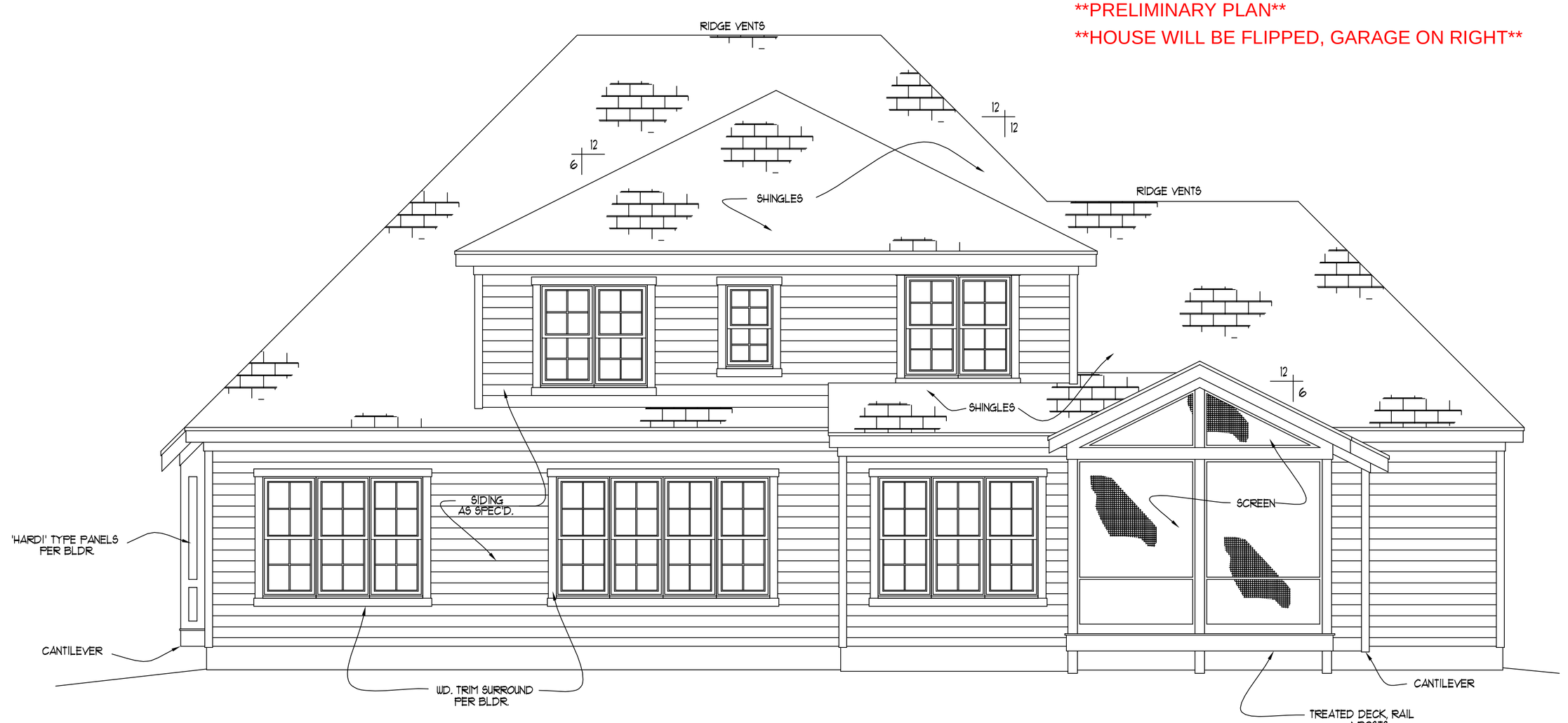
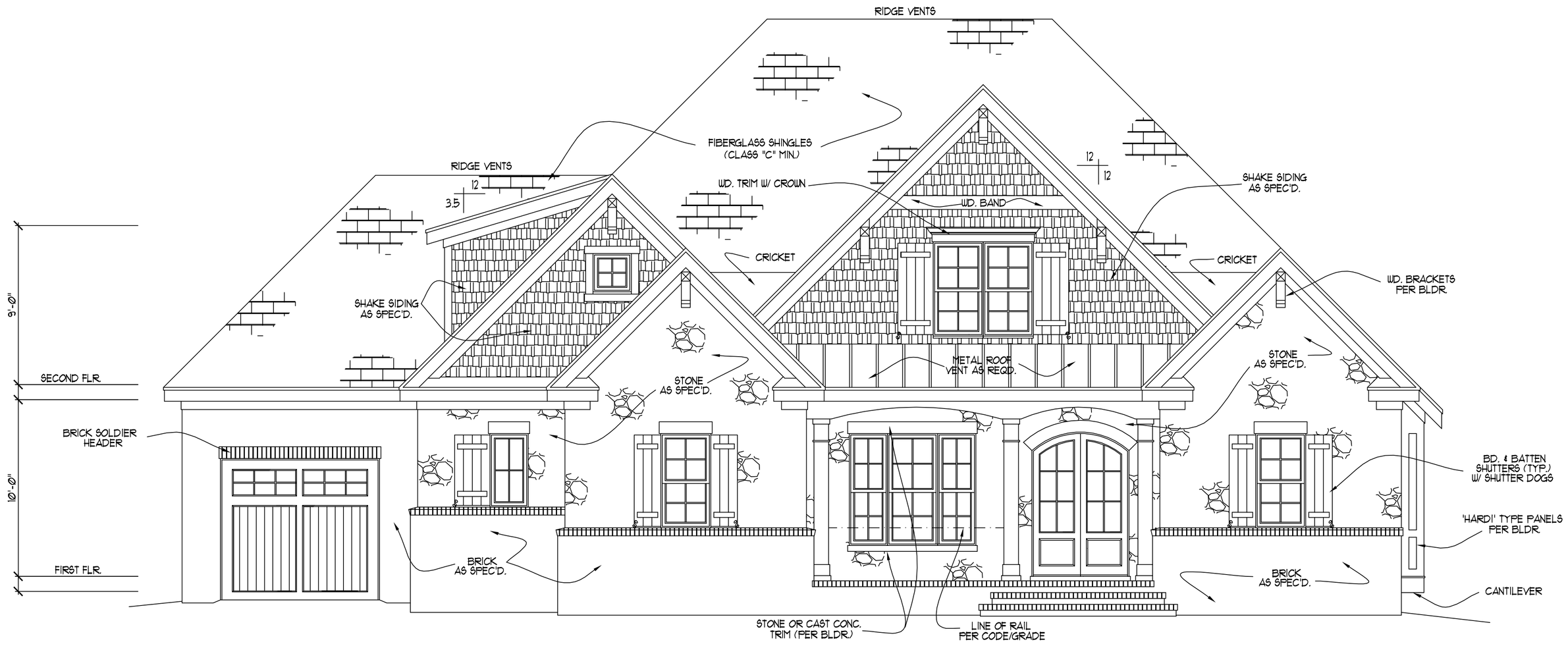
**PRELIMINARY PLAN**
**HOUSE WILL BE FLIPPED, GARAGE ON RIGHT**




# REAR ELEVATION

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




# FRONT ELEVATION

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

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## ATTIC VENTILATION

2832 ÷ 9.44 sq. ft. REQD.
300
*( ) - BASE, / VENTS =
*( ) - BASE, / VENTS =
*  =
*  =
*  =
* (85') - RIDGE VENT @ 9 sq.in./ft. = 5.31 SQ. FT.
TOTAL = 5.31 SQ. FT.

** PROVIDE CONTINUOUS SOFFIT VENT SURROUND TO EQUAL OR EXCEED 4.72 SQ. FT.
*** (OPT.) PROVIDE THEMOSTATICALLY CONTROLLED POWER VENT TO EQUAL OR EXCEED 4.72 SQ. FT.

## CODE INFORMATION

* ZONE: (CHECK ONE)
ZONE 7
ZONE 8
ZONE
* GLAZING U-FACTOR
* R-VALUES
CEILING R-38
WALL R-15
FLOOR R-19
BSMNT. WALL
SLAB PERIMETER
CRAWL SPACE WALL
* MEAN ROOF HEIGHT 23'-1"
* WALL AND ROOF CLADDING DESIGN VALUE: (MEAN ROOF HGT. 30 ft. OR LESS)
CRAWL SPACE WALL
WALLS +18.0, -24.1
ROOF PITCH 0/12 TO 2.25/12 +10.0, -45.4
ROOF PITCH 2.25/12 TO 7/12 +10.4,-34.8
ROOF PITCH 7/12 TO 12/12 +16.5,-21.0
EXPOSURE ADJUSTMENT x

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(919) 481-9115 FAX: (919) 481-6970
www.murphygarnowdesign.com

POYTHRESS CONSTRUCTION
'SEAFORTH'
LOT # 38

DRAWN BY: TWG
DATE: 5-16-17
FILE NAME: 197-2-3300

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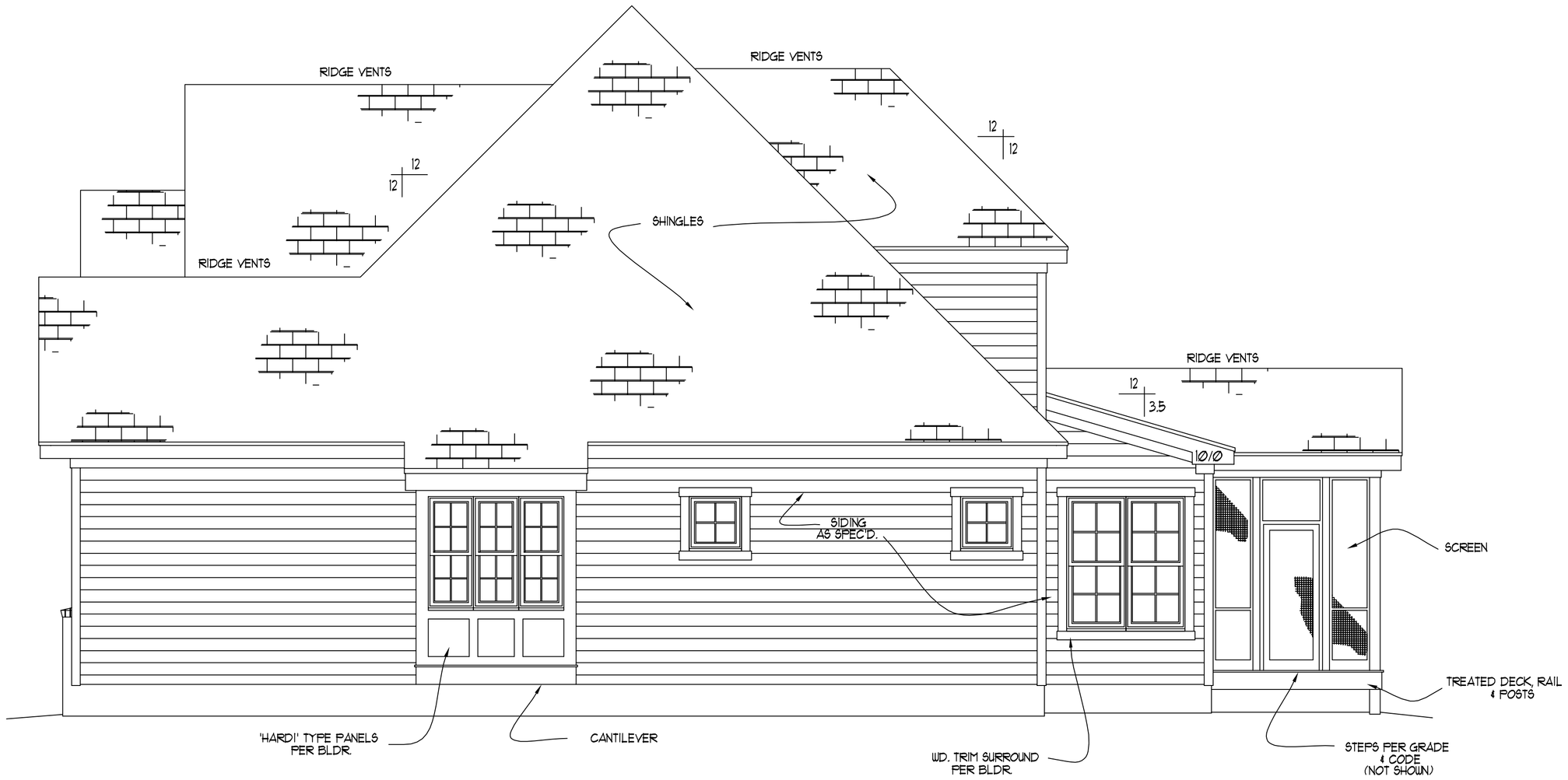
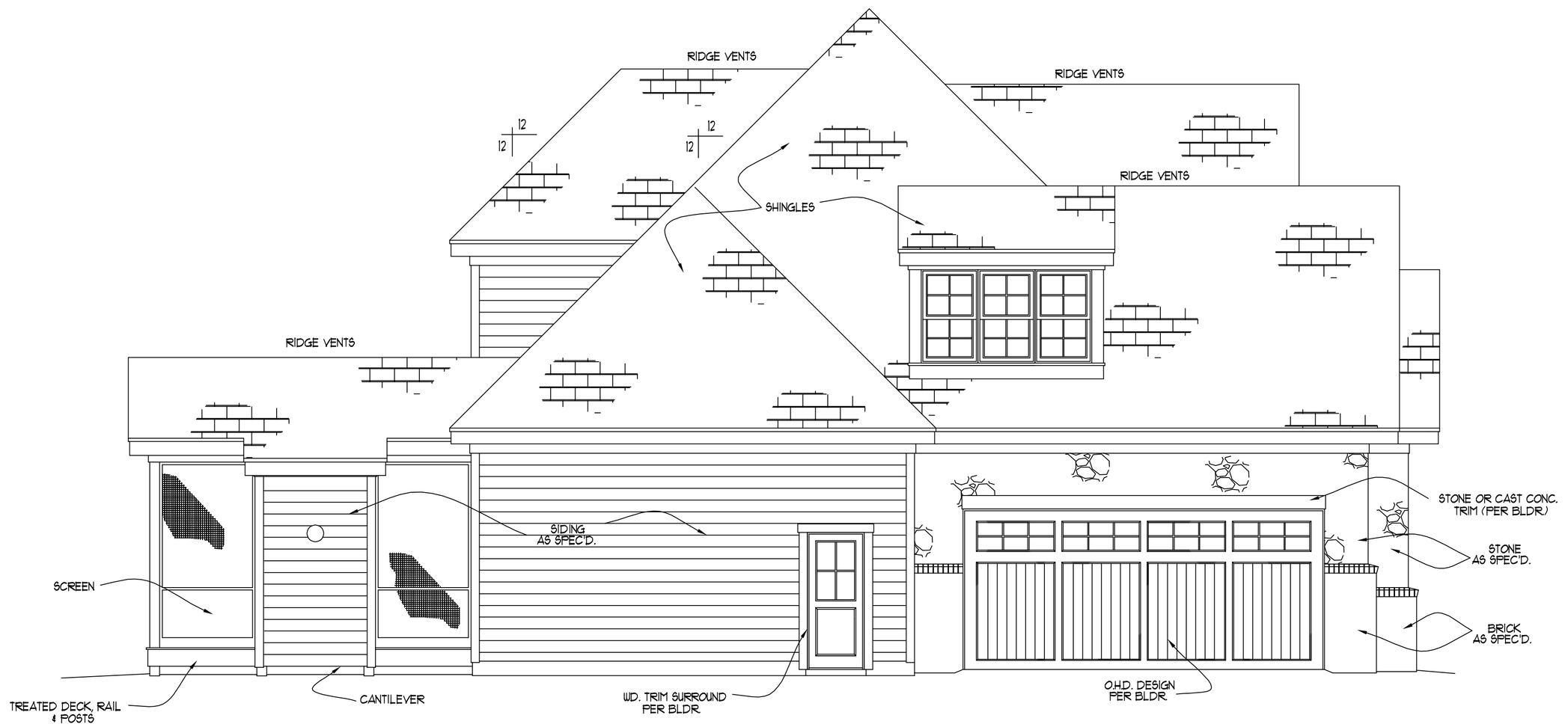



## RIGHT ELEVATION

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




## LEFT ELEVATION

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

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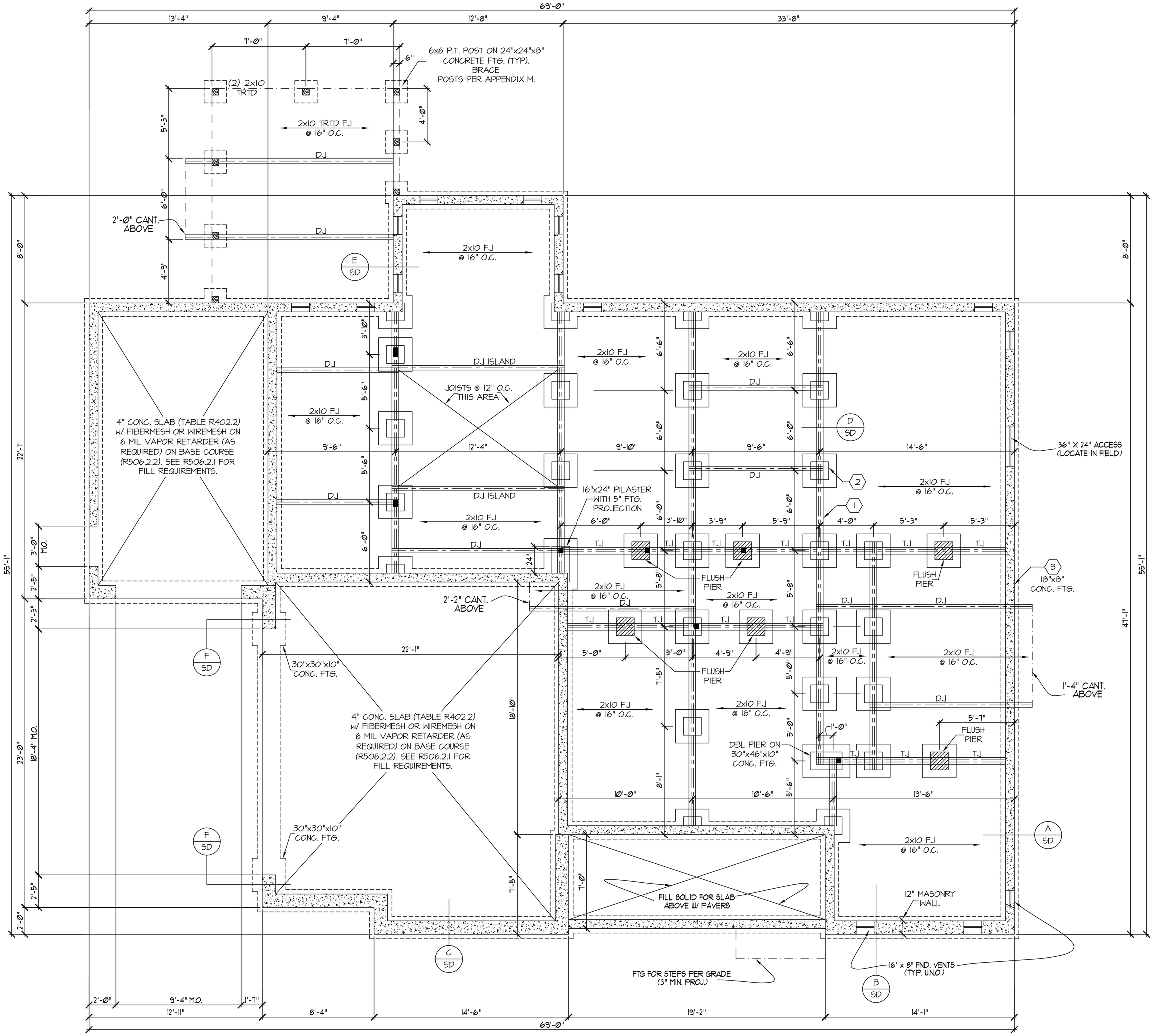


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## FOUNDATION NOTES

1) PROVIDE DBL. BAND @ EXTERIOR WALLS PARALLEL TO FLOOR JOISTS
2) ALL 1/2 PIERS TO BE TIED INTO FND. WALL (BONDED)
3) PROVIDE 1/2" ANCHOR BOLTS @ EXT. WALLS W/ 7" EMBEDMENT @ 6'-0" CNTRS. AND 12" FROM CORNERS

## FND. VENTILATION

2006 = 1331 SQ. FT. REQUIRED*
150
OR
2006 = 133 SQ. FT. REQUIRED*
1500
WITH APPROVED VAPOR RETARDER MATERIAL AND OPENINGS PLACED FOR CROSS VENTILATION

* ONE VENTILATION OPENING SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3716 BENSON DR., RALEIGH, NC 27609
LICENSE: C-1287, PHONE: 919-878-1617
PROJECT # 17-1452

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- Seal is valid for a project permitted within one year from date of seal.
- Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16073 ENGINEER JAMES H. HERRMANN

REFER TO "SD" SHEET(S) FOR STANDARD DETAILS AND STRUCTURAL NOTES.

# FOUNDATION PLAN

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

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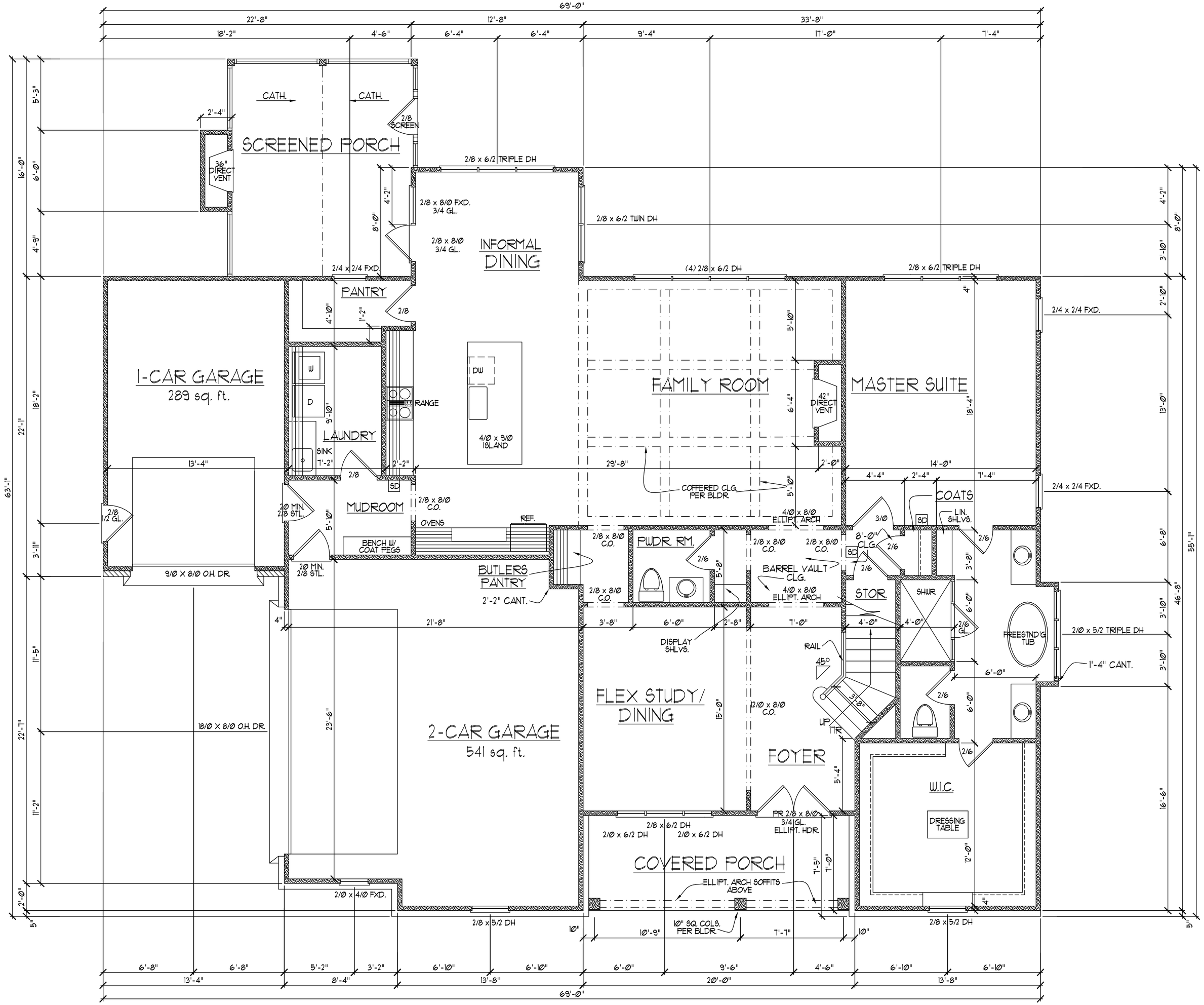


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## FIRST FLOOR NOTES:

1) 10'-0" CLG. HGT. (TYP.) U.N.O.
2) SET WINDOWS @ 8'-0" AFF. (TYP.) U.N.O.
3) STAIRS: UP 17 RISERS @ 7¾" (+ -) (TYP.) U.N.O. (VERIFY W/ FLR. SYSTEM.)
4) PROVIDE 5/8" TYPE 'X' GYPSUM @ GARAGE CEILING ADJACENT TO HTD. SPACES PROVIDE 1/2" GYPSUM @ GARAGE WALLS ADJACENT TO HTD. SPACES
5) ALL WALLS FIGURED AT 4" WIDTHS FOR FOR STUDS, 9" WIDTHS FOR STUD/BRICK (TYP.) U.N.O.
6) VERIFY ROUGH OPNG'S, SPECS. FOR CODE REQUIREMENTS WITH WINDOW MANUF.
7) SD = SMOKE DETECTOR
8) INT. DOORS TO BE 8'-0" H. (VERIFY W/ BLDR.)

## SQUARE FOOTAGE

| | HTD. | UNHTD. |
|---|---|---|
| • BSMNT. | | |
| • FIRST FLR. | 2002 | 830 |
| • SECOND FLR. | 1298 | 610 |
| • ATTIC (3rd. FLR.) | | |
| TOTAL | 3300 | 1440 |
| MISC. | | |
| • COVERED PORCH | | 134 |
| • SCREENED PORCH | | 220 |
| • MSTR. BATH CANT. | 10 | |
| • | | |
| • | | |

## WNDW. FALL PROTECTION NOTES:

SEE CODE SECTIONS R612 THRU R612.4 FOR WINDOW FALL PROTECTION DEVICE REQUIREMENTS IF WINDOW SILL IS LESS THAN 24" ABV. FLR. WITH A 6'-0" OR GREATER DISTANCE TO A SURFACE OUTSIDE AND BELOW THE WINDOW.

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# FIRST FLOOR PLAN

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

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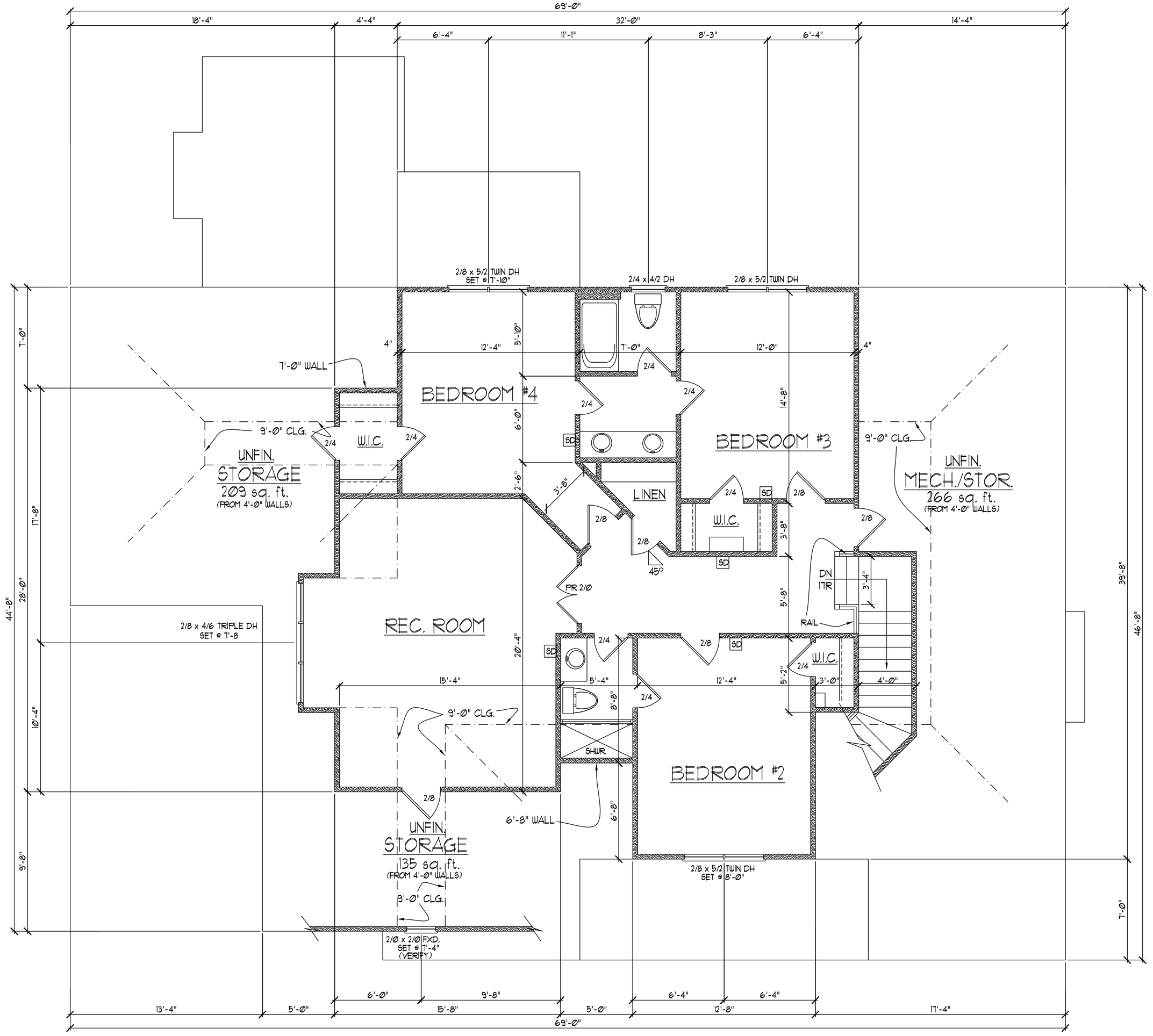


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## SECOND FLOOR NOTES:

1) 9'-Ø" CLG. HGT. (TYP.) U.N.O.
2) SET WINDOWS @ 7'-4" A.F.F. (TYP.) U.N.O.
3) STAIRS: N/A (VERIFY ATTIC ACCESS W/ BLDR.)
4) ALL WALLS FIGURED AT 4" WIDTHS FOR FOR STUDS, 9" WIDTHS FOR STUD/BRICK (TYP.) U.N.O.
5) VERIFY ROUGH OPNG'S, SPECS. FOR CODE REQUIREMENTS WITH WINDOW MANUF.
6) SD = SMOKE DETECTOR

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# SECOND FLOOR PLAN

SCALE: ----------1/4" = 1'-Ø"

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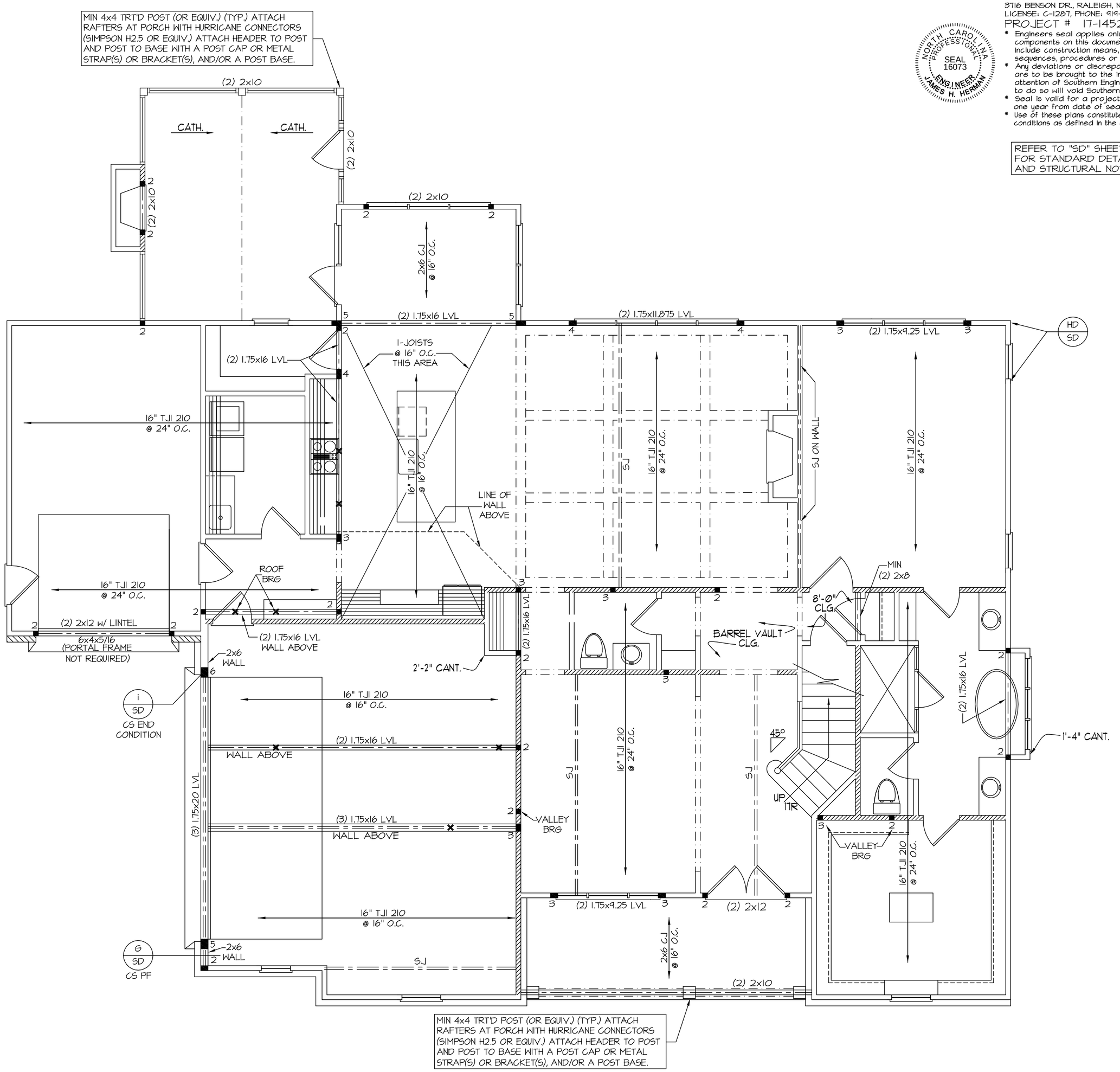



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3716 BENSON DR., RALEIGH, NC 27609
LICENSE: C-1287, PHONE: 919-878-1617


PROJECT # 17-1452

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES N. HERMAN

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## HEADER AND COLUMN NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2) 2x10 WITH (1) SUPPORT STUD AND (1) KING STUD, UNLESS NOTED OTHERWISE.

2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN.

## WALL BRACING NOTES: (100 MPH)

1. WALL BRACING ANALYSIS BASED ON R602.10 - CODE AND COMMENTARY FOR 2012 NC RESIDENTIAL CODE (FINAL 03-06-2013; EFFECTIVE DATE SEPTEMBER 1, 2013).

2. NOTE THAT THE WALL BRACING AMOUNT PROVIDED ON THE PLANS (DETAILS AND SPECIFICATIONS) IS GREATER THAN THE AMOUNT OF WALL BRACING REQUIRED BY THE CODE. SEE NOTES BELOW FOR DETAILS AND SPECIFICATIONS FOR WALL BRACING.

3. BRACING METHOD AND TYPE: CONTINUOUS SHEATHING PER SECTION R602.10.3 USING WSP (WOOD STRUCTURAL PANEL SHEATHING).

4. EXTERIOR WALL SHEATHING: SHEATH EXTERIOR WALLS WITH 7/16" WSP (WOOD STRUCTURAL PANEL) SHEATHING AND ATTACH WITH 8d NAILS AT A 6"/12" NAILING PATTERN (6" OC AT PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS). INSTALL BLOCKING AT ALL PANEL EDGES. (WSP SHEATHING SHALL EXTEND TO UPPERMOST DOUBLE BEARING PLATE). BLOCK AT ROOF PER R602.10.5.5.

5. MINIMUM WALL LENGTHS ARE BASED ON TABLE R602.10.1 AND ARE TO BE LOCATED AS SPECIFIED IN SECTION R602.10.3.2.

6. HD - HOLD DOWN DEVICE (NOTED AS "HD" ON PLANS) SHALL BE AN 800 POUND CAPACITY ASSEMBLY.
   - 1ST FLOOR: (2) SIMPSON SSP (SEE "HD" - HOLD-DOWN DETAIL)
   - 2ND FLOOR: ATTACH BASE OF KING STUD WITH A SIMPSON CS22 STRAP DOWN ACROSS THE BAND AND DOWN TO A STUD BELOW OR HEADER BELOW. EXTEND STRAP 7" MIN ALONG EACH STUD (OR HEADER) AND ATTACH EACH END W/ (7) 8d NAILS.

7. INTERIOR BRACED WALL: (NOTED AS "IBW" ON PLANS) ATTACH 1/2" GYPSUM BOARD ON EACH SIDE OF WALL WITH A MIN. OF 5d COOLER NAILS OR #6 SCREWS @ 7" O.C. ALONG THE EDGES AND AT INTERMEDIATE SUPPORTS.
   - 7.1. INTERIOR BRACED WALL - WOOD STRUCTURAL PANELS: (NOTED AS "IBW-WSP" ON PLANS) ATTACH 3/8" (MIN) WOOD STRUCTURAL PANEL SHEATHING ON ONE SIDE OF WALL. ATTACH WITH 6d COMMON NAILS AT 6"/12" NAILING PATTERN (6" AT EDGES AND 12" AT INTERMEDIATE SUPPORTS).
   - INTERIOR BRACED WALLS SHALL BE CONNECTED AS DESCRIBED IN R602.10.5.4 AND FIGURES CR602.10.5.4(1) AND CR602.10.5.4(2).

## WHOLE HOUSE BRACING SUMMARY

TOTAL REQUIRED BRACING: 76
TOTAL PROVIDED BRACING: 110
(IN FEET)

# FIRST FLOOR CEILING STRUCTURAL PLAN

SCALE: ---------- 1/4" = 1'-0" 10'-0" CLG. HGT.

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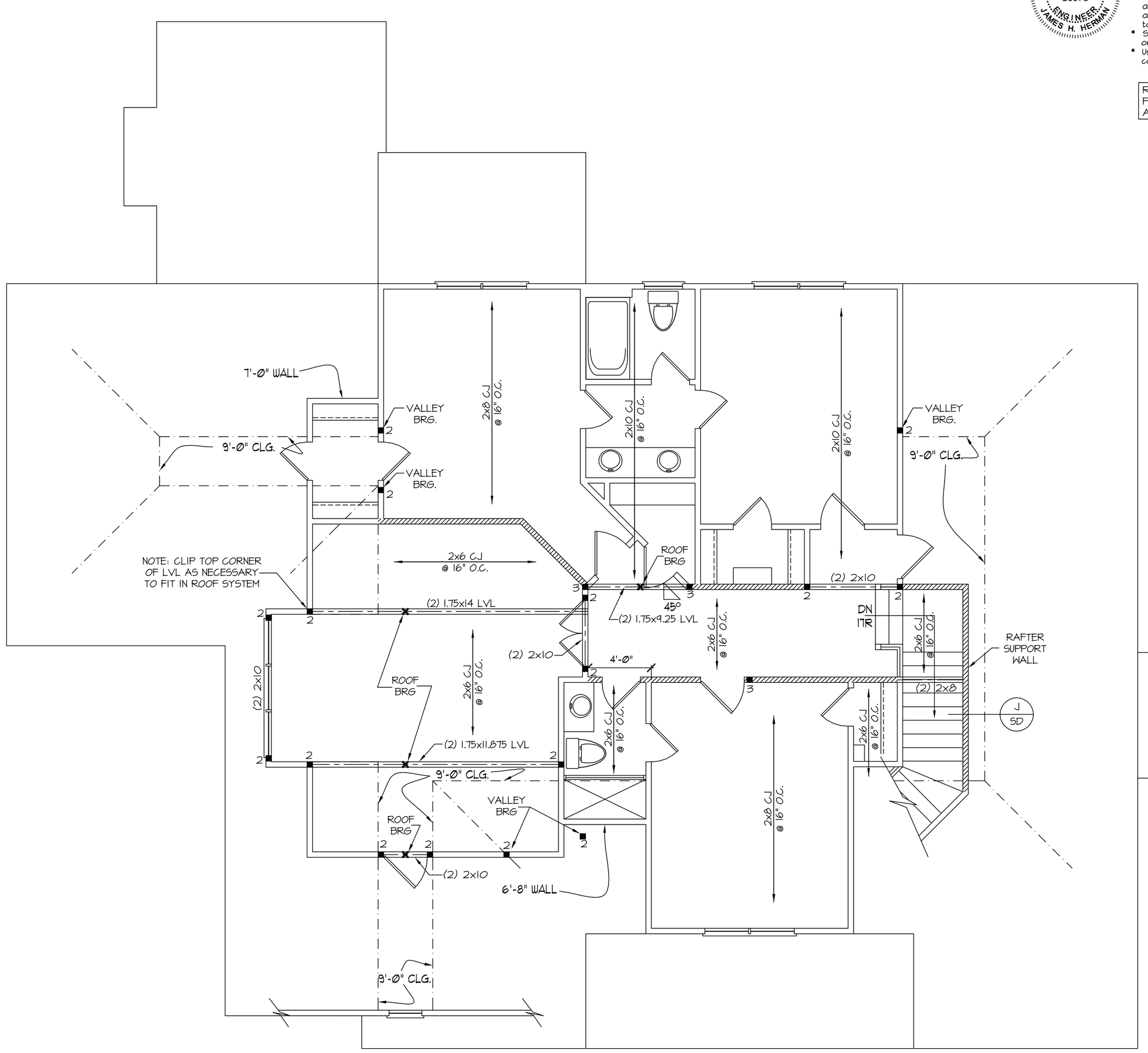


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## HEADER AND COLUMN NOTES

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2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN.

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# SECOND FLOOR CEILING STRUCTURAL PLAN

SCALE: ---------- 1/4" = 1'-0" 9'-0" CLG. HGT.

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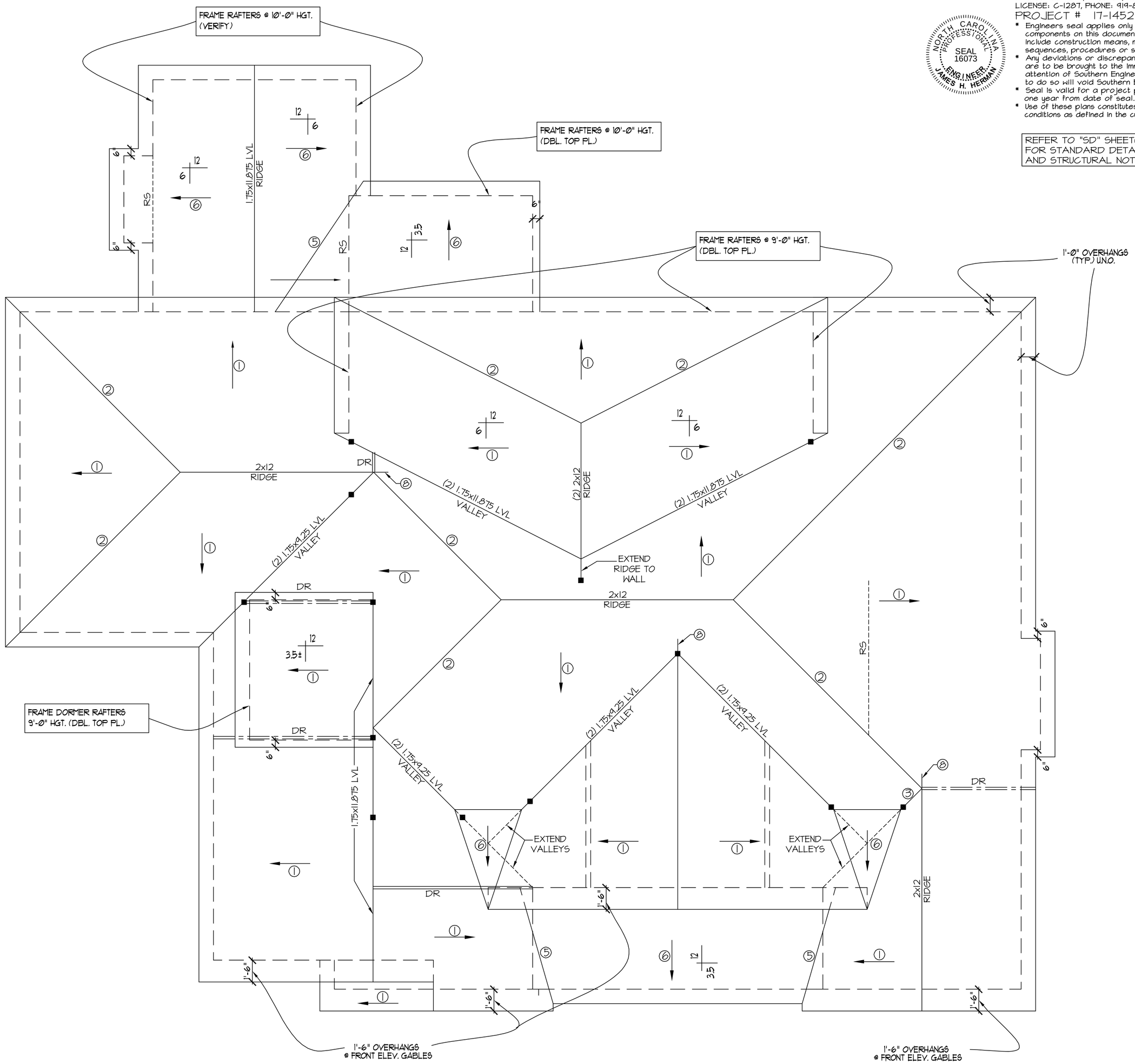


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## ROOF FRAMING NOTES:

1) ALL ROOF PITCHES TO BE 12/12 (TYP.) U.N.O.
2) PROVIDE 2x4 COLLAR BEAMS EVERY OTHER RAFTER (TYP.)
3) PROVIDE "HURRICANE CLIPS" AT ALL VALLEYS AND OPPPOSING DBL. RAFTERS
4) PROVIDE DBL. HEADERS ABD TRIMMERS AT ALL ROOF OPENINGS (EX: DORMERS, SKYLIGHTS, CHIMNEYS,ETC.)
5) 2x8 RAFTERS @ CATH. OR VAULTED CLGS. TO BE FURRED DOWN 2" OR USE 2x10 RAFTERS (VERIFY BRNG.HGT.) FOR PROPER INSULATION PER CODE
6) VERIFY ALL RAFTER BRNG. HGTS. BEFORE CONSTR. HAS BEGUN

## ROOF FRAMING NOTES:

(100 MPH WIND ZONE)
① ALL RAFTERS TO BE 2x8 @ 16" O.C. WITH 2x10 RIDGE, U.N.O.
② (2) 2x10 OR 1.75x11.875 LVL HIP. (2) 2x10 HIPS MAY BE SPLICED WITH A MIN. 6'-0" OVERLAP AT CENTER
③ (2) 2x10 OR 1.75x9.25 LVL VALLEY. DO NOT SPLICE VALLEYS
④ 1.75x11.875 LVL VALLEY
⑤ FALSE FRAME VALLEY ON 2x10 FLAT PLATE
⑥ 2x6 RAFTERS @ 16" O.C. W/ 2x8 RIDGE, U.N.O.
⑦ 2x10 RAFTERS @ 16" O.C. W/ 2x12 RIDGE, U.N.O.
⑧ EXTEND RIDGE 12" BEYOND INTERSECTION

- "SR" = SINGLE RAFTER
- "DR" = DOUBLE RAFTER
- "TR" = TRIPLE RAFTER
- "RS" = ROOF SUPPORT FOR RAFTER SPLICE
- "■" = (3) STUD OR 4x4 POST FOR ROOF SUPPORT
- FIR DOWN 2x8 RAFTERS OR USE 2x10 AT CATHEDRAL CEILINGS
- ATTACH VAULTED RAFTERS WITH HURRICANE CLIPS: SIMPSON "H-5" OR EQUIVALENT

# ROOF FRAMING PLAN

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

THESE PLANS MEET THE REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE '2012' EDITION.

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1140-300 KILDAIRE FARM ROAD
CARY, NORTH CAROLINA 27511
(919) 481-9115 FAX: (919) 481-6970
www.murphygarnowdesign.com

POYTHRESS CONSTRUCTION
"SEAFORTH"
LOT # 38

DRAWN BY: TWG
DATE: 5-16-17
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PAGE NUMBER:
8 of 8

## STRUCTURAL NOTES

2012 NCRC (2009 IRC)
100 mph ZONE

1) ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPS, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS AND HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIER & GIRDER SYSTEM AND FOOTINGS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM. ALL REQUIREMENTS FOR PROFESSIONAL CERTIFICATION SHALL BE PROVIDED BY THE APPROPRIATE PROFESSIONAL. SOUTHERN ENGINEERS, P.A. CERTIFIES ONLY THE STRUCTURAL COMPONENTS AS SPECIFICALLY STATED.

2) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2012 EDITION (2009 IRC), PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK, NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. "CONSTRUCTION REVIEW" SERVICES ARE NOT PART OF OUR CONTRACT. ALL MEMBERS SHALL BE FRAMED, ANCHORED, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

3) DESIGN LOADS (R301.4) (LISTED AS: LIVE LOAD, DEAD LOAD, DEFLECTION LIMIT)
ROOMS OTHER THAN SLEEPING ROOMS: (40 PSF, 10 PSF, L/360)
SLEEPING ROOMS: (30 PSF, 10 PSF, L/360)
ATTIC WITH PERMANENT STAIR: (40 PSF, 10 PSF, L/360)
ATTIC WITH OUT PERMANENT STAIR: (20 PSF, 10 PSF, L/360)
ATTIC WITH OUT STORAGE: (10 PSF, 10 PSF, L/240)
STAIRS: (40 PSF, --, L/360)
EXTERIOR BALCONIES: (60 PSF, 10 PSF, L/360)
DECKS: (40 PSF, 10 PSF. L/360)
GUARDRAILS AND HANDRAILS: (200 LBS)
PASSENGER VEHICLE GARAGES: (50 PSF, 10 PSF, L/360)
FIRE ESCAPES: (40 PSF, 10 PSF, L/360)
SNOW: (20 PSF)
WIND LOAD: (BASED ON 100 MPH WIND VELOCITY)

4) WALL BRACING: WALLS SHALL BE BRACED ACCORDING TO R602.10- CODE AND COMMENTARY FOR 2012 NC RESIDENTIAL CODE (FINAL 03-06-2013: EFFECTIVE DATE SEPTEMBER 1, 2013). NOTE THAT THE BRACING AS SPECIFIED ON THE PLANS IS BASED ON THE PRESCRIPTIVE BRACING REQUIREMENTS OF THE CODE AND SHALL BE VERIFIED AND/OR APPROVED BY THE CODE OFFICIAL.

5) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIR ENTRAINED PER TABLE 402.2. ALL CONCRETE SHALL BE PROPORTIONED, MIXED, HANDLED, SAMPLED, TESTED, AND PLACED IN ACCORDANCE WITH ACI STANDARDS. ALL SAMPLES FOR PUMPING SHALL BE TAKEN FROM THE EXIT END OF THE PUMP.

6) ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED. THE SURFACE AREA ADJACENT TO THE FOUNDATION WALL SHALL BE PROVIDED WITH ADEQUATE DRAINAGE, AND SHALL BE GRADED SO AS TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS.

7) ALL FRAMING LUMBER SHALL BE SPF #2 (Fb = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP # 2 (Fb=975 PSI). PLATE MATERIAL MAY BE SPF # 3 OR SYP #3 (Fc(perp) = 425 PSI - MIN).

8) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2x4 STUD COLUMN FOR 6'-0" MAX. BEAM SPAN (UNO), (2) 2X4 STUDS FOR BEAM SPAN GREATER THAN 6'-0" (UNO).

9) L.V.L. SHALL BE LAMINATED VENEER LUMBER: Fb=2600 PSI, Fv=285 PSI, E=1,900,000 PSI. P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=290 PSI, E=2,000,000 PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1,550,000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

10) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.

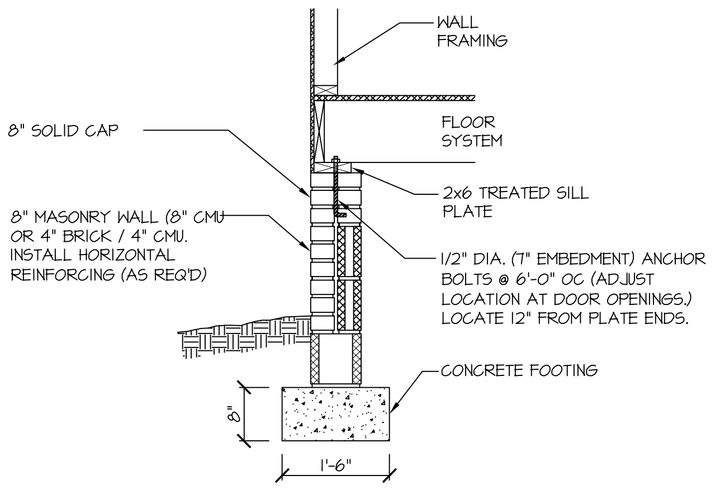
11) ALL STRUCTURAL STEEL SHALL BE ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOIST ARE TOE NAILED TO THE SOLE PLATE, AND SOLE PLATE IS NAILED OR BOLTED TO THE BEAM FLANGE @ 48" O.C. ALL STEEL TUBING SHALL BE ASTM A500.

12) REBAR SHALL BE DEFORMED STEEL, ASTM615, GRADE 60.

13) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A325) WITH WASHERS PLACED UNDER THE THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" O.C. (MAX), AND STAGGERED AT THE TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH 2 BOLTS LOCATED AT 6" FROM EACH END.

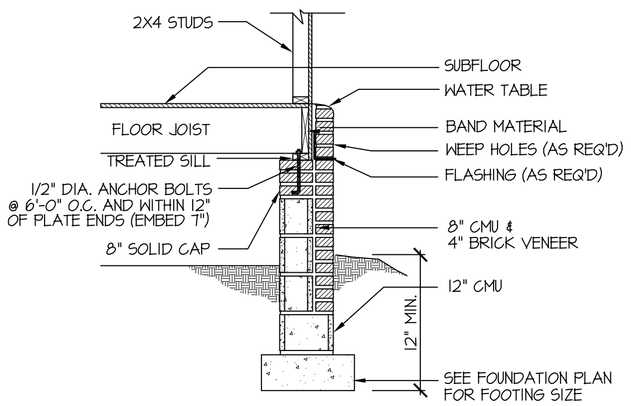
14) BRICK LINTELS SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 6'-0" SPAN AND 6"x4"x5/16" STEEL ANGLE WITH 6" LEG VERTICAL FOR SPANS UP TO 9'-0" (UNO).

15) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF. THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2012 EDITION SHALL BE AS FOLLOWS: :
ROOF
45.4 PSF - 2.25:12 PITCH OR LESS
34.8 PSF - 2.25:12 TO 7:12 PITCH
21 PSF - 7:12 TO 12:12 PITCH :
WALLS
24.1 PSF - WALLS



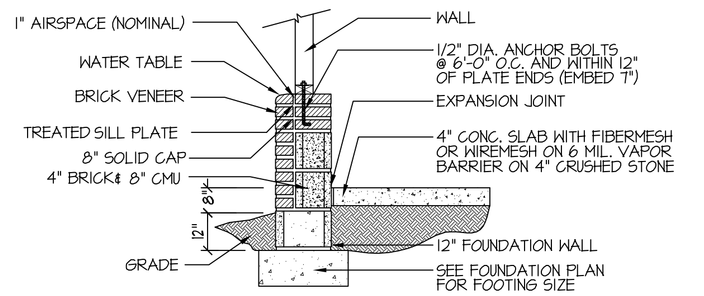

### (A) CRAWL SPACE FOOTING

(SIDING OR EQUAL)
NOTE: FOR 3-STORY, FTG WIDTH 1'-6" AND 10" DEPTH




### (B) CRAWL SECTION

NTS




### (C) GARAGE SLAB

NTS

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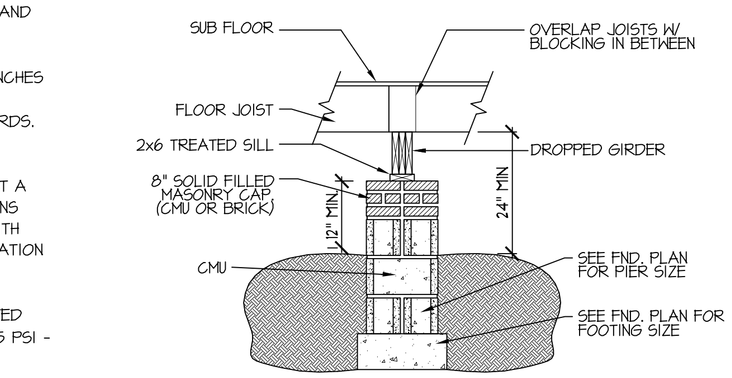
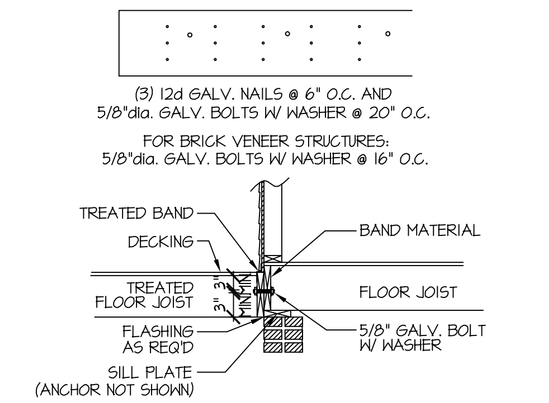


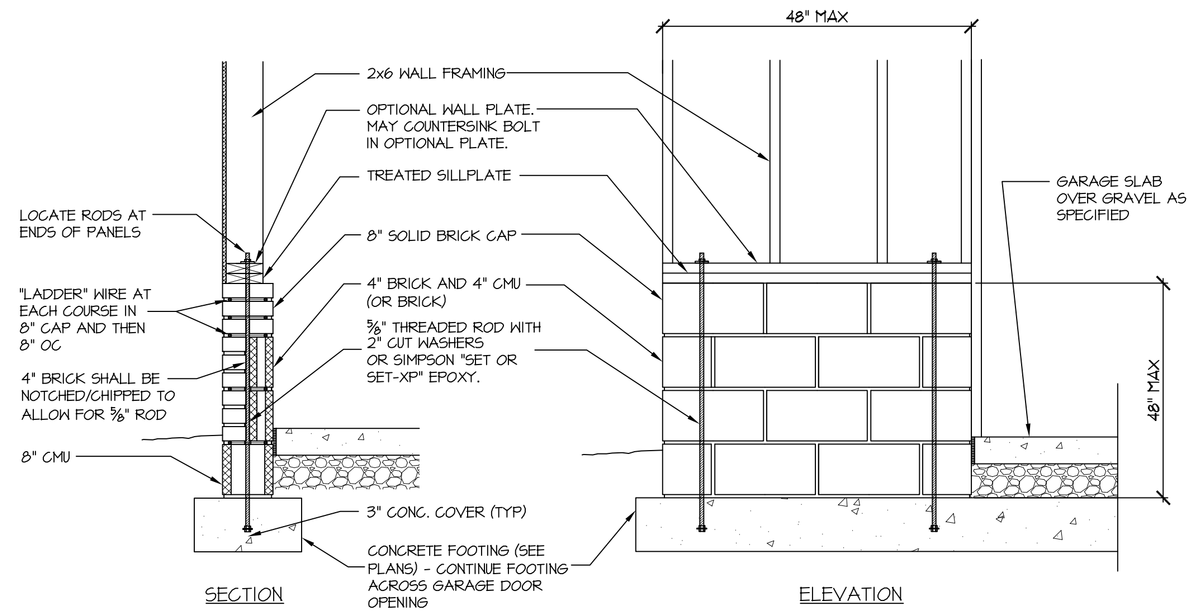

### (D) DROPPED GIRDER

NTS




### (E) DECK ATTACHMENT DETAIL

NTS




### (F) GARAGE 'WING WALL' REINFORCING

(CODE REFERENCE: IRC FIGURE R602.10.5.3)


NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES H. HERMAN

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1140-300 KILDAIRE FARM ROAD
CARY, NORTH CAROLINA 27511
(919) 481-9115 FAX: (919) 481-6970
www.murphygarnowdesign.com


POYTHRESS CONSTRUCTION
"SEAFORTH"
LOT # 38

DRAWN BY: TWG
DATE: 5-16-17
FILE NAME: 197-2-3300

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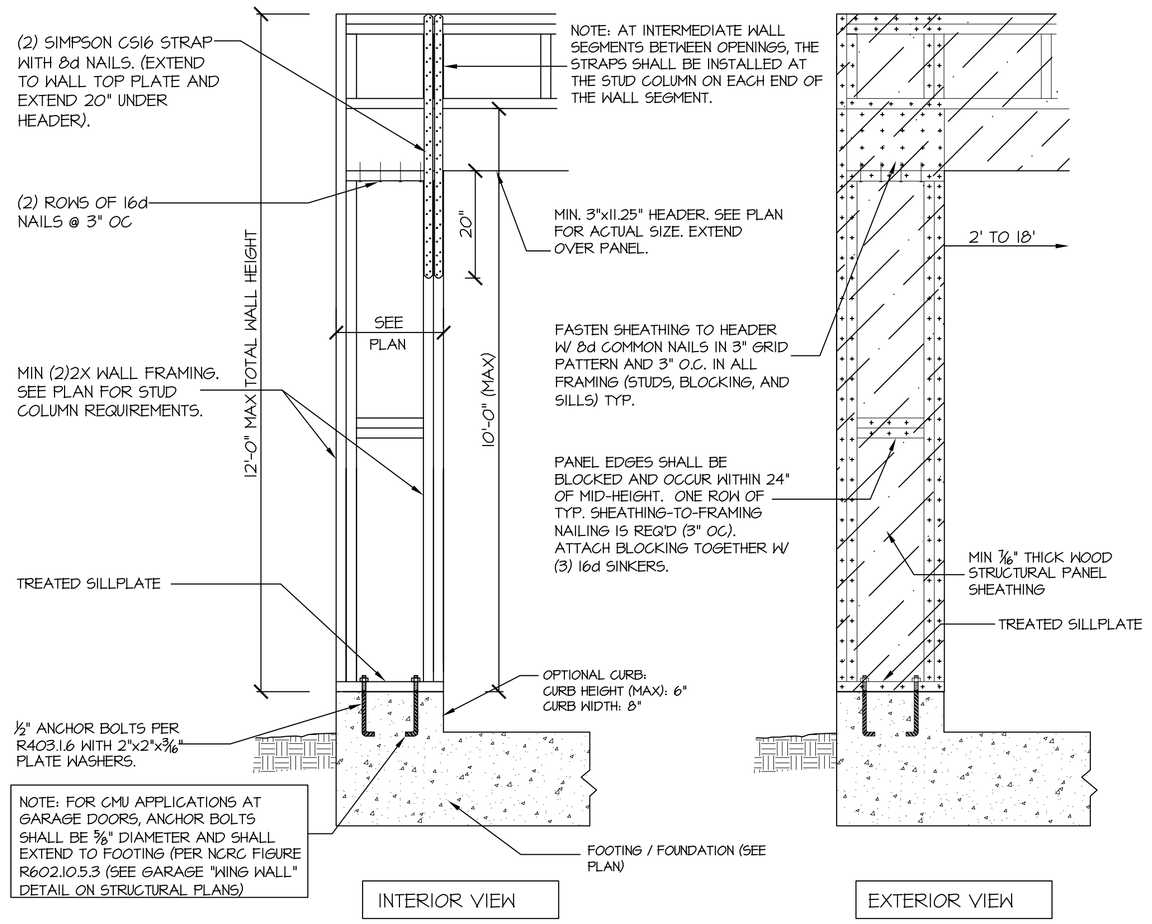
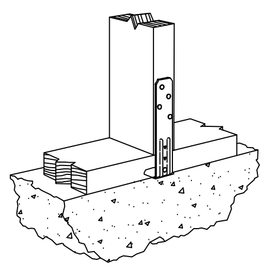
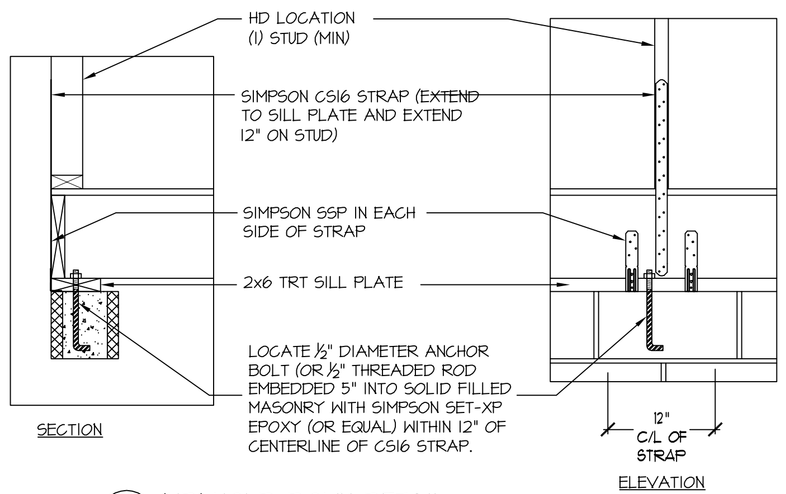



G CS-PF: CONTINUOUS PORTAL FRAME CONSTRUCTION

DETAIL AND APPLICATION BASED ON NCRC FIGURE R602.10.1 - PORTAL FRAME CONSTRUCTION



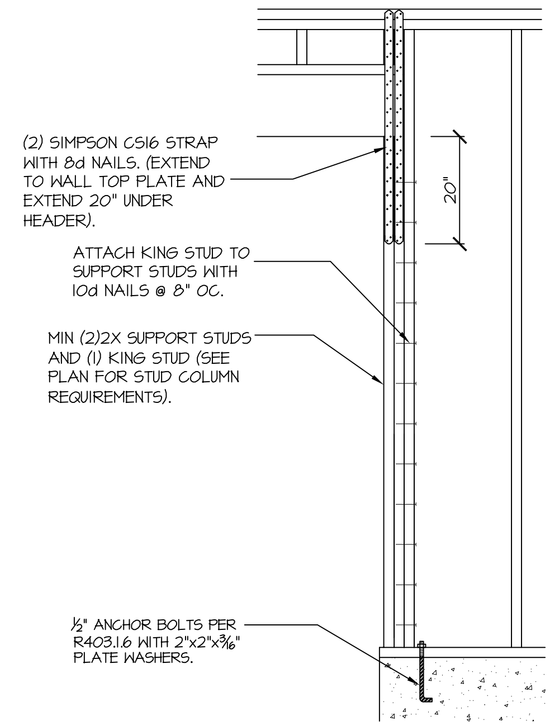
SIMPSON SSP




HD 'HD' HOLD-DOWN DETAIL

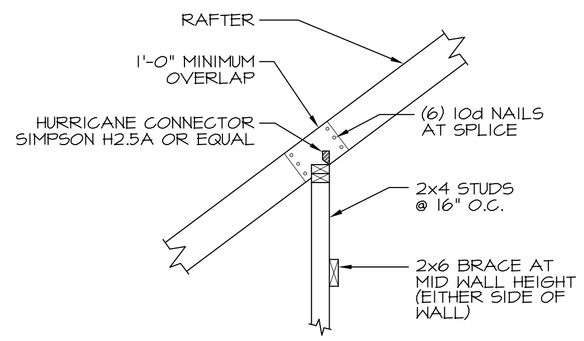
(OVER WOOD FLOOR)

NOTE: ALTERNATE HD HOLD-DOWN DEVICES OR SYSTEMS MAY BE USED TO MEET THE CODE REQUIRED 800 LB CAPACITY IN LIEU OF THE ABOVE DETAIL.




i END CONDITION DETAIL

(FOR USE WITH SINGLE CS-PF CONDITION)
DETAIL AND APPLICATION BASED ON NCRC FIGURE R602.10.1 - PORTAL FRAME CONSTRUCTION




J TYPICAL RAFTER SPLICE ON ATTIC KNEEWALL

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3716 BENSON DR., RALEIGH, NC 27604
LICENSE: C-1287, PHONE: 919-878-1617
PROJECT # 17-1452

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