

STRUCTURAL NOTES

- 1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER OR DESIGNER 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 OR DESIGNER 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.
- 2) DESIGN LOADS (R301.4)
- | | LIVE LOAD (PSF) | DEAD LOAD (PSF) | DEFLECTION (L) |
|---------------------------------|-----------------|-----------------|----------------|
| ROOMS OTHER THAN SLEEPING ROOMS | 40 | 10 | L/360 |
| SLEEPING ROOMS | 30 | 10 | L/360 |
| ATTIC WITH PERMANENT STAIR | 40 | 10 | L/360 |
| ATTIC WITH OUT PERMANENT STAIR | 20 | 10 | L/360 |
| ATTIC WITH OUT STORAGE | 10 | 10 | L/360 |
| STAIRS | 40 | --- | L/360 |
| EXTERIOR BALCONIES | 40 | 10 | L/360 |
| DECKS | 40 | 10 | L/360 |
| GUARDRAILS AND HANDRAILS | 200 | --- | --- |
| PASSENGER VEHICLE GARAGES | 50 | 10 | L/360 |
| FIRE ESCAPES | 40 | 10 | L/360 |
| SNOW | 20 | --- | --- |
- WIND LOAD (BASED ON 115/120 MPH WIND VELOCITY & EXPOSURE B)
- 3) WALL BRACING: BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO SECTION R602.10.3. THE AMOUNT AND LOCATION OF BRACING SHALL COMPLY WITH TABLE R602.10.1. THE LENGTH OF BRACED PANELS SHALL BE DETERMINED BY SECTION R602.10.4. LATERAL BRACING SHALL BE SATISFIED PER METHOD 3 BY CONTINUOUSLY SHEATHING WALLS WITH STRUCTURAL SHEATHING PER SECTION R602.10.3. NOTE THAT ANY SPECIFIC BRACED WALL DETAIL SHALL BE INSTALLED AS SPECIFIED.
- 4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF 5 INCHES UNLESS NOTED OTHERWISE (UNO). AIR ENTRAINMENT 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 (Fb=975 PSI - MIN).
- 7) ALL WOODEN BEAMS AND HEADERS SHALL HAVE THE FOLLOWING END SUPPORTS: (1) 2x4 STUD COLUMN FOR 4'-0" MAX. BEAM SPAN (UNO). (2) 2x4 STUDS FOR BEAM SPAN GREATER THAN 4'-0" (UNO).
- 8) L.V.L. SHALL BE LAMINATED VENEER LUMBER: Fb=2400 PSI, Fv=285 PSI, E=1,940⁴ PSI. P.S.L. SHALL BE PARALLEL STRAND LUMBER: Fb=2900 PSI, Fv=290 PSI, E=2,040⁴ PSI. L.S.L. SHALL BE LAMINATED STRAND LUMBER: Fb=2250 PSI, Fv=400 PSI, E=1,550⁴ PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS.
- 9) ALL ROOF TRUSS AND I-JOIST LAYOUTS SHALL BE PREPARED IN ACCORDANCE WITH ANY SEALED STRUCTURAL DRAWINGS. TRUSSES AND I-JOISTS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. ANY CHANGE IN TRUSS OR I-JOIST LAYOUT SHALL BE COORDINATED WITH DESIGNER OR ENGINEER.
- 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 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 @ 18" O.C. . ALL STEEL TUBING SHALL BE ASTM A500.
- 11) REBAR SHALL BE DEFORMED STEEL, ASTM415, 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 4" FROM EACH END.
- 13) BRICK LINTELS SHALL BE 3 1/2"x3 1/2"x1/4" STEEL ANGLE FOR UP TO 4'-0" SPAN AND 4"x4"x1/4" STEEL ANGLE WITH 4" LEG VERTICAL FOR SPANS UP TO 9'-0". SEE PLANS FOR SPANS OVER 9'-0".
- 14) THE POSITIVE AND NEGATIVE DESIGN PRESSURE FOR DOORS AND WINDOWS FOR A MEAN ROOF HEIGHT OF 35 FEET OR LESS SHALL BE 25 PSF.
- 15) THE POSITIVE AND NEGATIVE DESIGN PRESSURES REQUIRED FOR ANY ROOF OR WALL CLADDING APPLICATION NOT SPECIFICALLY ADDRESSED IN THE NORTH CAROLINA STATE RESIDENTIAL CODE - 2018 EDITION SHALL BE AS FOLLOWS:
- ROOF:
- | |
|----------------------------------|
| 15.4 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:
- | |
|-----------------|
| 241 PSF - WALLS |
|-----------------|
- SEE ALSO SECTION R703.1.3 LINTELS

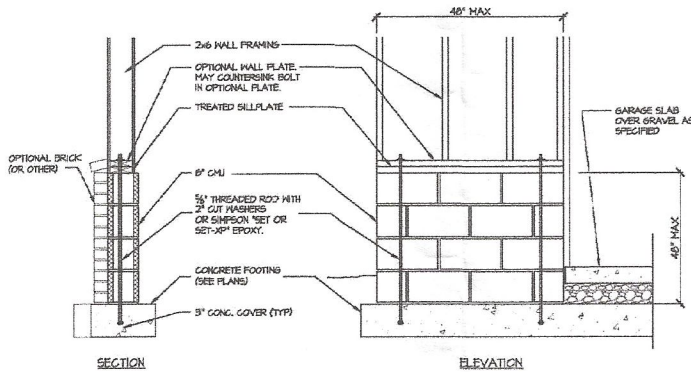
TRUSS SYSTEM REQUIREMENTS

NC (2018 NCRC):

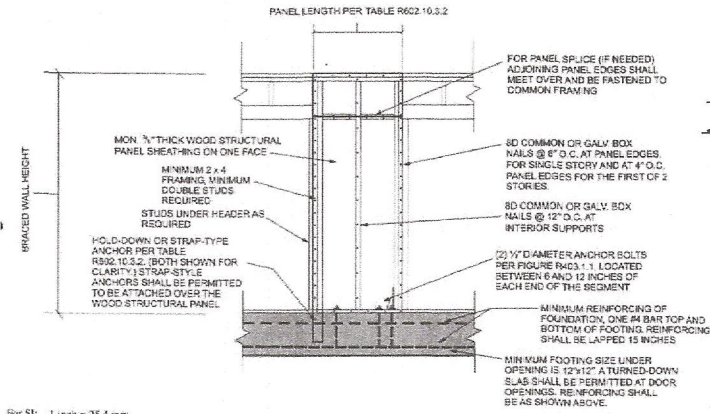
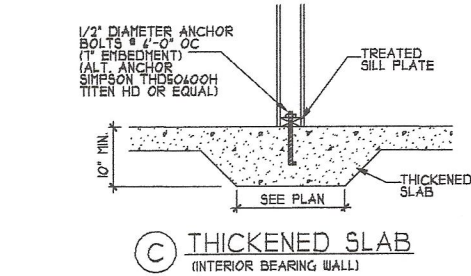
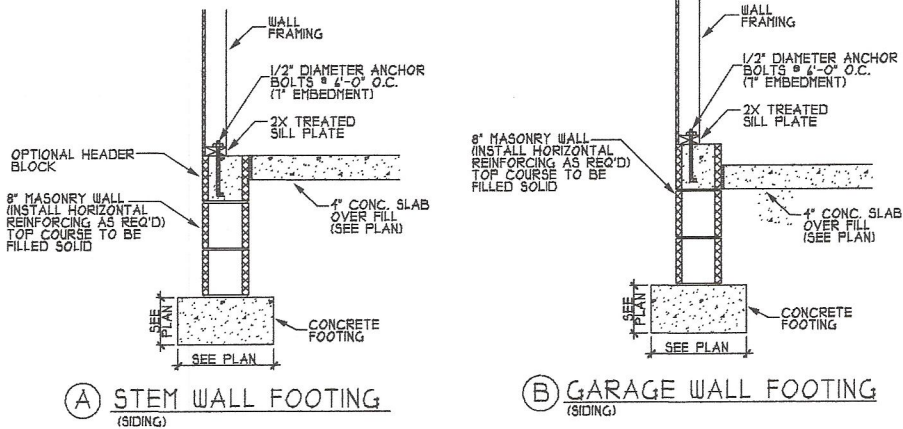
1. TRUSS SYSTEM LAYOUTS (PLACEMENT PLANS) SHALL BE DESIGNED IN ACCORDANCE WITH SEALED STRUCTURAL PLANS. ANY NEED TO CHANGE TRUSSES SHALL BE COORDINATED WITH SOUTHERN ENGINEERS.
2. TRUSS SCHEMATICS (PROFILES) SHALL BE PREPARED AND SEALED BY TRUSS MANUFACTURER.
3. ALL TRUSSES SHALL BE DESIGNED FOR BEARING ON SPF #2 OR #3 PLATES OR LEDGERS (UNO).
4. ALL REQUIRED ANCHORS FOR TRUSSES DUE TO UPLIFT OR BEARING SHALL MEET THE REQUIREMENTS AS SPECIFIED ON THE TRUSS SCHEMATICS.

HEADER/BEAM & COLUMN NOTES

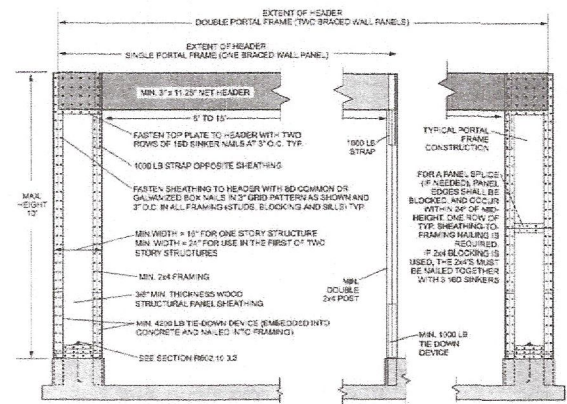
1. ALL EXTERIOR AND LOAD BEARING HEADERS SHALL BE MIN. (2) 2x4 (4" WALL) OR (3) 2x4 (4" WALL) WITH (1) SUPPORT STUD, UNLESS NOTED OTHERWISE.
2. THE NUMBER SHOWN AT BEAM AND HEADER SUPPORTS INDICATES THE NUMBER OF SUPPORT STUDS REQUIRED IN STUD POCKET OR COLUMN. THE NUMBER OF KING STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS SHALL BE ACCORDING TO TABLE R602.15 OR AS BELOW:
- UP TO 3' SPAN: (1) KING STUD
 - OVER 3' UP TO 4' SPAN: (2) KING STUDS
 - OVER 4' UP TO 9' SPAN: (3) KING STUDS
 - OVER 9' UP TO 12' SPAN: (4) KING STUDS
 - OVER 12' UP TO 15' SPAN: (5) KING STUDS



GARAGE 'WING WALL' REINFORCING PER IRC FIGURE R602.10.4.3



For SI: 1 inch = 25.4 mm.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.3 METHOD PFR: PORTAL FRAME WITH HOLD-DOWNS

BASIC BUILDING

DETAIL SHEET
(115/120 MPH)

*PLEASE NOTE THAT NOT ALL DETAILS APPLY TO EVERY PLAN.

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

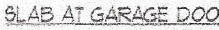
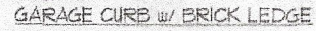
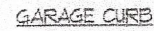
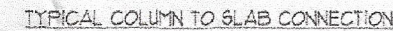
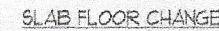
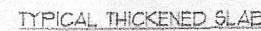
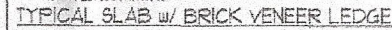
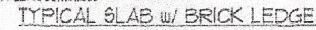
H SQUARED HOME DESIGN, INC.



ANY DEVIATION OF THE SPECIFIED HEADERS OR DIMENSIONS Voids SHALL BE THE DESIGN ENGINEER'S LIABILITY. THIS PLAN HAS BEEN DRAWN IN ACCORDANCE WITH THE NORTH CAROLINA STATE RESIDENTIAL BUILDING CODES 2018 EDITION.

DATE:

FILE:



NOTE: REBAR REQUIRED IN
HIGH WIND ZONES ONLY
(120 MPH - 130 MPH)
LOCATE REBAR MIN 3"
ABOVE BOTTOM OF
FOOTING w/ MIN. 25" LAP
SPlice LENGTH.

MONOLITHIC SLAB
FOUNDATION DETAILS

DATE MAY 17 1961
SCALE 1/4" = 1'-0"
DRAWN BY JSC
ENGINEERING BY ELL

FOUNDATION DETAILS