN. DECK BEAMS OF OTHER MATERIALS SHALL BE PERMITTED WHERE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES.

R507.7 DECKING.
MAXIMUM ALLOWABLE SPACING FOR JOISTS SUPPORTING WOOD DECKING, EXCLUDING STAIRWAYS, SHALL BE IN ACCORDANCE WITH TABLE R507.7. WOOD DECKING SHALL BE ATTACHED TO EACH SUPPORTING MEMBER WITH NOT LESS THAN TWO 8D THREADED NAILS OR TWO NO. 8 WOOD SCREWS. MAXIMUM ALLOWABLE SPACING FOR JOISTS SUPPORTING PLASTIC COMPOSITE DECKING SHALL BE IN ACCORDANCE WITH SECTION R507.2. OTHER APPROVED DECKING OR FASTENER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

R507.8 VERTICAL AND LATERAL SUPPORTS.
WHERE SUPPORTED BY ATTACHMENT TO AN EXTERIOR WALL, DECKS SHALL BE POSITIVELY ANCHORED TO THE PRIMARY STRUCTURE AND DESIGNED FOR BOTH VERTICAL AND LATERAL LOADS. SUCH ATTACHMENT SHALL NOT BE ACCOMPLISHED BY THE USE OF TOENAILS OR NAILS SUBJECT TO WITHDRAWAL. FOR DECKS WITH CANTILEVERED FRAMING MEMBERS, CONNECTION TO EXTERIOR WALLS OR OTHER FRAMING MEMBERS SHALL BE DESIGNED AND CONSTRUCTED TO RESIST UPLIFT RESULTING FROM THE FULL LIVE LOAD SPECIFIED IN TABLE R301.5 ACTING ON THE CANTILEVERED PORTION OF THE DECK. WHERE POSITIVE CONNECTION TO THE PRIMARY BUILDING STRUCTURE CANNOT BE VERIFIED DURING INSPECTION, DECKS SHALL BE SELF-SUPPORTING.

CHAPTER 6 :: WALL CONSTRUCTION

SECTION R601 GENERAL

R601.1 APPLICATION.
THE PROVISIONS OF THIS CHAPTER SHALL CONTROL THE DESIGN AND CONSTRUCTION OF WALLS AND PARTITIONS FOR BUILDINGS.

R601.2 REQUIREMENTS.
WALL CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED IN ACCORDANCE WITH SECTION R301 AND OF TRANSMITTING THE RESULTING LOADS TO THE SUPPORTING STRUCTURAL ELEMENTS.

SECTION R602 WOOD WALL FRAMING

R602.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION. SEE SECTIONS 602.6.1 THROUGH 502.6.11 FOR FURTHER SPECIFICATIONS.

R602.2 GRADE.
STUDS SHALL BE A MINIMUM NO. 3, STANDARD OR STUD GRADE LUMBER.

NOTE: SEE SECTION 506.2.2 FOR EXCEPTION

R602.3 DESIGN AND CONSTRUCTION.
EXTERIOR WALLS OF WOODFRAME CONSTRUCTION SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER AND FIGURES R602.3(1) AND R602.3(2), OR IN ACCORDANCE WITH AWC NDS. COMPONENTS OF EXTERIOR WALLS SHALL BE FASTENED IN ACCORDANCE WITH TABLES R602.3(1) THROUGH R602.3(4). WALL SHEATHING SHALL BE FASTENED DIRECTLY TO FRAMING MEMBERS AND, WHERE PLACED ON THE EXTERIOR SIDE OF AN EXTERIOR WALL, SHALL BE CAPABLE OF RESISTING THE WIND PRESSURES LISTED IN TABLE R301.2(2) ADJUSTED FOR HEIGHT AND EXPOSURE USING TABLE R301.2(3) AND SHALL CONFORM TO THE REQUIREMENTS OF TABLE R602.3(3). WALL SHEATHING USED ONLY FOR EXTERIOR WALL COVERING PURPOSES SHALL COMPLY WITH SECTION R703. STUDS SHALL BE CONTINUOUS FROM SUPPORT AT THE SOLE PLATE TO A SUPPORT AT THE TOP PLATE TO RESIST LOADS PERPENDICULAR TO THE WALL. THE SUPPORT SHALL BE FOUNDATION OR FLOOR, CEILING OR ROOF DIAPHRAGM OR SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

NOTE: SEE SECTION 506.2.3 FOR EXCEPTION

SEE SECTIONS 602.3.1 THROUGH 603.3.5 FOR FURTHER SPECIFICATIONS.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

R602.4 INTERIOR LOAD-BEARING WALLS.
R602.5 INTERIOR NONBEARING WALLS.
R602.6 DRILLING AND NOTCHING OF STUDS.
R602.7 HEADERS.
R602.8 FIREBLOCKING REQUIRED.
R602.9 CRIPPLE WALLS.

R602.10 WALL BRACING.
BUILDINGS SHALL BE BRACED IN ACCORDANCE WITH THIS SECTION OR, WHEN APPLICABLE, SECTION R602.12. WHERE A BUILDING, OR PORTION THEREOF, DOES NOT COMPLY WITH ONE OR MORE OF THE BRACING REQUIREMENTS IN THIS SECTION, THOSE PORTIONS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH SECTION R301.1.

REFER TO SECTIONS 602.10.1 THROUGH 602.10.10 FOR BRACED WALL PANELS, DESIGN AND CRITERIA.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS:

SECTION 603 COLD-FORMED STEEL WALL FRAMING
SECTION 604 WOOD STRUCTURAL PANELS
SECTION 605 PARTICLEBOARD
SECTION 606 GENERAL MASONRY CONSTRUCTION
SECTION 607 GLASS UNIT MASONRY
SECTION 608 EXTERIOR CONC. WALL CONSTRUCTION
SECTION 609 (SEE BELOW)
SECTION R610 STRUCTURAL INSULATED PANEL WALL CONSTRUCTION

SECTION R609 EXTERIOR WINDOWS AND DOORS.

R609.1 GENERAL.
THIS SECTION PRESCRIBES PERFORMANCE AND CONSTRUCTION REQUIREMENTS FOR EXTERIOR WINDOWS AND DOORS INSTALLED IN WALLS. WINDOWS AND DOORS SHALL BE INSTALLED IN ACCORDANCE WITH THE FENESTRATION MANUFACTURER'S WRITTEN INSTRUCTIONS. WINDOW AND DOOR OPENINGS SHALL BE FLASHED IN ACCORDANCE WITH SECTION R703.4. WRITTEN INSTALLATION INSTRUCTIONS SHALL BE PROVIDED BY THE FENESTRATION MANUFACTURER FOR EACH WINDOW OR DOOR.

R609.2 PERFORMANCE. EXTERIOR WINDOWS AND DOORS SHALL BE CAPABLE OF RESISTING THE DESIGN WIND LOADS SPECIFIED IN TABLE R301.2(2) ADJUSTED FOR HEIGHT AND EXPOSURE IN ACCORDANCE WITH TABLE R301.2(3) OR DETERMINED IN ACCORDANCE WITH ASCE 7 USING THE ALLOWABLE STRESS DESIGN LOAD COMBINATIONS OF ASCE 7. FOR EXTERIOR WINDOWS AND DOORS TESTED IN ACCORDANCE WITH SECTIONS R609.3 AND R609.5, REQUIRED DESIGN WIND PRESSURES DETERMINED FROM ASCE 7 USING THE ULTIMATE STRENGTH DESIGN (USD) ARE PERMITTED TO BE MULTIPLIED BY 0.6. DESIGN WIND LOADS FOR EXTERIOR GLAZING NOT PART OF A LABELED ASSEMBLY SHALL BE PERMITTED TO BE DETERMINED IN ACCORDANCE WITH CHAPTER 24 OF THE IRC. DESIGN WIND LOADS FOR EXTERIOR GLAZING NOT PART OF A LABELED ASSEMBLY SHALL BE PERMITTED TO BE DETERMINED IN ACCORDANCE WITH CHAPTER 24 OF THE INTERNATIONAL BUILDING CODE.

R609.4 GARAGE DOORS.
GARAGE DOORS SHALL BE TESTED IN ACCORDANCE WITH EITHER ASTM E330 OR ANSI/DASMA 108, AND SHALL MEET THE ACCEPTANCE CRITERIA OF ANSI/DASMA 108.

CHAPTER 7 :: WALL COVERING

R702.1 GENERAL.
INTERIOR COVERINGS OR WALL FINISHES SHALL BE INSTALLED IN ACCORDANCE WITH THIS CHAPTER AND TABLE R702.1(1), TABLE R702.1(2), TABLE R702.1(3) AND TABLE R702.3.5. INTERIOR MASONRY VENEER SHALL COMPLY WITH THE REQUIREMENTS OF SECTION R703.7.1 FOR SUPPORT AND SECTION R703.7.4 FOR ANCHORAGE, EXCEPT AN AIRSPACE IS NOT REQUIRED. INTERIOR FINISHES AND MATERIALS SHALL CONFORM TO THE FLAME SPREAD AND SMOKE DEVELOPMENT REQUIREMENTS OF SECTION R302.9.
SEE SECTIONS 702.2 THROUGH 702.7 FOR FURTHER SPECIFICATIONS.

SECTION R703 EXTERIOR COVERING

R703.1 GENERAL.
EXTERIOR WALLS SHALL PROVIDE THE BUILDING WITH A WEATHER-RESISTANT EXTERIOR WALL ENVELOPE. THE EXTERIOR WALL ENVELOPE SHALL INCLUDE FLASHING AS DESCRIBED IN SECTION R703.4.

R703.2 WATER-RESISTIVE BARRIER.
NOT FEWER THAN ONE LAYER OF WATER-RESISTIVE BARRIER SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS WITH FLASHING AS INDICATED IN SECTION R703.4, IN SUCH A MANNER AS TO PROVIDE A CONTINUOUS WATER-RESISTIVE BARRIER BEHIND THE EXTERIOR WALL VENEER. THE WATER-RESISTIVE BARRIER MATERIAL SHALL BE CONTINUOUS TO THE TOP OF WALLS AND TERMINATED AT PENETRATIONS AND BUILDING APPENDAGES IN A MANNER TO MEET THE REQUIREMENTS OF THE EXTERIOR WALL ENVELOPE AS DESCRIBED IN SECTION R703.1. WATER-RESISTIVE BARRIER MATERIALS SHALL COMPLY WITH ONE OF THE FOLLOWING:
1. NO. 15 FELT COMPLYING WITH ASTM D226, TYPE 1.
2. ASTM E2568, TYPE 1 OR 2.
3. ASTM E331 IN ACCORDANCE WITH SECTION R703.1.1.
4. OTHER APPROVED MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

NO.15 ASPHALT FELT AND WATER-RESISTIVE BARRIERS COMPLYING WITH ASTM E2556 SHALL BE APPLIED HORIZONTALLY, WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES (51 MM), AND WHERE JOINTS OCCUR, SHALL BE LAPPED NOT LESS THAN 6 INCHES (152 MM).

R703.3.3 FASTENERS.
EXTERIOR WALL COVERINGS AND ROOF OVERHANG SOFFITS SHALL BE SECURELY FASTENED WITH ALUMINUM, GALVANIZED, STAINLESS STEEL OR RUST-PREVENTATIVE COATED NAILS OR STAPLES IN ACCORDANCE WITH TABLE R703.3(1) OR WITH OTHER APPROVED CORROSION- RESISTANT FASTENERS IN ACCORDANCE WITH THE WALL COVERING MANUFACTURER'S INSTALLATION INSTRUCTIONS. NAILS AND STAPLES SHALL COMPLY WITH ASTM F1667. NAILS SHALL BE T-HEAD, MODIFIED ROUND HEAD, OR ROUND HEAD WITH SMOOTH OR DEFORMED SHANKS. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH (11.1 MM) OUTSIDE DIAMETER AND BE MANUFACTURED OF MINIMUM 16-GAGE WIRE. WHERE FIBERBOARD, GYPSUM, OR FOAM PLASTIC SHEATHING BACKING IS USED, NAILS OR STAPLES SHALL BE DRIVEN INTO THE STUDS. WHERE WOOD OR WOOD STRUCTURAL PANEL SHEATHING IS USED, FASTENERS SHALL BE DRIVEN INTO STUDS UNLESS OTHERWISE PERMITTED TO BE DRIVEN INTO SHEATHING IN ACCORDANCE WITH EITHER THE SIDING MANUFACTURER'S INSTALLATION INSTRUCTIONS OR TABLE R703.3.2.

R703.4 FLASHING.
APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED SHINGLE-FASHION IN A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. SELF-ADHERED MEMBRANES USED AS FLASHING SHALL COMPLY WITH AAMA 711. FLUID-APPLIED MEMBRANES USED AS FLASHING IN EXTERIOR WALLS SHALL COMPLY WITH AAMA 714. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH. APPROVED CORROSION-RESISTANT FLASHINGS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:

1. EXTERIOR WINDOW AND DOOR OPENINGS. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION R703.4.1.
2. AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO COPINGS.
3. UNDER AND AT THE ENDS OF MASONRY, WOOD OR METAL COPINGS AND SILLS.
4. CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
5. WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOODFRAME CONSTRUCTION.
6. AT WALL AND ROOF INTERSECTIONS.
AT BUILT-IN GUTTERS.

-R703.5 WOOD, HARDBOARD AND WOOD STRUCTURAL PANEL SIDING.
-R703.6 WOOD SHAKES AND SHINGLES.
-R703.7 EXTERIOR PLASTER (STUCCO).
-R703.8 ANCHORED STONE AND MASONRY VENEER, GENERAL.
-R703.9 EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)/EIFS WITH DRAINAGE.
-R703.10 FIBER CEMENT SIDING.
-R703.11 VINYL SIDING.
-R703.12 ADHERED MASONRY VENEER INSTALLATION.
-R703.13 INSULATED VINYL SIDING.
-R703.14 POLYPROPYLENE SIDING.
-R703.15 CLADDING ATTACHMENT OVER FOAM SHEATHING TO WOOD FRAMING.
-R703.16 CLADDING ATTACHMENT OVER FOAM SHEATHING TO COLD-FORMED STEEL FRAMING.
-R703.17 CLADDING ATTACHMENT OVER FOAM SHEATHING TO MASONRY OR CONCRETE WALL CONSTRUCTION.

CHAPTER 8 :: ROOF-CEILING CONSTRUCTION

SECTION 802 WOOD ROOF FRAMING

R802.1 GENERAL.
WOOD AND WOOD-BASED PRODUCTS USED FOR LOAD SUPPORTING PURPOSES SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THIS SECTION.

SEE SECTIONS 802.1.1 THROUGH 802.1.8 FOR FURTHER SPECIFICATIONS.

R802.2 DESIGN AND CONSTRUCTION.
THE FRAMING DETAILS REQUIRED IN SECTION R802 APPLY TO ROOFS HAVING A MINIMUM SLOPE OF THREE UNITS VERTICAL IN 12 UNITS HORIZONTAL (25-PERCENT SLOPE) OR GREATER. ROOF-CEILINGS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THIS CHAPTER AND FIGURES R606.11(1), R606.11(2) AND R606.11(3) OR IN ACCORDANCE WITH AWC NDS. COMPONENTS OF ROOF-CEILINGS SHALL BE FASTENED IN ACCORDANCE WITH TABLE R602.3(1).

R802.3 RIDGE.
A RIDGE BOARD USED TO CONNECT OPPOSING RAFTERS SHALL BE NOT LESS THAN 1 INCH (25 MM) NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. WHERE CEILING JOIST OR RAFTER TIES DO NOT PROVIDE CONTINUOUS TIES ACROSS THE STRUCTURE AS REQUIRED BY SECTION R802.5.2, THE RIDGE SHALL BE SUPPORTED BY A WALL OR RIDGE BEAM DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE AND SUPPORTED ON EACH END BY A WALL OR COLUMN.

R802.4 RAFTERS.
RAFTERS SHALL BE IN ACCORDANCE WITH THIS SECTION.

R802.4.1 RAFTER SIZE.
RAFTERS SHALL BE SIZED BASED ON THE RAFTER SPANS IN TABLES R802.4.1(1) THROUGH R802.4.1(8). RAFTER SPANS SHALL BE MEASURED ALONG THE HORIZONTAL PROJECTION OF THE RAFTER. FOR OTHER GRADES AND SPECIES AND FOR OTHER LOADING CONDITIONS, REFER TO THE AWC STJR.

R802.4.2 FRAMING DETAILS.
RAFTERS SHALL BE FRAMED OPPOSITE FROM EACH OTHER TO A RIDGE BOARD, SHALL NOT BE OFFSET MORE THAN 1 1/2 INCHES (38 MM) FROM EACH OTHER AND SHALL BE CONNECTED WITH A COLLAR TIE OR RIDGE STRAP IN ACCORDANCE WITH SECTION R802.4.6 OR DIRECTLY OPPOSITE FROM EACH OTHER TO A GUSSET PLATE IN ACCORDANCE WITH TABLE R602.3(1). RAFTERS SHALL BE NAILED TO THE TOP WALL PLATES IN ACCORDANCE WITH TABLE R602.3(1) UNLESS THE ROOF ASSEMBLY IS REQUIRED TO COMPLY WITH THE UPLIFT REQUIREMENTS OF SECTION R802.11.

R802.4.3 HIPS AND VALLEYS.
HIP AND VALLEY RAFTERS SHALL BE NOT LESS THAN 2 INCHES (51 MM) NOMINAL IN THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. HIP AND VALLEY RAFTERS SHALL BE SUPPORTED AT THE RIDGE BY A BRACE TO A BEARING PARTITION OR BE DESIGNED TO CARRY AND DISTRIBUTE THE SPECIFIC LOAD AT THAT POINT.

R802.4.4 RAFTER SUPPORTS.
WHERE THE ROOF PITCH IS LESS THAN 3:12 (25-PERCENT SLOPE), STRUCTURAL MEMBERS THAT SUPPORT RAFTERS, SUCH AS RIDGES, HIPS AND VALLEYS, SHALL BE DESIGNED AS BEAMS, AND BEARING SHALL BE PROVIDED FOR RAFTERS IN ACCORDANCE WITH SECTION R802.6.

REFER TO THE IRC FOR FURTHER INFORMATION ON THE FOLLOWING AREAS:

R802.5 ALLOWABLE RAFTER SPANS.
R802.6 BEARING.
R802.7 CUTTING, DRILLING AND NOTCHING.
R802.8 LATERAL SUPPORT.
R802.9 FRAMING OF OPENINGS.
R802.10 WOOD TRUSSES.

R802.10.1 TRUSS DESIGN DRAWINGS. TRUSS DESIGN DRAWINGS, PREPARED IN CONFORMANCE TO SECTION R802.10.1, SHALL BE PROVIDED TO THE BUILDING OFFICIAL AND APPROVED PRIOR TO INSTALLATION. TRUSS DESIGN DRAWINGS SHALL BE PROVIDED WITH THE SHIPMENT OF TRUSSES DELIVERED TO THE JOB SITE. TRUSS DESIGN DRAWINGS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING INFORMATION:

REFER TO SECTION 802 10.1 (1-12 FOR MINIMUM INFORMATION)

R802.10.2 DESIGN.
WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE. THE DESIGN AND MANUFACTURE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL COMPLY WITH ANSI/TPI 1. THE TRUSS DESIGN DRAWINGS SHALL BE PREPARED BY A REGISTERED DESIGN PROFESSIONAL WHERE REQUIRED BY THE STATUTES OF THE JURISDICTION IN WHICH THE PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH SECTION R106.1.

R802.10.3 BRACING.
TRUSSES SHALL BE BRACED TO PREVENT ROTATION AND PROVIDE LATERAL STABILITY IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE CONSTRUCTION DOCUMENTS FOR THE BUILDING AND ON THE INDIVIDUAL TRUSS DESIGN DRAWINGS. IN THE ABSENCE OF SPECIFIC BRACING REQUIREMENTS, TRUSSES SHALL BE BRACED IN ACCORDANCE WITH ACCEPTED INDUSTRY PRACTICE SUCH AS THE SBCA BUILDING COMPONENT SAFETY INFORMATION (BDSI) GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.

R802.10.4 ALTERATIONS TO TRUSSES.
TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERWISE ALTERED IN ANY WAY WITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD SUCH AS HVAC EQUIPMENT WATER HEATER THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSS SHALL NOT BE PERMITTED WITHOUT VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.

R802.11 ROOF TIE UPLIFT RESISTANCE.
ROOF ASSEMBLIES SHALL HAVE UPLIFT RESISTANCE IN ACCORDANCE WITH SECTIONS R802.11.1.1 AND R802.11.1.2.

NOTE: SEE SECTION 802.11 FOR EXCEPTION

R802.11.1 TRUSS UPLIFT RESISTANCE.
TRUSSES SHALL BE ATTACHED TO SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF RESISTING UPLIFT FORCES AS SPECIFIED ON THE TRUSS DESIGN DRAWINGS FOR THE ULTIMATE DESIGN WIND SPEED AS DETERMINED BY FIGURE R301.2(5)A AND LISTED IN TABLE R301.2(1) OR AS SHOWN ON THE CONSTRUCTION DOCUMENTS. UPLIFT FORCES SHALL BE PERMITTED TO BE DETERMINED AS SPECIFIED BY TABLE R802.11, IF APPLICABLE, OR AS DETERMINED BY ACCEPTED ENGINEERING PRACTICE.
R802.11.2 RAFTER UPLIFT RESISTANCE.
INDIVIDUAL RAFTERS SHALL BE ATTACHED TO SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF RESISTING UPLIFT FORCES AS DETERMINED BY TABLE R802.11 OR AS DETERMINED BY ACCEPTED ENGINEERING PRACTICE. CONNECTIONS FOR BEAMS USED IN A ROOF SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

REFER TO THE IRC FOR THE FOLLOWING SECTIONS:

SECTION 803 ROOF SHEATHING
SECTION 804 COLD-FORMED STEEL ROOF FRAMING

SECTION 805 CEILING FINISHES

R805.1 CEILING INSTALLATION.
CEILINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS FOR INTERIOR WALL FINISHES AS PROVIDED IN SECTIONS R702.1 THROUGH R702.6.

SECTION R806 ROOF VENTILATION

R806.1 VENTILATION REQUIRED.
ENCLOSED ATTICS AND ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATION OPENINGS SHALL HAVE A LEAST DIMENSION OF 1/16 INCH (1.6 MM) MINIMUM AND 1/4 INCH (6.4 MM) MAXIMUM. VENTILATION OPENINGS HAVING A LEAST DIMENSION LARGER THAN 1/4 INCH (6.4 MM) SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE CLOTH SCREENING, HARDWARE CLOTH PERFORATED VINYL OR SIMILAR MATERIAL WITH OPENINGS HAVING A LEAST DIMENSION OF 1/16 INCH (1.6 MM) MINIMUM AND 1/4 INCH (6.4 MM) MAXIMUM. OPENINGS IN ROOF FRAMING MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF SECTION R802.7. REQUIRED VENTILATION OPENINGS SHALL OPEN DIRECTLY TO THE OUTSIDE AIR AND SHALL BE PROTECTED TO PREVENT THE ENTRY OF BIRDS, RODENTS, SNAKES, AND OTHER SIMILAR CREATURES.

R806.2 MINIMUM VENT AREA.
THE MINIMUM NET FREE VENTILATING AREA SHALL BE 1/150 OF THE AREA OF THE VENTED SPACE.

NOTE: SEE SECTION 806.2 FOR EXCEPTION

R806.3 VENT AND INSULATION CLEARANCE.
WHERE EAVE OR CORNICE VENTS ARE INSTALLED, BLOCKING, BRIDGING, AND INSULATION SHALL NOT BLOCK THE FREE FLOW OF AIR. NOT LESS THAN A 1-INCH (25 MM) SPACE SHALL BE PROVIDED BETWEEN THE INSULATION AND THE ROOF SHEATHING AND AT THE LOCATION OF THE VENT.

R806.4 INSTALLATION AND WEATHER PROTECTION.
VENTILATORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALLATION OF VENTILATORS IN ROOF SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION R903. INSTALLATION OF VENTILATORS IN WALL SYSTEMS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION R703.1.

R806.5 UNVENTED ATTIC AND UNVENTED ENCLOSED RAFTER ASSEMBLIES.
UNVENTED ATTICS AND UNVENTED ENCLOSED ROOF FRAMING ASSEMBLIES CREATED BY CEILINGS THAT ARE APPLIED DIRECTLY TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS AND STRUCTURAL ROOF SHEATHING APPLIED DIRECTLY TO THE TOP OF THE ROOF FRAMING MEMBERS/RAFTERS, SHALL BE PERMITTED WHERE ALL THE FOLLOWING CONDITIONS ARE MET:

SEE CONDITIONS 806.5 (1 THROUGH 5)

SECTION R807 ATTIC ACCESS

R807.1 ATTIC ACCESS.
BUILDINGS WITH COMBUSTIBLE CEILING OR ROOF CONSTRUCTION SHALL HAVE AN ATTIC ACCESS OPENING TO ATTIC AREAS THAT HAVE A VERTICAL HEIGHT OF 30 INCHES (762 MM) OR GREATER OVER AN AREA OF NOT LESS THAN 30 SQUARE FEET (2.8 M2). THE VERTICAL HEIGHT SHALL BE MEASURED FROM THE TOP OF THE CEILING FRAMING MEMBERS TO THE UNDERSIDE OF THE ROOF FRAMING MEMBERS.

THE ROUGH-FRAMED OPENING SHALL BE NOT LESS THAN 22 INCHES BY 30 INCHES (559 MM BY 762 MM) AND SHALL BE LOCATED IN A HALLWAY OR OTHER LOCATION WITH READY ACCESS. WHERE LOCATED IN A WALL, THE OPENING SHALL BE NOT LESS THAN 22 INCHES WIDE BY 30 INCHES HIGH (559 MM WIDE BY 762 MM HIGH). WHERE THE ACCESS IS LOCATED IN A CEILING, MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE 30 INCHES (762 MM) AT SOME POINT ABOVE THE ACCESS MEASURED VERTICALLY FROM THE BOTTOM OF CEILING FRAMING MEMBERS. SEE SECTION M1305.1.3 FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED IN ATTICS.

CHAPTER 9 :: ROOF ASSEMBLIES

SECTION R901 GENERAL

R901.1 SCOPE. THE PROVISIONS OF THIS CHAPTER SHALL GOVERN THE DESIGN, MATERIALS, CONSTRUCTION AND QUALITY OF ROOF ASSEMBLIES.

CHAPTER 10 :: CHIMNEYS & FIREPLACES

R1001.1 GENERAL.
MASONRY FIREPLACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS SECTION AND THE APPLICABLE PROVISIONS OF CHAPTERS 3 AND 4.

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N·C·B·D·C
JONATHAN L. BOONE
CERTIFICATION NO. 25-137

Code Year: 2021
International Residential Code
Construction Specifications and Methodologies

IMPORTANT NOTE: THESE NOTES AND SPECIFICATIONS ARE PROVIDED BY HOUSE PLAN ZONE, LLC. AS A SERVICE TO THEIR CUSTOMERS TO PROVIDE THE MOST POPULAR CODE TOPICS. THE INFORMATION AND METHODOLOGIES PREPARED HEREIN ARE IN ACCORDANCE TO AND REFERENCED TO THE 2018 INTERNATIONAL RESIDENTIAL CODE®. THE INFORMATION IS ALSO A GENERAL SUMMARIZATION OF THE CODE AND IT IS RECOMMENDED THAT YOU BECOME FAMILIAR WITH THE FULL EXTENT OF THE ACTUAL CODE. THE NOTES AND SPECIFICATIONS MAY HAVE TO BE AMENDED DUE TO VARIATIONS IN LOCAL CODES AND GEOLOGICAL CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR HOMEOWNER TO MAKE THE NECESSARY MODIFICATIONS TO ENSURE CODE COMPLIANCE AND STRUCTURAL INTEGRITY. IT IS RECOMMENDED THAT YOU CONSULT A LOCAL ARCHITECT OR ENGINEER OF YOUR CHOICE AND CHECK WITH LOCAL BUILDING OFFICIALS PRIOR TO THE START OF ACTUAL CONSTRUCTION. SPECIAL ENGINEERING MAY REQUIRE THAT THESE SPECIFICATIONS BE CHANGED OR AMENDED TO COMPLY WITH SEISMIC, WIND, OR OTHER SPECIAL CONDITIONS AS REQUIRED BY LOCAL CONSTRUCTION METHODOLOGIES AND LOCAL CODES.

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08.10.22

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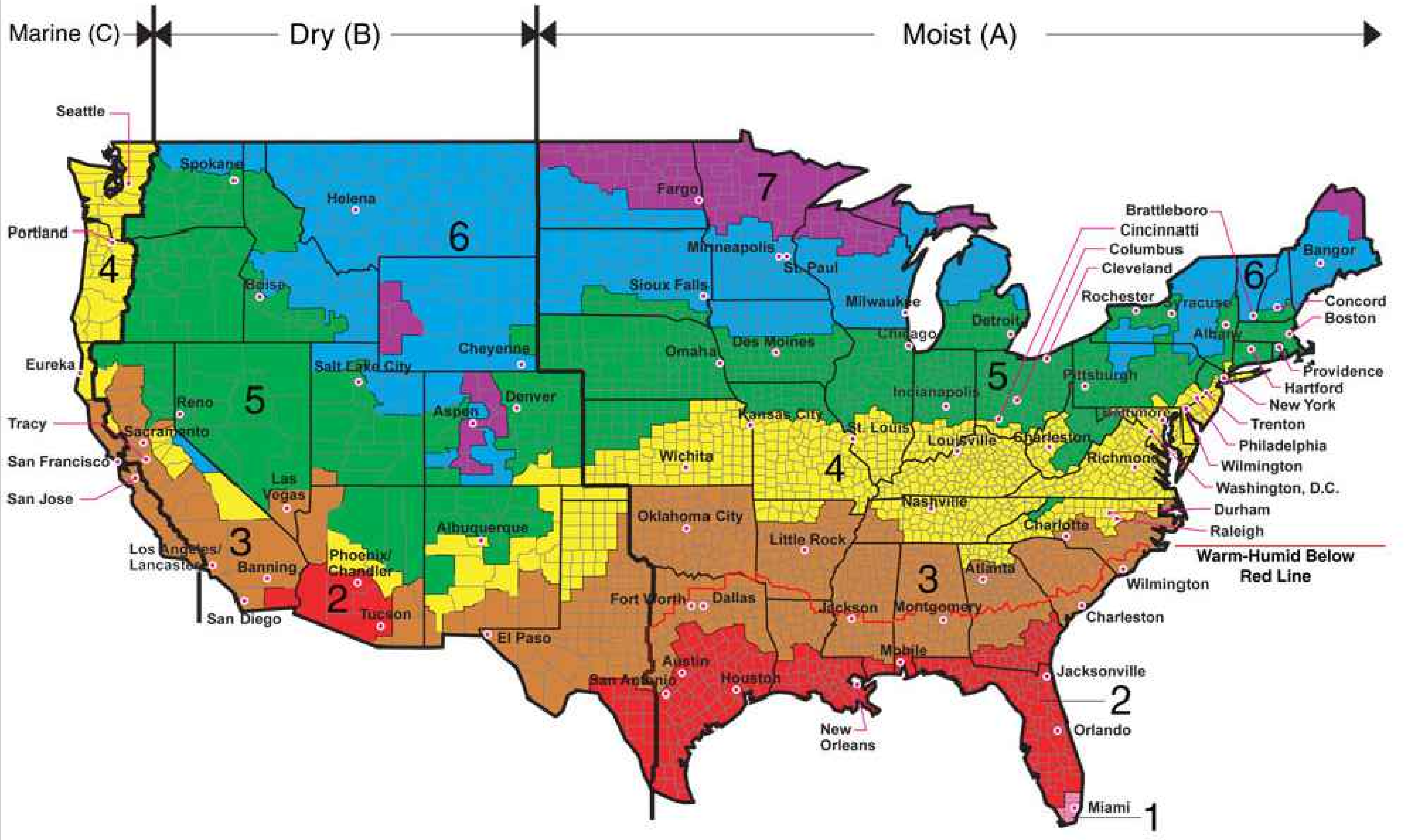

All of Alaska in Zone 7 except for the following Boroughs in Zone 8: Bethel, Dellingham, Fairbanks, N. Star, Nome North Slope, Northwest Arctic, Southeast Fairbanks, Wade Hampton, and Yukon-Koyukuk

Zone 1 includes: Hawaii, Guam, Puerto Rico, and the Virgin Islands

TABLE N1102.1.2 (R402.1.2)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENTa

CLIMATE ZONE	FENESTRATION *U-FACTORb*	SKYLIGHT b *U-FACTOR*	GLAZED FENESTRATION SHGCb, e	CEILING *R-VALUE*	WOOD FRAME WALL *R-VALUE*	MASS WALL *R-VALUEi*	FLOOR *R-VALUE*	BASEMENTc WALL *R-VALUE*	SLABd *R-VALUE & DEPTH*	CRAWL SPACEc WALL *R-VALUE*
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.32	0.55	0.25	38	20 or 13 + 5h	8/13	19	5/13f	0	5/13
4 except Marine	0.32	0.55	0.40	49	20 or 13 + 5h	8/13	19	10 /13	10, 2 ft	10/13
5 and Marine 4	0.30	0.55	NR	49	20 or 13 + 5h	13/17	30g	15/19	10, 2 ft	15/19
6	0.30	0.55	NR	49	20 + 5 or 13 + 10h	15/20	30g	15/19	10, 4 ft	15/19
7 and 8	0.30	0.55	NR	49	20 + 5 or 13 + 10h	19/21	38g	15/19	10, 4 ft	15/19

For SI: 1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.

b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.
Exception: Skylights may be excluded from glazed fenestration SHGC requirements in Climate Zones 1 through 3 where the SHGC for such skylights does not exceed 0.30.

c. "15/19" means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. "10/13" means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Zones 1 through 3 for heated slabs.

e. There are no SHGC requirements in the Marine Zone.

f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.10 and Table N1101.10.

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.

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

TABLE N1102.1.4 (R402.1.4)
EQUIVALENT U-FACTORSa

CLIMATE ZONE	FENESTRATION *U-FACTOR*	SKYLIGHT *U-FACTOR*	CEILING *U-FACTOR*	FRAME WALL *U-FACTOR*	MASS WALL *U-FACTORb*	FLOOR *U-FACTOR*	BASEMENT WALL *U-FACTOR*	CRAWL SPACE WALL *U-FACTOR*
1	0.50	0.75	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	0.030	0.084	0.165	0.064	0.360	0.477
3	0.35	0.55	0.030	0.060	0.098	0.047	0.091c	0.136
4 except Marine	0.35	0.55	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.32	0.55	0.026	0.060	0.082	0.033	0.050	0.055
6	0.32	0.55	0.026	0.045	0.060	0.033	0.050	0.055
7 and 8	0.32	0.55	0.026	0.045	0.057	0.028	0.050	0.055

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 0.17 in Zone 1, 0.14 in Zone 2, 0.12 in Zone 3, 0.087 in Zone 4 except Marine, 0.065 in Zone 5 and Marine 4, and 0.057 in Zones 6 through 8.

c. Basement wall U-factor of 0.360 in warm-humid locations as defined by Figure N1101.10 (R301.1) and Table N1101.10 (R301.1).

TABLE N1102.4.1.1 (R402.4.1.1)
AIR BARRIER AND INSULATION INSTALLATION (a)

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling or soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of not less than R-3 per inch. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and in continuous alignment with the air barrier.
Windows, skylights and doors	The space between framing and skylights, and framing the jambs of windows and doors, shall be sealed.	
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.
Floors (including above garage and cantilevered floors) and floors above garages.	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking. Alternatively floor framing cavity insulation shall be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing; and extending from the bottom to the top of all perimeter floor framing members.
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Crawl space insulation,where provided instead of floor insulation, shall be permanently attached to the walls.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.	
Narrow cavities		Batts to be installed in narrow cavities shall be cut to fit, or narrow cavities shall be filled with insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.	
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the finished surface.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.
Plumbing and wiring		In exterior walls, batt insulation shall be cut neatly to fit around wiring and plumbing or insulation that on installation, readily conforms to available space, shall extend behind piping and wiring.
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate the wall from the shower or tub.	Exterior walls adjacent to showers and tubs shall be insulated.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical and communication boxes. Alternatively, air-sealed boxes shall be installed.	
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.	
Concealed sprinklers	Where required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.	

a. Inspection of log walls shall be in accordance with the provisions of ICC 400.

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MAXIMUM HEADER SPANS

HEADER SPANS FOR EXTERIOR BEARING WALLS
SOUTHERN PINE #2 OR BETTER — LIVE LOAD=30psf

ALL SPANS ARE ASSUMING A MAXIMUM OF 24 FEET OF SUPPORTED ROOF FRAMING.

SUPPORTING ROOF AND CEILING ONLY

SIZE (NUMBER OF PLIES IN ( ))	MAXIMUM SPAN (FEET AND INCHES)	JACK STUDS
(2) 2 x 6	4-7	1
(2) 2 x 8	5-9	1
(2) 2 x 10	6-10	2
(2) 2 x 12	8-1	2
(3) 2 x 8	7-3	1
(3) 2 x 10	8-7	1
(3) 2 x 12	10-1	2

SUPPORTING ROOF, CEILING AND ONE CENTER BEARING FLOOR

SIZE (NUMBER OF PLIES IN ( ))	MAXIMUM SPAN (FEET AND INCHES)	JACK STUDS
(2) 2 x 10	5-8	2
(2) 2 x 12	6-8	2
(3) 2 x 10	7-2	2
(3) 2 x 12	8-5	2

NOTES:
1. THE ABOVE INFORMATION IS FROM THE 2021 IRC TABLE R602.7(1).
2. PLEASE REFER TO THE IRC 2018 FOR ADDITIONAL LUMBER SPECIES AND HEADER OPTIONS.
3. ALL HEADER SIZES SHALL BE DESIGNED/ VERIFIED BY A LOCAL PROFESSIONAL.

FLOOR JOIST SPANS

FLOOR JOIST SPANS FOR SOUTHERN PINE SPECIES
(RESIDENTIAL LIVING AREAS, LIVE LOAD = 40psf, L/Δ=360)
DEAD LOAD = 20psf

SIZE	SPACING (INCHES)	VISUALLY GRADED #2 SOUTHERN PINE (MAXIMUM FLOOR JOIST SPANS) (FT. - IN.)
2 x 6	12.0	9-10
	16.0	8-6
	19.2	7-9
	24.0	7-0
2 x 8	12.0	12-6
	16.0	10-10
	19.2	9-10
	24.0	8-10
2 x 10	12.0	14-9
	16.0	12-10
	19.2	11-8
	24.0	10-5
2 x 12	12.0	17-5
	16.0	15-1
	19.2	13-9
	24.0	12-4

NOTES:
The above tables are based on the IRC 2021 TABLE R502.3.1(2)

RAFTER SPANS

RAFTER SPANS FOR SOUTHERN PINE SPECIES
LIVE LOAD=30psf , L/Δ=180 DEAD LOAD = 10psf

SIZE	SPACING (INCHES)	SPANS (MAXIMUM RAFTER SPANS BETWEEN BRACING) (FT. - IN.)
2 x 6	12.0	12-11
	16.0	11-2
	19.2	10-2
	24.0	9-2
2 x 8	12.0	16-4
	16.0	14-2
	19.2	12-11
	24.0	11-7
2 x 10	12.0	19-5
	16.0	16-10
	19.2	15-4
	24.0	13-9
2 x 12	12.0	22-10
	16.0	19-10
	19.2	18-1
	24.0	16-2

NOTES:
The above tables are based on the IRC 2021 TABLE R802.4.1(3)

CEILING JOIST SPANS

CEILING JOIST SPANS FOR SOUTHERN PINE SPECIES
(UNINHABITABLE ATTICS WITH LIMITED STORAGE,
LIVE LOAD = 20psf, L/Δ=240) DEAD LOAD = 10psf)

***IF HABITABLE ATTIC SPACE IS DESIRED,
REFER TO THE INTERNATIONAL RESIDENTIAL CODE, SPAN TABLES.***

SIZE	SPACING (INCHES)	VISUALLY GRADED #2 SOUTHERN PINE (MAXIMUM CEILING JOIST SPANS) (FT. - IN.)
2 x 4	12.0	9-3
	16.0	8-0
	19.2	7-4
	24.0	6-7
2 x 6	12.0	13-11
	16.0	12-0
	19.2	11-0
	24.0	9-10
2 x 8	12.0	17-7
	16.0	15-3
	19.2	13-11
	24.0	12-6
2 x 10	12.0	20-11
	16.0	18-1
	19.2	16-6
	24.0	14-9

NOTES:
The above tables are based on the IRC 2021 TABLE R802.5.1(2)

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