

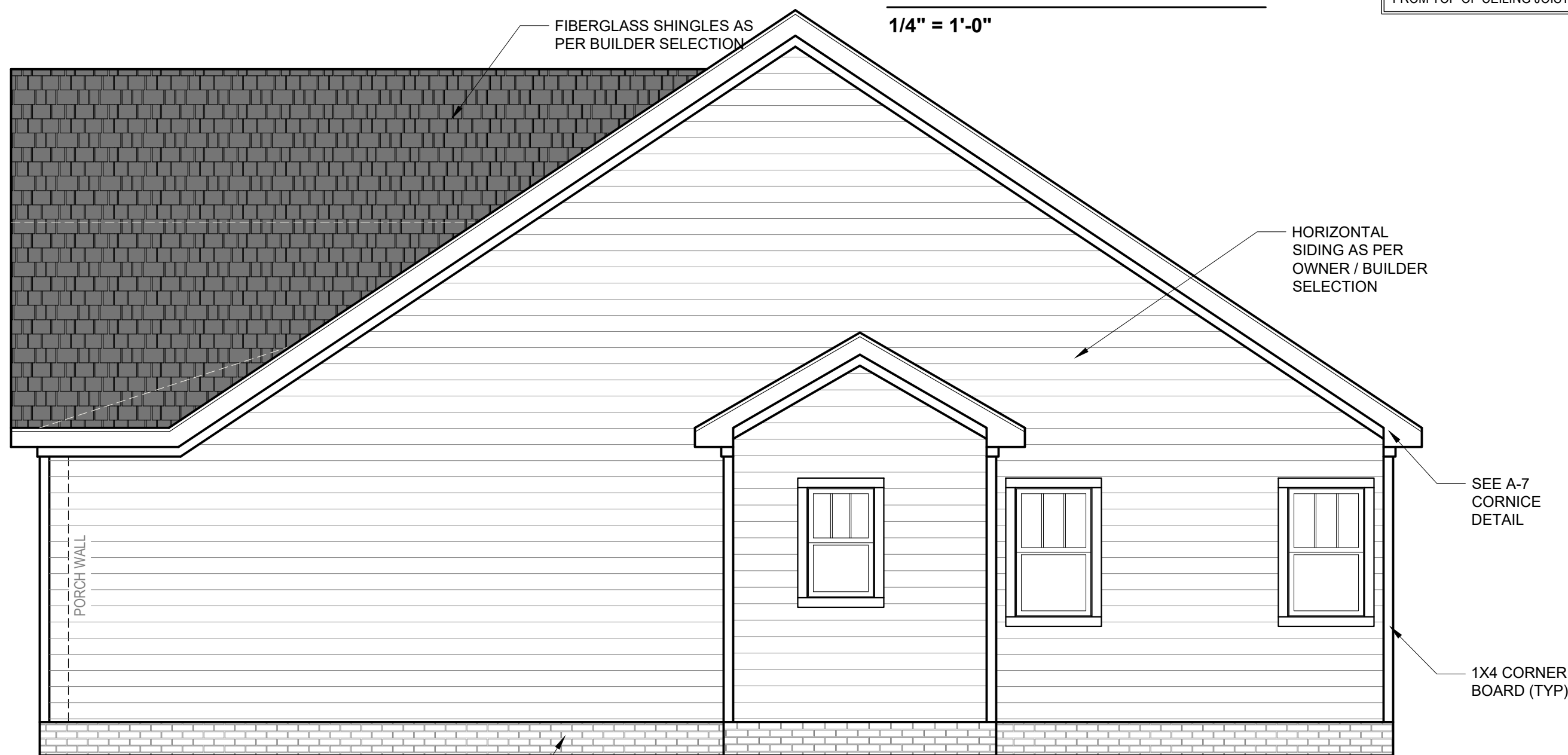
Alton Fields Lot 12 - 12 Sundrops Trail

THE SMITHFIELD



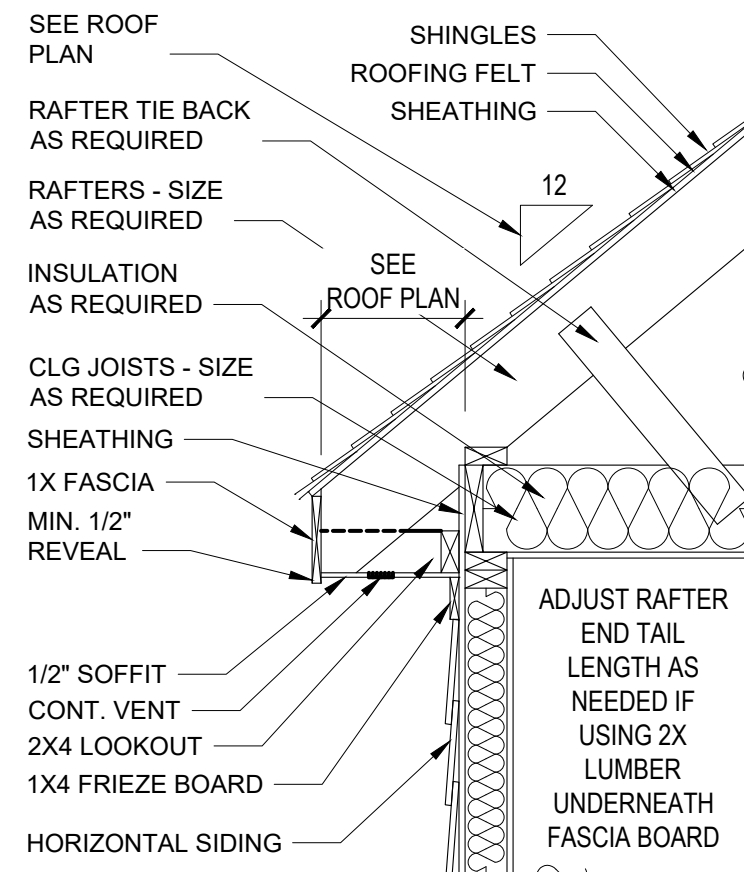
FRONT ELEVATION

1/4" = 1'-0"



RIGHT ELEVATION

1/4" = 1'-0"



A-7 CORNICE DETAIL

NTS

- DRB DESIGN assumes no liability for any home constructed from this plan.
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- Release of these plans requires further cooperation among the owner, his/her contractor, and DRB DESIGN.
- Design and construction are complex and, although the designer performed his services with due care and diligence, perfection is not a guarantee.
- Communication is imperfect and every contingency cannot be anticipated.
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- DRB DESIGN must be notified of any variations from the dimensions and conditions shown on these drawings.

PROJECT #
DRB2201-0234Z_C
DATE
06/11/2024
DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

www.
drbdesign.com

PROJECT NAME
THE
SMITHFIELD

drbdesign@drbdesign.com 919.631.5979
250 Shipwash Dr Suite 105 Garner, NC 27529

CLIENT NAME
RiverWILD
114 W. Main St.
Clayton, NC 27520
brittany@one27homes.com
919-766-8782

SHEET NAME
ELEVATIONS
SHEET #

1

of 9

THE SMITHFIELD



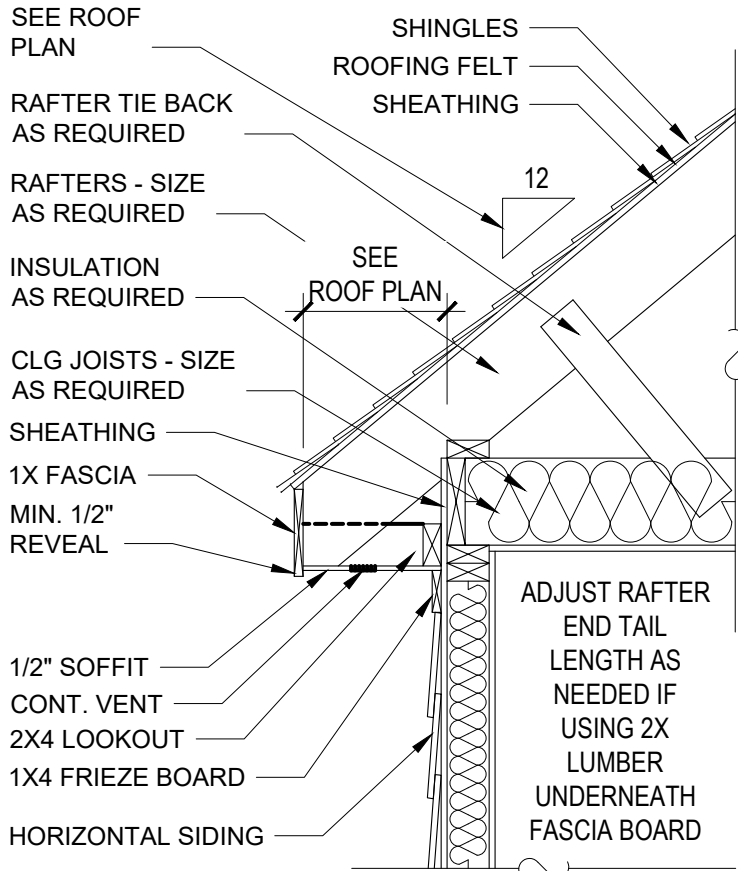
REAR ELEVATION

1/4" = 1'-0"



LEFT ELEVATION

1/4" = 1'-0"



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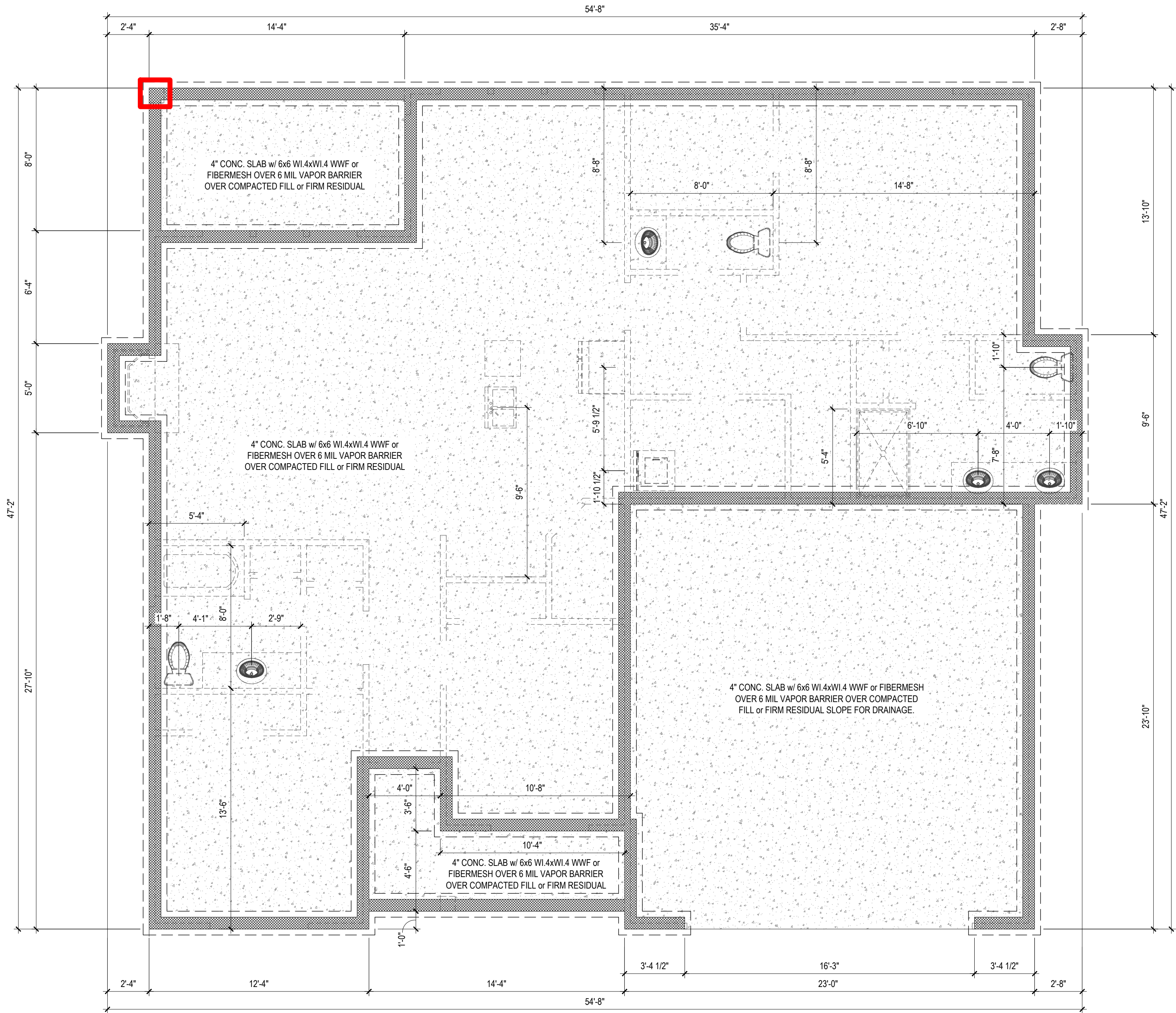
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FOUNDATION PLAN

1/4" = 1'-0"

STEM WALL

NOTE: SEE STRUCTURAL PLANS
FOR ENGINEERING INFORMATION

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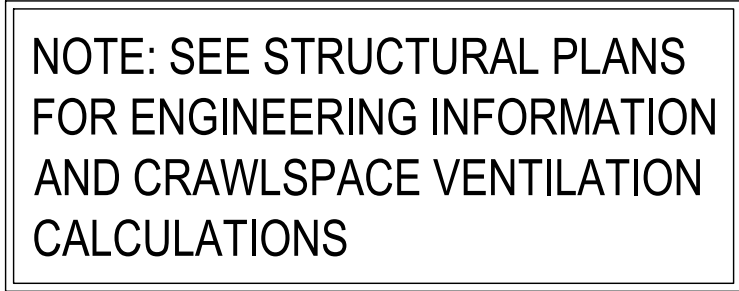
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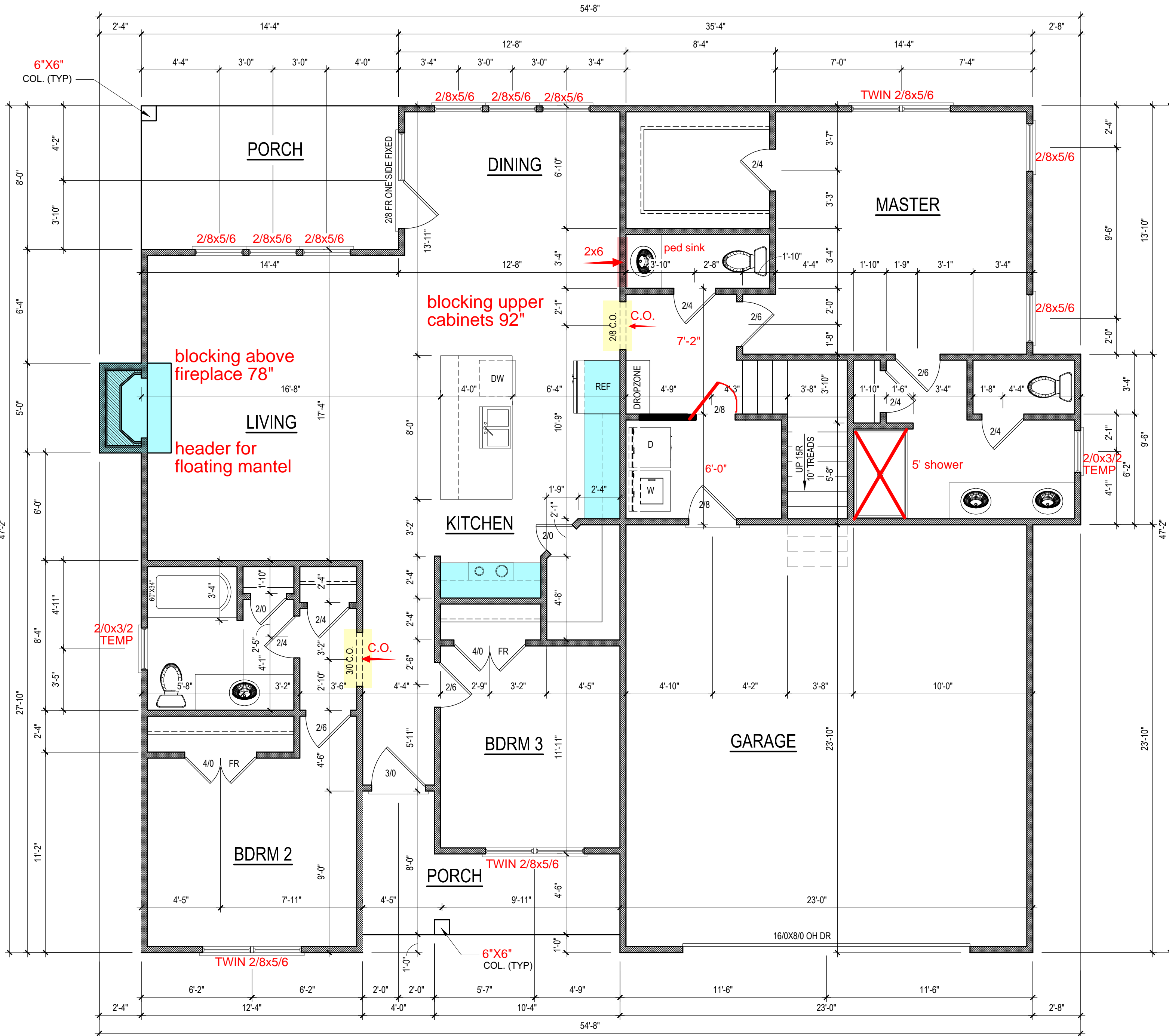
SHEET NAME
STEM WALL
SHEET #
3 of 9



4" CONC. SLAB w/ 6x6 WI.4xWI.4 WWF or
FIBERMESH OVER 6 MIL VAPOR BARRIER
OVER COMPACTED FILL or FIRM RESIDUAL

- NOTE: VENT CRAWLSPACE PER
LOCAL CODES AND REQUIREMENTS

CRAWL SPACE



FIRST FLOOR PLAN

1/4" = 1'-0" CEILING HGT. = 9'-0"

HEATED/HABITABLE
SQUARE FOOTAGE

First Floor 1630

TOTAL HEATED 1630

UNHTD SQUARE FOOTAGE

Garage 542

Front Porch 79

Rear Porch 115

TOTAL UNHEATED 736

Optional Rec Room 254

TOTAL SQ FT 2620

NOTE:
ALL EXTERIOR WALLS
ARE NOMINAL 4" UNO

NOTE:
ALL INTERIOR WALLS
ARE NOMINAL 4" UNO

NOTE:
ALL ANGLED WALLS
ARE 45° UNO

NOTE:
ALL DIMENSIONS ARE
FRAME TO FRAME

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SCALE
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SHEET NAME
1ST_FLOOR
SHEET #

6

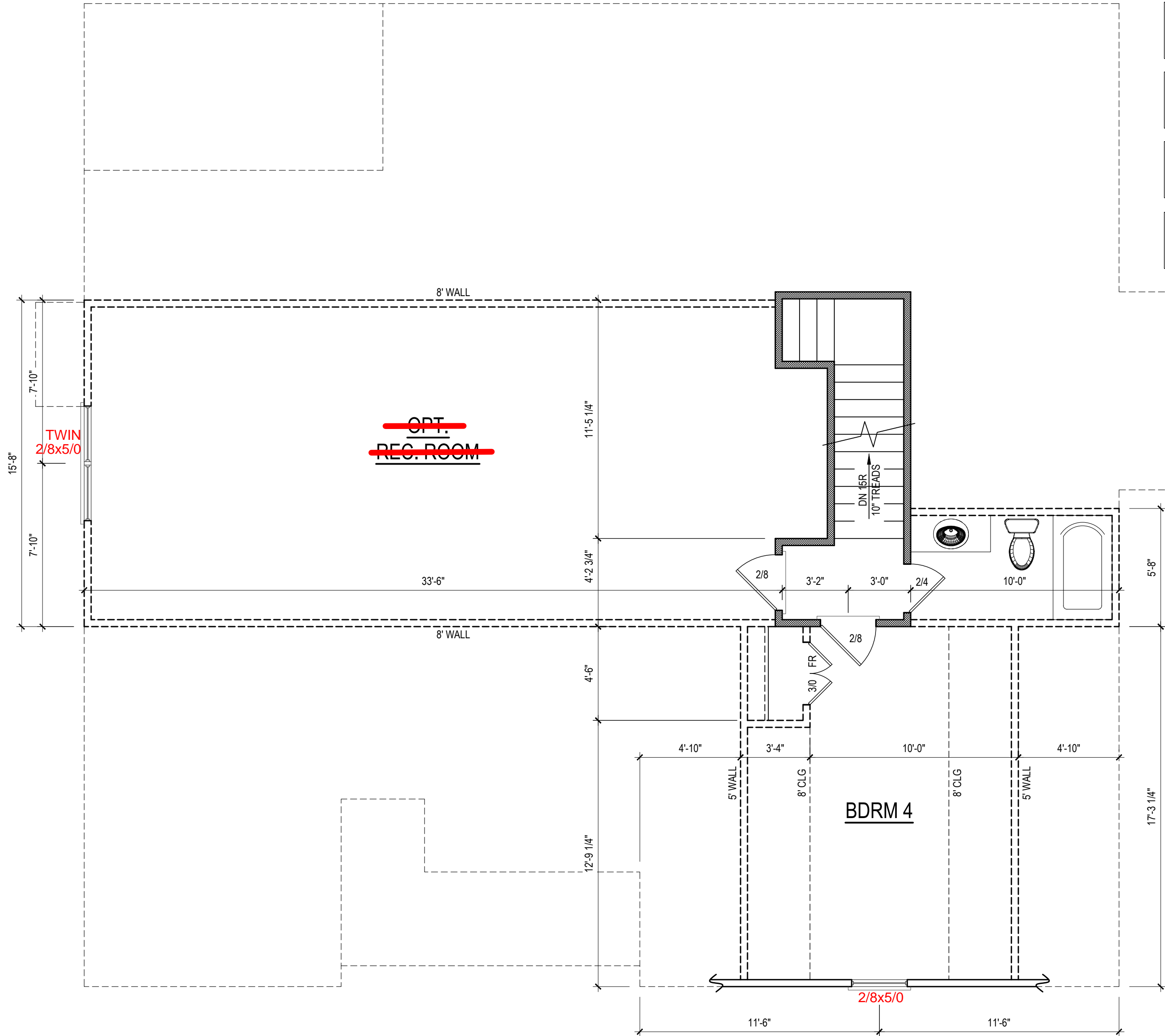
of 9

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SECOND FLOOR PLAN

1/4" = 1'-0"

CEILING HGT. = 8'-0"



NOTE:
ALL EXTERIOR WALLS
ARE 4" UNO

NOTE:
ALL INTERIOR WALLS
ARE 4" UNO

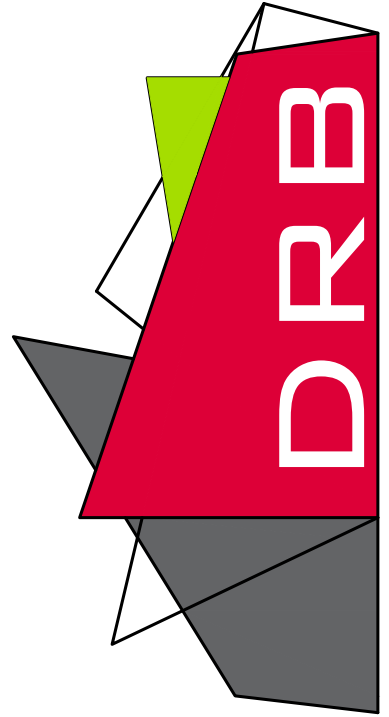
NOTE:
ALL DIMENSIONS ARE
FRAME TO FRAME

NOTE:
SEE ELEVATIONS FOR
WINDOW HDR HGTS

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DATE
06/11/2024
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MMB
CHECKED BY
DRB
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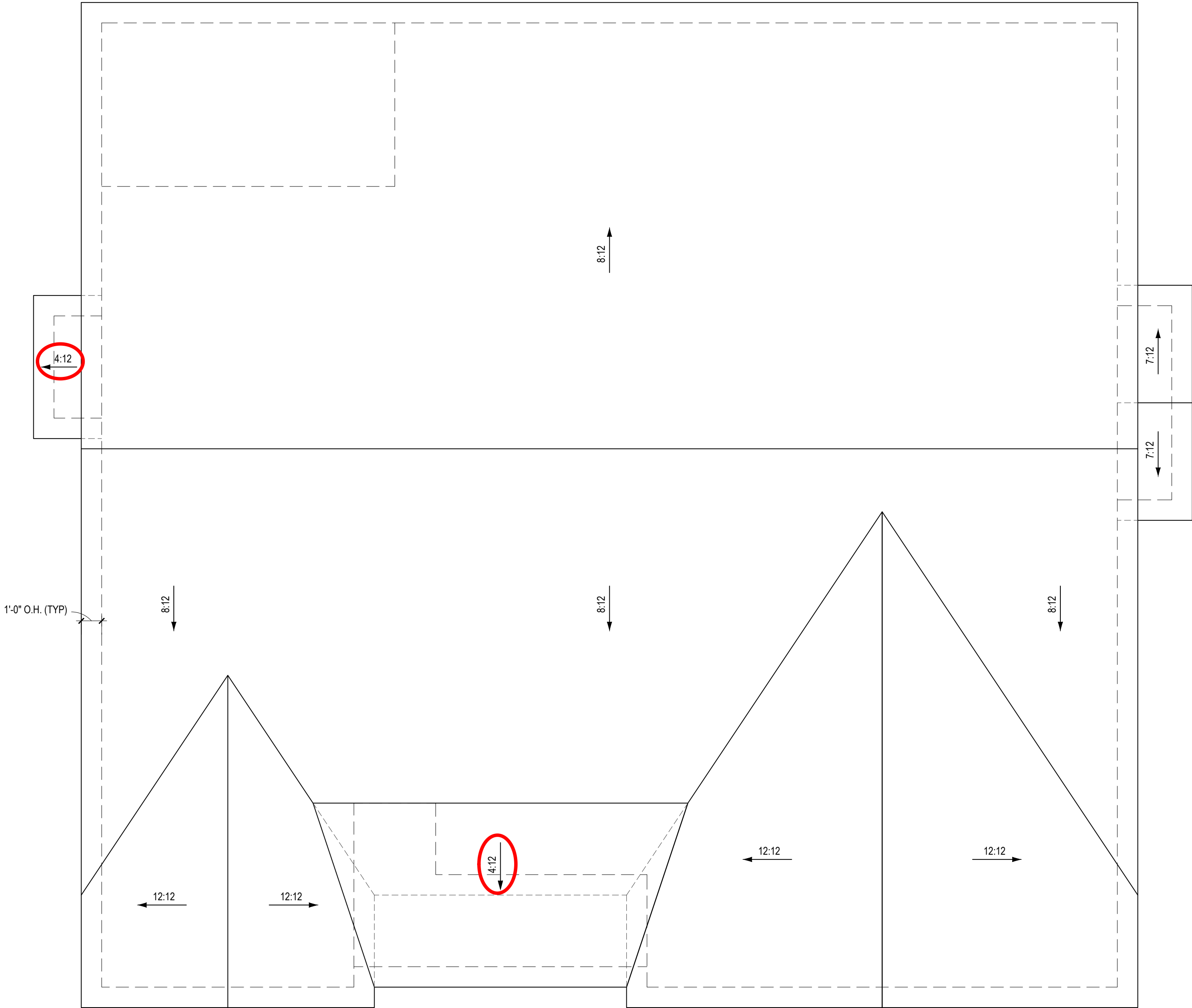
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SHEET NAME
2ND_FLOOR
SHEET #

8

of 9



NOTE: SEE STRUCTURAL PLANS FOR
ATTIC VENTILATION CALCULATIONS

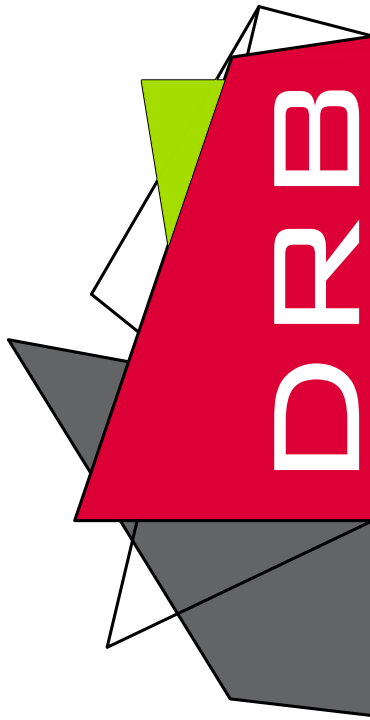
NOTE: ANY ROOF PITCH 4:12 OR LESS SHALL BE
PROPERLY WATERPROOFED PER BLDG. CODE

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

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SHEET NAME
ROOF
SHEET #
9 of 9

Sheet Number

S1.2

1 of 7

STRUCTURAL SHEATHING NOTES

- DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS.
- WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2018 NCRC.
- BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.3. REFER TO SECTION R602.10.4 FOR LOAD PATH DETAILS INCLUDING CONNECTIONS & SUPPORT OF BRACED WALL PANELS.

1 REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCRC.

- INTERIOR BRACED WALL PANELS (BWP) INDICATED SHALL BE SHEATHED IN ACCORDANCE WITH THE GB METHOD OR WSP METHOD AS PRESCRIBED IN SECTION R602.10.1 (UNO)

2 1/2" GYPSUM BOARD (GB) MINIMUM LENGTH OF 8'-0" (ISOLATED PANELS) OR 4'-0" (CONTINUOUS SHEATHING). SECURE w/ 5d COOLER NAILS (OR EQUAL PER TABLE R702.3.5) SPACED @ 7" O.C. AT PANEL EDGES, INCLUDING TOP AND BOTTOM PLATES & 7" O.C. AT INTERMEDIATE SUPPORTS

3 3/8" WOOD STRUCTURAL PANEL (WSP) SECURE w/ 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS

- EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.3 (UNO)
- ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND GABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS.
- MINIMUM BRACED WALL PANEL LENGTHS WITH CS-WSP METHOD SHALL BE AS FOLLOWS:
 - 24" ADJACENT TO OPENINGS NOT MORE THAN 67% OF WALL HEIGHT
 - 30" ADJACENT TO OPENINGS GREATER THAN 67% AND LESS THAN 85% OF WALL HEIGHT.
 - 48" FOR OPENINGS GREATER THAN 85% OF WALL HEIGHT

4 SHEATH INTERIOR & EXTERIOR

- FOR CS-WSP METHOD, A MINIMUM 24" BRACED WALL PANEL CORNER RETURN SHALL BE PROVIDED AT BOTH ENDS OF A BRACED WALL LINE IN ACCORDANCE WITH FIGURE R602.10.3(4). IN LIEU OF A CORNER RETURN, EITHER A MIN. 48" BRACED WALL PANEL SHALL BE PROVIDED AT THE CORNER OR A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT DESIGN VALUE OF 800# SHALL BE FASTENED TO THE EDGE OF THE BRACED WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FRAMING BELOW.

5 MINIMUM 800# HOLD-DOWN DEVICE

STRUCTURAL NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF "NORTH CAROLINA STATE 2018 RESIDENTIAL BUILDING CODE", IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.
- IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSIONS AND SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
- ALL LUMBER SHALL BE SYP #2 (UNO) ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI (I.E. iLEVEL MICROLAM) ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
- ALL LOAD BEARING EXTERIOR WINDOW HEADERS WITH MAXIMUM SPAN OF 5'-6" SHOULD BE A (2) 2x10 w/ (1) 2x4 KING STUD AND (1) 2x4 JACK STUD NAILED TOGETHER w/ (2) 10d @ 8" O.C. PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 6'-8". MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-6". OTHERWISE REFER TO TABLE R502.5(1).
- ALL INTERIOR LOAD BEARING HEADERS TO BE (2) 2x10 (U.N.O.) REFER TO TABLE R502.5(1) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS (UNO) REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10'-0" IN HEIGHT.
- ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50 Fy = 50 KSI MIN. (UNO)
- ALL EXTERIOR LUMBER TO BE #2 SYP PT
- ALL CONCRETE, fc = 3000 PSI MIN.
- PRESUMPTIVE BEARING CAPACITY = 2000 PSF
- 1/2" Ø ANCHOR BOLTS SPACED AT MAXIMUM OF 6'-0" O.C. AND NOT MORE THAN 12" FROM THE CORNER. THERE SHALL BE A MINIMUM OF (2) BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3'-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY.
- PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
- PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
- PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.4 OF THE 2018 IRC.
- MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.

DESIGN LOADS

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
FLOOR (primary)	40	10	L/360	L/240
FLOOR (secondary)	40	10	L/360	L/240
ATTIC (w/ storage)	20	10	L/240	L/180
ATTIC (no access)	10	5	L/240	L/180
EXTERNAL BALCONY	40	10	L/360	L/240
ROOF	20	10	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	BASED ON 120 MPH (EXPOSURE B)			
SEISMIC	BASED ON SEISMIC ZONES A, B & C			

***NOTE: SECURE 4-PLY W/ 1/2" Ø THRU-BOLTS @ 24" O.C. (OR EQUIV. STRUCTURAL SCREWS)

*NOTE: FRAMING IS FOR 2ND FLOOR WITH OPTIONAL REC. ROOM ONLY

**NOTE: FRAMING IS FOR 2ND FLOOR WITHOUT OPTIONAL REC. ROOM ONLY

NOTE: ADDITIONAL JOISTS

INSTALL AN ADDITIONAL JOIST UNDER NON-LOAD BEARING WALLS, BUILT-INS, AND CABINETS ABOVE THAT ARE PARALLEL TO THE FRAMING SYSTEM ON THIS PAGE, TYP UNO, BUILDER TO INSTALL AS REQUIRED, VIF DIMENSIONS

FIRST FLOOR PLAN

1/4" = 1'-0"

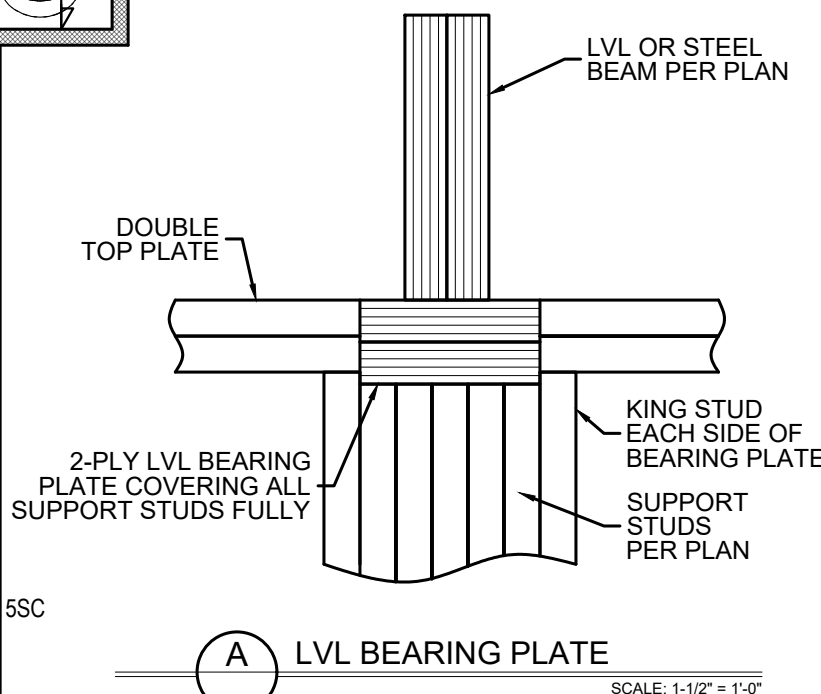
CEILING HGT. = 9'-0"

KING STUD SCHEDULE

HEADER SPAN (FT)	MIN. # OF FULL HEIGHT STUDS (KING) E.E. OF OPENING PER WALL DEPTH	
	2 X 4 STUD WALL	2 X 6 STUD WALL
UP TO 3'-0"	1	1
3'-1" TO 6'-0"	2	1
6'-1" TO 9'-0"	3	2
9'-1" TO 12'-0"	4	2
12'-1" TO 15'-0"	5	3
15'-1" TO 18'-0"	6	3

NOTES*:

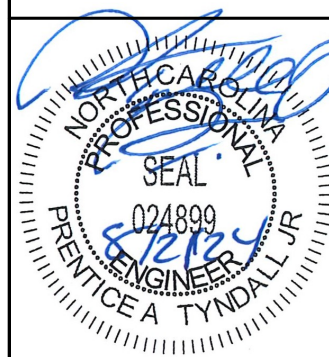
- TABLE DENOTES REQUIRED MINIMUM NUMBER OF STUDS EE OF HEADER, TYP UNO ON PLANS
- NUMBER OF KING STUDS LISTED ABOVE ARE BASED 10' NOMINAL WALL HEIGHT, STUD SPACING OF 16" O.C., AND ULTIMATE WIND SPEED OF 120 MPH (EXPOSURE B)
- HEADER SPANS IN TABLE ARE BASED ON ROUGH OPENINGS. INTERPOLATION BETWEEN SPAN VALUES IS PERMITTED, ROUND UP NUMBER OF KING STUDS, EXTRAPOLATION IS PROHIBITED. CONTACT TYNDALL ENGINEERING AND DESIGN IF HEADER SPANS EXCEED TABLE VALUES



BRACING PANEL LENGTHS REQUIRED:
BWL A = 13.2 FT
BWL B = 13.2 FT
BWL 1 = 13.7 FT
BWL 2 = 13.7 FT

BRACING PANEL LENGTHS PROVIDED:
BWL A = 26.83 FT CS-WSP
BWL B = 22.17 FT CS-WSP / PF
BWL 1 = 36.83 FT CS-WSP
BWL 2 = 37.83 FT CS-WSP

* Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
* Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A.
* Failure to do so will void Tyndall Engineering & Design, P.A. liability.
* Please review these documents carefully.
Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.



TYNDALL
ENGINEERING & DESIGN, P.A.



199 775-1800 • F 919 775-5458
www.tyndallengineering.com

THE SMITHFIELD

1ST FLR. HEADER
2ND FLR. FRMG.

Project #:

DRB2201-0234Z_C

Date:

08/02/2024

Engineered By:

JA

DWG. Checked By:

PTII

Scale:

SEE PLAN

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

Sheet Number

S2

2 of 7

A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "PRENTICE A TYNDALL JR" at the bottom. Inside the ring, the word "SEAL" is at the top, "ENGINEER" is at the bottom, and the license number "024899" is in the center. A blue ink signature is written across the seal.



T 919 778-1200 • F 919 778-9688
250 Shipwash Drive • Garner • North Carolina • 27529
www.syncallengineering.com

Client:

Plan:

2ND FLR. HDR.
2ND FLR. CLG.

Date:
08/02/2024

Date:
08/02/2024

DWG. Checked By

Scale:

SEE PLAIN

REVISIONS		
<u>No.</u>	<u>Date:</u>	<u>Remarks</u>
1		
2		
3		
4		

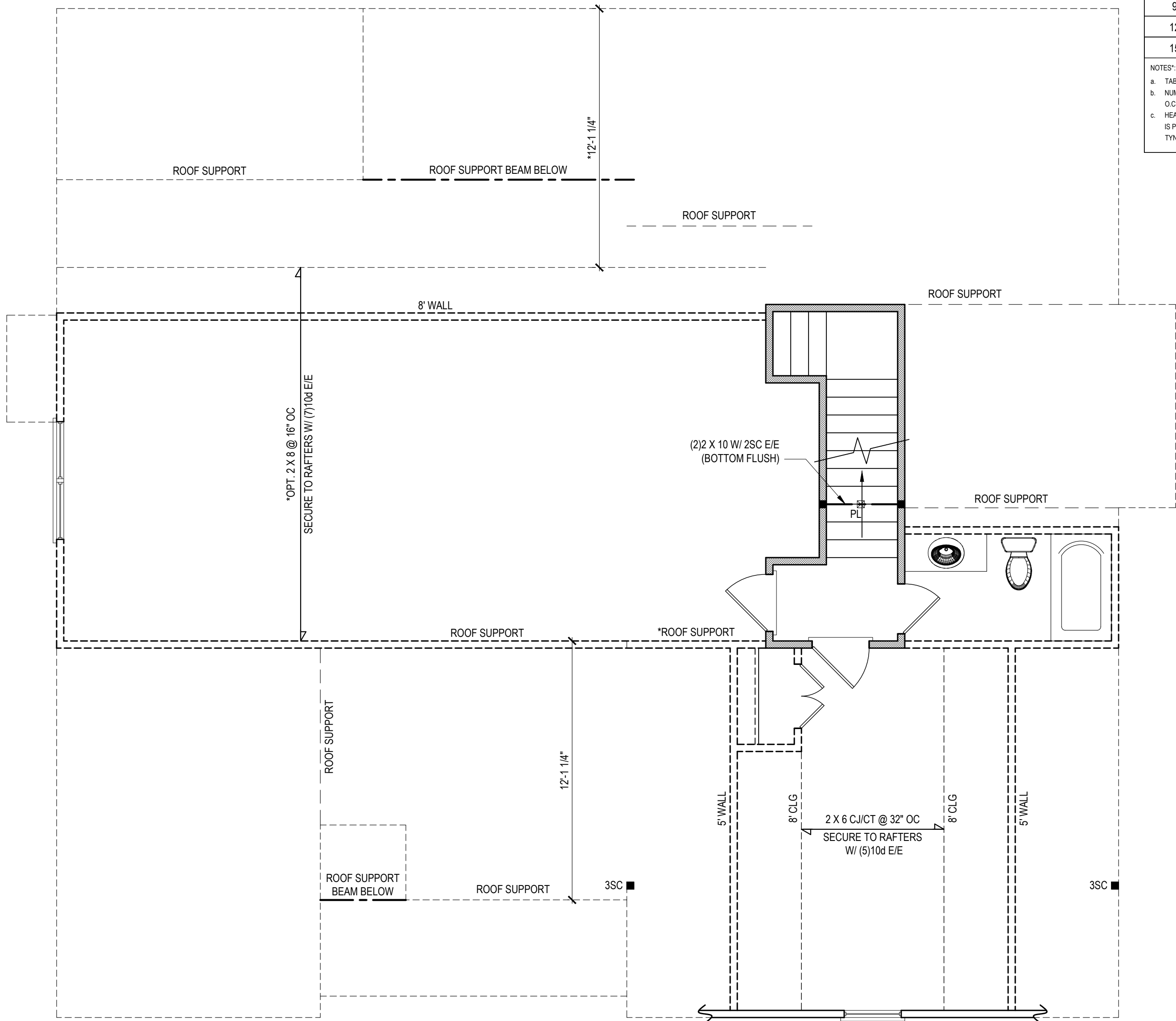
S3.1

3 of 7

KING STUD SCHEDULE		
	MIN. # OF FULL HEIGHT STUDS (KING) E.E. OF OPENING PER WALL DEPTH	
HEADER SPAN (FT)	2 X 4 STUD WALL	2 X 6 STUD WALL
UP TO 3'-0"	1	1
3'-1" TO 6'-0"	2	1
6'-1" TO 9'-0"	3	2
9'-1" TO 12'-0"	4	2
12'-1" TO 15'-0"	5	3
15'-1" TO 18'-0"	6	3

NOTES:

- TABLE DENOTES REQUIRED MINIMUM NUMBER OF STUDS EE OF HEADER, TYP UNO ON PLANS
- NUMBER OF KING STUDS LISTED ABOVE ARE BASED 10' NOMINAL WALL HEIGHT, STUD SPACING OF 16" O.C., AND ULTIMATE WIND SPEED OF 120 MPH (EXPOSURE B)
- HEADER SPANS IN TABLE ARE BASED ON ROUGH OPENINGS. INTERPOLATION BETWEEN SPAN VALUES IS PERMITTED, ROUND UP NUMBER OF KING STUDS, EXTRAPOLATION IS PROHIBITED. CONTACT TYNDALE ENGINEERING AND DESIGN IF HEADER SPANS EXCEED TABLE VALUES



*NOTE: FRAMING IS FOR 2ND FLOOR
WITH OPTIONAL REC. ROOM ONLY

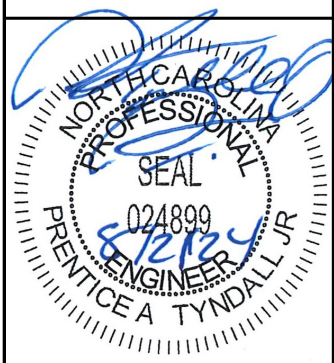
	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
FLOOR (primary)	40	10	L/360	L/240
FLOOR (secondary)	40	10	L/360	L/240
ATTIC (w/ storage)	20	10	L/240	L/180
ATTIC (no access)	10	5	L/240	L/180
EXTERNAL BALCONY	40	10	L/360	L/240
ROOF	20	10	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
BASED ON 120 MPH (EXPOSURE B)				
SEISMIC	BASED ON SEISMIC ZONES A, B & C			

SECOND FLOOR PLAN

1/4" = 1'-0"

CEILING HGT. = 8'-0"

* Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
* Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering & Design, P.A. liability.
* Please review these documents carefully. Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.



TYNDALL
ENGINEERING & DESIGN, P.A.

199 775-3800 • F 919 775-9658
280 Shipwash Drive • Garner • North Carolina • 27539
www.tyndallengineering.com

Client:

RIVERWILD
114 W. MAIN ST.
CLAYTON, NC 27520

Date:

THE SMITHFIELD

ROOF PLAN

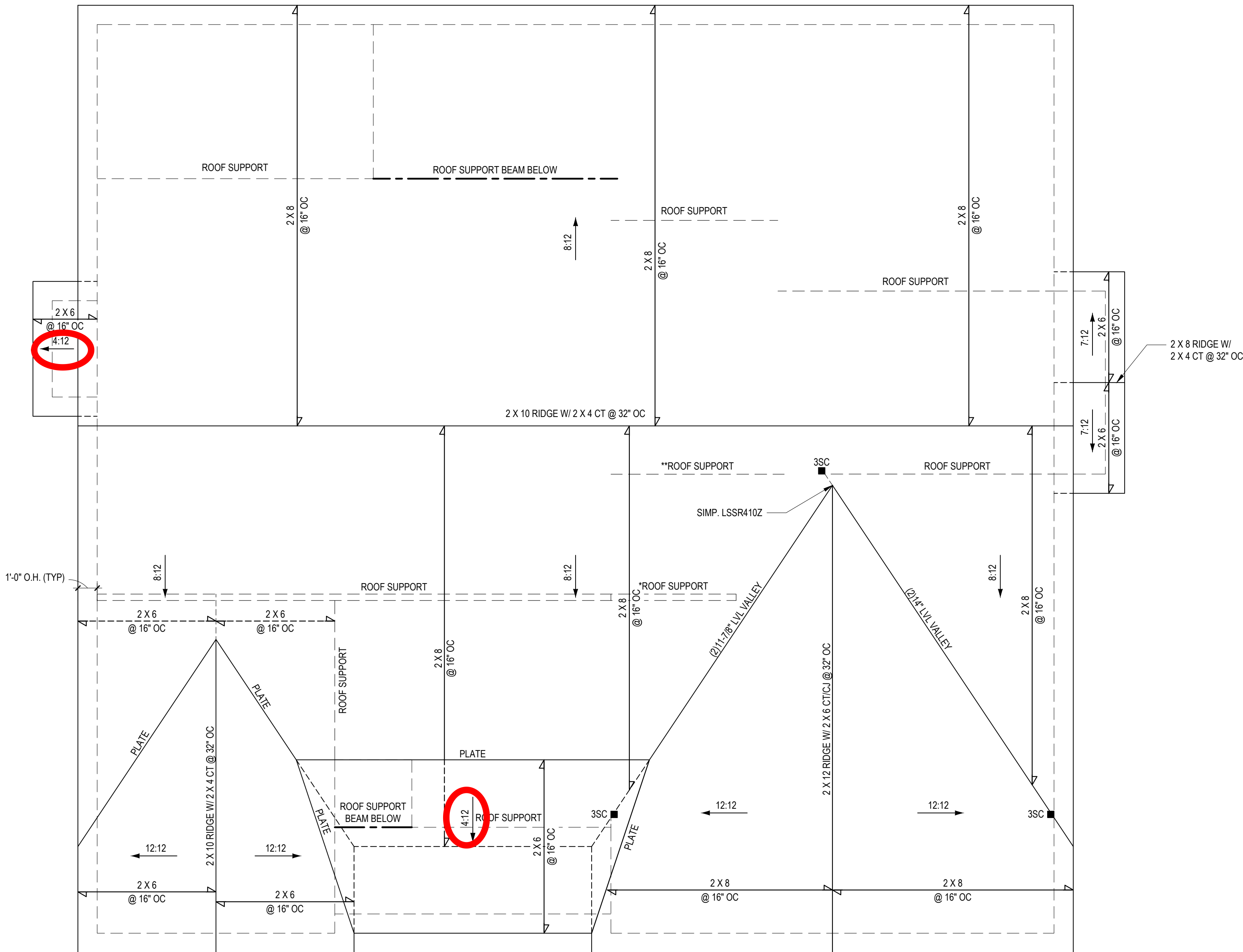
Project #:	DRB2201-0234Z_C
Date:	08/02/2024
Engineered By:	JA
DWG. Checked By:	PTII
Scale:	SEE PLAN

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DOUBLE PAPER

*NOTE: FRAMING IS FOR 2ND FLOOR WITH OPTIONAL REC. ROOM ONLY

**NOTE: FRAMING IS FOR 2ND FLOOR WITHOUT OPTIONAL REC. ROOM ONLY

NOTE: ANY ROOF PITCH 4:12 OR LESS SHALL BE PROPERLY WATERPROOFED PER BLDG. CODE

ROOF PLAN

1/4" = 1'-0"

2426 SQ. FT. OF ATTIC / 300 = 8.09 SQ. FT. INLETS/OUTLETS REQUIRED

- CALCULATION BASED ON VENTILATORS USED AT LEAST 3'-0" ABOVE THE COMICE VENTS WITH THE BALANCE OF VENTILATION PROVIDED BY EAVE VENTS.
- CATHEDRAL CEILINGS SHALL HAVE A 1" MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DECK AND THE INSULATION.

NO SCALE

*

ATTIC VENTILATION CALCULATION

STRUCTURAL NOTES

- 1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF "NORTH CAROLINA STATE 2018 RESIDENTIAL BUILDING CODE", IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.
- 2) DESIGN LOADS:
- | | LIVE LOAD
(PSF) | DEAD LOAD
(PSF) | DEFLECTION | |
|---------------------------|-------------------------------|--------------------|------------|-------|
| | | | LL | TL |
| ALL FLOORS | 40 | 10 | L/360 | L/240 |
| ATTIC (w/ walk up stairs) | 30 | 10 | L/360 | L/240 |
| ATTIC (pull down access) | 20 | 10 | L/240 | L/180 |
| ATTIC (no access) | 10 | 5 | L/240 | L/180 |
| EXTERNAL BALCONY | 40 | 10 | L/360 | L/240 |
| ROOF | 20 | 10 | L/240 | L/180 |
| ROOF TRUSS | 20 | 20 | L/240 | L/180 |
| WIND LOAD | BASED ON 120 MPH (EXPOSURE B) | | | |
| SEISMIC | SEISMIC ZONES A, B & C | | | |
- 3) MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
- 4) CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE. (U.N.O.)
- 5) MAXIMUM DEPTH OF UNBALANCED FILL AGAINST FOUNDATION WALLS TO BE LESS THAN 4'-0" WITHOUT USING SUFFICIENT WALL BRACING. REFER TO SECTION R404 OF 2018 NC BUILDING CODE FOR BACKFILL LIMITATIONS BASED ON WALL HEIGHT, WALL THICKNESS, SOIL TYPE, AND UNBALANCED BACKFILL HEIGHT.
- 6) ALL FRAMING LUMBER SHALL BE SYP #2 (Fb = 800 PSI, BASED ON 2x10) UNO.
ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.
ALL LVL LUMBER TO BE 1 1/2" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI (U.N.O.)
ALL LSL LUMBER TO BE 3 1/2" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2325 PSI, E = 1.6M PSI (U.N.O.)
ALL PSL LUMBER TO BE 3 1/2" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2400 PSI, E = 1.8M PSI (U.N.O.)
- 7) ALL LOAD BEARING EXTERIOR HEADERS SHALL BE AT (2) 2x10. (U.N.O.) REFER TO TABLE R602.7(1) & (2) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS UNLESS SPECIFICALLY NOTED ON PLANS.
- 8) ALL STRUCTURAL STEEL W-SHAPES (I-BEAMS) SHALL BE ASTM A992 GRADE 50.
ALL STEEL ANGLES, PLATES, AND C-CHANNELS SHALL BE ASTM A36.
ALL STEEL PIPE SHALL BE ASTM A53 GRADE B.
- 9) STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3'-1/2" AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO (2) LAG SCREWS (1/2"Ø x 4" LONG), LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOISTS ARE 10E NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.
- 10) PROVIDE ANCHOR BOLT PLACEMENT PER SECTION 403.1.6: 1/2"Ø ANCHOR BOLTS SPACED AT 6'-0" O.C. AND PLACED 12" FROM THE END OF EACH PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3'-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE. THERE SHALL BE A MINIMUM TWO ANCHOR BOLTS PER PLATE SECTION.
- 11) FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF NC BUILDING CODE.
- 12) WALL AND ROOF CLADDING VALUES:
WALL CLADDING SHALL BE DESIGNED FOR 28.0 POUNDS PER SQUARE FOOT (LBS/SQFT) OR GREATER POSITIVE AND NEGATIVE PRESSURE. FLOOR VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:
39.0 LBS/SQFT FOR ROOF PITCHES 0/12 TO 1/12
36.0 LBS/SQFT FOR ROOF PITCHES 1/12 TO 5/12
18.0 LBS/SQFT FOR ROOF PITCHES 5/12 TO 12/12
**MEAN ROOF HEIGHT 30'-0" OR LESS
- 13) FOR ROOF SLOPES FROM 2/12 THROUGH 4/12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER.
- 14) REFER TO SECTION R602.3 FOR FRAMING OF ALL WALLS OVER 10'-0" IN HEIGHT.
- 15) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NCRC.
- 16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- 17) REFER TO TABLE N1102.1 FOR PRESCRIPTIVE BUILDING ENVELOPE THERMAL COMPONENT CRITERIA.
- 18) PSL COLUMNS DESIGNED WITH MAXIMUM HEIGHT OF 9'-0" (U.N.O.)
- 19) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
- 20) MAXIMUM MASONRY PEIR HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- 21) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSION OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.

CLIMATE ZONES	FENESTRATION U-FACTOR ^{a,1}	SKYLIGHT U-FACTOR ^b	GLAZED FENESTRATION SHGC ^{b,2}	CEILING R-VALUE ^{2,3}	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE ¹	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE AND DEPTH ^d	CRAWL SPACE WALL R-VALUE ^c
3	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5 ^h	5/13 or 5/10 cont	19	5/13 ^f	0	5/13
4	0.35	0.55	0.30	38 or 30 cont ^j	15 or 13 + 2.5 ^h	5/13 or 5/10 cont	19	10/15	10	10/15
5	0.35	0.55	NR	38 or 30 cont ^j	19, or 13 + 5 or 15 + 3 ^h	13/17 or 13/12.5 cont	30 ^g	10/15	10	10/19

TABLE N1102.1 CLIMATE ZONES 3-5

- NO SCALE
- a. R-VALUES ARE MINIMUM. U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
- b. THE FENESTRATION U-FACTOR COLUMN EXCLUDES SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.
- c. "15/15" MEANS R-15 CONTINUOUS INSULATED SHEATHING ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-15 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 24" BELOW GRADE WHICHEVER IS LESS. FOR FLOATING SLABS, INSULATION SHALL EXTEND TO THE BOTTOM OF THE FOUNDATION WALL OR 24" WHICHEVER IS LESS. R-6 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR FLOATED SLABS.
- e. DELETED
- f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.7 AND TABLE N1101.7.
- g. OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY. R-19 MINIMUM.
- h. THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION. "13+4" MEANS R-13 CAVITY INSULATION PLUS R-4 INSULATED SHEATHING. "15+7" MEANS R-15 CAVITY INSULATION PLUS R-3 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 25% OR LESS OF THE EXTERIOR, INSULATED SHEATHING IS NOT REQUIRED WHERE THE STRUCTURAL SHEATHING IS USED. IF STRUCTURAL SHEATHING COVERS MORE THAN 25 PERCENT OF THE EXTERIOR, SHALL BE SUPPLEMENTED WITH INSULATED SHEATHING OF AT LEAST R-2. "13 + 3.5" MEANS R-13 CAVITY INSULATION PLUS R-3.5 SHEATHING.
- i. FOR MASS WALLS, THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR MASS WALL.
- j. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A U-FACTOR NO GREATER THAN 0.55 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- k. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A SHGC NO GREATER THAN 0.70 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- l. B-30 SHALL BE DEEMED TO SATISFY THE CEILING INSULATION REQUIREMENT WHEREVER THE FULL HEIGHT OF UNCOMPRESSED B-30 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES. OTHERWISE B-38 INSULATION IS REQUIRED WHERE ADEQUATE CLEARANCE EXISTS OR INSULATION MUST EXTEND TO EITHER THE INSULATION BATTLE OR WITHIN 1 INCH OF THE ATTIC ROOF FLOOR.
- m. TABLE VALUE REQUIRED EXCEPT FOR ROOF EDGE WHERE THE SPACE IS LIMITED BY THE PITCH OF THE ROOF. THERE THE INSULATION MUST FILL THE SPACE UP TO THE AIR BATTLE.
- n. B-11 IF FIBERGLASS BATT COMPRESSED AND INSTALLED IN A CAVITY IS DEEMED TO COMPLY. FIBERGLASS BATT R-11 OR HIGHER COMPRESSED AND INSTALLED IN A 2x4 WALL IS NOT DEEMED TO COMPLY.
- o. BASEMENT WALL MEETING THE MINIMUM MASS WALL SPECIFIC HEAT CONTENT REQUIREMENT MAY USE THE MASS WALL R-VALUE AS THE MINIMUM REQUIREMENT.

1630 SQ. FT. OF CRAWL SPACE / 150 = 10.87 SQ. FT. OF REQ'D VENTILATION WITHOUT CROSS VENTILATION
10.87 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 13.0 VENTS REQ'D (BASED ON 8" X 16" VENTS)!

-OR-

1630 SQ. FT. OF CRAWL SPACE / 1500 = 1.09 SQ. FT. OF REQ'D VENTILATION WITH CROSS VENTILATION
1.09 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 2.0 VENTS REQ'D (BASED ON 8" X 16" VENTS)!

- 1) VENT LOCATIONS MAY VARY FROM THOSE SHOWN ON PLAN, HOWEVER VENTS SHALL BE PLACED TO PROVIDE ADEQUATE VENTILATION AT ALL PORTS AND TO PREVENT DEAD AIR POCKETS.
- 2) THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/500 OF THE CRAWL SPACE GROUND AREA WHERE THE REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS VENTILATION OF THE CRAWL SPACE. THE INSTALLATION OF OPERABLE COVERS SHALL NOT BE PROHIBITED. ONE FOUNDATION VENT SHALL BE WITHIN 5 FEET OF EACH CORNER OF THE BUILDING TO PREVENT RAINWATER ENTRY WHEN THE CRAWL SPACE IS BUILT ON A SLOPED SITE. THE UPHILL FOUNDATION WALLS MAY BE CONSTRUCTED WITHOUT WALL VENT OPENINGS. VENT DAMS SHALL BE PROVIDED WHEN THE BOTTOM OF THE FOUNDATION VENT OPENING IS LESS THAN 4 INCHES ABOVE THE FINISHED EXTERIOR GRADE.
- WALL VENTED CRAWL SPACES REQUIRE FULL COVERAGE GROUND VAPOR RETARDERS.

CRAWL SPACE VENTILATION CALCULATION

DEFINITIONS FOR COMMON ABBREVIATIONS

ALT	=	ALTERNATE	MAX	=	MAXIMUM
CANT	=	CANTILEVER	MIN	=	MINIMUM
CJ	=	CEILING JOIST	NOM	=	NOMINAL
CMU	=	CONCRETE MASONRY UNIT	O.C.	=	ON CENTER
COL	=	COLUMN	PL	=	POINT LOAD
CONC	=	CONCRETE	PT	=	PRESSURE TREATED
CONT	=	CONTINUOUS	REINF	=	REINFORCED
CT	=	COLLAR TIE	REQD	=	REQUIRED
DBL	=	DOUBLE	RJ	=	ROOF JOIST
DIA	=	DIAMETER	RS	=	ROOF SUPPORT
DJ	=	DOUBLE JOIST	SC	=	STUD COLUMN
DR	=	DOUBLE RAFTER	SCH	=	SCHEDULE
EA	=	EACH	SPEC	=	SPECIFIED
EE	=	EACH END	THK	=	THICK
FJ	=	FLOOR JOIST	TJ	=	TRIPLE JOIST
FND	=	FOUNDATION	TRTD	=	TREATED
FTG	=	FOOTING	TYP	=	TYPICAL
GALV	=	GALVANIZED	UNO	=	UNLESS NOTED OTHERWISE
HORIZ	=	HORIZONTAL	W	=	WIDE FLANGE BEAM
HT	=	HEIGHT	WWF	=	WELDED WIRE FABRIC
MANUF	=	MANUFACTURER	XJ	=	EXTRA JOIST

- 1) MAXIMUM HEIGHT OF DECK SUPPORT POSTS AS FOLLOWS:

POST SIZE	MAX. POST HEIGHT**
4 x 4	8'-0"
6 x 6	20'-0"
***	OVER 20'-0"

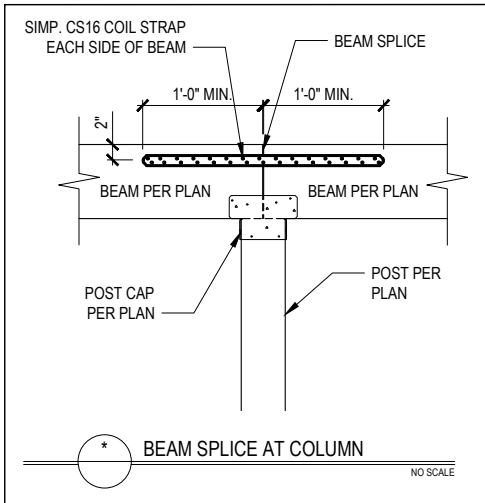
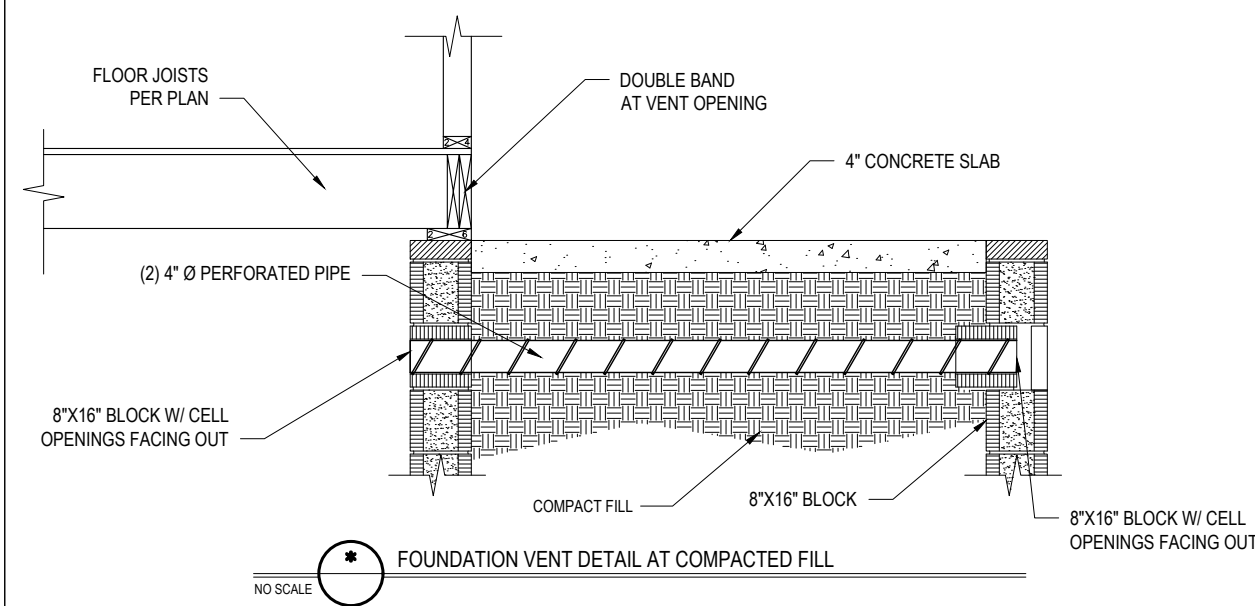
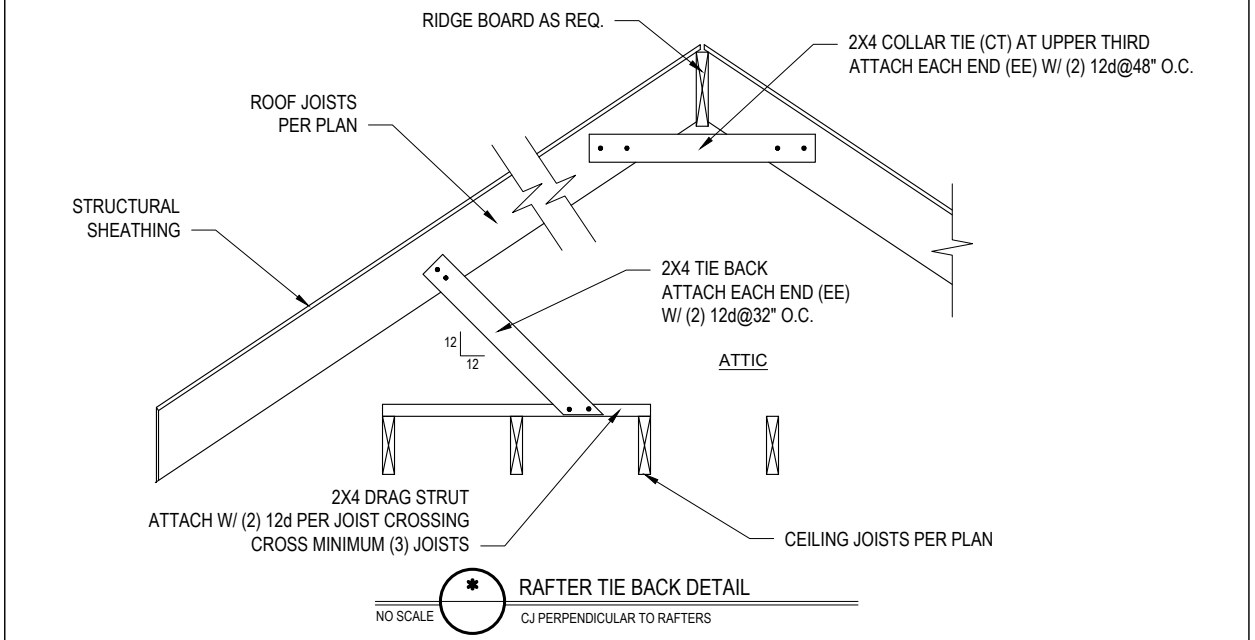
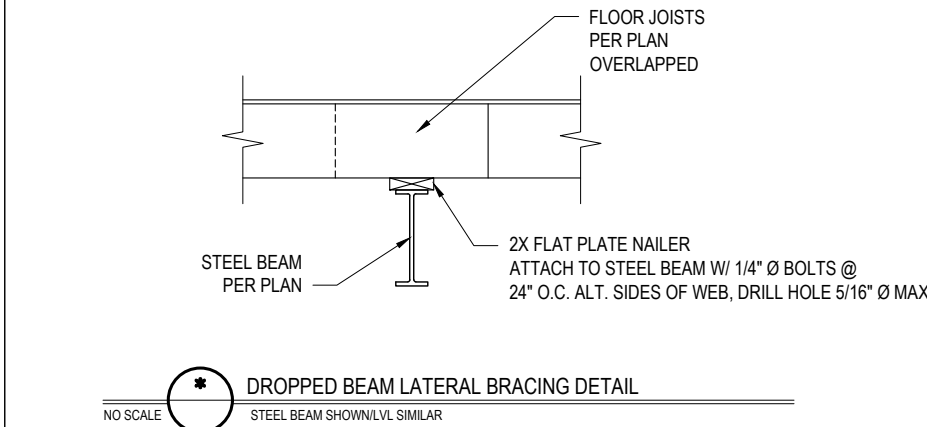
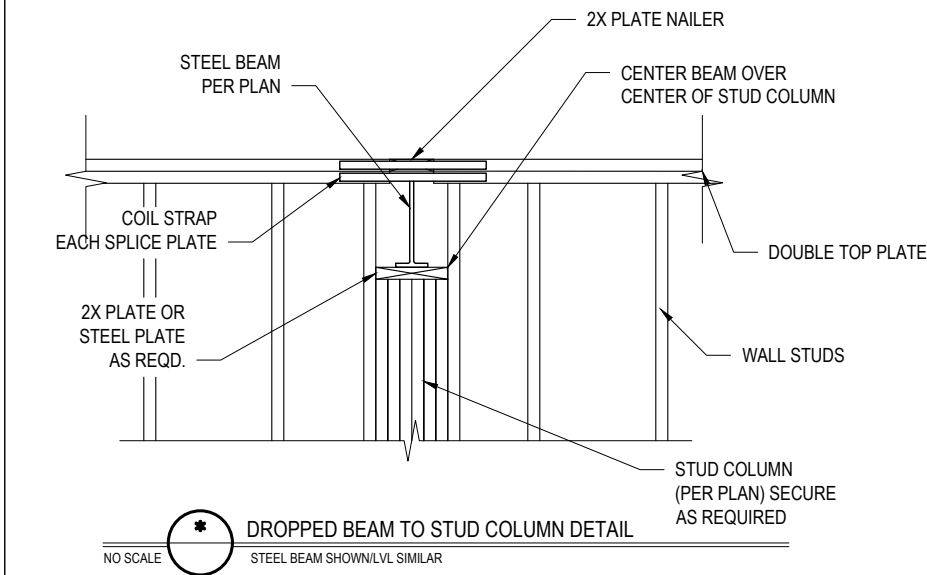
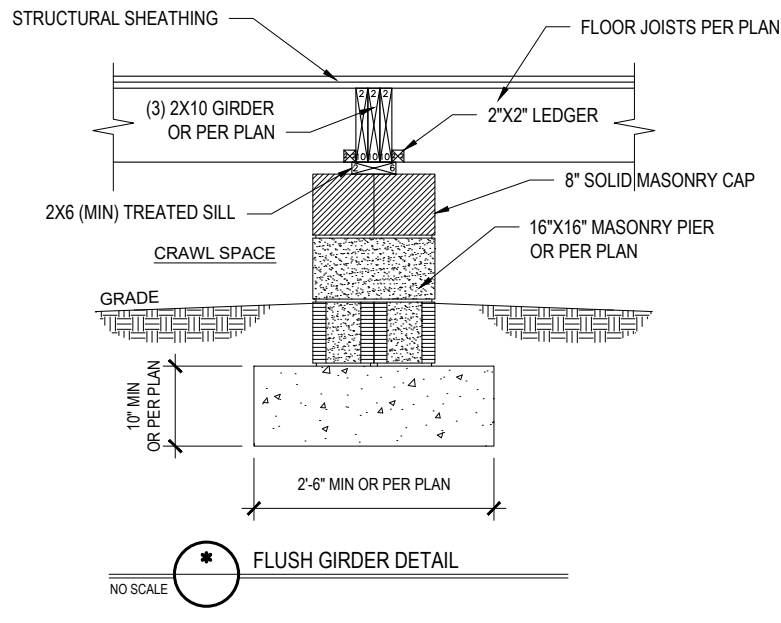
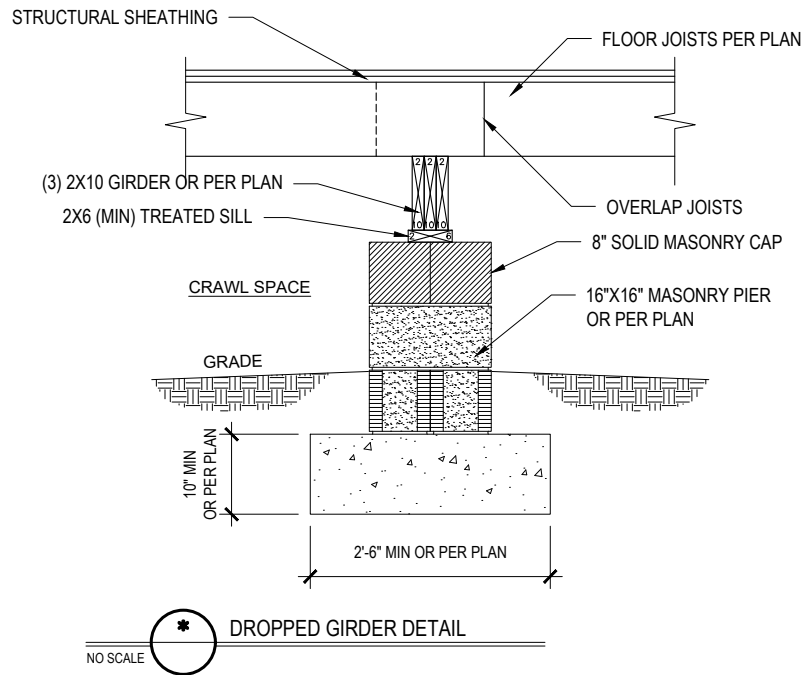
- * THIS TABLE IS BASED ON NO. 2 TREATED SOUTHERN PINE POSTS. MAXIMUM TRIBUTARY AREA IS BASED ON 128 TOTAL SQUARE FEET WHICH MAY BE LOCATED AT DIFFERENT LEVELS.
- ** FROM TOP OF FOOTING TO BOTTOM OF GIRDER.
- *** DECKS WITH POST HEIGHTS OVER 20'-0" SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT.

- 2) DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY BY ONE OF THESE METHODS:

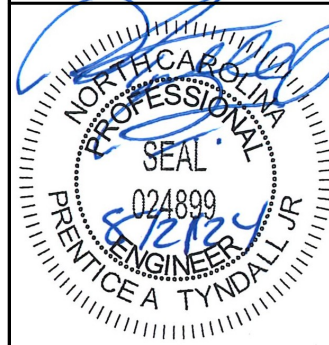
- A. THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION (4) ABOVE. LATERAL BRACING IS NOT REQUIRED.
- B. 4 x 4 WOOD KNEE BRACES MAY BE PROVIDED ON EACH COLUMN IN BOTH DIRECTIONS. THE KNEE BRACES SHALL ATTACH TO EACH POST AT A POINT NOT LESS THAN 1/3 OF THE POST LENGTH FROM THE TOP OF THE POST, AND THE BRACES SHALL BE ANGLED BETWEEN 45° AND 60° FROM THE HORIZONTAL. KNEE BRACES SHALL BE BOLTED TO THE POST AND GIRDER WITH ONE 5/8"Ø HOT DIPPED GALVANIZED BOLT AT EACH END OF THE BRACE.
- C. FOR FREESTANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POSTS IN ACCORDANCE WITH THE FOLLOWING:

POST SIZE	MAX. TRIBUTARY AREA	MAX. POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4 x 4	48 SQ. FT.	4'-0"	2'-6"	1'-0"
6 x 6	120 SQ. FT.	6'-0"	3'-6"	1'-8"

- D. 2 x 6 DIAGONAL VERTICAL CROSS BRACING MAY BE PROVIDED IN TWO (2) PERPENDICULAR DIRECTIONS FOR FREESTANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE 2 x 6s SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8"Ø HOT DIPPED GALVANIZED BOLT AT EACH END OF EACH BRACING MEMBER.
- E. FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 46.



* Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
* Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A.
* Failure to do so will void Tyndall Engineering & Design, P.A. liability.
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TYNDALL
ENGINEERING & DESIGN, P.A.

1919 775-3800 • 1919 775-5458
www.tyndallengineering.com
280 Shipwash Drive • Garner • North Carolina • 27539

Client:
RIVERWILD
114 W. MAIN ST.
CLAYTON, NC 27520

Date:
THE SMITHFIELD

STANDARD
DETAILS

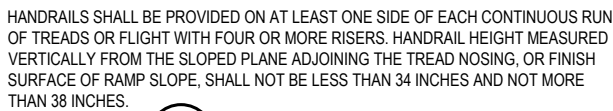
Project #: DRB2201-0234Z_C
Date: 08/02/2024
Engineered By: JA
DWG. Checked By: PTII
Scale: NOT TO SCALE

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No.	Date:	Remarks

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D1

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A circular professional engineer seal for the State of North Carolina. The outer ring contains the text "NORTH CAROLINA" at the top and "PRENTICE A TYNDALL JR" at the bottom. The inner circle contains the text "PROFESSIONAL SEAL" at the top, "ENGINEER" at the bottom, and the license number "024899" in the center. The seal is stamped in blue ink on a white background.

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THE SMITHFIELD

STANDARD DETAILS

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D2

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