

REVIEWER'S SEAL

Project #  
25-274

Date:  
8-25-25

Drawn/Design By:  
KBB

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



9101 Ten-Ten Rd.  
Raleigh, NC 27603  
O: (919) 302-0693



1655 Oakridge  
River Rd.  
Addition

ATB Contracting, LLC.  
900 Maxwell Dr.  
Raleigh, NC 27603

ELEVATIONS

Sheet Number

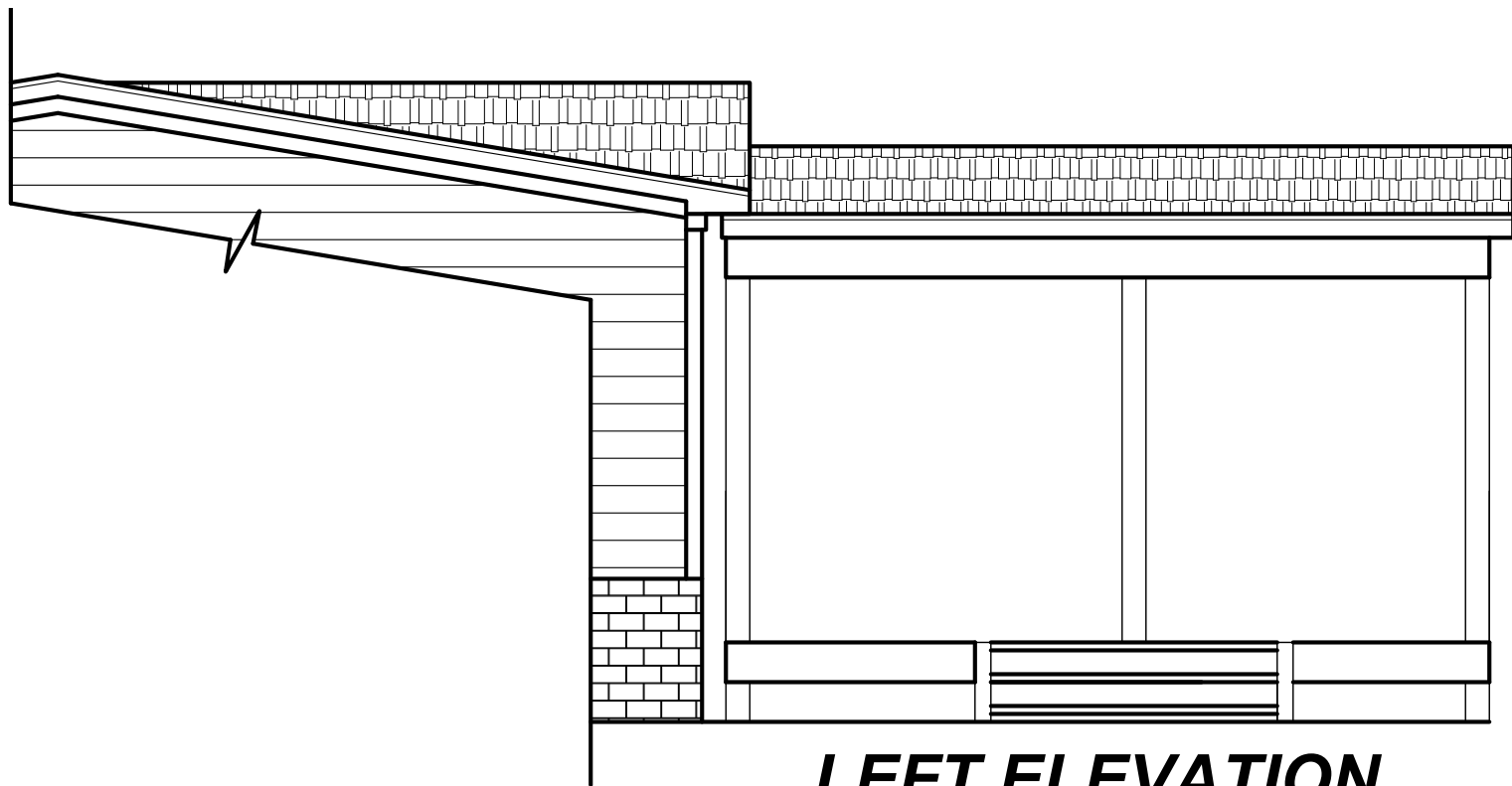
1

of 2

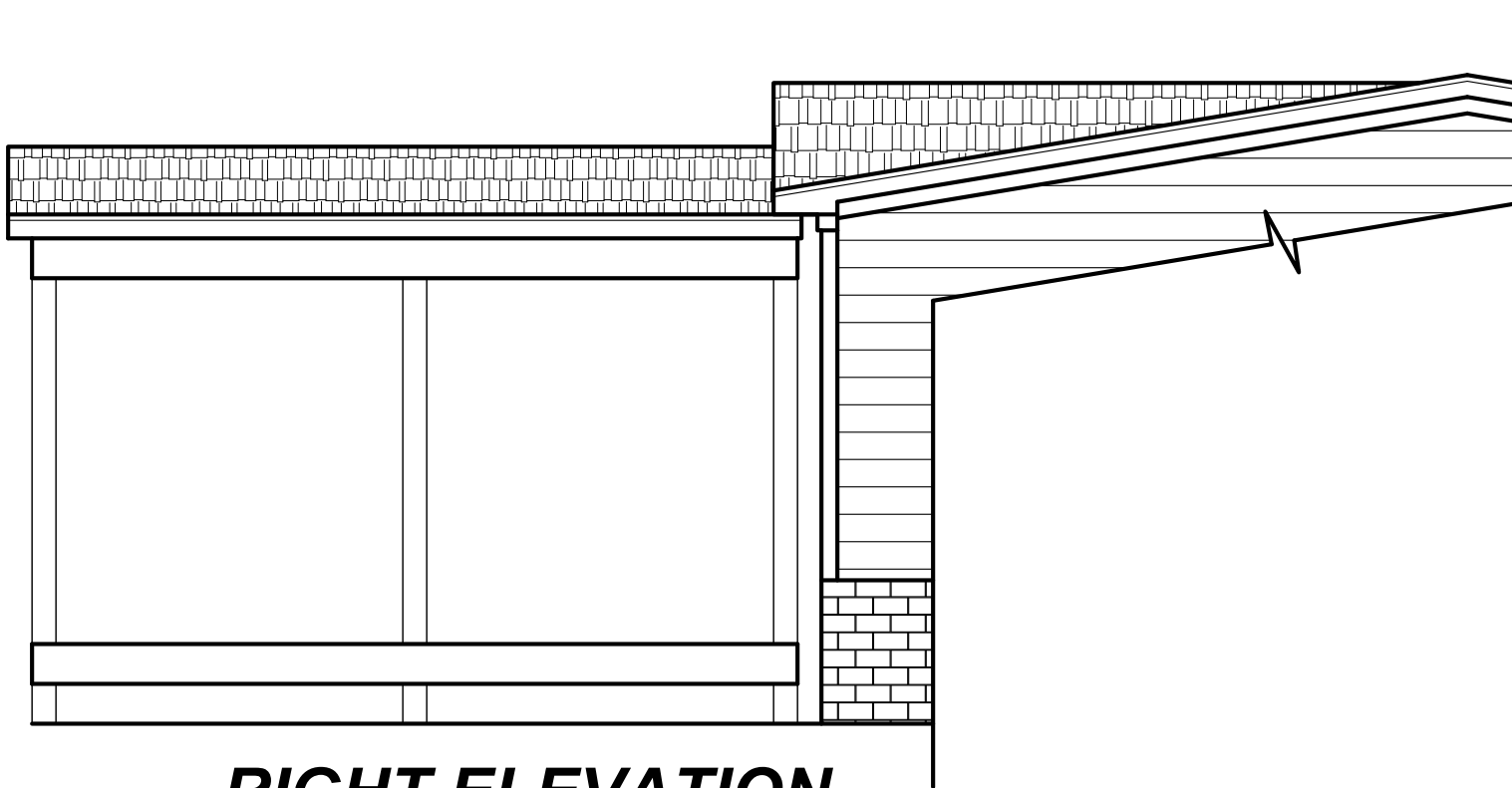
MATCH EXISTING  
1ST FLOOR  
CEILING HT.  
WIN. HDR.  
HGT  
MATCH EXISTING  
1ST F.F.



**FRONT ELEVATION**  
1/4" = 1'-0"



**LEFT ELEVATION**  
1/4" = 1'-0"



**RIGHT ELEVATION**  
1/4" = 1'-0"

A rectangular box with rounded corners, labeled "REVIEWER'S SEAL" at the top. The box is currently empty.

|                                |
|--------------------------------|
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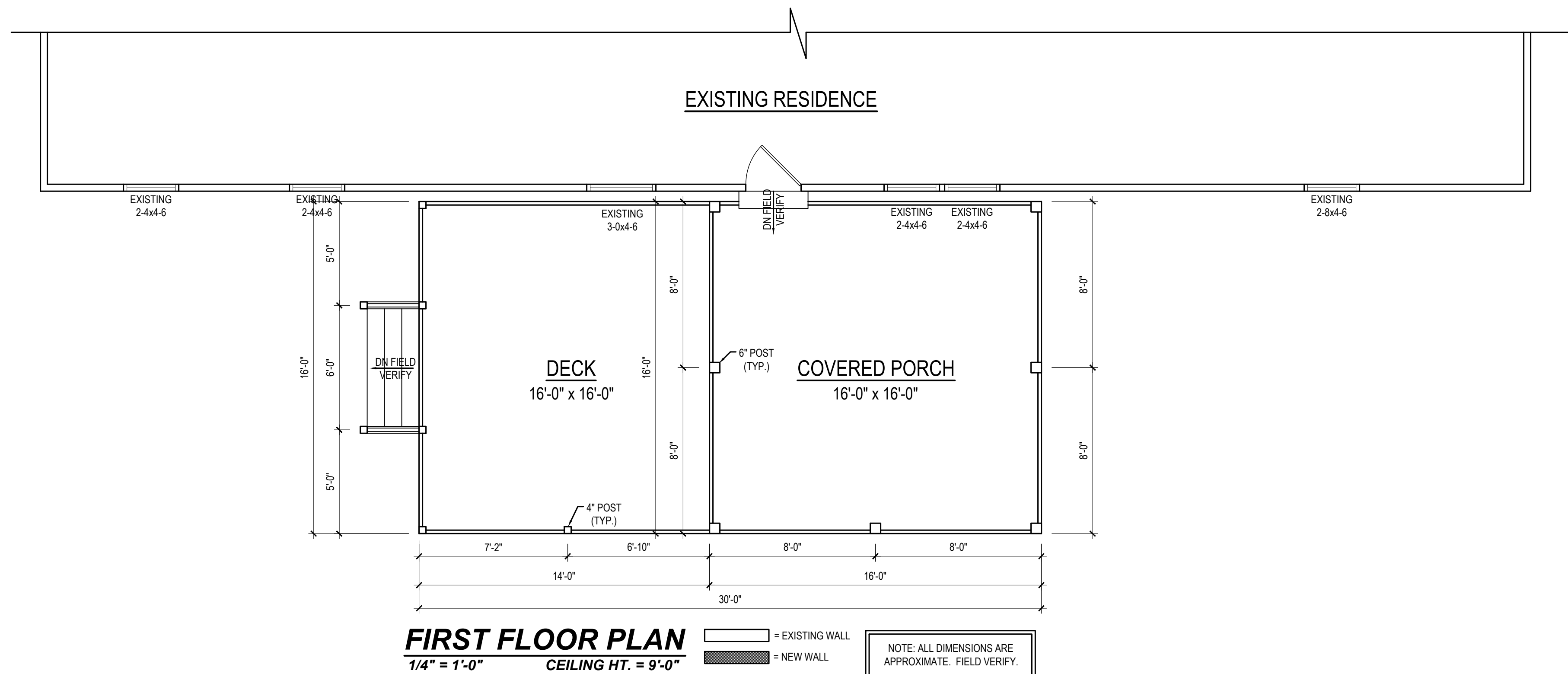
**ATB Contracting, LLC.**  
900 Maxwell Dr.  
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## FLOOR PLAN

**Sheet Number**

**2**

of 2





GENERAL NOTES:

- IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL DIMENSIONS, ROOF PITCHES, AND SQUARE FOOTAGE ARE CORRECT PRIOR TO CONSTRUCTION. K&A HOME DESIGNS, INC. IS NOT RESPONSIBLE FOR ANY DIMENSIONING, ROOF PITCH, OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
- ALL WALLS SHOWN ON THE FLOOR PLANS ARE DRAWN AT 4" UNLESS NOTED OTHERWISE.
- ALL ANGLED WALL SHOWN ON THE PLANS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
- STUD WALL DESIGN SHALL CONFORM TO ALL NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS.
- DO NOT SCALE PLANS. DRAWING SCALE MAY BE DISTORTED DUE TO COPIER IMPERFECTIONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA RESIDENTIAL STATE BUILDING CODE, 2024 EDITION.

SQUARE FOOTAGE

HEATED SQUARE FOOTAGE

|               |     |               |     |
|---------------|-----|---------------|-----|
| FIRST FLOOR=  | N/A | GARAGE=       | N/A |
| SECOND FLOOR= | N/A | COV. PORCH=   | 256 |
| THIRD FLOOR=  | N/A | SCREEN PORCH= | N/A |
| BASEMENT=     | N/A | DECK=         | 224 |
|               |     | STORAGE=      | N/A |

UNHEATED SQUARE FOOTAGE

TOTAL HEATED= N/A

TOTAL UNHEATED= 480

CRAWL SPACE VENTILATION CALCULATIONS

-VENT LOCATIONS MAY VARY FROM THOSE SHOWN ON THE PLAN BUT SHOULD BE PLACED TO PROVIDE ADEQUATE VENTILATION AT ALL POINTS TO PREVENT DEAD AIR POCKETS.

-100% VAPOR BARRIER MUST BE PROVIDED WITH 12" MIN. LAP JOINTS.

-THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/1500 AS LONG AS REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS-VENTILATION OF THE SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED. (COMPLY WITH NC CODE MIN. WITH REGARD TO VENT PLACEMENT FROM CORNERS)

N/A SQ. FT. OF CRAWL SPACE/1500

N/A SQ. FT. OF REQUIRED VENTILATION

PROVIDED BY: N/A VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= N/A SQ. FT. OF VENTILATION

\*\*FOUNDATION DRAINAGE- WATERPROOFING PER SECTIONS 405 & 406.

ATTIC VENTILATION CALCULATIONS

- CALCULATIONS SHOWN BELOW ARE BASED ON VENTILATORS USED AT LEAST 3 FT. ABOVE THE CORNICE VENTS WITH THE BALANCE OF VENTIALTION PROVIDED BE EAVE VENTS.

- CATHEDRAL CEILINGS SHALL HAVE A MIN. 1" CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DECK AND THE INSULATION.

256 SQ. FT. OF ATTIC/300= .85

EACH OF INLET AND OUTLET REQUIRED.

\*WALL AND ROOF CLADDING DESIGN VALUES

- WALL CLADDING IS DESIGNED FOR A 24.1 SQ. FT. OR GREATER POSITIVE AND NEGATIVE PRESSURE.

- ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:

45.5 LBS. PER SQ. FT. FOR ROOF PITCHES OF 0/12 TO 2.25/12

34.8 LBS. PER SQ. FT. FOR ROOF PITCHES OF 2.25/12 TO 7/12

21 LBS. PER SQ. FT. FOR ROOF PITCHES OF 7/12 TO 12/12

\*\* MEAN ROOF HEIGHT 30' OR LESS

STRUCTURAL NOTES

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF "NORTH CAROLINA STATE 2024 RESIDENTIAL BUILDING CODE", IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.

2) DESIGN LOADS:

|                          | LIVE LOAD (PSF)                     | DEAD LOAD (PSF) | DEFLECTION (DL & LL) |
|--------------------------|-------------------------------------|-----------------|----------------------|
| ALL FLOORS               | 40                                  | 10              | L/360                |
| ATTIC (pull down access) | 20                                  | 10              | L/240                |
| ATTIC (no access)        | 10                                  | 5               | L/240                |
| EXTERNAL BALCONY         | 60                                  | 10              | L/360                |
| ROOF                     | 20                                  | 10              | L/180                |
| ROOF TRUSS               | 20                                  | 20              | L/240                |
| WIND LOAD                | [BASED ON 120 MPH (3-second gusts)] |                 |                      |

3) MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF

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

5) MAXIMUM DEPTH OF UNBALANCED FILL AGAINST FOUNDATION WALLS TO BE LESS THAN 4'-0" WITHOUT USING SUFFICIENT WALL BRACING. REFER TO SECTION R404 OF 2024NC RESIDENTIAL BUILDING CODE FOR BACKFILL LIMITATIONS BASED ON WALL HEIGHT, WALL THICKNESS, SOIL TYPE, AND UNBALANCED BACKFILL HEIGHT

6) ALL FRAMING LUMBER SHALL BE SYP #2 (Fb = 800 PSI) UNO. ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.

7) ALL LOAD BEARING HEADERS SHALL BE (2)x10 (UNO). ALL WINDOW AND DOOR HEADERS SHALL BE SUPPORTED BY (1) JACK STUD AND (1) KING STUD AT EACH END UNLESS NOTED. ALL OTHER BEAMS SHALL BE SUPPORTED BY 2 STUDS OR THE AMOUNT OF STUDS REQUIRED FOR FULL BEARING AT EACH END UNLESS NOTED. POINT LOADS (STIFF KNEES, ETC.) SHALL CONSIST OF 2 STUDS UNLESS NOTED. ALL SUPPORTS OF 2 STUDS OR MORE SHALL BE TRANSFERRED THROUGH EACH FLOOR TO THE FOUNDATION.

8) ALL EXTERIOR WALLS TO BE SHEATHED WITH MIN. 7/16" WOOD STRUCTURAL PANELS FASTNED WITH 8D NAILS 6" O.C. AT EDGES AND 12" O.C. AT INT. SUPPORTS. BLOCKING SHALL BE INSTALLED IF LESS THAN 50 PERCENT OF THE WALL LENGTH IS SHEATHED. WHERE BLOCKING IS REQ'D, ALL PANELS SHALL BE FASTENED AT 3' O.C AT EDGES AND 6' O.C. AT INT. SUPPORTS.

9) ALL STRUCTURAL STEEL SHALL ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3'-12" 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 AND 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOISTS ARE TOE NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.

10) ANCHOR BOLT PLACEMENT PER SECTION R403.1.6. 1/2" DIAMETER ANCHOR BOLTS SPACED AT 6'-0" O/C AND PLACED 12" FROM THE END OF EACH PLATE SECTION

11) FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF 2024 NC RESIDENTIAL BUILDING CODE

12) WALL AND ROOF CLADDING VALUES:  
WALL CLADDING SHALL BE DESIGNED FOR A 24.1 SQ.FT. OR GREATER POSITIVE AND NEGATIVE PRESSURE  
ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:

45.5 LBS/SQFT FOR ROOF PITCHES OF 0/12 TO 2.25/12  
34.8 LBS/SQFT FOR ROOF PITCHES OF 2.25/12 TO 7/12  
21.0 LBS/SQFT FOR ROOF PITCHES OF 7/12 TO 12/12  
\*\* MEAN ROOF HEIGHT 30' OR LESS

13) FOR ROOF SLOPES FROM 2:12 THROUGH 4:12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER  
14) IT IS THE CONTRACTOR'S RESPONSIBLTY TO VERIFY ALL DIMENSIONS AND SQ. FTG. ARE CORRECT PRIOR TO CONSTRUCTION. DESIGNER IS NOT RESPONSIBLE FOR DIMENSIONING OR SQ. FTG. ERRORS ONCE CONSTRUCTION BEGINS

TABLE N1102.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

| CLIMATE ZONE | MAXIMUM GLAZING U-FACTOR | MINIMUM INSULATION R-VALUE |       |        |                |                |                   |
|--------------|--------------------------|----------------------------|-------|--------|----------------|----------------|-------------------|
|              |                          | CEILINGS                   | WALLS | FLOORS | BASEMENT WALLS | SLAB PERIMETER | CRAWL SPACE WALLS |
| 3            | .35                      | R-38 or R-30               | R-15  | R-19   | R-5/13         | R-0            | R-5/13            |
| 4            | .35                      | R-38 or R-30               | R-15  | R-19   | R-10/15        | R-10           | R-10/15           |

R905.2 references TABLE R905.1.1(2) which states that "For roof slopes from two units vertical in 12 units horizontal (2:12), up to four units vertical in 12 units horizontal (4:12), underlayment shall be two layers applied in the following manner: apply a 19-inch strip of underlayment felt parallel to and starting at the eaves. Starting at the eave, apply 36-inch-wide sheets of underlayment, overlapping successive sheets 19 inches. Distortions in the underlayment shall not interfere with the ability of the shingles to seal.

R301.5 is a table titled "MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (in pounds per square foot)". It states that the LIVE LOAD for Stairs is 40, with a note that states "Individual stair treads shall be designed for the uniformly distributed live load or a 300-pound concentrated load acting over an area of 4 square inches, whichever produces the greatest stress".

ALL DOORS LEADING TO DWELLING FROM THE GARAGE TO BE 20-MINUTE FIRE RATED DOOR PER NCRC R302.5.1

GARAGE TO BE SEPARATED FROM HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8-INCH TYPE X GYPSUM BOARD OR EQUIVALENT PER NCRC SECTION R302.6N

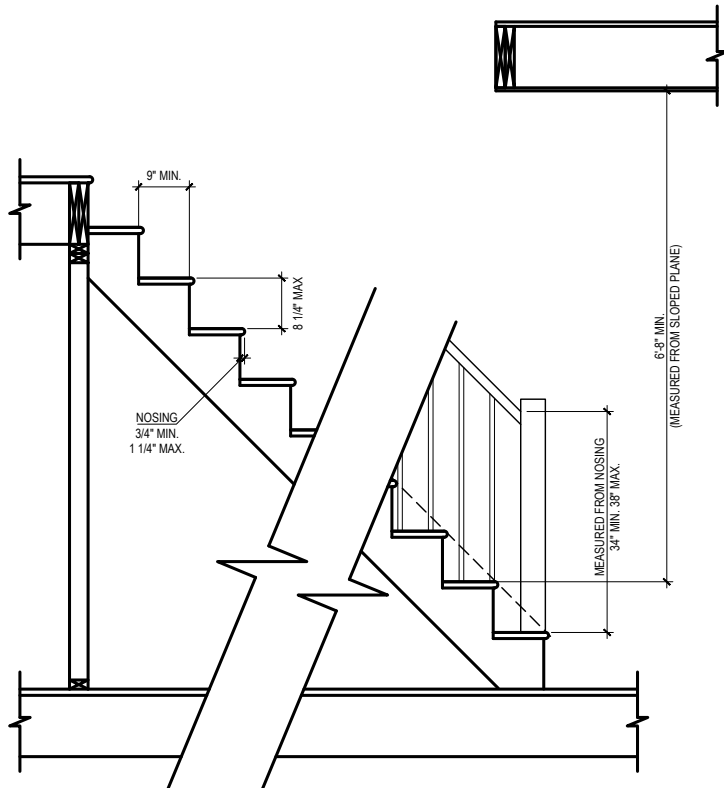
WINDOW FALL PROTECTION, PER NCRC SECTION R312.2

CARBON MONOXIDE ALARMS ARE REQUIRED TO BE INSTALLED OUTSIDE ALL SLEEPING AREAS PER NCRC SECTION R315

EMERGENCY ESCAPE AND RESCUE OPENINGS AS PER NCRC SECTION R310

PENETRATION SEALING:  
SEAL ALL PENETRATIONS IN FIRE-RATED WALLS, CEILINGS, OR FLOORS WITH UL-RATED FIRESTOP MATERIALS.

UL FIRESTOP SYSTEMS:  
W-L-1001: FOR SMALL PIPE PENETRATIONS IN WOOD STUD WALLS.  
C-A-J-1202: FOR PENETRATIONS THROUGH CEILINGS AND FLOOR ASSEMBLIES.



STAIRWAYS & GAURDS REQUIREMENTS PER 311.7 & R312

EACH TREAD AND RISER MUST BE UNIFORM. THE GREATEST RISER HEIGHT SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8". THE GREATEST TREAD DEPTH SHALL NOT EXCEED THE SMALLEST BY MORE THAN 3/8". THE TOP AND BOTTOM RISER OF INTERIOR STAIRS SHALL NOT EXCEED THE SMALLEST RISER BY MORE THAN 3/4".

R308.4.5 GLAZING & WET SURFACES:

GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING or FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS AND INDOOR or OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES, MEASURED VERTICALLY ABOVE ANY STANDING or WALKING SURFACE SHALL BE CONSIDERED TO BE A HAZARDOUS LOCATION. THIS SHALL APPLY TO SINGLE GLAZING AND EACH PANE IN MULTIPLE GLAZING.

EXCEPTION: GLAZING THAT IS MORE THAN 60 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, FROM THE WATER'S EDGE OF A BATHTUB, HOT TUB, SPA, WHIRLPOOL or SWIMMING POOL or FROM THE EDGE OF A SHOWER, SAUNA or STEAM ROOM

R807.1 ATTIC ACCESS:

AN ATTIC ACCESS OPENING SHALL BE PROVIDED TO ATTIC AREAS THAT EXCEED 400 SQUARE FEET (37.16 M<sup>2</sup>) AND HAVE A VERTICAL HEIGHT OF 60 INCHES (1524 MM) OR GREATER. THE NET CLEAR OPENING SHALL NOT BE LESS THAN 20 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.

EXCEPTION:

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

DWELLING / GARAGE SEPARATION (SECTION R302.5, R302.6 and R302.7):

WALLS - A MINIMUM 5/8" GYPSUM BOARD MUST BE INSTALLED ON ALL WALLS SUPPORTING FLOOR/CEILING ASSEMBLIES USED FOR SEPARATION REQUIRED BY THIS SECTION.  
OPENING PROTECTION - OPENINGS FROM A PRIVATE GARAGE DIRECTLY INTO A ROOM USED FOR SLEEPING PURPOSES SHALL NOT BE PERMITTED. OTHER OPENINGS BETWEEN THE GARAGE AND RESIDENCE SHALL BE EQUIPPED WITH SOLID WOOD DOORS NOT LESS THAN 1 3/4 INCHES (35MM) IN THICKNESS, SOLID or HONEYCOMB-CORE STEEL DOORS NOT LESS THAN 1 3/4 INCHES (35MM) THICK, or 20-MINUTE FIRE-RATED DOORS.  
DUCT PENETRATION - 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 GAUGE (0.48MM) SHEET STEEL or OTHER APPROVED MATERIAL AND SHALL NOT HAVE OPENINGS INTO THE GARAGE.

CEILINGS - GARAGE TO BE SEPARATED FROM HABITABLE ROOMS ABOVE BY NOT LESS THAN 5/8-INCH TYPE X GYPSUM BOARD OR EQUIVALENT PER NCRC SECTION R302.6N  
STAIRS - ENCLOSED ACCESSIBLE SPACE UNDER STAIRS SHALL HAVE WALLS, UNDER-STAIR SURFACE AND ANY SOFFITS PROTECTED ON THE ENCLOSED SIDE WITH 1/2 INCH (12.7MM) GYPSUM BOARD.  
OTHER PENETRATIONS - PENETRATIONS THROUGH THE SEPARATION REQUIRED IN SECTION R302.6 SHALL BE PROTECTED AS REQUIRED BY SECTION R302.11, ITEM 4.

R609.1 EXTERIOR WINDOWS & DOORS:

THIS SECTION PRESCRIBES PERFORMANCE AND CONSTRUCTION REQUIREMENTS FOR EXTERIOR WINDOWS AND DOORS INSTALLED IN WALLS. WINDOWS AND DOORS SHALL BE INSTALLED AND FLASHED IN ACCORDANCE WITH THE FENESTRATION MANUFACTURER'S WRITTEN INSTRUCTIONS. WINDOW AND DOOR OPENINGS SHALL BE FLASHED IN ACCORDANCE WITH SECTION R703.4. WRITTEN INSTALLATION INSTRUCTIONS SHALL BE PROVIDED BY THE FENESTRATION MANUFACTURER FOR EACH WINDOW OR DOOR.

SUMMARY OF REQUIREMENTS FOR MASONRY FIREPLACES AND CHIMNEYS

| ITEM                                                          | LETTER | REQUIREMENTS                                                                                                                                       |
|---------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| HEARTH SLAB THICKNESS                                         | A      | 4"                                                                                                                                                 |
| HEARTH EXTENSION (EACH SIDE OF OPENING)                       | B      | 8" FIREPLACE OPENING < 6 SQUARE FOOT<br>12" FIREPLACE OPENING < 6 SQUARE FOOT                                                                      |
| HEARTH EXTENSION (FRONT OF OPENING)                           | C      | 16" FIREPLACE OPENING < 6 SQUARE FOOT<br>20" FIREPLACE OPENING < 6 SQUARE FOOT                                                                     |
| HEARTH REINFORCING                                            | D      | REINFORCED TO CARRY ITS OWN WEIGHT AND ALL IMPOSED LOADS                                                                                           |
| THICKNESS OF WALL OF FIREBOX                                  | E      | 10" SOLID BRICK or 8" WHERE A FIREBRICK LINING IS USED<br>JOINTS IN FIREBRICK 1/4" MAXIMUM                                                         |
| DISTANCE FROM TOP OF OPENING TO THROAT                        | F      | 8"                                                                                                                                                 |
| SMOKE CHAMBER WALL THICKNESS UNLINED WALLS                    | G      | 6"<br>8"                                                                                                                                           |
| CHIMNEY VERTICAL REINFORCING                                  | H      | FOUR NO. 4 FULL-LENGTH BARS FOR CHIMNEY UP TO 40" WIDE<br>ADD TWO NO. 4 BARS FOR EACH ADDITIONAL 40" or FRACTION OF WIDTH or EACH ADDITIONAL FLUE. |
| HORIZONTAL REINFORCING                                        | J      | 1/4" TIES AT 18" AND TWO TIES AT EACH BEND IN VERTICAL STEEL                                                                                       |
| BOND BEAMS                                                    | K      | NO SPECIFIED REQUIREMENTS                                                                                                                          |
| FIREPLACE LINTEL                                              | L      | NONCOMBUSTIBLE MATERIAL                                                                                                                            |
| CHIMNEY WALLS WITH FLUE LINING                                | M      | SOLID MASONRY UNITS or HOLLOW MASONRY UNITS GROUTED<br>SOLID WITH NOT LESS THAN 4-INCH NOMINAL THICKNESS                                           |
| DISTANCE BETWEEN ADJACENT FLUES                               | --     | SEE SECTION R1003.13                                                                                                                               |
| EFFECTIVE FLUE AREA (BASED ON AREA OF FIREPLACE OPENING)      | P      | SEE SECTION R1003.15                                                                                                                               |
| CLEARANCES COMBUSTIBLE MATERIAL MANTEL AND TRIM ABOVE ROOF    | R      | SEE SECTION R1001.11 AND R1003.18<br>SEE SECTION R1001.11, EXCEPTION 4<br>3' AT ROOFLINE AND 2' AT 10'                                             |
| ANCHORAGE STRAP NUMBER EMBEDMENT INTO CHIMNEY FASTEN TO BOLTS | S      | 3/16" x 1" TWO<br>12" HOOKED AROUND OUTER BAR WITH 6" EXTENSION<br>4 JOISTS<br>THREE 1/2" DIAMETER                                                 |
| FOOTING THICKNESS WIDTH                                       | T      | 12" MIN<br>12" EACH SIDE OF FIREPLACE WALL                                                                                                         |

NOTE: THIS TABLE PROVIDES A SUMMARY OF MAJOR REQUIREMENTS FOR THE CONSTRUCTION OF MASONARY CHIMNEYS AND FIREPLACES. LETTER REFERENCES ARE TO FIGURE R1001.1(NORTH CAROLINA STATE 2024 RESIDENTIAL BUILDING CODE), WHICH SHOWS EXAMPLES OF TYPICAL CONSTRUCTION. THIS TABLE DOES NOT COVER ALL REQUIREMENTS, NOR DOES IT COVER ALL ASPECTS OF THE INDICATED REQUIREMENTS. FOR THE ACTUAL MANDATORY REQUIREMENTS OF THE CODE, SEE THE INDICATED SECTION OF TEXT.

- THE LETTERS REFER TO FIGURE R1001.1 OF THE NORTH CAROLINA STATE 2024 RESIDENTIAL BUILDING CODE
- NOT REQUIRED IN SEISMIC DESIGN CATEGORY A, B, or C

REVIEWER'S SEAL

EXTERIOR WALL CAVITY INSULATION SHALL BE ENCLOSED ON ALL SIDES WITH RIGID OR AN AIR BARRIER MATERIAL: BEHIND TUBS, SHOWERS, STAIRS, FIRE PLACES AND KNEE WALLS. PER NCRC SECTION N1102.2.12

CRAWLSPACE ACCESS NEEDS TO BE A MINIMUM OPENING MEASURING 18 INCHES BY 24 INCHES PER NCRC SECTION R408.8

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GENERAL NOTES

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1. 2018 NORTH CAROLINA STATE BUILDING CODES
2. ASCE 7-10
3. DESIGN LOADS
- LIVE LOAD (ROOF) = 20 PSF
- LIVE LOAD (CEILING-NO STORAGE) = 10 PSF
- LIVE LOAD (FLOOR) = 40 PSF
- GROUND SNOW LOAD = 15 PSF
- ULTIMATE WIND VELOCITY = 120 MPH
- EXPOSURE CATEGORY = B
- ASSUMED GROUND BEARING CAPACITY 12" B  
RESPONSIBLE FOR VERIFICATION)

1. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION.
2. THE CONTRACTOR SHALL COORDINATE THEIR WORK ACTIVITIES WITH THE OWNER OR OWNER REPRESENTATIVE.
3. CONTRACTOR SHALL MAKE A CAREFUL INSPECTION OF THE SITE TO FAMILIARIZE HIM/HERSELF WITH THE ACTUAL CONDITIONS OF THE SITE PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL CHECK AND VERIFY GIVEN DIMENSIONS, TAKE ADDITIONAL DIMENSIONS AS REQUIRED AND REPORT ANY INACCURACIES TO THE ENGINEER.
5. ALL WORK SHALL CONFORM TO THE THE CURRENT EDITIONS OF THE NORTH CAROLINA STATE BUILDING CODE, THE AISC CODE, THE ACI BUILDING CODE (ACI 318), THE AMERICAN WELDING SOCIETY CODE, ALL APPLICABLE ASTM STANDARDS, AND LOCAL GUIDELINES. IN CASES OF CONFLICT, THE MOST STRINGENT REQUIREMENT SHALL GOVERN.
6. CONTRACTOR SHALL COORDINATE AND VERIFY THE SIZE, LOCATION, TYPE, AND DIRECTION OF ALL PADS, DEPRESSIONS, BOLTS, SLEEVES, ANCHORS, INSERTS, OPENINGS, ETC. TO BE SET OR CAST IN CONCRETE OR MASONRY PRIOR TO PLACEMENT.
7. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO FOUNDATION LAYOUT AND FABRICATION OF ANY STRUCTURAL MEMBERS. DIMENSIONS SHOWN ARE BASED ON PRELIMINARY DRAWINGS PROVIDED BY THE ARCHITECT/CONTRACTOR AND/OR SITE INSPECTION. THESE DIMENSIONS SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
8. CONTRACTOR SHALL DESIGN AND INSTALL ALL TEMPORARY SHORING REQUIRED TO STABILIZE NEW AND EXISTING STRUCTURES AND FOUNDATIONS UNTIL CONSTRUCTION IS COMPLETE.
9. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, SPECIFICATIONS, NOTES, AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, AND RESOLVED BEFORE PROCEEDING WITH WORK.
10. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THE STRUCTURE SHOWN IS STRUCTURALLY SOUND IN IT'S COMPLETED FORM ONLY. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION.
11. APPLY TERMITE TREATMENT TO GROUND SURFACES WITHIN THE DEFINED SCOPE OF WORK AS REQUIRED BY CODE AND LOCAL BUILDING INSPECTOR.
12. ONLY SEALED DRAWINGS WITH MOST RECENT REVISIONS ARE APPLICABLE FOR CONSTRUCTION.
13. STRUCTURAL PLANS DO NOT INCORPORATE ADA, PLUMBING, MECHANICAL, ELECTRICAL, OR SITE FEATURES. ENGINEER'S SEAL APPLIES TO STRUCTURAL COMPONENTS ONLY.
14. SECTIONS AND DETAILS SHOWN AT LOCATIONS INDICATED ON PLAN ARE TYPICAL FOR OTHER SIMILAR CONDITIONS OF BUILDING, EVEN IF NO SECTION CUT IS INDICATED AT A SIMILAR CONDITION. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL DETAILS WITH OTHER TRADES, DISCIPLINES, AND ALL SECTIONS AND DETAILS WITHIN STRUCTURAL DOCUMENTS. CONTRACTOR SHALL COORDINATE THESE STRUCTURAL DRAWINGS WITH DRAWINGS OF OTHER DISCIPLINES. SHOULD CONFLICTS OR DEVIATIONS BE NOTED, THEY SHOULD BE IMMEDIATELY BROUGHT TO THE ATTENTION OF SUBJECT DESIGNERS FOR REVIEW.
15. IN THE CASE WHERE NEW STRUCTURE IS INTEGRATED INTO EXISTING STRUCTURE, THE EXISTING STRUCTURE IS TO REMAIN UNMODIFIED UNLESS EXPLICITLY DESCRIBED IN THE DESIGN PLANS. ANY DAMAGE TO EXISTING STRUCTURE IDENTIFIED DURING CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OR REVIEW PRIOR TO RESUMING WORK.
16. THE SCOPE OF THIS PROJECT IS CONTAINED IN THIS DRAWING AND WAS PERFORMED ON A FLAT RATE U.N.O. THE ENGINEER'S PROFESSIONAL LIMIT OF LIABILITY FOR THIS PROJECT IS 10 TIMES THE FEES COLLECTED.

1. ALL BOTTOM OF FOOTINGS SHALL BE CAST A MINIMUM OF 12" BELOW ORIGINAL GROUND LINE AND IN NO CASE ABOVE THE FROST LINE BASED ON 2018 NCBC AND LOCAL STANDARDS. NO FOOTINGS SHALL BE CAST ON LOOSE FILL MATERIAL.
2. ALL FILL SHALL BE PLACED IN 8" MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-698 (STANDARD PROCTOR METHOD). THIS REQUIREMENT SHALL BE INCREASED TO 98 PERCENT OF ASTM D-698 IN THE FINAL FOOT BENEATH FLOOR SLABS AND PAVEMENTS.
3. ONCE FOOTINGS ARE ABLE TO HANDLE LATERAL LOADING, BACKFILL WITH ENGINEERED STONE OR NO. 57 STONE IN 8" UNIFORM LIFTS. EXTERIOR OF THE FOOTING MAY BE BACKFILLED WITH 8" UNIFORM LIFTS OF SUITABLE SOILS COMPACTED TO 95% OF THE DRY DENSITY BEYOND THE PLACEMENT OF THE FOOTING DRAIN.
4. A 10 MIL VAPOR BARRIER IS TO BE PLACED OVER THE ENTIRETY OF THE SUB-BASE, PRIOR TO PLACEMENT OF THE FLOOR INSULATION AND ANY CONCRETE SLAB-ON-GRADE. WITHIN CRAWL SPACES A MINIMUM 6-MIL VAPOR BARRIER SHALL BE INSTALLED ON BARE SOILS.

1. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES," ACI 315.
2. CLEAR CONCRETE COVER OVER BARS SHALL BE 3" FOR FOOTINGS AND OTHER CONCRETE CAST AGAINST GROUND. CONCRETE COVER IN OTHER LOCATIONS TO BE A MINIMUM 1.5" (TYP. U.N.O.)
3. PROVIDE CORNER BARS AT ALL FOOTING STEPS AND CORNERS. THE REINFORCING BARS SHALL BE A MINIMUM OF 2'-6" LONG AND SHALL HAVE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCING.
4. LAP ALL SPLICES IN CONCRETE AS SPECIFICALLY CALLED FOR, BUT AT LEAST 48 BAR DIAMETERS FOR TENSION OR COMPRESSION, UNLESS NOTED OTHERWISE.
5. PROVIDE VERTICAL REINFORCEMENT IN FOUNDATION WALLS FOR UNBALANCED BACKFILL IN ACCORDANCE WITH APPLICABLE DESIGN DETAILS. WHERE NOT DETAILED IN PLAN, REINFORCEMENT SHALL BE INSTALLED PER TABLE R404.1.1(1) & (2) IN THE 2018 NBCB:RC.
6. REINFORCING BARS SHALL BE DEFORMED AND CONFORMING TO ASTM A615, GRADE 60.
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064 AND BE SUPPLIED IN SHEETS, NOT ROLLS, U.N.O. MINIMUM 6X6 - W2.9 X W2.9 WELDED WIRE FABRIC. MINIMUM 1.5" FROM BOTTOM OF CONCRETE SLAB ON GRADES. AS AN ALTERNATIVE TO WELDED WIRE FABRIC REINFORCEMENT, FIBER REINFORCEMENT AT 1.5 POUNDS PER CUBIC YARD MAY BE UTILIZED.

1. CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (LATEST EDITION), ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (LATEST EDITION), AND ACI 302 "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" (LATEST EDITION).
2. MIX DESIGN SHALL BE IN ACCORDANCE WITH ACI 318 (CURRENT EDITION).

3. MINIMUM CEMENT CONTENT = 500 LBS PER CUBIC YARD.
4. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE AND SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS (3,000 PSI FOR SLABS-ON-GRADE).
5. MAXIMUM SLUMP = 4" PLUS OR MINUS 1" PRIOR TO THE ADDITION OF ADMIXTURES.
6. THE MAX. AGGREGATE SIZE SHALL BE 3/4" UNLESS MIX DESIGN IS APPROVED BY ENGINEER PRIOR TO PLACEMENT.
7. CONCRETE AGGREGATES SHALL COMPLY WITH ASTM C33 AND SHALL BE FREE OF CLAY, FOAM, LUMPS, OR OTHER DELETERIOUS SUBSTANCES.
8. CONCRETE SHALL BE CONSOLIDATED USING CONCRETE VIBRATOR IN ACCORDANCE WITH ACI 309R-05.
9. EXTERIOR SLABS SHALL HAVE 6%  $\pm$  1% AIR ENTRAINMENT. DO NOT USE AIR ENTRAINMENT ON INTERIOR SLABS (3% MAXIMUM AIR ENTRAINMENT). AIR ENTRAINMENT SHALL COMPLY WITH ASTM C260.
10. THE CONTROL JOINT SPACING SHALL BE A MAXIMUM OF 12' OR AS SHOWN ON PLANS FOR A 4" THICK SLAB. PLACE CONTROL JOINTS TO AVOID RE-ENTRANT CORNERS. MAKE SAWCUTS TO FORM WEAKEN PLANE CONTROL JOINTS AS SOON AS POSSIBLE.

1. MORTAR MATERIALS:  
PORTLAND CEMENT, ASTM C150, TYPE 1  
MASONRY CEMENT, ASTM C91, TYPE "S" FOR STD. STRENGTH  
CMU, TYPE "M" FOR HIGH STRENGTH CMU
2. HORIZONTAL JOINT REINFORCEMENT  
--- 9 GAUGE, GALVANIZED STEEL WIRE, LADDER TYPE FOR MULTIPLE WYTHE WALLS, TRUSS  
TYPE FOR SINGLE WYTHE WALLS.  
--- LIGHTWEIGHT CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 FOR LOAD  
BEARING CONCRETE MASONRY UNITS. MINIMUM NET AREA COMPRESSIVE STRENGTH OF  
1900 PSI. SEE DETAILS FOR LOCATIONS OF HIGH STRENGTH CMU (FM = 4800 PSI).
3. GROUT FOR USE IN MASONRY WALLS SHALL CONFORM TO ASTM C476 WITH A MINIMUM  
COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. GROUT MIX SHALL HAVE MAXIMUM SLUMP  
OF 8".
4. CONCRETE MASONRY UNITS SHALL BE LAID IN RUNNING BOND WITH FULL MORTAR COVERAGE  
ON HORIZONTAL AND VERTICAL FACE SHELLS AND WEBS. USE HORIZONTAL JOINT  
REINFORCEMENT AT 16" CENTERS IN ALL CMU WALLS, UNLESS NOTED OTHERWISE. GROUT  
SOLID ALL CELLS AND COURSES WITH BAR REINFORCEMENT AND GROUT SOLID ALL CELLS  
BELOW GRADE.
5. THE SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF LOAD BEARING CONCRETE  
MASONRY UNITS AS PUBLISHED BY THE NATIONAL CONCRETE MASONRY ASSOCIATION SHALL  
APPLY FOR ALL CONCRETE MASONRY UNITS, LOAD BEARING CONSTRUCTION.

1. FRAMING STANDARD: COMPLY WITH AF&PA'S "DETAILS FOR CONVENTIONAL WOOD FRAME CONSTRUCTION", UNLESS OTHERWISE INDICATED.
2. ALL EXTERIOR WALLS SHALL BE FRAMED WITH 2x4 STUDS SPACED AT 16" O.C., U.N.O. (MAXIMUM HEIGHT = 10'-0")
3. ALL INTERIOR WALLS SHALL BE FRAMED WITH 2X4 STUDS SPACED AT 16" O.C., U.N.O. (MAXIMUM HEIGHT = 10'-0")
4. ALL WALLS TO BE BALLOON FRAMED FROM BOTTOM PLATE TO TOP PLATE, U.N.O. SPECIAL CARE SHALL BE OBSERVED DURING CONSTRUCTION OF WALLS WITH STUDS GREATER THE 10' IN HEIGHT TO ENSURE CONTINUITY.
5. USE 12"-LONG 1/2" DIAMETER ANCHOR BOLTS, 7" MINIMUM EMBEDMENT IN CONCRETE, AT A MAXIMUM OF 6' ON CENTER AND A MAXIMUM OF 12" FROM CORNERS AND OPENINGS EXCEEDING 4' IN WIDTH.
6. NAIL 2X BOTTOM PLATE TO RIM JOIST BELOW WITH 16D NAILS AT 4" O/C SPACING.
7. METAL FRAMING ANCHORS: INSTALL METAL FRAMING ANCHORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
- DO NOT SPLICE BUILT-UP BEAM MEMBERS BETWEEN SUPPORTS UNLESS OTHERWISE IN
8. WHERE BUILT-UP BEAMS OR GIRDERS OF 2-INCH NOMINAL DIMENSIONAL LUMBER ON EDGE ARE REQUIRED, FASTEN TOGETHER WITH 3 ROWS OF 16D NAILS SPACED NOT LESS THAN 24" O.C. LOCATED ONE ROW 1.5" FROM TOP EDGE AND ONE ROW 1.5" FROM BOTTOM EDGE.
9. WHERE MULTI-PLY LVL BEAMS ARE REQUIRED, FASTEN TOGETHER WITH 2 ROWS OF FASTENMASTER FLATLOK STRUCTURAL WOOD SCREWS, EACH ROW SPACED 16". USE 3.5" LONG FLATLOK SWS FOR 2-PLY LVL; USE 5" LONG SWS FOR 3-PLY LVL; USE 6.5" LONG FLATLOK SWS FOR 4-PLY LVL. LONGER SCREWS SHALL BE NECESSARY IF PLYWOOD OR OSB SPACERS ARE INSTALLED BETWEEN LVL PLIES.
10. FOR BUILT-UP (GANG) COLUMNS, CONNECT EACH PLY W/ (2) ROWS OF 10D NAILS AT 12" O/C. PROVIDE HORIZONTAL STRAPPING FOR COLUMN PLIES GREATER THAN 3.
11. INSTALL EQUIVALENT, SOLID BLOCKING BELOW ALL STUD GROUPS TO ENSURE CONTINUOUS LOAD PATH TO THE FOUNDATION.
12. FLOOR TO FLOOR STRAP TIES: LAP EXTERIOR SHEATHING PANELS AT LEAST 24" ABOVE BOTTOM PLATE OR BELOW TOP PLATE.
13. SEE FRAMING PLANS FOR ALL BEARING HEADER SIZES. MINIMUM HEADER SIZE 2-2x8 (U.N.O.).
14. ALL ROOF FRAMING MUST BE TIED TO THE FRAMING BELOW WITH SIMPSON H2.5A TIES, TRUSS SCREWS, OR EQUIVALENT FASTENING MECHANISM.
15. ALL LUMBER EXPOSED TO CONCRETE/MASONRY OR WEATHER MUST BE PRESSURE TREATED.
16. ALL FASTENERS/METAL HARDWARE EXPOSED TO WEATHER MUST BE GALVANIZED.
17. ALL FASTENING SHALL CONFORM TO TABLE R602.3(1) IN THE 2018 NBCB:RC.
18. ALL DECK FRAMING COMPONENTS ARE TO BE INSTALLED PER 2018 NBCB:RC APPENDIX M.
19. PROVIDE KING STUDS AT NEW EXTERIOR OPENINGS PER 2018 NBCB:RC TABLE R602.3(5) SUBNOTE "d". "ONE HALF OF THE STUDS INTERRUPTED BY A WALL OPENING SHALL BE PLACED IMMEDIATELY OUTSIDE THE JACK STUDS ON EACH SIDE OF THE OPENING AS KING STUDS ... KING STUDS SHALL EXTEND FULL HEIGHT FROM SOLE PLATE TO TOP PLATE OF WALL"
20. PROVIDE SIMPSON LVL HANGERS AT FLUSH CONNECTIONS FOR FLOOR FRAMING U.N.O.
21. PROVIDE DOUBLE JOISTS BELOW INTERIOR WALLS PARALLEL TO THE FLOOR FRAMING U.N.O.
22. PROVIDE STEEL ANGLE LINTELS ABOVE EXTERIOR OPENINGS TO SUPPORT MASONRY VENEER PER TABLE R703.8.3.1.

1. MAXIMUM MOISTURE CONTENT: 19%.
2. NO. 2 GRADE OR BETTER (EXCEPT STUD WALLS) AND ANY OF THE FOLLOWING SPECIES:
  - HEM-FIR (NORTH), NLGA.
  - SOUTHERN PINE, SPIB.
  - DOUGLAS FIR-LARCH, WCLIB OR WWPA.
  - MIXED SOUTHERN PINE, SPIB.
  - SPRUCE-PINE-FIR, NLGA.
  - DOUGLAS FIR-SOUTH, WWPA.
  - HEM-FIR, WCLIB OR WWPA.
  - DOUGLAS FIR-LARCH (NORTH), NLGA.
3. EXTERIOR, LOAD BEARING AND INTERIOR PARTITION WALLS: ANY SPECIES (STUD GRADE OR BETTER) WITH A MODULUS OF ELASTICITY OF AT LEAST 1,300,000 PSI AND EXTREME FIBER STRESS IN BENDING OF AT LEAST 650 PSI FOR 2" NOMINAL THICKNESS AND 12" NOMINAL WIDTH FOR A SINGLE MEMBER USE.
4. JOISTS, RAFTERS, AND OTHER FRAMING NOT LISTED ABOVE: ANY SPECIES (NO. 2 OR BETTER) WITH A MODULUS OF ELASTICITY OF AT LEAST 1,300,000 PSI AND AN EXTREME FIBER STRESS IN BENDING OF AT LEAST 850 PSI FOR 2" NOMINAL THICKNESS AND 12" NOMINAL WIDTH FOR SINGLE MEMBER USE.
5. USE ONLY KILN DRIED PRESSURE TREATED 2X FOR BLOCKING AT PIERS.

1. LAMINATED VENEER LUMBER: STRUCTURAL COMPOSITE LUMBER MADE FROM WOOD VENEERS WITH GRAIN PRIMARILY PARALLEL TO MEMBER LENGTHS, EVALUATED AND MONITORED ACCORDING TO ASTM D5456 AND MANUFACTURED WITH AN EXTERIOR-TYPE ADHESIVE COMPLYING WITH ASTM D2559 AND CONTAINING NO UREA FORMALDEHYDE.
2. AVAILABLE MANUFACTURERS: SUBJECTS TO COMPLIANCE WITH REQUIREMENTS. MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
  - BOISE CASCADE CORPORATION
  - GEORGIA-PACIFIC
  - LOUISIANA-PACIFIC CORPORATION
  - ROSEBURG FOREST PRODUCTS CO.
  - WELDWOOD OF CANADA LIMITED, SUBSIDIARY OF INTERNATIONAL PAPER COMPANY
  - WEYERHAEUSER COMPANY

EXTREME FIBER STRESS IN BENDING, EDGEWISE: 3,000 PSI FOR 12" NOMINAL DEPTH MEMBERS.  
MODULUS OF ELASTICITY, EDGEWISE: 2,000,000 PSI.

3. WRAPPING, WEATHER PROOFING, AND FLASHING REQUIREMENTS/SPECIFICATIONS AT ENGINEERED WOOD MEMBERS SHALL BE DETERMINED BY OTHERS.
4. PARALLEL-STRAND LUMBER: STRUCTURAL COMPOSITE LUMBER MADE FROM WOOD STAND ELEMENTS WITH GRAIN PRIMARILY PARALLEL TO MEMBER LENGTHS, EVALUATED AND MONITORED ACCORDING TO ASTM D5456 AND MANUFACTURED WITH AN EXTERIOR-TYPE ADHESIVE COMPLYING WITH ASTM D2559 AND CONTAINING NO UREA FORMALDEHYDE.  
EXTREME FIBER STRESS IN BENDING, EDGEWISE: 2,900 PSI FOR 12" NOMINAL DEPTH MEMBERS.  
MODULUS OF ELASTICITY, EDGEWISE: 2,200,000 PSI.

1. UNLESS NOTED OTHERWISE: SHEATH ROOF AND WALLS WITH EXPOSURE 1, 7/16"-THICK APA RATED OSB (SPAN RATING 32/16) WITH 8D NAILS AT 6" O/C EDGES, 12" O/C FIELD, BLOCKING NOT REQUIRED AT PANEL EDGES AT ROOF SHEATHING.
2. WHERE TOP CHORD IS DISCONTINUOUS, APPLY MSTC40 STRAP TO COMPLETE THE TENSILE LOAD PATH. POSITION TOP CHORD SPLICES OVER WALL STUDS.
3. INSTALL "H" CLIPS AT PANEL EDGES BETWEEN EACH RAFTER/TRUSS FOR ALL ROOF SHEATHING WITH RAFTER SPACING GREATER THAN 24".
4. NAIL ALL SHEATHING AT GABLE AND EAVE ROOF OVERHANGS WITH 8D NAILS AT 6" O/C EDGES, 6" O/C FIELD.
5. NAIL ALL SHEATHING AT PERIMETER AND PEAK OF ROOF WITH 8D NAILS AT 6" O/C EDGES, 6" O/C FIELD.
6. NAIL ALL SHEATHING WITHIN 4'-0" OF WALL CORNERS WITH 8D NAILS AT 6" O/C EDGES, 12" O/C FIELD.
7. SUBFLOORING SHALL BE IN ACCORDANCE WITH TABLE R503.1 WITHIN RESIDENTIAL BUILDING CODE OR ENGINEER APPROVED ALTERNATIVE.
8. MEMBERS AND BLOCKING AT ADJOINING PANEL EDGES SHALL BE MINIMUM 3" NOMINAL OR DOUBLE 2" NOMINAL WITH STAGGERED NAILING AT ALL PANEL EDGES.
9. HORIZONTAL BLOCKING MAY BE 2X LAID FLAT AGAINST SHEATHING.
10. AT EXISTING STRUCTURE WHERE SHEATHING IS IN PLACE, NEW SHEATHING SHALL BE KEYED IN A MINIMUM OF 2' WITHIN EVERY OTHER SHEATHING PANEL.

1. PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIED IN THIS ARTICLE FOR MATERIAL AND MANUFACTURER.
2. WHERE ROUGH CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, OR IN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIPPED ZINC COATING COMPLYING WITH ASTM A153 A153M.
3. POWER DRIVEN FASTENERS: CABO NER-272  
WOOD SCREWS: ASTM B18.6.1  
LAG BOLTS: ASME B18.2.1
- BOLTS: STEEL BOLTS COMPLYING WITH ASTM A-307, GRADE 1 (ASTM F568M, PROPERTY CLASS 4.6); WITH ASTM A563 (ASTM A563M) HEX NUTS AND, WHERE INDICATED, FLAT WASHERS.
4. EXPANSION ANCHORS: ANCHOR BOLTS AND SLEEVE ASSEMBLY OF MATERIAL INDICATED BELOW WITH CAPABILITY TO SUSTAIN, WITHOUT FAILURE, A LOAD EQUAL TO 6 TIMES THE LOAD IMPOSED WHEN INSTALLED IN UNIT MASONRY ASSEMBLIES AND EQUAL TO 4 TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE AS DETERMINED BY TESTING PER ASTM E488 CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY.
5. MATERIAL: CARBON-STEEL COMPONENTS, ZINC PLATED TO COMPLY WITH ASTM B633, CASS FE/ZN 5.

1. ALL EPOXY SHALL BE SIMPSON BRAND "SET" EPOXY SYSTEM, OR APPROVED EQUAL, UNLESS NOTED OTHERWISE.
2. EPOXY ADHESIVES TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
3. ALL EPOXY ANCHOR BOLTS TO BE SIZED AS SHOWN IN NOTES/DETAILS AND SHALL CONFORM TO THE FOLLOWING:
  - ANCHOR BOLTS INTO FOUNDATION: ASTM F1554, GRADE 36
  - ALL OTHER APPLICATIONS: ASTM 307, U.N.O.
4. ALL EPOXY ANCHOR BOLTS AND REBAR DOWELS SHOULD BE CLEAN AND OIL FREE.
5. CONCRETE DUST SHALL BE REMOVED FROM ALL DRILLED HOLES BY USE OF A NYLON BRUSH AND OIL FREE COMPRESSED AIR. CORRECT PROCEDURE INVOLVES BLOWING THE DUST OUT OF THE HOLE, BRUSHING THE HOLE CLEAN, AND THEN BLOWING AGAIN.
6. DRILLED HOLES SHALL BE KEPT DRY AND ANY STANDING WATER MUST BE BLOWN OUT WITH OIL FREE COMPRESSED AIR AND ALLOWED TO DRY PRIOR TO EPOXY INSTALLATION.
7. EPOXY SHALL NOT BE INSTALLED IN CONCRETE WHICH IS LESS THAN 7 DAYS OLD.
8. EPOXY ADHESIVES MUST BE ALLOWED THE FULL CURE TIME AS SPECIFIED BY THE MANUFACTURER PRIOR TO APPLICATION OF ANY LOAD AND ANCHOR BOLTS OR REBAR DOWELS MUST REMAIN UNDISTURBED DURING THIS SETTING PERIOD.
9. EPOXY ADHESIVE ANCHORS ARE NOT TO BE USED EXCEPT WHERE SPECIFICALLY INDICATED ON PLANS.

| SHEET INDEX |                                               |
|-------------|-----------------------------------------------|
| S1.0        | COVER SHEET AND GENERAL NOTES                 |
| S2.0        | FOUNDATION AND FLOOR FRAMING PLAN AND DETAILS |
| S3.0        | NEW ROOF AND CEILING FRAMING PLANS            |



7283 VETERANS PARKWAY  
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P: 919-817-9915  
NC LICENSE NO. P-2664

ADAM BEACH  
STRUCTURAL PLANS  
K&A HOME DESIGNS  
1655 OAKRIDGE RIVER RD.  
FUQUAY-VARINA, NC

## REVISIONS

| NO. | DATE       | DESCRIPTION      |
|-----|------------|------------------|
| 0   | 09.25.2025 | FOR CONSTRUCTION |
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DRAWN BY: TLT

DATE: SEPT. 25, 2025

# S1.0





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The logo for Built Up Engineers features a stylized icon on the left consisting of two vertical bars with a small square and horizontal lines between them. To the right of the icon, the words "BUILT UP" are stacked above "ENGINEERS" in a bold, sans-serif font. "BUILT UP" is in dark blue, and "ENGINEERS" is in orange.

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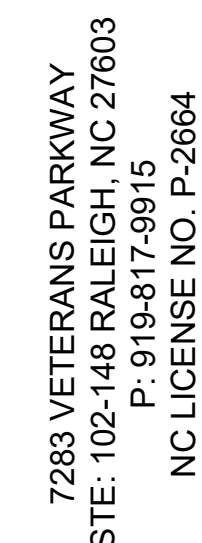


ADAM BEACH  
STRUCTURAL PLANS  
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