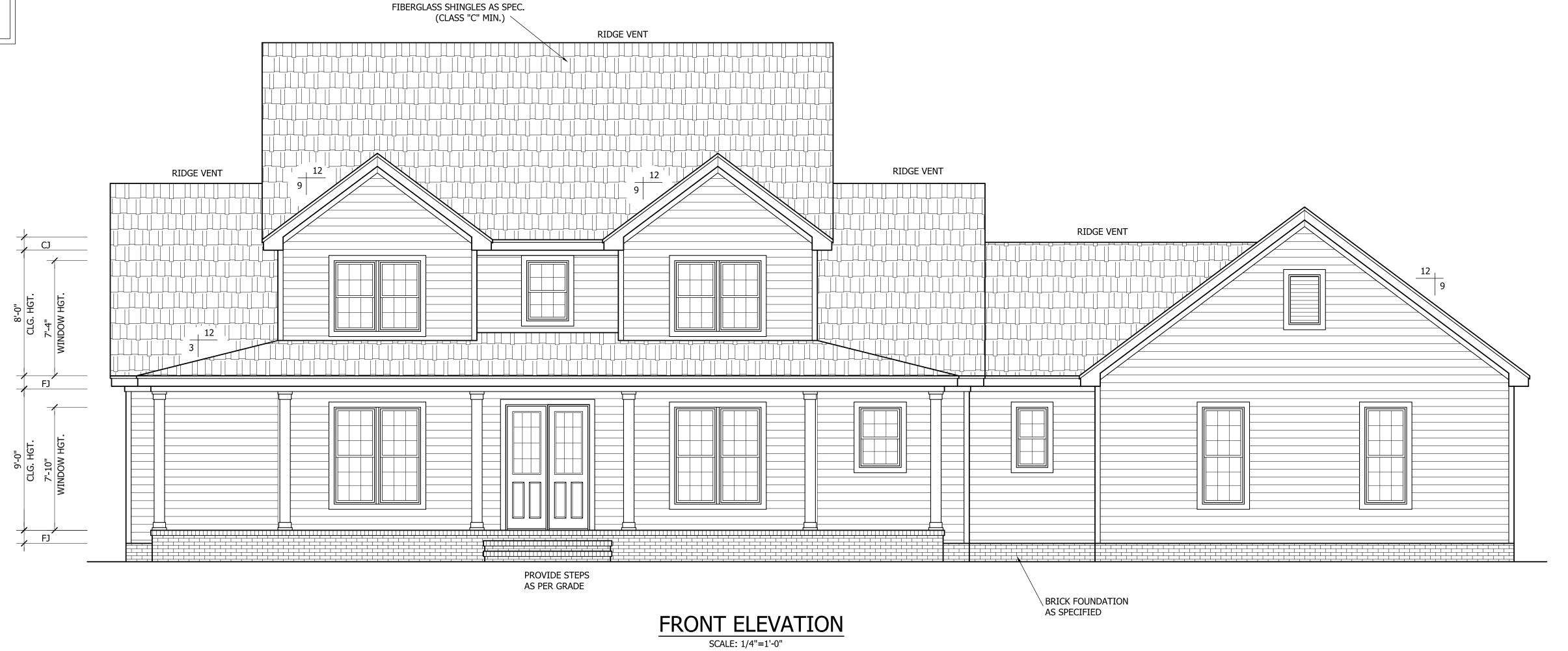
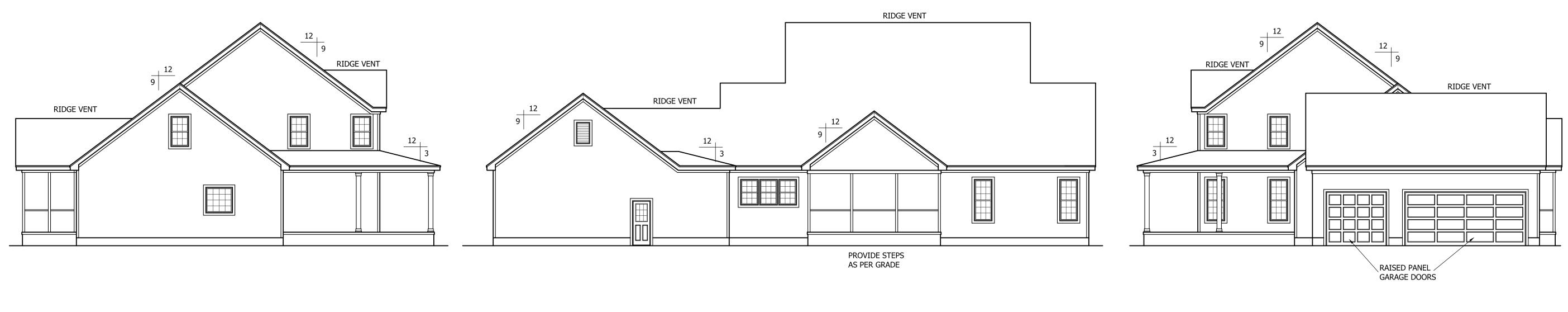
CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGGINING WORK. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL STATE AND LOCAL BUILDING CODES AND ORDINANCES. KADS CUSTOM HOME DESIGNS ASSUMES NO LIABILITY FOR SITE CONDITIONS, CONSTRUCTION METHODS OR ANY DEVIATION OF THESE PLANS.

ALL WINDOWS TO BE INSTALLED MUST MEET
A MINIMUM OF .32 U VALUE OR BETTER, UNLESS
ENERGY CALCULATIONS ARE SUBMITTED WITH PLANS
PROVIDED BY BUILDER AT TIME OF PLAN REVIEW.





LEFT ELEVATION

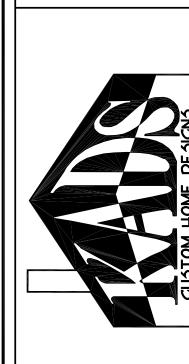
SCALE: 1/8"=1'-0"

REAR ELEVATION

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

RIGHT ELEVATION

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



ANGIER, NC 919-369-7181

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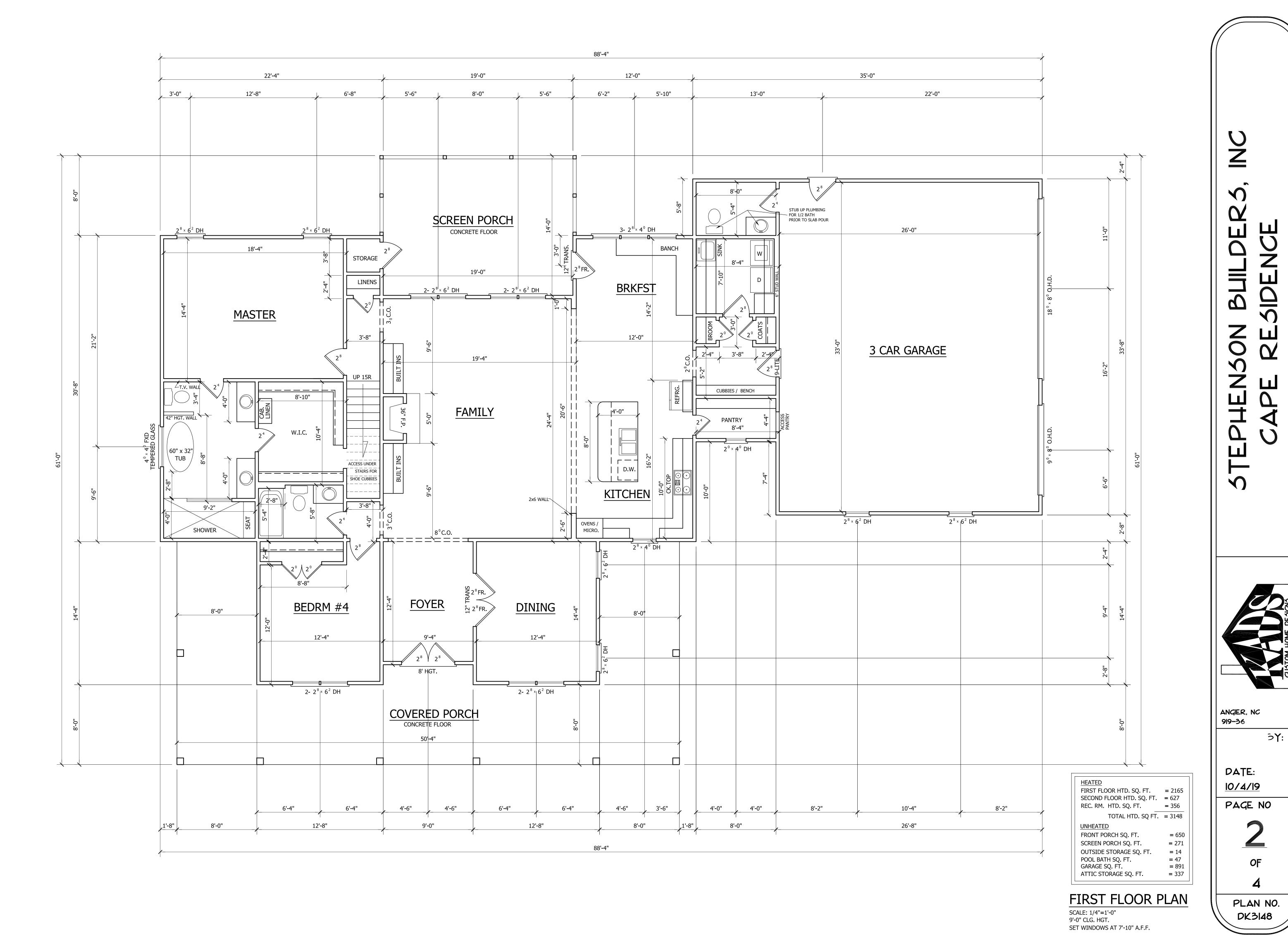
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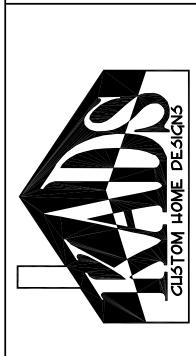
PLAN NO. DK3148



SECOND FLOOR PLAN

SCALE: 1/4"=1'-0" 8'-0" CLG. HGT. SET WINDOWS AT 7'-4" A.F.F.

# TEPHENSON BUILDERS, INC CAPE RESIDENCE



ANGIER, NC 919-369-7181

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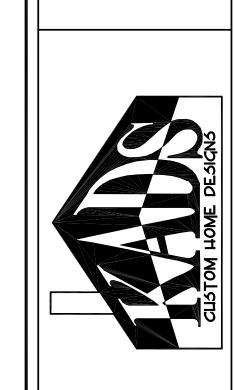
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PLAN NO. DK3I48



ANGIER, NO 919-369-7181

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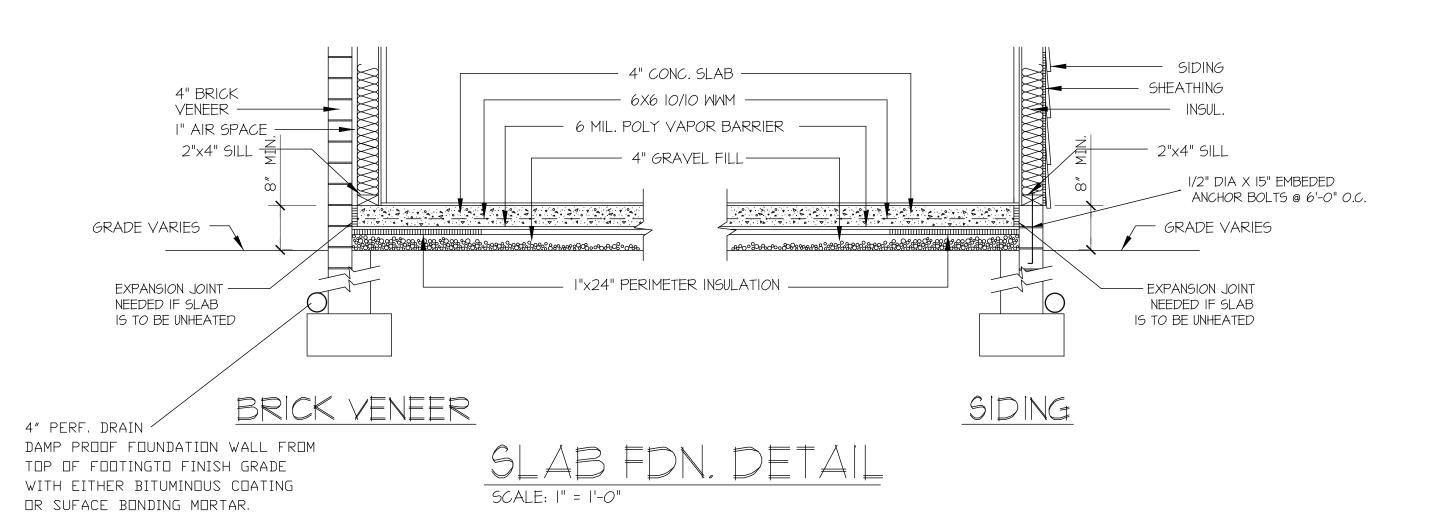
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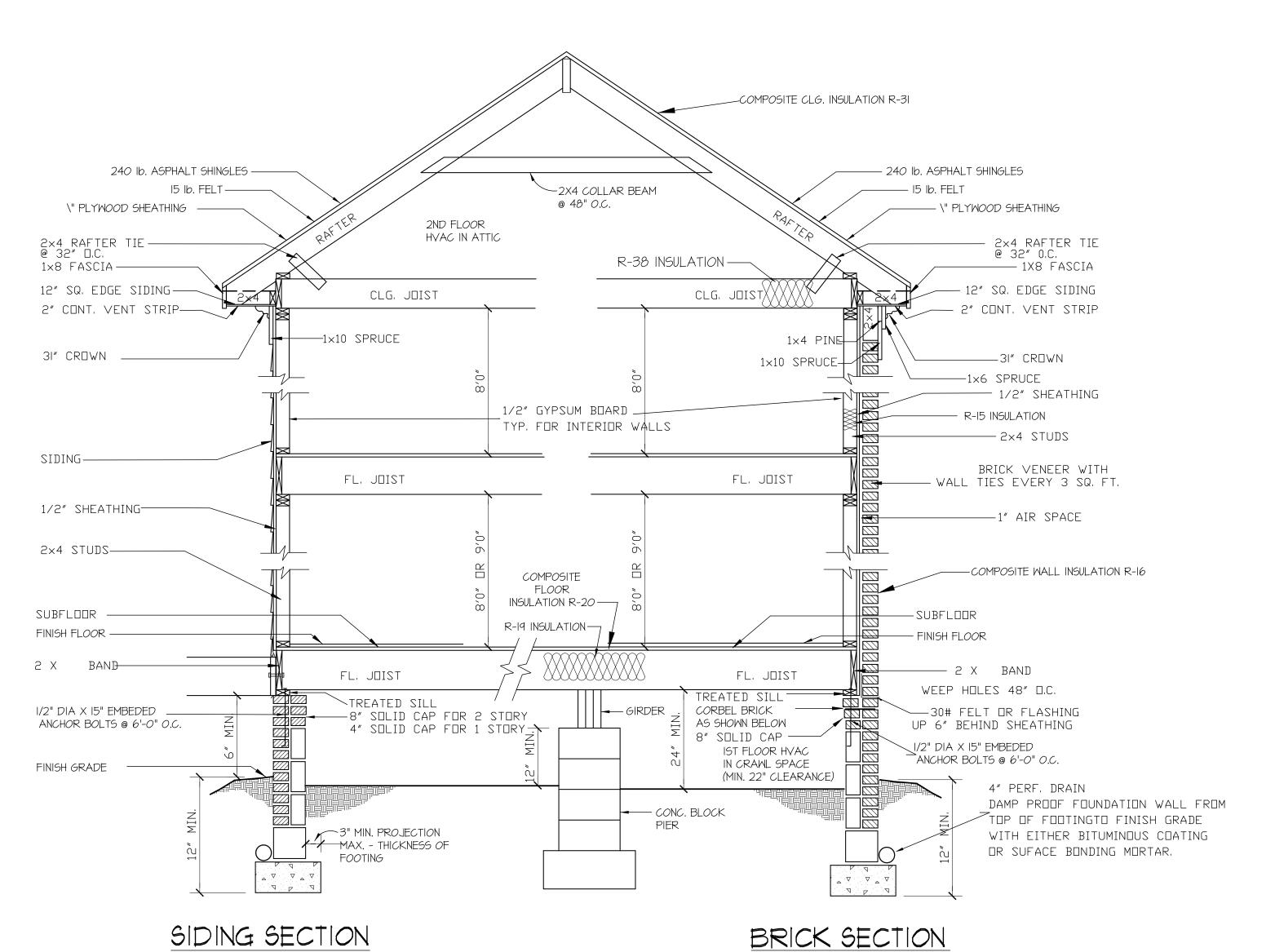
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OF

PLAN NO. DK3148





, EXPANSION JOINT - 4" CONC. SLAB WITH FIBERMESH OR WIREMESH ON 6 MIL. VAPOR FOUNDATION — BARRIER ON 4" CRUSHED STONE GRADE 8" CONC. BLK. WALL 8"x16" CONC. FTG.

GARAGE SLAB SCALE: NTS

WALL SECTION

SCALE: \" = 1'-0"

REDUCE REQUIRED AREA TO 1.0 SQ. FT NET FREE VENTILATION AREA FOR EACH 1,500 SQ. FT. OF CRAWL SPACE WITH APPROVED VAPOR BARRIER. PROVIDE (1) VENT WITHIN 3'-0" OF EACH REFER TO MANUFACTURER SPECIFICATIONS FOR ACTUAL VENTS USED TO DETERMINE NUMBER OF VENTS REQUIRED. ROOF VENTILATING REQUIREMENTS

CRAWL SPACE VENTILATION

CRAWL SPACE AREA = 2165 SQ.FT. 2165/150 = 14.43 SQ. FT. REQ'D.

OF CRAWL SPACE.

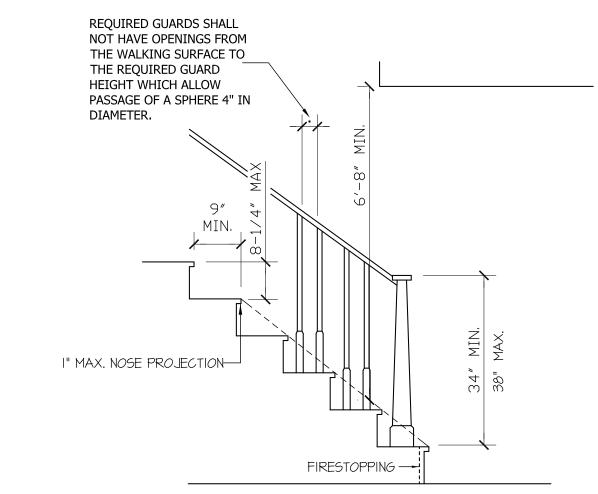
PROVIDE AT LEAST 1.0 SQ. FT. NET FREE VENTILATION AREA FOR EACH 150 SQ. FT.

**ROOF VENTILATING REQUIREMENTS** (POWER ROOF VENTILATOR REQUIRED)

= <u>13.37</u> SQ. FT. REQ'D

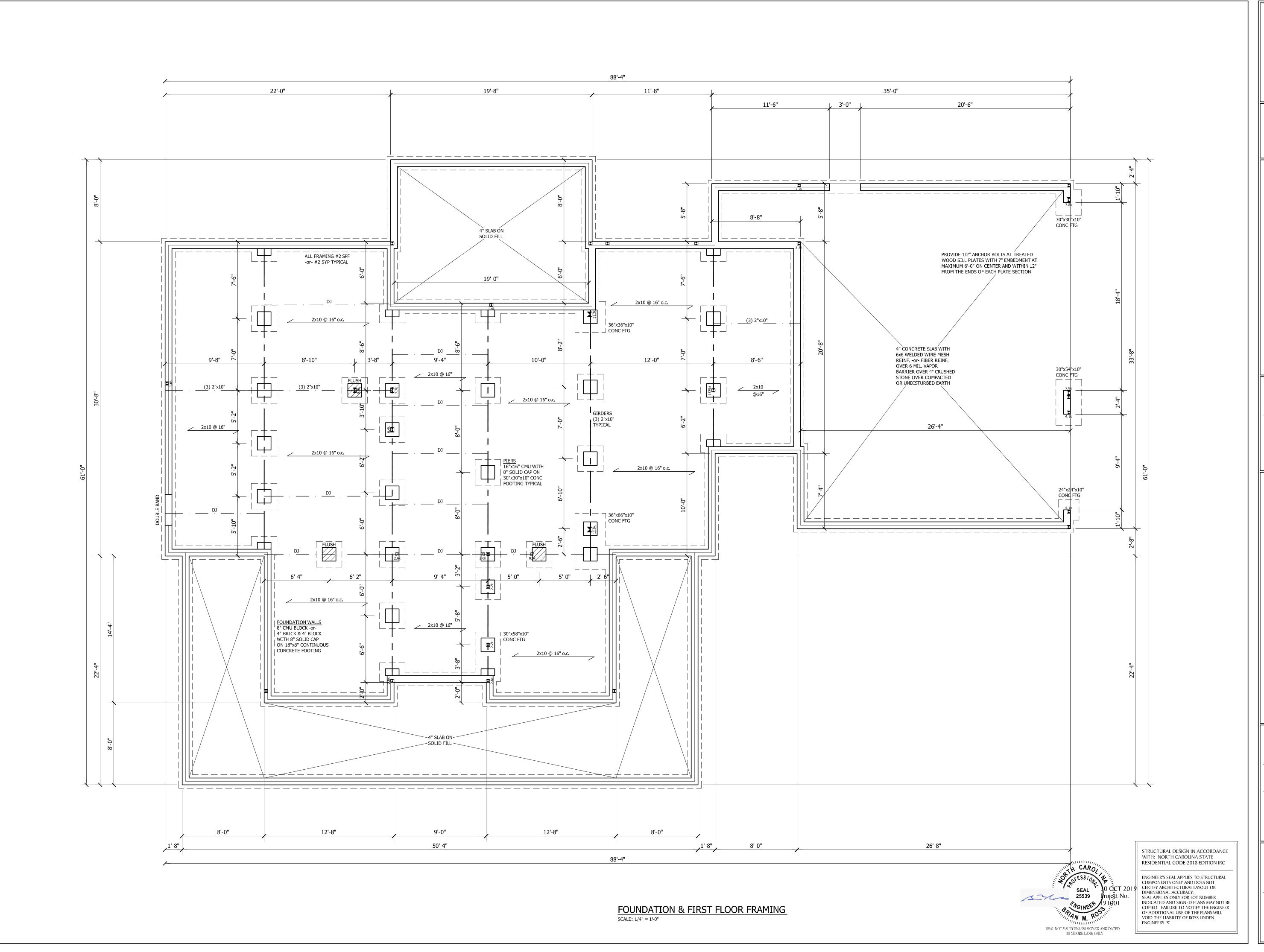
= <u>26.74</u> SQ. FT. REQ'D

BUILDER TO PROVIDE APPROPRIATE VENTILATING AS REQUIRED.



Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height and below the required headroom height. Handrails shall not project more than 4.5 inches on either side of the stairway and the minimum clear width of the stairway at and below the handrail height, including treads and landings, shall not be less than 31-1/2 inches where a handrail is installed on one side and 27 inches where handrails are provided on both sides

SCALE: NTS





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STEPHENSON BUILDERS THE CAPE RESIDENCE 182 MOORE LANE ANGIER NC

PROJECT NO. 191001

DESIGN BY LLR

29 OCT 2019

REVISION DATE

- - - - -

FOUNDATION & FIRST FLOOR

SHEET NO.

OF S5

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 RECTANGLE.

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

RECTANGLE 1 EAVE TO RIDGE HEIGHT: 12.5 ft

FIRST FLOOR:

SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 45.0 ft REQUIRED LENGTH OF BRACING =  $\frac{11.5 \text{ ft}}{25.3 \text{ ft}}$ PROVIDED LENGTH OF BRACING =  $\frac{25.3 \text{ ft}}{25.3 \text{ ft}}$ 

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 53.67 ft REQUIRED LENGTH OF BRACING = 13.7 ftPROVIDED LENGTH OF BRACING = 17.2 ft

RECTANGLE 2 EAVE TO RIDGE HEIGHT: 11.0 ft

### FIRST FLOOR:

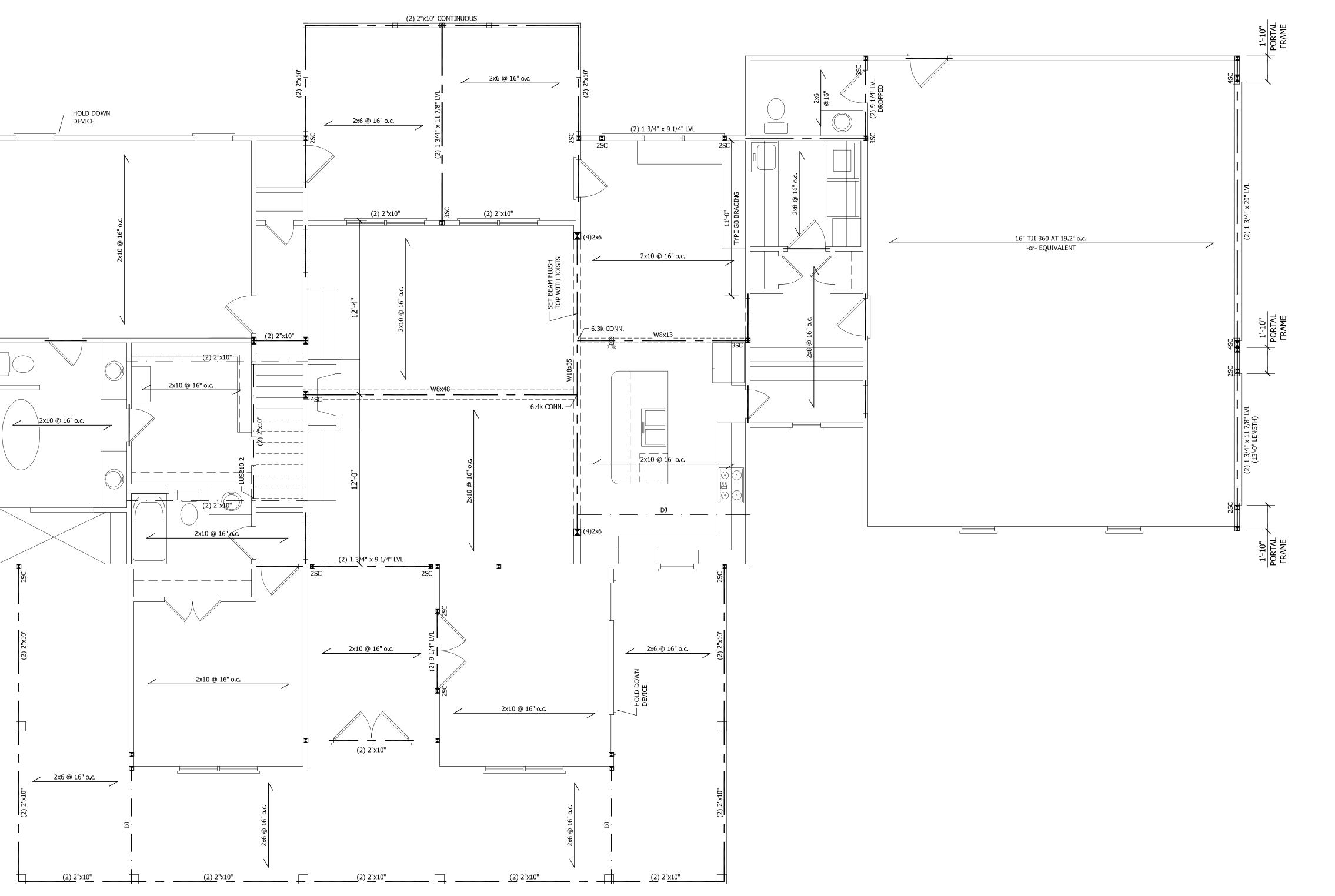
SHORT SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 33.67 ft REQUIRED LENGTH OF BRACING =  $\frac{4.0 \text{ ft}}{}$ PROVIDED LENGTH OF BRACING = 28.0 ft

LONG SIDE LENGTH OF CIRCUMSCRIBED RECTANGLE: 35.0 ft REQUIRED LENGTH OF BRACING = 4.1 ftPROVIDED LENGTH OF BRACING = 8.25 ft

FRAMING NOTES

- 1. STRUCTURAL NOTES SHEET S5.
- 2. FRAMING SHALL BE #2 SPF OR BETTER u.n.o.
- 3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.
- 4. DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.

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.



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



STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE RESIDENTIAL CODE 2018 EDITION IRC ENGINEER'S SEAL APPLIES TO STRUCTURAL

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> STEPHENSON BUILDERS THE CAPE RESIDENCE 182 MOORE LANE ANGIER NC ANGIER NC

PROJECT NO. 191001

DESIGN BY LLR

29 OCT 2019

DATE REVISION

> FIRST CEILING FRAMING

SHEET NO.

OF S5

FIRST CEILING FRAMING

- 1. STRUCTURAL NOTES SHEET S5.
- 2. FRAMING SHALL BE #2 SPF OR BETTER u.n.o.
- 3. EXTERIOR AND BEARING HEADERS (2) 2"x10" u.n.o.
- 4. DENOTES POINT LOAD. SEE CONSTRUCTION NOTE #4 ON S5.

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STEPHENSON BUILDERS THE CAPE RESIDENCE 182 MOORE LANE ANGIER NC

PROJECT NO. 191001

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DATE REVISION

SECOND CEILING

FRAMING

SHEET NO.

STRUCTURAL DESIGN IN ACCORDANCE WITH: NORTH CAROLINA STATE

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ENGINEERS PC.

SEAL NOT VALID UNLESS SIGNED AND DATED 182 MOORE LANE ONLY

OF S5

SECOND CEILING FRAMING SCALE: 1/4" = 1'-0"

ROOF FRAMING NOTES

1. STRUCTURAL NOTES SHEET S5.

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

3. PROVIDE 2x4 COLLAR TIES AT 48" o.c. AT UPPER THIRD OF RAFTERS u.n.o. ON PLAN.

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STEPHENSON BUILDERS THE CAPE RESIDENCE 182 MOORE LANE ANGIER NC

PROJECT NO.

DESIGN BY LLR

29 OCT 2019

DATE REVISION

> **ROOF PLAN** FRAMING

SHEET NO.

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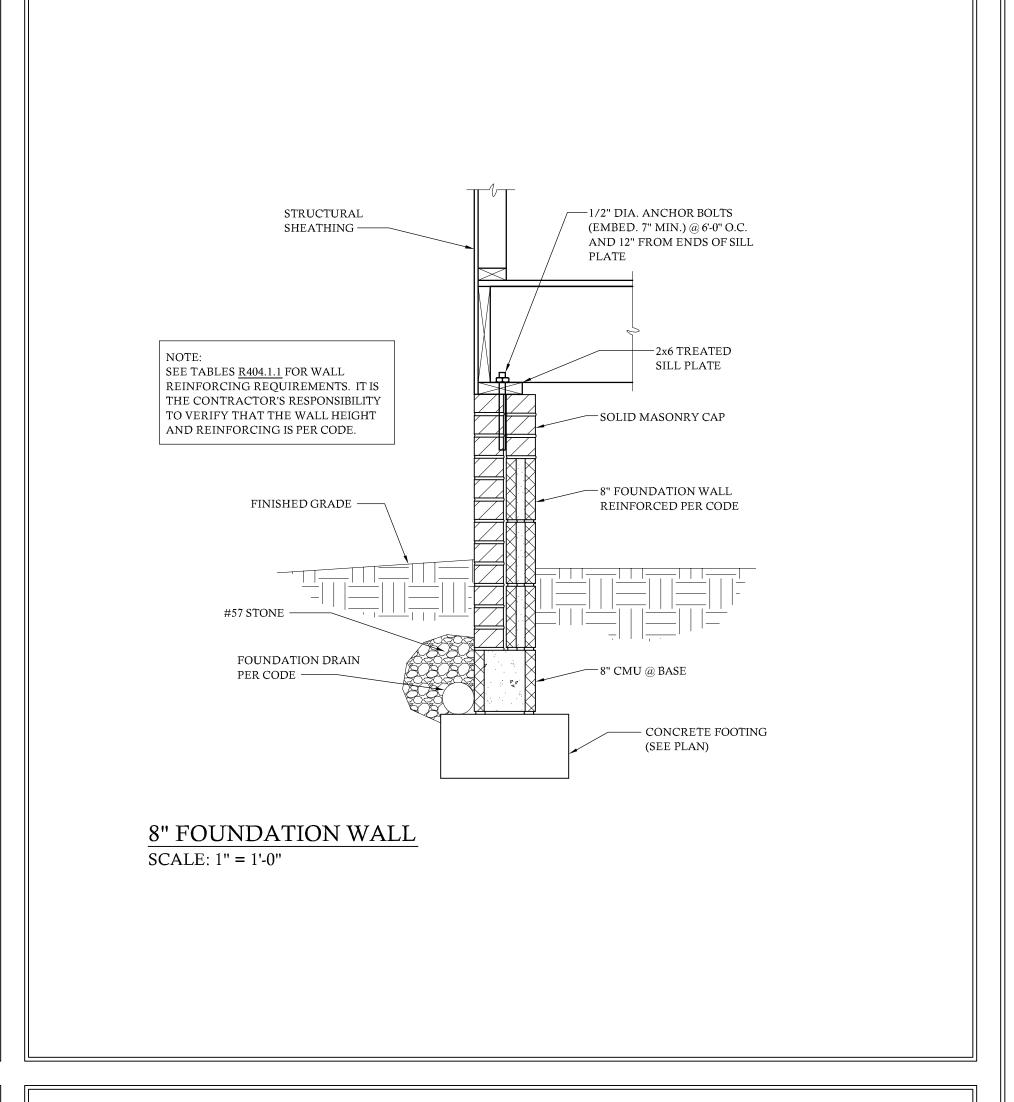
SEAL APPLIES ONLY FOR LOT NUMBER INDICATED AND SIGNED PLANS MAY NOT BE

ENGINEERS PC.

OF S5

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

SEAL NOT VALID UNLESS SIGNED AND DATED 182 MOORE LANE ONLY



# EXTENT OF HEADER FASTEN HEADER TO KING STUD 6-16d FASTEN SHEATHING TO . . . . . . . . HEADER AND WALL FRAMING (EACH STUD 0 0 0 0 0 WITH 8d NAILS AT 3" o.d 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 - SEE PLAN FOR HEADER PROVIDE LSTA24 STRAP BEAMS WITH 2x MATERIAL INSIDE FACE OF WALL FOR ATTACHMENT OF (TYP. EACH SIDE). -SHEATHING AND STRAPS. SEE PLAN — FOR A PANEL SPLICE, PANEL EDGES SHALL BE BLOCKED AND OCCUR WITHIN 24" OF MID-HEIGHT. ONE ROW OF TYP. SHEATHING-TO-FRAMING CONNECTIONS IS REQUIRED IN EACH PANEL. — WOOD STRUCTURAL 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. <u>R602.10.1</u>

# 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.

### **DESIGN LOADS** LIVE LOAD DEAD LOAD DWELLING UNITS SLEEPING ROOMS ATTICS WITH STORAGE ATTICS WITHOUT STORAGE ROOF SNOW STAIRS DECKS EXTERIOR BALCONIES PASSENGER VEHICLE GARAGES FIRE ESCAPES GUARDRAILS AND HANDRAILS

## ADDITIONAL LOADS

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

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

 $\underline{\text{TABLE R301.2(6)}}$  - 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 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 7:12 TO 12:12 21.0 PSF 22.1 PSF 22.9 PSF

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 PSITHE 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 TABLE R402.2 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>R602.10.3</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  $1/2 \times 3 1/2 \times 1/4$  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 SECTION R404 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

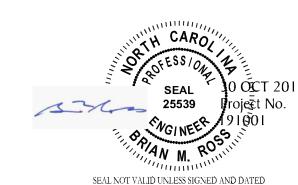
4. WOOD SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WITH 1/2" ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT SPACED A MAXIMUM OF 6'-0" o.c. AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION.

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

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> NC E CAPE RESIDENCE
>
> MOORE LANE ANGIER NO

PROJECT NO.

DESIGN BY LLR

29 OCT 2019

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STRUCTURAL **NOTES & DETAILS** 

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REVISION