

**WHITE LAKE TOWNSHIP
ZONING BOARD OF APPEALS**

**REPORT OF THE
COMMUNITY DEVELOPMENT DEPARTMENT**

TO: Zoning Board of Appeals
FROM: Justin Quagliata, Staff Planner
DATE: December 14, 2023

Agenda item: 8d

Appeal Date: December 14, 2023

Applicant: Chase Middler

Address: 951 W. Clarkston Road
Lake Orion, MI 48362

Zoning: R1-C Single Family Residential

Location: Undeveloped Parcel – Lake Lane Drive
Parcel Number 12-21-278-010

Property Description

The approximately 0.39-acre (16,936 square feet) parcel identified as Parcel Number 12-21-278-010 is located within the Brooksvale subdivision and zoned R1-C (Single Family Residential). The property is intended to be served by a private well for potable water and the public sanitary sewer system for sanitation. The corner lot contains 84.81 feet in width along the Highland Road front property line and 199.80 feet in width along the Lake Lane Drive front property line.

Applicant's Proposal

Chase Middler, the Applicant, is proposing to construct a house with an attached two-car garage.

Planner's Report

On April 25, 2019 the Zoning Board of Appeals approved variance requests from the previous property owner for the project. Variances are valid for a period of six months from the date of approval, unless a building permit is obtained within such period and the work associated with the variance is started and proceeds to completion in accordance with the terms of the building permit. The previous property owner did not obtain a building permit within six months of the approval date so the variances expired and are void. The following variances were previously granted:

- 12-foot variance from the front yard (west) setback
- 11-foot variance from the rear yard (east) setback

In November 2023 the Applicant submitted a site plan showing a proposed single-story, 2,154 square foot house (living space: 1,599 square feet; covered front porch: 62 square feet; garage: 493 square feet). As proposed, the house (garage) would be located 25 feet from the front (west) lot line, requiring a 10-foot variance from the required 35-foot front yard setback. Based on the orientation of the house, the proposed rear yard setback would be 15.4 feet, requiring a 19.6-foot variance from the required 35-foot rear yard setback.

Corner lots are required to meet the width requirement on each street upon which the lot fronts. The minimum lot width requirement is 100 feet in the R1-C zoning district, and the subject site is 84.81 feet in width along the Highland Road right-of-way. A 15.19-foot variance for lot width is required.

The requested variances are listed in the following table.

Variance #	Ordinance Section	Subject	Standard	Requested Variance	Result
1	Article 3.1.5.E	Front yard setback	35 feet	10 feet (west)	25 feet (west)
2	Article 3.1.5.E	Rear yard setback	35 feet	19.6 feet	15.4 feet
3	Article 3.1.5.E	Minimum lot width	100 feet	15.19 feet	84.81 feet

Zoning Board of Appeals Options:

Approval: I move to approve the variances requested by Chase Middler from Article 3.1.5.E of the Zoning Ordinance for Parcel Number 12-21-278-010 in order to construct a new house that would encroach 10 feet into the required front yard setback and 19.6 feet into the required rear yard setback. A 15.19-foot variance from the required lot width is also granted from Article 3.1.5.E. This approval will have the following conditions:

- The Applicant shall obtain all necessary permits from the White Lake Township Building Division.
- No mechanical units, including HVAC system or generator, shall be placed in the front yards or closer than five (5) feet to any side yard lot line or rear yard lot line.
- The proposed deck shall be setback at least five feet from the east property line.
- A foundation certificate shall be required prior to the backfill inspection by the Building Division.
- An as-built survey shall be required to verify the approved setbacks and lot coverage.

Denial: I move to deny the variances requested by Chase Middler for Parcel Number 12-21-278-010 due to the following reason(s):

Postpone: I move to postpone the appeal of Chase Middler *to a date certain or other triggering mechanism* for Parcel Number 12-21-278-010 to consider comments stated during this hearing.

Attachments:

1. Variance application dated November 14, 2023.
2. Site plan dated November 10, 2023.
3. Architectural plans dated January 21, 2021.
4. Letter of denial from the Building Official dated November 30, 2023.
5. Minutes of the April 25, 2019 Zoning Board of Appeals meeting.

7.37 STANDARDS

General variances: The Zoning Board of Appeals may authorize a variance from the strict application of the area or dimensional standard of this Ordinance when the applicant demonstrates all of the following conditions "A - E" or condition F applies.

- A. Practical difficulty: A practical difficulty exists on the subject site (such as exceptional narrowness, shallowness, shape or area; presence of floodplain; exceptional topographic conditions) and strict compliance with the zoning ordinance standards would unreasonably prevent the owner from using of the subject site for a permitted use or would render conformity unnecessarily burdensome. Demonstration of a practical difficulty shall have a bearing on the subject site or use of the subject site, and not to the applicant personally. Economic hardship or optimum profit potential are not considerations for practical difficulty.
- B. Unique situation: The demonstrated practical difficult results from exceptional or extraordinary circumstances or conditions applying to the subject site at the time the Ordinance was adopted or amended which are different than typical properties in the same zoning district or the vicinity.

- C. Not self created: The applicants problem is not self created.
- D. Substantial justice: The variance would provide substantial justice by granting the property rights similar to those enjoyed by the majority of other properties in the vicinity, and other properties in the same zoning district. The decision shall not bestow upon the property special development rights not enjoyed by other properties in the same district, or which might result in substantial adverse impacts on properties in the vicinity (such as the supply of light and air, significant increases in traffic, increased odors, an increase in the danger of fire, or other activities which may endanger the public safety, comfort, morals or welfare).
- E. Minimum variance necessary: The variance shall be the minimum necessary to grant relief created by the practical difficulty.
- F. Compliance with other laws: The variance is the minimum necessary to comply with state or federal laws, including but not necessarily limited to:
- i. The Michigan Right to Farm Act (P.A. 93 of 1981) and the farming activities the Act protects;
 - ii. The Americans with Disabilities Act of 1990 (as amended), and the needs of handicapped individuals the Act protects, including accessory facilities, building additions, building alterations, and site improvements which may not otherwise meet a strict application of the standards of this Ordinance.

Under no circumstances shall the Board of Appeals grant a variance to allow a use not permissible under the terms of this Ordinance in the district involved, or any use expressly or by implication prohibited by the terms of this Ordinance in said district.

CHARTER TOWNSHIP OF WHITE LAKE
ZONING BOARD OF APPEALS APPLICATION

Community Development Department, 7525 Highland Road,
White Lake, Michigan, 48383
(248) 698-3300 x5

APPLICANT'S NAME: Chase Middler PHONE: (248) 736-4768
ADDRESS: 951 W. Clarkston Rd. Lake Orion, MI 48362
APPLICANT'S EMAIL ADDRESS: Chase.middler@gmail.com
APPLICANT'S INTEREST IN PROPERTY: OWNER BUILDER OTHER: _____

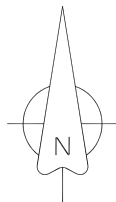
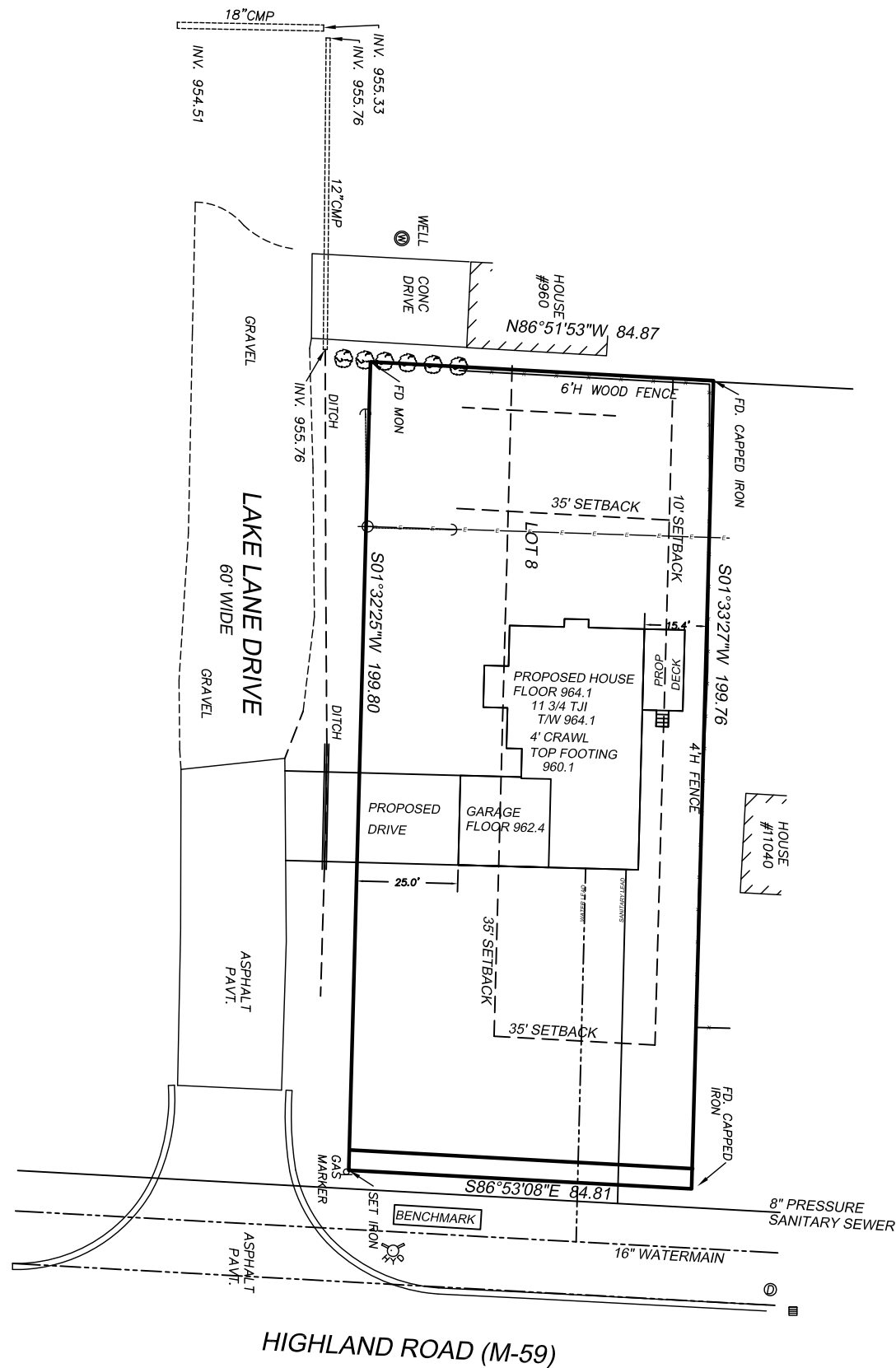
ADDRESS OF AFFECTED PROPERTY: (Vacant) Lake Lane PARCEL # 12 - 21-278-010
CURRENT ZONING: Residential PARCEL SIZE: .39 Acre lot

STATE REQUESTED VARIANCE AND ORDINANCE SECTION: 3.1.5 E. A1-C Single Family Residential; Front yard Setback, Rear yard Setback, and lot coverage
VALUE OF IMPROVEMENT: \$ _____ SEV OF EXISTING STRUCTURE: \$ _____

STATE REASONS TO SUPPORT REQUEST: (ATTACH WRITTEN STATEMENT TO APPLICATION)

APPLICATION FEE: \$385.00 (CALCULATED BY THE COMMUNITY DEVELOPMENT DEPARTMENT)

APPLICANT'S SIGNATURE:  DATE: 11/14/23



BENCHMARK
TOP NUT OF HYDRANT AT NORTHEAST
CORNER M-59 & LAKE LANE DR
ELEVATION 966.13 NAVD 88 DATUM

DESCRIPTION OF PARCEL 12-21-278-010
LOT 8 OF "BROOKSVALE SUBDIVISION", A
SUBDIVISION OF PART OF THE EAST 1/2 OF THE
NORTHEAST 1/4 OF SECTION 21, T.3N., R.8E.,
WHITE LAKE TOWNSHIP, OAKLAND COUNTY,
MICHIGAN, AS RECORDED IN LIBER 63 OF
PLATS, PAGE 11, OAKLAND COUNTY
RECORDS.

OWNER: CHASE MIDDLE
951 W CLARKSTON RD, LAKE ORION, MI 48362

ZONING

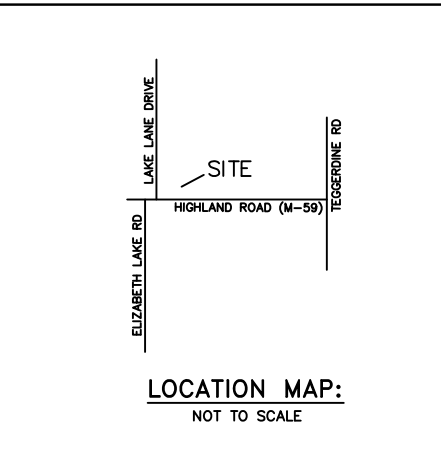
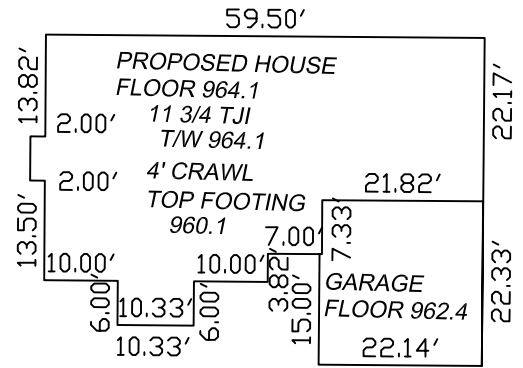
DISTRICT: R1-C SINGLE FAMILY
MIN. LOT: 16,000 SQ. FEET
MIN. LOT WIDTH: 100 FEET

SETBACKS

FRONT YARD: 35 FEET
SIDE YARDS: 10 FEET
REAR YARD: 35 FEET

PROPOSED LOT COVERAGE:
PROPOSED HOUSE 2277 SQ FT
PROPOSED DECK 212 SQ FT
2277+212=2489 SQ FT

$2489/16936 * 100 = 14.69 \%$
PROPOSED LOT COVERAGE = 14.69 % OK (30 % MAX)



LEGEND

- ⊕ INLET BASIN
- ⊙ STORM MANHOLE
- ⊙ SANITARY MANHOLE
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- 000.0 EXISTING GRADES
- 000.0 PROPOSED GRADES
- DRAINAGE ARROW
- ⊠ SOIL EROSION FENCE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- x-x FENCE LINE
- ⊗ GATE VALVE
- ⊙ HYDRANT
- POWER POLE
- POWER LINE
- ⊠ CATCH BASIN
- ← DRAINAGE SWALE
- ⊠ UTILITY PAD/PEDISTAL
- ⊗ PINE TREE
- ⊗ DECIDUOUS TREE
- ⊙ SOIL BORING
- ⊗ TO BE REMOVED
- ⊠ PROP AC UNIT
- ⊠ PROP GENERATOR
- ⊙ GAS METER
- ⊙ ELECTRIC METER
- ⊙ PROPOSED DOWNSPOUT
- ⊗ CHANGES TO PLAN
- ⊙ WELL

NOTE:
IT IS THE CLIENTS RESPONSIBILITY TO REVIEW THIS DRAWING FOR ALL HOUSE
PLAN DATA, INCLUDING (BUT NOT LIMITED TO) ELEVATION, HOUSE AND
BASEMENT SIZES, CANTILEVERS, ETC., AND, THE HOUSE LOCATION AND
ORIENTATION ON THE PARCEL. ANY DISCREPANCIES NOT BROUGHT TO OUR
ATTENTION, SHALL BE THE SOLE RESPONSIBILITY OF THE CLIENT.

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS, AS SHOWN ON
THE PLAN, WERE OBTAINED FROM UTILITY OWNERS
AND WERE NOT FIELD LOCATED.
A MINIMUM OF 72 HOURS PRIOR TO BEGINNING
CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY
"MISS DIG" AND HAVE ALL UNDERGROUND UTILITIES
STAKED BEFORE ANY WORK MAY BEGIN.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR
THE PROTECTION AND OR RELOCATION OF ALL
UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

3 WORKING DAYS (72 HOURS)
**BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171**

CALL-FREE FOR THE LOCATION
OF UNDERGROUND FACILITIES



DPS&A DAVID P SMITH & ASSOCIATES PROFESSIONAL LAND SURVEYORS 8615 RICHARDSON ROAD-SUITE 100 WALLED LAKE, MICHIGAN 48390 (248)363-1515 (FAX)363-1646 © 2023 DPS&A, INC. ALL RIGHTS RESERVED EMAIL ADDRESS: AASURVEYOR@AOL.COM	DATE	11-10-2023
	SCALE	1" = 20
	JOB NO.	23-102500
	SHEET NO.	1 OF 1

PROPOSED HOUSE ADDITION
VARIANCE REQUEST

LAKE LANE DRIVE, WHITE LAKE, MI 48386
LOTS 8, BROOKSVALE SUB
WHITE LAKE, OAKLAND COUNTY, MI

DRAWN _____ COMP. _____ DIRECTORY _____

HOUSE PLAN ZONE, LLC.

www.HPZplans.com

Phone: 601.336.3254

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 B-LAWS REGARDING CONSTRUCTION PLANS THAT WOULD BE SUBMITTED TO YOUR LOCAL MUNICIPALITY AND USED FOR THE CONSTRUCTION OF YOUR HOME. THESE B-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).

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REPRODUCTION OF THESE CONSTRUCTION PLANS, EITHER IN WHOLE OR IN PART, INCLUDING ANY FORM COPYING AND/OR PREPARATION OF A DERIVATIVE WORKS THEREOF, FOR ANY REASON IS STRICTLY PROHIBITED. THE PURCHASE OF A SET OF CONSTRUCTION PLANS IN NO WAY TRANSFERS ANY COPYRIGHT OR OTHER OWNERSHIP INTEREST IN IT TO THE PURCHASER EXCEPT FOR A LIMITED LICENSING RELEASE TO USE THE SAID PLAN SET FOR CONSTRUCTING ONE AND ONLY ONE DWELLING UNIT. THE PURCHASE OF ADDITIONAL SETS OF THE SAID PLANS AT A REDUCED PRICE FROM THE ORIGINAL SET OR AS PART OF A MULTIPLE SET PACKAGE DOES NOT CONVEY TO THE PURCHASER A LICENSE TO CONSTRUCT MORE THAN ONE DWELLING. SIMILARLY, THE PURCHASE OF REPRODUCIBLE CONSTRUCTION PLANS (A.K.A. SEPIAS, MYLARS, OR VELLUMS) CARRIES THE SAME COPYRIGHT PROTECTION AS MENTIONED ABOVE. IT IS GENERALLY ALLOWED TO MAKE A MAXIMUM OF 10 COPIES FOR THE CONSTRUCTION OF A SINGLE DWELLING ONLY. TO USE ANY PLAN MORE THAN ONCE, AND TO AVOID ANY COPYRIGHT/ LICENSE INFRINGEMENT, IT IS NECESSARY TO CONTACT THE ORIGINAL DESIGNER TO RECEIVE A LICENSE FOR ANY EXTENDED USAGE. WHEREAS A PURCHASER OF REPRODUCIBLE'S IS GRANTED A LICENSE TO MAKE COPIES, IT SHOULD BE NOTED THAT AS COPYRIGHTED MATERIALS, MAKING PHOTOCOPIES FROM CONSTRUCTION PLANS IS ILLEGAL. COPYRIGHT AND LICENSEE OF CONSTRUCTION PLANS EXISTS TO PROTECT ALL PARTIES. IT RESPECTS AND SUPPORTS THE INTELLECTUAL PROPERTY OF THE ORIGINAL ARCHITECT AND/OR DESIGNER, THEREBY KEEPING IT POSSIBLE TO OFFER PRE-DRAWN PLANS AT AFFORDABLE PRICES. COPYRIGHT LAW FOR PRE-DRAWN CONSTRUCTION PLANS IS NOW BEING VIGOROUSLY ENFORCED. COPYRIGHT INFRINGEMENT COULD LEAD TO FINES OF UP TO \$100,000 PER VIOLATION.

GENERAL SITE NOTES

1. CONTRACTOR TO VERIFY LOCATIONS OF SITE UTILITIES, REQUIREMENTS, AND CONNECTIONS FEES. OWNER, CONTRACTOR AND SUB-CONTRACTORS 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 STATES UTILITY LOCATOR FACILITATOR.
3. IT IS RECOMMENDED THAT THE SITES 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 VERIFIED 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.



PLAN #: 1599R

FOUNDATION TYPE: CRAWLSPACE
EXTERIOR WALL SIZE: 2x4 EXT. WALLS

STANDARD ABBREVIATIONS

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

SHEET INDEX:

1.	COVER SHEET	N1	I.R.C. CODE SHEET
2.	FOUNDATION PLAN	N2	I.R.C. CODE SHEET
3.	FLOOR PLAN	N3	I.R.C. CODE SHEET
4.	EXTERIOR VIEWS	N4	I.R.C. ENERGY SHEET
5.	SECTION AND CABINETS		
6.	ROOF PLAN		
7.	ELECTRICAL PLAN		

DESIGN DATA

MINIMUM SOIL BEARING CAPACITY = 2000 P.S.F. FOR GROUP II
CONCRETE MINIMUM (28 DAYS) P.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.



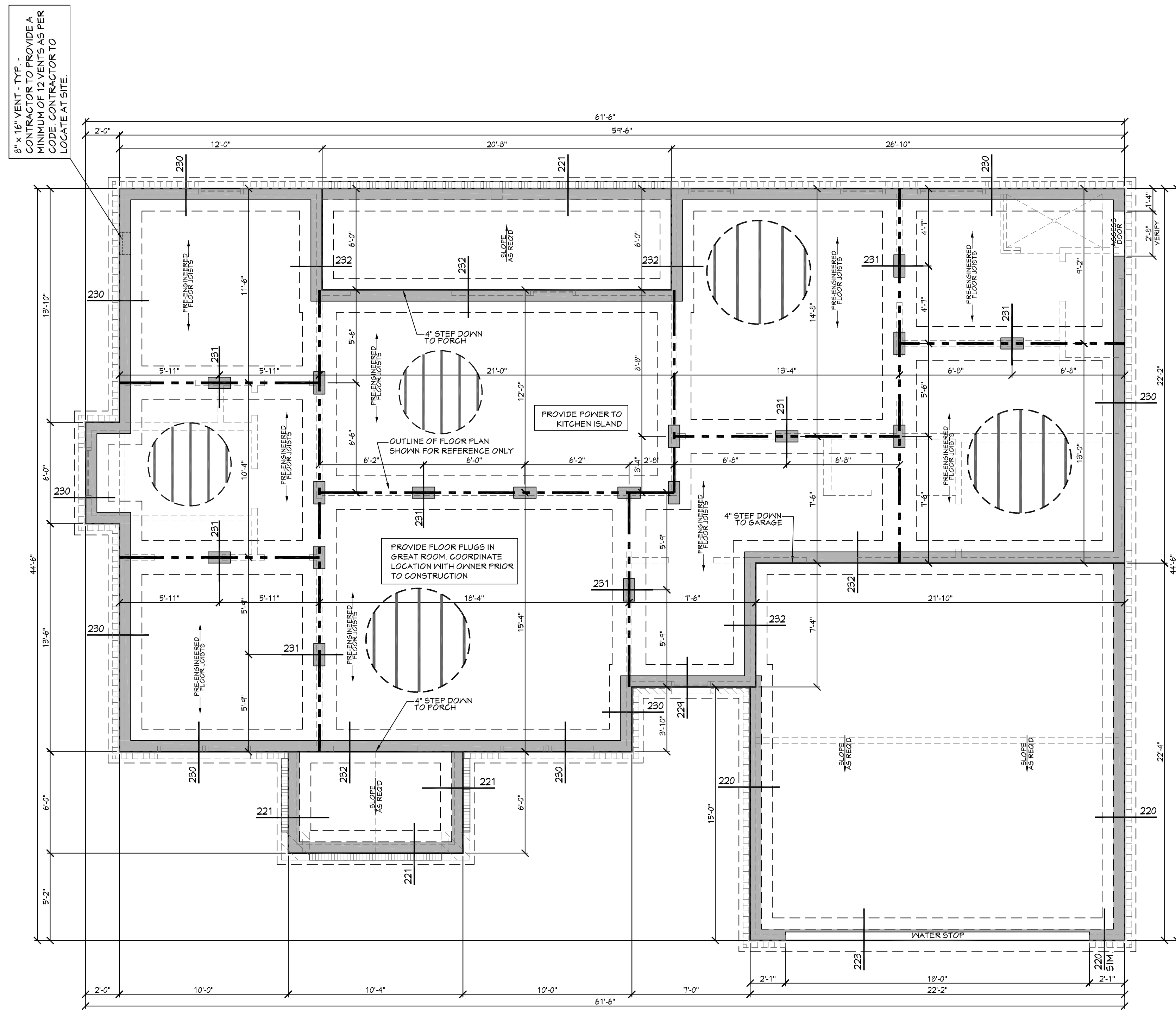
Date: 01.21.21

Drawn By: J.A.L.

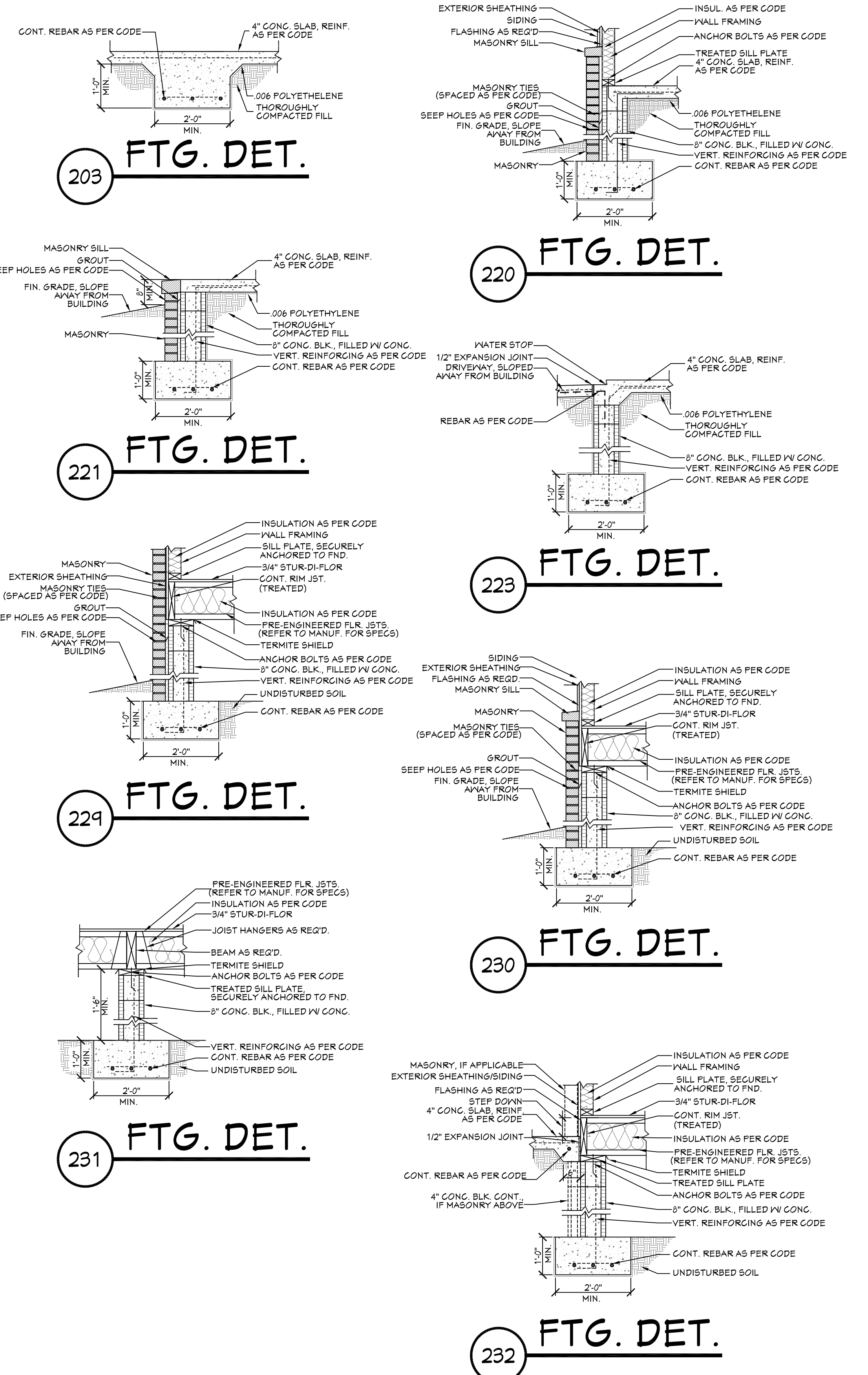
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ALL RIGHTS RESERVED

SHEET NUMBER

1



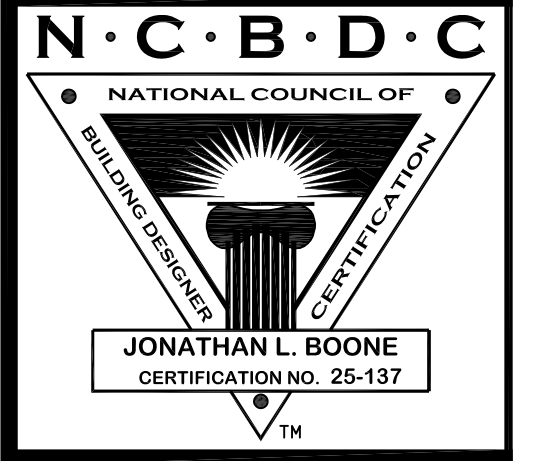
201 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"



CRAWLSPACE 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. CONTRACTOR TO PROVIDE ADEQUATE DRAINAGE BASED ON EXISTING SITE CONDITIONS. VERIFY WITH LOCAL CODES.
7. REFER TO FLOOR JOIST MANUFACTURER FOR JOIST SIZING, SPACING, CROSS BRACING REQUIREMENTS AND BEAM SIZES.
8. VERIFY THE QUANTITY AND LOCATION OF CRAWLSPACE VENTS WITH APPLICABLE CODES AT SITE.
9. ALL EXTERIOR DIMENSIONS ARE TO THE OUTSIDE OF THE STUDWALL AND DO NOT INCLUDE THE BRICK LEDGE (IF APPLICABLE)

Website:
www.HFZplans.com
 Email:
sales@hfzplans.com
 Phone:
 601.336.3254
 Fax:
 1.800.574.1387



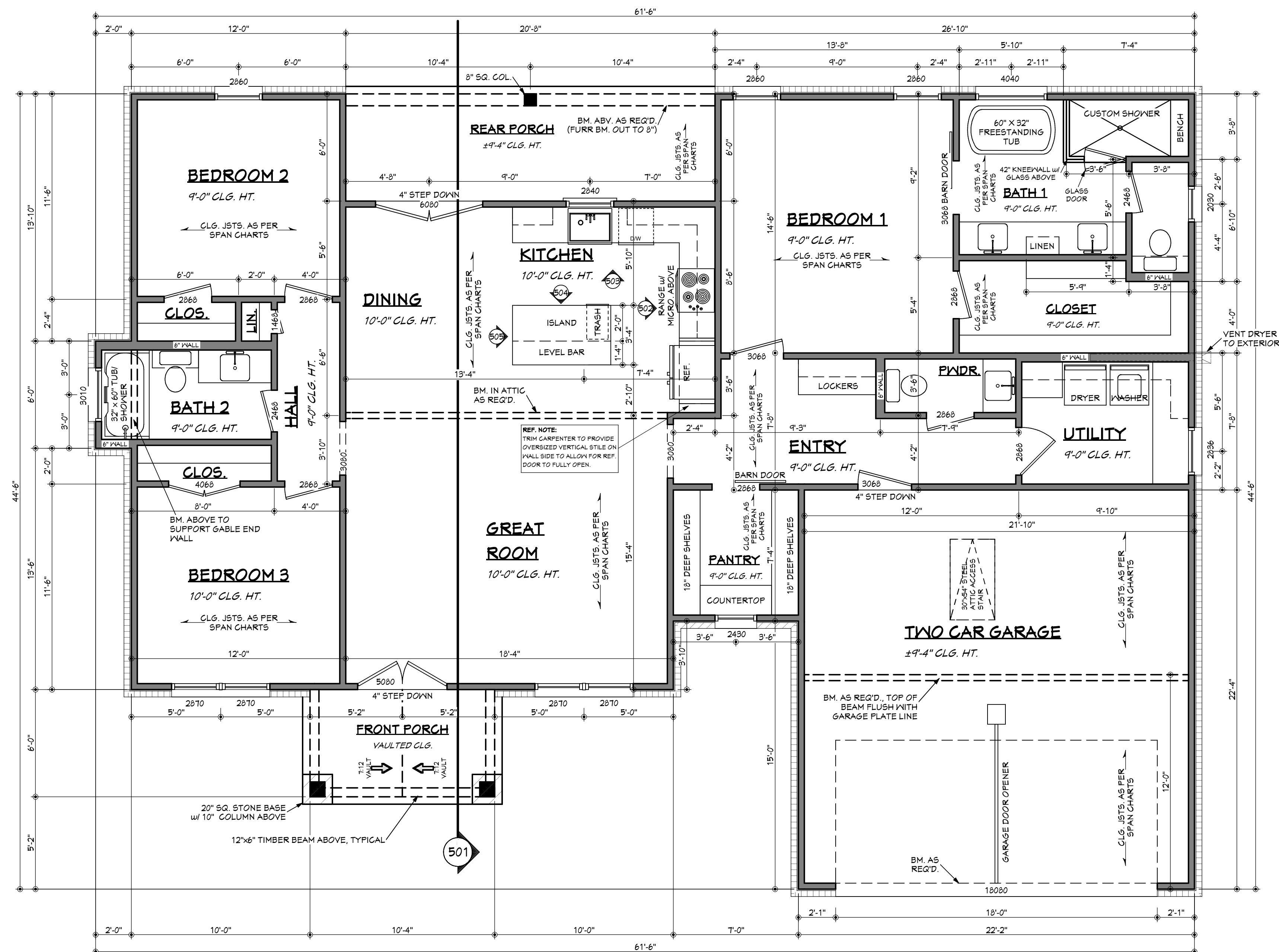
Pre-Drawn Plan ID:
1599R

Date:
 01.21.21
 Drawn By:
 J.A.L.

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SHEET NUMBER
2

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FLOOR PLAN

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

AREAS (FRAME):

1599	S.F. HEATED TOTAL WITHOUT MASONRY
62	S.F. UNHEATED - FRONT PORCH
124	S.F. UNHEATED - REAR PORCH
493	S.F. UNHEATED - TWO CAR GARAGE
679	S.F. UNHEATED TOTAL
2278	S.F. TOTAL UNDER ROOF

SQUARE FOOTAGE CALCULATION NOTES:
 1. SQUARE FOOTAGE OF HEATED AREA IS FIGURED TO THE OUTSIDE OF THE STUDY WALL 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).

- MECHANICAL NOTE:**
 WATER HEATER & HVAC UNIT TO BE LOCATED IN ATTIC SPACE BY CONTRACTOR.
- WALL FRAMING NOTE:**
 ALL WALLS TO BE 2X4 @ 16" O.C. UNLESS OTHERWISE NOTED.
- GARAGE SEPARATION REQUIREMENT:**
- CONTRACTOR TO PROVIDE 3/4" TYPE X GYPSUM WALL BOARD ON GARAGE CEILING AND 1/2" GYPSUM WALL BOARD ON INTERIOR SIDE OF GARAGE WALLS AS PER IRC 2018 SECTION AND TABLE R302.6.
 - OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE BUILT W/DOOR OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN 1/2" THICK OR 20 MINUTE FIRE RATED DOORS, WITH A SELF-CLOSING OR AUTOMATIC CLOSING DOOR AS PER IRC 2018 R302.1.
- DOOR LABEL SIZE:** 3065 IS A DOOR THAT IS 3 FT 0 INCHES WIDE BY 6 FEET 8 INCHES TALL. TO FURTHER CLARIFY, THE 3065 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.
- WINDOW LABEL SIZE:** 3050 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.

FLOOR PLAN NOTES: (2018 IRC)

- ALL DIMENSIONS & SITE CONDITIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL EXTERIOR DIMENSIONS ARE TO THE OUTSIDE FACE OF THE STUD AND DO NOT INCLUDE EXTERIOR FINISHES SUCH AS SIDING, BRICK, STUCCO, ETC.
- ALL FINISHES (INTERIOR & EXTERIOR) TO BE VERIFIED WITH OWNER PRIOR TO CONSTRUCTION.
- VERIFY ALL DOOR AND WINDOW STYLES AND SIZES WITH OWNER PRIOR TO CONSTRUCTION. MANUFACTURER TO SUPPLY ALL ROUGH OPENING SIZES.
- CONTRACTOR TO VERIFY ALL CLEARANCES OF ALL DOORS, WINDOWS AND OTHER ITEMS THAT ARE CRITICAL, PRIOR TO CONSTRUCTION.
- CONTRACTOR TO ADAPT PLANS AS REQUIRED TO MEET ALL APPLICABLE CODES AT SITE.
- ALL BEAMS TO BE SIZED BY A LICENSED STRUCTURAL ENGINEER.
- PORCHES, BALCONIES OR RAISED FLOOR SURFACES LOCATED MORE THAN 30 INCHES ABOVE THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES HORIZONTALLY SHALL HAVE GUARDS NOT LESS THAN 36 INCHES IN HEIGHT. OPEN SIDES OF STAIRS WITH A TOTAL RISE OF MORE THAN 30 INCHES ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 34 INCHES IN HEIGHT MEASURED VERTICALLY FROM THE NOSING OF THE TREADS. INSECT SCREENING SHALL NOT BE CONSIDERED AS A GUARD. IRC 2018, R312.1.1 & R312.1.2
- M1305.1.2 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.
- APPLIANCE ACCESS FOR INSPECTION SERVICE, REPAIR AND REPLACEMENT. APPLIANCES SHALL BE ACCESSIBLE 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 AT LEAST 30 INCHES DEEP AND 30 INCHES WIDE SHALL BE PROVIDED IN FRONT OF THE CONTROL SIDE TO SERVICE AN APPLIANCE. M1305.1.1
- 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. ALL SLEEPING ROOMS TO HAVE AN EXTERIOR ACCESS THROUGH A DOOR OR WINDOW WITH A MINIMUM OF 5.7 SQUARE FEET NET CLEAR OPENING AS PER IRC 2018 R310.2.1. EXCEPTION: GRADE FLOOR OR BELOW GRADE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5 SQUARE FEET. MAXIMUM SILL HEIGHT TO BE 44 INCHES. MINIMUM NET CLEAR OPENING HEIGHT TO BE 24 INCHES. MINIMUM NET CLEAR OPENING WIDTH TO BE 20 INCHES.
- ALL RETURN AIR GRILLS ARE TO BE LOCATED TO COMPLY WITH SECTION M1602 OF THE IRC 2018.
- ALL SQUARE FOOTAGE MEASUREMENTS ARE APPROXIMATE AND MAY DIFFER FROM ACTUAL CONSTRUCTED RESIDENCE OR BUILDING. FOOTAGES SHOWN ARE TO THE OUTSIDE OF THE STUDY WALL AND DO NOT INCLUDE THE EXTERIOR FINISH MATERIAL SUCH AS SIDING, BRICK, STONE ETC.
- FIRE SPRINKLER SYSTEM TO BE DESIGNED AND INSTALLED (IF REQUIRED BY LOCAL CODES) AS PER THE IRC 2018 AND BY A LICENSED PROFESSIONAL IN THE AREA OF CONSTRUCTION.
- ALL BATHROOM EXHAUST VENTS SHALL BE VENTED DIRECTLY TO THE EXTERIOR OF THE HOME AND NOT INTO THE ATTIC. IRC 2018, M1505.2

Website:
www.HPZplans.com

Email:
sales@hpzplans.com

Phone:
 601.336.3254

Fax:
 1.800.574.1387

N.C.B.D.C.
 NATIONAL COUNCIL OF BUILDING DESIGNERS
 JONATHAN L. BOONE
 CERTIFICATION NO. 25-137

Pre-Drawn Plan ID:
1599R

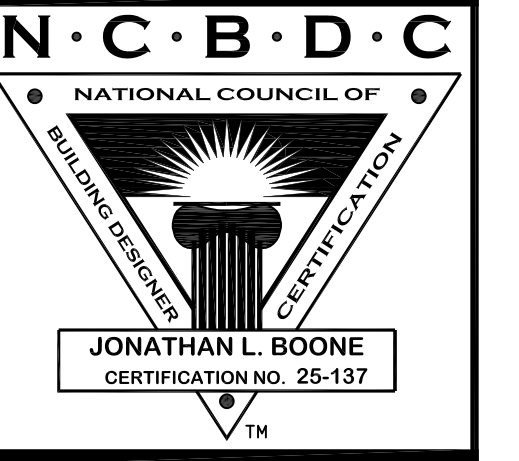
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www.HFZplans.com
 Email:
sales@hpfzplans.com
 Phone:
 601.336.3254
 Fax:
 1.800.574.1387

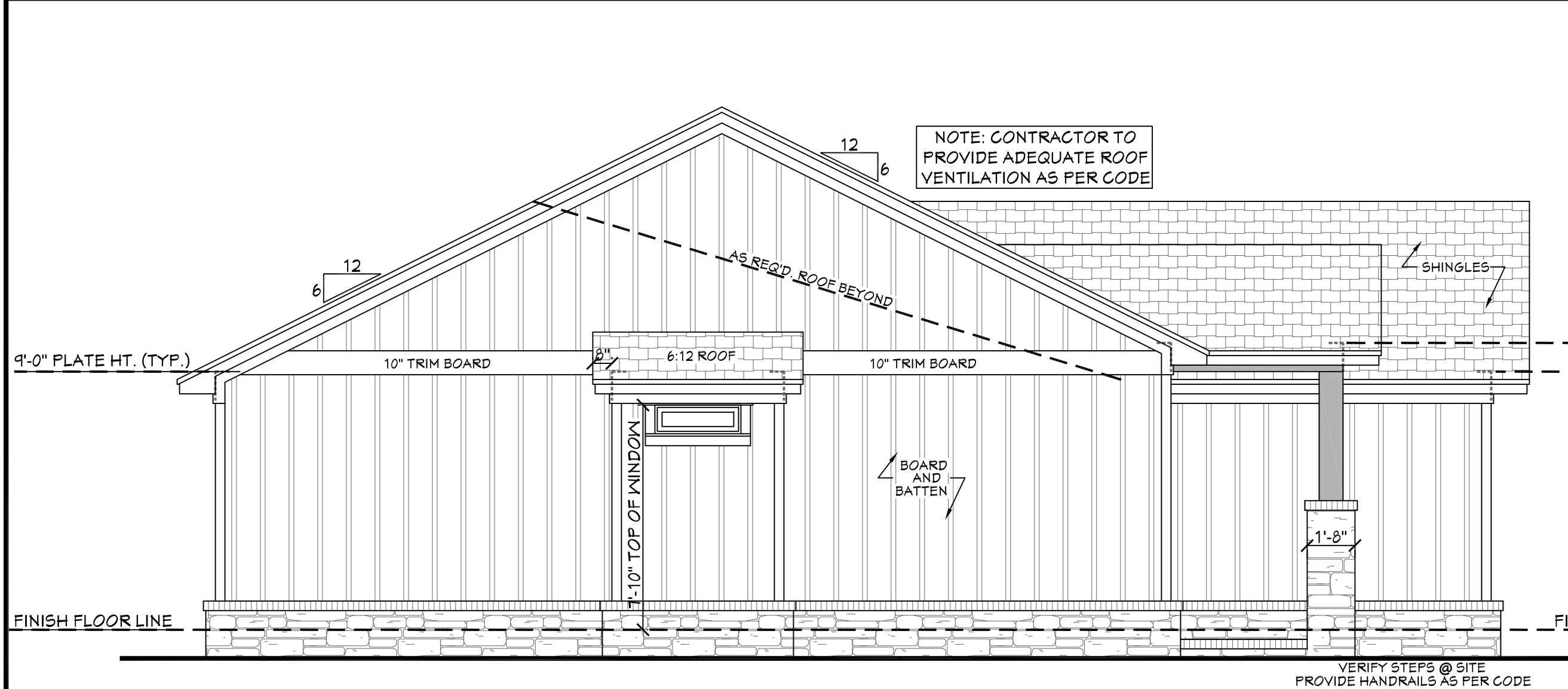


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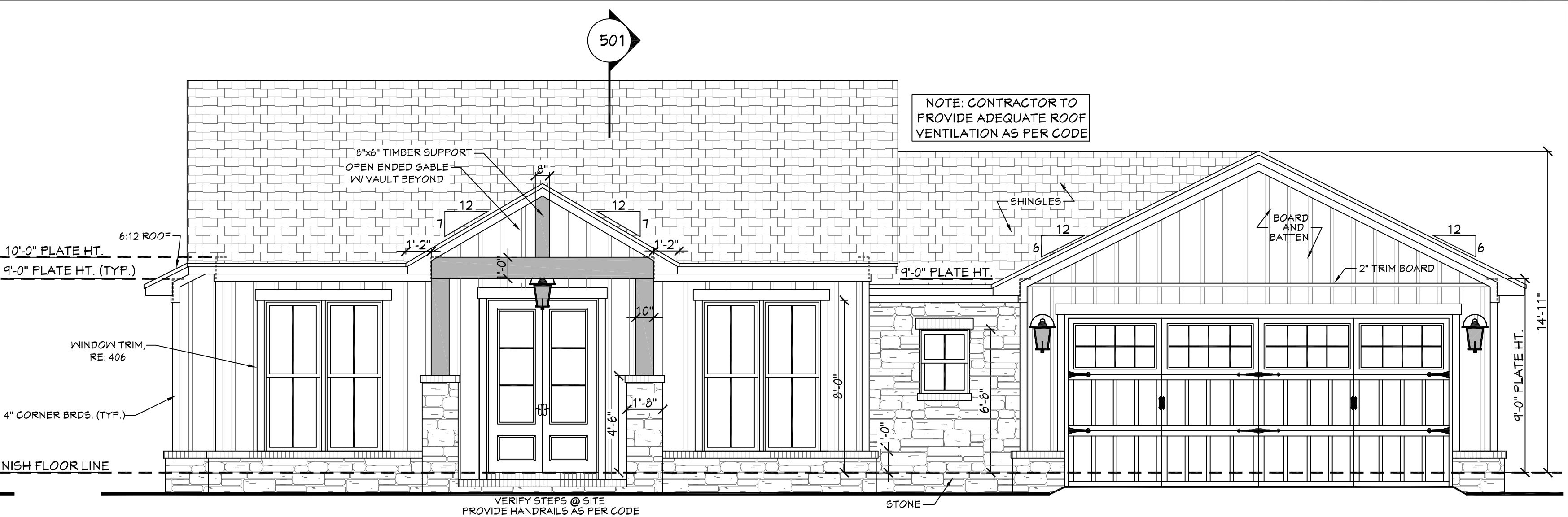
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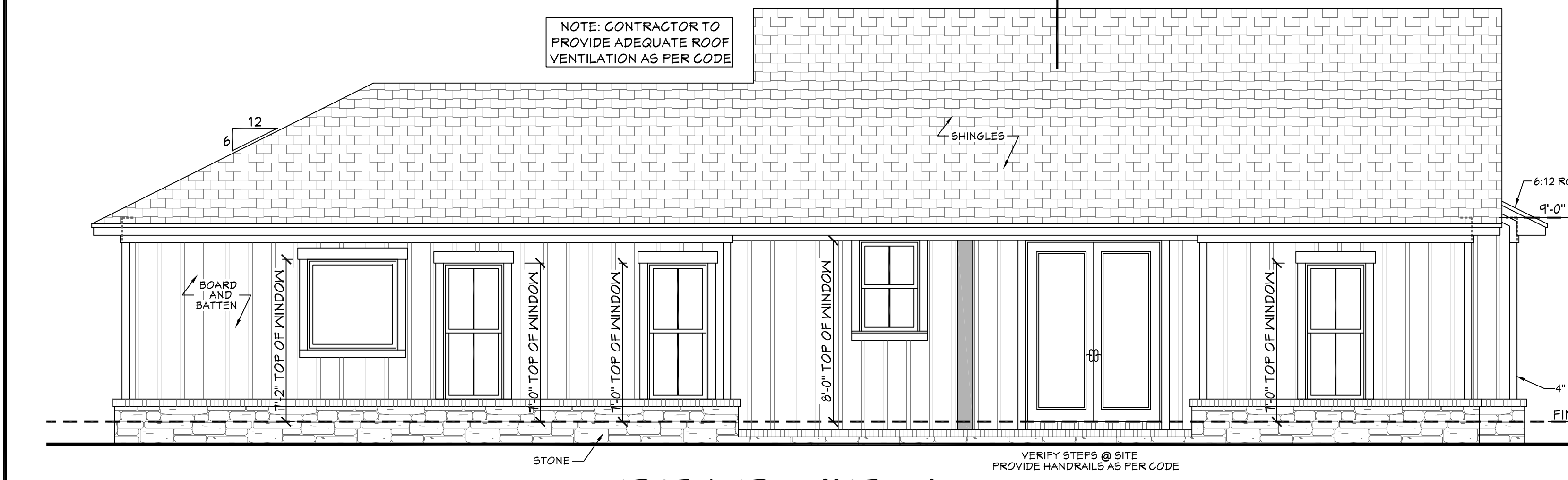
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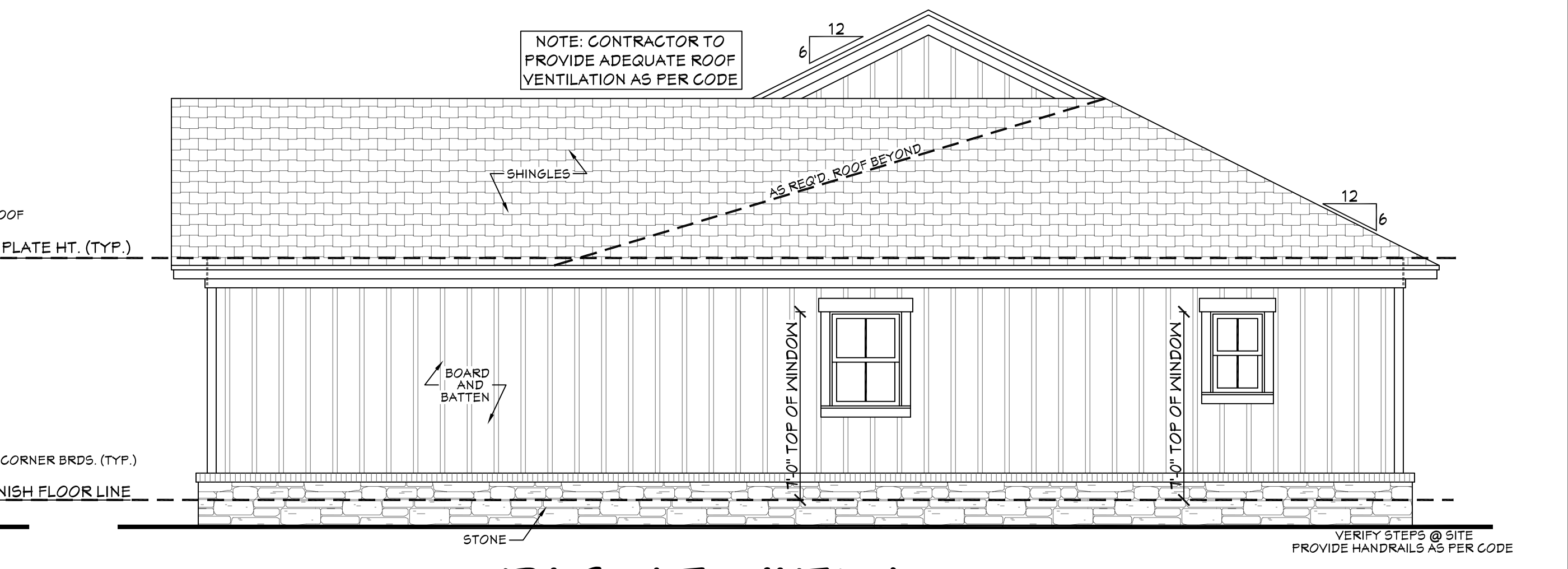
402 LEFT VIEW
 SCALE: 1/4" = 1'-0"



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



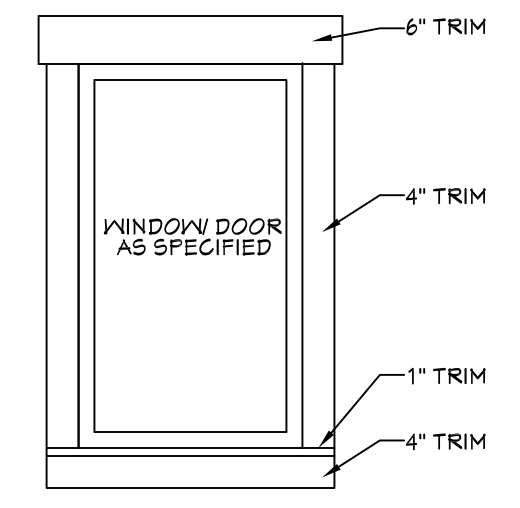
404 REAR VIEW
 SCALE: 1/4" = 1'-0"



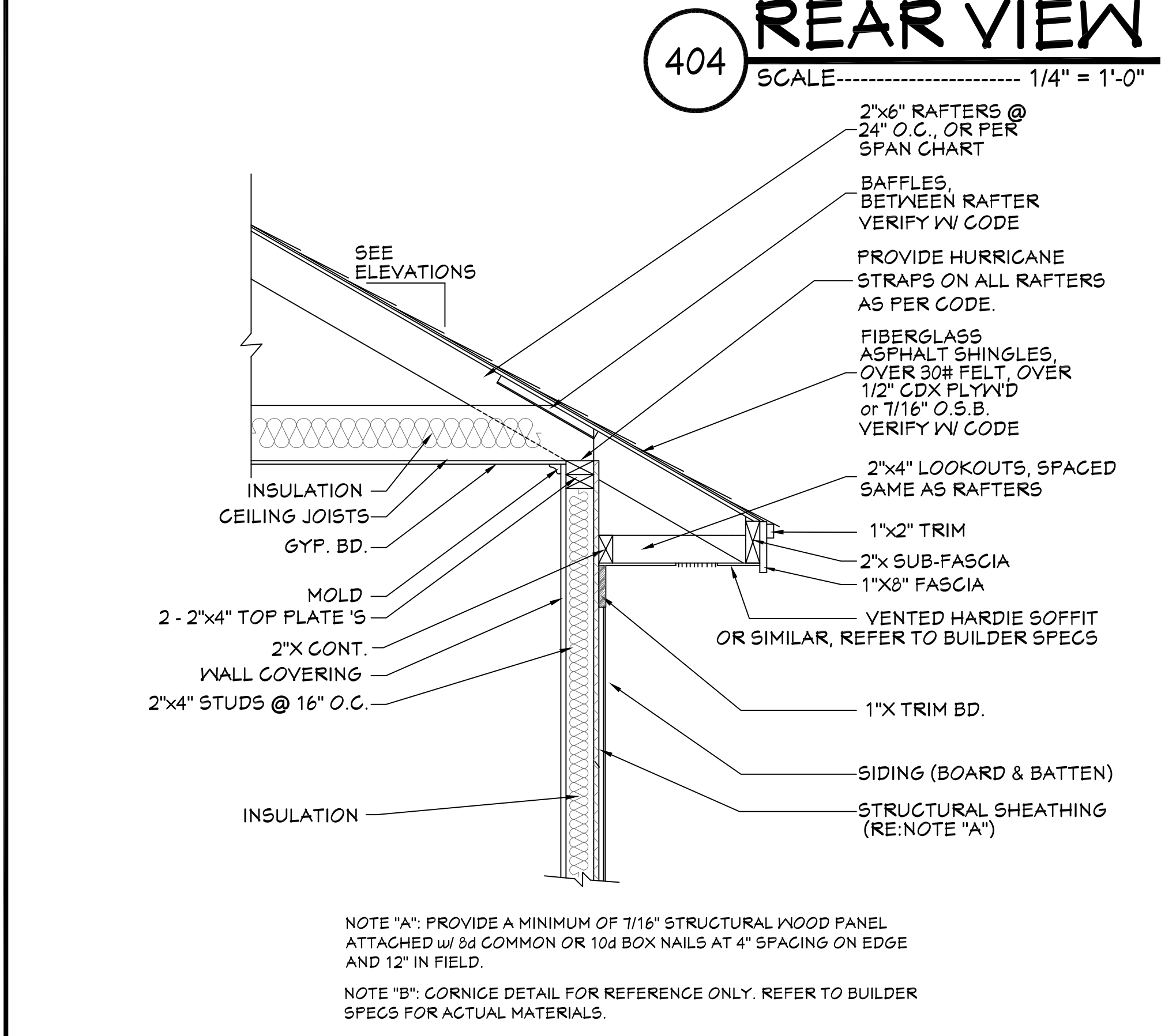
403 RIGHT VIEW
 SCALE: 1/4" = 1'-0"

EXTERIOR ELEVATION NOTES:

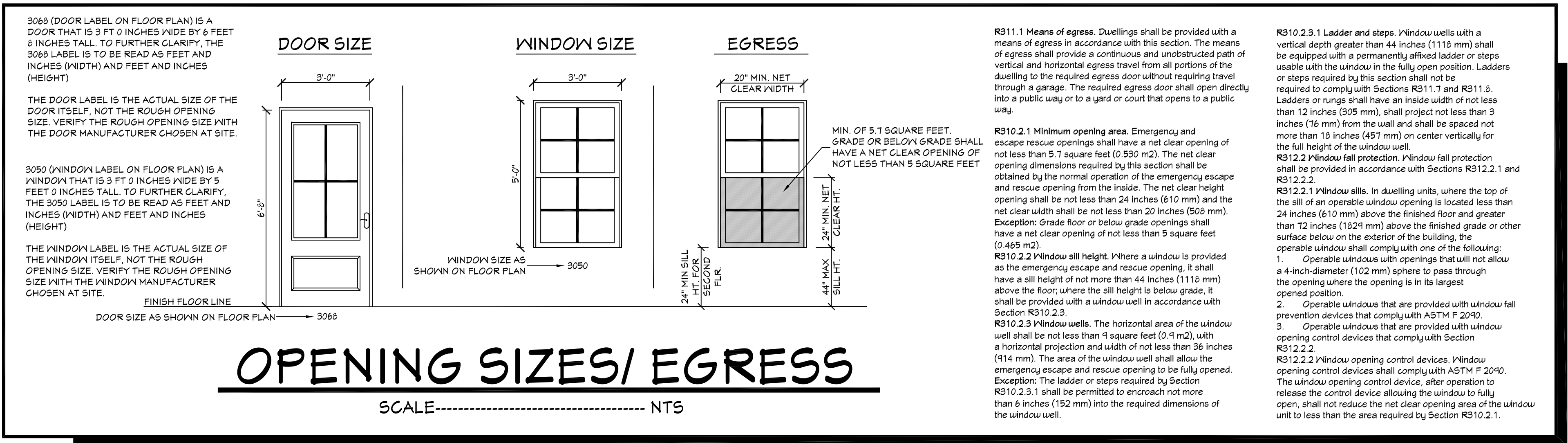
1. CONTRACTOR TO VERIFY ALL WINDOW AND DOOR STYLES AND SIZES WITH OWNER PRIOR TO CONSTRUCTION.
2. PROVIDE STEPS AND GUARD RAILS AS PER CODE BASED ON SITE CONDITIONS.
3. GROUND LINES SHOWN FOR REFERENCE ONLY AND VARY DEPENDING ON SITE CONDITIONS.
4. ALL FINISH MATERIALS TO BE VERIFIED WITH OWNER PRIOR 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.



406 TYPICAL TRIM DETAIL
 SCALE: 1/2" = 1'-0"



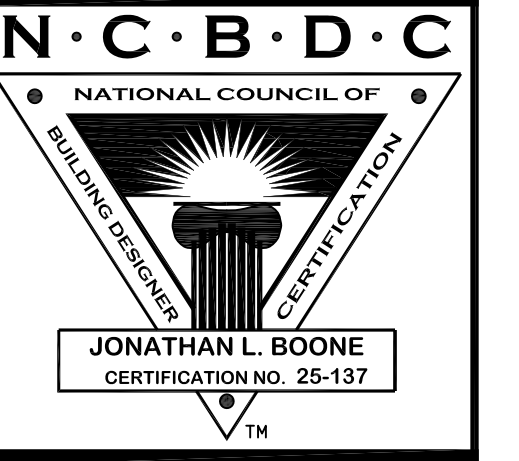
405 TYP. CORNICE DETAIL
 SCALE: 3/4" = 1'-0"



OPENING SIZES/ EGRESS
 SCALE: NTS

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Website:
Email:
sales@hpszplans.com
Phone:
601.336.3254
Fax:
1.800.574.1387



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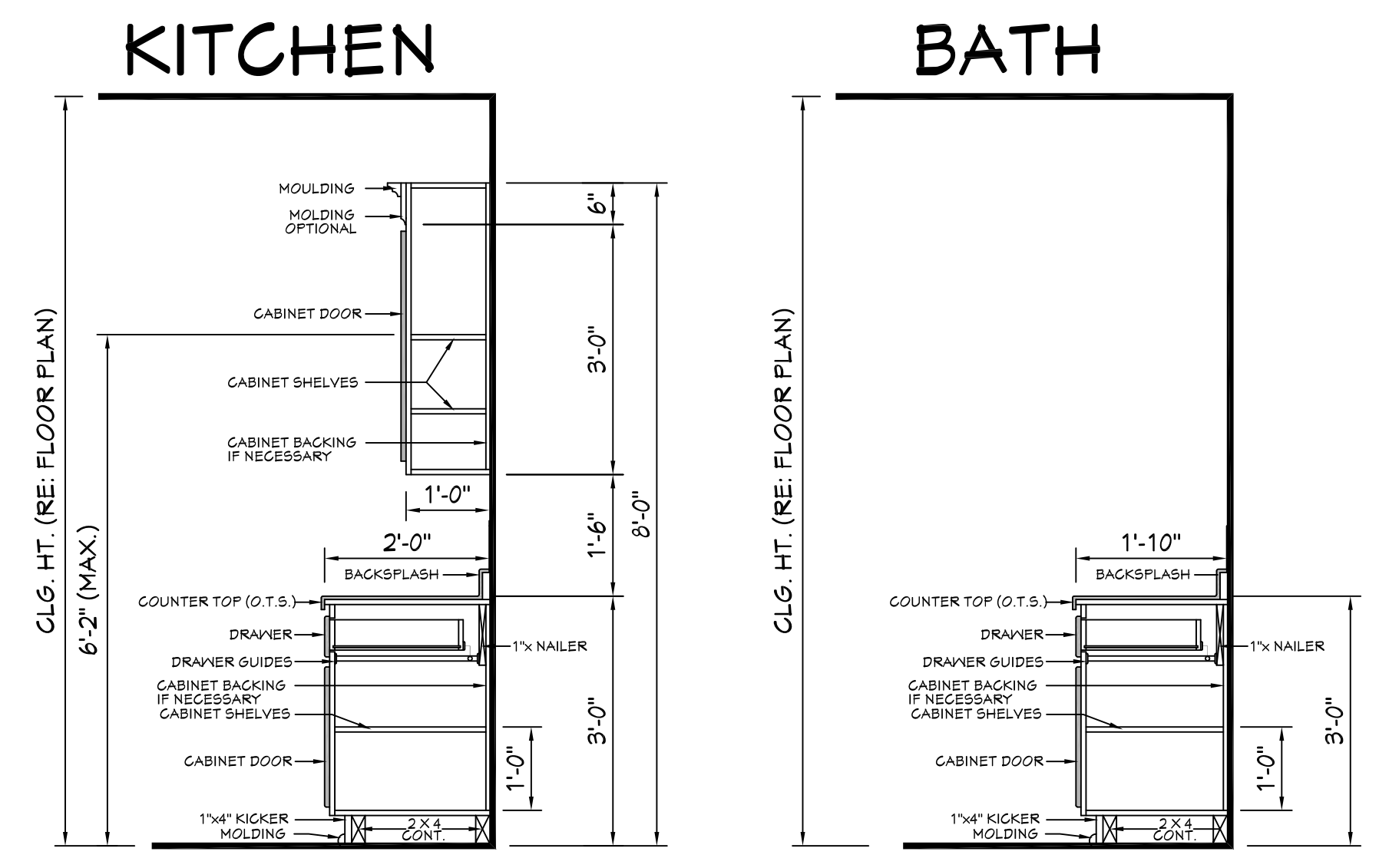
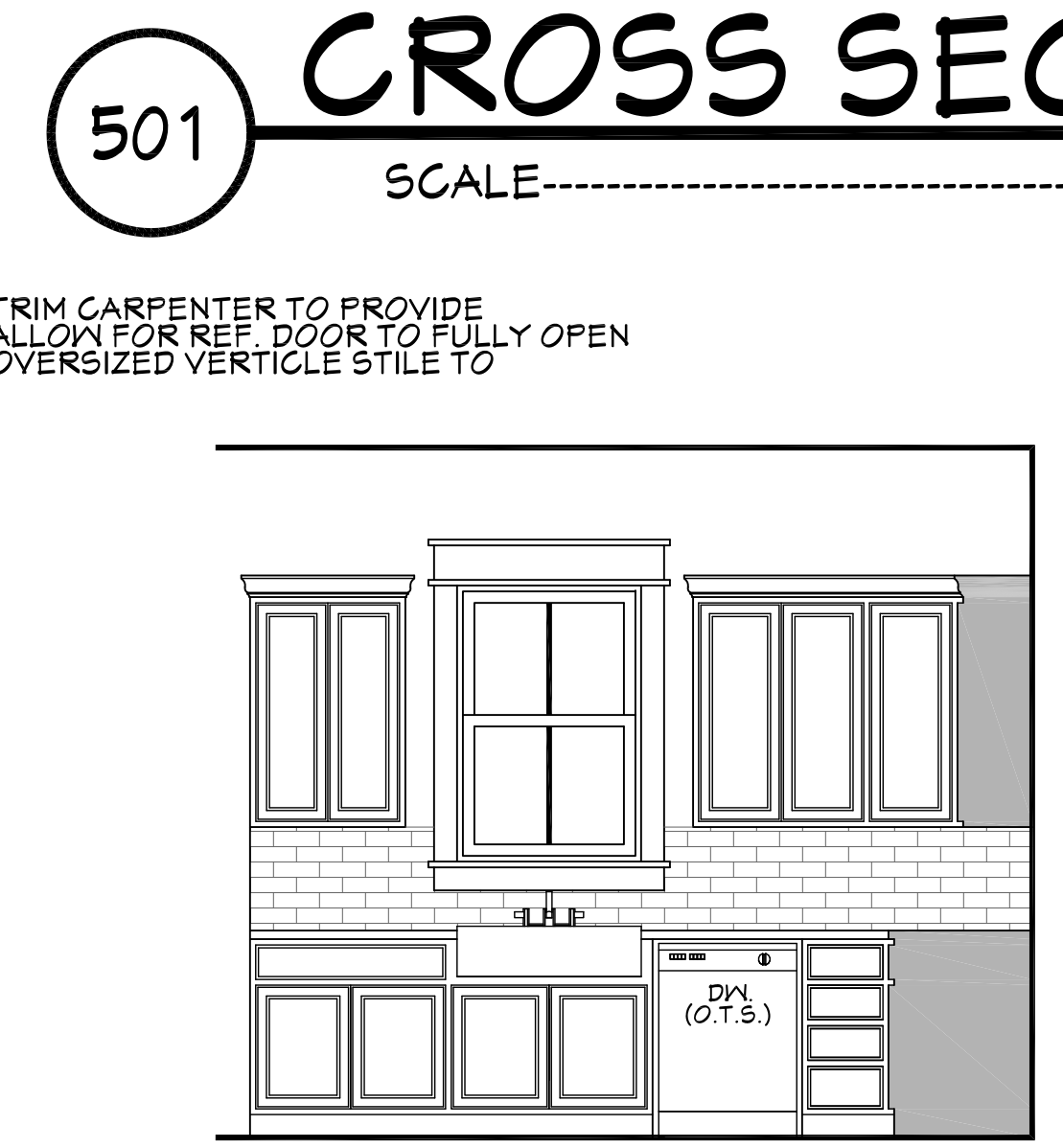
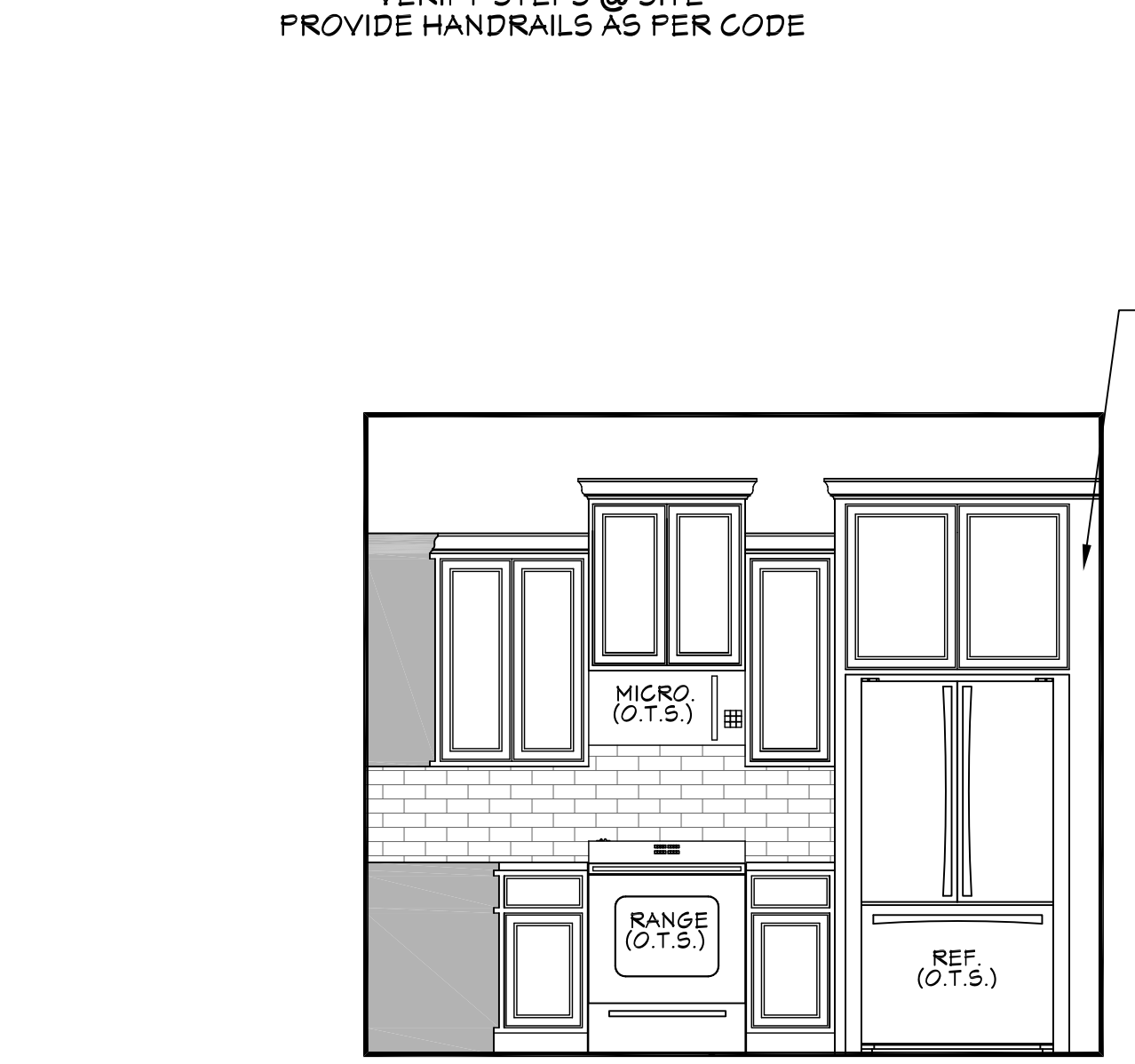
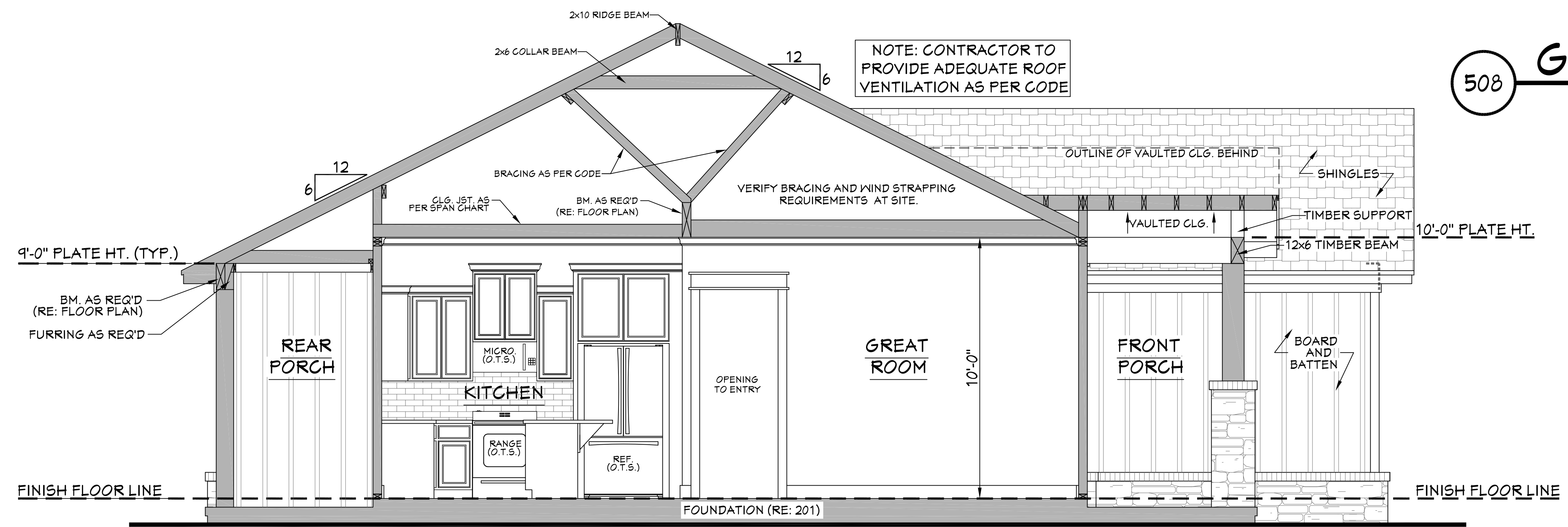
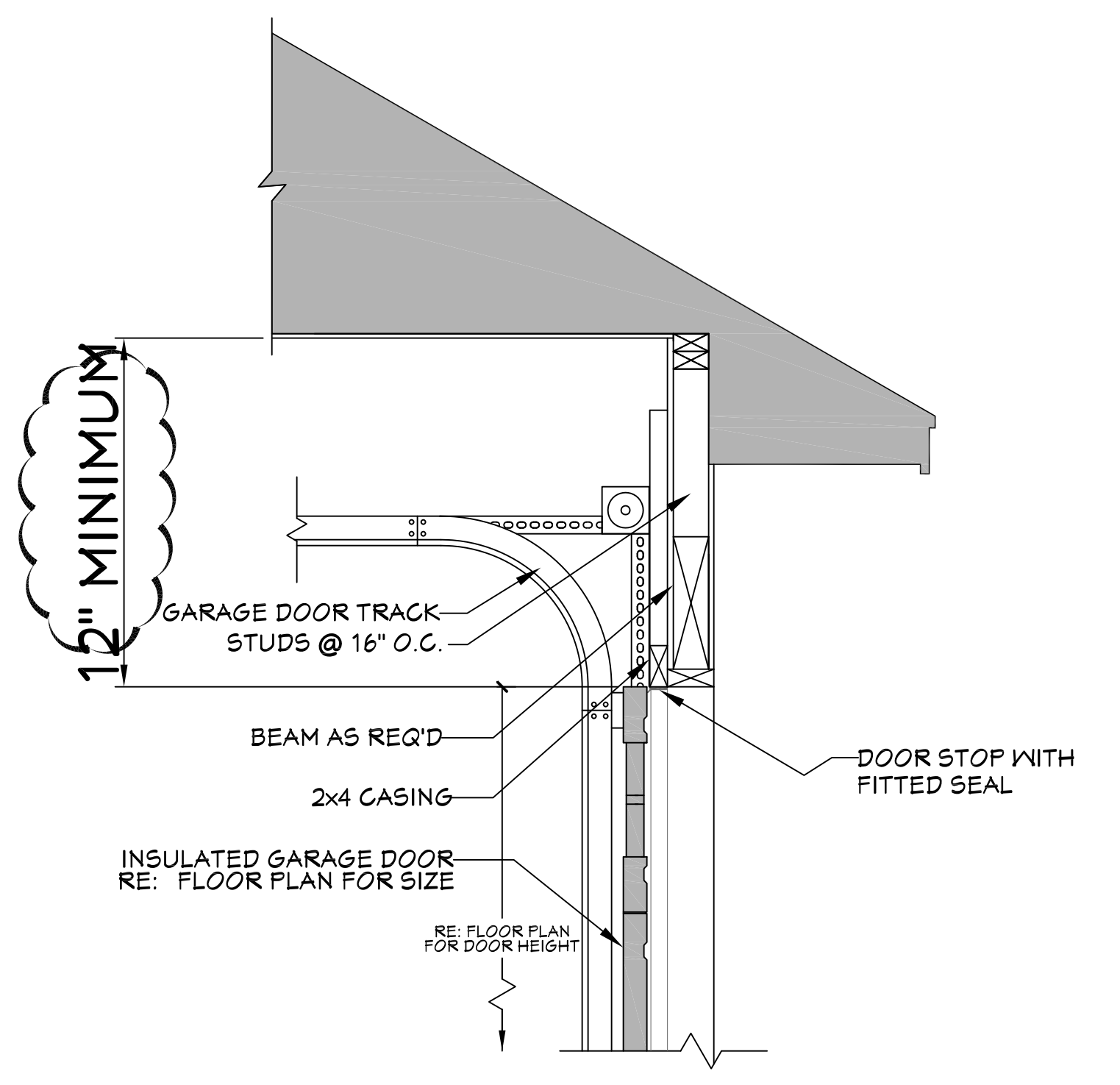
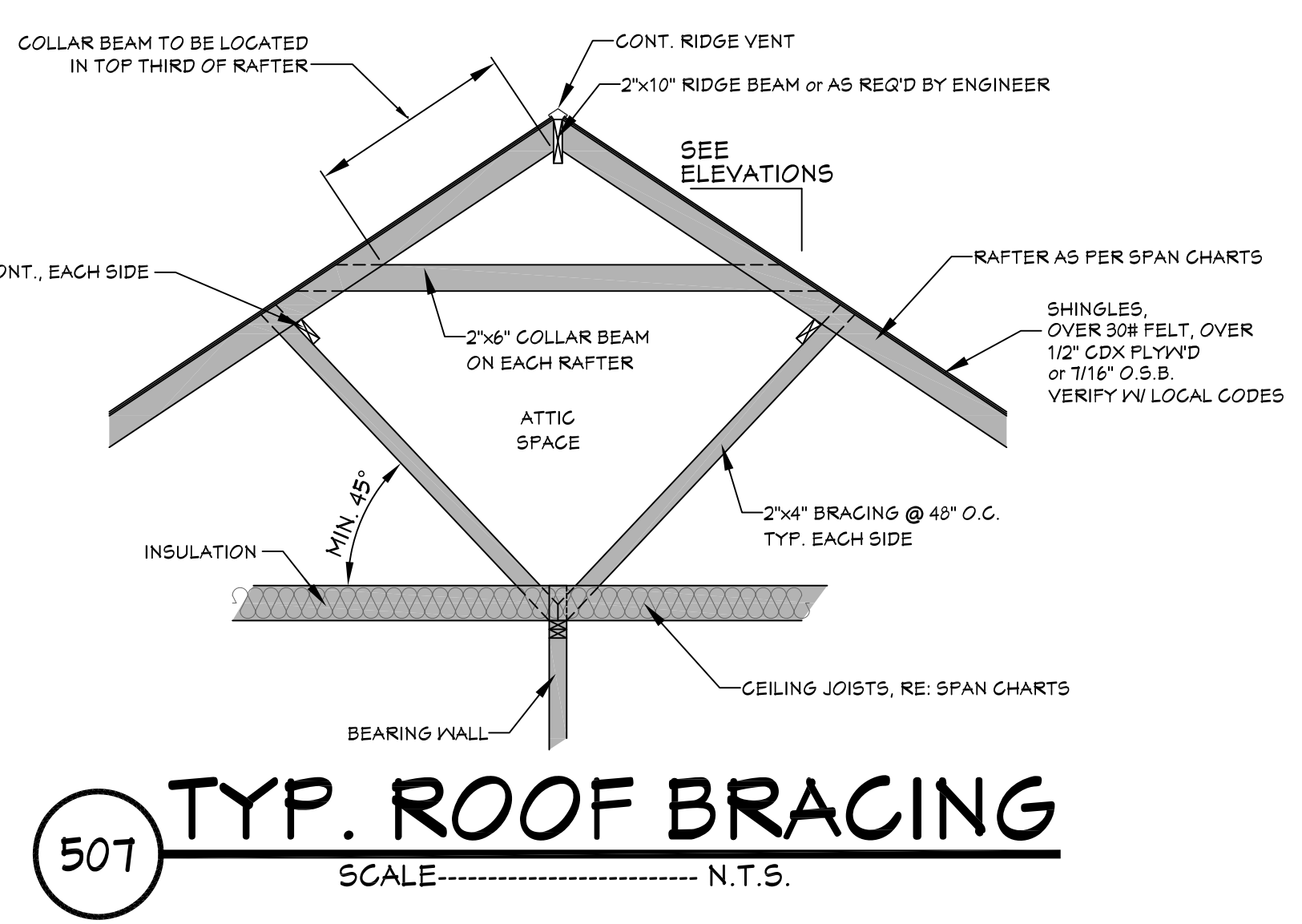
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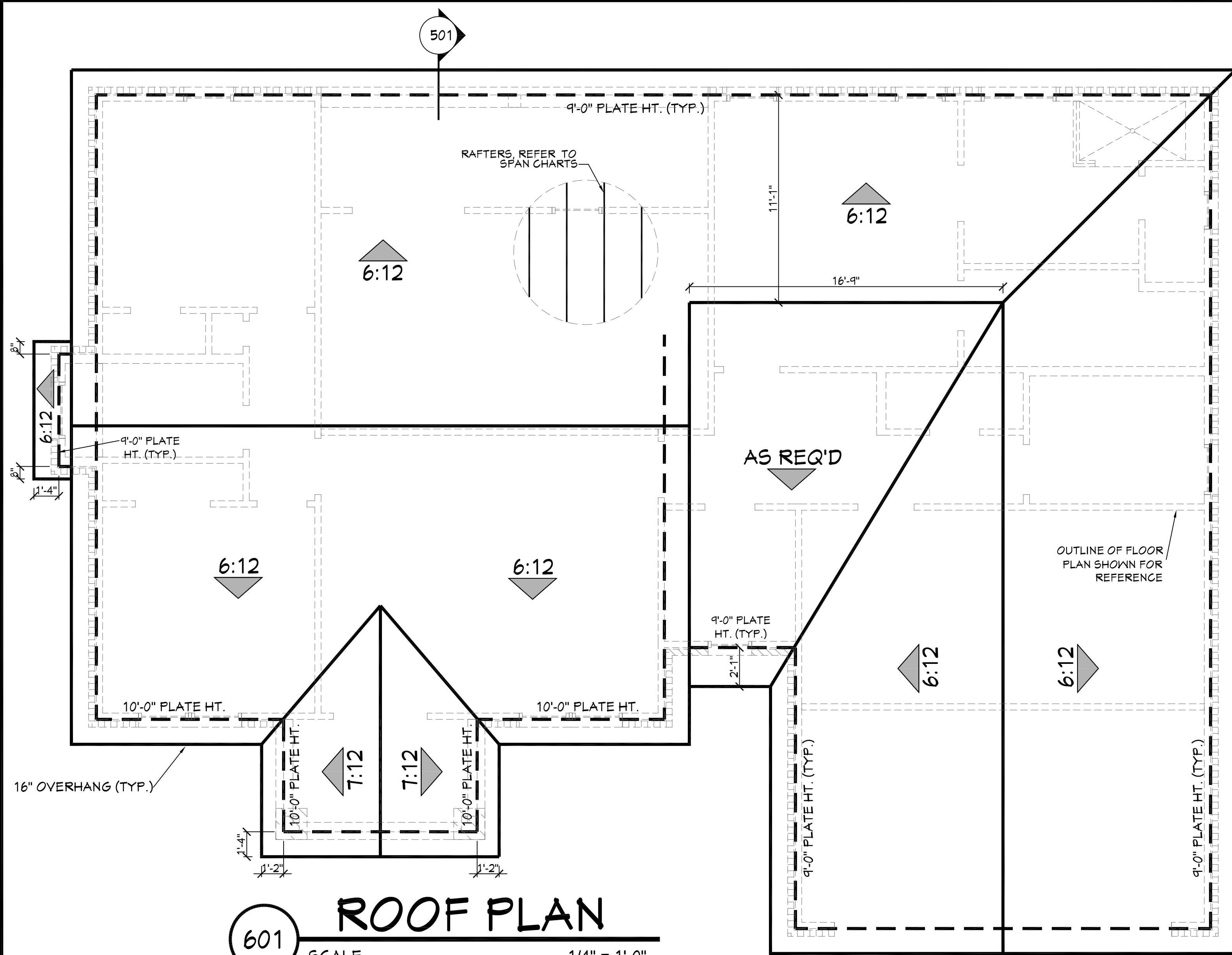
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- CROSS SECTION NOTES:**
1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AT SITE.
 2. ALL RIDGE BEAMS, HIP RAFTERS, & VALLEY RAFTERS TO BE 2" x 10", OR AS REQUIRED BY LOCAL ENGINEER.
 3. CONTRACTOR TO PROVIDE RAFTER BRACING TO MEET APPLICABLE CODES.
 4. CONTRACTOR TO THOROUGHLY WATERPROOF ALL EXTERIOR INTERSECTIONS AS PER CODE AND TYPICAL BUILDING PRACTICES.
 5. ALL BEAMS TO BE SIZED BY A LOCAL PROFESSIONAL OR LICENSED STRUCTURAL ENGINEER.
 6. ALL LUMBER SIZES AND SPACING TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
 7. CONTRACTOR TO PROVIDE ADEQUATE ROOF VENTILATION AS REQ'D. BY CURRENT CODES.





601 ROOF PLAN
SCALE----- 1/4" = 1'-0"

- ROOF PLAN NOTES:**
1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES
 2. ALL RIDGE BEAMS, HIP RAFTERS, & VALLEY RAFTERS CONTRACTOR TO TO BE 2" X 10", No. 2 S.Y.P. OR AS REQ'D BY ENGINEER.
 3. ALL RAFTERS 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.

HIP/VALLEY CONVERSION

IF COMMON RAFTER ROOF PITCH IS:		THEN HIP/VALLEY RAFTER ROOF PITCH BECOMES:	
RISE/RUN	SLOPE	RISE/RUN	SLOPE
1/12	5°	1/11	5°
2/12	10°	2/11	10°
3/12	14°	3/11	14°
4/12	18°	4/11	18°
5/12	23°	5/11	23°
6/12	27°	6/11	27°
7/12	30°	7/11	30°
8/12	34°	8/11	34°
9/12	37°	9/11	37°
10/12	40°	10/11	40°
11/12	42°	11/11	45°
12/12	45°	12/11	45°

CONVERSION CHART FOR SIMPLE ROOFS ONLY. CHART DOES NOT APPLY FOR DUAL PITCH ROOFS.

RAFTER LENGTH CHART

ROOF PITCH	FACTOR
3/12	1.05
4/12	1.07
5/12	1.10
6/12	1.14
7/12	1.17
8/12	1.20
9/12	1.25
10/12	1.30
11/12	1.35
12/12	1.40
14/12	1.54
16/12	1.70

MULTIPLY HORIZONTAL SPAN OF MEMBER BY FACTOR. CHOOSE APPROPRIATE FACTOR BY ROOF PITCH.

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	2 x 6
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 2018 TABLE R802.5.1(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 4	2 x 6
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 2018 TABLE R802.4.1(3)

MAXIMUM HEADER SPANS

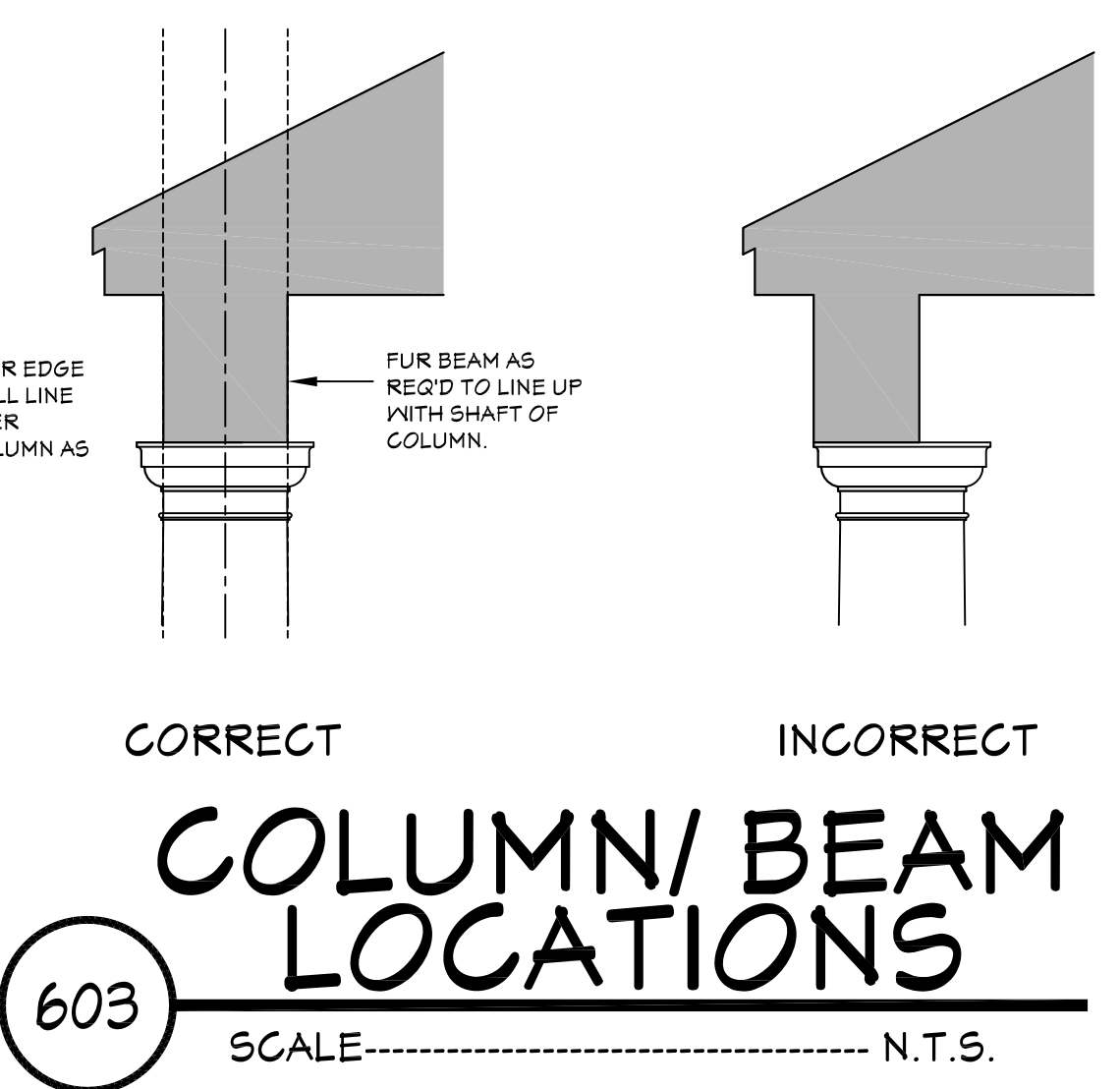
HEADER SPANS FOR EXTERIOR BEARING WALLS
SOUTHERN PINE #2 OR BETTER LIVE LOAD=30psf DEAD LOAD = 10psf

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

SUPPORTING ROOF AND CEILING ONLY		
SIZE (NUMBER OF FLIES 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	2
(3) 2 x 12	10-1	2

SUPPORTING ROOF, CEILING AND ONE CENTER BEARING FLOOR		
SIZE (NUMBER OF FLIES 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 2018 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.



603 COLUMN/ BEAM LOCATIONS
SCALE----- N.T.S.

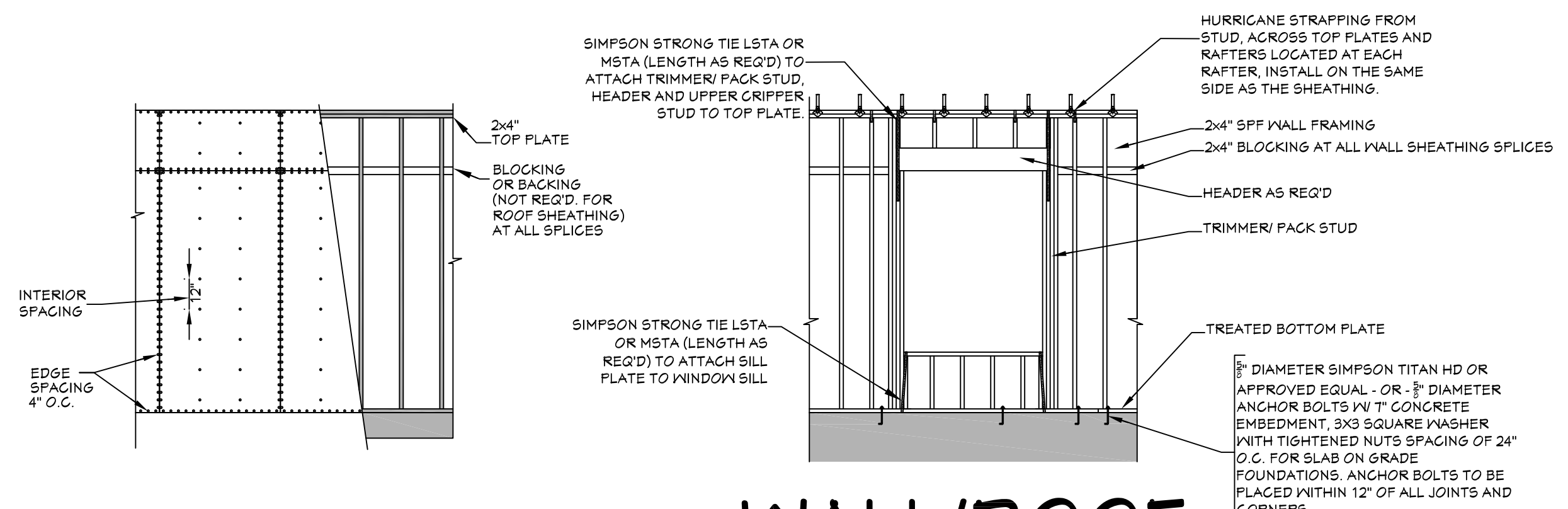
NAIL SIZE SPACING FOR WALL SHEATHING

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

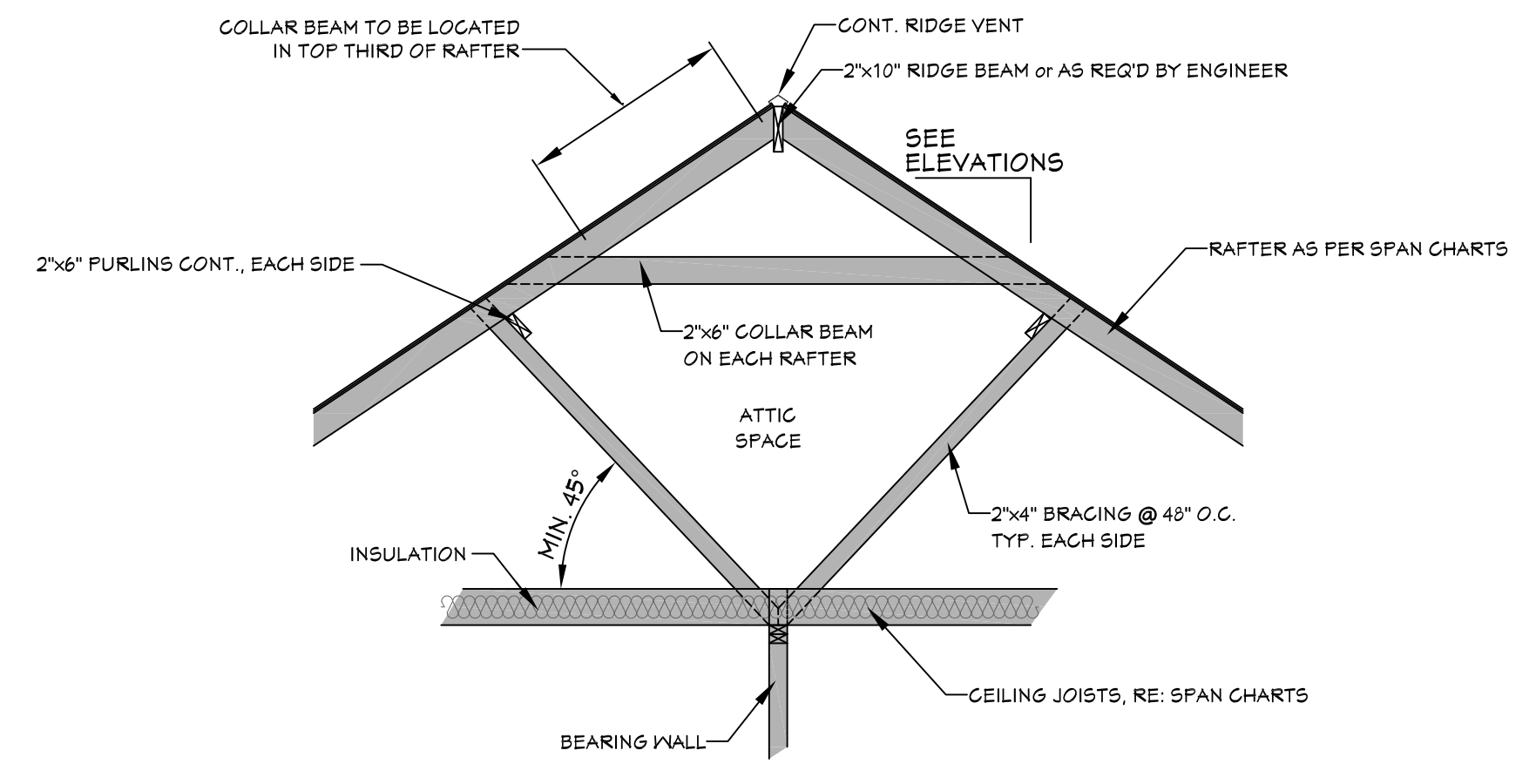
NAIL SIZE SPACING FOR ROOF SHEATHING

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.



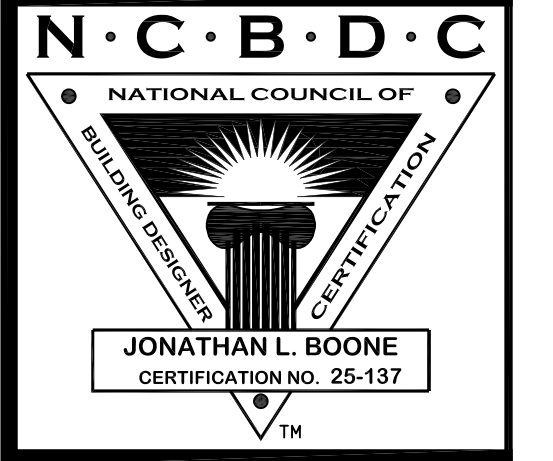
604 WALL/ROOF FASTENING DETAILS
SCALE----- 1/4" = 1'-0"



602 TYP. ROOF BRACING
SCALE----- N.T.S.

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Email:
sales@hfpzplans.com
Phone:
601.336.3254
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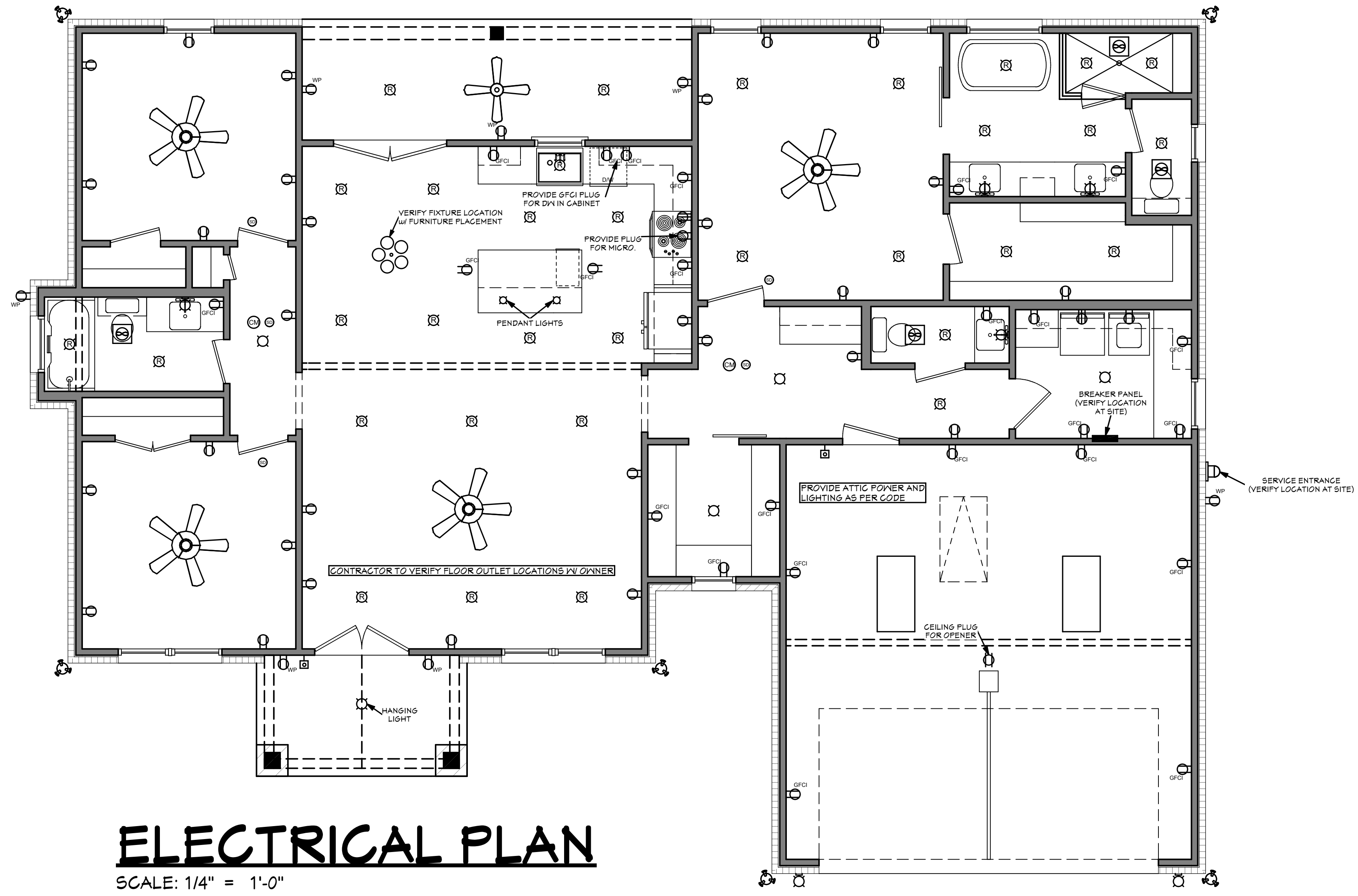
Pre-Drawn Plan ID:
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01.21.21
Drawn By:
J.A.L.

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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
	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)
	TELEVISION OUTLET (OWNER TO LOCATE)
	DOORBELL BUTTON (CONTRACTOR TO LOCATE)
	THERMOSTAT (CONTRACTOR TO LOCATE)
	CEILING EXHAUST FAN, VENT TO EXTERIOR
	TV SPEAKER
	RADIO SPEAKER
	CEILING FAN ONLY, NO LIGHT KIT
	CEILING FAN WITH LIGHT KIT
	TRACK LIGHTING (OWNER TO LOCATE)
	WALL SCONE (OWNER TO LOCATE)
	CHANDELIER 1 (O.T.S.)
	CHANDELIER 2 (O.T.S.)
	UNDER COUNTER LIGHTING
	EMERGENCY LIGHTING/ EXIT SIGN

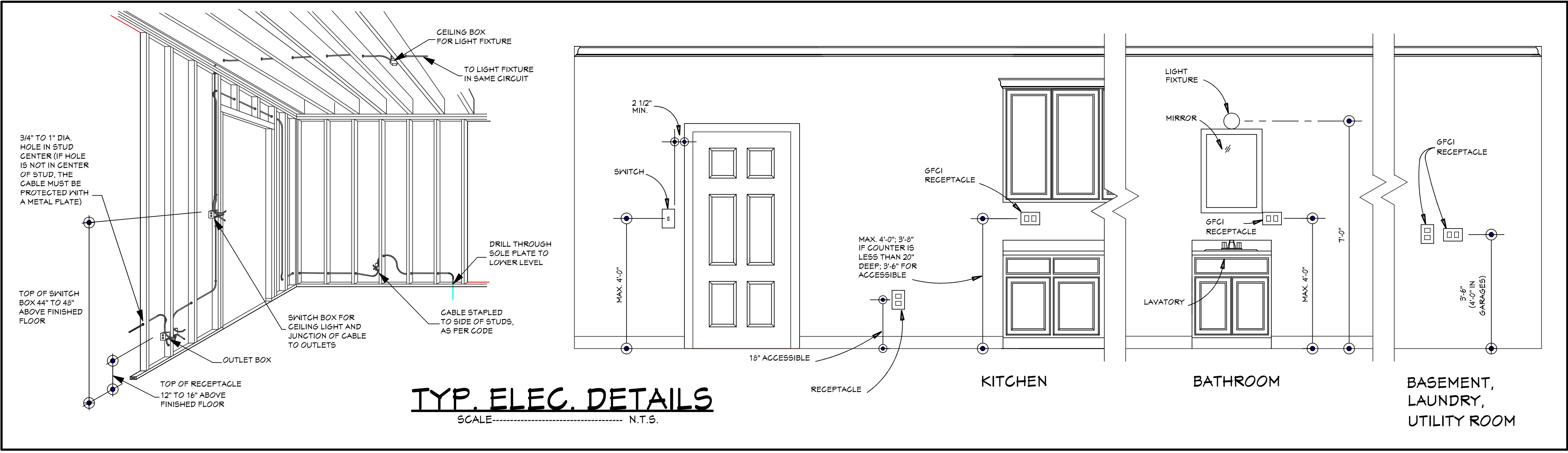
ELECTRICAL NOTES: (2018 IRC)

- ALL WORK SHALL COMPLY WITH ALL CODES APPLICABLE AT SITE.
- 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 IN 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.
- 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.
- 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 ARE NOT SHOWN. OWNER TO LOCATE THESE ITEMS DURING ELECTRICAL WALK-THROUGH WITH ELECTRICAL CONTRACTOR AT SITE.



TYP. ELEC. DETAILS
SCALE:----- N.T.S.

House Plan Zone, LLC has exercised great care and effort in the development of these plans and the completion of these construction documents. However, the user of these plans assumes all 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. 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.

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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REPRODUCTION OF THESE CONSTRUCTION PLANS, EITHER IN WHOLE OR IN PART, INCLUDING ANY FORM OF COPYING AND/OR PREPARATION OF A DERIVATIVE WORKS THEREOF, FOR ANY REASON IS STRICTLY PROHIBITED. THE PURCHASE OF A SET OF CONSTRUCTION PLANS IN NO WAY TRANSFERS ANY COPYRIGHT OR OTHER OWNERSHIP INTEREST IN IT TO THE PURCHASER EXCEPT FOR A LIMITED LICENSING RELEASE TO USE THE SAID PLAN SET FOR CONSTRUCTING ONE AND ONLY ONE DWELLING UNIT. THE PURCHASE OF ADDITIONAL SETS OF THE SAID PLANS AT A REDUCED PRICE FROM THE ORIGINAL SET OR AS PART OF A MULTIPLE SET PACKAGE DOES NOT CONVEY TO THE PURCHASER A LICENSE TO CONSTRUCT MORE THAN ONE DWELLING. SIMILARLY, THE PURCHASE OF REPRODUCIBLE CONSTRUCTION PLANS (A.K.A. SEPIAS, MYLARS, OR VELLUMS) CARRIES THE SAME COPYRIGHT PROTECTION AS MENTIONED ABOVE. IT IS GENERALLY ALLOWED TO MAKE A MAXIMUM OF 10 COPIES FOR THE CONSTRUCTION OF A SINGLE DWELLING ONLY. TO USE ANY PLAN MORE THAN ONCE, AND TO AVOID ANY COPYRIGHT/ LICENSE INFRINGEMENT. IT IS NECESSARY TO CONTACT THE ORIGINAL DESIGNER TO RECEIVE A LICENSE FOR ANY EXTENDED USAGE. WHEREAS A PURCHASER OF REPRODUCIBLES IS GRANTED A LICENSE TO MAKE COPIES, IT SHOULD BE NOTED THAT AS COPYRIGHTED MATERIALS, MAKING PHOTOCOPIES FROM CONSTRUCTION PANS IS ILLEGAL. COPYRIGHT AND LICENSEE OF CONSTRUCTION PLANS EXISTS TO PROTECT ALL PARTIES. IT RESPECTS AND SUPPORTS THE INTELLECTUAL PROPERTY OF THE ORIGINAL ARCHITECT AND/OR DESIGNER. WHEREBY KEEPING IT POSSIBLE TO OFFER PRE-DRAWN PLANS AT AFFORDABLE PRICES COPYRIGHT LAW FOR PRE-DRAWN CONSTRUCTION PLANS IS NOW BEING VIGOROUSLY ENFORCED. COPYRIGHT INFRINGEMENT COULD LEAD TO FINES OF UP TO \$100,000 PER VIOLATION.

GENERAL SITE NOTES

1. CONTRACTOR TO VERIFY LOCATIONS OF SITE UTILITIES, REQUIREMENTS, AND CONNECTIONS FEES. OWNER, CONTRACTOR AND SUB-CONTRACTORS 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 STATES UTILITY LOCATOR FACILITATOR.
 3. IT IS RECOMMENDED THAT THE SITES 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 ON THIS PAGE FOR MORE DETAIL.
- 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 4 FEET (1219 MM) IN ANY HORIZONTAL DIMENSION MEASURING 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 2705.1.

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 (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 (914 MM) ABOVE THE FLOOR.
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 CLASS BALUSTER PANELS, OR SHALL BE OTHERWISE SUPPORTED TO REMAIN IN PLACE SHOULD ONE CLASS BALUSTER PANEL FAIL.

NOTE: SEE SECTION 308.4.4.1 FOR EXCEPTIONS.

R308.4.5 GLAZING AND WET SURFACES.
GLAZING IN WALL ENCLOSURES OR FENCES CONTAINING OR FACING 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.

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.
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/F2. 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 THAT OPENS TO A PUBLIC WAY.

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 (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.

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 ON WINDOWS SERVING AS A REQUIRED EMERGENCY ESCAPE AND RESCUE OPENING SHALL COMPLY WITH ASTM F2090.

R310.2 EMERGENCY ESCAPE AND RESCUE OPENINGS.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE MINIMUM DIMENSIONS AS SPECIFIED IN THIS SECTION.

R310.2.1 MINIMUM OPENING AREA.
EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A NET CLEAR OPENING OF NOT LESS THAN 5.7 SQUARE FEET (0.530 M2). THE NET CLEAR OPENING DIMENSIONS REQUIRED BY THIS SECTION SHALL BE OBTAINED BY THE NORMAL OPERATION OF THE EMERGENCY ESCAPE AND RESCUE OPENING FROM THE INSIDE. THE NET CLEAR HEIGHT OF THE OPENING SHALL BE NOT LESS THAN 24 INCHES (610 MM) AND THE NET CLEAR WIDTH SHALL BE NOT LESS THAN 20 INCHES (508 MM).

EXCEPTION: GRADE FLOOR OPENINGS OR BELOW-GRADE OPENINGS SHALL HAVE A NET CLEAR OPENING AREA OF NOT LESS THAN 5 SQUARE FEET (0.465 M2).

R310.2.2 WINDOW SILL HEIGHT.
WHERE A WINDOW IS PROVIDED AS THE EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL HAVE A SILL HEIGHT OF NOT MORE THAN 44 INCHES (1118 MM) ABOVE THE FLOOR; WHERE THE SILL HEIGHT IS BELOW GRADE, IT SHALL BE PROVIDED WITH A WINDOW WELL IN ACCORDANCE WITH SECTION R310.2.3.

R310.2.3 WINDOW WALLS.
THE HORIZONTAL AREA OF THE WINDOW 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 AREA OF THE WINDOW WELL SHALL ALLOW THE EMERGENCY ESCAPE AND RESCUE OPENING TO BE FULLY OPENED.

SEE SECTION 310.2.3 FOR EXCEPTION

R310.2.3.1 LADDER AND STEPS.
WINDOW WALLS WITH A VERTICAL DEPTH GREATER THAN 44 INCHES (1118 MM) SHALL BE EQUIPPED WITH A PERMANENTLY AFFIXED LADDER OR STEPS USABLE WITH THE WINDOW IN THE FULLY OPEN POSITION. LADDERS OR STEPS REQUIRED BY THIS SECTION SHALL NOT BE REQUIRED TO COMPLY WITH SECTIONS R311.7. LADDERS OR 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 WINDOW WELL.

R310.2.3.2 DRAINAGE.
WINDOW WALLS SHALL BE DESIGNED FOR PROPER DRAINAGE BY CONNECTING TO THE BUILDING'S FOUNDATION DRAINAGE SYSTEM REQUIRED BY SECTION R405.1 OR BY AN APPROVED ALTERNATIVE METHOD.

NOTE: SEE SECTION 310.2.3.2 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.

R310.2.5 REPLACEMENT WINDOWS.
REPLACEMENT WINDOWS INSTALLED IN BUILDINGS MEETING THE SCOPE OF THIS CODE SHALL BE EXEMPT FROM THE MAXIMUM SILL HEIGHT REQUIREMENTS OF SECTION R310.2.2 AND THE REQUIREMENTS OF SECTION R310.2.1, 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.

R310.3 EMERGENCY ESCAPE AND RESCUE DOORS.
EMERGENCY ESCAPE AND RESCUE OPENING, IT SHALL BE A SIDE-HINGED DOOR OR A SLIDER WHERE THE OPENING IS BELOW THE ADJACENT GRADE. IT SHALL BE PROVIDED WITH AN AREA WELL.

R310.3.1 MINIMUM DOOR OPENING SIZE.
THE MINIMUM NET CLEAR HEIGHT OPENING FOR ANY DOOR THAT SERVES AS AN EMERGENCY AND ESCAPE RESCUE OPENING SHALL BE IN ACCORDANCE WITH SECTION R310.2.1.

R310.3.2 AREA WALLS.
AREA WALLS SHALL HAVE A WIDTH OF NOT LESS THAN 36 INCHES (914 MM). THE AREA WELL SHALL BE SIZED TO ALLOW THE EMERGENCY ESCAPE AND RESCUE DOOR TO BE FULLY OPENED.

R310.3.2.1 LADDER AND STEPS.
AREA WALLS WITH A VERTICAL DEPTH GREATER THAN 44 INCHES (1118 MM) SHALL BE EQUIPPED WITH A PERMANENTLY AFFIXED LADDER OR STEPS USABLE WITH THE DOOR IN THE FULLY OPEN POSITION. LADDERS OR STEPS REQUIRED BY THIS SECTION SHALL NOT BE REQUIRED TO COMPLY WITH SECTION R311.7. LADDERS OR 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 EXTERIOR STAIRWELL.

R310.3.2.2 DRAINAGE.
AREA WALLS SHALL BE DESIGNED FOR PROPER DRAINAGE BY CONNECTING TO THE BUILDING'S FOUNDATION DRAINAGE SYSTEM REQUIRED BY SECTION R405.1 OR BY AN APPROVED ALTERNATIVE METHOD.

NOTE: SEE SECTION 310.3.2.1 FOR EXCEPTION

R310.4 BARS, GRILLES, COVERS AND SCREENS.
WHERE BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS, AREA WALLS, OR WINDOW WALLS, THE MINIMUM NET CLEAR OPENING SIZE SHALL COMPLY WITH SECTIONS R310.2.1 THROUGH R310.2.3, AND SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNOWLEDGE OR FORCE GREATER THAN THAT REQUIRED FOR THE NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING.

R310.5 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 310.5 FOR EXCEPTIONS

R310.6 ALTERATIONS OR REPAIRS OF EXISTING BASEMENTS.
AN EMERGENCY ESCAPE AND RESCUE OPENING IS NOT REQUIRED WHERE EXISTING BASEMENTS UNDERGO ALTERATIONS OR REPAIRS.

NOTE: SEE SECTION 310.6 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) WHEN 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 OPEN-ABLE FROM INSIDE THE DWELLING WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

SEE SECTION 311.7.5. 2.1 FOR EXCEPTION

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. THE LANDING 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 1/2 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 7/34 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 THE 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.

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 HANDRAIL 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 (689 MM) WHERE HANDRAILS ARE INSTALLED ON BOTH SIDES.

NOTE: SEE SECTION 311.7. 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 LARGER THAN 15 1/2 INCHES (3935 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

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, 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 11/2 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 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 SILLS.
IN DWELLING UNITS, WHERE THE TOP OF THE SILL 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:

- 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.
- OPERABLE WINDOWS ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F2090.
- OPERABLE WINDOWS THAT ARE PROVIDED WITH WINDOW 4. OPENING CONTROL DEVICES THAT COMPLY WITH SECTION R312.2.2.

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 RESIDENTIAL FIRE 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 RESIDENTIAL FIRE 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 RESIDENTIAL FIRE 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.

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 ATTIC 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.

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.

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.

- IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 20 FEET (6096 MM) HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLIANCE.
- 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.
- PHOTOELECTRIC SMOKE 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.

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.

- THE DWELLING UNIT CONTAINS A FUEL-FIRED APPLIANCE.
- 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.

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 R315.6.1 THROUGH R315.6.4.

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:

- 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 EQUALLED OR EXCEEDED IN ANY YEAR.
- 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 TO TO ALTER THE BUILDING OR STRUCTURE IN VIOLATION OF THIS SECTION.

NOTE: SEE SECTION 322.1.5 FOR EXCEPTIONS

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, 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.

R322.2.2 ENCLOSED AREA BELOW DESIGN FLOOD ELEVATION.
THE DESIGN FLOOD ELEVATION SHALL:

- BE USED SOLELY FOR PARKING OF VEHICLES, BUILDING ACCESS OR STORAGE.
- 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 AND SECTION R322.3 FOR 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 DESIGN FLOOD ELEVATION
- R322.3.6 ENCLOSED AREAS BELOW DESIGN FLOOD 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/NSA-500.

SECTION R326 SWIMMING POOLS, SPAS AND HOT TUBS

R326.1 GENERAL.
THE DESIGN AND CONSTRUCTION OF POOLS AND SPAS SHALL COMPLY

CHAPTER 4 :: FOUNDATIONS

SECTION R401 GENERAL

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 CRAWL SPACE 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-TOLLUMBER 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-TUMBLE 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 NAPHTHATE. 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 OF F' _{CC} 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

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. 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 FIRE PLACES SHALL BE IN ACCORDANCE WITH SECTION R1001.2. THE SIZE OF FOOTINGS SUPPORTING PIERS ABOVE 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. WHEN APPLICABLE, THE DEPTH OF FOOTINGS SHALL ALSO CONFORM TO SECTIONS R403.1.4.1 THROUGH R403.1.4.2.

REFER TO SECTION 404.2 FOR FURTHER SPECIFICATIONS, NOTES AND DESIGN CRITERIA FOR WOOD 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.

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:

- EXTENDED BELOW THE FROST LINE SPECIFIED IN TABLE R301.2(1).
- CONSTRUCTED IN ACCORDANCE WITH SECTION R403.3.
- CONSTRUCTED IN ACCORDANCE WITH ASCE 32.
- 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 BEAMS SHALL BE 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 R603.3.1 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.

NOTE: SEE SECTION 403.1.6 FOR EXCEPTIONS

R403.1.6.1 FOUNDATION ANCHORAGE IN SEISMIC DESIGN CATEGORIES C, D0, D1 AND D2.
ADDITIONAL 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 1806.6 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 H

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 1/2 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 AC 332. FLOORS SHALL BE A MINIMUM 3/4 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 OR 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 6-MIL (.006 INCH, 152 MM) POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED NOT LESS THAN 6 INCHES (152 MM) SHALL BE PLACED BETWEEN THE CONCRETE FLOOR SLAB AND THE 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. 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
REFER TO THE IRC FOR INFORMATION REGARDING FOOTINGS.

R507.4 DECK POSTS.
FOR SINGLE-LEVEL WOOD-FRAMED DECKS WITH BEAMS SIZED IN ACCORDANCE WITH TABLE R507.5, DECK 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 TABLE R607.5. BEAM PLIES SHALL BE FASTENED WITH TWO ROWS OF 100 (3/4-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 ALLOWABLE 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 DECKING SHALL BE IN ACCORDANCE WITH TABLE R507.7. WOOD DECKING SHALL BE ATTACHED TO EACH SUPPORTING MEMBER WITH NOT LESS THAN TWO #8 THREADED NAILS OR TWO NO. 8 WOOD SCREWS. 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.

R507.8.1 DECK POST TO DECK FOOTING.
POSTS SHALL BEAR ON FOOTINGS IN ACCORDANCE WITH SECTION R403 AND FIGURE R507.8.1. POSTS SHALL BE RESTRAINED TO PREVENT LATERAL DISPLACEMENT AT THE BOTTOM SUPPORT. SUCH LATERAL RESTRAINT SHALL BE PROVIDED BY MANUFACTURED CONNECTORS INSTALLED IN ACCORDANCE WITH SECTION R507 AND THE MANUFACTURER'S INSTRUCTIONS OR A MINIMUM POST EMBEDMENT OF 12 INCHES (305 MM) IN SURROUNDING SOILS OR CONCRETE PIERS.

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 502.6.10 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(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 602.10.12 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 CONG. 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 AND FLASHED 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 ANSIDASMA 108, AND SHALL MEET THE ACCEPTANCE CRITERIA OF ANSIDASMA 108.

CHAPTER 7 :: INTERIOR 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.
ONE LAYER OF NO. 15 ASPHALT FELT, FREE FROM HOLES AND BREAKS, COMPLYING WITH ASTM D226 FOR TYPE 1 FELT OR OTHER APPROVED WATER-RESISTIVE BARRIER SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS. NO. 15 ASPHALT FELT SHALL BE APPLIED HORIZONTALLY WITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES (51 MM), WHERE JOINTS OCCUR, FELT SHALL BE LAPPED NOT LESS THAN 6 INCHES (152 MM). OTHER APPROVED MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE WATER-RESISTIVE BARRIER MANUFACTURER'S INSTALLATION INSTRUCTIONS. NO. 15 ASPHALT FELT OR OTHER APPROVED 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.

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 COVERINGS 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 FIBERGLASS 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 SINGLE-FASHION IN A MANNER TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURE. FLASHING SHALL BE APPLIED TO 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 EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH OR TO THE WATER-RESISTIVE BARRIER COMPLYING WITH SECTION 703.2 FOR SUBSEQUENT DRAINAGE. MECHANICALLY ATTACHED FLEXIBLE FLASHINGS SHALL COMPLY WITH AAMA 712. FLASHING AT EXTERIOR WINDOW AND DOOR OPENINGS SHALL BE INSTALLED IN ACCORDANCE WITH ONE OR MORE OF THE FOLLOWING:

REFER TO SECTION 1.1 THROUGH 1.3 FOR FURTHER SPECIFICATIONS.

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

- R703.5 WOOD, HARDBOARD AND WOOD STRUCTURAL PANEL SIDING.
- R703.6 WOOD SHAKES AND SHINGLES.
- R703.7 EXTERIOR PLASTER.
- 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 :: 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 802.1.7 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 R806.11(1), R806.11(2) AND R806.11(3) OR IN ACCORDANCE WITH AWC NDS. COMPONENTS OF ROOF-CEILINGS SHALL BE FASTENED IN ACCORDANCE WITH TABLE R802.3(1).

R802.3 FRAMING DETAILS.
RAFTERS SHALL BE FRAMED NOT MORE THAN 1 1/2-INCHES (38 MM) OFFSET FROM EACH OTHER TO RIDGE BOARD OR DIRECTLY OPPOSITE FROM EACH OTHER WITH A GUSSET PLATE AS A TIE. RIDGE BOARD SHALL BE NOT LESS THAN 1-INCH (25 MM) NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. AT VALLEYS AND HIPS THERE SHALL BE A VALLEY OR HIP RAFTERNOT LESS THAN 2-INCH (51 MM) NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER. HIP AND VALLEY RAFTERS SHALL BE SUPPORTED AT THE RIDGE BY A BRACE TO A BEARING PARTITION OR BE DESIGNED TO CARRY AND DISTRIBUTE THE SPECIFIC LOAD AT THAT POINT. WHERE THE ROOF PITCH IS LESS THAN THREE UNITS VERTICAL IN 12 UNITS HORIZONTAL (25-PERCENT SLOPE), STRUCTURAL MEMBERS THAT SUPPORT RAFTERS AND CEILING JOISTS, SUCH AS RIDGE BEAMS, HIPS AND VALLEYS, SHALL BE DESIGNED AS BEAMS.

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

- R802.4 ALLOWABLE CEILING JOIST SPANS.
- 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 OF THE MANUFACTURE OF METAL-PLATE-CONNECTED WOOD TRUSSES SHALL COMPLY WITH ANSITP1. THE TRUSS DESIGN DRAWINGS SHALL BE PREPARED BY A REGISTERED 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 WAIR 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-DOWN.

R802.11.1 UPLIFT RESISTANCE. ROOF ASSEMBLIES SHALL HAVE UPLIFT RESISTANCE IN ACCORDANCE WITH SECTIONS R802.11.1.1 AND R802.11.1.2. WHERE THE UPLIFT FORCE DOES NOT EXCEED 200 POUNDS (90.8 KG), RAFTERS AND TRUSSES SPACED NOT MORE THAN 24 INCHES (610 MM) ON CENTER SHALL BE PERMITTED TO BE ATTACHED TO THEIR SUPPORTING WALL ASSEMBLIES IN ACCORDANCE WITH TABLE R602.3(1). WHERE THE BASIC WIND SPEED DOES NOT EXCEED 115 MPH, THE WIND EXPOSURE CATEGORY IS B, THE ROOF PITCH IS 5:12 (42-PERCENT SLOPE) OR GREATER, AND THE ROOF SPAN IS 32 FEET (9754 MM) OR LESS, RAFTERS AND TRUSSES SPACED NOT MORE THAN 24 INCHES (610 MM) ON CENTER SHALL BE PERMITTED TO BE ATTACHED TO THEIR SUPPORTING WALL ASSEMBLIES IN ACCORDANCE WITH TABLE R602.3(1).

R802.11.1.1 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.

R802.11.1.2 RAFTER UPLIFT RESISTANCE. INDIVIDUAL RAFTERS SHALL BE ATTACHED TO SUPPORTING WALL ASSEMBLIES BY CONNECTIONS CAPABLE OF RESISTING UPLIFT FORCES AS DETERMINED BY TABLE R802.11.1 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 SECTION R702.

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 ENTRY OF RAIN OR SNOW. VENTILATING OPENINGS SHALL HAVE A LEAST DIMENSION OF 1/16 INCH (1.6 MM) MINIMUM AND 1/4 INCH (6.4 MM) MAXIMUM. VENTILATING 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 EAIVE 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.

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
2 x 8	24.0	7-0

Rik Kowall, Supervisor
Anthony L. Noble, Clerk
Mike Roman, Treasurer



Trustees
Scott Ruggles
Liz Fessler Smith
Andrea C. Voorheis
Michael Powell

WHITE LAKE TOWNSHIP

7525 Highland Road • White Lake, Michigan 48383-2900 • (248) 698-3300 • www.whitelaketwp.com

November 30, 2023

Chase Middler
951 Clarkston Rd
Lake Orion, MI 48362

RE: Proposed Residential Structure at Vacant Lake Lane Dr Parcel ID: 12-21-278-010

Based on the submitted plans, the proposed residential structure does not satisfy the White Lake Township Clear Zoning Ordinance for R1-C zoning district.

Article 3.1.5 of the White Lake Township Clear Zoning Ordinance: Requires a minimum lot width of 100 ft, a minimum front yard setback of 35 ft, and a minimum rear yard setback of 35 ft.

The existing corner lot is legal non-conforming with one road frontage measuring 84.81 ft. The proposed new structure would have a 25 ft front yard setback; and based on the orientation of the proposed structure, the rear yard setback would be 15.4 ft.

Approval of the building permit would be subject to a variance to the schedule of regulations, Article 7 of the White Lake Township Clear Zoning Ordinance. ***Be advised, a certified boundary and location survey showing the proposed structure will be required by the ZBA.*** The Planning Department can be reached at (248)698-3300, ext. 5

Sincerely,

Nick Spencer, Building Official
White Lake Township

WHITE LAKE TOWNSHIP
ZONING BOARD OF APPEALS
APRIL 25, 2019
7525 Highland Road
White Lake, MI 48383

Ms. Spencer called the regular meeting of the White Lake Township Zoning Board of Appeals to order at 7:00 p.m. and led the Pledge of Allegiance. Roll was called:

ROLL CALL: Debby Dehart
Mike Powell – Excused
Nik Schillack
Cliff Seiber
Josephine Spencer –Chairperson
Dave Walz – Vice Chair - Excused
Allison Swanson - Excused

Also Present: Jason Iacoangeli, AICP, Staff Planner
Sherri Ward, Recording Secretary

Visitors: 15

Approval of the Agenda:

Mr. Schillack moved to approve the agenda as presented. Mr. Seiber supported and the MOTION CARRIED with a voice vote (4 yes votes)

Approval of Minutes:

Zoning Board of Appeals Meeting of March 28, 2019.

Mr. Schillack moved to approve the meeting minutes of March 28, 2019 as presented. Mr. Seiber supported and the MOTION CARRIED with a voice vote (4 yes votes)

New Business:

a.
Applicant: Steven Gangnier
2518 Tackles Drive

Location: White Lake, MI 48386
2518 Tackles Drive
White Lake, MI 48386, identified as 12-11-478-029
Request: Variance to Article 3.1.6 E. R1-D Single Family Residential: Front
Yard Setback, and Lot Coverage.

Chairperson Spencer noted for the record that 31 letters were sent out to residents in a 300 foot radius and none were received in favor, none in opposition, and none were returned by the USPS. Mr. Iacoangeli presented his staff planner report.

Property Description: The property at 2518 Tackles Drive is a single family home zoned R1-D Single Family Residential. The property is located in Supervisors Plat No. 3 on Pontiac Lake. The home currently uses a private well for water, and the public sanitary sewer for sanitation.

Applicant's Proposal: The applicant is proposing to construct a new 480 square foot (24 x 20) garage with an additional (16 x 38) or 608 square foot additional garage storage. The total new garage addition will be 1088 square feet. The applicant will be removing the existing (15 x 20) 300 square feet one car garage.

Staff Planner's Report: The applicant is proposing to construct a 1088 square foot garage addition to the existing home this new addition will require a front yard setback variance in amount of twenty (20') feet for an end result of ten (10') feet. The R1-D District requires a thirty (30') foot setback. This addition will be an improvement as the existing garage is located seven (7') feet from the front property line. The new garage will meet the rear and side-yard setbacks for the district. The new garage addition will also require a lot coverage variance.

The current lot coverage is as follows:

Current:

House: 2,480 Square feet
Existing Garage: 330 Square Feet
Shed: 183 Square Feet
Total: 2,993 (14.5%) Lot Size: 15,732 Square Feet

The proposed lot coverage is as follows:

Proposed:

House: 2,480 Square Feet
New Garage: 1,088 Square Feet
Shed: 183 Square Feet
Total: 3,751 (23.8%) Lot Size: 15,732 Square Feet

Based on the Departments analysis the applicant will need a 3.8% variance for lot coverage.

Steve Gangnier was in attendance to discuss his case. The current garage that is there is only a few feet off the road, and is a single car garage. He purchased some property from the neighbor

to improve his lot coverage. The height of the garage won't be any greater than the current house.

Mr. Seiber asked about the firewood stored alongside the house. It will be moved towards the water. Will the boat be stored in the garage? The boat will be stored in the garage or off site. Ms. Dehart asked about the shed near the water, that will be removed. Mr. Seiber wanted to mention that the purchase of the additional property from the neighbor really reduces the variance required and was very well done. The front yard setback is being reduced 3 feet, the purchase really makes this work.

Mr. Schillack moved to approve the variance requested by Steven Gangnier for the property at 2518 Tackles Drive identified as 12-11-478-029 in order to construct a garage addition. The variances requested are to Section 3.1.6: 1) A 20 ft. front yard setback variance from the required 30 ft. setback for an end result of 10 ft.; 2) A 3.8% (605 sq. ft.) maximum lot coverage variance from the required 20% (3,146 sq. ft.) for an end result of 23.8% (3,751 sq. ft). This approval will have the following conditions: The applicant will pull all necessary permits with the White Lake Township Building Department. Ms. Dehart supported and the MOTION CARRIED with a roll call vote: Schillack – yes, it improves the property and the neighborhood; Dehart – yes, for the reasons stated; Spencer – yes, she sees a hardship and the purchase of the additional property minimizes the variance needed; Seiber – yes, due to the improvement to front yard setback and the purchase of some neighboring property. (4 yes votes)

b.

Applicant: Michael Bullion
8306 Cascade St.
White Lake, MI 48386
Location: **8306 Cascade St.**
White Lake, MI 48386, identified as 12-36-453-017
Request: Variance to Article 3.1.6 E. R1-D Single Family Residential: Front Yard Setback, Side Yard Setbacks, Lot Coverage, Lot Size, and Lot Width. Article 7.28.A Repairs and Maintenance.

Chairperson Spencer noted for the record that 31 letters were sent out to residents in a 300 foot radius and none were received in favor, none in opposition, and none were returned by the USPS. Mr. Iacoangeli presented his staff planner report.

Property Description: The property at 8306 Cascade is a single family home zoned R1-D Single Family Residential. The property is located in the Russel Beach Neighborhood on Cooley Lake. The home currently uses a private well for water, and the public sanitary sewer for sanitation.

Applicant's Proposal: The applicant is proposing to remodel the existing home, and attach the home to the existing garage. The new addition to the house will include a 1,292 lower level addition, as well as 1,385 second floor addition. The new addition will attach the home to the existing garage.

Staff Planner's Report: Under the current Ordinance Section 7.28 Repairs and Maintenance the non-conforming structures are not to exceed fifty percent 50% of the State Equalized Valuation

in repairs in a given twelve (12) month period. This project will exceed this number. Further, the Ordinance does not allow for the cubic content of the non-conforming structure to be increased. Based on this, the applicant's proposal needs to be treated as a new home. All of the setback requirements will need to be met, or dimensional variances will be necessary. The existing garage appears to be built over the parcel line for the property. The home will also require a side-yard setback variance on the east side of the property in amount of (4.6') feet as the new home will be setback (5.4') feet from the property line. The home will also need a side-yard setback variance on the west side of the property in the amount of (2.5') feet with the new home being (7.5') feet from the property line. The new home will also require a variance for lot coverage.

The current lot coverage is as follows:

Current:

House: 1,326 Square feet

Existing Garage: 676 Square Feet

Total: 2,002 (31.0%) Lot Size: 6,444 Square Feet

The proposed lot coverage is as follows:

Proposed:

House: 2,618 Square Feet

Garage: 676 Square Feet

Total: 3,294 (51.1%) Lot Size: 6,444 Square Feet

Based on the Departments analysis the applicant will need a 31% variance for lot coverage. The lot is deficient in lot width being only forty-five (45') feet of the required eighty (80') feet for the district. Also, the lot is deficient in size being only 6,444 square feet of the required 12,000 square feet for the R1-D District.

Mr. Schillack asked about the ordinance regarding State Equalized Value (SEV) and the proposed construction. Mr. Iacoangeli stated that this calculation for the ordinance follows it to the letter and this will exceed this due to the cost of construction. This basically allows us to treat these major renovations as a new build.

Ms. Dehart asked when the garage was constructed. It was construction in 2015 and it wasn't built per the variances requested and is over the property line into the road right of way.

Mr. Schillack asked if we get in a bind if the addition is connected to the garage. Mr. Iacoaneli stated that it's a good questions, resolving the garage issue first is prudent. The applicant could state their proposal in this public hearing to set concerns and ask questions.

Michael Bullion was in attendance for his presentation. His stated that his home is an old cottage and they have one child and one on the way. They have to go down a stairway that not covered to go from the garage to house and he feels it's a legitimate hardship. He considered going up, but the house was built in 1920 and they have concerns about the structural integrity. The master bedroom is upstairs and there is only one exit. It's more safety and having a functional family home. The home is on a crawl space. Going up off the living room would

affect the view of their neighbor. Cascade has many homes with the same lot coverage. He feels it would be an improvement to the neighborhood. There was no malicious intent before and he didn't understand the dimensions and he will correct that. He can slice off a portion of the garage and put a stone wall and a light there to get them out of the road. He's adjusted to meet the side yard setback of 5%. He also worked to reduce lot coverage from 40% to 39%.

Ms. Dehart asked if cutting the garage off would take you to the setback granted in 2015? No, it gets you to a zero setback from the ROW.

Mr. Seibert asked if he could come back for a variance on the zero setback. Mr. Iacoangeli noted that he could, but they probably wouldn't entertain it. It's never been granted in 20 years that he knows of.

Mr. Schillack stated that there are so many variances, which do we want to focus on?

Chairperson Spencer opened the meeting to the public at 7:33 p.m. No one from the public spoke on the case, and the meeting was closed to public at 7:33 p.m.

Mr. Iacoangeli informed the applicant that the front yard subject was published for the meeting and they are within their rights in that area. He would caution a zero foot setback, 13 ft. was granted in 2015.

Regarding Variance #1, it's a zero. Ms. Spencer stated that it's a health, safety and welfare issue. It's too close. She concerned about granting less – what kind of liability does this get the Township in? There was discussion about the length of a car and how much room is needed between the road and a garage for parking.

The applicant noted that they are making Cascade a one way street. They have a utility pole there that would make it pretty hard for a car to hit the garage.

Mr. Seiber stated that the plan needs to be changed, and the garage cut back as discussed. Mr. Seiber would like to table this and not give any variances until this issue is resolved and the applicant works with the Planning Department. Mr. Seiber noted that this wouldn't have to be published again, unless other variances are requested.

Mr. Schillack moved to table variance request of Michael Bullion for 8306 Cascade identified as 12-36-453-017 to consider comments noted during this public hearing. Ms. Dehart supported and the MOTION CARRIED with a roll call vote: Schillack – yes, the garage has to be dealt with; Dehart – yes, due to the garage; Spencer – yes, the variance that was granted needs to be resolved; Seiber – yes, so the WLT Planning Department can reach a resolution regarding a garage. (4 yes votes)

c.

Applicant: Steve and Mary Luff
714 Elderberry Court
Walled Lake, MI 48390

Location: **3359 Duffield**
White Lake, MI 48383, identified as 12-07-377-023

Request: Variance to Article 3.1.6 E. R1-D Single Family Residential: Side Yard Setback, Minimum First Floor, Lot Coverage, Lot Size, and Lot Width. Article 7.28.A Repairs and Maintenance.

Chairperson Spencer noted for the record that 23 letters were sent out to residents in a 300 foot radius and none were received in favor, none in opposition, and none were returned by the USPS. Mr. Iacoangeli presented his staff planner report.

Property Description: The property at 3359 Duffield is a single family home zoned R1-D Single Family Residential. The property is located in Supervisors Plat No. 2 on White Lake. The home currently uses a private well for water, and a private septic system for sanitation.

Applicant's Proposal: The applicant is proposing to construct a new 690 square foot home after the removal of a legal non-conforming home is removed. This project has been applied for as a remodel of the existing home, with expansion of the second floor and digging out the crawl space to add a secure foundation and walkout.

Staff Planner's Report: Under the current Ordinance Section 7.28 Repairs and Maintenance the non-conforming structures are not to exceed fifty percent 50% of the State Equalized Valuation in repairs in a given twelve (12) month period. This project will exceed this number. Further, the Ordinance does not allow for the cubic content of the non-conforming structure to be increased. Based on this, the applicant's proposal needs to be treated as a new home. The applicant is proposing to construct a new 690 square foot home to replace an existing legal non-conforming cottage. The new home is being rotated onto a new foundation that will for new side yard setbacks. The home will require a variance on the North side of the property in the amount of 3.4' feet for an end result of 6.6' feet. The current home is setback 3.2' feet on the North Side. The home will require a side yard setback on the South side in the amount of 3.75' feet for an end result of 6.25'. The current setback is 7.5'. The home will also require a variance for minimum floor area the new home will be 690 square feet of the required 700 square feet for the district a difference of 10 square feet. The lot is deficient in lot size being only 5,529 square feet of the minimum 12,000 square feet for the R1-D District. Also, the lot is deficient in lot width being only 38 feet of the required 80.

Mr. Iacoangeli stated that due to the State Equalized Value (SEV), this is being looked at as a new home.

Mr. Seiber noticed that the Building Department report noted that a deck variance may be required, it won't be required. The loft is not counted in the square footage, usually just the ground floor of the room is considered. A two story home has to have a minimum of 700 square feet, but they missed by the size of a closet.

The applicant, Mary Luff reported that when they bought the house, the crawl was crumbling. They will move the house so it's more conforming and will dig a full basement for a walkout. They stayed within the existing foundation. They will be making a lot of improvements with the property being updated.

Mr. Iacoangeli reported that they were asked to provide rotation to the footprint of the house and by doing so they lessened the variances requested.

Ms. Dehart asked if the home is on a septic. It is, and they plan on using the existing septic.

The meeting was opened to the public at 7:55. Diane Hancock (3369 Duffield) was in attendance and she is the neighbor to the north. The property has been neglected for 20 years and it will be an improvement. Speaking for two other neighbors, everyone is in favor. The meeting was closed to the public at 7:56.

Mr. Seiber noted that this is an improvement to the setback. Overall it's 25.8 inches of improvement when you balance the two sides, it's a good project.

Mr. Seiber moved to approve the variance requested by Steve and Mary Luff for the property at 3359 Duffield identified as 12-07-377-023 in order to construct a new home. The variances requested to Article 3.1.6 and 7.28 are as follows: 1) A 3.4 ft. north side yard setback variance to the required 10 ft. for an end result of 6.6 ft.; 2) A 3.75 ft. south side yard setback variance to the required 10 ft. for an end result of 6.25 ft.; 3) A 10 sq. ft. minimum floor area variance to the required 700 sq. ft. for an end result of 690 sq. ft.; 4) A 6,471 sq. ft. variance to the minimum lot size from the required 12,000 sq. ft. for an end result of 5,529 sq. ft.; 5) A 42 ft. lot width variance from the required 80 ft. for an end result of 38 ft.; 7) Variance request of SEV - \$ 67,010, variance request of building - \$ 72,311. This approval will have the following conditions: Applicant will pull all necessary permits with the White Lake Township Building Department. Mr. Schillack supported and the MOTION CARRIED with a roll call vote: Schillack -- yes, hardship with the property and it appears to be significant improvement to the neighborhood; Dehart – yes, hardship with the lot and a betterment for the setbacks; Spencer – yes, hardship with the nonconforming lot and an improvement to lot and area; Seiber – yes, overall improvement on sideyard setbacks. (4 yes votes)

d.

Applicant: Derek Mack
3384 Knoll Court
Highland, MI 48356

Location: **Vacant Parcel – Lake Lane Drive**
White Lake, MI 48383, identified as 12-21-278-010

Request: Variance to Article 3.1.5 E. R1-C Single Family Residential: Front Yard Setback, Rear Yard Setback, and Lot Coverage.

Chairperson Spencer noted for the record that 14 letters were sent out to residents in a 300 foot radius and none were received in favor, none in opposition, and none were returned by the USPS. Mr. Iacoangeli presented his staff planner report.

Property Description: The vacant property at identified as 12-21-278-010 is located at the corner of Lake Lane and Highland Road (M-59). The property is zoned R1-C Single Family Residential and is located in Brooksvale Subdivision. The home will be connected to public water and public sanitary sewer.

Applicant's Proposal: The applicant is proposing to construct a new 2,079 square foot, 2-Story home on a vacant parcel. The parcel is a conforming lot for the R1-C district.

Staff Planner's Report: The applicant would like the home to face Lake Lane with the driveway being off of the Lake Lane side of the home. Because this is a corner lot the parcel has two front yard setbacks. The applicant is requesting a front yard setback variance from the Lake Lane Drive (West) in the amount of thirteen (13') feet to place the home twenty-two (22') feet from the property line. The applicant is also requesting a rear yard setback variance in the amount of ten (10') feet to place the home twenty-five (25') feet from the rear property line. It is likely that MDOT would not approve a drive-way location along M-59 for this home if applied for as a part of the access management plan for White Lake.

Mr. Iacoangeli reported that this is a remaining vacant lot on Lake Lane, near the Elizabeth Lake Road intersection. The chances of getting a curb cut along M59 these days would be very difficult.

Derek Mack was in attendance to discuss the proposed variances. He's trying to match with the current houses in the area and line the front yards up. He also has power lines to move around. He's looking for a 23 ft. front yard setback and 24 ft. in the rear. Aesthetically it makes sense.

Mr. Seiber asked about facing the house to M59 and a side entrance garage. The applicant stated that he looked at that initially, but he's trying to match with the neighbors on Lake Lane.

Chairperson Spencer opened the meeting to the public at 8:10 p.m. No one from the public spoke about the case, and the meeting was closed to the public at 8:10 p.m.

Mr. Seiber's first concern was the neighbor to the east having a rear yard facing the side of their home. Mack noted that if he faced M59, the house would only be 10 feet from the neighbor. The M59 setback is about 60 feet.

Mr. Schillack moved to approve the variance requested by Derek Mack for the property identified as 12-21-278-010 in order to construct a new home. The variances requested are to Article 3.1.5: 1) A 12 ft. front yard setback variance from the required 35 ft. for an end result of 23 ft.; 2) A 11 ft. East rear yard setback variance from the required 35 ft. for an end result of 24 ft. This approval will have the following conditions: Applicant will pull all necessary permits with the White Lake Township Building Department. Mr. Seiber supported and the MOTION CARRIED with a roll call vote: Schillack – yes, the variance makes sense to him, and he sees a hardship; Dehart – yes, hardship with the drive being on M59, access off Lake Lane is safer; Spencer – yes, this is a hardship for the reasons stated; Seiber – yes, no objections from neighbor to the East, and the proposed home mirrors the situation with the house across the street. (4 yes votes)

e.

Applicant: Donald and Karen McCuean
10687 Castlewood Drive
White Lake, MI 48386

Location: **10687 Castlewood Drive**
White Lake, MI 48386, identified as 12-34-151-005

Request: Variance to Article 3.1.6 E. R1-D Single Family Residential: Front Yard Setback, Side Yard Setback, Lot Coverage, Lot Size, and Lot Width.

Chairperson Spencer noted for the record that 11 letters were sent out to residents in a 300 foot radius and none were received in favor, none in opposition, and none were returned by the USPS. Mr. Iacoangeli presented his staff planner report.

Property Description: The property at 10687 Castlewood Drive is a single family home zoned R1-D Single Family Residential. The property is located in the Oak Dale Sub. on Sugden Lake. The home currently uses a private well for water, and will be connected to the public sanitary sewer.

Applicant's Proposal: The applicant is proposing to construct a new 32 x 24, 768 square feet detached garage.

Staff Planner's Report: The new detached garage will require a side yard setback on the West side of the property. The garage will require a front yard setback variance in the amount of twenty (20') feet, placing the new garage ten (10') feet from the property line. The setback will be 5' feet from the property line this will require a variance in the amount of 5'. The new garage will also require a lot coverage variance.

The current lot coverage is as follows:

Current:

House: 2,917 Square feet
Total: 2,917 (33.5%) Lot Size: 8,706 Square Feet

The proposed lot coverage is as follows:

Proposed:

House: 2,917 Square Feet
New Garage: 1,088 Square Feet
Total: 4,005 (46%) Lot Size: 8,706 Square Feet

Based on the Departments analysis the applicant will need a 26% variance for lot coverage. The lot is also deficient in size being only 8,706 square feet of the required minimum of 12,000 for the District. Also, the lot is only fifty (50') feet wide or the required eighty (80') required for R1-D.

Donald McCuean was in attendance to discuss his variances. He is asking to replace the old septic area with a garage. He would like to have a garage, but the lot is only 50 wide.

Mr. Seiber asked if the applicant stored items across the street. It's for sale but the owner had allowed him to store things there. He asked if there is a vacant lot at the end of the street, and there is.

Mr. Schillack asked if there is storage above the garage. Yes, there is. He is trying to match the house as close as possible. Ms. Dehart asked if he will remove the shed across the street, and yes, he will take that out.

Chairperson Spencer opened the meeting to the public at 8:20 p.m. No one from the public spoke on the case and the meeting was closed to the public at 8:20 p.m.

Mr. Seiber noted that the big issue is lot coverage, the house alone is 33%. The fact that it's at the end of the road is nice. The houses that are 2 and 3 doors down have similar situations. There are 3 houses in that area that are closer than the 30 feet setback.

Mr. Seiber moved to approve the variance requested by Donald and Karen McCuean for the property at 10687 Castlewood Drive identified as 12-34-151-005 in order to construct a detached garage. The variances requested are to Article 3.1.5 and 3.1.6: 1) 20 ft. front yard setback variance to the required 30 ft. for an end result of 10 ft.; 2) A 5 ft. South side yard setback to the required 10 ft. for an end result of 5 ft.; 3) A 26% (2,264 sq. ft.) maximum lot coverage variance to the required 20% (1,741 sq. ft.) for an end result of 42% (4,005 sq. ft.); 4) A 3,294 sq. ft. minimum lot size variance to the required 12,000 sq. ft. for an end result of 8,706 sq. ft.; 5) A 30 ft. required lot width variance to the required 80 ft. for an end result of 50 ft. This approval will have the following conditions: Applicant will pull all necessary permits with the White Lake Township Building Department. Ms. Dehart supported and the MOTION CARRIED with a roll call vote: Schillack – yes, sees a hardship; Dehart – yes, improvement with hooking into sewer and eliminating the septic; Spencer – yes, hardship and improvement; Seiber -- yes, he needs the garage. (4 yes votes)

Other Business

Mr. Iacoangeli reported that Allison Swanson will no longer serve as an alternate due to commitments with her employment.

Adjournment:

The meeting was adjourned at 8:26 p.m.

Next Meeting Date:

May 23, 2019