

DESIGN CRE

PROJECT: LOT 11

LANE **FARMS**

STEPHENSON BUILDERS

1187 NORTH RALEIGH STREET ANGIER, NC 27501

BCR

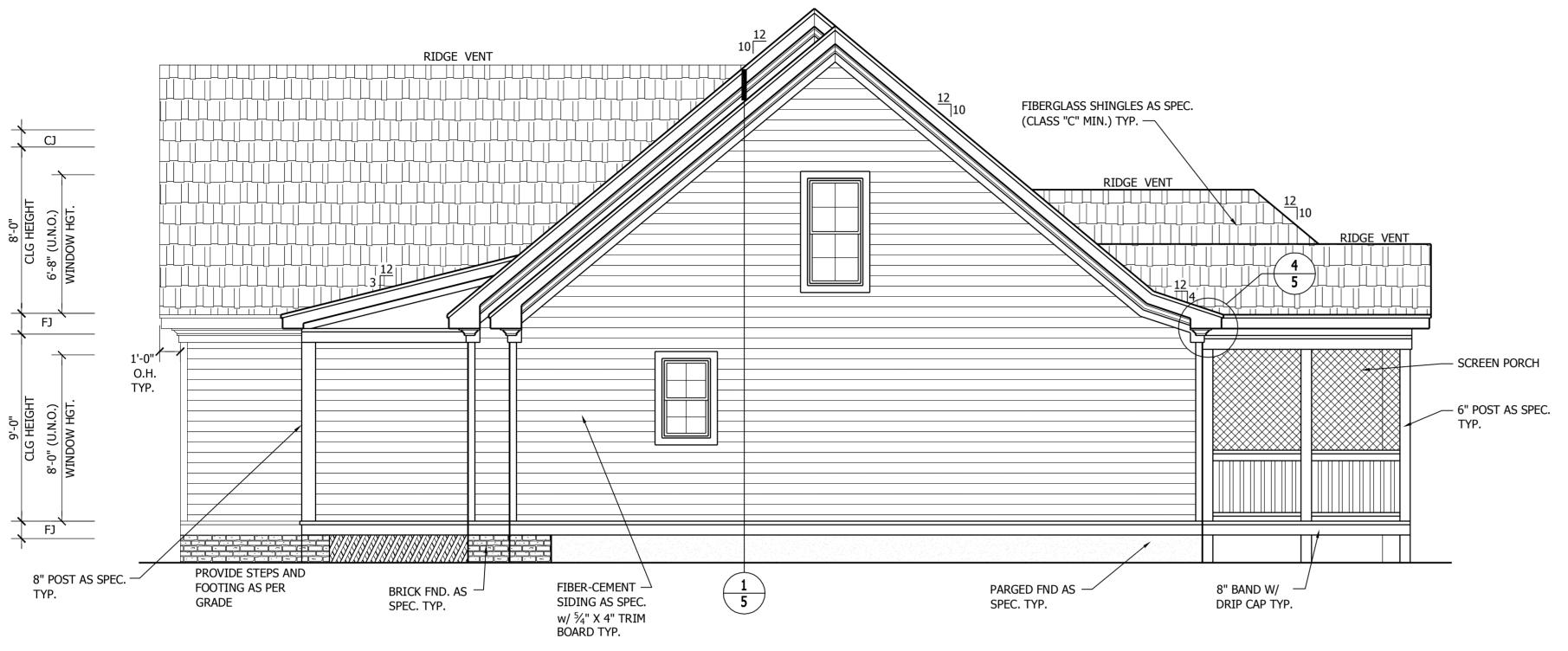
DATE:

08-23-22

REVISIONS:

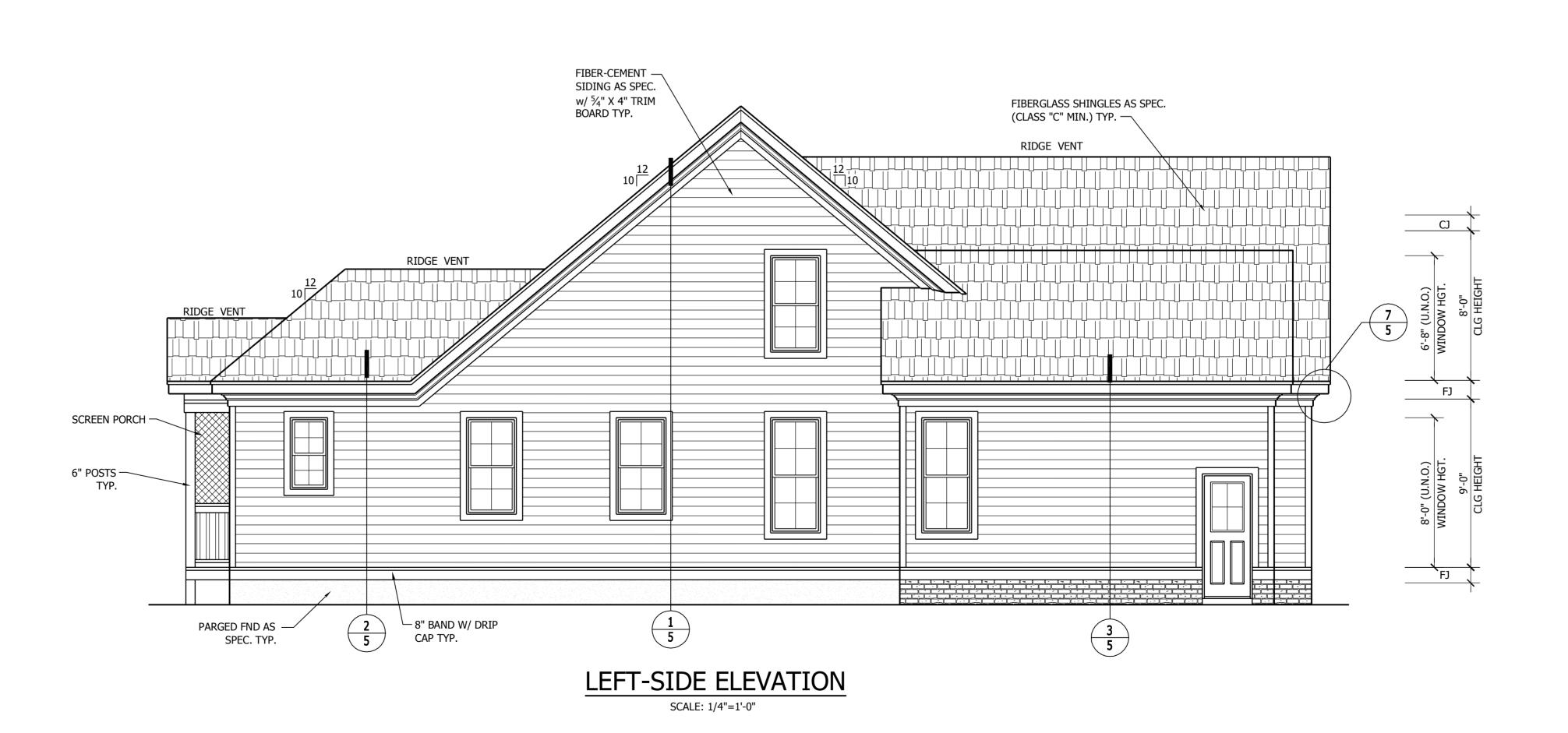
SHEET NO.

PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE.
SEE ROOF PLAN FOR KNEEWALL HEIGHTS AND LOCATIONS.



RIGHT-SIDE ELEVATION

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



ATIVE RESIDENTIA DESIGNS, LLC

5000 NEIMAN COV RALEIGH, N.C. 27612

PROJECT:

LOT 11 LANE FARMS

STEPHENSON BUILDERS INC.

1187 NORTH RALEIGH STREET ANGIER, NC 27501

BCR

DATE:

08-23-22

REVISIONS:

SHEET NO.

2

4

AREA CALCULATIONS

HEATED (SQ. FT	.)	UNHEATED (SO	Q. FT.)	UNFINISHED	(SQ. FT.)
BASEMENT:	N/A	GARAGE:	843	BASEMENT:	N/A
1ST FLOOR:	2309	SCREEN:	218	REC ROOM:	N/A
2ND FLOOR:	535	PORCH:	302	ATTIC:	, N/A
		STOOP:	N/A	STORAGE:	1131
		BRICK:	N/A	OVERALL DIM	ENCION
TOTAL:	2844	TOTAL:	1363		
	2044		1303	WIDTH:	83'-4"
(HEATED)		(UNHEATED)		DEPTH:	57'-10"



ATIVE RESIDENTIAI DESIGNS, LLC

5000 NEIMA RALEIGE 2761

PROJECT:

LOT 11 LANE FARMS

I EPHENSON BUILDERS INC.

7 NORTH RALEIGH S ANGIER, NC 2750

BCR

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3

PATIO SIZE AND SHAPE BY OWNER 11'-8" SCREEN PORCH BDRM #3 PROVIDE STEPS AND FOOTING AS PER GRADE MATCH HEADER HGT. 3- 2⁸ × 6² DH 11'-10" OWNER'S SUITE **DINING** BDRM #2 **FAMILY** 7 1R-1S D LAUNDRY OWNER'S **ENTRY** SEAT 7'-7" OPT. BDRM #4/ **FOYER** SHELVES STUDY KITCHEN PROVIDE STEPS TO SLAB. NOTE: BEFORE STARTING CONSTRUCTION NOTE FINISHED FLOOR HT vs SLAB HT TO DETERMINE NUMBER OF STEPS REQUIRED. SHOES 2- 2⁸ × 6² DH 2-CAR GARAGE 1-CAR GARAGE COVERED PORCH NOTES: -PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE. -ALL ANGLED WALLS ARE 45 ° UNLESS NOTED OTHERWISE. 13'-6" 9'-2" 13'-2" -FINISH DOOR AND WINDOW HEADS SHALL ALIGN EXCEPT AS NOTED. -ALL MATERIALS AND COMPONENTS MUST BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. -GRADES SHOWN ARE ILLUSTRATIVE. NATURAL GRADE WILL DETERMINE FINISH GRADE. ─8" POST TYP. FIRST FLOOR PLAN 21'-8" -FLOOR PLAN NOTATIONS GOVERN OVER ELEVATION SCALE. 9'-0" CEILING HGT. SET WINDOWS @ 8'-0" A.F.F. -VERIFY ALL WINDOW SIZES, RADIUS, AND DETAILS WITH CHOSEN SCALE= 1/4" = 1'-0" MANUFACTURE. 9 º × 8 º OHD -ALL HABITABLE ROOMS SHALL MEET LIGHT/VENTILATION & EGRESS REQUIRMENTS. 18⁰x 8 1 OHD -TEMPERED GLASS TO BE USED AT ALL SAFETY REQUIRED LOCATIONS. -ALL WINDOW GLAZING TO HAVE 0.35 U-FACTOR MIN. -ALL CABINET DESIGNS/LAYOUTS TO BE VERIFIED WITH SHOP DRAWINGS FROM CABINET MANUFACTURER. 3'-9" 3'-9" 5'-7" 7'-2" 6'-10" 11'-0" 11'-0" 7'-0" 7'-4" 7'-0" 5'-11" 7'-0" 22'-0" 7'-6" 14'-0" 14'-4" 14'-0" 11'-6" -PER 2018 N.C. RESIDENTIAL BUILDING CODE TABLE R302.6: SHEETROCK ON GARAGE CEILING TO BE 5/8" TYPE "X". 83'-4"

17'-4"

7'-8"

15'-8"

11'-0"

83'-4"

14'-4"

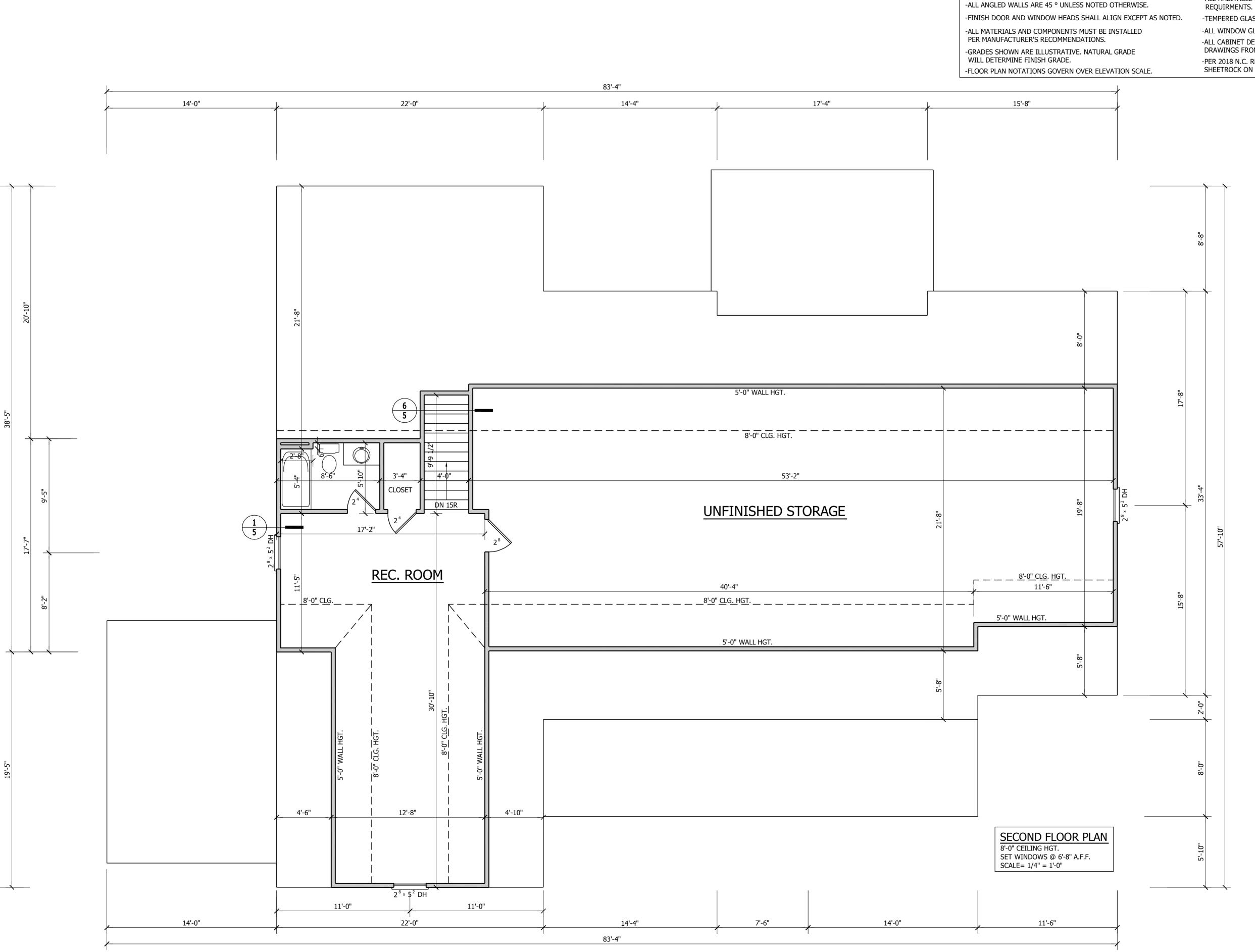
7'-4"

22'-0"

7'-4"

12'-4"

14'-0"



-VERIFY ALL WINDOW SIZES, RADIUS, AND DETAILS WITH CHOSEN MANUFACTURE.

NOTES:

-PLANS DESIGNED UNDER 2018 NORTH CAROLINA RESIDENTIAL CODE.

-ALL HABITABLE ROOMS SHALL MEET LIGHT/VENTILATION & EGRESS REQUIRMENTS.

REQUIRMENTS.
-TEMPERED GLASS TO BE USED AT ALL SAFETY REQUIRED LOCATIONS.

-ALL WINDOW GLAZING TO HAVE 0.35 U-FACTOR MIN.
-ALL CABINET DESIGNS/LAYOUTS TO BE VERIFIED WITH SHOP DRAWINGS FROM CABINET MANUFACTURER.

-PER 2018 N.C. RESIDENTIAL BUILDING CODE TABLE R302.6: SHEETROCK ON GARAGE CEILING TO BE 5/8" TYPE "X".

EATIVE RESIDENTIAI

DESIGNS, LL 5000 NEIMAN COV RALEIGH, N.C.

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EPHENSON UILDERS INC

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3-22 BCR

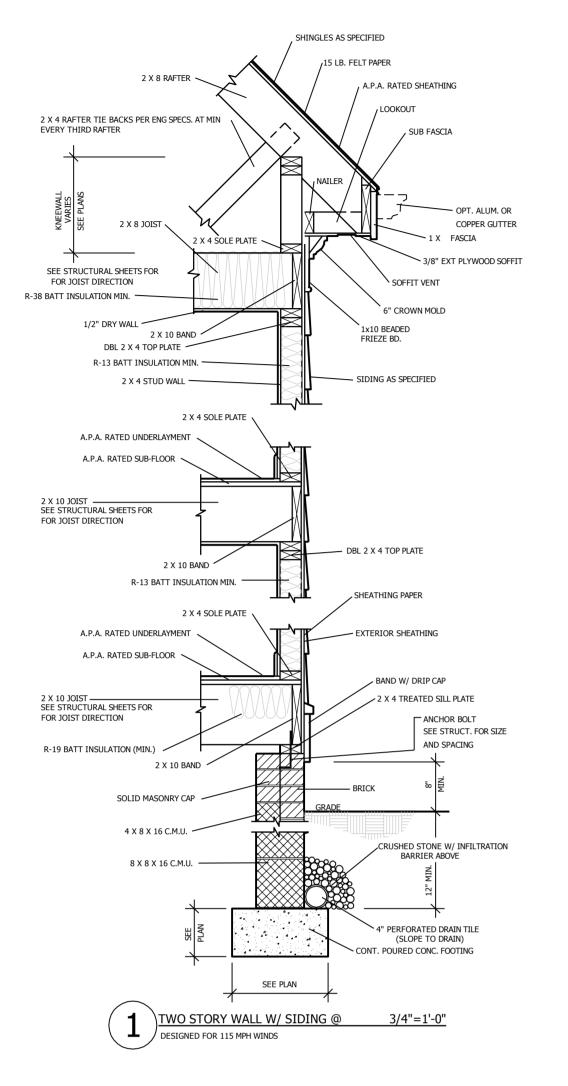
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OF

5



- OPTIONAL CAN LIGHTING

— OPTIONAL CROWN MOLDING

- ADJUSTABLE SHELVES

UNDERCABINET LIGHTING OPT.

SEE OWNER/BUILDER FOR

MODEL TO BE USED

BACKSPLASH

ADJUSTABLE SHELVES

PULL OUT TRAY

FOR 10' CLG HEIGHT USE 12" CABINETS SET ON TOP OF 42" UPPER

SEE OWNER/BUILDER FOR

VERIFICATION OF CABINET

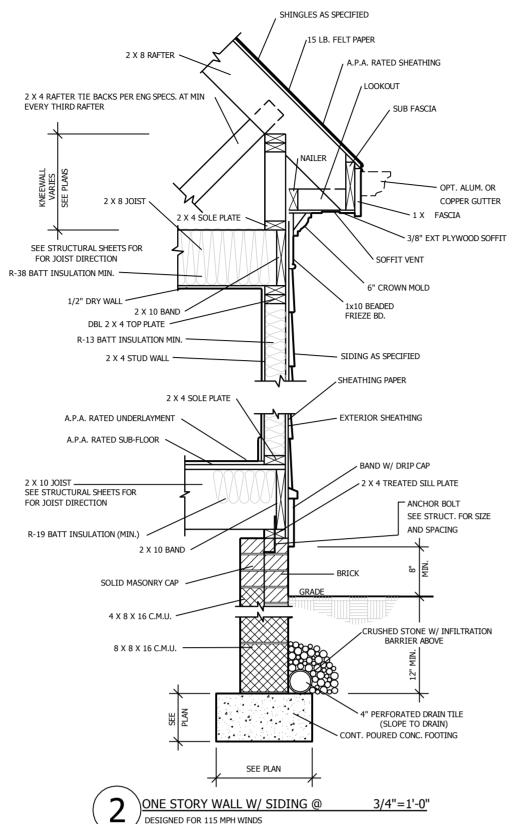
2'-0"

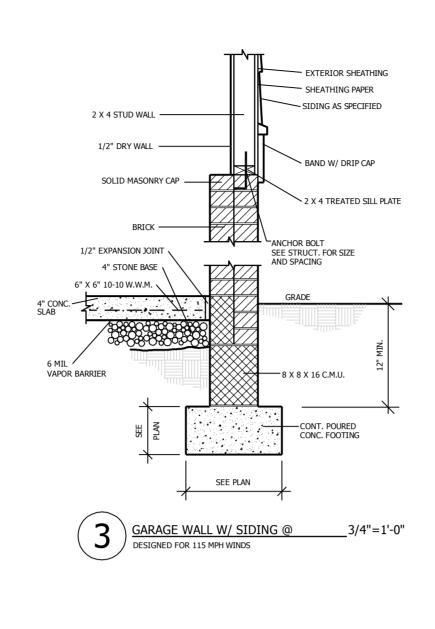
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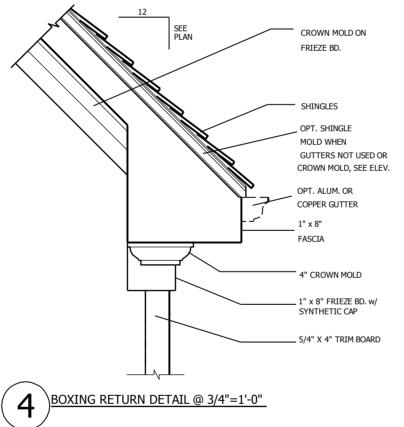
5 TYP. KITCHEN CABINET SECTION @ 3/4"=1'-0"

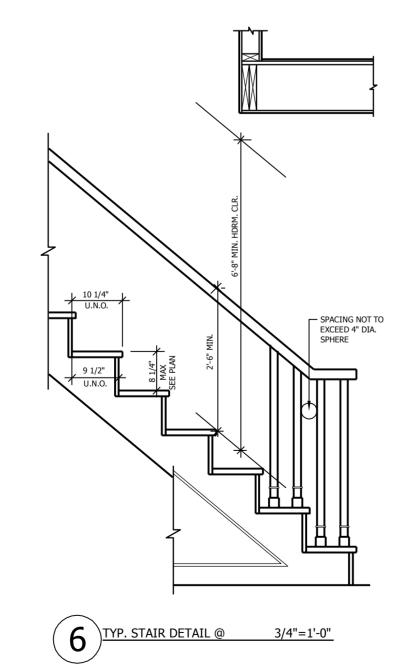
OPTIONAL SOFFIT. ADJUST SOFFIT DIMENSIONS TO ACCEPT

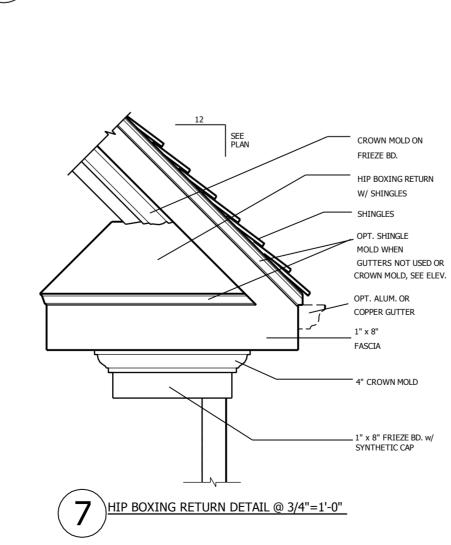
TRIM WORK ON CABINETS AS SELECTED

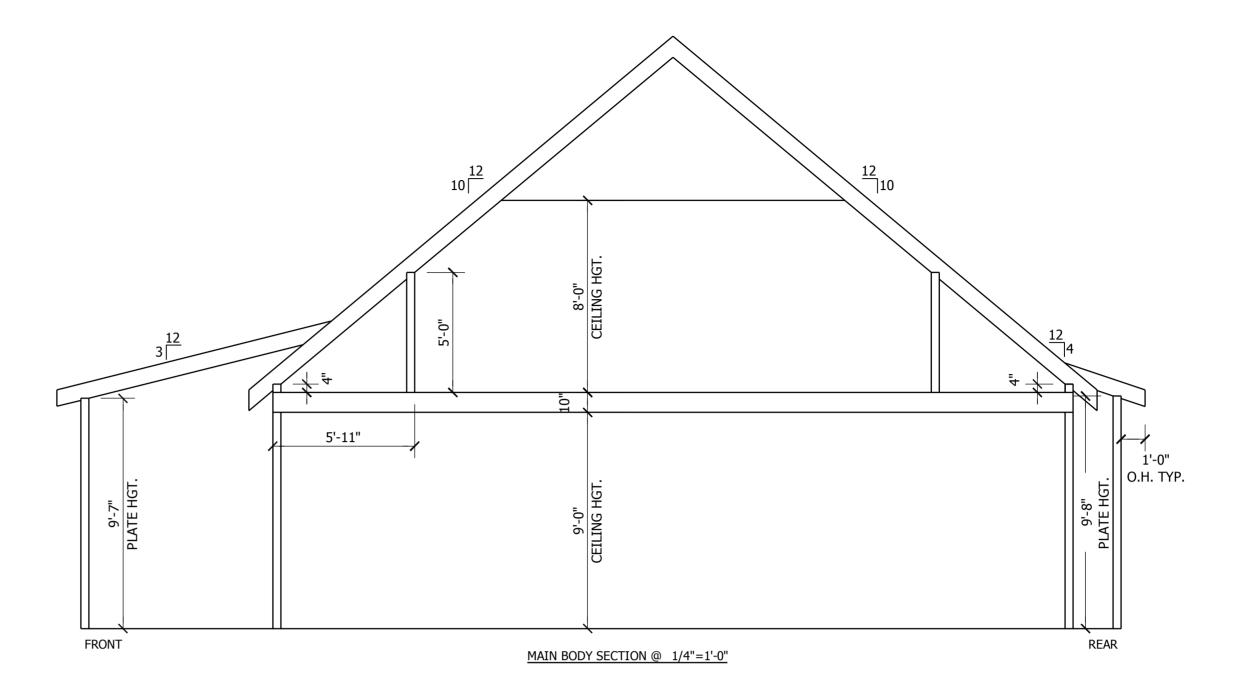












AREA CALCULATIONS

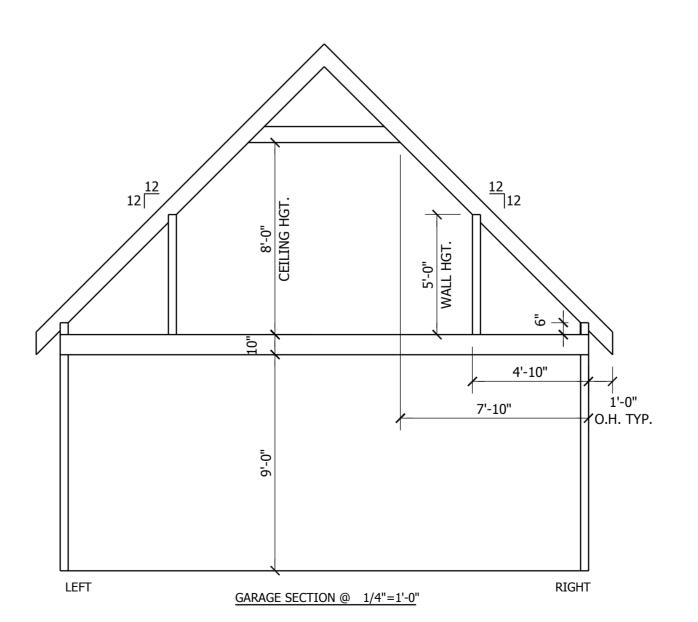
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BASEMENT:	N/A	GARAGE:	843	BASEMENT:	N/A
1ST FLOOR:	2309	SCREEN:	218	REC ROOM:	N/A
2ND FLOOR:	535	PORCH:	302	ATTIC:	N/A
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_		BRICK:	N/A	OVERALL DIME	NSION
TOTAL:	2844	TOTAL:	1363		
	2077		1303	WIDTH:	83'-4"
(HEATED)		(UNHEATED)		DEPTH:	57'-10"

PLANS DESIGNED TO THE 2018 NORTH CAROLINA RESIDENTIAL CODE
HOUSE DESIGNED FOR 115 MPH 3 SECOND GUST, EXPOSURE B

ANCHOR BOLTS TO BE NO MORE THAN 6' O.C. AND WITHIN 12" OF ALL PLATES SPLICES ANCHOR BOLTS SHALL BE MIN. 1/2" DIAMETER & SHALL EXTEND A MINIMUM 7" INTO MASONRY OR CONCRETE

MEAN ROOF HEIGHT = < 30'-0"

COMPONENT & CLADDING DESIGNED FOR THE FOLLOWING LOADS MEAN ROOF HEIGHT UP TO 30' 30'-1" - 35' 35'-1" - 40' 40'-1" - 45' ZONE 1 16.5, -18.0 17.3, -18.9 18.0, -19.6 18.5, -20.2 ZONE 2 16.5, -21.0 17.3, -22.1 18.0, -22.9 18.5, -23.5 ZONE 3 17.3, -22.1 18.5, -23.5 16.5, -21.0 18.0, -22.9 ZONE 4 18.9, -20.5 20.2, -21.8 18.0, -19.5 19.6, -21.3 ZONE 5 18.0, -24.1 18.9, -25.3 19.6, -26.3 20.2, -27.0



FOUNDATION VENT CALCS.

 $\frac{2429 \text{ SQ. FT.}}{150}$ = 16.19 SQ. FT. VENT REQ'D. $\frac{16.19 \text{ SQ. FT.}}{56}$ = 29 VENTS TO BE PROVIDED

NOTE: FIGURE BASED ON SECTION R-409 OF THE 2018 IRC. NOTE: FND VENT SPECS BASED ON PUSH/PULL POLYPROPYLENE FND. VENT THAT ALLOWS 72 SQ. IN. OF NET FREE AREA PER VENT.

- WHERE CONTINOUS OPERATED MECHANICAL VENTILATION IS PROVIDED AT A RATE OF 1.0 CFM FOR EACH 50 SQ. FT. OF CRAWL
- THE CRAWL SPACE IS SUPPLIED WITH CONDITIONED AIR AND THE PERIMETER WALLS ARE INSULATED IN ACCORDANCE WITH SECTION R409 OF THE 2018 IRC.
- 3 BUILDER/OWNER TO VERIFY VENT SIZE AND REQUIREMENTS PRIOR TO CONSTRUCTION.
 SEE SECTION R409 OF THE 2018 IRC.

ROOF VENTILATING REQUIREMENTS

 $\frac{3383}{150}$ SQ.FT. = $\underline{22.55}$ SQ. FT. OF TOTAL ROOF VENTILATION REQ'D

280'-4" (LINEAR FT. OF SOFFIT) X = 9.81 SQ. FT. OF AVAILABLE SOFFIT VENT .035 (NET FREE AREA PER FT.)

22.55 $^{-}$ 9.81 = 12.74 SQ.FT. REMAINING REQ'D ROOF VENTILATION

 $\frac{12.74}{.125}$ SQ.FT. $=\frac{101.92}{.125}$ LINEAR FT. OF RIDGE VENT REQ'D

NOTE: FIGURE BASED ON SECTION R-806 OF THE 2018 IRC.

NOTE: - SOFFIT VENT SPECS BASED ON HARDISOFFIT PANELS THAT ALLOWS
5 SQ. IN. OF NET FREE AREA PER LINEAR FT.

- RIDGE VENT SPECS BASED ON VENTURIVENT PLUS THAT ALLOWS
18 SQ. IN. OF NET FREE AREA PER LINEAR FT.

TOTAL NET FREE VENTILATING AREA IS PERMITTED TO BE REDUCED TO 1 TO 300:

- PROVIDED AT LEAST 50% AND NOT MORE THAN 80% OF THE REQ'D VENTILATING AREA IS PROVIDED BY VENTILATORS. REFERENCE R806.2 OF THE 2018 IRC. FOR PROPER LOCATION.
- WHEN AN APPROVED VAPOR BARRIER HAVING A TRANSMISSION RATE NOT EXCEDING 1 PERM IS INSTALLED ON THE WARM SIDE OF THE CEILING

ATIVE RESIDENTIA DESIGNS, LLC

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LOT 11 LANE FARMS

PHENSON UILDERS INC

7 NORTH RALEIGH S ANGIER, NC 2750

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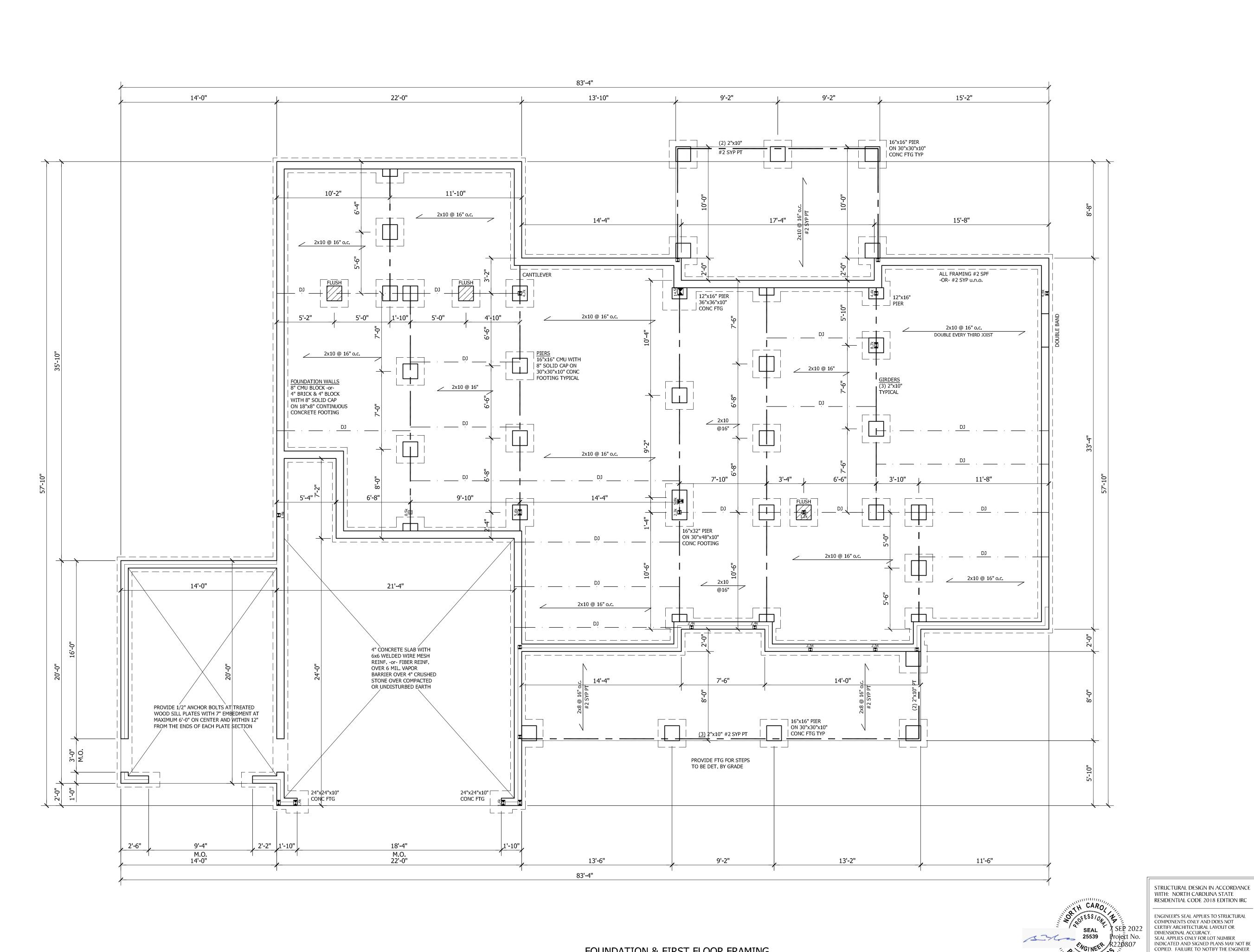
REVISIONS:

SHEET NO.

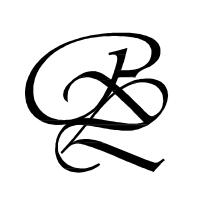
5

OF

5



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



709 W. JONES STREET RALEIGH, NC 27603 TEL 919.832.5680 FAX 919.832.5675 WWW.ROSSLINDEN.COM

ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THESE PLANS.

PLAN ENGINEERING REMAINS THE PROPERTY OF ROSS LINDEN ENGINEERS PC AND ANY UNAUTHORIZED USE OR DUPLICATION IN WHOLE OR PART IS STRICTLY PROHIBITED. THESE DRAWINGS ARE OFFERED TO THE CLIENT FOR A CONDITIONAL ONE TIME USE. THE CONDITIONAL USE IS LIMITED TO THE LOT OR PROPERTY AS SPECIFIED HEREIN, AND ONLY FOR THE SAID LOCATION.

STEPHENSON BUILDERS LOT 11 LANE FARMS

PROJECT NO. R220807

DESIGN BY LLR 7 SEP 22

REVISION 210101 180301 141103

25 JAN 21 12 MAR 18 2 DEC 14

DATE

FOUNDATION & FIRST FLOOR

SHEET NO.

OF ADDITIONAL USE OF THE PLANS WILL VOID THE LIABILITY OF ROSS LINDEN

ENGINEERS PC.

SEAL NOT VALID UNLESS SIGNED AND DATED LOT 11 LANE FARMS ONLY

OF S5

FOUNDATION & FIRST FLOOR FRAMING

WALL BRACING NOTES:

WALL BRACING SHALL BE IN ACCORDANCE WITH SECTION R602.10.3
CONTINUOUS SHEATHING. BRACING METHOD CS-WSP SHALL BE USED IN ACCORDANCE WITH TABLE R602.10.1.

THE REQUIRED LENGTH OF BRACING FOR EACH SIDE OF A RECTANGLE CIRCUMSCRIBED AROUND THE PLAN OR A PORTION OF THE PLAN AT EACH STORY LEVEL SHALL BE IN ACCORDANCE WITH TABLE R602.10.3 AND FIGURE R60.10.3(1). UNLESS NOTED OTHERWISE, THE ENTIRE STRUCTURE IS ASSUMED TO CIRCUMSCRIBED WITHIN A SINGLE

MINIMUM PANEL WIDTH IS 24". SEE SECTION R602,10.3 FOR ADDITIONAL INFORMATION. CONNECTION CRITERIA SHALL BE IN ACCORDANCE WITH TABLE R602.10.1. PORTAL FRAME CONSTRUCTION SHALL BE IN ACCORDANCE WITH FIGURE R602.10.1

HOLD DOWN DEVICE SHALL BE AS FOLLOWS: SIMPSON LSTA24 STRAP (OR EQUIVALENT) BETWEEN FLOORS EXTENDING FROM BOTTOM OF FLOOR BAND UP STUDS WHERE SHOWN. SIMPSON HD3B HOLDOWN (OR EQUIVALENT) WHERE REQUIRED TO CONNECT DIRECTLY TO FOUNDATION.

WIND SPEED: 115 mph

EAVE TO RIDGE HEIGHT: 14.67 ft

RECTANGLE 1 - FIRST FLOOR:

SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 57.83 ft REQUIRED LENGTH OF BRACING = 7.5 ftPROVIDED LENGTH OF BRACING = 33.5 ft

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 69.33 ft REQUIRED LENGTH OF BRACING = 9.0 ft

RECTANGLE 2 - FIRST FLOOR:

PROVIDED LENGTH OF BRACING = 31.0 ft

SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 14.0 ft REQUIRED LENGTH OF BRACING = $\frac{2.0 \text{ ft}}{7.83 \text{ ft}}$

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 20.0 ft REQUIRED LENGTH OF BRACING = 2.5 ftPROVIDED LENGTH OF BRACING = $\frac{4.67 \text{ ft}}{}$

(2) 2"x10" CONTINUOUS 2x8 @ 16" o.c. 2x10 @ 16" o.c. 2x8 @ 16" c --- HOLD DOWN DEVICE LOAD BEARING (2) 2"x10" WALL ABOVE (2<u>) 1 3/4" x 14" L</u>VL (2) 1 3/4" x 14" LVL HHUS410 -2x10 @ 16" o.c. (3) 1 3/4" x 18" LVL UPSET IN WALL ABOVE - HGUS5.50/10 2x10 @ 16" o.c. 2x10 @ 16" o.c. 2x10 @ 16" o.c. $\overline{}$ 3-PLY LVL AT KITCHEN SPAN ONLY (2) 1 3/4" x 9 1/4" LVL CONTINUOUS (+/-24'-6' LENGTH) OFFSET - 1/2" GYPSUM BOARD INSTALLED LOAD LOAD ON BOTH SIDES OF WALL FOR BRACING REQUIREMENTS (2) 9 1/4" LVL (2) 9 1/4" LVL 2x8 @ 16" o.c. 16" LPI 32Plus at 16" o.c. -or- EQUIVALENT — PORCH BEAMS BEAR IN WALL FRAMING TYP (2) 1 3/4" x 14" LVL — EXTEND HEADER AND PROVIDE CS-PF PORTAL

FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.

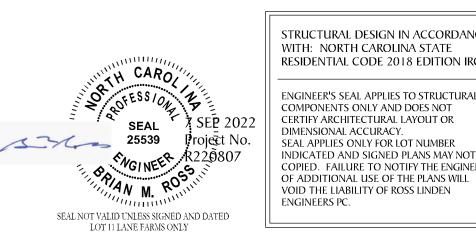
2. FRAMING SHALL BE #2 SPF OR #2 SYP u.n.o.

3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.

4. ■ DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.

FRAMING SYSTEM
JOIST LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN. JOISTS SHALL BE DESIGNED FOR MAXIMUM L/480 LIVE LOAD DEFLECTION, JOIST LAYOUT SHALL BE PROVIDED FOR REVIEW AND COORDINATED WITH THE ENGINEER OF RECORD. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

EXTEND HEADER AND PROVIDE CS-PF PORTAL FRAME PANEL PER FIG. R602.10.1. PROVIDE LSTA24 STRAP (OR EQUIVALENT) EACH SIDE AS SHOWN. FASTEN SHEATHING TO HEADER AND WALL FRAMING (EACH STUD) WITH 8d NAILS AT 3" o.c. AS SHOWN, SEE FIG. R602.10.1 FOR ADDITIONAL REQUIREMENTS. SEE SHEET S5 FOR DETAIL.



STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE RESIDENTIAL CODE 2018 EDITION IRC ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE COPIED. FAILURE TO NOTIFY THE ENGINEER

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PLAN ENGINEERING REMAINS THE PROPERTY OF ROSS LINDEN ENGINEERS PC AND ANY UNAUTHORIZED USE OR DUPLICATION IN WHOLE OR PART IS STRICTLY PROHIBITED. THESE DRAWINGS ARE OFFERED TO THE CLIENT FOR A CONDITIONAL ONE TIME USE. THE CONDITIONAL USE IS LIMITED TO THE LOT OR PROPERTY AS SPECIFIED HEREIN, AND ONLY FOR THE SAID LOCATION.

STEPHENSON BUILDERS LOT 11 LANE FARMS

PROJECT NO. R220807

DESIGN BY LLR 7 SEP 22

REVISION 210101 180301 141103

> FIRST CEILING FRAMING

25 JAN 21

12 MAR 18 2 DEC 14

OF S5

SHEET NO.

FRAME. SEE NOTE ABOVE.

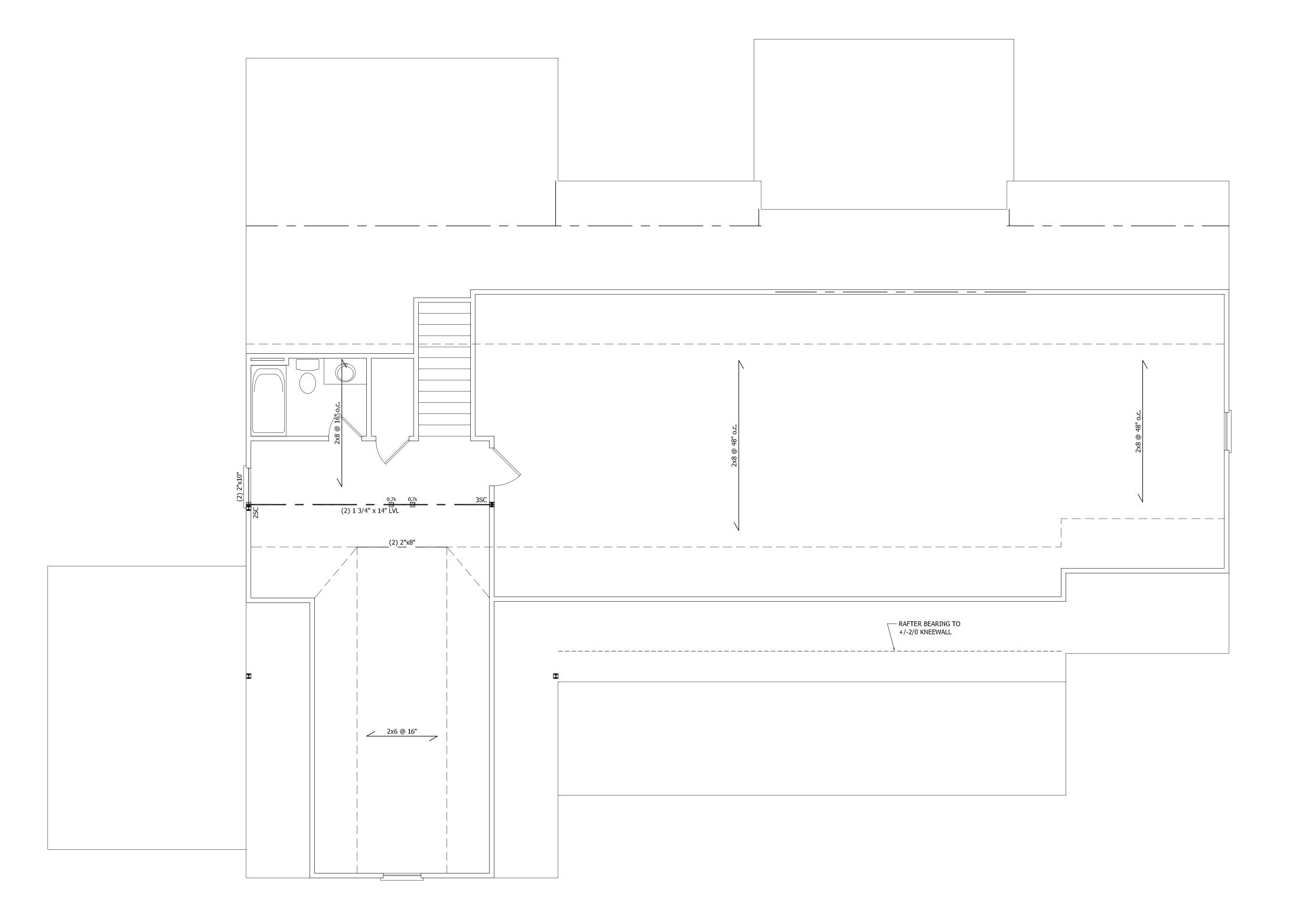
FRAMING NOTES

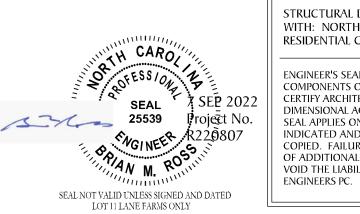
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2. FRAMING SHALL BE #2 SPF OR #2 SYP u.n.o.

3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.

4. 🛮 DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.





STRUCTURAL DESIGN IN ACCORDANCE
WITH: NORTH CAROLINA STATE
RESIDENTIAL CODE 2018 EDITION IRC

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> ROSS LINDEN ENGINEERSPC

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STEPHENSON BUILDERS LOT 11 LANE FARMS

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DESIGN BY LLR

7 SEP 22

REVISION DATE
210101 25 JAN

25 JAN 21 12 MAR 18 2 DEC 14

SECOND CEILING FRAMING

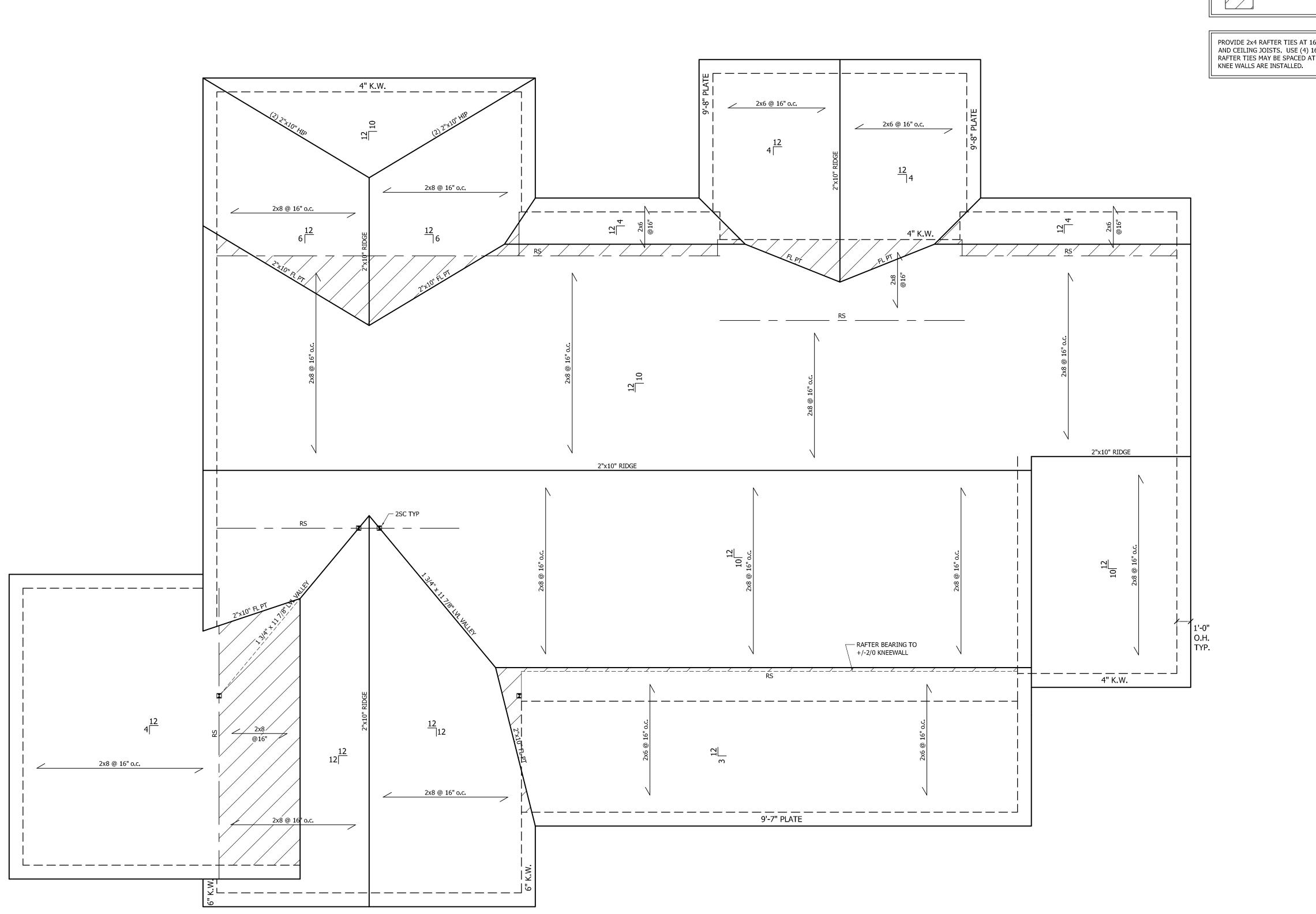
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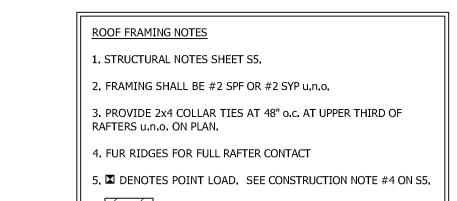
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S3

OF S5





DENOTES OVERFRAMED AREA

PROVIDE 2x4 RAFTER TIES AT 16" o.c. AT 45° BETWEEN RAFTERS AND CEILING JOISTS. USE (4) 16d NAILS AT EACH CONNECTION. RAFTER TIES MAY BE SPACED AT 48" o.c. AT LOCATIONS WHERE NO

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7 SEP 22

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> **ROOF PLAN** FRAMING

25 JAN 21

12 MAR 18

2 DEC 14

OF S5

SHEET NO.

STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE

RESIDENTIAL CODE 2018 EDITION IRC

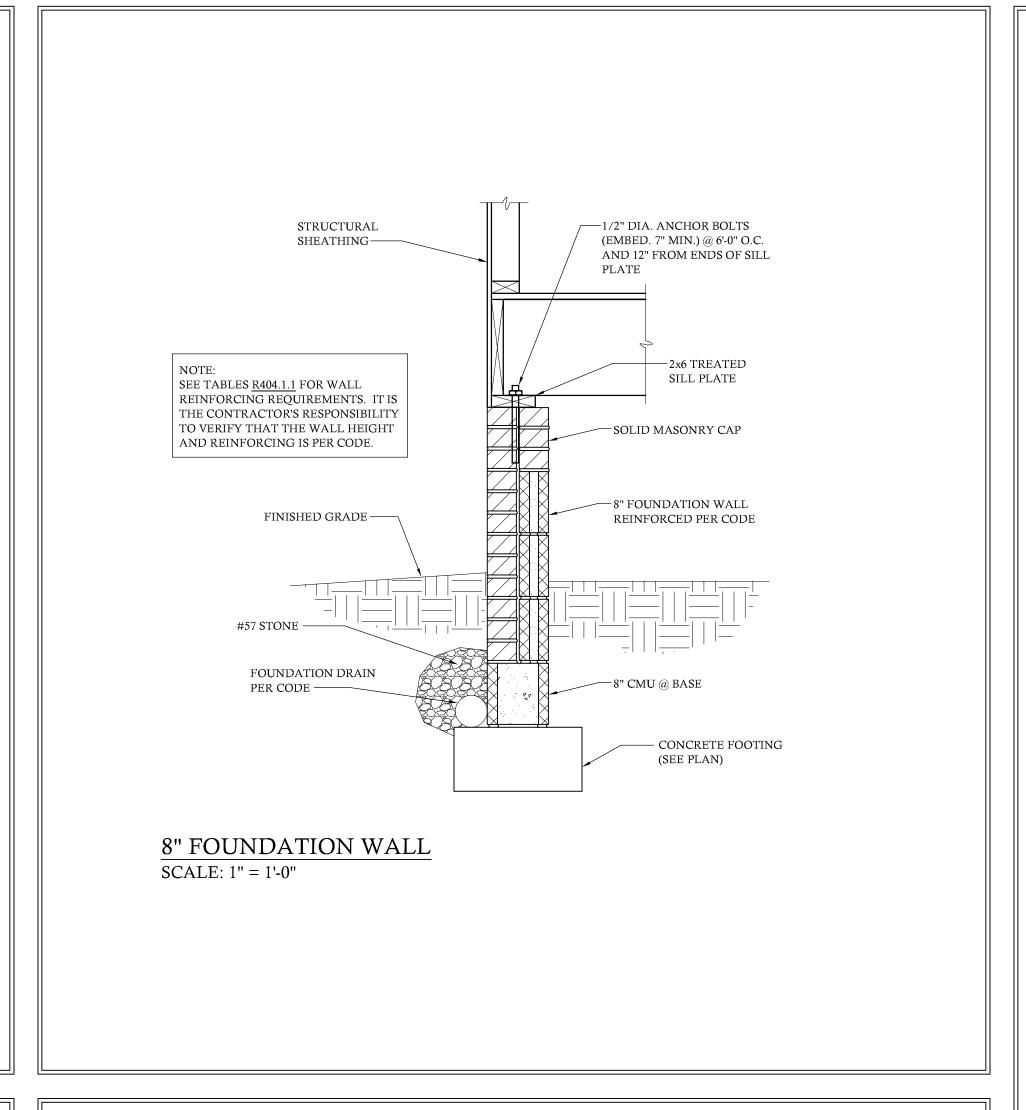
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ENGINEERS PC.

SEAL NOT VALID UNLESS SIGNED AND DATED LOT 11 LANE FARMS ONLY

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



EXTENT OF HEADER FASTEN HEADER TO KING STUD 6-16d 0 0 0 0 0 HEADER AND WALL 0 0 0 0 0 WITH 8d NAILS AT 3" o.c. 0 0 0 0 000000 - SEE PLAN FOR HEADER PROVIDE LSTA24 STRAP BEAMS WITH 2x MATERIAL INSIDE FACE OF WALL FOR ATTACHMENT OF (TYP. EACH SIDE). SHEATHING AND STRAPS. FOR A PANEL SPLICE, PANEL EDGES SHALL BE BLOCKED AND OCCUR WITHIN 24" OF MID-HEIGHT. ONE ROW OF TYP. ONNECTIONS IS REQUIRED IN EACH PANEL. SEE FIG. R602.10.1 FOR ADDITIONAL INFORMATION ANCHOR BOLT PER R403.1.6 TYP. PROVIDE MIN. 2" x2" x 3/16" PLATE WASHER AT BOLTS EACH SIDE OF DOOR. CS-PF PORTAL FRAME BRACED WALL PANEL NO SCALE BASED ON FIG. R602.10.1

STRUCTURAL NOTES

1. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. ROSS LINDEN ENGINEERS PC ASSUMES NO LIABILITY FOR CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS, OR FOR CONSTRUCTION METHODS, OR FOR ANY DEVIATION FROM THE PLANS.

2. 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 2015 (IRC), AND LOCAL CODES AND REGULATIONS. DIMENSIONS SHALL GOVERN OVER SCALE AND CODE SHALL GOVERN OVER DIMENSIONS

3. CONTACT THE ENGINEER PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE NOTED ON THE PLANS.

4. ONLY CURRENT SEALED DRAWINGS ARE TO BE USED FOR CONSTRUCTION.

	LIVE LOAD	DEAD LOAD
TABLE R301.4	(PSF)	(PSF)
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	

ADDITIONAL LOADS

TABLE R301.2(4) - BASIC DESIGN WIND SPEED 115 MPH

TABLE R301.2(7) - SEISMIC DESIGN CATEGORY B

 $\frac{\text{TABLE R301.2(6)}}{\text{DOORS AND WINDOW FOR A MEAN ROOF HEIGHT OF 35 FEET OR}}$ LESS SHALL BE 25 PSF

TABLE R301.2(2) - COMPONENT AND CLADDING LOADS FOR A BUILDING LOCATED IN EXPOSURE B

ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE DESIGNED BASED ON ROOF PITCHES AND MEAN ROOF HEIGHT AS FOLLOWS:

2.25:12 TO 7:12 34.8 PSF 36.5 PSF 37.9 PSF 21.0 PSF 22.1 PSF 22.9 PSF 7:12 TO 12:12

WALL CLADDING SHALL BE DESIGNED FOR A 24.1 PSF POSITIVE AND NEGATIVE PRESSURE

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 = 2600 PSI Fv = 285 PSI E = 1.9E6 PSI

THE FOLLOWING PRODUCTS MEET OR EXCEED THE ABOVE SPECIFICATIONS AND MAY BE USED AT THE LOCATION INDICATED ON THE PLANS: BROADSPAN 1.9E-2750Fb LVL BY GEORGIA PACIFIC

iLEVEL TRUS JOIST 1.9E MICROLLAM LVL BY WEYERHAUSER 4. STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A992 OR A572, GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.

5. BOLTS SHALL CONFORM TO A325 MINIMUM GRADE.

6. REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60.

7. SEE <u>TABLE R602.3(1)</u> FOR STRUCTURAL MEMBER FASTENING

REQUIREMENTS. 8. 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. 9. CONCRETE LOCATED PER <u>TABLE R402.2</u> SHALL BE AIR ENTRAINED WITH THE TOTAL AIR CONTENT NOT LESS THAN 5 PERCENT OR MORE THAN 7 PERCENT.

10. MASONRY UNITS SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 AND MORTAR SHALL COMPLY WITH ASTM C 270.

CONSTRUCTION

1. 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.

2. ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.

3. 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.

4. 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.

5. 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. ROOF TRUSS DRAWINGS SHALL BE SIGNED AND SEALED BY THE MANUFACTURER AND REVIEWED BY THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

6. WALL BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL

A. EXTERIOR WALLS ARE ASSUMED TO BE BRACED WALL LINES. ADDITIONAL INTERIOR WALLS MAY ALSO BE USED AS BRACED WALL LINES WHERE APPLICABLE. SEE PLAN FOR LOCATIONS.

B. THE EXTERIOR OF THE STRUCTURE SHALL BE CONTINUOUSLY SHEATHED WITH 1/2" WOOD STRUCTURAL SHEATHING (PLYWOOD OR OSB) PER CODE SECTION <u>R602.10.4</u>. EXTERIOR BRACED WALL LINES ARE ASSUMED TO BE BRACED WITH CS-WSP (WOOD STRUCTURAL PANEL) BRACED WALL PANELS. ALTERNATE BRACING METHODS, IF USED, MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE CODE AND MUST BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. C. INTERIOR BRACED WALL LINES ARE CONSIDERED TO BE

BRACED WITH 1/2" GB (GYPSUM BOARD) BRACED WALL PANELS. SEE TABLE R602.10.2 FOR CONNECTION CRITERIA. D. SEE PLANS FOR SPECIAL WALL BRACING REQUIREMENTS FOR GARAGE WALLS AND OTHER WALLS WITH MULTIPLE OR LARGE OPENINGS.

7. 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.

8. BRICK LINTELS SHALL BE 3 1/2 x 3 1/2 x 1/4 STEEL ANGLE FOR UP TO 6'-0" MAXIMUM SPAN AND 6 x 4 x 5/16 FOR SPANS GREATER THAN 6'-0".

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 TRIPLE 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.

FOUNDATION

1. MINIMUM ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE 2000 PSF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY.

2. CONCRETE AND MASONRY FOUNDATION WALLS SHALL BE SELECTED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF <u>SECTION R404</u> OR IN ACCORDANCE WITH ACI 318, NCMA TR68-A, OR ACI 530/ASCE 5/TMS 402.

3. MASONRY AND POURED CONCRETE WALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLES R404.1.1 (1 THROUGH 4) OF THE NORTH CAROLINA RESIDENTIAL CODE.

A. PER R404.1.3, TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL SUPPORT AT THE TOP AND BOTTOM. B. WALL REINFORCING SHALL BE PLACED ACCORDING TO FOOTNOTE (c) OF THE TABLES (REINFORCING IS NOT CENTERED IN WALL).

C. FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER

4. WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT SPACED A MAXIMUM OF 6'-0" o.c. AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION.

5. THE UNSUPPORTED HEIGHT OF SOLID MASONRY PIERS SHALL NOT EXCEED TEN TIMES THEIR LEAST DIMENSION. UNFILLED HOLLOW PIERS MAY BE USED IF THE UNSUPPORTED HEIGHT IS NOT MORE THAN FOUR TIMES THEIR LEAST DIMENSION.

6. CENTERS OF PIERS SHALL BEAR IN THE MIDDLE THIRD OF THE FOOTINGS, AND GIRDERS SHALL CENTER IN THE MIDDLE THIRD OF THE PIERS.

7. ALL FOOTINGS SHALL HAVE MINIMUM 2" PROJECTION ON EACH SIDE OF FOUNDATION WALLS.

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		
PT	PRESSURE TREATED		
RS	RAFTER SUPPORT		
SC	STUD COLUMN		
SP	STUD POCKET		
TJ	TRIPLE JOIST		
TYP	TYPICAL		
UNO	UNLESS NOTED OTHERWISE		
XJ	EXTRA JOIST		



STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE RESIDENTIAL CODE 2018 EDITION IRC

ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY AND DOES NOT CERTIFY ARCHITECTURAL LAYOUT OR DIMENSIONAL ACCURACY. SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE COPIED. FAILURE TO NOTIFY THE ENGINEER OF ADDITIONAL USE OF THE PLANS WILL VOID THE LIABILITY OF ROSS LINDEN

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STRUCTURAL **NOTES & DETAILS**

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