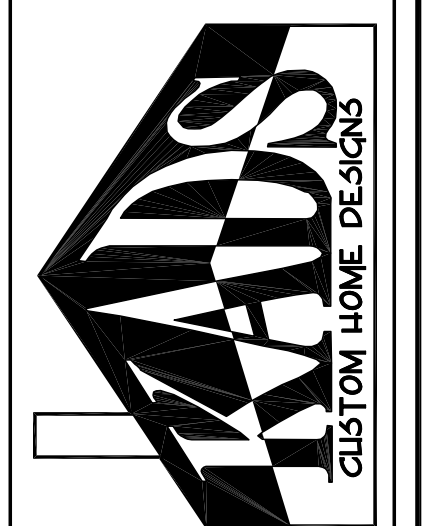


|                             |        |
|-----------------------------|--------|
| <b>HEATED</b>               |        |
| FIRST FLOOR HTD. SQ. FT.    | = 1582 |
| SECOND FLOOR HTD. SQ. FT.   | = 596  |
| REC. RM. FLOOR HTD. SQ. FT. | = 398  |
| TOTAL HTD. SQ. FT. = 2576   |        |
| <b>UNHEATED</b>             |        |
| FRONT PORCH SQ. FT.         | = 118  |
| GARAGE SQ. FT.              | = 598  |
| SCREEN PORCH SQ. FT.        | = 180  |

**FIRST FLOOR PLAN**

SCALE: 1/4"=1'-0"  
 9'-0" CLG. HGT.  
 SET WINDOWS AT 7'-10" A.F.F.

**STEPHENSON BUILDERS, INC.**  
**LOT 26 MORGAN FARMS**



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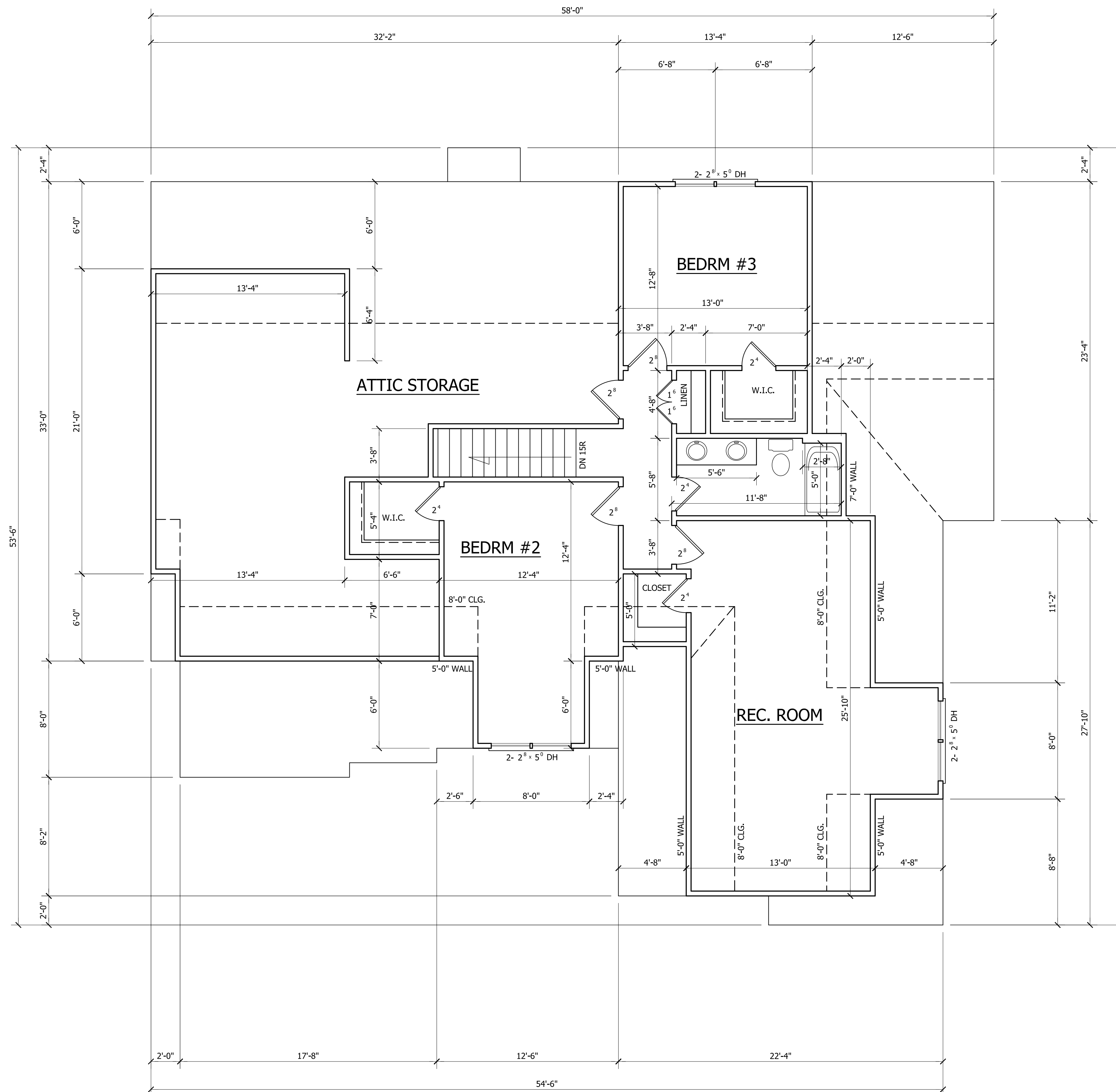
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**D.V.O.**

**DATE:**  
**7/15/20**

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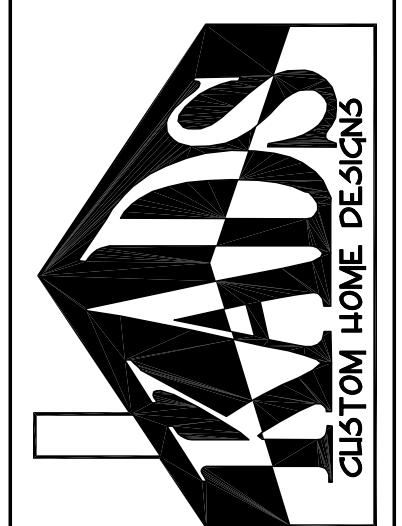
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**DK2576**



**SECOND FLOOR PLAN**

SCALE: 1/4"=1'-0"  
 8'-0" CLG. HGT.  
 SET WINDOWS AT 6'-8" A.F.F.

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**LOT 26 MORGAN FARMS**



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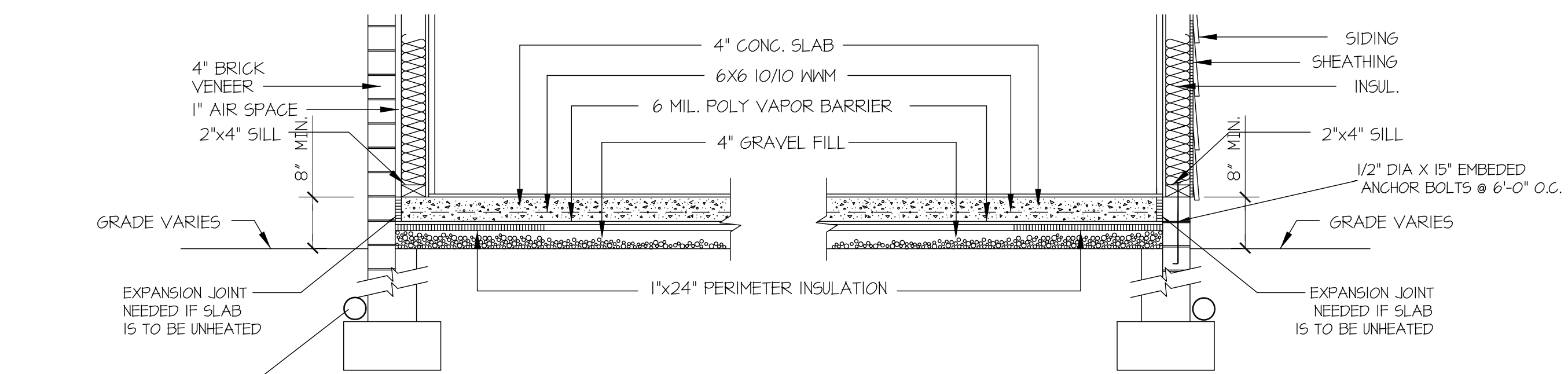
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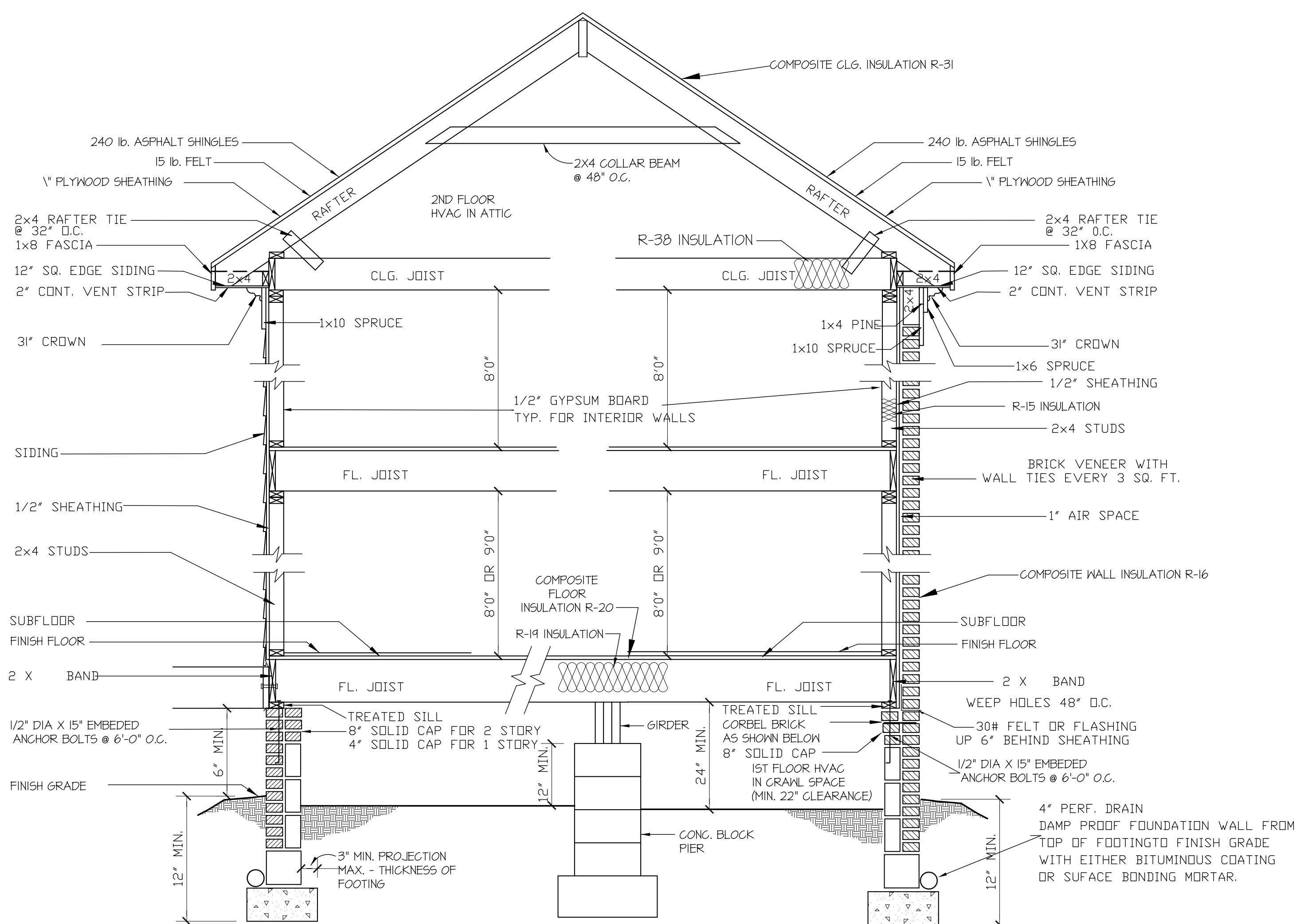
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**SLAB FDN. DETAIL**

SCALE: 1\"/>



**SIDING SECTION**

**BRICK SECTION**

**WALL SECTION**

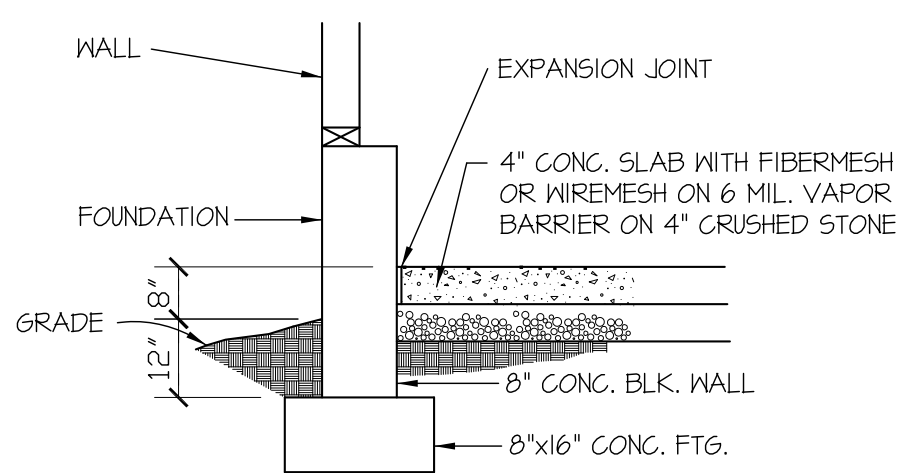
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**CRAWL SPACE VENTILATION**  
 PROVIDE AT LEAST 1.0 SQ. FT. NET FREE VENTILATION AREA FOR EACH 150 SQ. FT. OF CRAWL SPACE.  
 CRAWL SPACE AREA = 1582 SQ. FT.  
 1582/150 = 10.55 SQ. FT. REQ'D.  
 REDUCE REQUIRED AREA TO 1.0 SQ. FT. NET FREE VENTILATION AREA FOR EACH 1,500 SQ. FT. OF CRAWL SPACE WITH APPROVED VAPOR BARRIER.  
 PROVIDE (1) VENT WITHIN 3'-0" OF EACH CORNER.  
 REFER TO MANUFACTURER SPECIFICATIONS FOR ACTUAL VENTS USED TO DETERMINE NUMBER OF VENTS REQUIRED.

**ROOF VENTILATING REQUIREMENTS**  
 $\frac{2478}{150} = 16.52$  SQ. FT. REQ'D

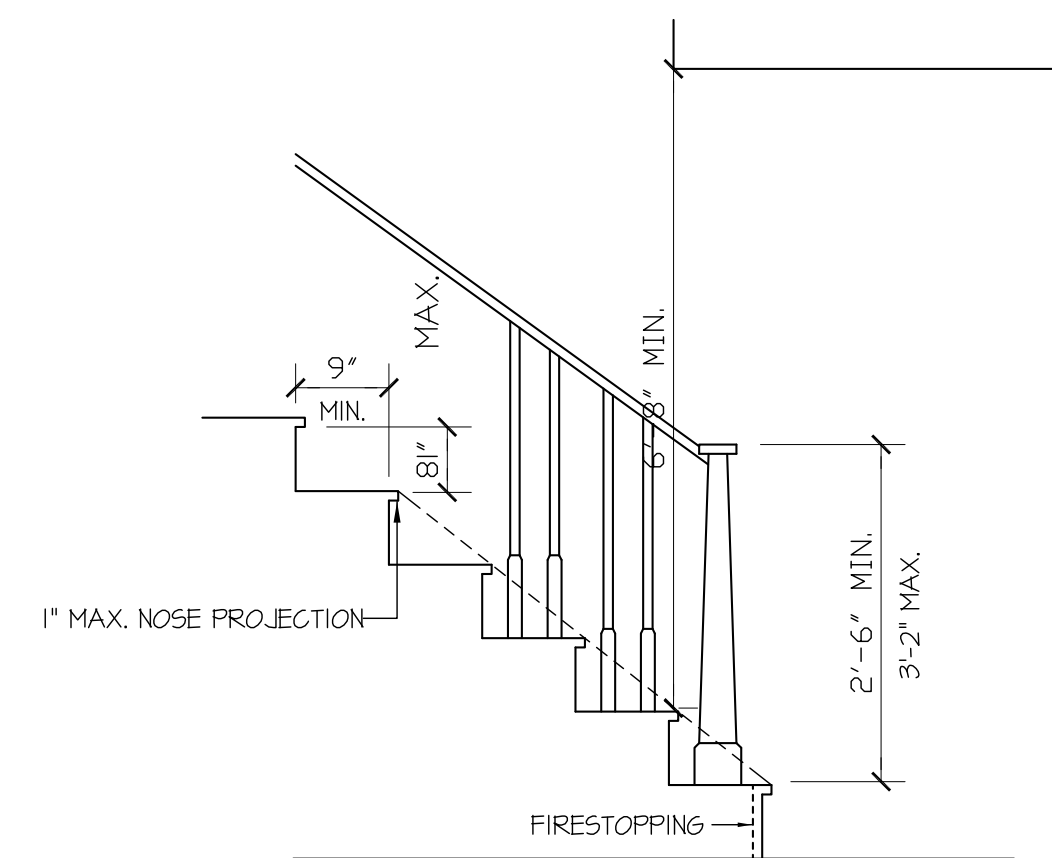
**ROOF VENTILATING REQUIREMENTS**  
 (POWER ROOF VENTILATOR REQUIRED)  
 $\frac{2478}{300} = 8.26$  SQ. FT. REQ'D

BUILDER TO PROVIDE APPROPRIATE VENTILATING AS REQUIRED.



**GARAGE SLAB**

SCALE: NTS



NOTE:  
 MINIMUM CLEAR WIDTH:  
 2'-8\"/>

**STAIR DETAIL**

SCALE: NTS

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**LOT 26 MORGAN FARMS**



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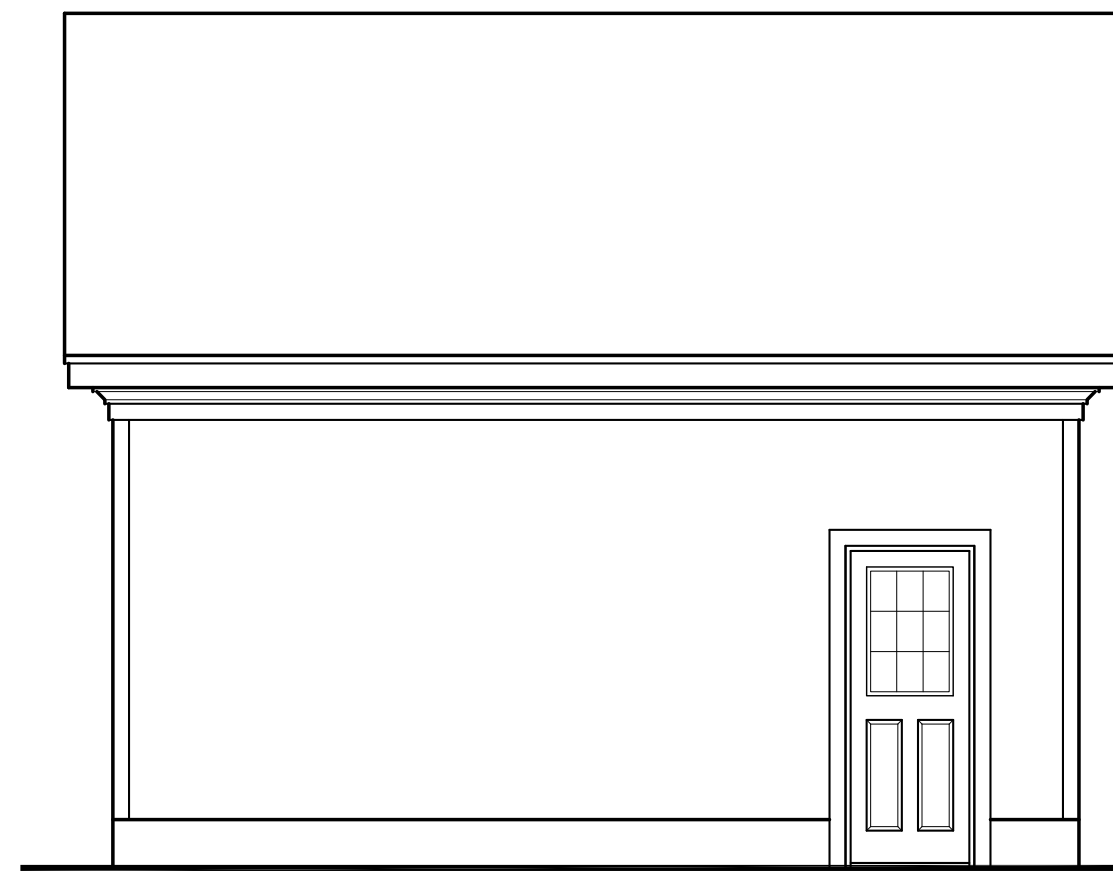
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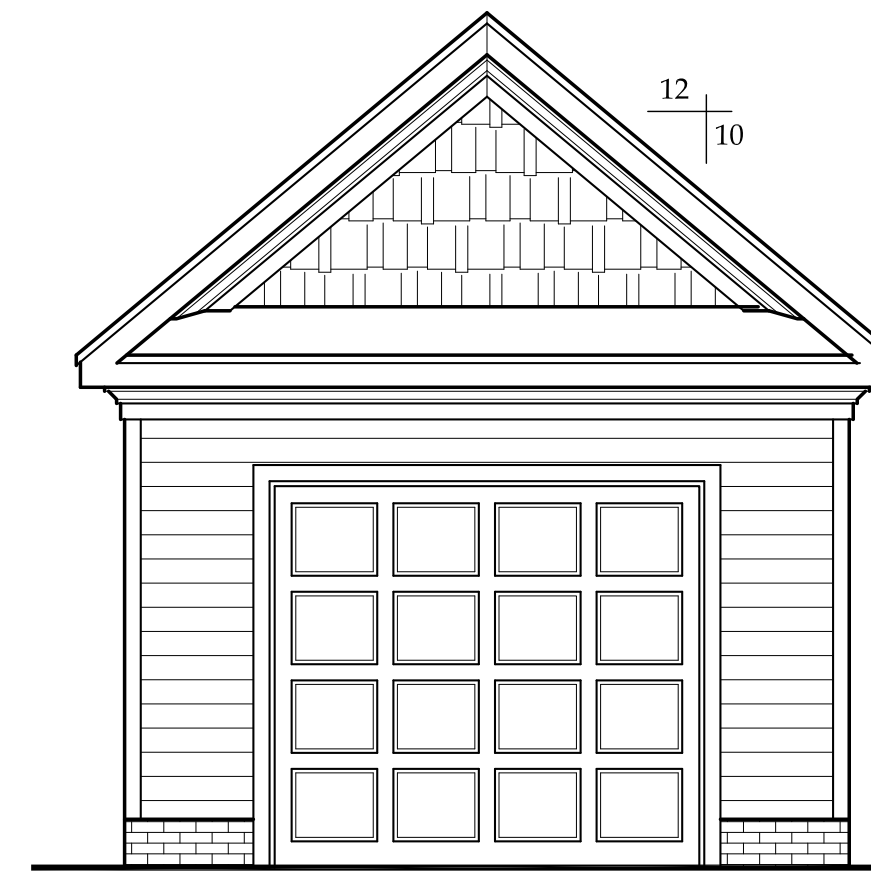
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**PLAN NO.**  
**DK2576**



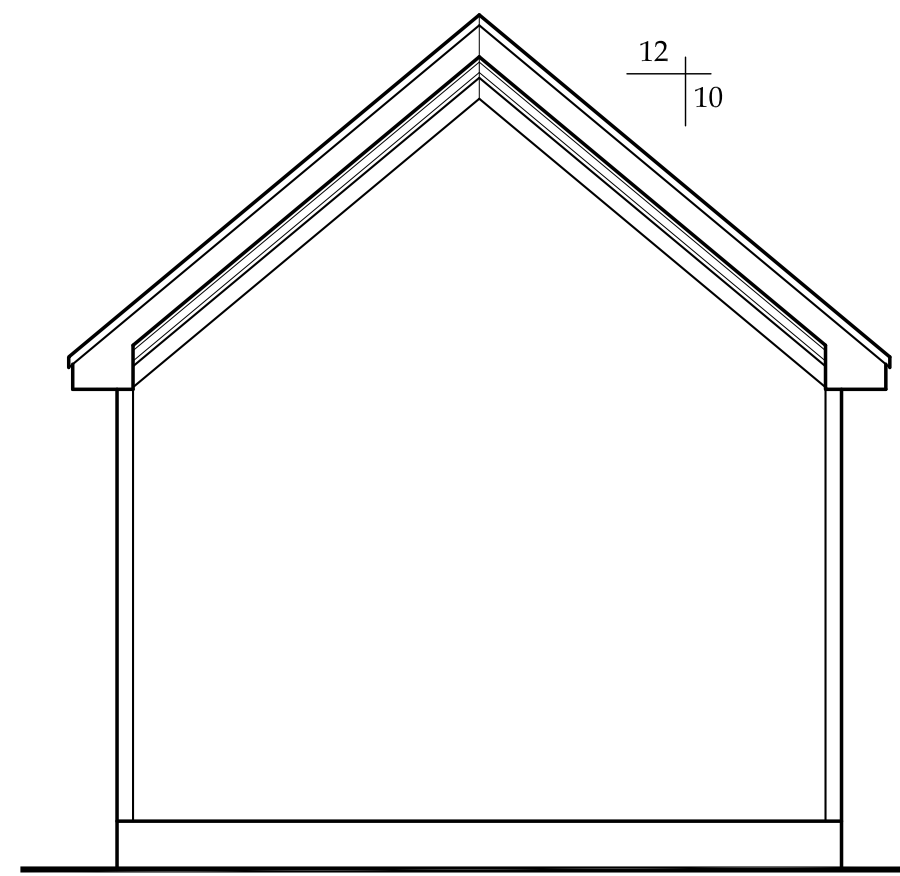
**LEFT ELEVATION**

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



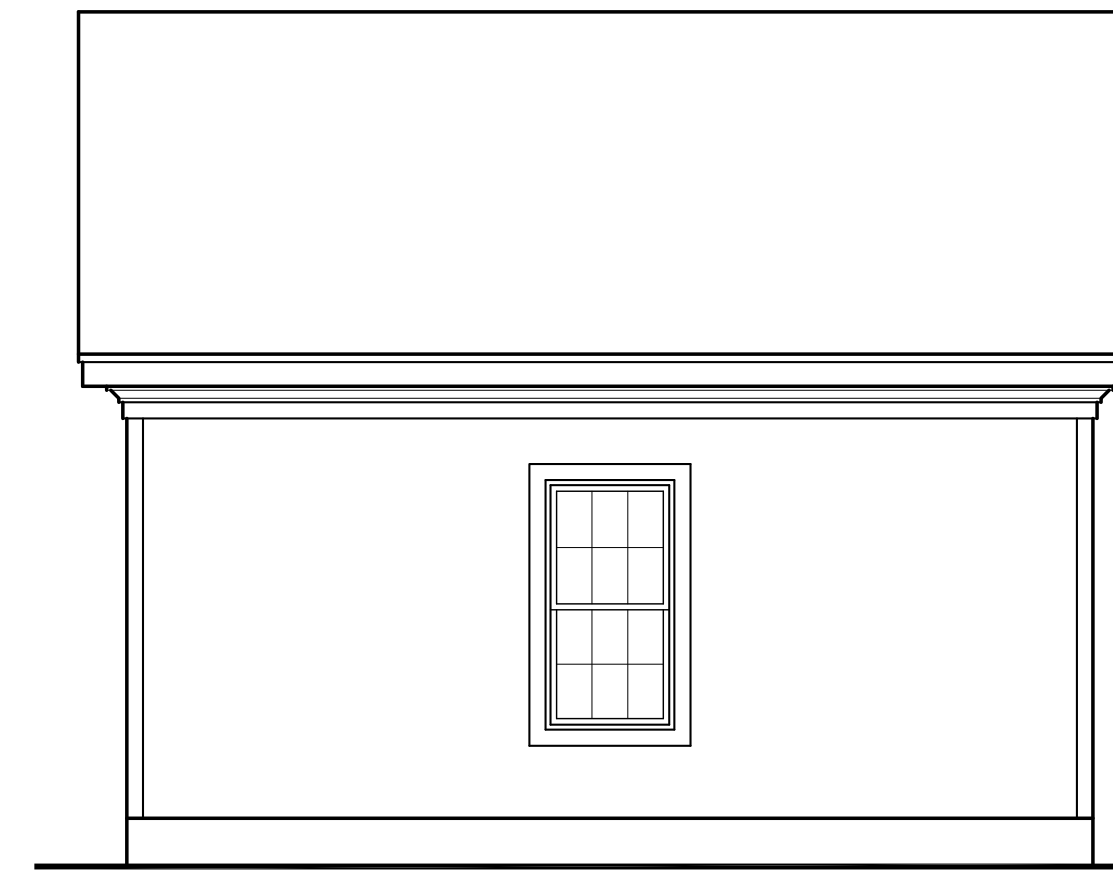
**FRONT ELEVATION**

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



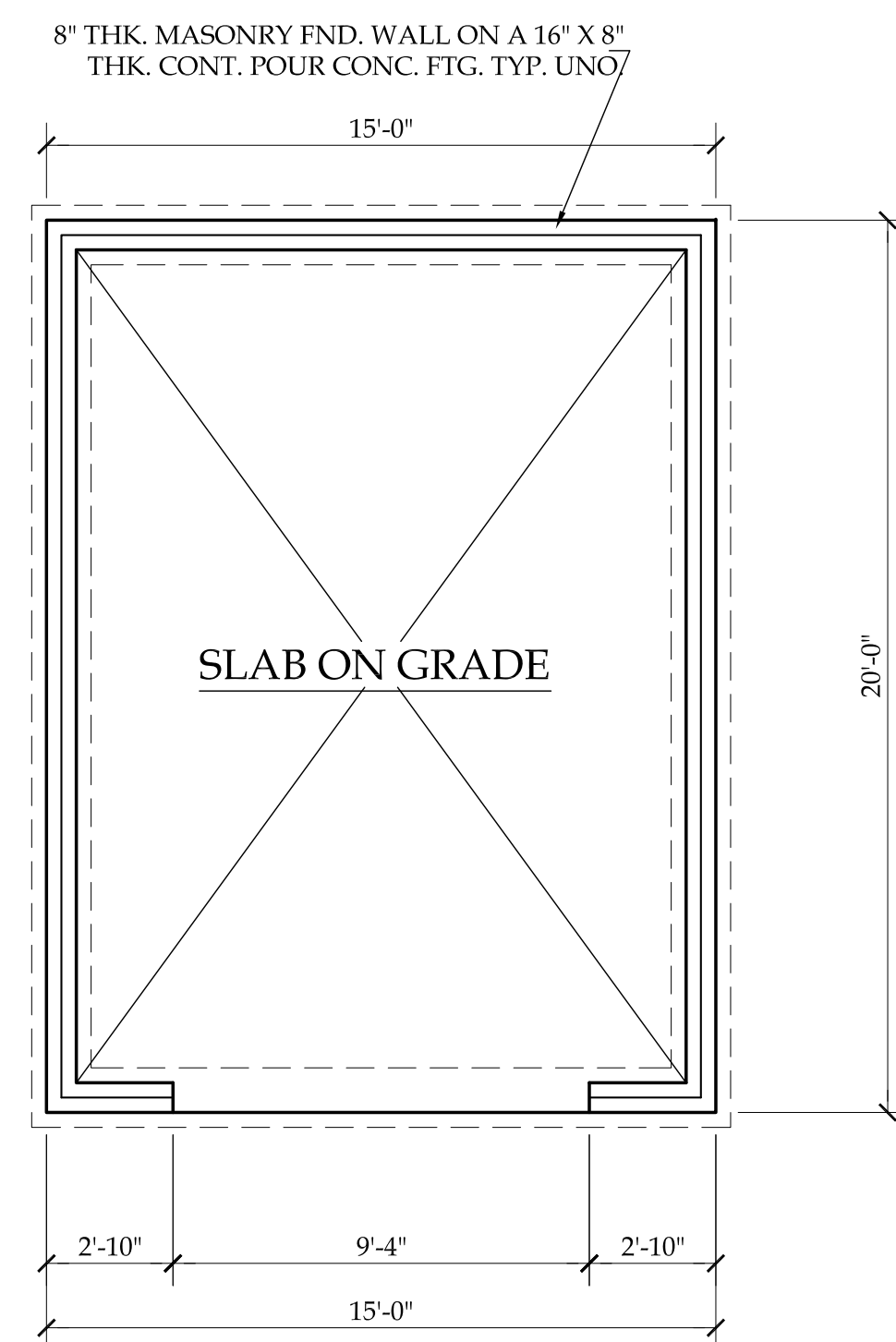
**REAR ELEVATION**

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



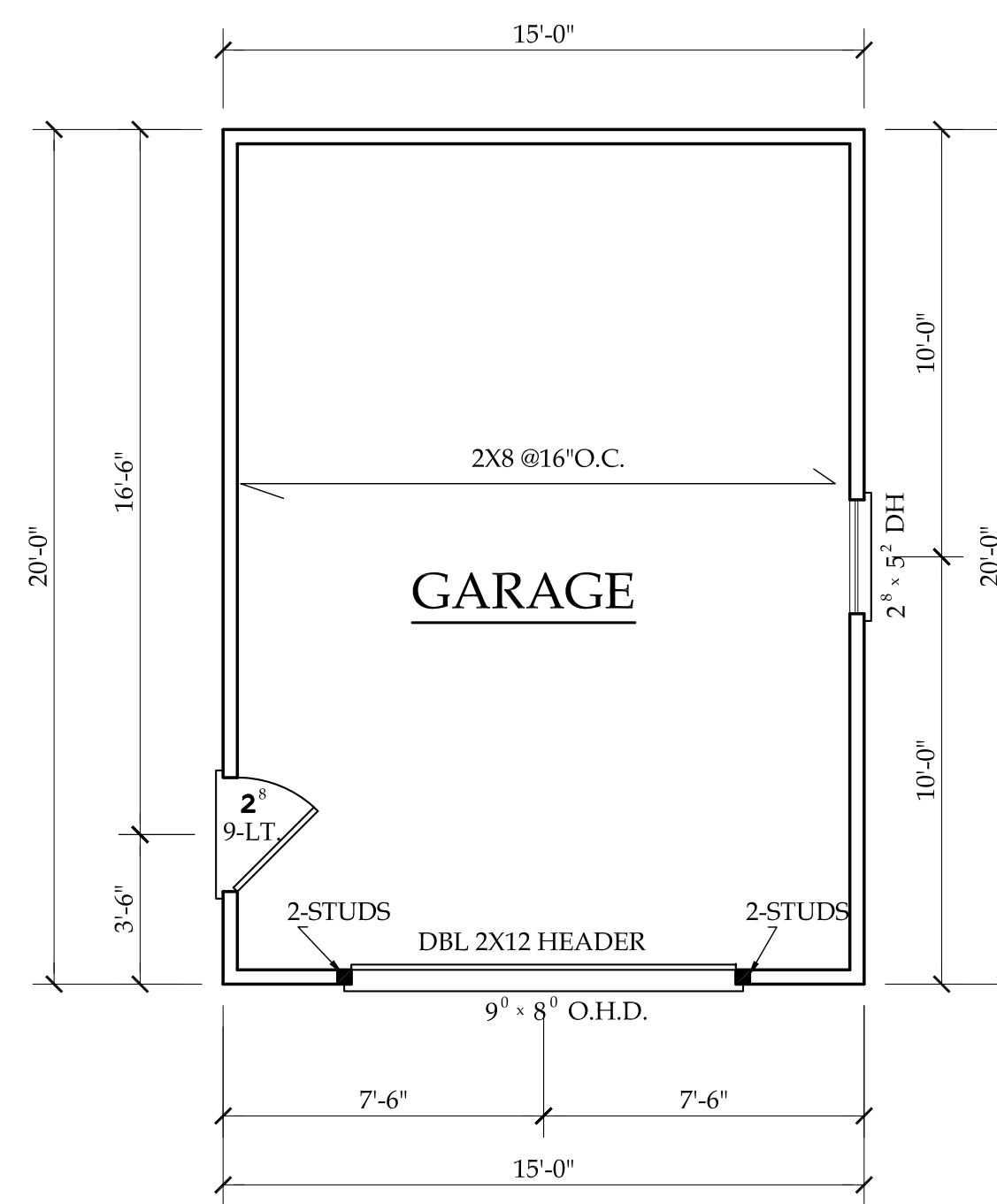
**RIGHT ELEVATION**

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



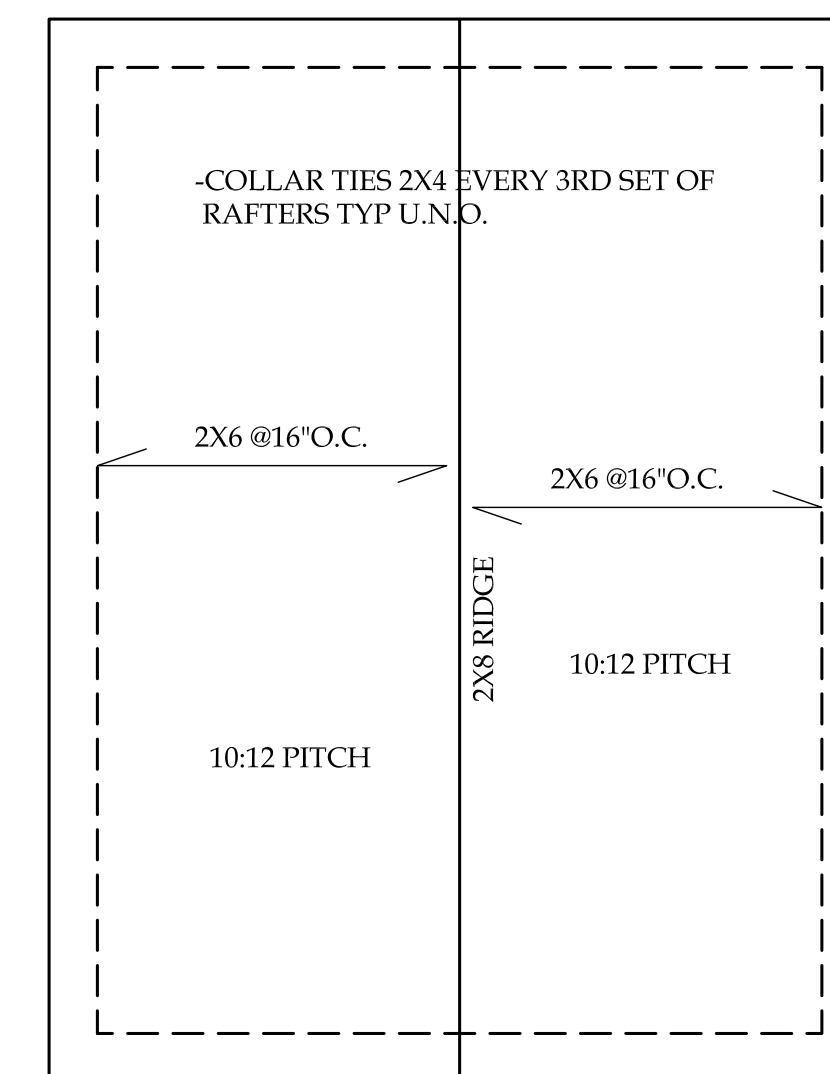
**FOUNDATION PLAN**

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



**FLOOR PLAN**

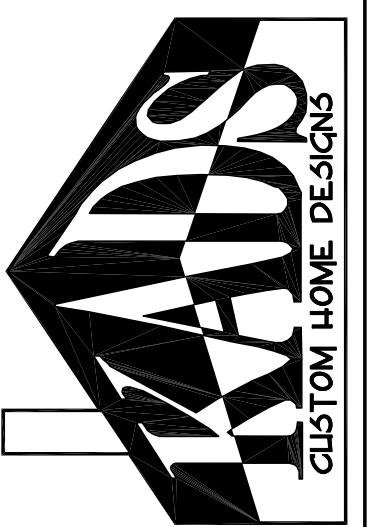
SCALE: 1/4"=1'-0"



**ROOF PLAN**

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

**STEPHENSON BUILDERS, INC.**  
**LOT 26 MORGAN FARMS**



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**7/15/20**

**DETACHED GARAGE**

**PLAN NO.**  
**15X20**



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STEPHENSON BUILDERS  
 LOT 3 MORGAN FARM

PROJECT NO.

R200304

DESIGN BY

LLR  
 31 MAR 2020

REVISION

DATE

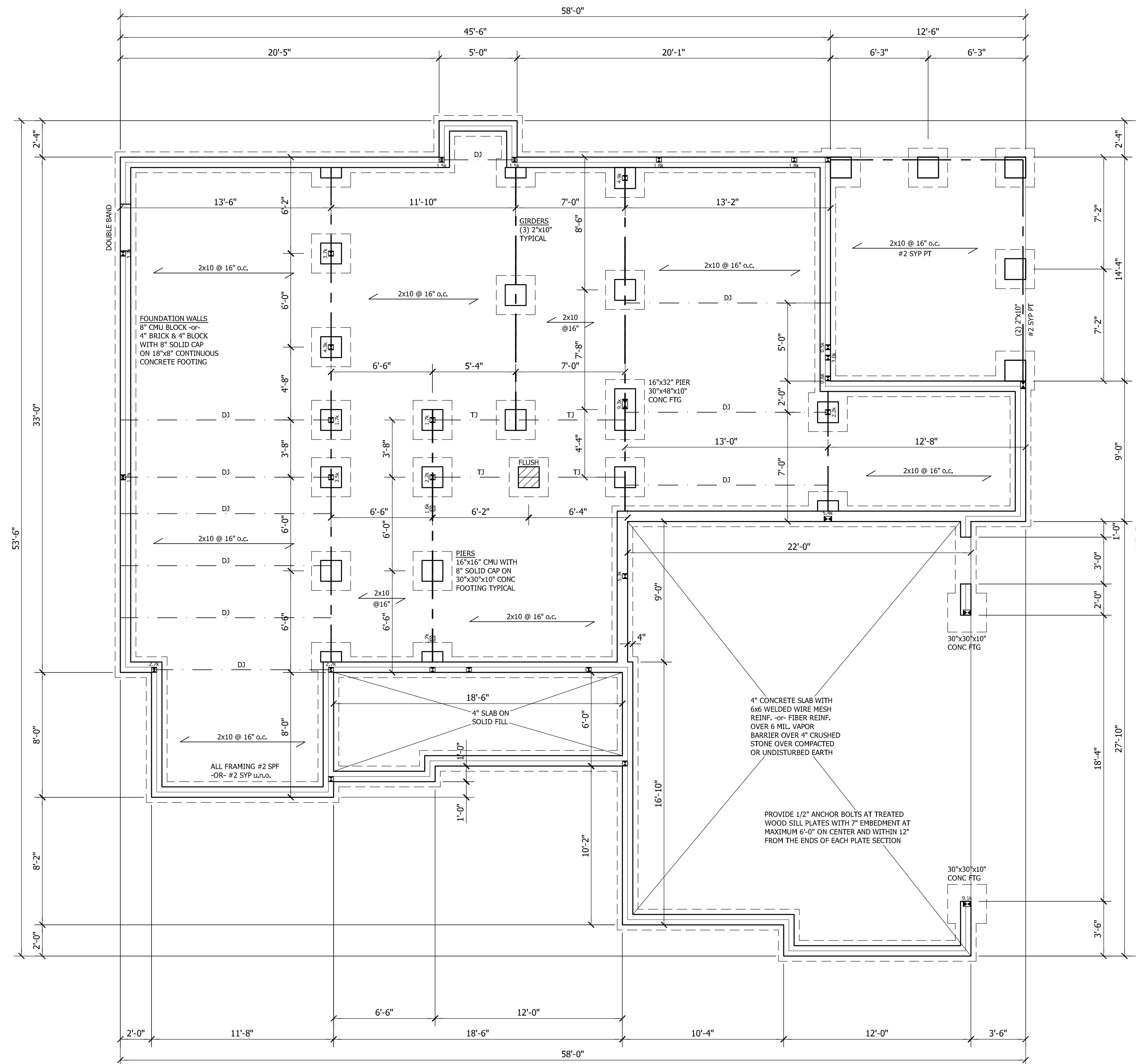
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FOUNDATION &  
 FIRST FLOOR

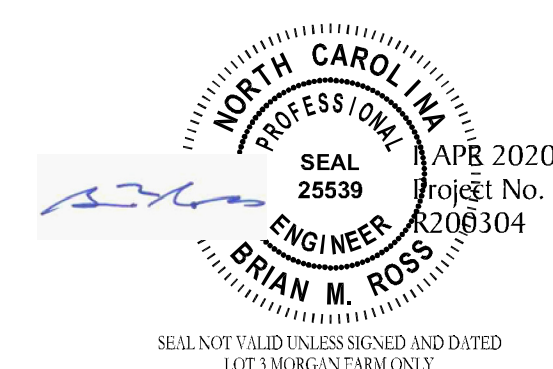
SHEET NO.

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FOUNDATION & FIRST FLOOR FRAMING  
 SCALE: 1/4" = 1'-0"

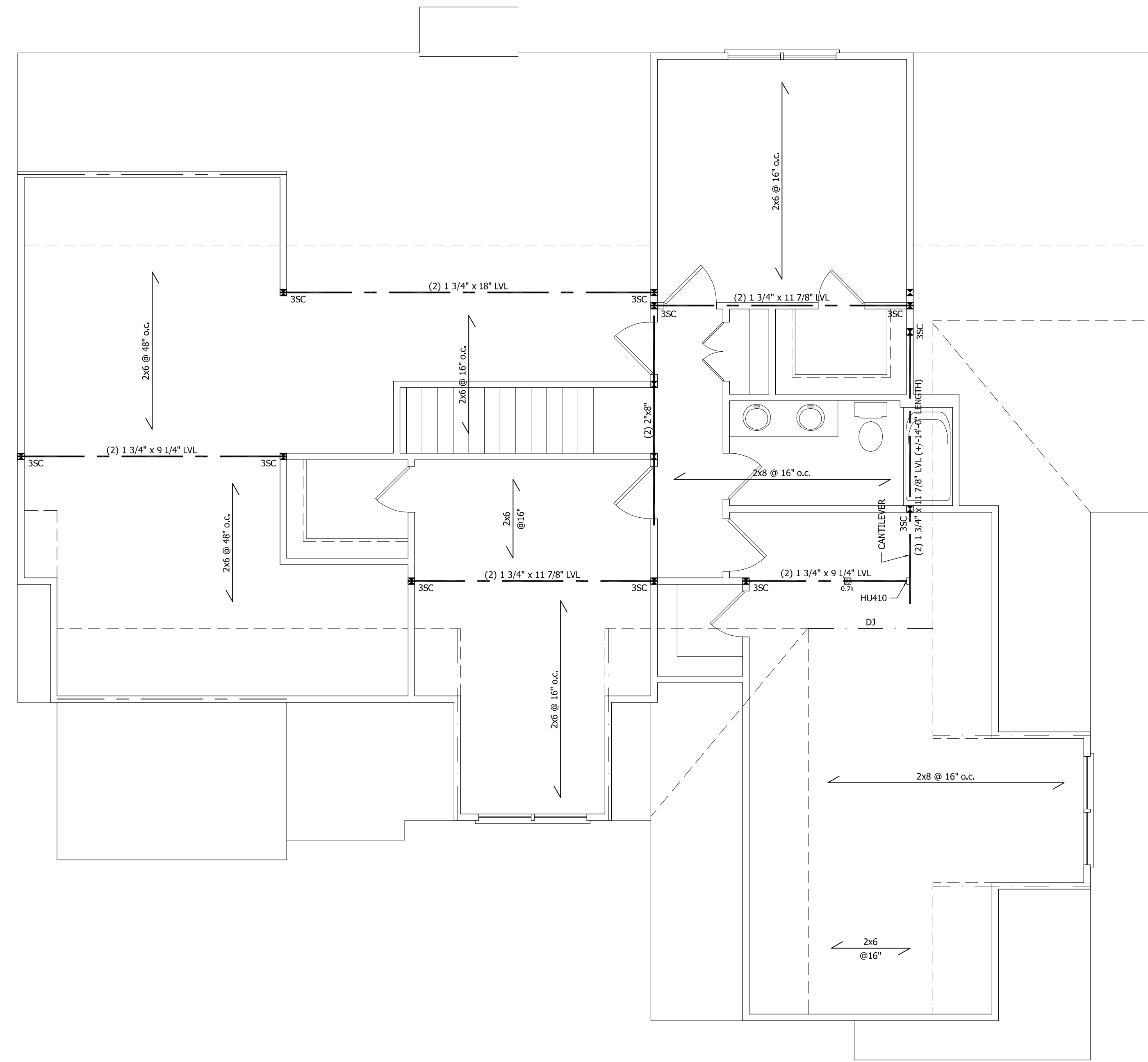


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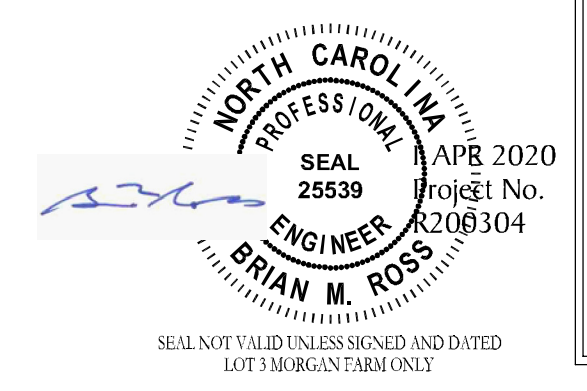


NOTE:  
 PER SECTION R602.10.3.2, THE AMOUNT OF BRACING PROVIDED  
 ON THE SECOND STORY EQUALS OR EXCEEDS THE AMOUNT OF  
 BRACING FOR THE FIRST STORY BELOW. THEREFORE A SEPARATE  
 ANALYSIS OF SECOND STORY BRACING IS NOT REQUIRED.

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

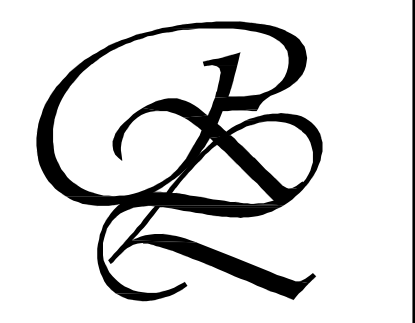


**SECOND CEILING FRAMING**  
 SCALE: 1/4" = 1'-0"



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

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**STEPHENSON BUILDERS**  
 LOT 3 MORGAN FARM

PROJECT NO.  
**R200304**



DESIGN BY LLR  
 31 MAR 2020

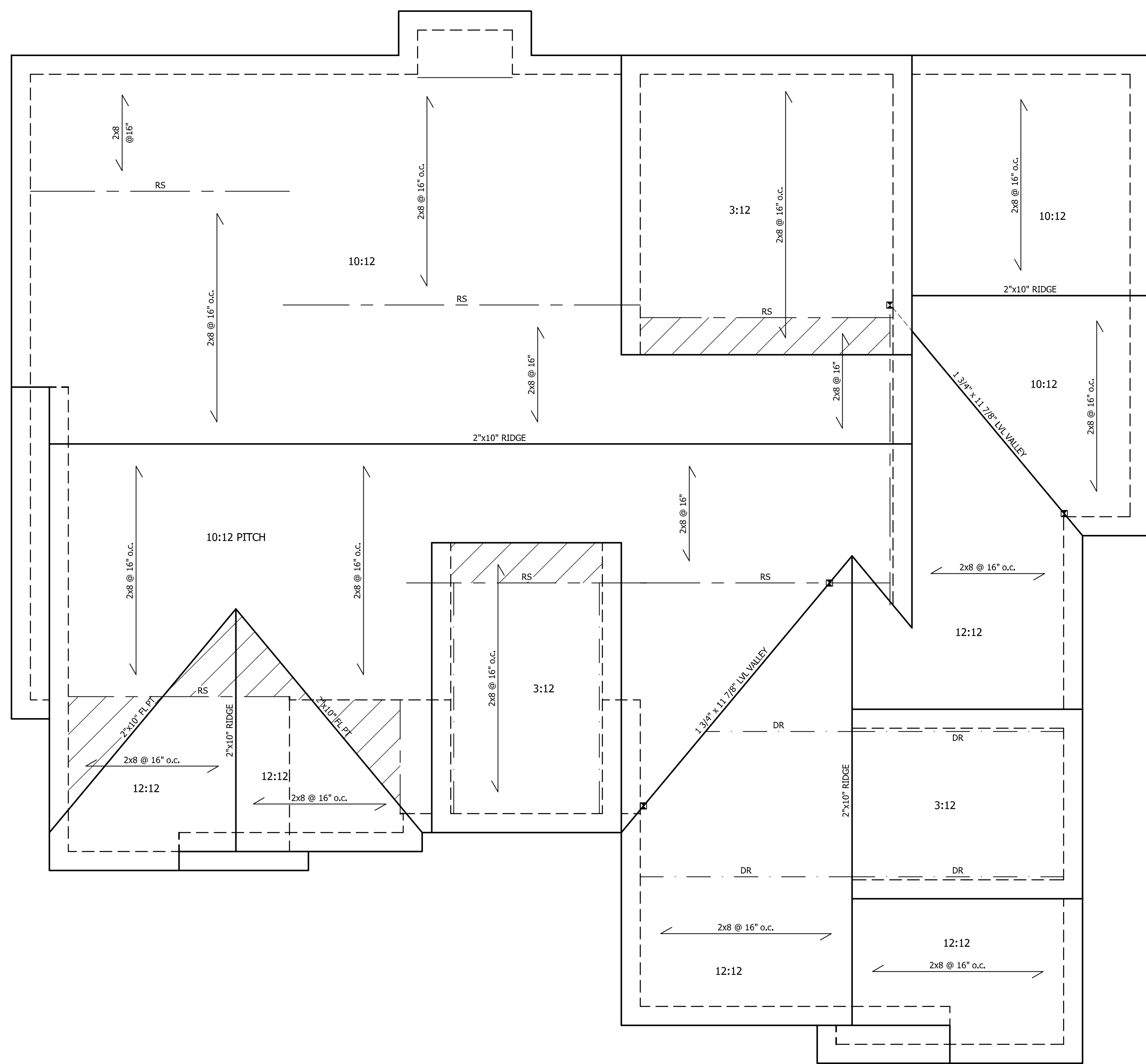
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**SECOND CEILING  
 FRAMING**

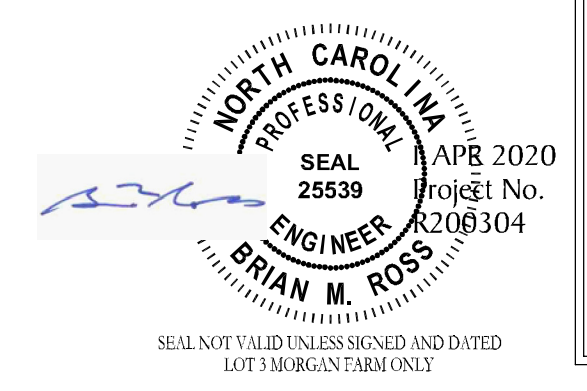
SHEET NO.  
**S3**  
 OF 55



- ROOF FRAMING NOTES**
1. STRUCTURAL NOTES SHEET SS.
  2. FRAMING SHALL BE #2 SPF OR #2 SYP u.r.o.
  3. PROVIDE 2x4 COLLAR TIES AT 48" o.c. AT UPPER THIRD OF RAFTERS u.r.o. ON PLAN.
  4. FUR RIDGES FOR FULL RAFTER CONTACT
  5.  DENOTES POINT LOAD, SEE CONSTRUCTION NOTE #4 ON SS.
  6.  DENOTES OVERFRAMED AREA



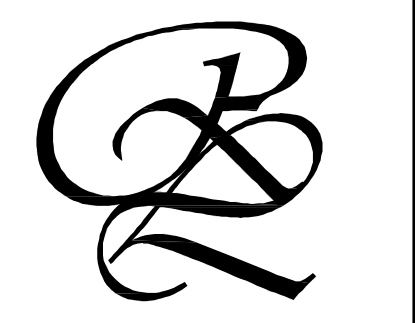
**ROOF PLAN FRAMING**  
SCALE: 1/4" = 1'-0"



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

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STEPHENSON BUILDERS  
LOT 3 MORGAN FARM

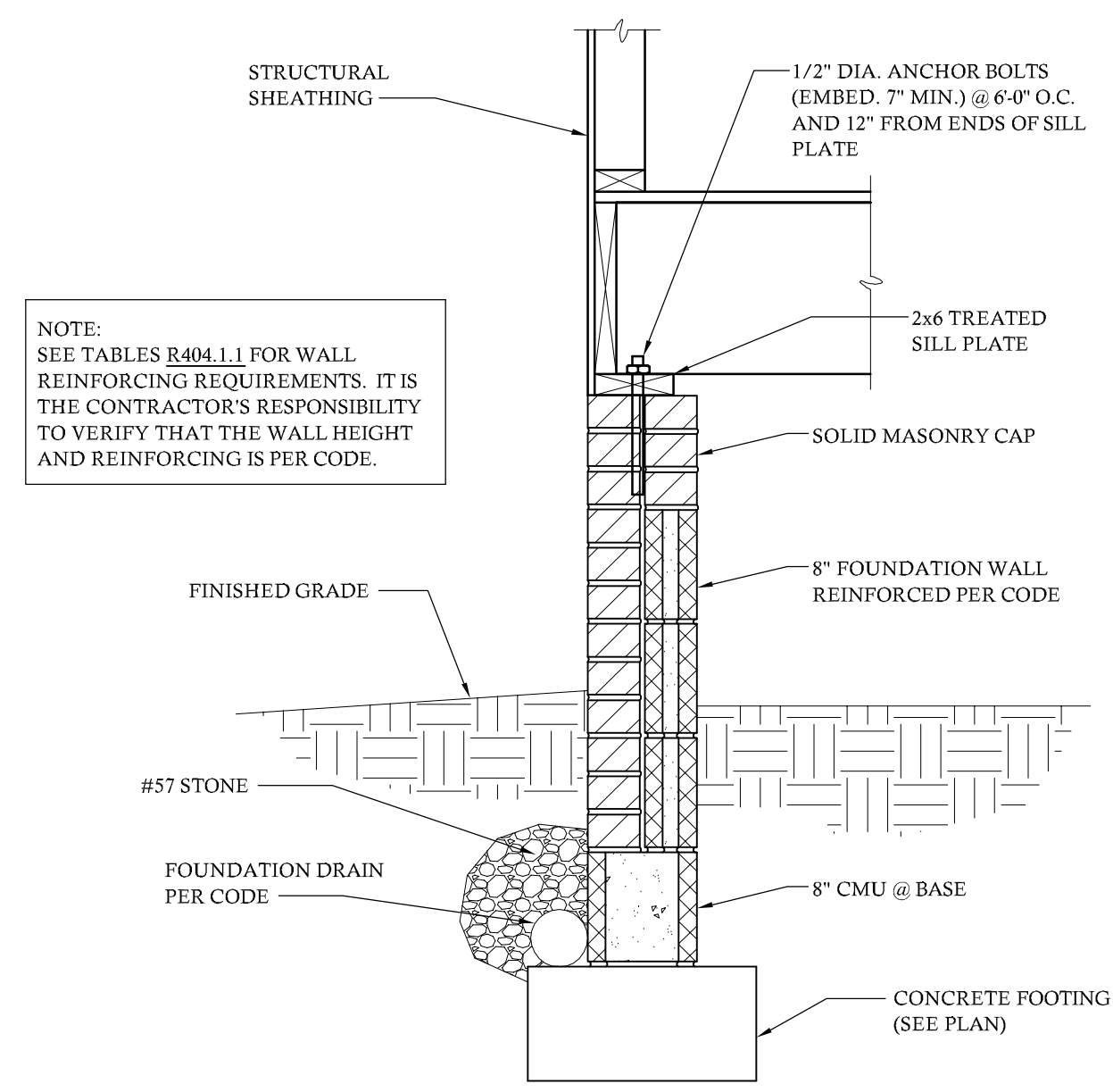
PROJECT NO.  
**R200304**

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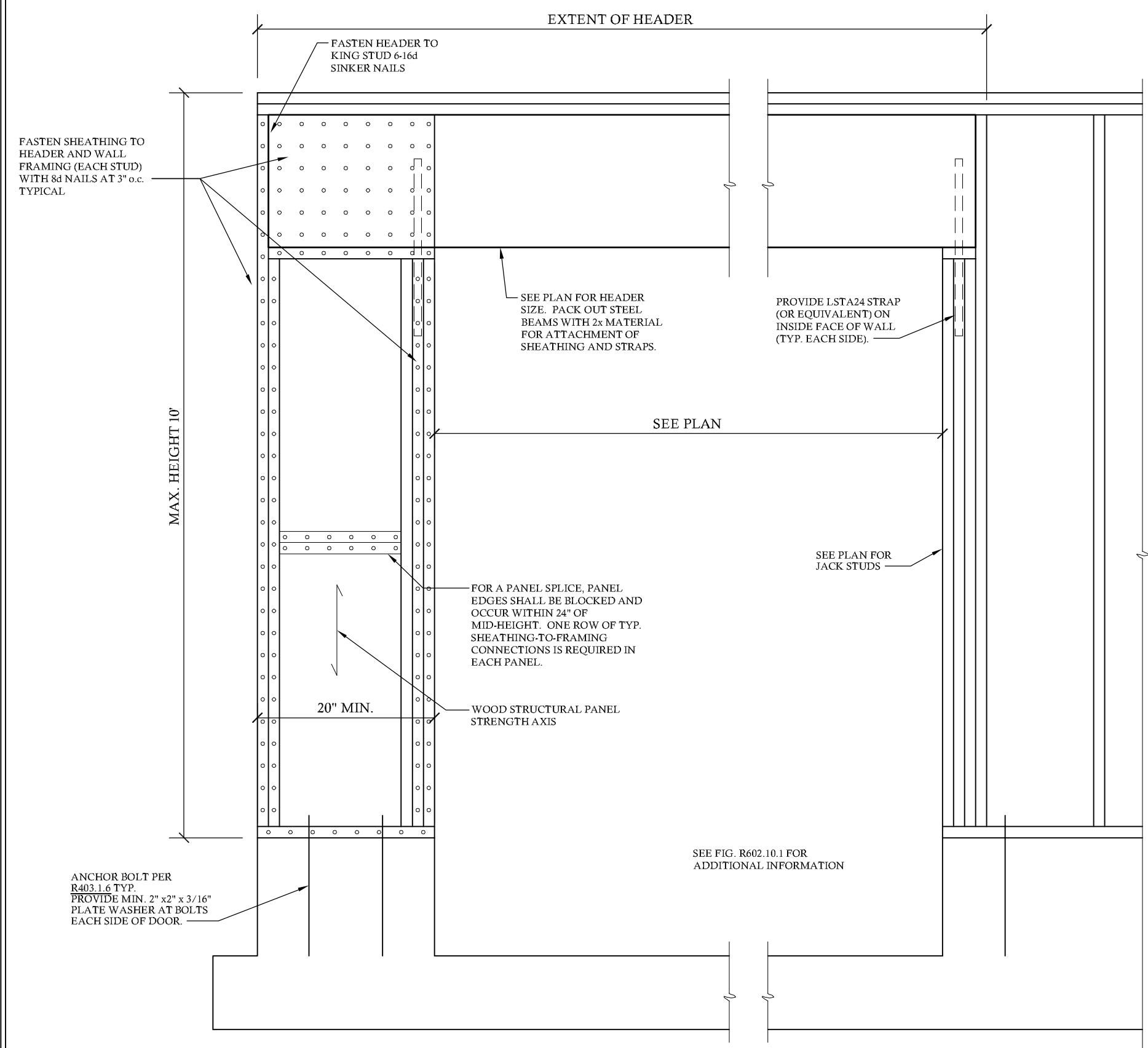
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**ROOF PLAN FRAMING**

SHEET NO.  
**S4**  
OF 55



**8" FOUNDATION WALL**  
SCALE: 1" = 1'-0"



**CS-PF PORTAL FRAME BRACED WALL PANEL**  
NO SCALE BASED ON FIG. R602.10.1

**STRUCTURAL NOTES**

**GENERAL**

- 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.
- 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.
- CONTACT THE ENGINEER PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE NOTED ON THE PLANS.
- ONLY CURRENT SEALED DRAWINGS ARE TO BE USED FOR CONSTRUCTION.

**DESIGN LOADS**

| TABLE E301.4              | LIVE LOAD (PSF) | DEAD LOAD (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              | -               |
| 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

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:

| ROOF PITCH      | MEAN ROOF HEIGHT | 0-30 FT  | 35 FT    | 40 FT    |
|-----------------|------------------|----------|----------|----------|
| 0:12 TO 2.25:12 | 45.4 PSF         | 47.7 PSF | 49.5 PSF | 49.5 PSF |
| 2.25:12 TO 7:12 | 34.8 PSF         | 36.5 PSF | 37.9 PSF | 37.9 PSF |
| 7:12 TO 12:12   | 21.0 PSF         | 22.1 PSF | 22.9 PSF | 22.9 PSF |

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

**MATERIALS**

- FRAMING LUMBER SHALL BE #2 SPRUCE PINE FIR (SPF) WITH THE FOLLOWING DESIGN PROPERTIES: F<sub>b</sub> = 875 PSI F<sub>v</sub> = 70 PSI E = 1.4E6 PSI
- 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 A WPA C22 WITH THE FOLLOWING DESIGN PROPERTIES: F<sub>b</sub> = 1050 PSI F<sub>v</sub> = 95 PSI E = 1.6E6 PSI
- ENGINEERED WOOD BEAMS SHALL BE LAMINATED VENEER LUMBER (LVL) OR PARALLEL STRAND LUMBER (PSL) WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES: F<sub>b</sub> = 2600 PSI F<sub>v</sub> = 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-2750F LVL BY GEORGIA PACIFIC ILEVEL TRUS JOIST 1.9E MICROLLAM LVL BY WEYERHAEUSER
- STRUCTURAL STEEL WIDE FLANGE BEAMS SHALL CONFORM TO ASTM A992 OR A572, GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
- BOLTS SHALL CONFORM TO A325 MINIMUM GRADE.
- REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615 GRADE 60.
- SEE TABLE R602.3(1) FOR STRUCTURAL MEMBER FASTENING REQUIREMENTS.
- 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.
- 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.
- MASONRY UNITS SHALL CONFORM TO ACI 530/ASCE 5/TMS 402 AND MORTAR SHALL COMPLY WITH ASTM C 270.

**CONSTRUCTION**

- 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.
- ENGINEERED WOOD BEAMS SHALL BE INSTALLED WITH ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.
- 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.
- 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.
- 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.
- WALL BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE.
  - 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.
  - THE EXTERIOR OF THE STRUCTURE SHALL BE CONTINUOUSLY SHEATHED WITH 1/2" WOOD STRUCTURAL SHEATHING (PLYWOOD OR OSB) PER CODE SECTION R602.10.4. 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.
  - 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.
  - SEE PLANS FOR SPECIAL WALL BRACING REQUIREMENTS FOR GARAGE WALLS AND OTHER WALLS WITH MULTIPLE OR LARGE OPENINGS.
- 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.
- 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".
- 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.

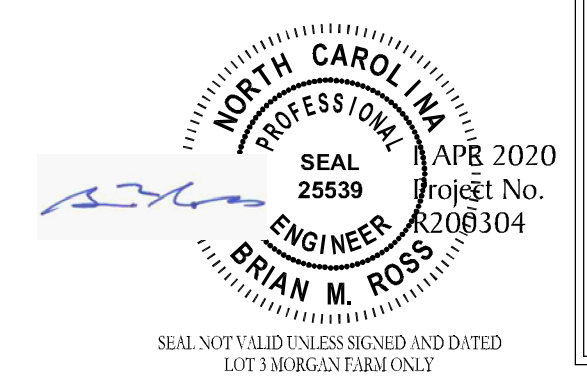
**FOUNDATION**

- MINIMUM ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE 3000 PSF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY.
- CONCRETE AND MASONRY FOUNDATION WALLS SHALL BE SELECTED AND CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OR IN ACCORDANCE WITH ACI 318, NCM A TR68-A, OR ACI 530/ASCE 5/TMS 402.
- MASONRY AND POURED CONCRETE WALL REINFORCEMENT SHALL BE IN ACCORDANCE WITH TABLE R404.1.1 (1) THROUGH (4) OF THE NORTH CAROLINA RESIDENTIAL CODE.
  - PER R404.1.3, TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL SUPPORT AT THE TOP AND BOTTOM.
  - WALL REINFORCING SHALL BE PLACED ACCORDING TO FOOTNOTE (c) OF THE TABLES (REINFORCING IS NOT CENTERED IN WALL).
  - FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER R405.
- 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.
- 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.
- CENTERS OF PIERS SHALL BEAR IN THE MIDDLE THIRD OF THE FOOTINGS, AND GIRDS SHALL CENTER IN THE MIDDLE THIRD OF THE PIERS.
- 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     | EACH | EACH                    |
| FL PLT | 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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**STEPHENSON BUILDERS**  
LOT 3 MORGAN FARM

PROJECT NO.  
**R200304**

DESIGN BY LLR  
31 MAR 2020

| REVISION | DATE |
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**STRUCTURAL NOTES & DETAILS**

SHEET NO.  
**S5**