

ATTIC VENTILATION:

THE NET FREE VENTILATING AREA SHALL BE NOT LESS THAN 1 TO 150 OF THE AREA OF THE SPACE VENTILATED EXCEPT THAT THE AREA MAY BE 1 TO 300, PROVIDED AT LEAST 50 PERCENT OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE OR CORNICE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATION TO BE PROVIDED BY EAVE OR CORNICE VENTS.

GROSS ATTIC AREA TO BE VENTILATED 3014 SQ.FT.  
3014/150 = 20.09 SQ.FT. NET FREE AREA

ENERGY COMPLIANCE

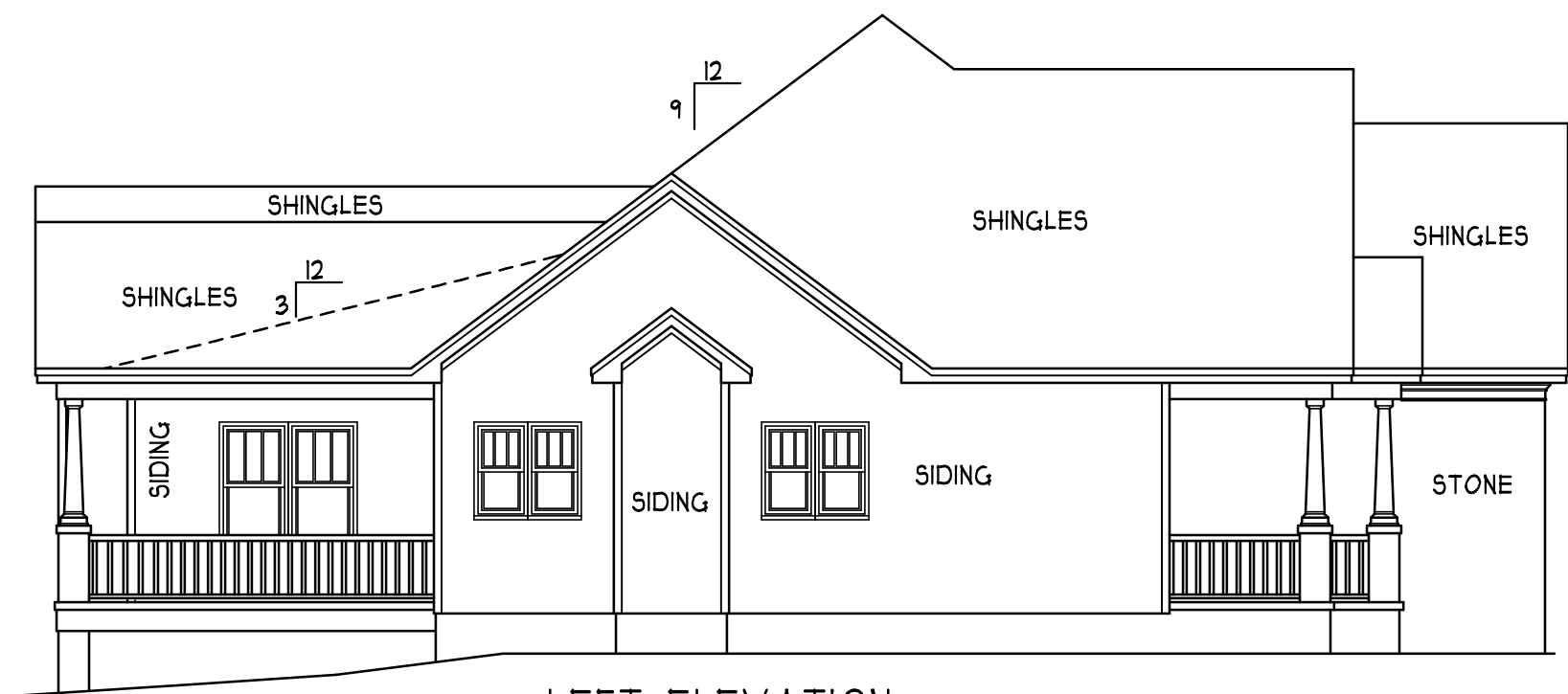
ZONE 3 = MAX. GLAZING U-FACTOR .35  
R-VALUE = CEILING R30, WALLS R13,  
FLOORS R19 FOR JOHNSTON, WAYNE COUNTY

ZONE 4 = MAX. GLAZING U-FACTOR .35  
R-VALUE = CEILING R38, WALLS R15,  
FLOORS R19 FOR WAKE, ORANGE COUNTY



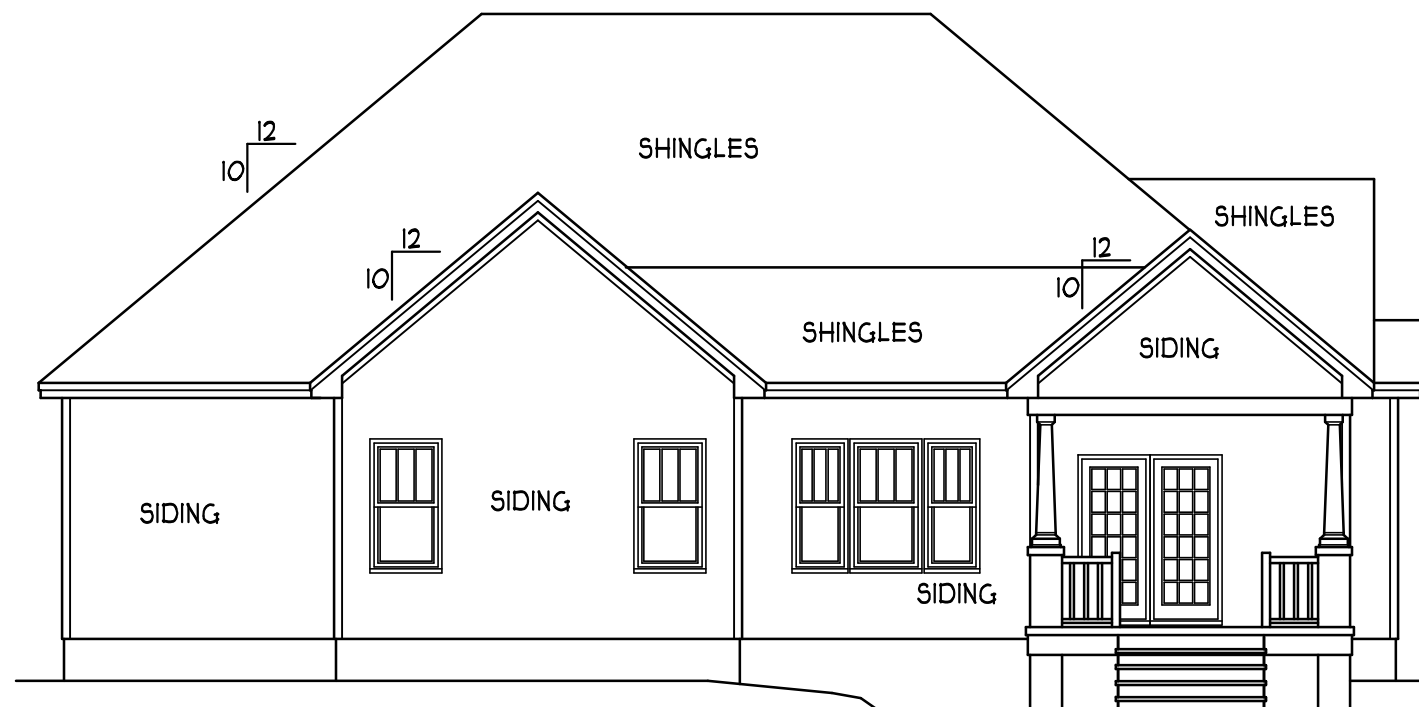
FRONT ELEVATION

SCALE 1/4" = 1'-0"



LEFT ELEVATION

SCALE 1/8" = 1'-0"



REAR ELEVATION

SCALE 1/8" = 1'-0"



RIGHT ELEVATION

SCALE 1/4" = 1'-0"

THE TYSON  
TRIMSTERS INC.

#2078

HEATED FOOTAGE:

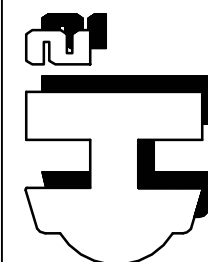
= 2078  
= 418  
= 373  
= 563

SQUARE FOOTAGE:

FIRST FLOOR  
UNF. REC ROOM  
PORCHES  
GARAGE

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.



ANY DEVIATION OF THIS PLAN, DIMENSIONS  
OR FINISHES FROM THE DESIGN  
INC. IS NOT LIABLE.  
THE PLANS HAVE BEEN DRAWN  
IN ACCORDANCE WITH NORTH  
CAROLINA STATE RESIDENTIAL  
BUILDING CODES 2008 EDITION.

DATE:  
01/12/16

1 STORY

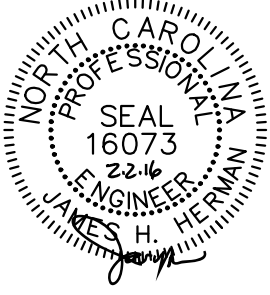
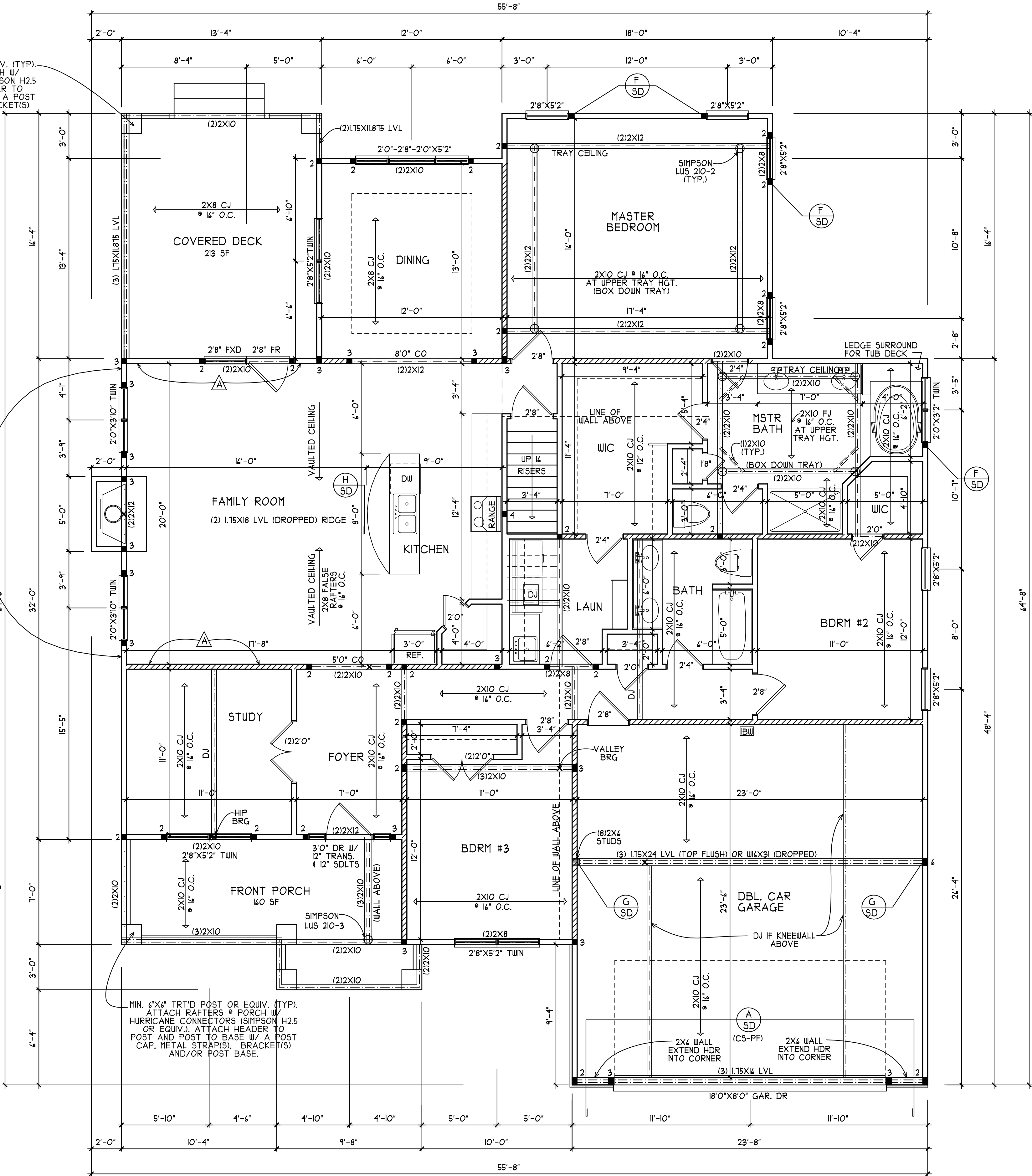
FILE:  
010216



WALL BRACING NOTES: (100 MPH)  
1. WALL BRACING ANALYSIS BASED ON R402.10 - CODE AND COMMENTARY FOR 2012 NC RESIDENTIAL CODE (FINAL 03-04-2013; EFFECTIVE DATE SEPTEMBER 1, 2013).  
2. NOTE THAT THE WALL BRACING AMOUNT PROVIDED ON THE PLAN (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 R402.10.3 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 R402.10.5.5.  
5. MINIMUM WALL LENGTHS ARE BASED ON TABLE R402.10.1 AND ARE TO BE LOCATED AS SPECIFIED IN SECTION R402.10.3.2.  
6. HOL-DOWN DEVICE (NOTED AS "HD" ON PLANS) SHALL BE AN 800 POUND CAPACITY ASSEMBLY AS NOTED ON PLANS. SEE DETAILS FOR HD ASSEMBLY.  
7. INTERIOR BRACED WALL: (NOTED AS "IBW" ON PLANS) ATTACH 1/2" GYPSUM BOARD (U.N.O.) ON EACH SIDE OF WALL WITH A MIN. OF 5d OR 6d NAILS OR #4 SCREWS @ 1' O.C. ALONG THE EDGES AND AT INTERMEDIATE SUPPORTS. INTERIOR BRACED WALLS SHALL BE CONNECTED AS DESCRIBED IN R402.10.5.4 AND FIGURES CR402.10.5.4(1) AND CR402.10.5.4(2).

MIN. 4"X4" TRT'D POST OR EQUIV. (TYP). ATTACH RAFTERS @ PORCH W/ HURRICANE CONNECTORS (SIMPSON H2.5 OR EQUIV.). ATTACH HEADER TO POST AND POST TO BASE W/ A POST CAP, METAL STRAP(S), BRACKET(S) AND/OR POST BASE.

BALLOON FRAME WALL WITH 2X4 STUDS @ 16" O.C. OR (2)2X4 STUDS @ 16" O.C. (2)2X4 STUDS SHALL BE NAILED TOGETHER AND MAY BE SPLICED WITH MIN. 8'-0" OVERLAP AT CENTER. INSTALL 1/2" CDX OR OSB STRUCTURAL SHEATHING ON WALL.



STRUCTURAL DESIGN BY:  
SOUTHERN ENGINEERS, P.A.  
3716 BENSON DR., RALEIGH, NC 27604  
LICENSE: C-1281, PHONE: 919-878-1471  
PROJECT # 16-1038  
\* Engineers seal applies only to structural components on this document. Seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
\* Any deviations or discrepancies on plans are to be brought to the immediate attention of Southern Engineers. Failure to do so will void Southern Engineer's liability.  
\* Seal is valid for a project permitted one year from date of seal.  
\* Use of these plans constitutes approval of terms & conditions as defined in the customer agreement.

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

NOTE: TO ENSURE PLUMB WALL ALIGNMENT, DO NOT PERMANENTLY ATTACH RAFTERS TO WALL UNTIL ROOF SHEATHING HAS BEEN ATTACHED. PROVIDE TEMPORARY RAFTER ATTACHMENT AND WALL BRACING AS REQUIRED.

WHOLE HOUSE BRACING SUMMARY  
TOTAL REQUIRED BRACING: 12  
TOTAL PROVIDED BRACING: 12 (IN FEET)

HEADER AND COLUMN NOTES  
1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2) 2X4 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.

FIRST FLOOR PLAN  
SCALE 1/4" = 1'-0"

THE TYSON TRIMSTERS INC.

#2078

HEATED FOOTAGE:  
= 2078  
= 416  
= 373  
= 563

SQUARE FOOTAGE:  
FIRST FLOOR  
UNF. REC ROOM  
PORCHES  
GARAGE

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED HOME DESIGN, INC.

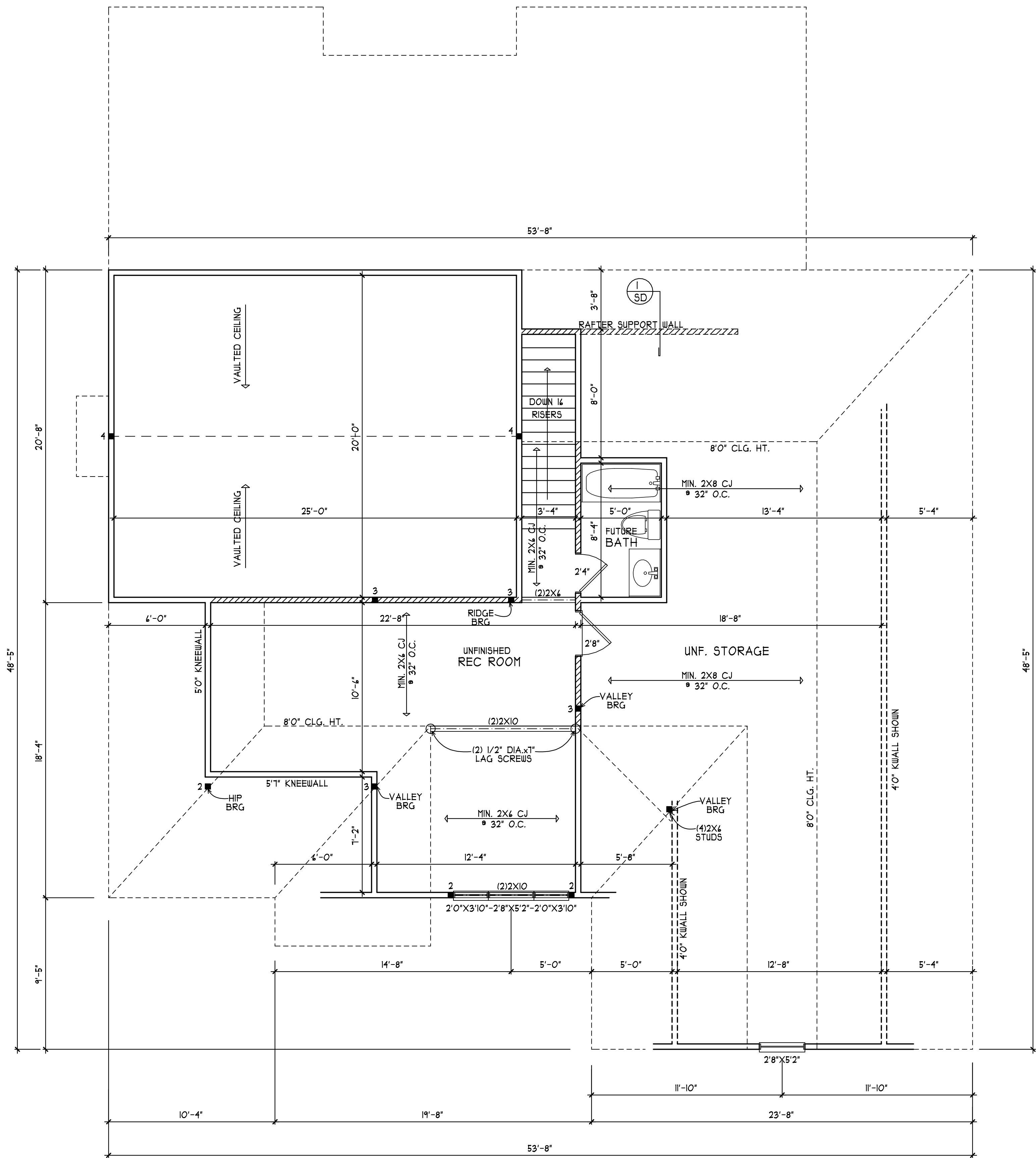
ANY DEVIATION OF THIS PLAN, DIMENSIONS OR FINISHES FROM THE ORIGINAL SET OF PLANS IS NOT PERMITTED.

DATE:  
01/12/16

I STORY

FILE:  
010216

THE PLAN HAS BEEN REVIEWED IN ACCORDANCE WITH NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES AND ORDINANCES.



SECOND FLOOR PLAN  
SCALE 1/4" = 1'-0"

THE TYSON  
TRIMSTERS INC.

#2078

HEATED FOOTAGE:  
= 2078  
= 486  
= 373  
= 563

SQUARE FOOTAGE:  
FIRST FLOOR  
UNF. REC ROOM  
PORCHES  
GARAGE

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.

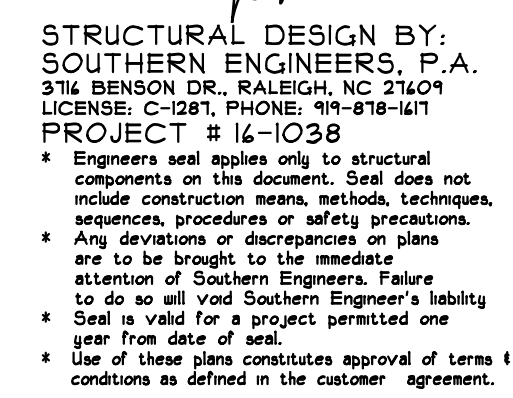
ANY DEVIATION OF THIS PLAN, DIMENSIONS OR NOTATIONS SHALL BE THE RESPONSIBILITY OF THE CLIENT. H SQUARED HOME DESIGN, INC. IS NOT LIABLE.

DATE:  
01/12/16

I STORY

FILE:  
010216

THE PLAN HAS BEEN REVIEWED AND APPROVED BY THE NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES AND DESIGN.



THE TYSON  
TRIMSTERS INC.

= 2078  
 = 416  
 = 373  
 = 563

**FOOTAGE:**  
FIRST FLOOR  
UNF. REC ROOM  
PORCHES  
GARAGE

HEATHER HALL  
165 HEATHERSTONE CT  
BENSON NC 27504  
(919) 207-1403

H SQUARED  
HOME  
DESIGN, INC.

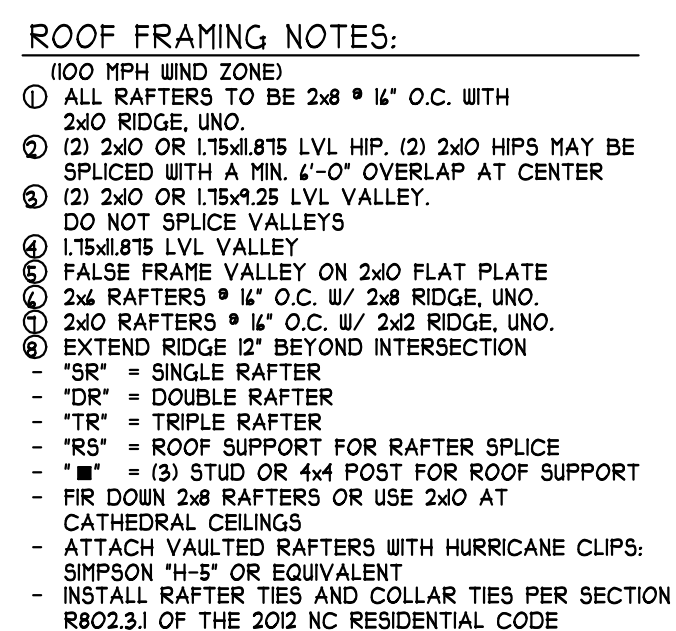


ANY DEVIATION OF THE  
OR OTHERWISE, H SQ  
INC. IS NOT LIABLE.

DATE:  
01/12/16

## I STORY

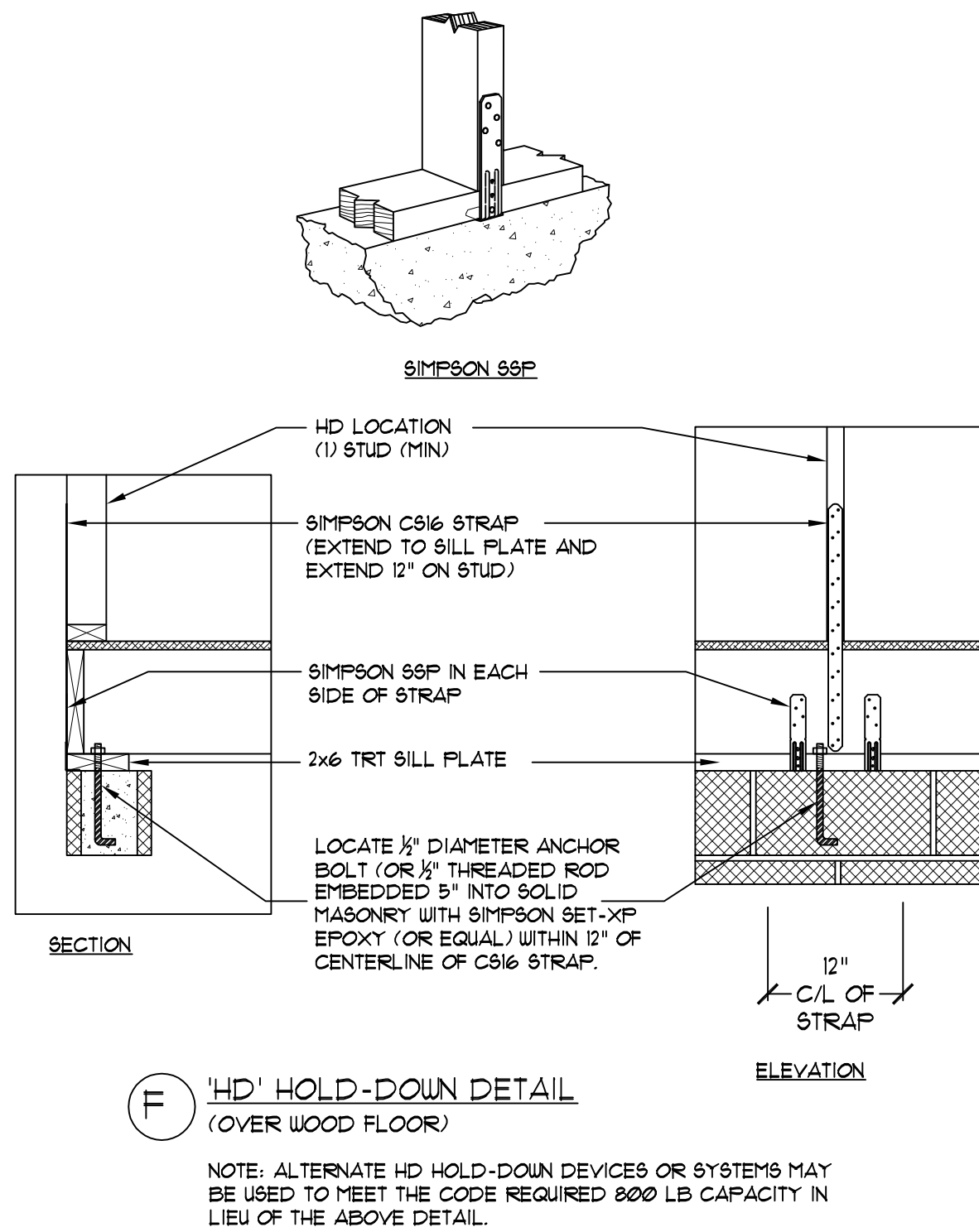
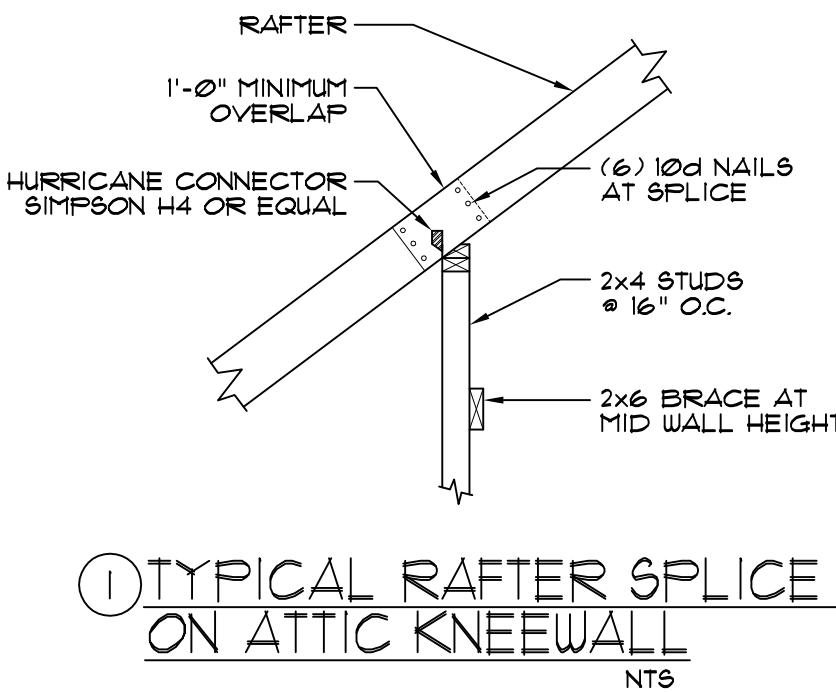
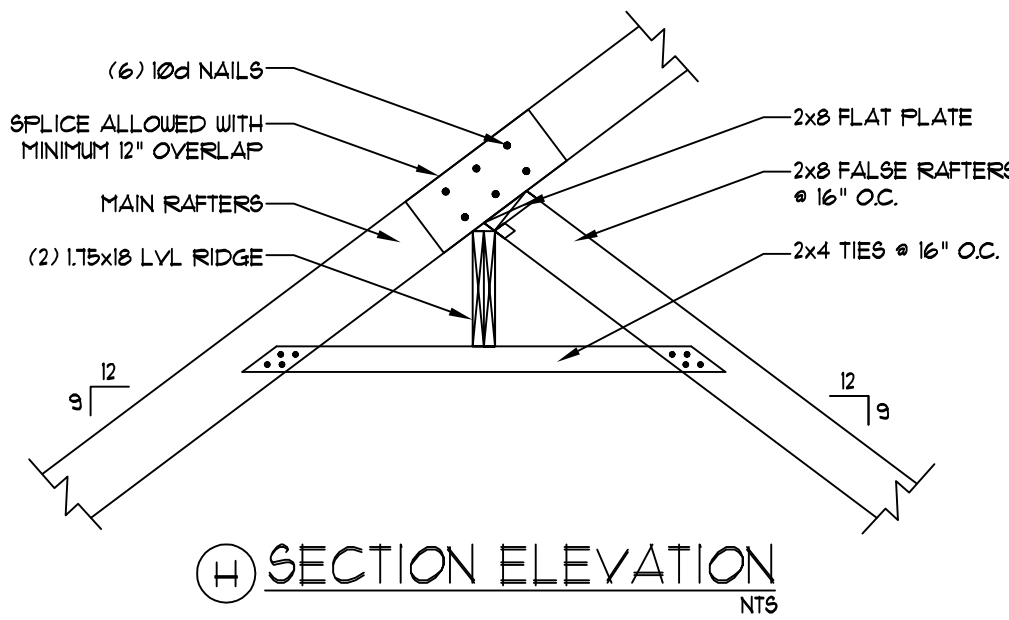
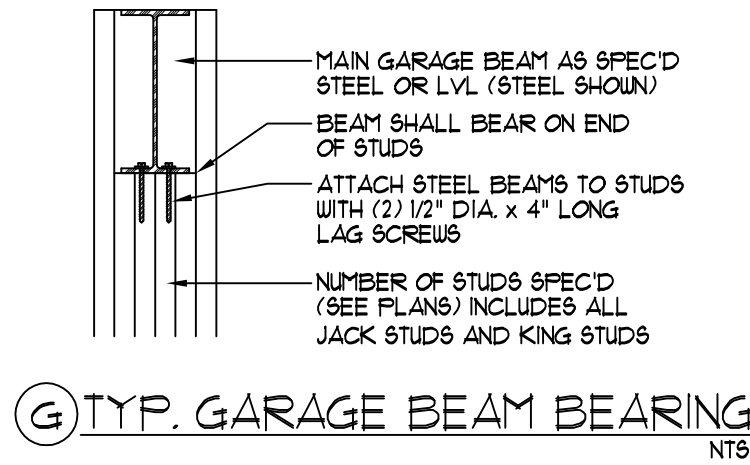
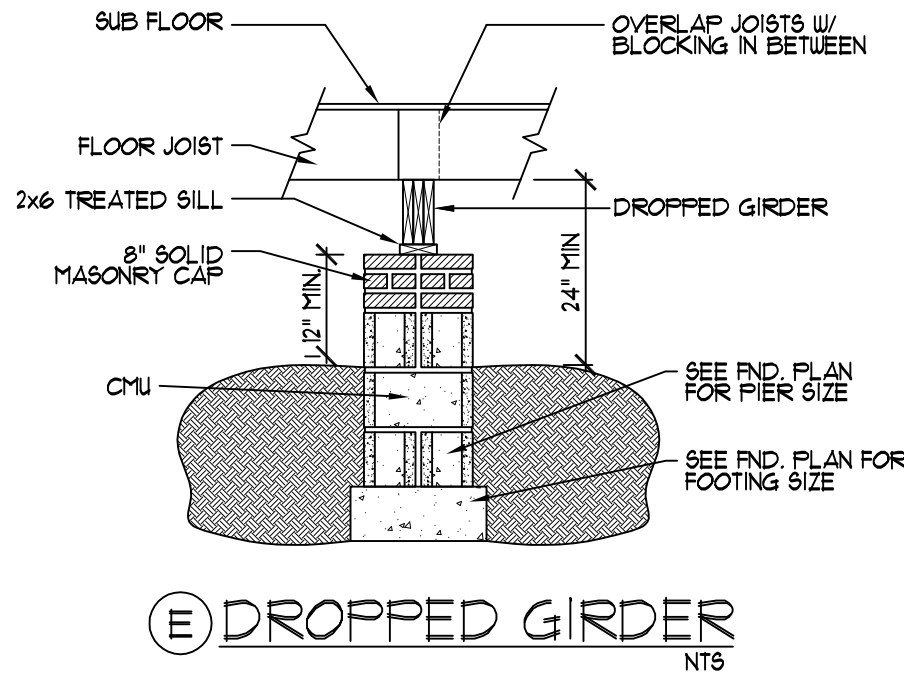
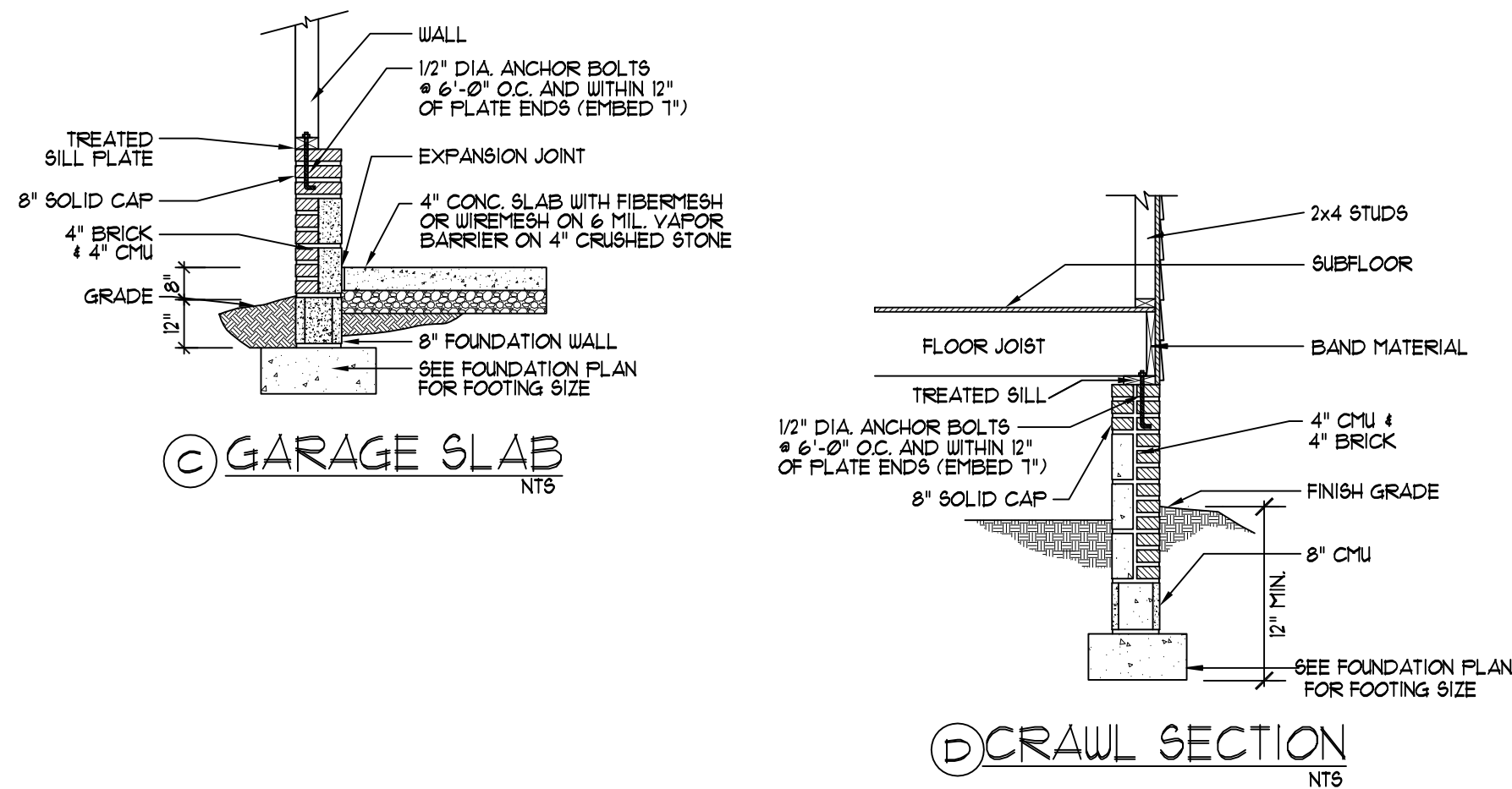
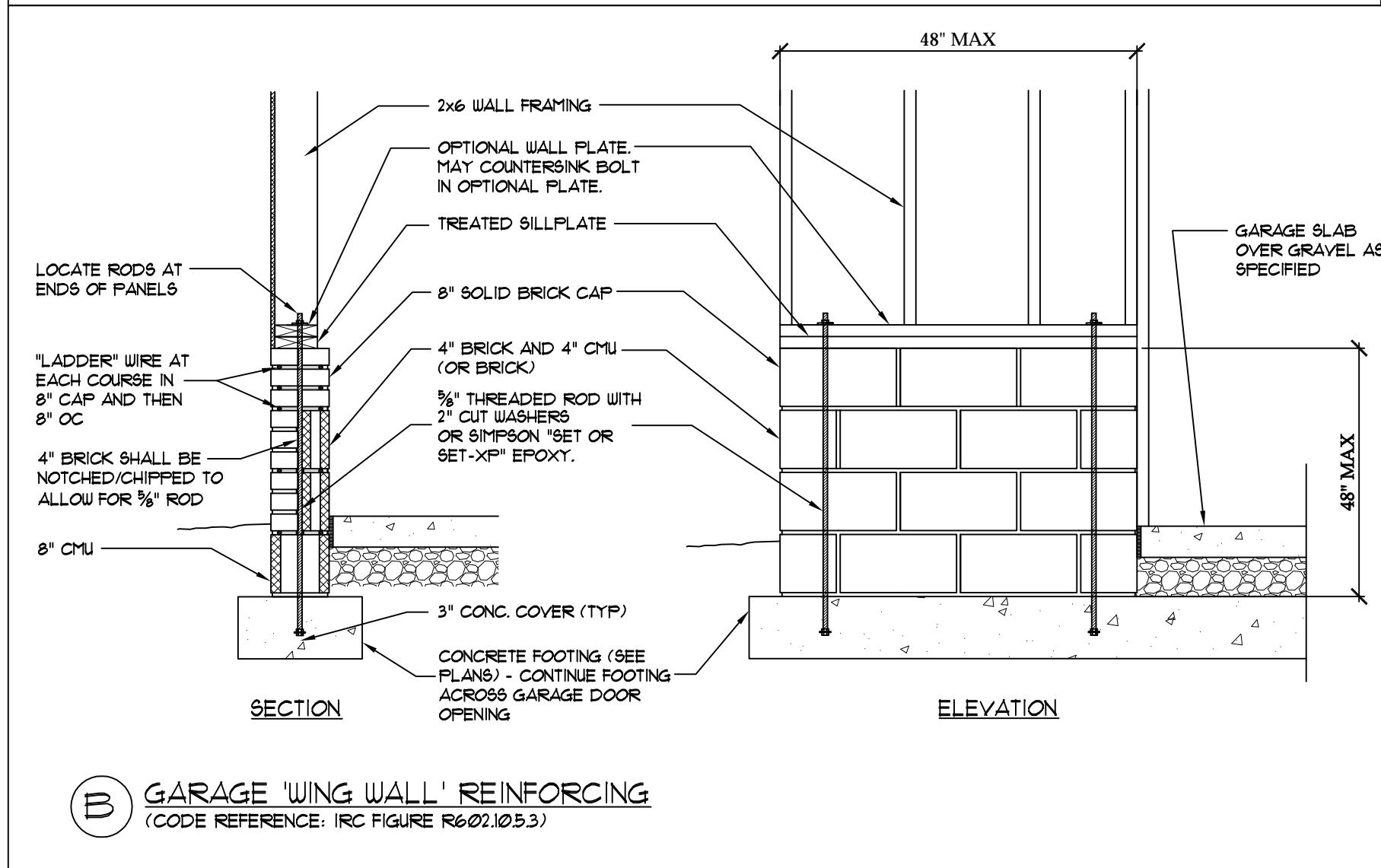
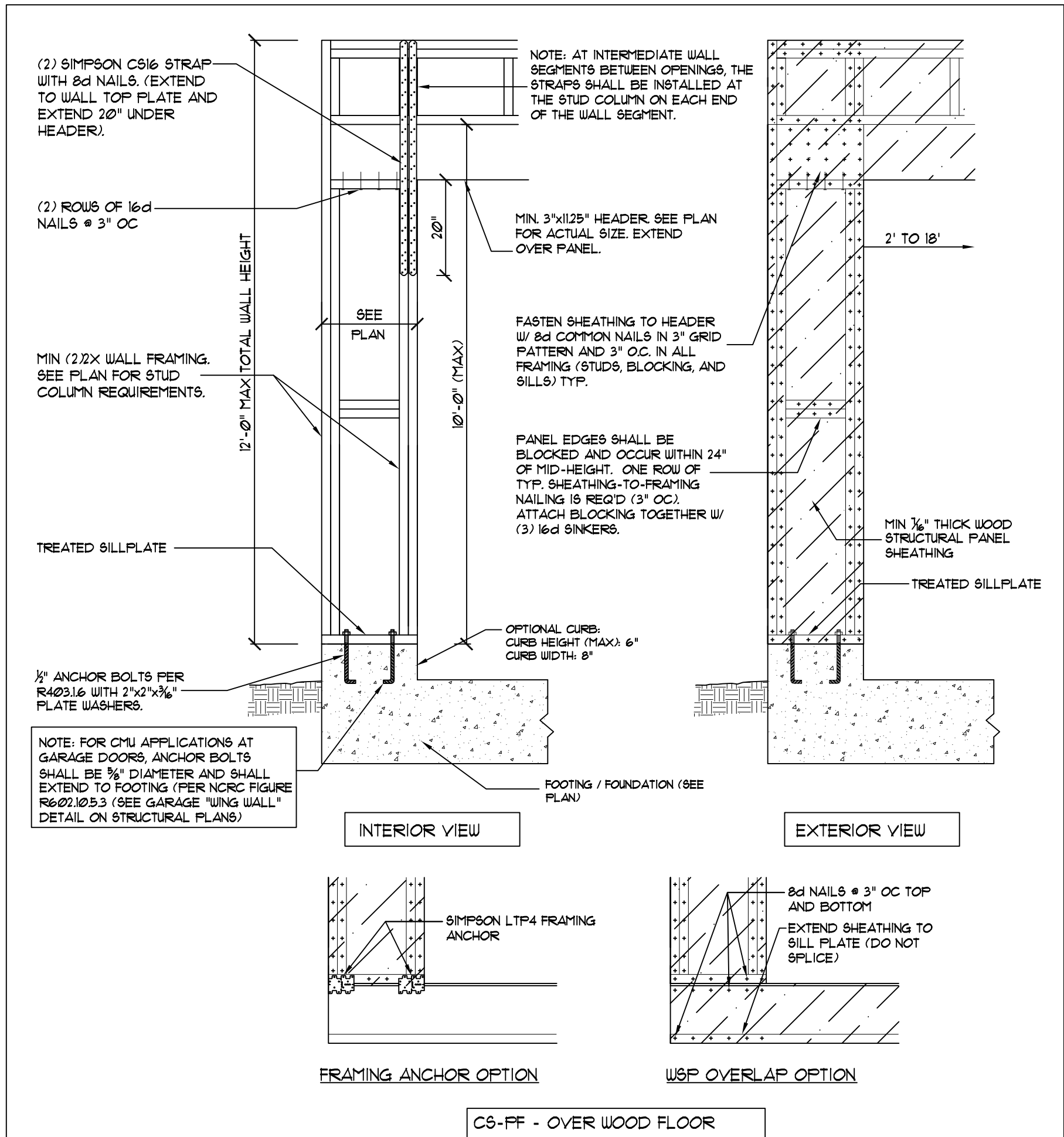
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ROOF PLAN  
SCALE 1/4" = 1'-0"

SCALE 1/4" = 1'-0"





# **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 STAIRS: (40 PSF, 10 PSF, L/360)  
ATTIC WITH OUT PERMANENT STAIRS: (30 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: (30 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 4022. 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 SFF #2 (Fb = 875 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE SYP #2 (Fb=975 PSI). PLATE MATERIAL MAY BE SFF #3 OR SYP #3 (Fb/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=1300000 PSI. F.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=230 PSI, E=2000000 PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1550000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

10) ALL ROOF TRUSSES 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).

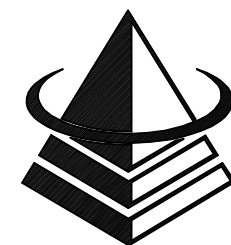
15) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF. THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2012 EDITION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

ROOF  
45.4 PSF - 2:12:12 PITCH OR LESS  
34.8 PSF - 2:12:12 TO 1:12 PITCH  
21 PSF - 1:12 TO 12:12 PITCH :  
WALLS  
24.1 PSF - WALLS



PROJECT # 16-1038

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Southern Engineers, P.A.

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www.southernengineers.com

H SQUARED HOME

DESIGN, INC.

165 HEATHERSTONE COURT

BENSON, NC 27504

919-207-1403

THE TYSON

TRIMSTERS, INC.

SD