

DESIGN LOADS		
	LIVE LOAD (PSF)	DEAD LOAD (PSF)
TABLE R301.4	40	10
DWELLING UNITS	40	10
SLEEPING ROOMS	30	10
ATTICS WITH STORAGE	20	10
ATTICS WITHOUT STORAGE	10	10
ROOF SNOW	20	10
STAIRS	40	10
DECKS	40	10
EXTERIOR BALCONIES	60	10
PASSENGER VEHICLE GARAGES	50	--
FIRE ESCAPES	40	10
GUARDRAILS AND HANDRAILS	200	--

MATERIALS		
1. FRAMING LUMBER SHALL BE #2 SPRUCE PINE FIR (SPF) WITH THE FOLLOWING DESIGN PROPERTIES: Fb = 875 PSI Fv = 70 PSI E = 1.4E6 PSI		
2. FRAMING LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, CONCRETE OR MASONRY SHALL BE #2 SOUTHERN YELLOW PINE (SYP) TREATED IN ACCORDANCE WITH AWPA C22 WITH THE FOLLOWING DESIGN PROPERTIES: Fb = 1050 PSI Fv = 95 PSI E = 1.6E6 PSI		
3. ENGINEERED WOOD BEAMS SHALL BE LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES: Fb = 2900 PSI Fv = 285 PSI E = 1.9E6 PSI		
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 MINIMUM GRADE.		
5. BOLTS SHALL CONFORM TO A307 MINIMUM GRADE.		
6. REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60.		
7. POURED CONCRETE SHALL HAVE A MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. MATERIALS USED TO PRODUCE CONCRETE SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN ACI 318 OR ASTM C 1157.		
8. CONCRETE LOCATED PER TABLE R402.2 SHALL BE AIR ENTRAINED WITH THE TOTAL AIR CONTENT NOT LESS THAN 5 PERCENT OR MORE THAN 7 PERCENT.		
9. MASONRY UNITS SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 AND MORTAR SHALL COMPLY WITH ASTM C 270.		
10. ALLOWABLE SOIL BEARING PRESSURE 2000 PSF.		

GENERAL		
ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION METHODS OR ANY DEVIATION FROM THE PLANS.		
ALL CONSTRUCTION, WORKMANSHIP, MATERIAL QUALITY AND SELECTION SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE - RESIDENTIAL CODE 2018 EDITION FROM THE INTERNATIONAL RESIDENTIAL CODE 2018 (IRC), AND LOCAL CODES AND REGULATIONS. DIMENSIONS SHALL GOVERN OVER SCALE AND CODE SHALL GOVERN OVER DIMENSIONS.		

ADDITIONAL LOADS		
FIGURE R301.2(4) - ULTIMATE DESIGN WIND SPEEDS 115-120 MPH		
FIGURE R301.2(2) - SEISMIC DESIGN CATEGORY B		
TABLE R301.2(4) - DESIGN POSITIVE AND NEGATIVE PRESSURE FOR DOORS AND WINDOW FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF		
TABLE R301.2(2) - COMPONENT AND CLADDING LOADS FOR A MEAN ROOF HEIGHT OF 30 FEET OR LESS LOCATED IN EXPOSURE B		
ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE DESIGNED BASED ON ROOF PITCHES AS FOLLOWS: 45.4 PSF FOR 12:12 TO 2.25:12, 34.8 PSF FOR 2.25:12 TO 7:12 AND 21 PSF FOR 7:12 TO 12:12 WALL CLADDING IS DESIGNED FOR A 24.1 PSF POSITIVE AND NEGATIVE PRESSURE		

ENERGY COMPLIANCE:		
TABLE N1102.1 - REFER TO TABLE N1101.1 TO DETERMINE THE CLIMATE ZONE BY COUNTY AND REFER TO TABLE N1102.1 FOR R VALUE INSULATION REQUIREMENTS LISTED BY ZONE.		
TABLE N1102.1 - ZONE 7 - MAX. GLAZING U-FACTOR: 0.40, MIN. INSULATION R-VALUES: CEILING R-30, WALLS R-13, FLOORS R-19, BASEMENT WALLS R-7, SLAB PERIMETER R-0, CRAWL SPACE WALLS R-7.		
TABLE N1102.1 - ZONE 8 - MAX. GLAZING U-FACTOR: 0.40, MIN. INSULATION R-VALUES: CEILING R-30, WALLS R-13, FLOORS R-19, BASEMENT WALLS R-8, SLAB PERIMETER R-5 (2 FT DEEP), CRAWL SPACE WALLS R-10.		

CONSTRUCTION		
1. STEEL FLITCH BEAMS SHALL BE FASTENED TOGETHER WITH 1/2" DIAMETER BOLTS WITH WASHERS PLACED UNDER THE THREADED END OF THE BOLT. BOLTS SHALL BE SPACED AT MAXIMUM 24" o.c. STAGGERED TOP AND BOTTOM OF BEAM WITH A MINIMUM 2" EDGE DISTANCE. TWO BOLTS SHALL BE LOCATED AT 6" FROM EACH END OF FLITCH BEAM.		
2. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH. BEAMS MUST BE ANCHORED AT EACH END WITH A MINIMUM OF FOUR 16d NAILS OR TWO 1/2" x 4" LAG SCREWS.		
3. ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.		
4. ALL BEAMS SHALL BE CONTINUOUSLY SUPPORTED Laterally AND SHALL BEAR FULL WIDTH ON THE SUPPORTING WALLS OR COLUMNS INDICATED WITH A MINIMUM OF THREE STUDS.		
5. SOLID BLOCKING SHALL BE PROVIDED AT ALL POINT LOADS TO TRANSFER LOADS THROUGH FLOOR LEVELS. COLUMNS SHALL BE CONTINUOUS TO THE FOUNDATION OR TO OTHER STRUCTURAL ELEMENTS.		
6. ENGINEERED WOOD FLOOR SYSTEMS AND ROOF TRUSS SYSTEMS SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.		
7. WALL BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE.		
8. BRICK LINTELS SHALL BE 3 1/2 x 3 1/2 x 1/4 STEEL ANGLE FOR UP TO 60" MAXIMUM SPAN AND 6 x 4 x 5/16 FOR SPANS GREATER THAN 60".		
9. BRICK LINTELS AT SLOPED AREAS SHALL BE 4 x 3 1/2 x 1/4 STEEL ANGLE WITH 16d NAILS IN 3/16" HOLES IN 4" ANGLE LEG AT 12" o.c. TO DOUBLE RAFTER. WHEN THE SLOPE EXCEEDS 4:12 A MINIMUM OF 3 x 3 x 1/4 PLATES SHALL BE WELDED AT 24" o.c. ALONG THE STEEL ANGLE.		

ABBREVIATIONS	
CONC	CONCRETE
CONT	CONTINUOUS
DBL	DOUBLE
DJ	DOUBLE JOIST
DSP	DOUBLE STUD POCKET
EA	EACH
FL PT	FLAT PLATE
FTG	FOOTING
HGR	HANGER
LVL	LAMINATED VENEER LUMBER
NTS	NOT TO SCALE
OC	ON CENTER
PSL	PARALLEL STRAND LUMBER
PT	PRESSURE TREATED
SC	STUD COLUMN
SP	STUD POCKET
TJ	TRIPLE JOIST
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE

REVISION LOG						
Rev	Description	Drawn By	Date	Sheets Affected	Brochure Required	Engineering Required
1						
2						
3						
4						
5						
6						
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13						
14						

TABLE N1102.1 CLIMATE ZONES 3-5

CLIMATE ZONES	FENESTRATION U-FACTOR ^b	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{d,e}	CEILING ^k R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT ^c WALL R-VALUE	SLAB ^d R-VALUE AND DEPTH	CRAWL SPACE ^c WALL R-VALUE
3	0.25	0.55	0.30	20	13	5/13	10	5/13	0	5/13
4	0.35	0.55	0.30	38 OR 30 CONT ^j	15 OR 13+2.5 ^h	5/13	19	10/15	10	10/15
5	0.45	0.55	N/A	38 OR 30 CONT ^j	19 OR 13+5 OR 15+3.5 ^h	13/17 OR 13/12.5 ^j	28/0	10/15	10	10/15

- a. R-VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS.
- b. THE FENESTRATION U-FACTOR COLUMN EXCLUDES SKYLIGHTS. THE SHGC COLUMN APPLIES TO ALL GLAZED FENESTRATION.
- c. "10/13" MEANS R-10 CONT. INSULATED SHEATHING ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-13 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL OR CRAWL SPACE WALL.
- d. FOR MONOLITHIC SLABS, INSULATION SHALL BE APPLIED FROM THE INSPECTION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR A MAXIMUM OF 18 INCHES BELOW GRADE, WHICHEVER IS LESS. FOR FLOATING SLABS, INSULATION SHALL EXTEND TO THE BOTTOM OF THE FOUNDATION WALL OR 24 INCHES, WHICHEVER IS LESS. R-5 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUE FOR HEATED SLABS.
- e. R-19 FIBERGLASS BATTS COMPRESSED AND INSTALLED IN A NOMINAL 2x6 CAVITY IS DEEMED TO COMPLY. FIBERGLASS BATTS RATED R-19 OR HIGHER COMPRESSED AND INSTALLED IN A 2x4 WALL IS NOT DEEMED TO COMPLY.
- f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.2 (1 AND 2) AND TABLE N1101.2.
- g. OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY, R-19 MINIMUM.
- h. "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 INSULATED SHEATHING. 15+3 MEANS R-15 CAVITY INSULATION PLUS R-3 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 25 PERCENT OR LESS OF THE EXTERIOR, INSULATING SHEATHING IS NOT REQUIRED WHERE STRUCTURAL SHEATHING IS USED. IF THE STRUCTURAL SHEATHING COVERS MORE THAN 25 PERCENT OF THE EXTERIOR, STRUCTURAL SHEATHING SHALL BE SUPPLEMENTED WITH INSULATED SHEATHING OF AT LEAST R-2. 13+2.5 MEANS R-13 CAVITY INSULATION PLUS R-2.5 SHEATHING.
- i. FOR MASS WALLS, THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.
- j. R-30 SHALL BE DEEMED TO SATISFY THE CEILING INSULATION REQUIREMENT WHEREVER THE FULL HEIGHT OF THE UNCOMPRESSED R-30 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES. OTHERWISE R-38 INSULATION IS REQUIRED WHERE ADEQUATE CLEARANCE EXISTS OR INSULATION MUST EXTEND TO EITHER THE INSULATION BAFFLE OR WITHIN 1" OF THE ATTIC ROOF DECK.
- k. TABLE VALUE REQUIRED EXCEPT FOR ROOF EDGE WHERE THE SPACE IS LIMITED BY THE PITCH OR THE ROOF, THERE THE INSULATION MUST FILL THE SPACE UP TO THE AIR BAFFLE.

Lot #1 Cedar Knoll

MEAN ROOF HEIGHT
1 STORY = 11'-0"
CLADDING POSITIVE & NEGATIVE PRESSURE = 21 PSF

1 1/2 STORY = 19'-0"
CLADDING POSITIVE & NEGATIVE PRESSURE = 34.8 PSF

2 STORY = 19'-0"
CLADDING POSITIVE & NEGATIVE PRESSURE = 34.8 PSF

ANCHOR BOLTS
INSTALL ANCHOR BOLTS, NUTS, AND WASHERS PER CODE AT ALL EXTERIOR WALL
TREATED PLATES AND AT INTERIOR BEARING WALL
TREATED PLATES ON SLAB FOUNDATIONS. TO BE A MINIMUM OF 6" O.C. AND WITHIN 12" FROM THE ENDS OF EACH PLATE.

DESIGN PRESSURES
MINIMUM RATING: 25 PSF

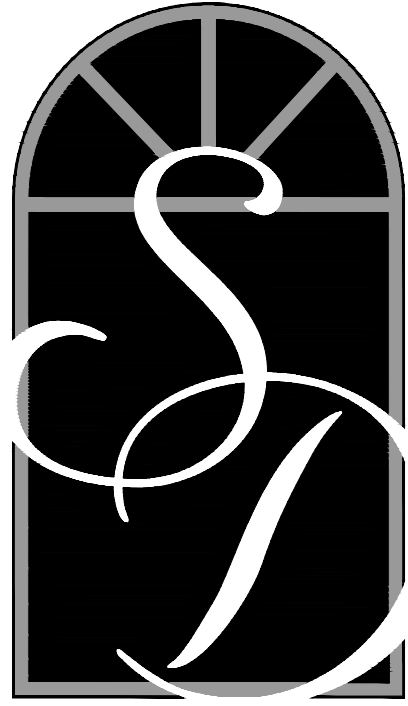
MI WINDOWS 3500 SERIES
LOW E-GLASS WINDOWS

SQUARE FOOTAGE		
	HEATED SQUARE FT.	UNHEATED SQUARE FT.
FIRST FLOOR	2038	
SECOND FLOOR	934	
FRONT PORCH		26
UNFINISHED STORAGE		756
SCREEN PORCH		219
2 CAR GARAGE		720
1 CAR GARAGE		296
TOTAL	2972	2017

CRAWL SPACE VENTILATION:			
2038	SQ. FT. / 150 =	13.59	SQ. FT. REQ.
13.59	SQ. FT. / .47 PER VENT =	29	VENTS REQ.
NOTE: A MINIMUM OPENING MEASURING 18 INCHES BY 24 INCHES SHALL BE PROVIDED.			
OPT #1: WHERE AN APPROVED VAPOR BARRIER IS INSTALLED OVER GROUND SURFACE, THE REQUIRED VENTILATION MAY BE REDUCED BY 50%.			
OPT #2 - CLOSED CRAWL SPACE PER R409.			

ATTIC VENT SCHEDULE							
ELEVATION							
MAIN HOUSE		SQ FTG	3054	AT / NEAR RIDGE		AT / NEAR EAVE	
VENT TYPE	SQ. FT. REQUIRED RANGE	SQ. FT. SUPPLIED	PERCENT OF TOTAL SUPPLIED	POT. LARGE (SQ. FT. EACH)	POT. SMALL (SQ. FT. EACH)	RIDGE VENT (SQ. FT. PER LF)	EAVE VENT (SQ. IN. EACH)
				0.4236	0.2778	0.125	0.1944
							0.0625
RIDGE VENT	4.07	5.09	5.00	49.08	0	0	40.00
SOFFIT VENTS	6.11	5.09	5.19	50.92			0
							83.00
TOTAL (MIN)	10.18	10.18	10.19	100.00			

* SCHEDULE HAS BEEN CALCULATED ASSUMING EAVE VENTILATION AT 50-60% OF TOTAL AND RIDGE AT 40-50% OF TOTAL REQUIRED VENTILATION



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Checked By:	RWB
Date:	7-12-2024
Revision No.	Revision Date

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Title
COVER SHEET

Plan No.

2972

Sheet No.

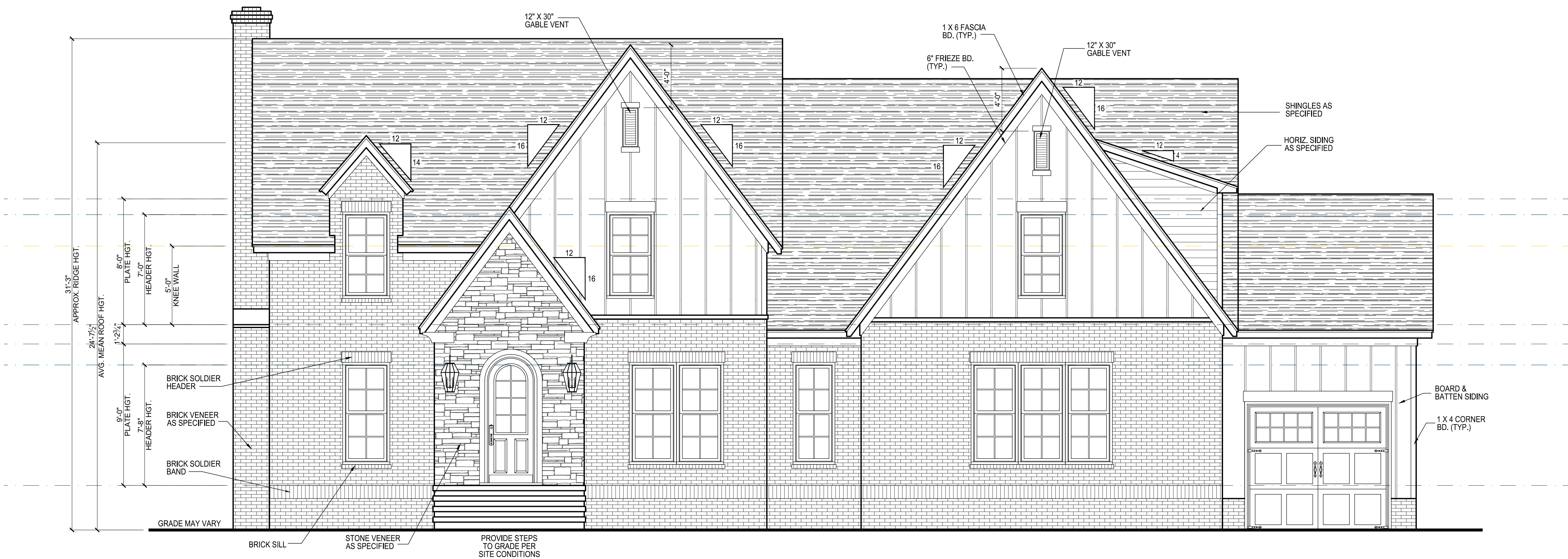
Of

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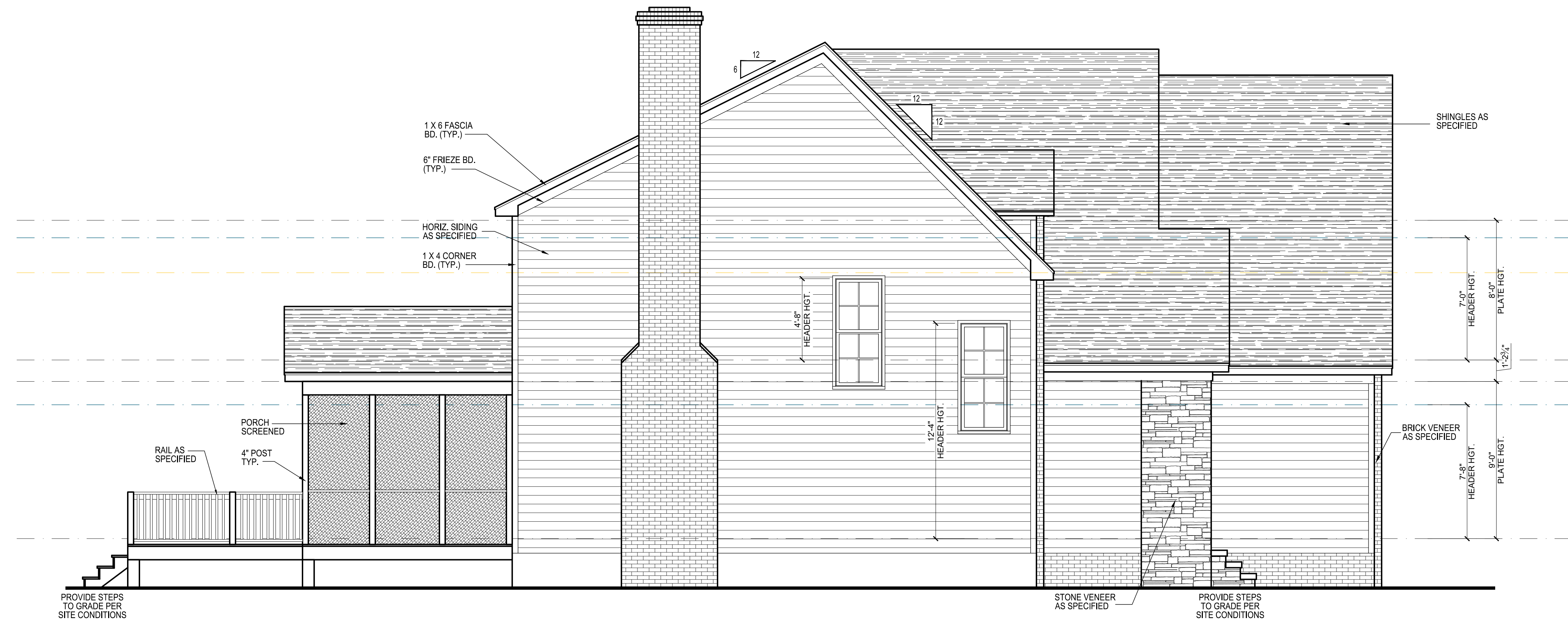
General Elevation Notes

General Elevation Notes shall apply unless noted otherwise on plan.

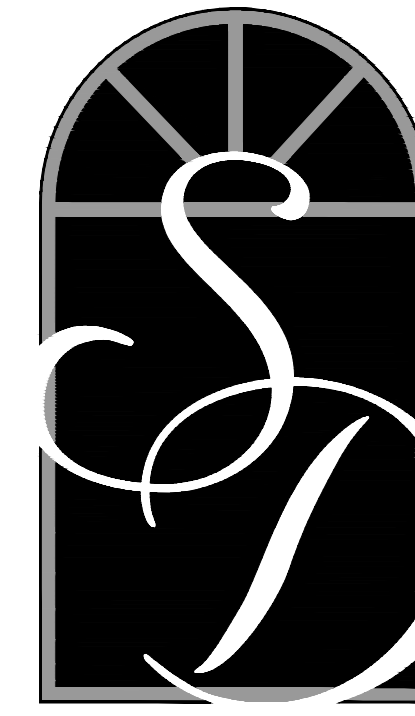
1. Roof shall be finished with architectural composition shingles with slopes as noted on plan.
2. Ridge Vent shall be provided and installed on all ridges greater than 6' in length per manufacturer's specifications.
3. Soffit Vent shall be continuous soffit vent
4. House Wrap, "tyvek" or approved equal shall be installed over entire exterior wall per manufacturer's specifications and recommendations.
5. Flashing shall be provided above all door and window openings, above finish wall material changes and at wall surfaces where lower roof areas abut vertical wall surfaces.
6. Porch Railings shall be provided at all porch walking surfaces greater than 30" above adjacent finished grade. It shall be 36" high with guards spaced no more than 4" apart. Consult community specifications for material.
7. Finish Wall Material shall be as noted on elevation drawings.



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



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



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Title
FRONT & LEFT
ELEVATION

Plan No.
2972

Sheet No. 27
Of

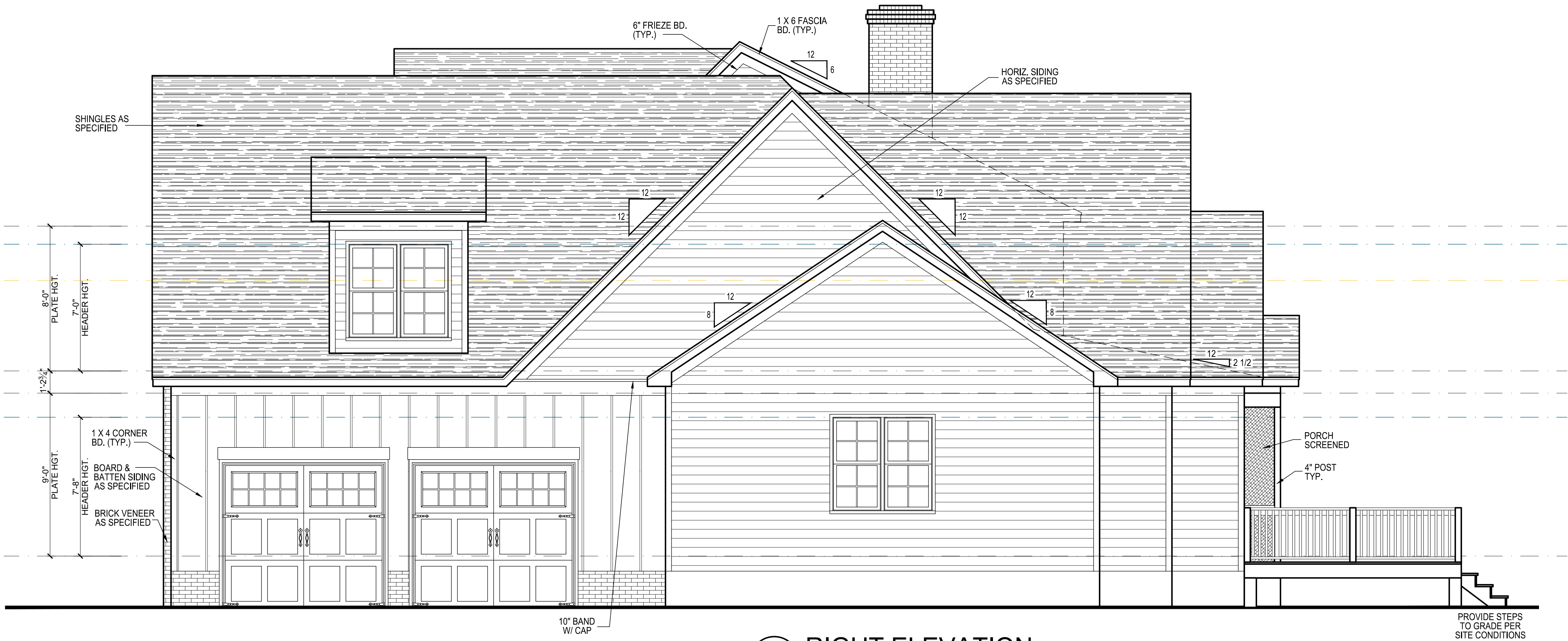
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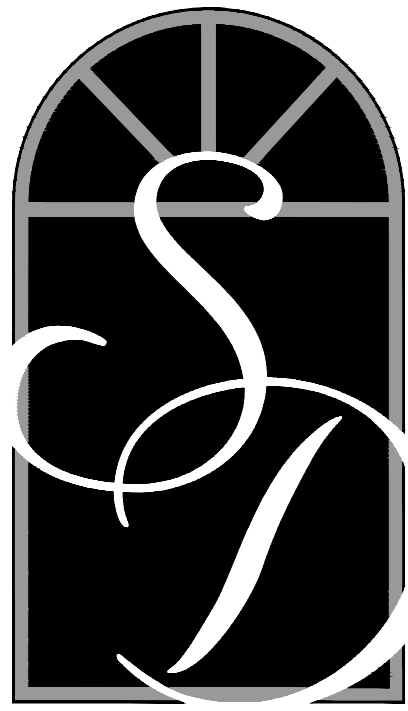
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- 6. Porch Railings shall be provided at all porch walking surfaces greater than 30" above adjacent finished grade. It shall be 36" high with guards spaced no more than 4" apart. Consult community specifications for material.
- 7. Finish Wall Material shall be as noted on elevation drawings.



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



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



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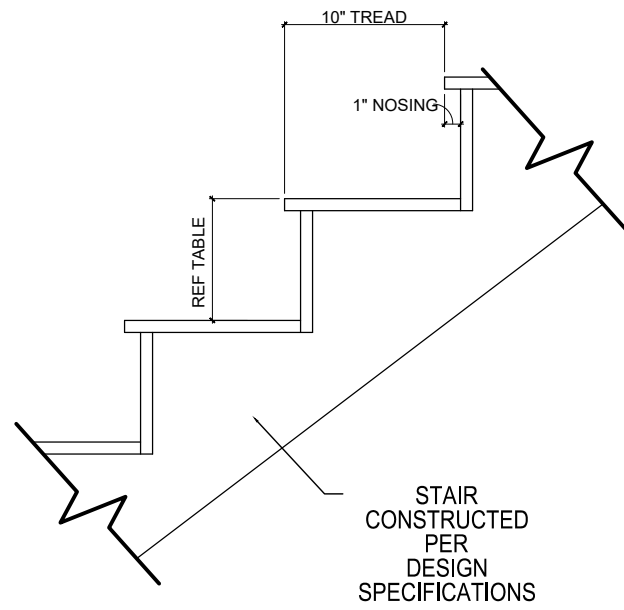
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Title
REAR & RIGHT
ELEVATION

Plan No.
2972

3 7



RISER HEIGHTS PER STAIR CONFIGURATION			
PLATE HEIGHT	10" FLOOR SYSTEM	14" FLOOR SYSTEM	16" FLOOR SYSTEM
8'-1 1/2"	14 RISERS @ 7 11/16"	15 RISERS @ 7 1/2"	15 RISERS @ 7 5/8"
9'-1 1/2"	16 RISERS @ 7 1/2"	16 RISERS @ 7 3/4"	17 RISERS @ 7 7/16"
10'-1 1/2"	17 RISERS @ 7 3/4"	18 RISERS @ 7 9/16"	18 RISERS @ 7 11/16"

2 TYPICAL STAIR DETAIL

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

NOTE:
HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF STAIR TREADS WITH 4, OR MORE RISERS. VERTICAL HT. OF HANDRAILS SHALL BE NOT LESS THAN 34" AND NO MORE THAN 38" PER NC 2018 RESIDENTIAL CODE SEC. R311.7.8
GUARDS ON ALL HANDRAILS SHALL BE PLACED SO THAT A SPHERE OF 4" CANNOT PASS THROUGH PER NC 2018 RESIDENTIAL CODE SEC. R312.1

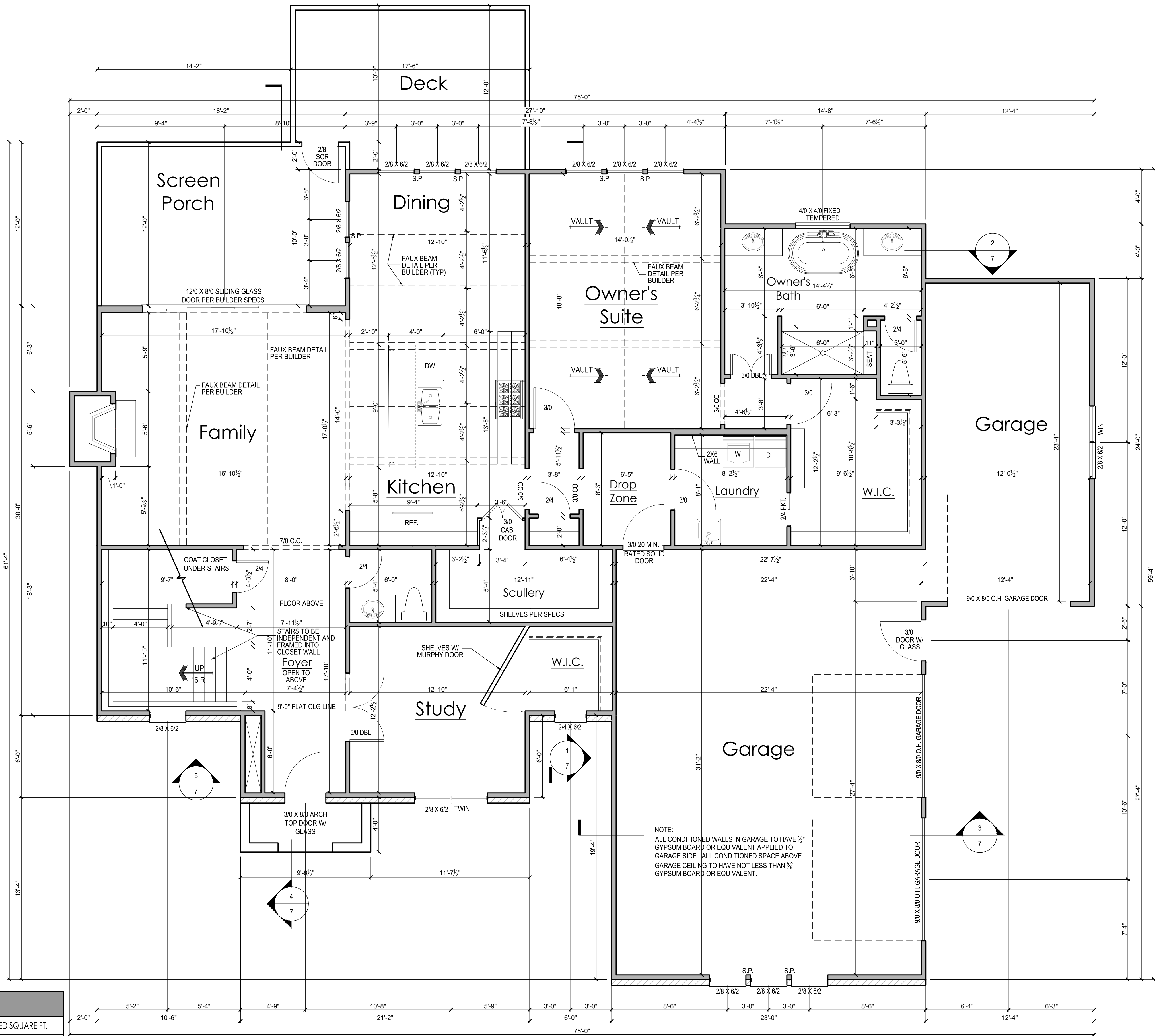
General Floor Plan Notes

General Floor Plan Notes shall apply unless noted otherwise on plan.

- Wall Heights: Typically 9'-1-1/2" at basement and first floor, and 8'-1-1/2" at bonus room, U.N.O.. All walls are constructed using a double top plate. Splices at Double Top Plate do not need to occur at Vertical Studs but must be at least 24" apart from Joint in other Top Plate layer. Special wall heights are noted on plans where they occur.
- Wall Thickness: is shown 3-1/2" at both exterior and interior walls U.N.O. 2x6 frame shall be used at walls that back up to plumbing fixtures. Walls greater than 10' high shall be framed with 2x6 framing or greater and will be noted as a special condition where it occurs on plan.
- Header height shall be 7'-4" AFF at basement, 7'-8" AFF at first floor, and 7'-0" AFF at second floor, unless noted otherwise.
- All headers for exterior windows and doors are (2) 2x10 unless noted otherwise. Headers for interior doors shall be a min (2) 2x6
- Jacks: Openings up to 3'-4" wide shall have (1) 2x4 jack stud SPF on each side. Openings greater than 3'-4" wide shall have (2) 2x4 jack studs SPF on each side.
- Soffits, Coffered Ceilings, Tray Ceilings and other significant ceiling plan elements are shown on the floor plans and are denoted as single dashed lines. Unless specifically call out as included, Kitchens do not include soffits over wall cabinetry.
- Door & Window Frames, where occurring near corners, shall be a minimum of 4" from corner. Except for walk-in closets with doors near a corner, doors at closets shall be centered on closet.
- Windows: Shall have at least (1) window in each sleeping room, that meets egress. Shall be provided with tempered glass at hazardous glazing areas. False windows shall be installed with obscure glazing.
- Handrails and Guards of stairs shall be 34" above the finished surface of the ramp surface of the stair. Handrails at landings and overlooks of multilevel spaces shall be 36" above finished floor. Guards (pickets or balusters) shall be spaced so that a 4" cannot pass through the guards.
- Attic Access shall be provided at all attic area with a height greater than 30". Minimum clear attic access shall be 20" x 30". Pull down stairs and access doors in knee walls meeting minimum criteria are also acceptable.
- Garage Door to Living Space shall be 2'-8" x 6'-8" minimum size and shall be 20 minute fire rated and weather sealed.
- Provide 1/2" (minimum) gypsum board separation at walls and ceilings adjacent to the main house and attic areas. With habitable space above, the inside of all garage walls require 1/2" GWS supporting 5/8" type X GWS on ceiling.
- Provide the following minimum thermal protection for each wall, floor, etc. in the building thermal envelope:

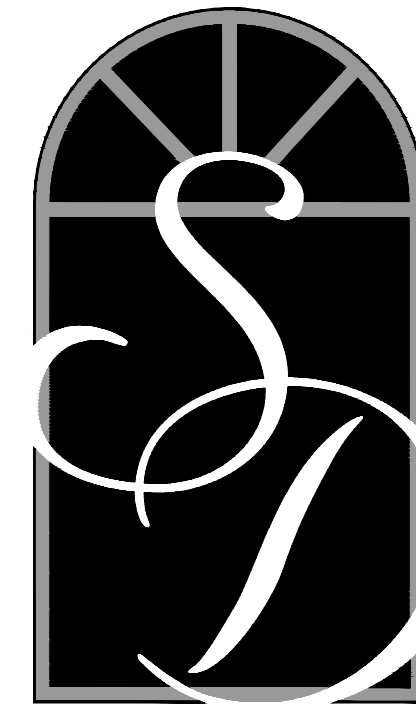
Ceilings:	R-30 (energy heel)
Walls:	R-15
Canilivered Floors:	R-19
Crawl Floors:	R-19
Basement Walls:	R-10 / R-15
- Wall bracing is per the CS-WSP method of R602.10.3.1, of the current North Carolina Residential Code, unless noted otherwise.

SQUARE FOOTAGE		
	HEATED SQUARE FT.	UNHEATED SQUARE FT.
FIRST FLOOR	2038	
SECOND FLOOR	934	
FRONT PORCH		26
UNFINISHED STORAGE		756
SCREEN PORCH		219
2 CAR GARAGE		720
1 CAR GARAGE		296
TOTAL	2972	2017



1 FIRST FLOOR PLAN

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



**SOUTH
DESIGNS**

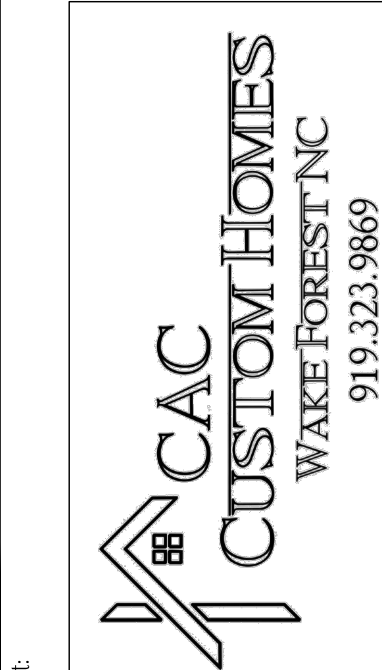
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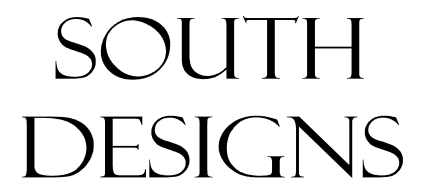
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Title:
**FIRST FLOOR
PLAN**

Plan No.
2972

Sheet No. **4** of **7**



Drawn By: RWB

Checked By: RWB

Date: 7-12-2024

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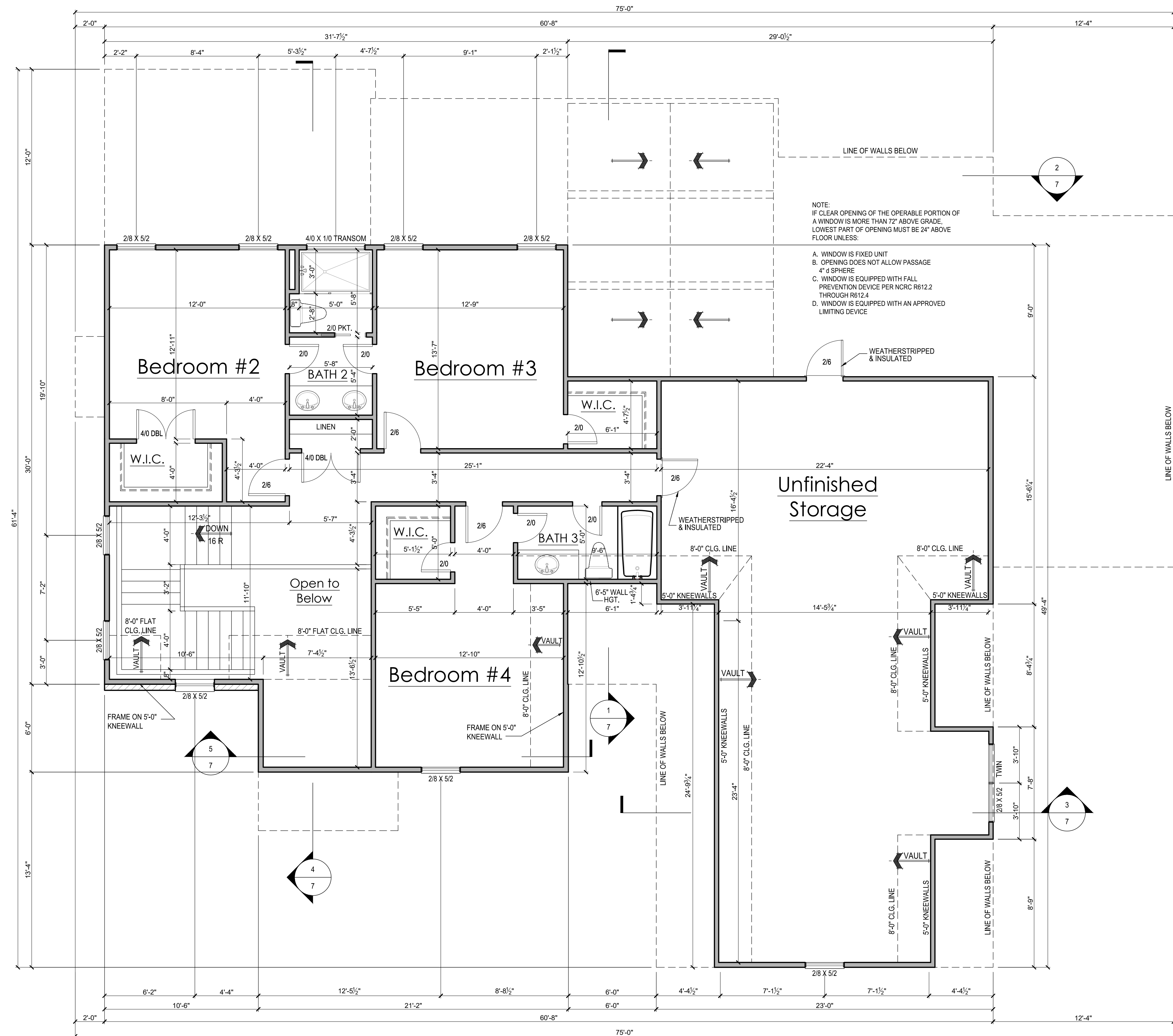


Title: SECOND FLOOR PLAN

Plan No.
972

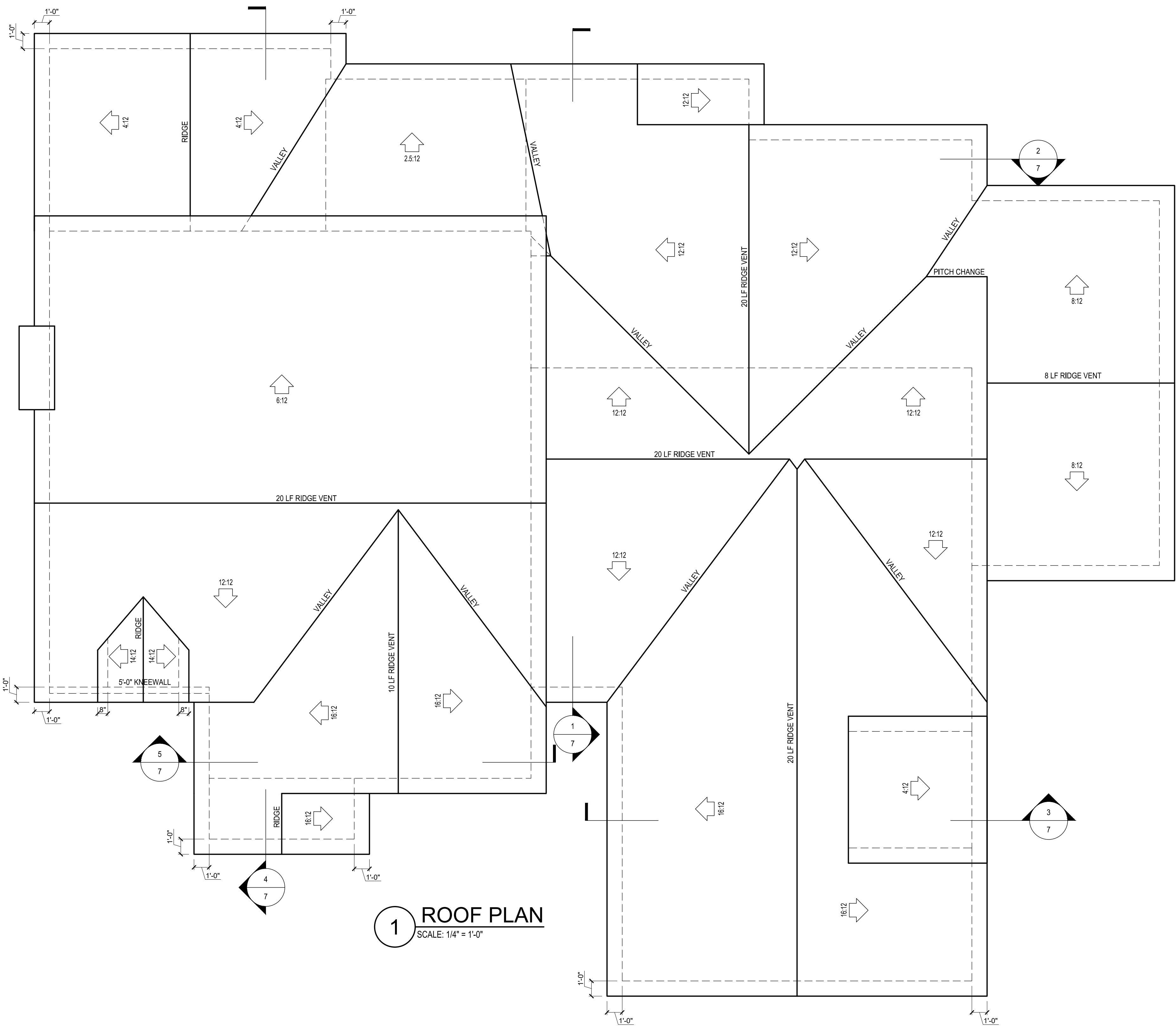
5 of 7

Sheet No. _____ Of _____



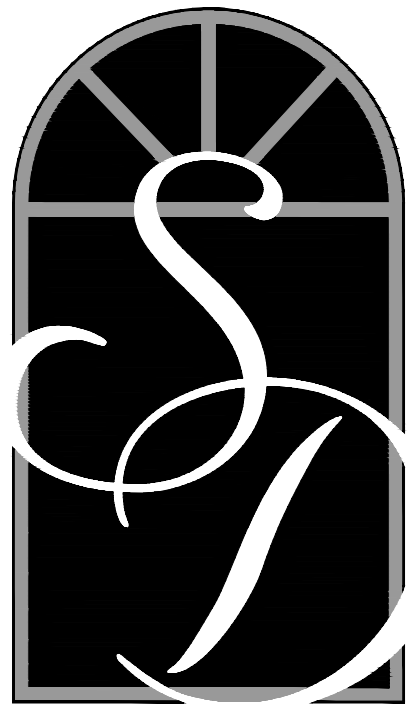
2 SECOND FLOOR PLAN

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



ATTIC VENT SCHEDULE								
ELEVATION								
MAIN HOUSE			SQ FTG	3054	AT / NEAR RIDGE			AT / NEAR EAVE
VENT TYPE	SQ. FT. REQUIRED RANGE		SQ. FT. SUPPLIED	PERCENT OF TOTAL SUPPLIED	POT. LARGE (SQ. FT. EACH)	POT. SMALL (SQ. FT. EACH)	RIDGE VENT (SQ. FT. PER LF)	EAVE VENT (SQ. IN. EACH)
					0.4236	0.2778	0.125	0.1944
RIDGE VENT	4.07	5.09	5.00	49.08	0	0	40.00	
SOFFIT VENTS	6.11	5.09	5.19	50.92				0
TOTAL (MIN)	10.18	10.18	10.19	100.00	POT VENTS MAY BE REQUIRED IF THERE IS INSUFFICIENT RIDGE AVAILABLE			

* SCHEDULE HAS BEEN CALCULATED ASSUMING EAVE VENTILATION AT 50-60% OF TOTAL AND RIDGE AT 40-50% OF TOTAL REQUIRED VENTILATION



SOUTH
DESIGNS

P.O. Box 688
Wake Forest, NC 27587
(O) 919-556-2226
(F) 919-556-2228
www.southdesigns.com

Drawn By: RWB
Checked By: RWB
Date: 7-12-2024

Revision No.	Revision Date

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ROOF PLAN

2972

6 7



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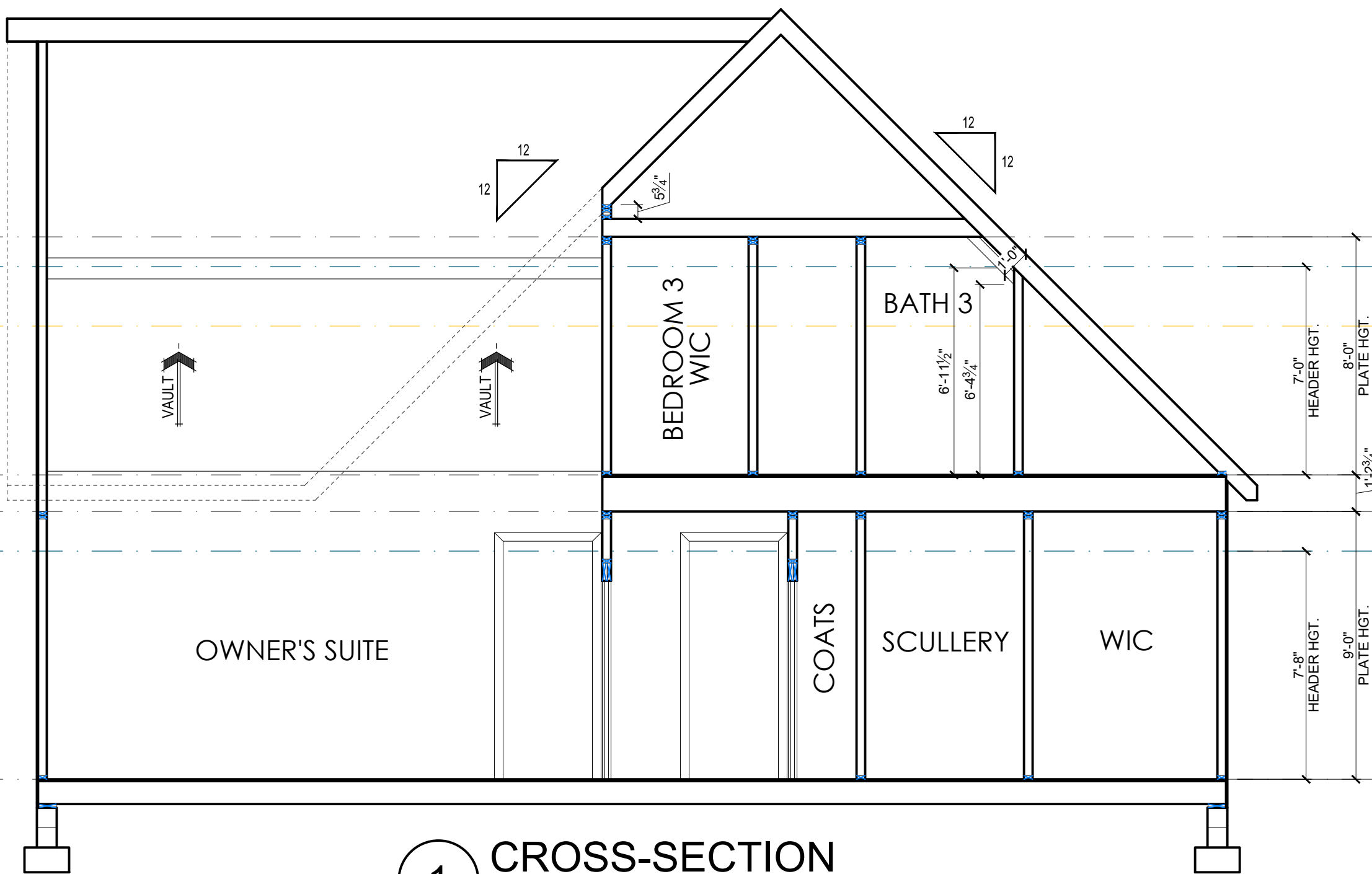
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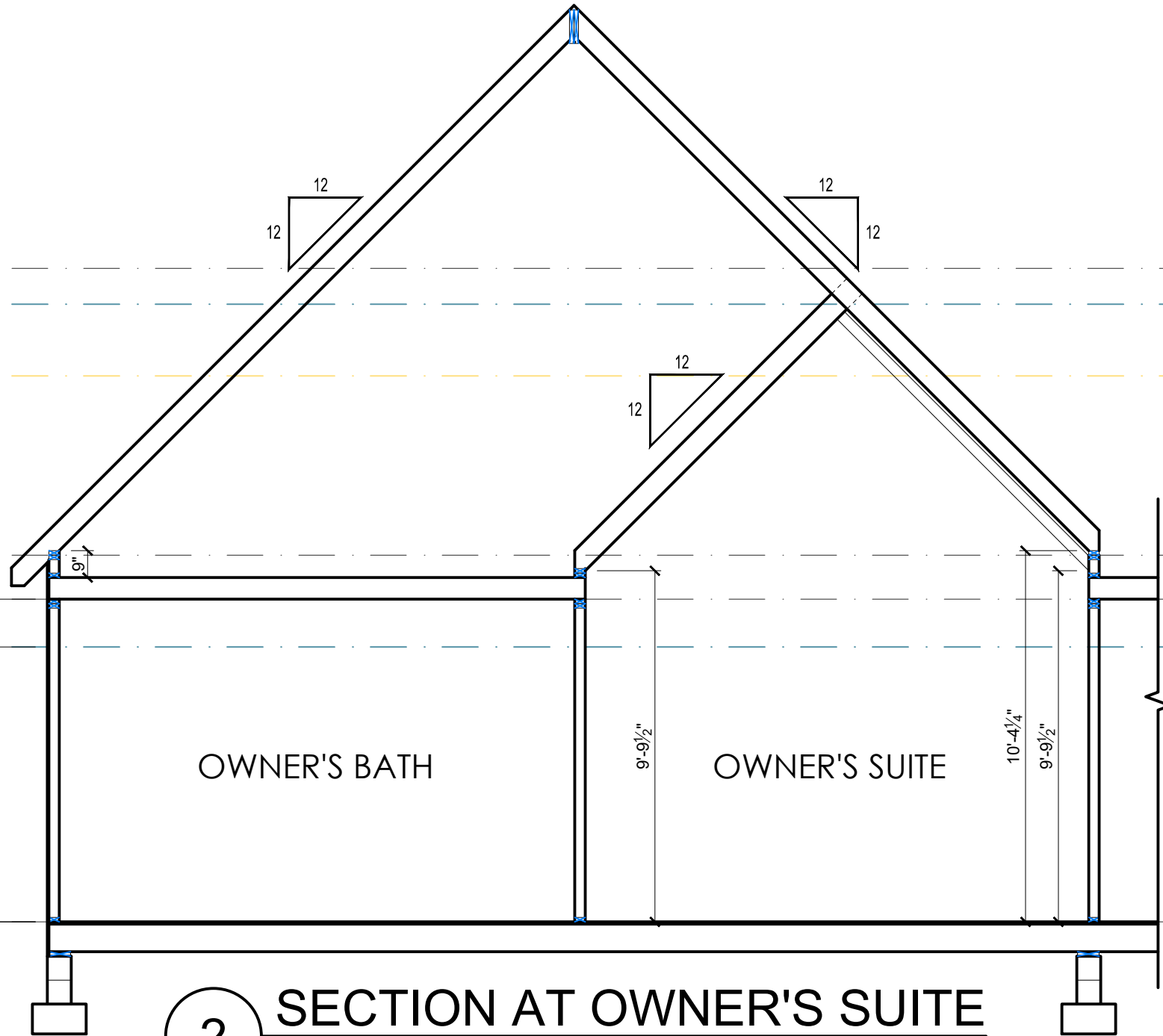
Client:
Title:
SECTIONS

Plan No.
2972

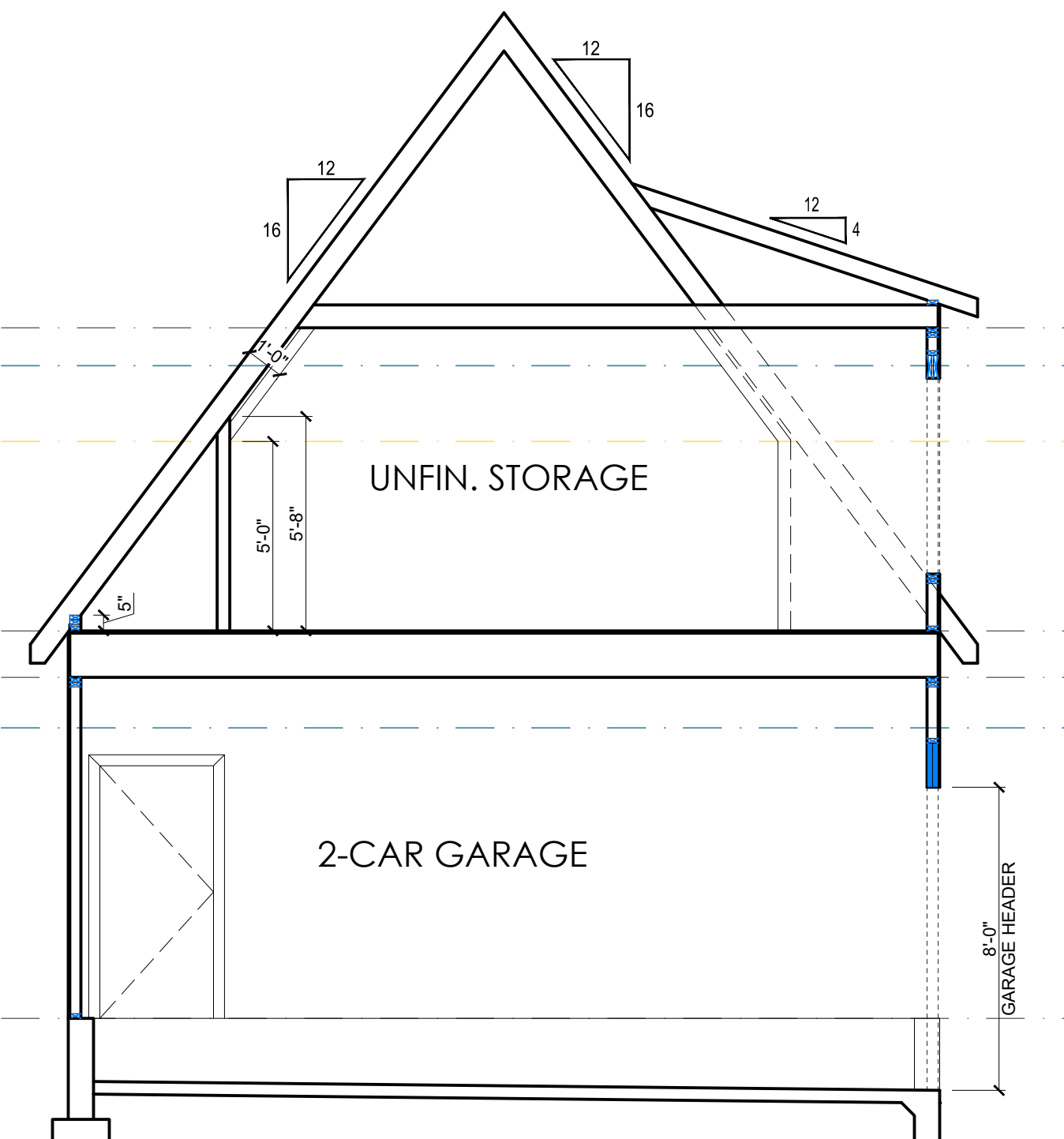
Sheet No. 7 Of 7



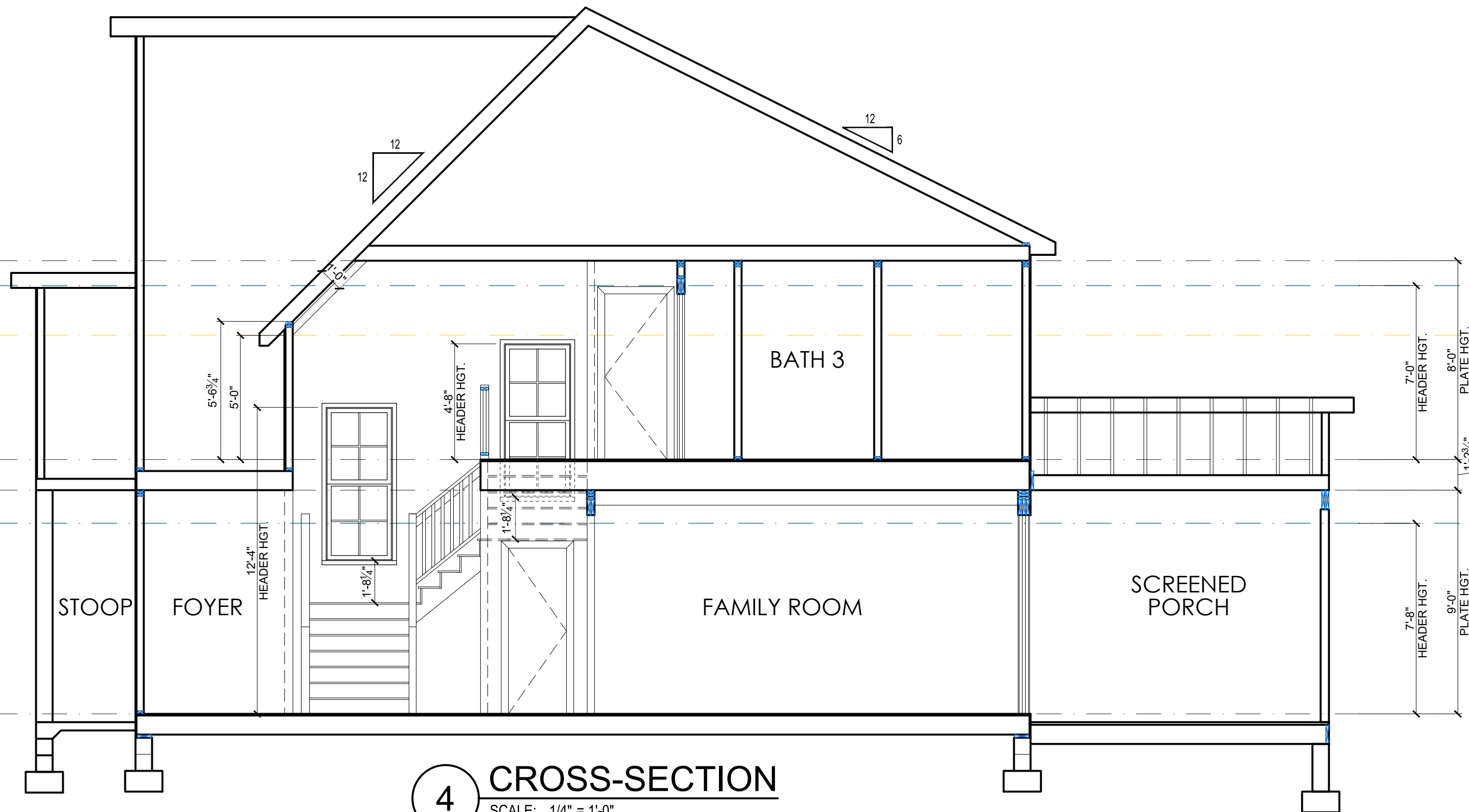
1 CROSS-SECTION
SCALE: 1/4" = 1'-0"



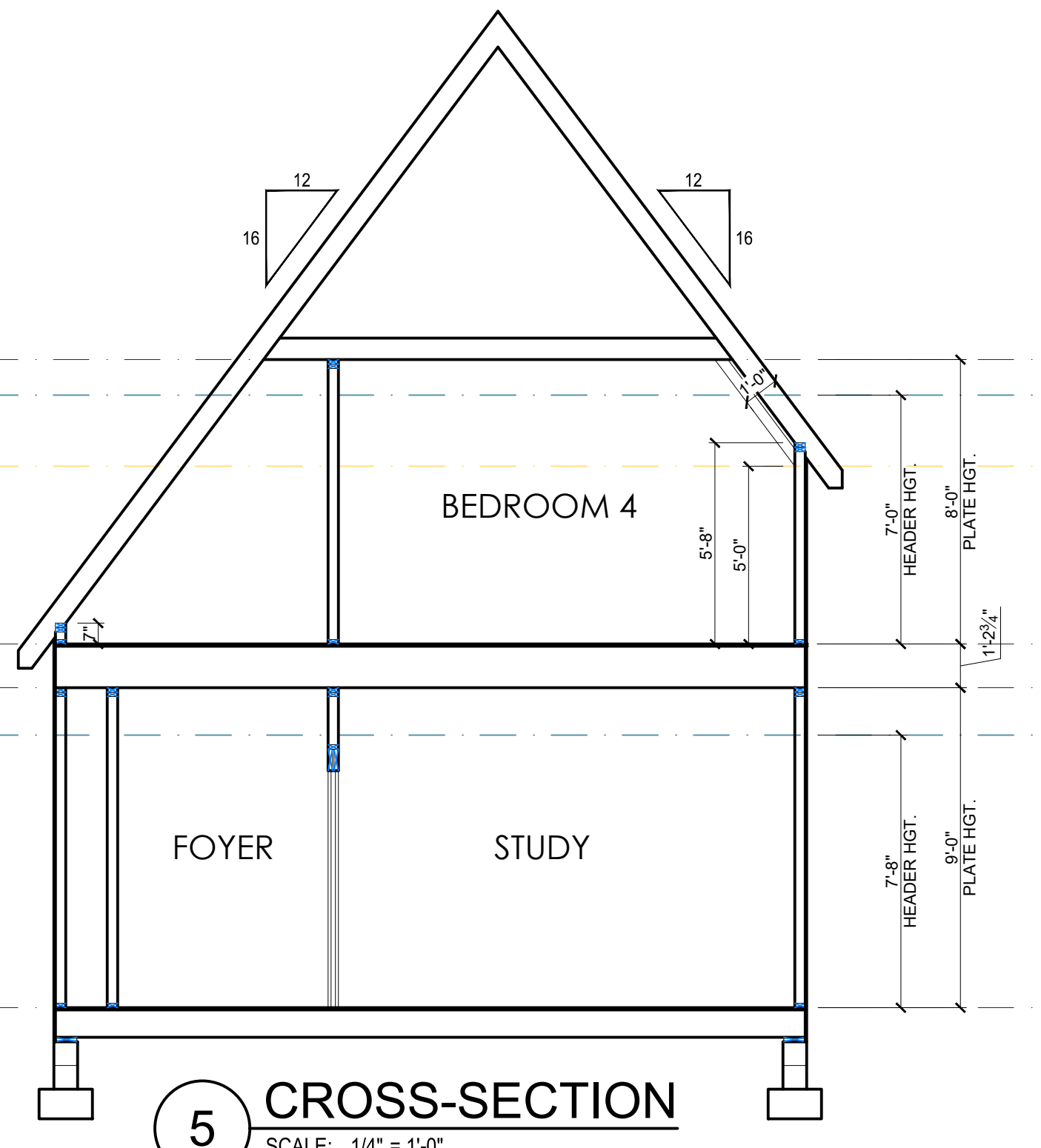
2 SECTION AT OWNER'S SUITE
SCALE: 1/4" = 1'-0"



3 SECTION AT GARAGE
SCALE: 1/4" = 1'-0"



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



5 CROSS-SECTION
SCALE: 1/4" = 1'-0"

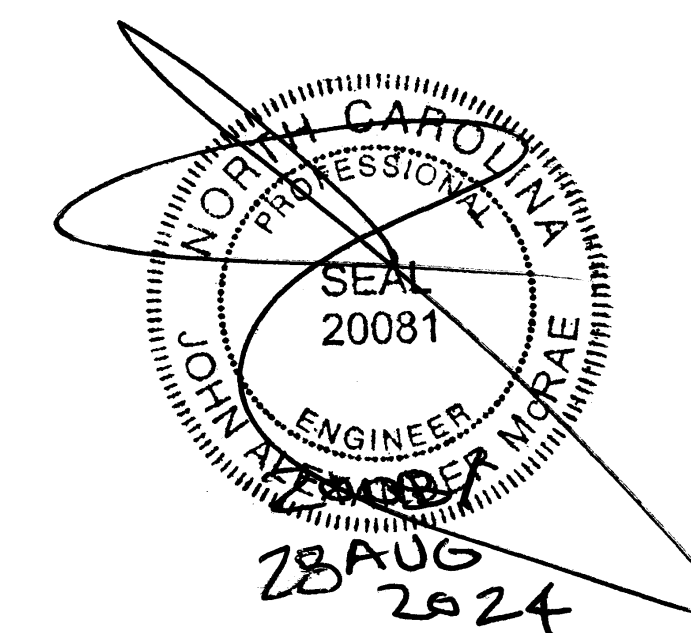
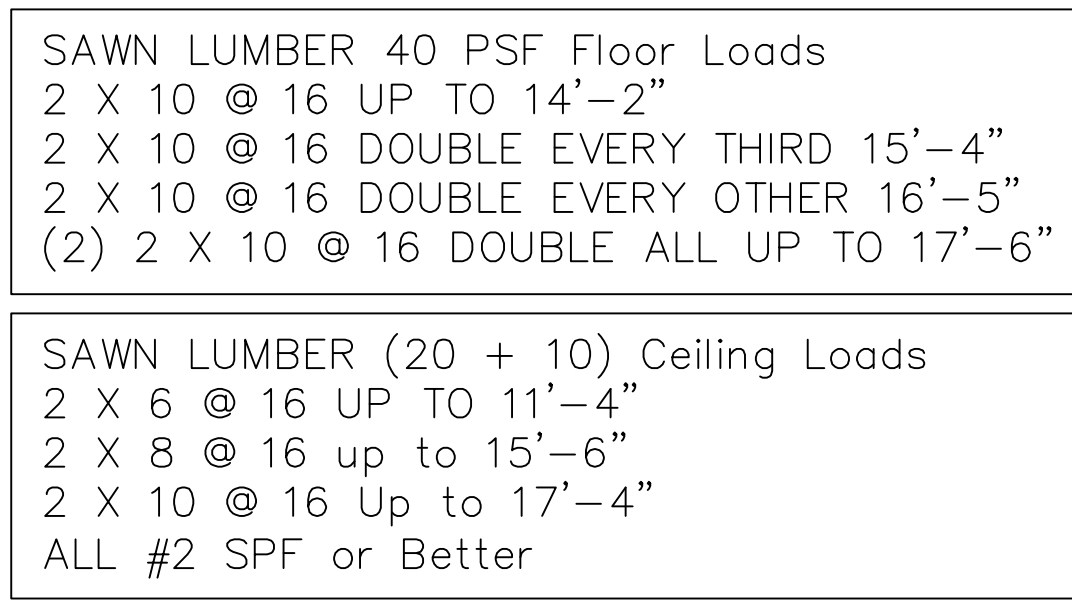
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John Alexander McRae, P.E., Inc.
Residential and Commercial Engineering (NC C-2298)

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Cell 919 210 5749 jarmc@nc.rr.com



sheet no.
S1 of **S4**
plan no.
2408-06



2 x 10 @ 16 # 2 SPF or Better
ORIENTED Left to Right

 DENOTES 12"x16" -or- 16"x16"
CMU PIER WITH 8" SOLID CAP
ON 30"x30"x10" CONC. FTR.

CONCRETE PIER SIZES		
Size	Hollow Masonry	Solid Masonry
12"x16"	Up to 48" High	Up to 9'-0" High
16"x16"	Up to 64" High	Up to 12'-0" High

FOUNDATION WALLS
ALL FOUNDATION WALLS 8" BLOCK
PARGED -or- 4" BRICK w/ 4" BLOCK
w/ 8" SOLID CAP ON 18"x10" CONTINUOUS
CONCRETE FOOTER

20" x 10" in areas of brick veneer

GIRDERS
(3) 2"x10" #2 SYP -or-
NEW SFPA SYP Values Used
(4) 2x 10 # 2 SPF or Better
Anchor bolts required ALL foundation walls
provide 1/2" x 10" with 7 inch embedment
6' on center and 12 inches from ends / corners

DESIGN TO IRC 2015 NCRC 2018

CRAWL SPACE VENTILATION

2037 SQ. FT. OF CRAWL / 150=19.17 SQ. FT. OF FREE
VENT REQUIRED

NOTE:
REFER TO SECTION 409.1 (CRAWL SPACE VENTILATION)
IN THE NORTH CAROLINA STATE BUILDING CODE (IRC)

IRC 2015 NCRC 2018 REQUIRES VAPOR BARRIER OVER
100 PERCENT OF CRAWL AREA REDUCING VENTING

$$\frac{2037}{300} \text{ SQ. FT. OF CRAWL} / 300 = \underline{6.79} \text{ SQ. FT. OF FREE VENT REQUIRED}$$
$$6.79 / 0.44 = 15 - 8 \times 16 \text{ vents (64 SQ IN FREE)}$$

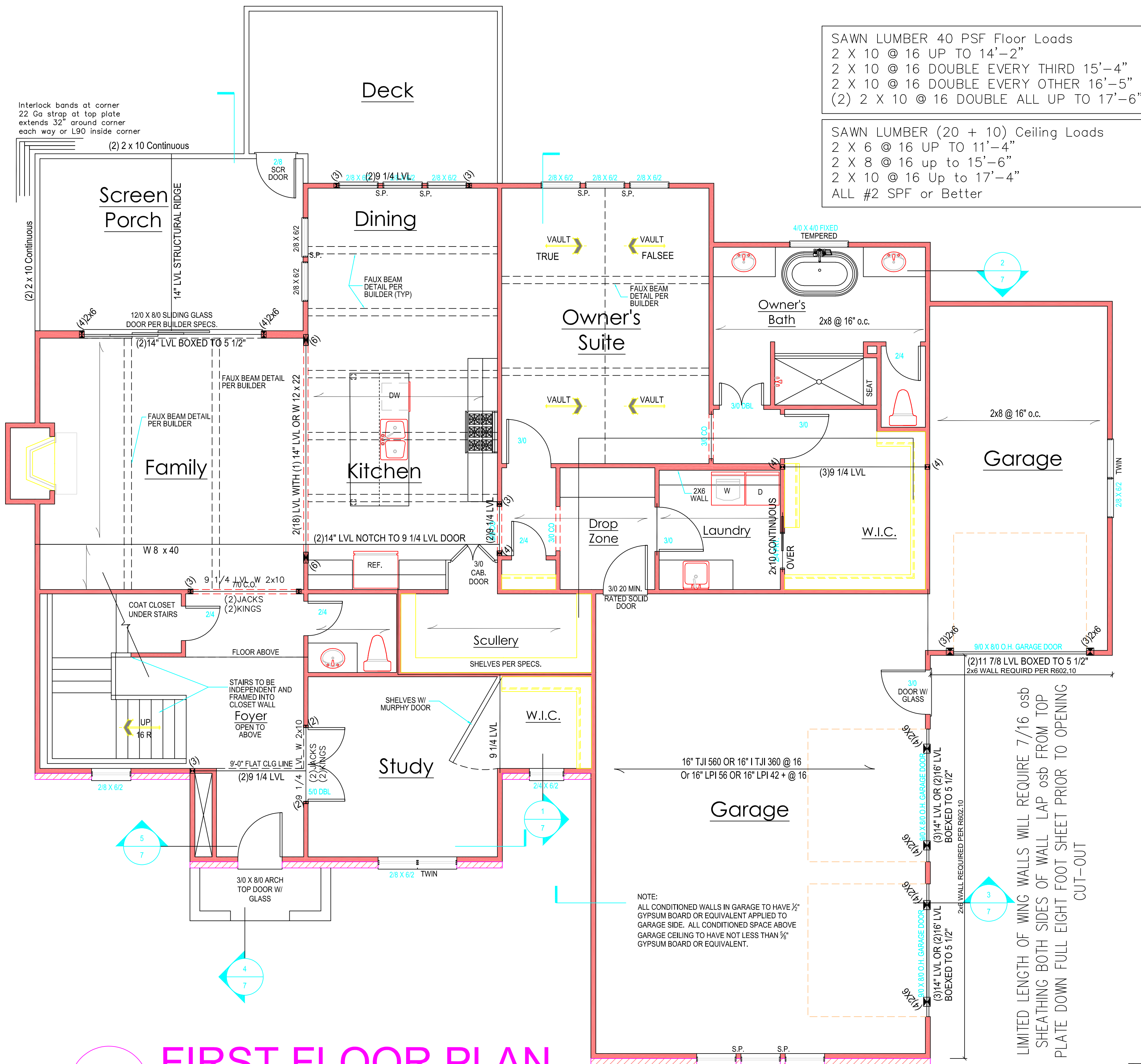
Structural Design By:
John Alexander McRae, PE, Inc
218 Coley Farm Road
Fuquay-Varina North Carolina 27526
jampe@nc.rr.com (919) 210-5749
P O Box 1466 Apex, NC 27502
Report deficiencies immediately

2408-06
(NC C-2298)

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

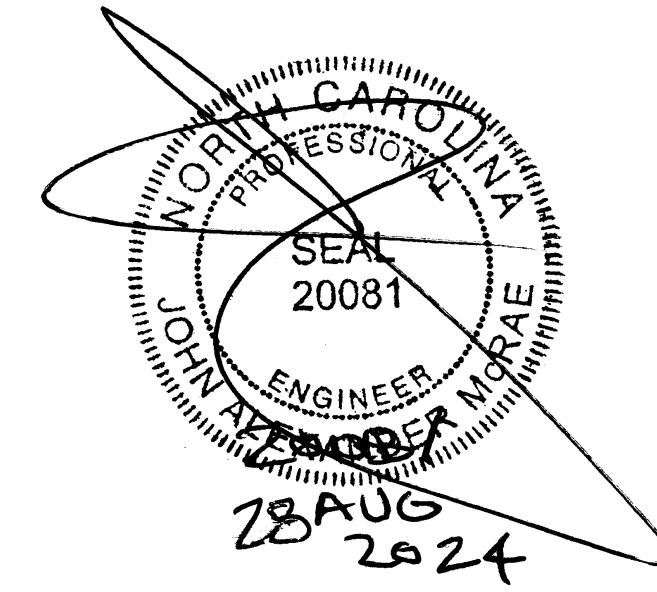
Design to IRC 2015 NCRC Residential Building Code 2018

NOTE TO BUILDER:
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SAWN LUMBER 40 PSF Floor Loads
2 X 10 @ 16 UP TO 14'-2"
2 X 10 @ 16 DOUBLE EVERY THIRD 15'-4"
2 X 10 @ 16 DOUBLE EVERY OTHER 16'-5"
(2) 2 X 10 @ 16 DOUBLE ALL UP TO 17'-6"

SAWN LUMBER (20 + 10) Ceiling Loads
2 X 6 @ 16 UP TO 11'-4"
2 X 8 @ 16 up to 15'-6"
2 X 10 @ 16 Up to 17'-4"
ALL #2 SPF or Better



ALL FLOOR JOISTS 2 X 10 @16
#2 SPF OR BETTER
Or 11 7/8 I Joists at 16" or 19.2" By MFR
ALL CEILING JOIST 2 X 8 @ 16 Up To 15'
2 X 6 @ 16 Up To 11'
ALL EXTERIOR AND BEARING HEADER (2) 2"x10" u.n.o.
ALL LVL BEAMS/HEADERS 3 STUD COLUMNS EACH END u.n.o.
ALL FRAMING #2 SPF OR BETTER u.n.o.

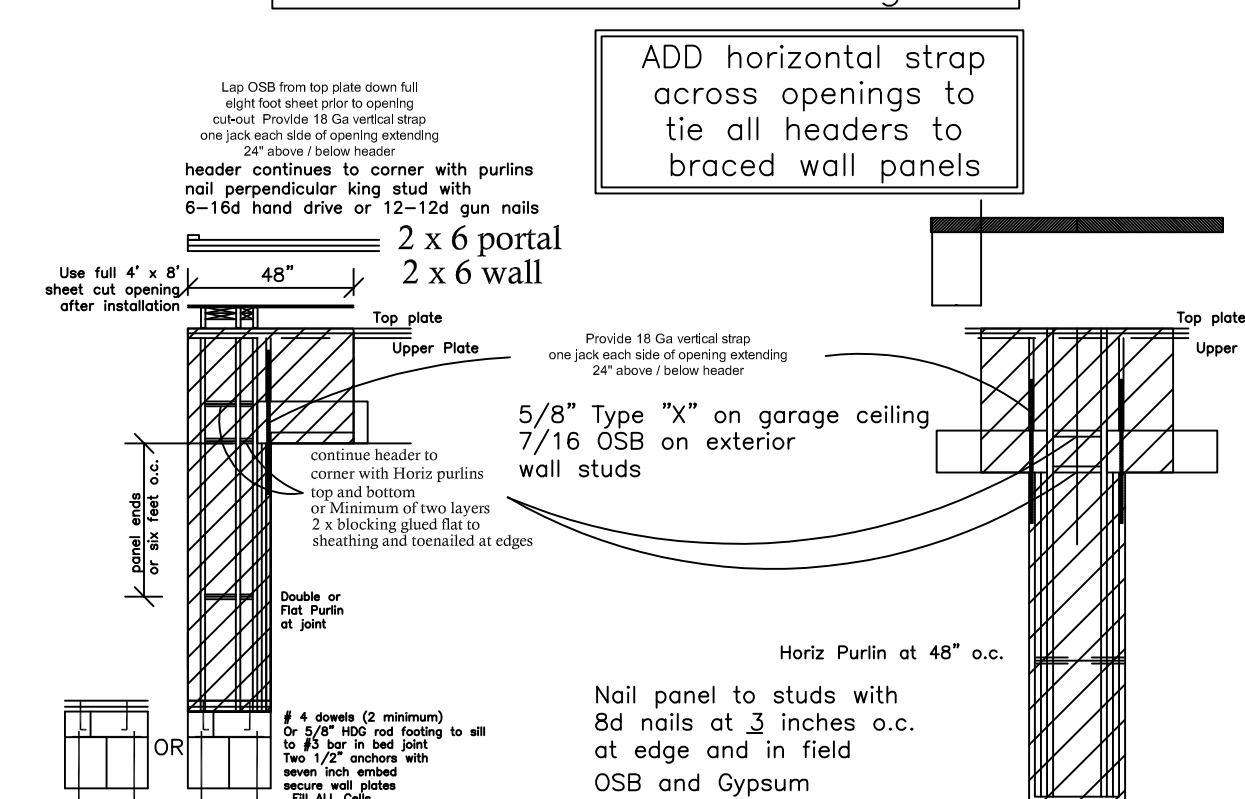
All stories to be sheathed with 7/16" OSB nailed @ six inches on center
edges and ends with additional nailing of "braced" panels as noted below:

ALL EXTERIOR BEARING AND
NON LOAD BEARING WALLS
Four Foot Panel at Corners
and Maximum 12' o.c.

Wall Bracing 7/16" OSB Lap OSB
from top plate down full eight foot sheet
prior to opening cut-out. Nail with 8d
nails at THREE inches on center edges/ends
six inches in field. Purlins at panel

The number of kings shall equal half
the cripple studs above or below the
opening.

ORIENTED Left to Right



Engineered Alternate Design
Portal Frame with hold downs
PFH method

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date:
14 August 2024
drawn by:
J A McRae

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One Cedar Knoll
CAC CUSTOM HOMES
WAKE FOREST NC (919)-323-9869

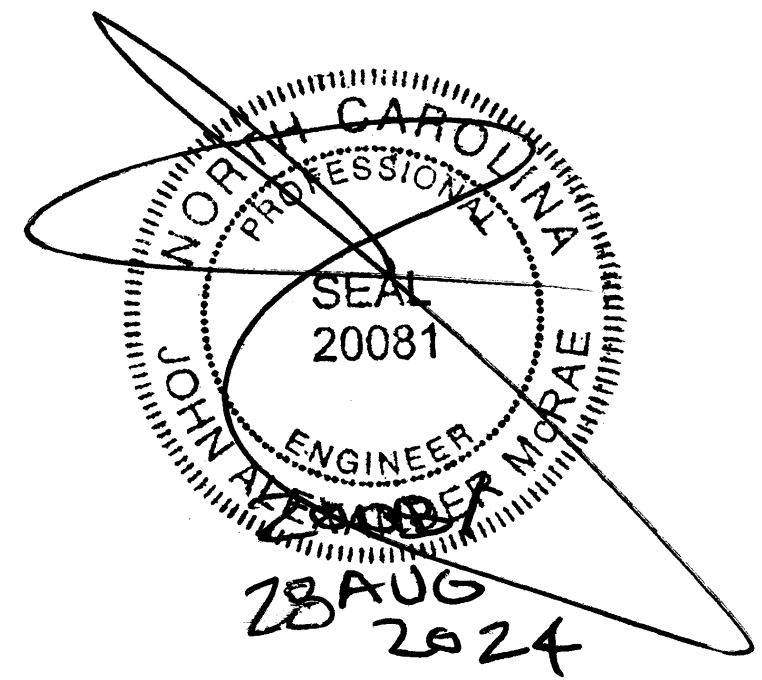
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S2 of S4
plan no.
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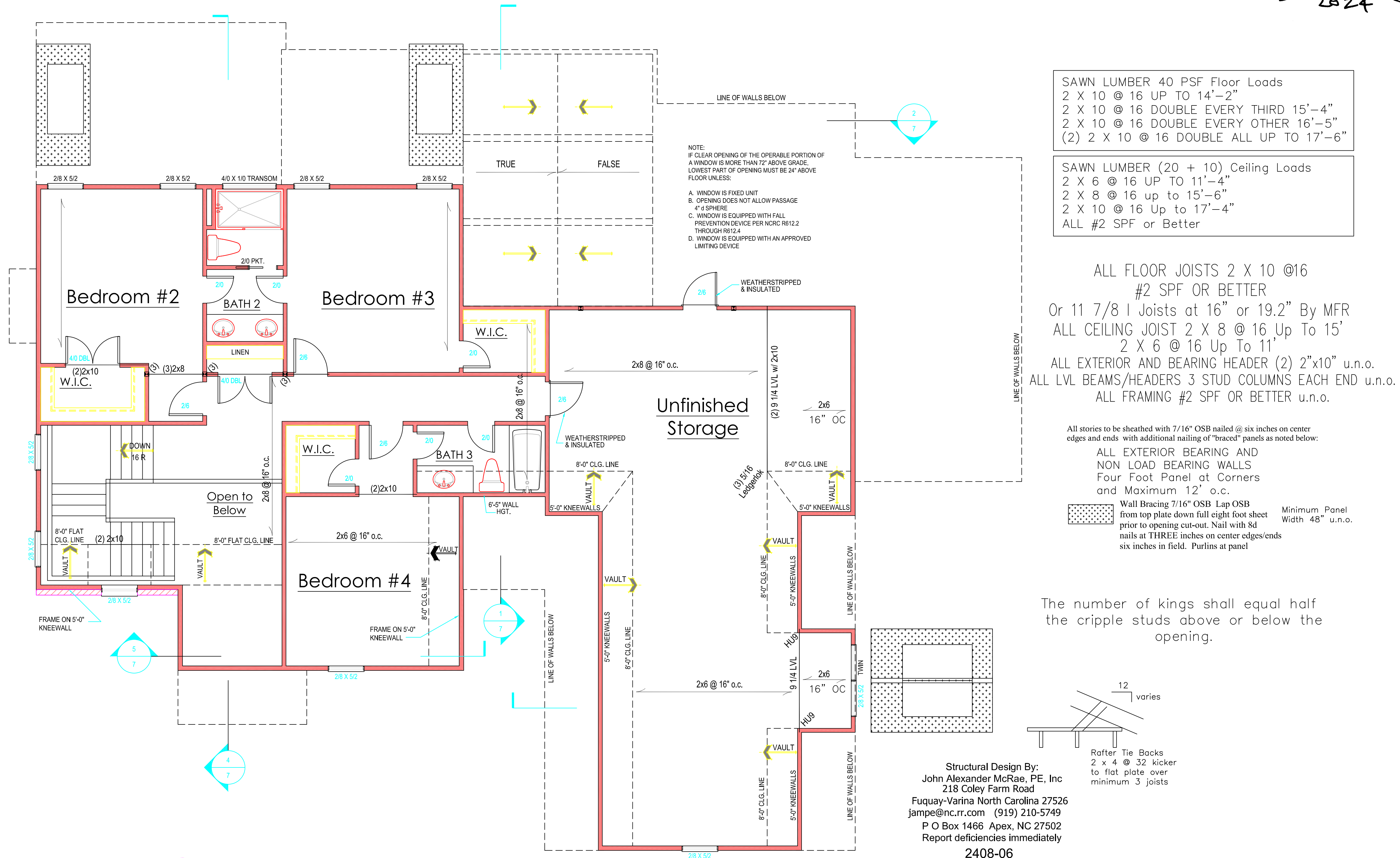
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2 SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

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2 X 10 @ 16 UP TO 14'-2"
2 X 10 @ 16 DOUBLE EVERY THIRD 15'-4"
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(2) 2 X 10 @ 16 DOUBLE ALL UP TO 17'-6"

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ALL LVL BEAMS/HEADERS 3 STUD COLUMNS EACH END u.n.o.
ALL FRAMING #2 SPF OR BETTER u.n.o.

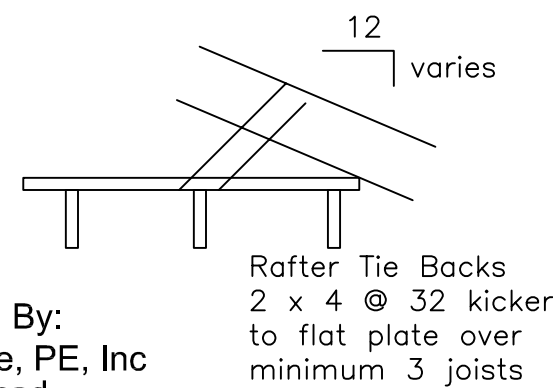
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NON LOAD BEARING WALLS
Four Foot Panel at Corners
and Maximum 12' o.c.

Wall Bracing 7/16" OSB Lap OSB
from top plate down full eight foot sheet
prior to opening cut-out. Nail with 8d
nails at THREE inches on center edges/ends
six inches in field. Purlins at panel

Minimum Panel
Width 48" u.n.o.

The number of kings shall equal half
the cripple studs above or below the
opening.



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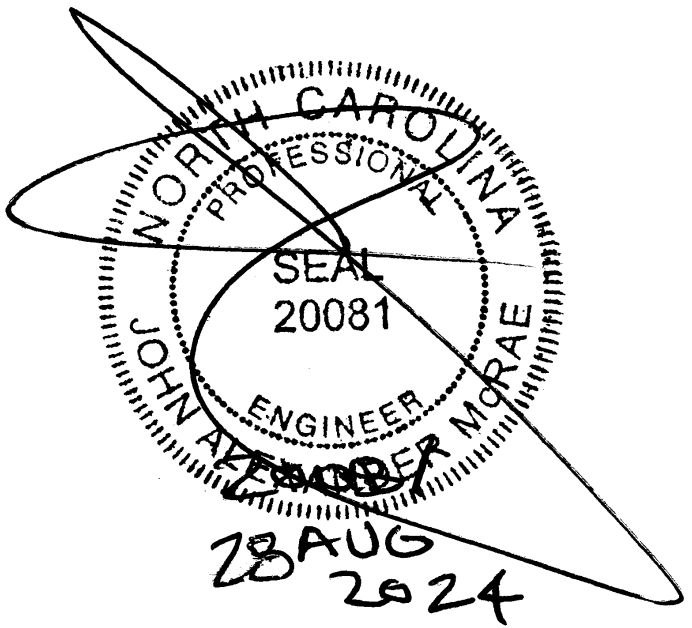
Design to IRC 2015 NCRC Residential Building Code 2018

One Cedar Knoll
CAC CUSTOM HOMES
WAKE FOREST NC (919)-323-9869

sheet no.
S3 of S4
plan no.
2408-06

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date:
14 August 2024
drawn by:
J A McRae



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One Cedar Knoll
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sheet no.
S4 of **S4**
plan no.
2408-06

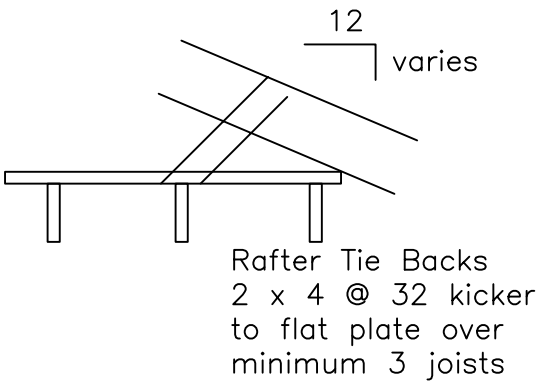
Cathedral and Vaulted Rafters require
Collar ties at 32 inches on center in
upper third or H2.5A clips ALL Rafters
to Ridge. ALL rafters to top plate to
be anchored by H2.5A clips

ATTIC VENT SCHEDULE								
ELEVATION								
MAIN HOUSE		SQ FTG	3054	AT / NEAR RIDGE		AT / NEAR EAVE		
VENT TYPE	SQ. FT. REQUIRED RANGE	SQ. FT. SUPPLIED	PERCENT OF TOTAL SUPPLIED	POT. LARGE (SQ. FT. EACH)	POT. SMALL (SQ. FT. EACH)	RIDGE VENT (SQ. FT. PER LF)	EAVE VENT (SQ. IN. EACH)	CONT. VENT (SQ. IN. PER LF)
RIDGE VENT	4.07	5.09	5.00	49.08	0	0	40.00	
SOFIT VENTS	6.11	5.09	5.19	50.92			0	83.00
TOTAL (MIN)	10.18	10.18	10.19	100.00				
POT VENTS MAY BE REQUIRED IF THERE IS INSUFFICIENT RIDGE AVAILABLE								

* SCHEDULE HAS BEEN CALCULATED ASSUMING EAVE VENTILATION AT 50-60% OF TOTAL AND RIDGE AT 40-50% OF TOTAL REQUIRED VENTILATION

all rafters
2 x 8 @ 16 #2
spf or better
all ridges 2 x 10 u.n.o.
fur ridge as required to
provide full rafter contact
fur rafters as required to
meet insulation code
lap all rafters at kneewall splices
18" minimum nail with 5-12d
nails from each side
IRC 2015 / NCRC 2018 Increases
Attic / Ceiling Insulation to R-38

Hips May Be Spliced with six feet
between opposing splices
NO Valley Splices



2 x 4 x 48
@ 32 Collar Ties
(115 mph zones)

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

Design to IRC 2015 NCRC Residential Building Code 2018

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