NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

APPROVED
Limited building only review
Permit holder responsible for
full compliance with the code

04/28/2020

Harnett COUNTY NORTH CAROLINA

THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

NC (2018 NCRC) : Wind : 115 - 120 mph

FRONT ELEVATION

SCALE 1/4" = 1'0"

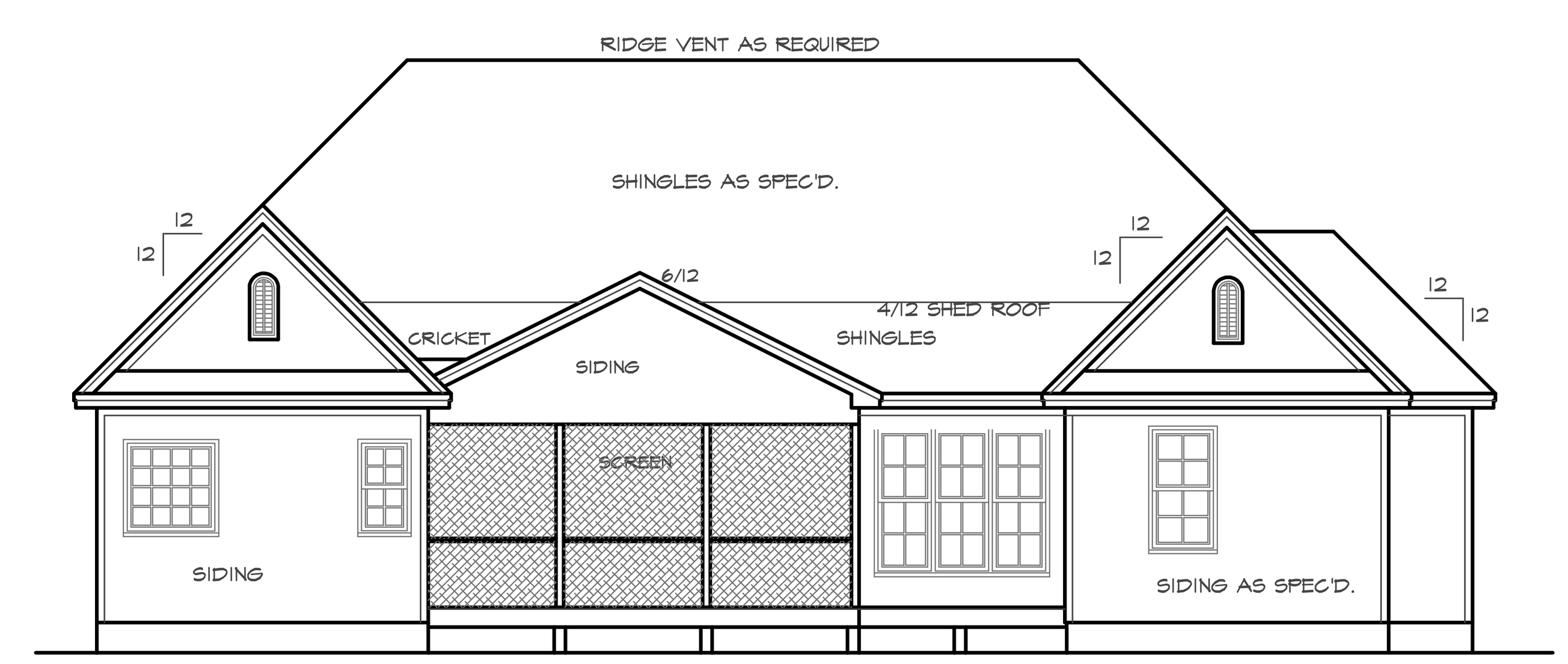
ATTIC VENTILATION:

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 1898 SQ.FT.

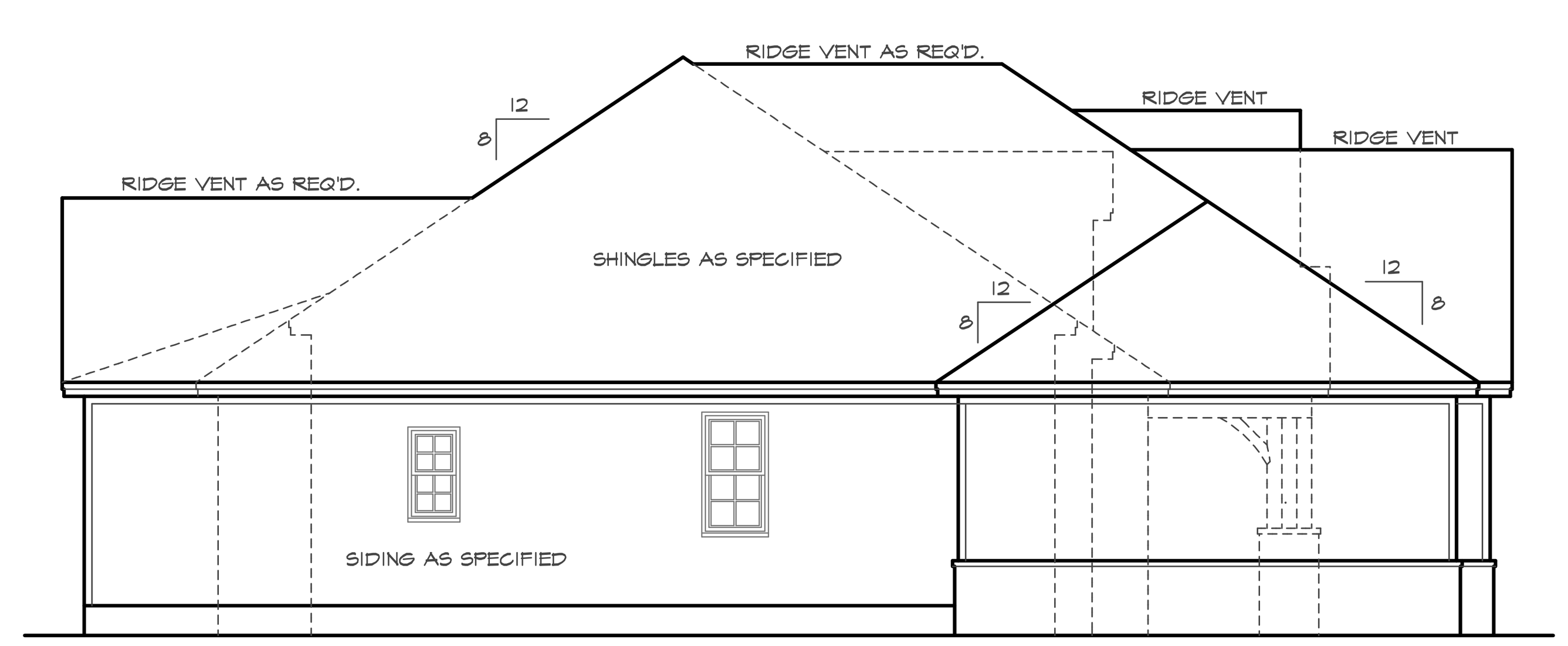
1898/300 = 6.3 SQ.FT. NET FREE AREA

50% OF VENTING MUST BE 3FT. ABOVE EAVE OR SOFFIT VENTS.



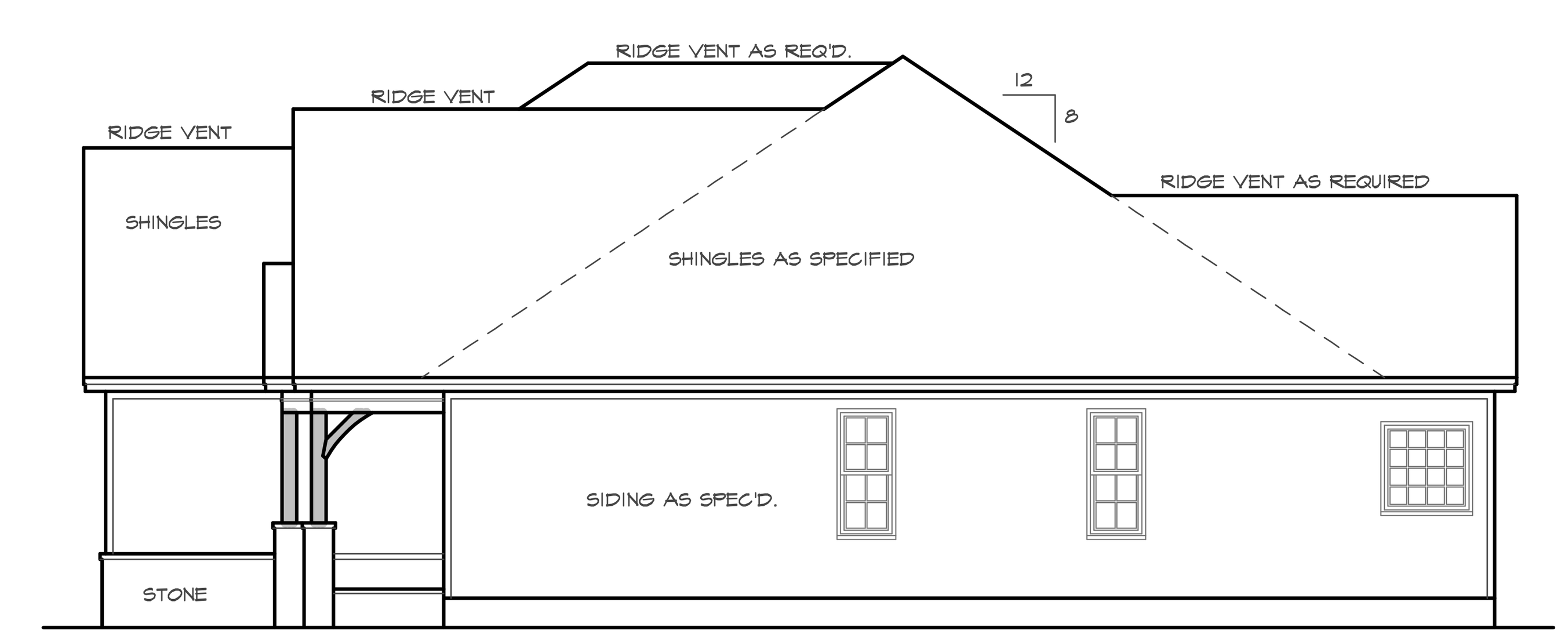
REAR ELEVATION

SCALE 1/8" = 1'0"



LEFT SIDE ELEVATION

SCALE 1/8" = 1'0"



RIGHT SIDE ELEVATION

SCALE 1/8" = 1'0"

MIDTOWN DESIGNS

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Plan For:

Raise the Roof

MidTown Designs Inc. 5306 Six Forks Rd. Clayton NC 27520 Phone: 919-783-8626 www.midtowndesigns.com

DATE	REV	DATE	REV

LOT
SUB

DATE 11/7/2019

SCALE

PROJECT #
191015

STRUCTURAL DESIGN BY:
SOUTHERN ENGINEERS, P.A.
3716 BENSON DR., RALEIGH, NC 27609
LICENSE: C-1287, PHONE: 919-878-1617
PROJECT #:19-2320

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

FOUNDATION STRUCTURAL NOTES:

NC (2018 NCRC): Wind: 115-120 MPH

1. (3) 2x10 SYP #2 OR SPF#2 GIRDER, TYPICAL UNO.
2. CONCRETE BLOCK PIER SIZE SHALL BE:

SIZE	HOLLOW MASONRY	SOLID MASONRY
8 x 16	UP TO 32" HIGH	UP TO 5'-0" HIGH
12 x 16	UP TO 48" HIGH	UP TO 9'-0" HIGH
16 x 16	UP TO 64" HIGH	UP TO 12'-0" HIGH
24 x 24	UP TO 96" HIGH	

WITH 30" x 30" x 10" CONCRETE FOOTING, UNO.

3. WALL FOOTING AS FOLLOWS:
   DEPTH: 8" - UP TO 2-1/2 STORY
   10" - 3 STORY
   WIDTH: SIDING (OR EQUAL)
   - 16" - UP TO 2-1/2 STORY
   - 20" - 3 STORY
   BRICK VENEER
   - 16" - 1 STORY
   - 20" - 2 STORY
   - 24" - 3 STORY

   FOR FOUNDATION WALL HEIGHT AND BACKFILL REQUIREMENTS, REFER TO NORTH CAROLINA RESIDENTIAL CODE TABLE R404.1.1 (1 THRU 4)
   NOTE: ASSUMED SOIL BEARING CAPACITY = 2000 PSF. CONTRACTOR MUST VERIFY SITE CONDITIONS AND CONTACT SOILS ENGINEER IF MARGINAL OR UNSTABLE SOILS ARE ENCOUNTERED.
4. (4) 2x10 SYP#2 OR SPF#2 GIRDER.
5. (2) 1.75X9.25 LVL OR LSL GIRDER
6. (3) 1.75X9.25 LVL OR LSL GIRDER
7. "■" DESIGNATES A SIGNIFICANT POINT LOAD TO HAVE SOLID BLOCKING TO PIER. SOLID BLOCK ALL BEAM BEARING POINTS NOTED TO HAVE THREE OR MORE STUDS TO FND, TYPICAL.
8. ABBREVIATIONS:
   "SJ" = SINGLE JOIST
   "DJ" = DOUBLE JOIST
   "TJ" = TRIPLE JOIST

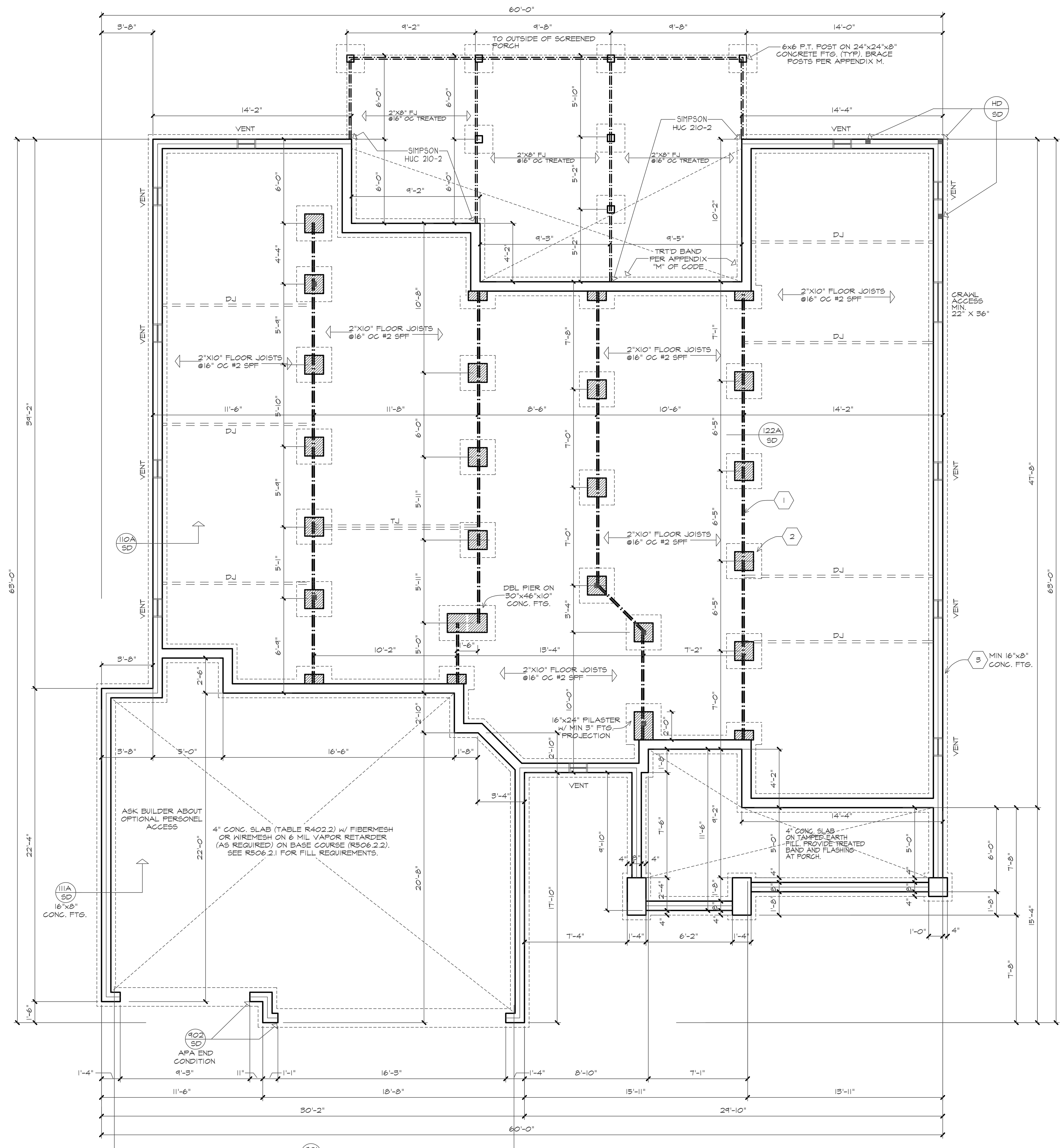
FOUNDATION VENTING

SECTION R408 UNDER FLOOR SPACE

R408.1 Ventilation. The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement or cellar) shall be provided with ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet (0.67 m squared for each 100 m squared) of under-floor space area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of said building.

CRAWL AREA TO BE VENTED: 2174 SQ.FT.
2174/300 = 7.3 NET FREE VENTING AREA REQUIRED

R408.2 Ground Vapor Retarder
A minimum 6 mil. polyethlyne vapor retarder shall be installed to cover all earth in the crawl space with joints lapped not less than 12"



FOUNDATION PLAN

SCALE 1/4" = 1'-0"

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PROJECT # 191015

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES H. HERMAN 11.7.19

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3716 BENSON DR., RALEIGH, NC 27609
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HEADER / BEAM NOTES

1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2)2x10 (4" WALL) OR (3)2x10 (6" WALL) 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. THE NUMBER OF KING STUDS FOR HEADERS SHALL BE ACCORDING TO ITEM "d" IN TABLE R602.3(5) OR AS BELOW:
   - UP TO 4' SPAN: (1) KING STUD E/E
   - OVER 4' AND TO 8' SPAN: (2) KING STUDS E/E
   - OVER 8' AND UP TO 10' SPAN: (3) KING STUDS E/E
   - OVER 10' SPAN: (4) KING STUDS E/E

WHOLE HOUSE BRACING SUMMARY

TOTAL REQUIRED BRACING: 36
TOTAL PROVIDED BRACING: 121
(IN FEET)

FRAMING NOTES:

NC (2018 NCRC): Wind: 140-150 mph

1. BRACING METHOD AND TYPE: CONTINUOUSLY SHEATHED WSP: CS-WSP. 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 AND WALL FRAMING.

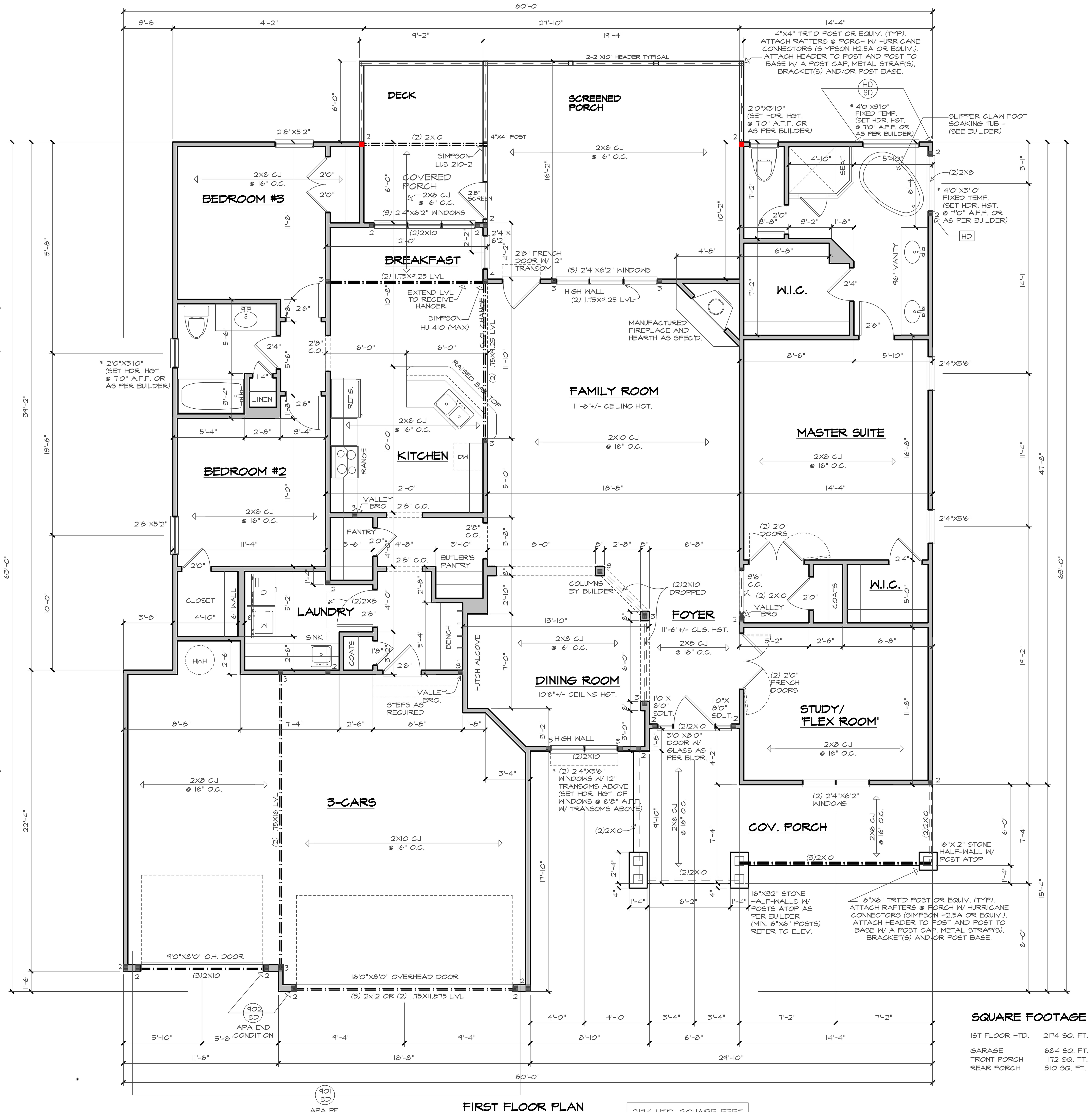
2. EXTERIOR WALL SHEATHING: WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANEL SHEATHING (WSP) (EXPOSURE B: 7/16". EXPOSURE C: 15/32"). SHEATHING SHALL BE ATTACHED WITH 8d NAILS AT A 3"/12" NAILING PATTERN (3" O.C AT PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS). INSTALL BLOCKING AT ALL PANEL EDGES.

3. WSP SHEATHING SHALL EXTEND TO THE UPPERMOST DOUBLE BEARING PLATE. BLOCK AT ROOF AND ATTACH BRACED WALLS PER CODE. ATTACH WSP SHEATHING AT TOP AND BOTTOM PLATES WITH (2) ROWS OF 8d NAILS @ 3" O.C. (STAGGERED). WSP SHEATHING SHALL BE SPLICED ACROSS STUDS (CONTINUOUS ACROSS FLOOR SYSTEM) WITH BLOCKING AT PANEL EDGES. (MINIMUM 12" BEYOND FLOOR BREAK) OR OTHER APPROVED METHOD.

4. "HD" = HOLDOWN: HOLD-DOWN DEVICE (NOTED AS "HD" ON PLANS) SHALL BE AN 800 POUND CAPACITY ASSEMBLY AS NOTED ON PLANS. SEE DETAILS FOR HD ASSEMBLY.
**GROUND/FIRST FLOOR: USE "HD HOLD-DOWN DETAIL" ON SD SHEET (OR EQUIV).
**UPPER FLOORS: 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.

5. INTERIOR BRACED WALL: (NOTED AS "IBW" ON PLANS) ATTACH 1/2" GYPSUM BOARD (GB) 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.

6. INTERIOR BRACED WALL-WOOD STRUCTURAL PANEL: (NOTED AS "IBW-WSP" ON PLANS). ATTACH ONE SIDE WITH 7/16" WSP SHEATHING 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. ATTACH GB OVER WSP REQUIRED. ATTACH OPPOSITE SIDE WITH 1/2" GB WITH A MIN. OF 5d COOLER NAILS OR #6 SCREWS @ 7" OC ALONG THE EDGES AND AT INTERMEDIATE SUPPORTS.



FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

2174 HTD. SQUARE FEET

SQUARE FOOTAGE

1ST FLOOR HTD.	2174 SQ. FT.
GARAGE	684 SQ. FT.
FRONT PORCH	172 SQ. FT.
REAR PORCH	310 SQ. FT.

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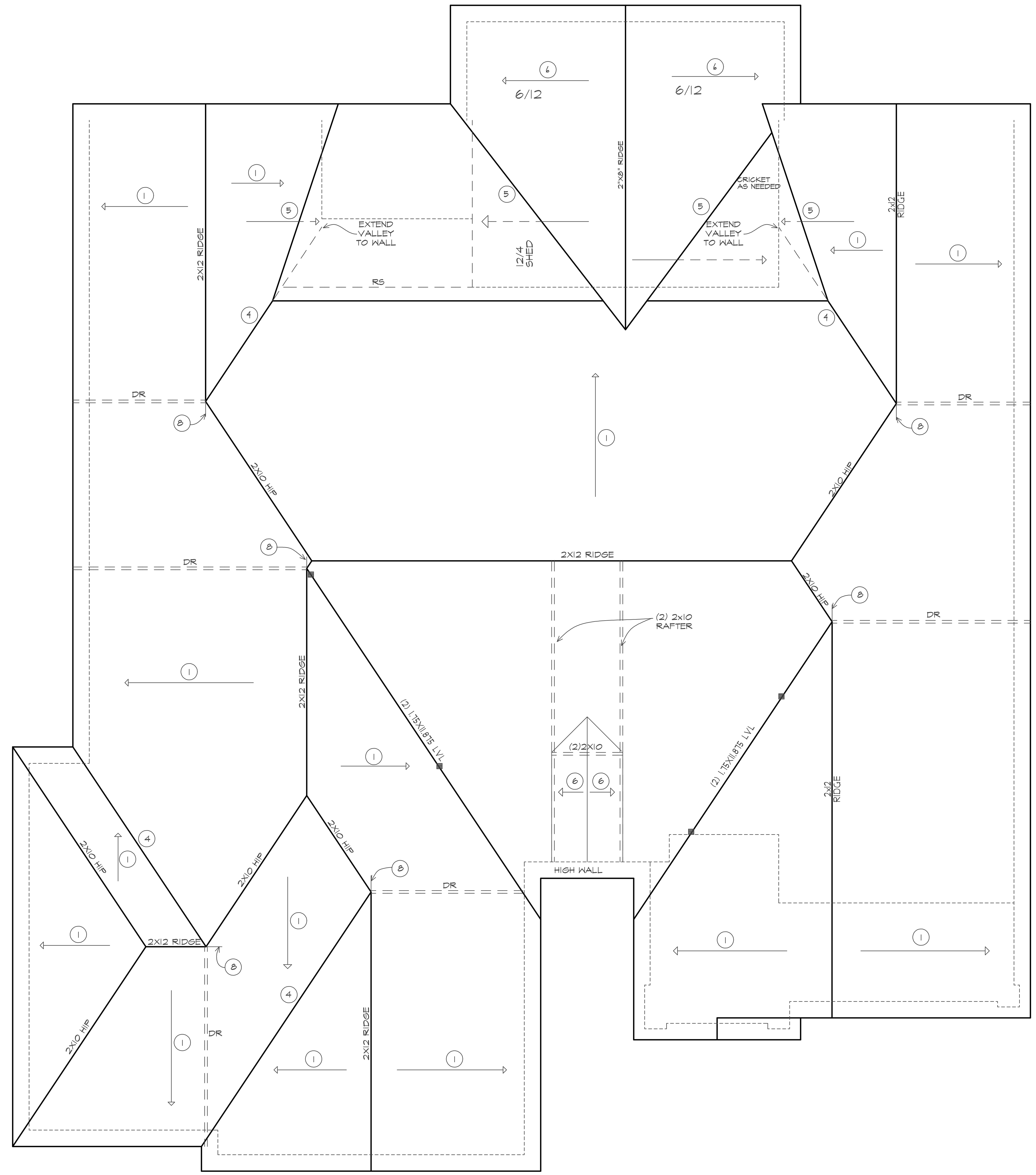
ROOF FRAMING NOTES:

1. ALL RAFTERS TO BE 2x8 @ 16" O.C. WITH 2x10 RIDGE, UNO.
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, UNO.
7. 2x10 RAFTERS @ 16" O.C. W/ 2x12 RIDGE, UNO.
8. EXTEND RIDGE +/- 12"

- "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 PLAN

SCALE 1/4" = 1'-0"

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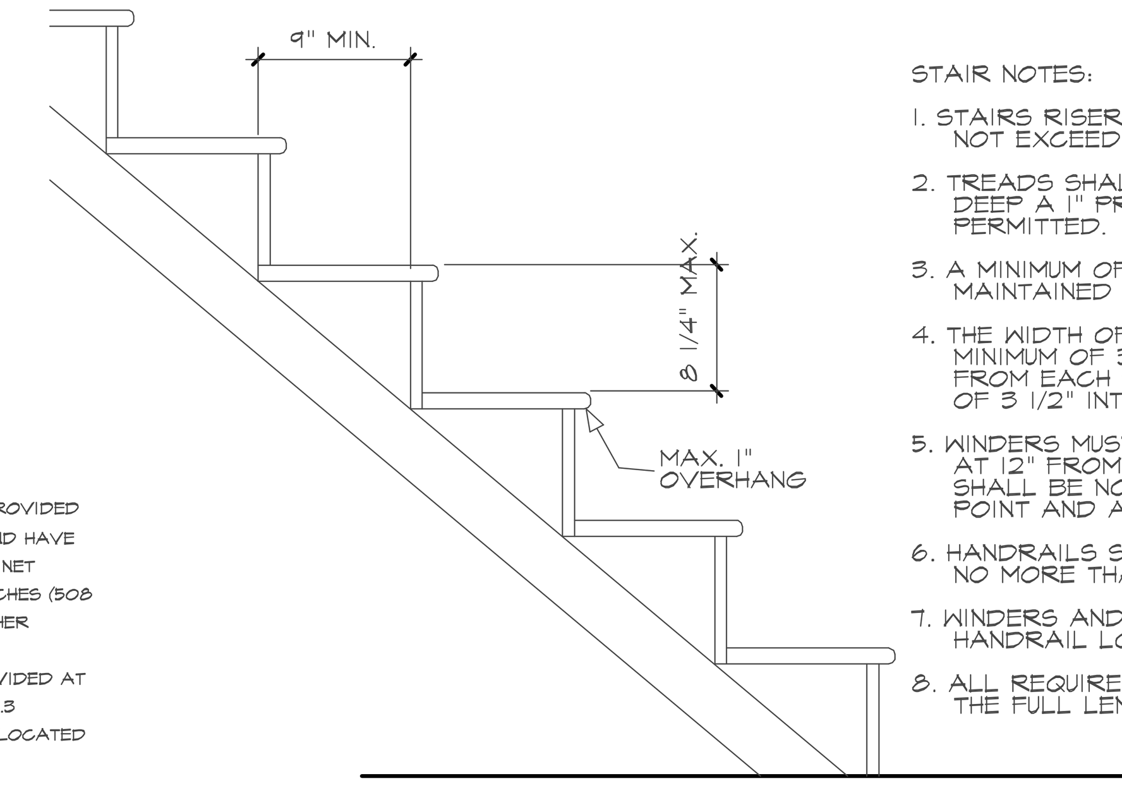


STAIR DETAIL

NO SCALE

STAIR NOTES:

1. STAIRS RISERS MUST BE UNIFORM AND NOT EXCEED 8 1/4".
2. TREADS SHALL NOT BE LESS THAN 10" DEEP A 1" PROJECTION OVER RISER IS PERMITTED.
3. A MINIMUM OF 6'8" HEADROOM MUST BE MAINTAINED AT ALL PLACES ON STAIR.
4. THE WIDTH OF THE STAIR SHALL BE A MINIMUM OF 3'0". HANDRAIL MAY PROJECT FROM EACH SIDE OF STAIR A DISTANCE OF 3 1/2" INTO THE REQUIRED WIDTH.
5. WINDERS MUST BE A MINIMUM OF 9" IN WIDTH AT 12" FROM THE NARROWEST SIDE. TREAD SHALL BE NO NARROWER THAN 4" AT ANY POINT AND AVERAGE NO LESS THAN 9 INCHES.
6. HANDRAILS SHALL BE NO LESS THAN 34" AND NO MORE THAN 38" ABOVE TREAD NOSING.
7. WINDERS AND SPIRAL STAIRS SHALL HAVE THE HANDRAIL LOCATED ON THE OUTSIDE RADIUS.
8. ALL REQUIRED HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE STAIRS.

ATTIC ACCESS

SECTION R807

R807.1 ATTIC ACCESSAN ATTIC ACCESS OPENING SHALL BE PROVIDED TO ATTIC AREAS THAT EXCEED 400 SQUARE FEET (37.16 M2) AND HAVE A VERTICAL HEIGHT OF 60 INCHES (1524 MM) OR GREATER. THE NET CLEAR OPENING SHALL NOT BE LESS THAN 20 INCHES BY 30 INCHES (508 MM BY 762 MM) AND SHALL BE LOCATED IN A HALLWAY OR OTHER READILY ACCESSIBLE LOCATION. A 30-INCH (762 MM) MINIMUM UNOBSTRUCTED HEADROOM IN THE ATTIC SPACE SHALL BE PROVIDED AT SOME POINT ABOVE THE ACCESS OPENING. SEE SECTION M1305.1.3 FOR ACCESS REQUIREMENTS WHERE MECHANICAL EQUIPMENT IS LOCATED IN ATTICS.

EXCEPTIONS:

1. CONCEALED AREAS NOT LOCATED OVER THE MAIN STRUCTURE INCLUDING PORCHES, AREAS BEHIND KNEE WALLS, DORMERS, BAY WINDOWS, ETC. ARE NOT REQUIRED TO HAVE ACCESS.
2. PULL DOWN STAIR TREADS, STRINGERS, HANDRAILS, AND HARDWARE MAY PROTRUDE INTO THE NET CLEAR OPENING.

STRUCTURAL NOTES

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION (2015 IRC), PLUS ALL LOCAL CODES AND REGULATIONS.
ALL MEMBERS SHALL BE FRAMED, ANCHORED,, TIED AND BRACED IN ACCORDANCE WITH GOOD CONSTRUCTION PRACTICE AND THE BUILDING CODE.

2) DESIGN LOADS SEE TABLE R301.5

WIND SPEED: (REFER TO TABLE R301.2.4)
VERIFY ZONE BEFORE CONSTRUCTION.

3) WALL BRACING: WALLS SHALL BE BRACED ALONG BRACED WALL LINES ACCORDING TO SECTION R602.10. THE AMOUNT, LOCATION, AND CONSTRUCTION OF BRACING SHALL COMPLY WITH R602.10. NOTE THAT THE BRACING SHOWN ON THE PLANS IS BASED ON THE PRESCRIPTIVE BRACING REQUIREMENTS OF THE CODE AND SHALL BE VERIFIED AND/ORAPPROVED BY THE CODE OFFICIAL.

4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIT 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.

5) 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.

6) 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).

7) 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).

8) 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 MANUFACTURER'S INSTRUCTIONS.

9) 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 MANUFACTURER'S SPECIFICATIONS.

10) 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 SUPORT 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.

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

12) FLITCH BEAMS SHALL BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM A307) 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.

13) 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).

14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS SEE R301.2(6)

DWELLING / GARAGE SEPARATION

REFER TO SECTIONS R302.5, R302.6, AND R302.7

WALLS. A MINIMUM 1/2" GYPSUM BOARD MUST BE INSTALLED ON ALL WALLS SUPPORTING FLOOR/CEILING ASSEMBLIES USED FOR SEPARATION REQUIRED BY THIS SECTION.

STAIRS. A MINIMUM OF 1/2" GYPSUM BOARD MUST BE INSTALLED ON THE UNDERSIDE AND EXPOSED SIDES OF ALL STAIRWAYS.

CEILINGS. A MINIMUM OF 1/2" GYPSUM MUST BE INSTALLED ON THE GARAGE CEILING IF THERE ARE NO HABITABLE ROOM ABOVE THE GARAGE. IF THERE ARE HABITABLE ROOM ABOVE THE GARAGE A MINIMUM OF 5/8" TYPE X GYPSUM BOARD MUST BE INSTALLED ON THE GARAGE CEILING.

OPENING PENETRATIONS. OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH SOLID WOOD DOORS NOT LESS THAN 1 3/8 INCHES (35 MM) IN THICKNESS, SOLID OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN 1 3/8 INCHES (35 MM) THICK, OR 20-MINUTE FIRE-RATED DOORS.

DUCT PENETRATIONS. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS SEPARATING THE *DWELLING* FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE (0.48 MM) SHEET STEEL OR OTHER *APPROVED* MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE.

OTHER PENETRATIONS. PENETRATIONS THROUGH THE SEPARATION REQUIRED IN SECTION R302.6 SHALL BE PROTECTED AS REQUIRED BY SECTION R302.11, ITEM 4.

DECK BRACING

SECTION AM109

AM109.1 DECK BRACING. DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY. THE FOLLOWING ARE ACCEPTABLE MEANS TO PROVIDE LATERAL STABILITY.

AM109.1.1. WHEN THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" ABOVE FINISHED GRADE PER FIGURE AM109 AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION AM104, LATERAL BRACING IS NOT REQUIRED.

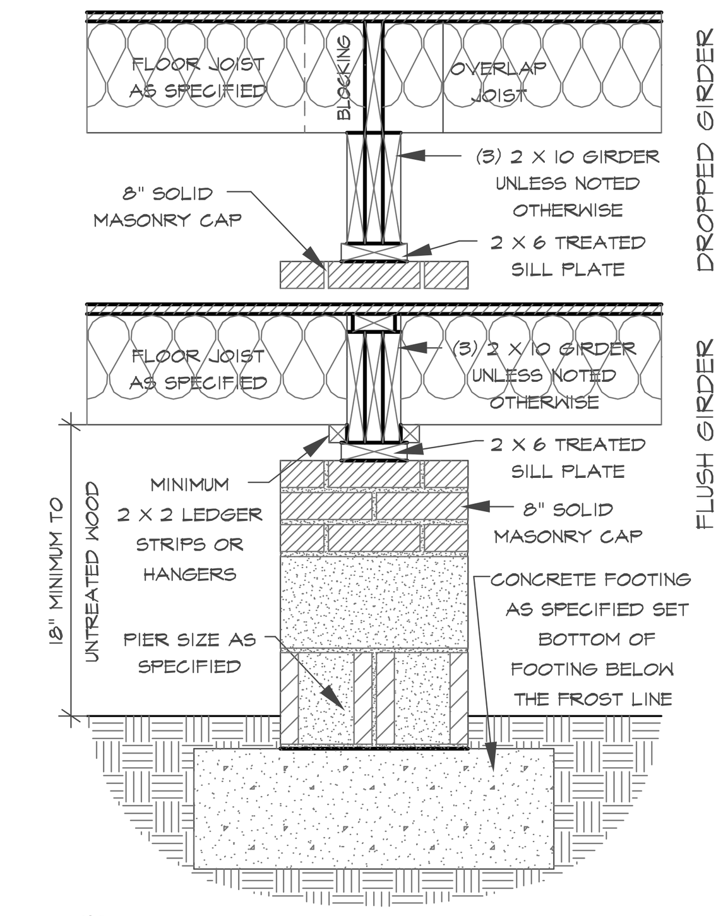
AM109.1.2. 4 X 4 WOOD KNEE BRACES MAY BE PROVIDED ON EACH COLUMN IN BOTH DIRECTIONS. THE KNEE BRACES SHALL ATTACH TO EACH POST AT A POINT NOT LESS THAN 1/3 OF THE POST LENGTH FROM THE TOP OF THE POST, AND THE BRACES SHALL BE ANGLED BETWEEN 45 DEGREES AND 60 DEGREES FROM THE HORIZONTAL. KNEE BRACES SHALL BE BOLTED TO THE POST AND THE GIRDER/DOUBLE BAND WITH ONE 5/8 INCH HOT DIPPED GALVANIZED BOLT WITH NUT AND WASHER AT BOTH ENDS OF THE BRACE PER FIGURE AM109.1

AM109.1.3. FOR FREESTANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POST IN ACCORDANCE WITH FIGURE AM109.2 AND THE FOLLOWING:

POST SIZE	MAX TRIBUTARY AREA	MAX. POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4 X 4	48 SF	4'-0"	2'-6"	1'-0"
6 X 6	120 SF	6'-0"	3'-6"	1'-8"

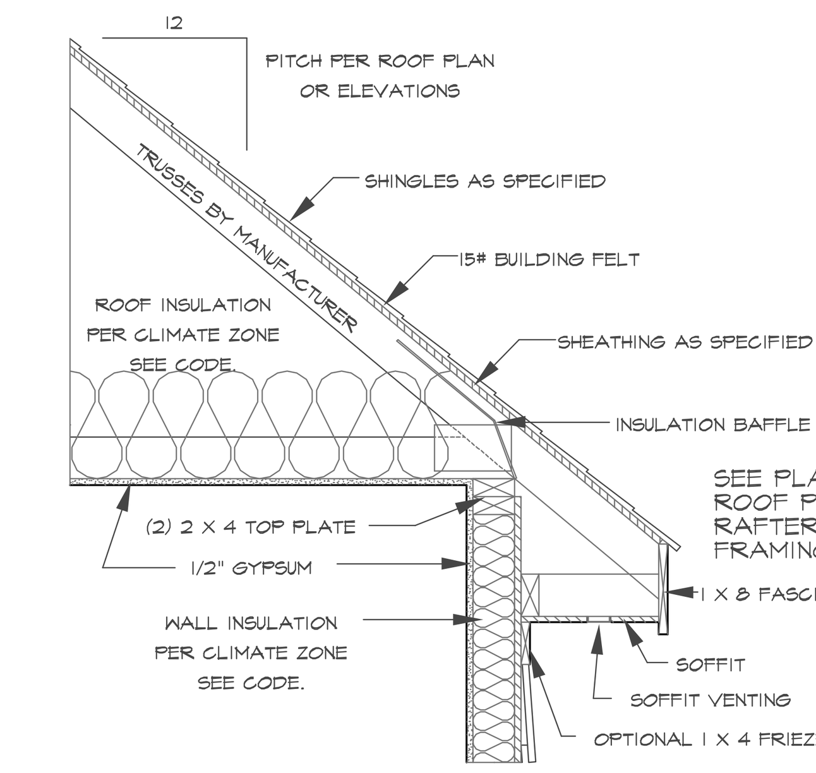
AM109.1.4. 2 X 6 DIAGONAL VERTICAL CROSS BRACING MAY BE PROVIDED IN TWO PERPENDICULAR DIRECTIONS FOR FREESTANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE 2 X 6S SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8 INCH HOT DIPPED GALVANIZED BOLT WITH NUT AND WASHER AT EACH END OF EACH BRACING MEMBER PER FIGURE AM109.3.

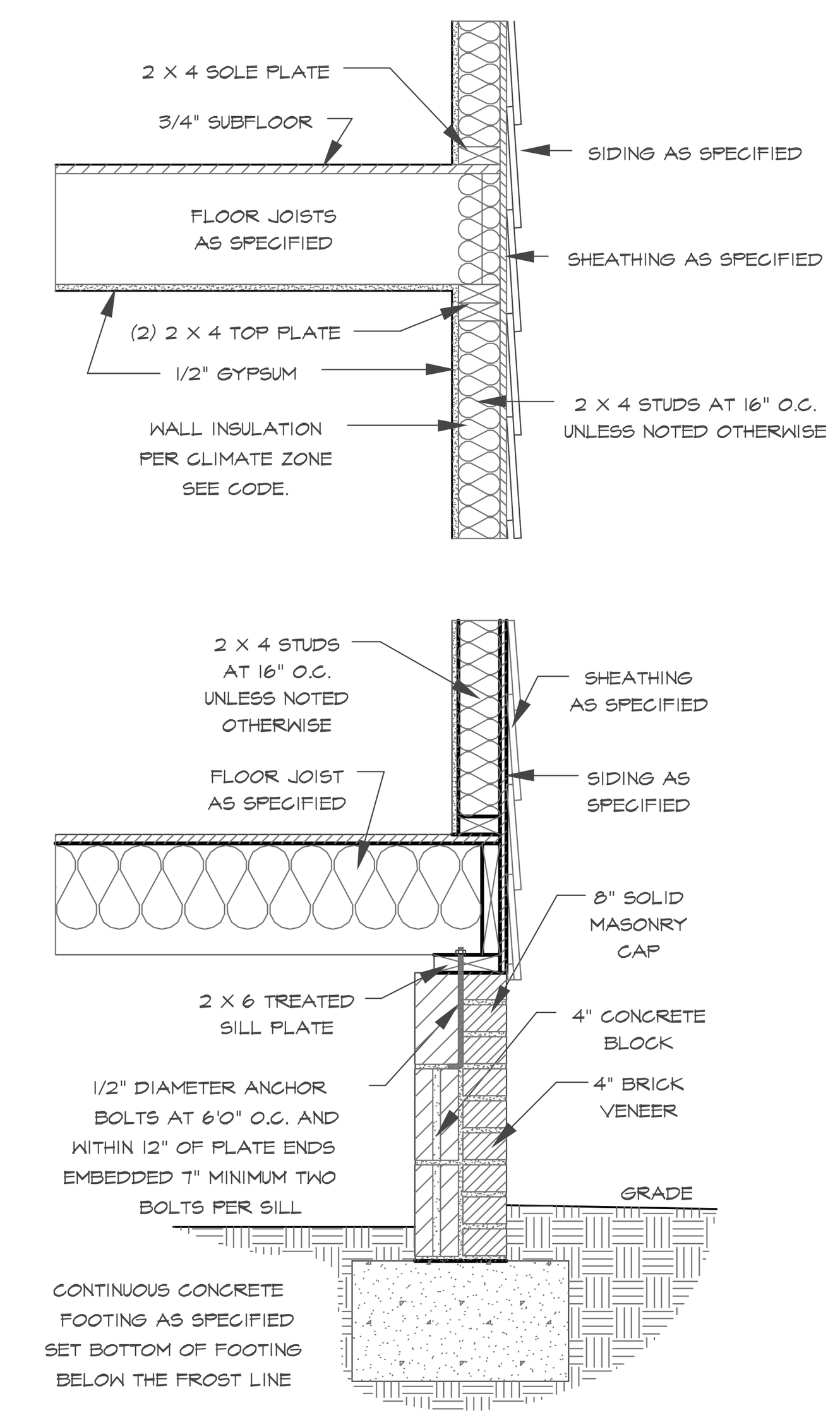
AM109.1.5. FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 45.



C DROPPED/ FLUSH PIER

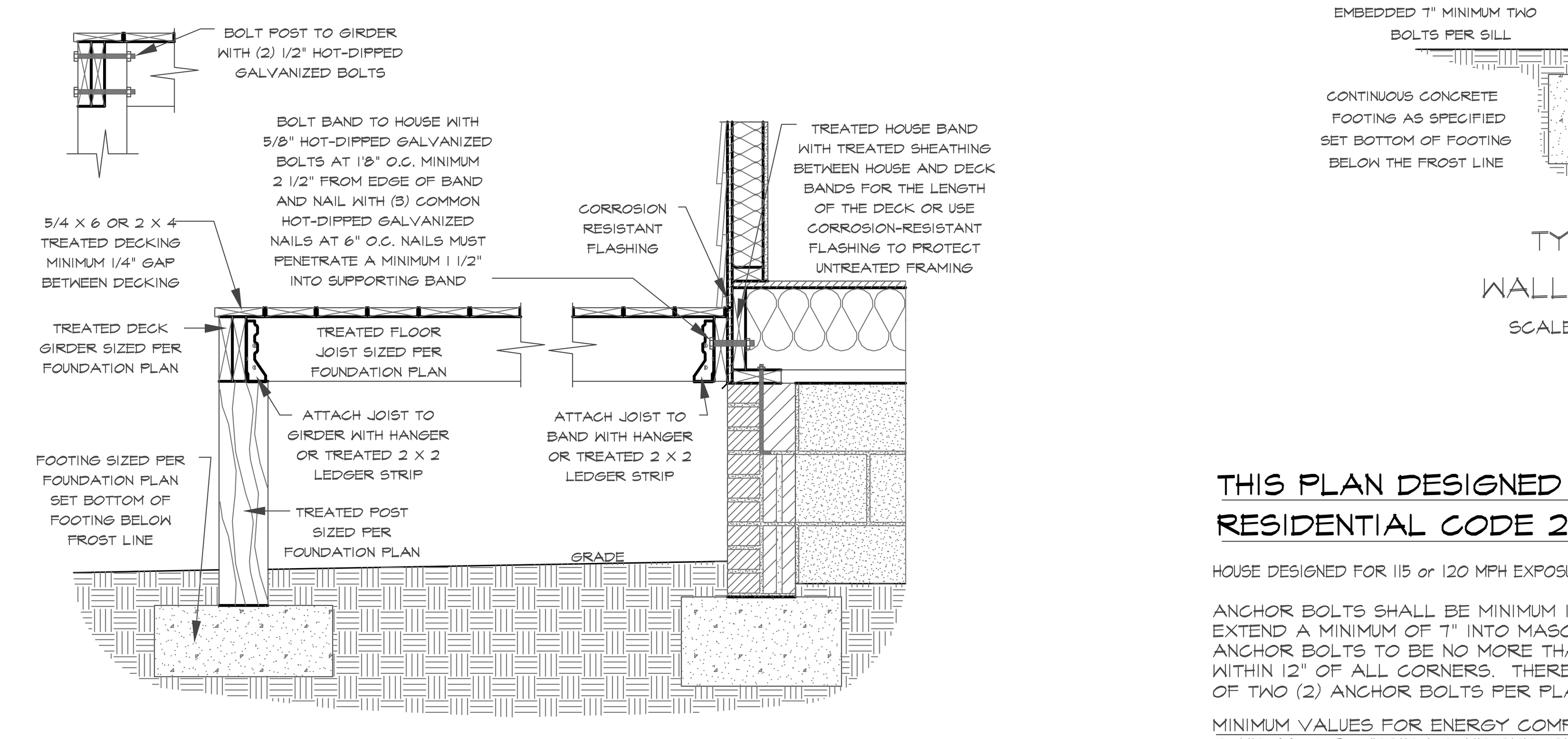
SCALE 3/4" = 1'-0"





TYPICAL WALL SECTION

SCALE 3/4" = 1'-0"



DECK ATTACHMENT DETAIL TO FRAMED WALL

SCALE 3/4" TO 1'-0"

THIS PLAN DESIGNED UNDER NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION (2015 IRC)

HOUSE DESIGNED FOR 115 or 120 MPH EXPOSURE B

ANCHOR BOLTS SHALL BE MINIMUM 1/2" DIAMETER & SHALL EXTEND A MINIMUM OF 7" INTO MASONRY OR CONCRETE. ANCHOR BOLTS TO BE NO MORE THAN 6' ON CENTER AND WITHIN 12" OF ALL CORNERS. THERE SHALL BE A MINIMUM OF TWO (2) ANCHOR BOLTS PER PLATE SECTION.

MINIMUM VALUES FOR ENERGY COMPLIANCE
ZONE 4A, & 3. VERIFY ZONE BEFORE CONSTRUCTION

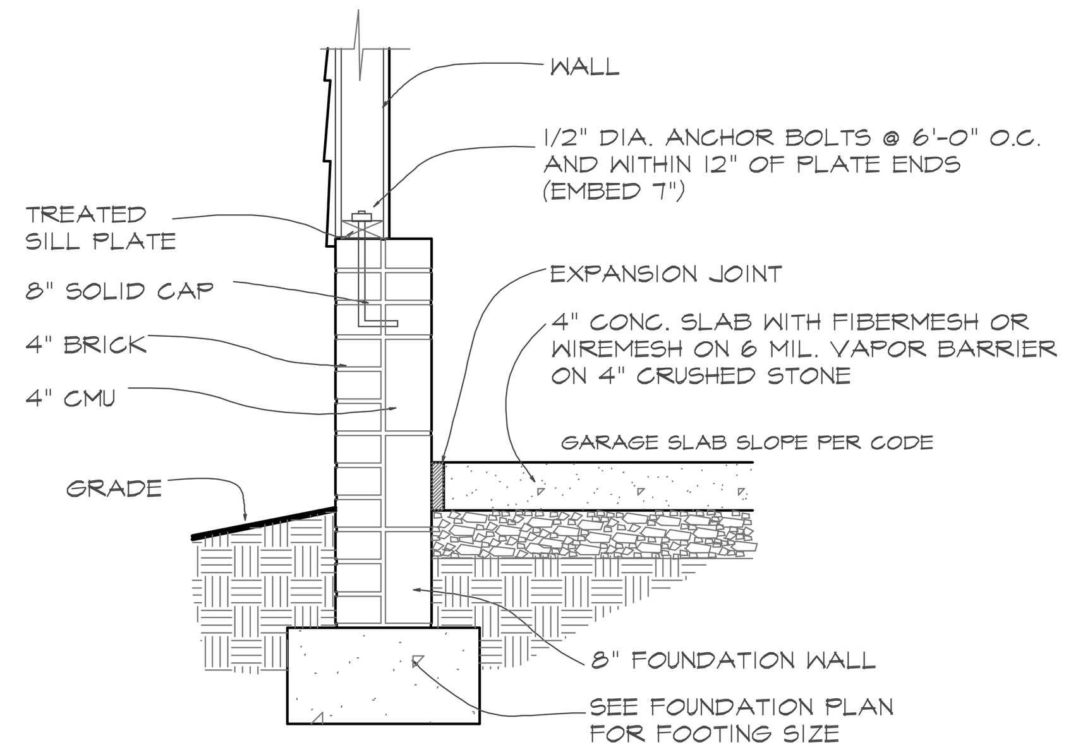
TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
3	0.35	0.55	0.30	38 or 30ci	15 or 13+2.5	5/13 or 5/10ci	19	5/13	0	5/13
4	0.35	0.55	0.30	38 or 30ci	15 or 13+2.5	5/13 or 5/10ci	19	10/15	10	10/15
5	0.35	0.55	NR	38 or 30ci	19 or 13+5 or 15+3	13/17 or 13/12.5ci	30	10/15	10	10/19

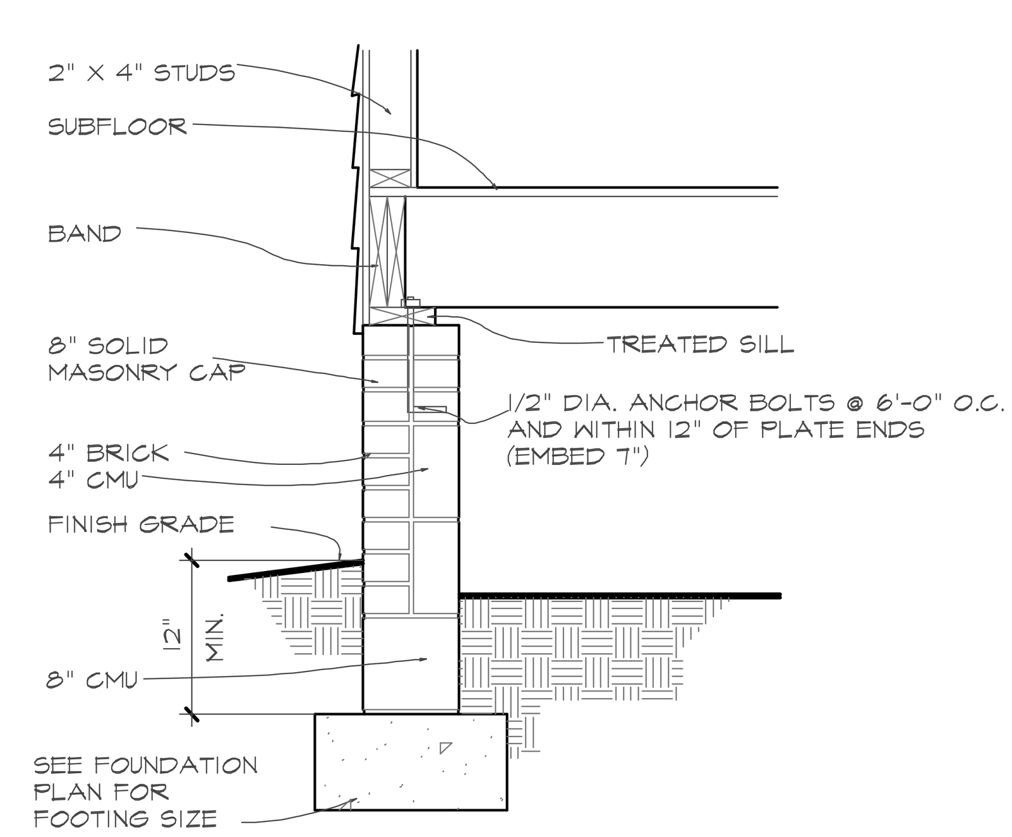
TABLE R402.1.4
EQUIVALENT U-FACTORS[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[d]	SKYLIGHT U-FACTOR	CEILING U-FACTOR	FRAME WALL U-FACTOR	MASS WALL U-FACTOR[b]	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR	CRAWL SPACE WALL U-FACTOR
3	0.35	0.55	0.030	0.077	0.141	0.047	0.091[c]	0.136
4	0.35	0.55	0.030	0.077	0.141	0.047	0.059	0.065
5	0.35	0.55	0.030	0.061	0.082	0.033	0.059	0.065

a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.
b. When more than half the insulation is on the interior, the mass wall *U*-factors shall be a maximum of 0.07 in Climate Zone 3, 0.07 in Climate Zone 4 and 0.054 in Climate Zone 5.
c. Basement wall *U*-factor of 0.360 in warm-humid locations as defined by Figure R301.1 and Table R301.1.
d. A maximum of two glazed fenestration product assemblies having a *U*-factor no greater than 0.55 and a SHGC no greater than 0.70 shall be permitted to be substituted for minimum code compliant fenestration product assemblies without penalty. When applying this note and using the REScheck "UA Trade-off" compliance method to allow continued use of the software, the applicable fenestration products shall be modeled as meeting the *U*-factor of 0.35 and the SHGC of 0.30, as applicable, but the fenestration products actual *U*-factor and actual SHGC shall be noted in the comments section of the software for documentation of application of this note to the applicable products. Compliance for these substitute products shall be verified compared to the allowed substituted maximum *U*-value requirement and maximum SHGC requirement, as applicable.



B SECTION AT GARAGE SLAB



D SECTION AT CRAWL

Purchaser must verify all dimensions and conditions before beginning construction.

MidTown Designs Inc. assumes no liability for contractors practices and procedures

These drawings are instruments of service and as such shall remain property of the designer

RESIDENCE FOR:

Detail Sheet

MidTown Designs Inc. 5306 Six Forks Rd. Suite 107 Raleigh NC 27609 Phone: 919-783-8626 www.midtowndesigns.com

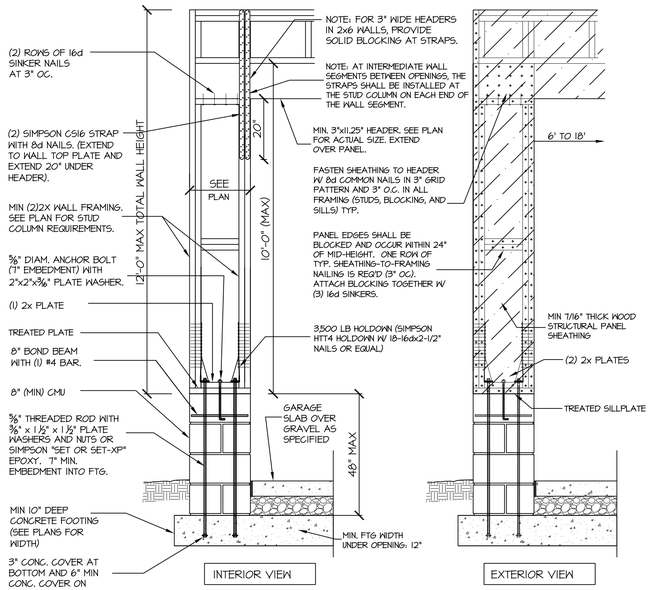
DATE	REV	DATE	REV

LOT

SUB

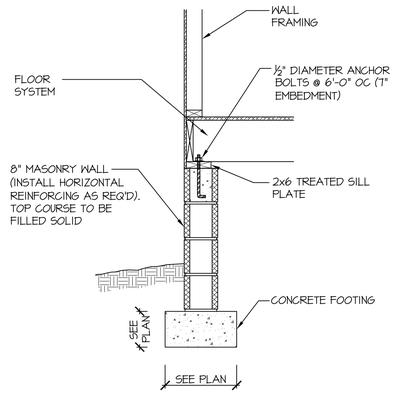
DATE 1/16/2019

SCALE



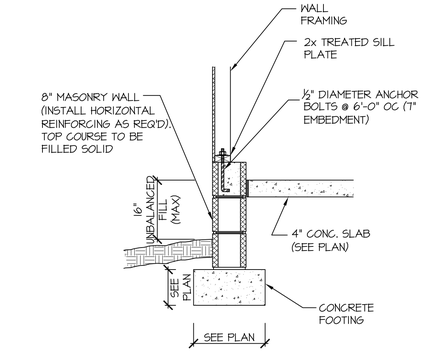
ELEVATION 901 5D — APA PORTAL FRAME W/ HOLD-DOWNS

DETAIL AND APPLICATION BASED ON APA TT-100F WITH USE OF TABLE 1 FOR APA PORTAL FRAME WITH HOLD-DOWN CAPACITIES.



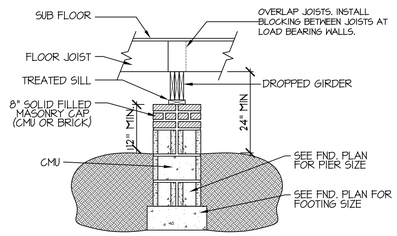
115-120 MPH 110A 5D — CRAWL SPACE FOOTING

(SIDING OR EQUAL)



115-120 MPH 111A 5D — GARAGE WALL FOOTING

(SIDING OR EQUAL)



122A 5D — DROPPED GIRDER

NTS

STRUCTURAL NOTES

NC (2018 NCRC): Wind: 115-120 mph

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, FOOTING, AND PILING SYSTEM. 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 RESIDENTIAL CODE, 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 (LISTED AS: LIVE LOAD, DEAD LOAD, DEFLECTION)
   - 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 WITHOUT PERMANENT STAIR: (20 PSF, 10 PSF, L/360)
   - ATTIC WITHOUT STORAGE: (10 PSF, 10 PSF, L/240)
   - STAIRS: (40 PSF, 10 PSF, L/360)
   - EXTERIOR BALCONIES: (60 PSF, 10 PSF, L/360)
   - DECKS: (40 PSF, 10 PSF, L/360)
   - GUARDRAILS AND HANDRAILS: (200 LBS)
   - PASSSENGER VEHICLE GARAGES: (50 PSF, 10 PSF, L/360)
   - FIRE ESCAPES: (40 PSF, 10 PSF, L/360)
   - SNOW: (20 PSF)

4. WALLS SHALL BE BRACED BY SHEATHING WALLS ON ALL STORIES WITH WOOD STRUCTURAL PANELS. SEE FRAMING NOTES FOR THICKNESS AND NAILING REQUIREMENTS.

5. SEE APPENDIX M (DCA6) FOR EXTERIOR DECK REQUIREMENTS INCLUDING ATTACHMENTS FOR LATERAL LOADS.

6. 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. CONTROL JOINTS IN SLABS SHALL BE SPACED ON A GRID OF +-30 TIMES THE DEPTH (D). CONTROL JOINTS SHALL BE SAWCUT TO A DEPTH OF 1/D. (I.E. 4" CONCRETE SLABS SHALL HAVE ¼" DEEP CONTROL JOINTS SAWCUT IN SLAB ON A +-10'-0" x +-10'-0" GRID).

7. ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 2000 PSF. THE CONTRACTOR MUST CONTACT A GEOTECHNICAL ENGINEER AND THE STRUCTUAL 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 DRAINSURFACE WATER AWAY FROM FOUNDATION WALLS.

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

9. L.V.L. SHALL BE LAMINATED VENEER LUMBER: Fb=2600 PSI, Fv=285 PSI, E=1.9x10 PSI.
   9.1. P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2400 PSI, Fv=290 PSI, E=2.0x10 PSI.
   9.2. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1.55x10 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURERS INSTRUCTIONS.

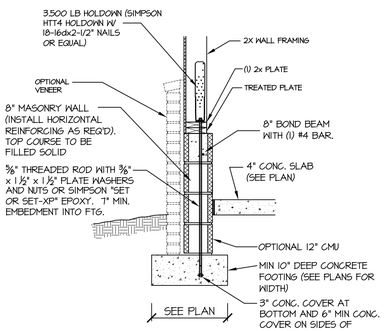
10. ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH THE SEALED STRUCTURAL DRAWINGS, TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURE'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.

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 PROVIDING 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. LAP ALL REBAR SPLICES 30 BAR DIAMETERS.

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 (WHEN REQUIRED) 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". SEE PLANS FOR SPANS OVER 9'-0". SEE ALSO SECTION R703.7.3 LINTELS.

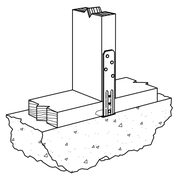


FOOTING SECTION

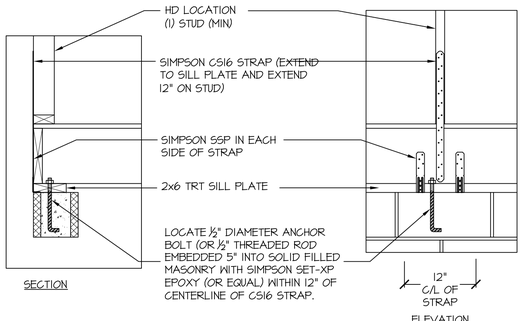
SIMPSON HTT4

SECTION 901 5D — APA PORTAL FRAME W/ HOLD-DOWNS

DETAIL AND APPLICATION BASED ON APA TT-100F WITH USE OF TABLE 1 FOR APA PORTAL FRAME WITH HOLD-DOWN CAPACITIES.



SIMPSON SSP

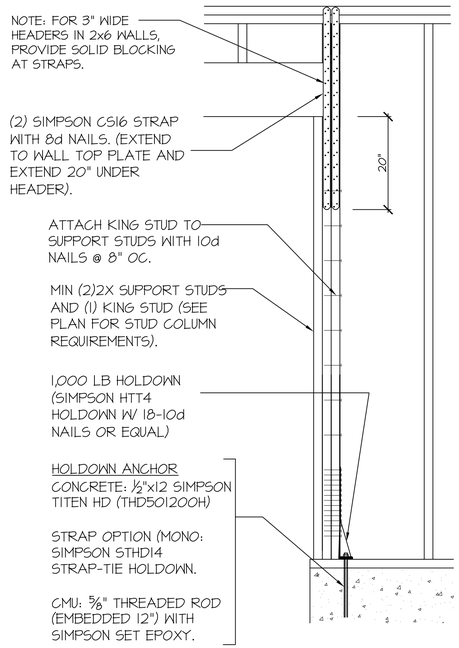


SECTION ELEVATION

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.



902 5D — END CONDITION DETAIL

(FOR USE WITH SINGLE APA PORTAL FRAME CONDITION)

DETAIL AND APPLICATION BASED ON APA TT-100F WITH USE OF TABLE 1 FOR APA PORTAL FRAME WITH HOLD-DOWN CAPACITIES.

NORTH CAROLINA PROFESSIONAL SEAL 16073 ENGINEER JAMES H. HERMAN

PROJECT # 19-2320

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MIDTOWN DESIGNS

RAISE THE ROOF

SD