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# GENERAL REQUIREMENTS

- THE WORD 'CONTRACTOR' AS USED HEREIN SHALL MEAN THE GENERAL CONTRACTOR, SUBCONTRACTORS AND ALL PERSONS DIRECTLY OR INDIRECTLY EMPLOYED BY ANY OF THEM.
- CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH THE FOLLOWING APPLICABLE CODE REQUIREMENTS:
  - ALL LANG, STATUTES, THE MOST RECENT BUILDING CODES, ORDINANCES, RULES, REGULTIONS, AND LANFUL ORDERS OF A FUELIC AUTORITIES HAVING JURISDICTION OVER OWNER, CON-TRACTOR, ANY SUBCONTRACTOR, THE PROJECT, THE PROJECT SITE, THE WORK, OR THE PROSECUTION OF THE WORK.
  - THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT AND ALL OTHER APPLICABLE CODE REQUIREMENTS RELATING TO SAFETY.
  - THE FAIR HOUSING AMENDMENTS ACT, THE AMERICANS WITH DISA-BILITIES ACT, AND ALL OTHER APPLICABLE CODE REQUIREMENTS RELATING THERETO.
- CONTRACTOR SHALL CAREFULLY STUDY AND REVIEW THE CONSTRUCTION DOCUMENTS AND INFORMATION FURNISHED BY OWNER, AND SHALL PROMPLY REPORT IN WRITING TO OWNERS REPRESENTATIVE ANY ERRORS, INCONSISTENCIES, OR OMISSIONS IN THE CONSTRUCTION DOCU-MENTS OR INCONSISTENCIES WITH APPLICABLE CODE REQUIREMENTS OBSERVED BY THE CONTRACTOR.
- IF CONTRACTOR PERFORMS WORK WHICH HE KNOWS OR SHOULD KNOW IS IF CONTRACTOR HERFORMS WORK WHICH HE KNONG OK SHOULD KNOW E CONTRARY TO APPLICABLE CODE REQUIREMENTS, MITHOUT THE ASREEM OF ONNER, CONTRACTOR SHALL BE RESPONSIBLE FOR SUCH WORK AND SHALL BEAR THE RESULTANT LOSSES, INCLUDING, WITHOUT LIMITATION, TH COSTS OF CORRECTING DEFECTIVE WORK.
- CONTRACTOR SHALL PROVIDE CERTIFICATES OF INSURANCE ACCEPTABLE TO OWNER PRIOR TO COMMENCEMENT OF WORK
- CONTRACTOR SHALL TAKE FIELD MEASUREMENTS, VERIFY FIELD CONDITIONS, AND CAREFULLY COMPARE WITH THE CONSTRUCTION DOCUMENTS SUCH FIELD MEASUREMENTS, CONDITIONS, AND OTHER NFORMATION KNOWN TO CONTRACTOR BEFORE COMMENCING THE WORK. ERRORS, INCONSISTENCIES, OR OMISSIONS DISCOVERED AT ANY TIME SHALL BE PROMPTLY REPORTED IN WRITING TO THE OWNER.
- CONTRACTOR SHALL PROMPTLY NOTIFY OWNER'S REPRESENTATIVE IF CONTRACTOR SHALL FROM ILL NOTIFIC TONIER'S REPRESENTATIVE IF CONTRACTOR BECOMES AWARE DURING THE PERFORMANCE OF THE WORK THAT THE CONSTRUCTION DOCUMENTS ARE NOT IN COM-PLIANCE WITH APPLICABLE CODE REQUIREMENTS.
- BY SUBMITTAL OF BID. CONTRACTOR WARRANTS TO OWNER THAT 8. ALL MATERIALS AND EQUIPMENT TO BE FURNISHED ARE NEW UNLESS NOTED OTHERWISE AND ALL WORK WILL BE OF GOOD QUALITY AND FREE FROM FAULTS AND DEFECTS.
- SUB-CONTRACTORS SHALL INSURE THAT ALL WORK IS DONE IN A PROFESSIONAL WORKMANLIKE MANNER BY SKILLED MECHANICS AND SHALL REPLACE ANY MATERIALS OR ITEMS DAMAGED BY SUB-CONTRACTOR'S PERFORMANCE. SUB-CONTRACTORS AND SUPPLIERS ARE HEREBY NOTIFIED THAT THEY ARE TO CONTRER AND COOPERATE FULLY WITH EACH OTHER DURING THE CORSE OF CONSTRUCTION TO DETERMINE THE EXACT EXTENT AND OVERLAP OF EACH OTHER'S MORK AND TO SUCCESSFULLY COMPLETE THE EXECUTION OF THE WORK. ALL SUB-CONTRACTOR WORKMASHIP SHALL BE OF CONLINY TO PASS INSPECTIONS BY LOCAL AUTHORITIES, LENDING INSTITUTIONS, ARCHITECT OR BUILDER, ANY ONE OR ALL OF THE ADOVE MENTIONED INSPECTORS MAY INSPECT MORKMASHIP AT ANY TIME, AND CORRECTIONS NEEDED TO ENHANCE THE GUALITY OF BUILDING WILL DE TONE INSPECTORS MAY INSPECT MORKMASHIP AT ANY TIME, AND CORRECTIONS NEEDED TO ENHANCE THE GUALITY OF BUILDING WILL BE CONSIDELED OF HISHERS SUB-CONTRACT AGREEMENT, SHALL BE RESPONSIBLE FOR CLEANING UP AND REMOVING FROM THE JOB SITE ALL TRASH AND DEBRIS NOT LEFT BY OTHER SUB-CONTRACTORS, BUILDER MULL DETERMINE HOM SOON AFTER SUB-CONTRACTOR ON MELTES EACH MILL DETERMINE HOM SOON AFTER SUB-CONTRACTOR ON MELTES DAC MILL DETERMINE HOM SOON AFTER SUBCONTRACTOR ON MELTES DACH HAGE OF HIS MORK SUB-CONTRACTORS SHALL INSURE THAT ALL WORK IS DONE IN A SOON AFTER SUBCONTRACTOR COMPLETES EACH PHASE OF HIS WORK THAT TRASH AND DEBRIS WILL BE REMOVED FROM THE SITE.
- APPROVAL BY THE BUILDING INSPECTOR DOES NOT MEAN APPROVAL OR 10. ALLOWABLE FAILURE TO COMPLY WITH THE PLANS AND SPECIFICATIONS. ANY DESIGN WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE ARCHITECT OR ENGINEER FOR INTERPRETATION OR CLARIFICATION
- ALL EQUIPMENT AND MATERIALS FURNISHED AND INSTALLED UNDER THESE PLANS SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY OWNER UNLESS STIPULATED OTHERWISE.
- ALL TRADE NAMES AND BRAND NAMES CONTAINED HEREIN ESTABLISH QUALITY STANDARDS, SUBSTITUTIONS ARE PERMITTED, WITH PRIOR APPROVAL BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL SUBMIT FOR THE ARCHITECT'S AND BUILDER'S APPROVAL ALL MATERIALS OR EQUIPMENT WHICH IS CONSIDERED "OR EQUAL" TO THAT SPECIFIED. 12.
- CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ON ANY OR ALL SHEETS MAY DE SUBJECT TO REVIEW. THIS REVIEW MAY RESULT IN CHANGES WHICH MAY DE MADE TO THE PLANS PRIOR TO THE ISSUANCI OF THE FINAL CONSTRUCTION SET WHICH WILL CONTAIN NO "BID SET" DESIGNATIONS. CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" ARE NOT TO BE CONSTRUCTION DOCUMENTS IDENTIFIED AS "BID SET" DRIVED AS DELIGION SET KONSTRUCTION DECOMENTS ON THE ISSUENCE DRAWINGS AND THEY SHOULD NOT IN ANY WAY BE USED AS SUCH. 13.
- ALL STANDARD NOTES CONTAINED HEREIN ARE TYPICAL UNLESS NOTED OTHERWISE.
- TYPICAL DETAILS AND SPECIFICATIONS ARE MINIMUM REQUIREMENTS TO BE USED WHEN CONDITIONS ARE NOT SHOWN OTHERWISE.
- SPECIFIC NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS, WHERE NO DETAILS ARE SHOWN CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
- SEE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR PITS, TRENCHES, ROOF OPPNINGS, DEPRESSIONS, 17. ETC. NOT SHOWN ON THE OTHER DRAWING
- 18. THE CONSTRUCTION DOCUMENTS AND ALL COPIES THEREOF FURNISHED TO CONTRACTOR ARE THE PROPERTY OF THE ARCHITECT AND ARE NOT TO BE USED ON OTHER WORK.

## SITE WORK

- CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC., AND BURIED ARTIFACTS SUCH AS INDIAN OR DINOSAUR BONES ANY SUCH ITEMS ARE FOUND THE ARCHITECT, CIVIL ENGINEER, AND SOILS ENGINEER SHALL BE NOTIFIED IMMEDIATELY
- 2. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO FULLY PROTECT ADJACENT PROPERTIES
- REFER TO THE SOILS REPORT AS PREPARED BY THE GEOTECHNICAL з. ENGINEER
- 4. REFER TO CIVIL ENGINEER'S CURRENT GRADING AND PLOT PLANS.

# SITE WORK (continued)

- REFER TO THE LANDSCAPE ARCHITECT'S CURRENT GRADING PLAN AND CONSTRUCTION DOCUMENTS.
- ALL FOOTINGS SHALL REST ON FIRM NATURAL SOIL OR APPROVED COMPACTED FILL. REFER TO GEOTECHNICAL REPORT.
- EXCAVATIONS FOR FOOTINGS SHALL BE MADE TO THE WIDTH, LENGTH, AND DEPTH REQUIRED AND FINISHED WITH LEVEL BOTTOMS.
- EXCAVATIONS SHALL BE KEPT FREE OF STANDING WATER.
- WHERE EXCAVATIONS ARE MADE TO A DEPTH GREATER THAN INDICATED, SUCH ADDITIONAL DEPTH SHALL BE FILLED WITH CONCRETE AS SPECIFIED FOR FOOTINGS.
- FILL MATERIALS SHALL BE FREE FROM DEBRIS, VEGETABLE MATTER AND OTHER FOREIGN SUBSTANCES. 10.
- ALL FINISH GRADES TO DRAIN AWAY FROM THE BUILDING FOOTINGS. 12. THERE SHALL BE NO ON-SITE WATER RETENTION.
- 13. THERE SHALL BE NO DRAINAGE TO ADJACENT PROPERTY
- 14
- FOR ONSITE CONTSPUCTION, PLANS TO COMPLY WITH NECESSARY INSPECTIONS APPROVED BY THE BUILDING OFFICIAL. THE REQUIREMENTS IN THESE NOTES ARE THE MINIMUM THAT SHALL BE
- MET. REQUIREMENTS OF THE STRUCTURAL DRAWINGS THAT EXCEED THE REQUIREMENTS SHOWN HERE SHALL BE MET.

# CONCRETE

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- REFER TO STRUCTURAL ENGINEERING CALCULATIONS AND SOILS REPORT FOR THE PERFORMANCE REQUIREMENTS FOR CONCRETE FOUNDATIONS.
- CONCRETE SHALL BE PROPORTIONED TO PROVIDE AN AVERAGE 2. COMPRESSIVE STRENGTH AS PRESCRIBED IN THE N.C.-R. AS WELL AS SATISFY THE DURABILITY CRITERIA OF THE N.C.-R
- MIXING OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318, SECTION 5.8
- THE DEPOSITING OF CONCRETE SHALL COMPLY WITH THE PROVISIONS ACI 318. SECTION 5.10.
- THE CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH 5. ACI 318. SECTION 5.11
- ALL FORM WORK SHALL BE DESIGNED, CONSTRUCTED, UTILIZED, AND
- CONDUIT, PIPES AND SLEEVES OF ANY MATERIAL NOT HARMFUL TO CONCRETE AND NITHIN THE LIMITATIONS OF ACI 318, SECTION 6.3, ARE PERMITTED TO BE EMPEDDED IN CONCRETE WITH APPROVAL OF THE REGISTERED DESIGN PROFESSIONAL.
- CONSTRUCTION JOINTS INCLUDING THEIR LOCATION SHALL COMPLY WITH THE PROVISIONS OF ACI 318, SECTION 6.4.
- ALL STEEL REINFORCING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE N.C.-R
- TOP OF CONCRETE SLABS TO BE A MINIMUM 4" W/ MASONRY VENEER 6" ELSEWHERE (3" HJJD.) ABOVE FINISH GRADE. 10.
- FOUNDATION WIDTHS, DEPTHS, AND REINFORCING, AS SHOWN ON PLANS, ARE SUPERCEDED BY ANY LOCAL CODES OR ORDINANCES WHICH REQUIRE INCREASES OF THE SAME.
- 12. ALL REINFORCEMENT, CONDUIT, OUTLET BOXES, ANCHORS, HANGERS, ALL REINFORCEMENT, CONDUCT, DUILET SOUCES, ANOHORS, HANGERS, SLEEVES, BOLTS OR OTHER EMEEDDED MATERIALS AND ITHEM MUST BE SECURED AND APPROPRIATELY FASTENED IN THEIR PROPER LOCATIONS PRIOR TO THE FLACEMENT OF CONCRETE. SUB-CONTRACTOR SHALL VERIEY INSTALLATION OF HOLD-DOWNS, ANCHOR BOLTS, PA STRAPS, AND OTHER ANCHORAGE MATERIAL AND ITEMS PRIOR TO PLACEMENT OF CONCRETE.
- POST-TENSION SLABS, IF APPLICABLE: 13.
- POINT AND LINE LOADS FROM STRUCTURE ABOVE TO BE PROVIDED TO POST-TENSION ENGINEER PRIOR TO POST-TENSION DESIGN. A.
- ANCHOR BOLTS AND OTHER HARDWARE TO BE SHOWN ON POST-TENSION PLANS TO AVOID MIS-LOCATION OF HARDWARE AND POSSIBLE FIELD FIXES WHICH MAY CUT TENDONS. В.

## MASONRY

- ALL MASONRY DESIGN SHALL FOLLOW THE REQUIREMENTS OF THE CURRENT ADOPTED CODES.
- ANCHORED MASONRY VENEER SHALL COMPLY WITH THE PROVISIONS OF N.C.-R, AND SECTIONS 6.1 AND 6.2 OF 530/ASCE 5/TMS 402.
- STONE VENEER UNITS NOT EXCEEDING 5 INCHES IN THICKNESS SHALL BE ANCHORED DIRECTLY TO MASONRY, CONCRETE OR TO STUD CONSTRUCTION BY ONE OF THE APPROVED METHODS LISTED IN THE N.C.-R
- MORTAR FOR USE IN MASONRY CONSTRUCTION SHALL COMPLY WITH ASTM C 270. THE TYPE OF MORTAR SHALL BE IN ACCORDANCE NITH THE N.C.R. AND SHALL MEET THE PROPORTION SPECIFICATIONS OR THE PROPERTY SPECIFICATIONS OF ASTM C 270
- GROUT SHALL CONSIST OF FIBER CEMENT MATERIAL AND AGGREGATE IN ACCORDANCE WITH ASTM C 476 AND THE PROPORTION SPECIFICATIONS PER THE N.C.-R
- AGGREGATES FOR MORTAR AND GROUT SHALL BE NATURAL SAND AND ROCK CONFORMING TO A.S.T.M. C-144-04 (MASONRY MORTAR, MORTAR) AND C-404-07 (GROUT).
- CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO A.S.T.M. C 150
- 8. ALL BRICK SHALL CONFORM TO A.S.T.M. C 216, GRADE MW
- UNLESS SPECIFICALLY SHOWN OTHERWISE ALL BRICK SHALL BE LAID
- IO. ANCHORS, TIES AND WIRE FABRIC SHALL CONFORM TO N.C.-R.
- ANCHOR TIES AND WIRE FABRIC FOR USE IN MASONRY WALL CONSTRUCTION SHALL CONFORM TO THE N.C.-R.

# METALS

- REFER TO STRUCTURAL NOTES AND SPECIFICATIONS FOR STRUCTURAL STEEL, METAL AND REINFORCING STEEL SPECIFICATIONS.
- ALL STRUCTURAL STEEL SHALL CONFORM TO AISC/CRED 2.
- ANCHOR RODS SHALL BE SET ACCURATELY TO THE PATTERN AND DIMENSIONS CALLED FOR ON THE PLANS. THE PROTRUSION OF THE THREADED ENDS THROUGH THE CONNECTED MATERIAL BHALL BE SUFFICIENT TO FULLY ENGAGE THE THREADS OF THE NTS, BUT SHALL NOT BE GREATER THAN THE LENSTH OF THE THREADS ON THE BOLTS
- FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED MOOD SHALL BE OF HOT-DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STELL, SILLCON BRONZE OR COPPERY VERIFY ACCEPTABLE FASTENERS FER CHEMICALS USED IN PRESSURE PRESERVITIVELY TREATED MOOD W N.C.-R. FASTENINGS FOR WOOD FOUNDATIONS SHALL BE AS REQUIRED IN AF&PA TECHNICAL REPORT NO. T.

# WOOD & FRAMING

#### LUMBER

- THE DESIGN AND CONSTRUCTION OF CONVENTIONAL LIGHT-FRAME WOOD CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE N.C.-R
- CONSTRUCTION, PROJECTIONS, OPENINGS AND PENETRATIONS OF EXTERIOR WALLS OF DWELLINGS AND ACCESSORY BUILDINGS SHALL COMPLY WITH TABLE RE302.1.
- ALL LUMBER SHALL MEET THE STANDARDS OF QUALITY AS STATED IN THE N.C.-R з.
- LIMBER AND PLYMOOD REQUIRED TO BE PRESEIVE PRESERVATIVELY TREATED IN ACCORDANCE WITH THE N.C.R. AND SHALL BEAR THE QUALITY MARK OF AN APPROVED INSPECTION AGENCY THAT MAINTAINS CONTINUING SUPERVISION, TESTING AND INSPECTION OVER THE QUALITY OF THE PRODUCT AND THAT HAS BEEN APPROVED BY AN ACCREDITATION BODY THAT COMPLIES WITH THE REQUIREMENTS OF THE AMERICAN LUMBER STANDARD COMMITTEE TREATED WOOD PROGRAM
- 5. ALL LUMBER SIZES NOTED AND SPECIFIED ON PLANS ARE NOMINAL SIZES UNLESS SPECIFICALLY INDICATED AS NET SIZE.

#### GLUE LAMINATED LUMBER

L.

- REFER TO THE STRUCTURAL ENGINEER'S CURRENT NOTES. CALCULATIONS, AND SPECIFICATIONS
- 2. GLUED LAMINATED TIMBERS SHALL BE MANUFACTURED AND IDENTIFIED AS REQUIRED IN AITC AI90.1 AND ASTM D 3737.

#### PROTECTION AGAINST DECAY & TERMITE

- IN AREAS SUBJECT TO DECAY DAMAGE AS ESTABLISHED BY THE N.C.-R THE FOLLOWING LOCATIONS SHALL REQUIRE THE USE OF NATURALLY DRABLE WOOD OR WOOD THAT IS PRESERVATIVE TREATED IN ACCORDANCE WITH AWPA UI FOR THE SPECIES, PRODUCT, PRESERVATIVE AND END USE, PRESERVATIVES SHALL BE LISTED IN SECTION 4 OF AWPA UI
- WOOD JOISTS OR THE BOTTOM OF WOOD FLOOR WHEN CLOSER THAN 18 INCHES, OR WOOD GIRDERS WHEN CLOSER THAN 12 INCHES TO THE EXPOSED GROUND IN CRANL SPACES OR UNEXCAVATED AREAS LOCATED WITHIN THE PERIPHERY OF THE BUILDING FOUNDATION.
- ALL EXTERIOR SILLS & PLATES THAT REST ON CONCRETE OR MASONRY 5. EXTERIOR FOUNDATION WALLS.
- SILLS AND SLEEPERS ON A CONCRETE OR MASONRY, UNLESS THE SLAB THAT IS IN DIRECT CONTACT WITH THE GROUND IS SEPARATE FROM THE GROUND BY AN APPROVED IMPERVIOUS MOISTURE BARRIER. RATED
- THE ENDS OF WOOD GIRDERS ENTERING EXTERIOR MASONRY OR CONCRETE WALLS HAVING CLEARANCES OF LESS THAN 0.5 INCH ON TOPS, SIDES AND ENDS.
- WOOD SIDING AND SHEATHING ON THE EXTERIOR OF A BUILDING HAVING A CLEARANCE OF LESS THAN 6 INCHES FROM THE GROUND.
- WOOD STRUCTURAL MEMBERS SUPPORTING MOISTURE-PERMEABLE FLOORS OR ROOPS THAT ARE EXPOSED TO THE MEATHER, SUCH AS CONCRETE OR MASONRY SLABS, UNLESS SEPARATED FROM SUCH FLOORS OR ROOPS BY ANIMPERVIOUS MOISTURE BARRIER.
- MOOD FURRING STRIPS OR OTHER MOOD FRAMING MEMBERS ATTACHED 2. DIRECTLY TO THE INTERIOR OF EXTERIOR MASONRY WALLS OR CONCRETE WALLS BELOW GRADE EXCEPT WHERE AN APPROVED VAPOR RETARDER IS APPLIED BETWEEN THE WALL AND THE FURRING S. STRIPS OR FRAMING MEMBERS.
- ALL PORTIONS OF A PORCH, SCREEN PORCH OR DECK FROM THE BOTTOM OF THE HEADER DOWN, INCLUDING POSTS, GUARDRAILS, PICKETS, STEPS AND FLOOR STRUCTURE. COVERINGS THAT WOULD PREVENT MOISTURE OR WATER ACCUMULATION ON THE SURFACE OR AT JOINTS BETWEEN MEMBERS ARE ALLOWED
- IN AREAS SUBJECT TO DAMAGE FROM TERMITES METHODS OF PROTECTION SHALL BE ONE OF THE METHODS LISTED IN THE N.C.-R з.
- UNDER-FLOOR AREAS SHALL BE VENTILATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE N.C.-R

# WOOD & FRAMING (continued)

# GUE ATHIN

FLOOR FRAMING

ROOF FRAMING

MALL FRAMING

EXCEPTIONS

2

2.

- WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS AS SET FORTH IN THE N.C.-R
- ROOF SHEATHING PANELS SHALL BE LAID WITH FACE GRAIN OR STRENGTH AXIS PERPENDICULAR TO SUPPORTS AND WITH PANEL CONTINUOUS OVER TWO OR MORE SPANS.
- ROOF SHEATHING SHALL BE IN ACCORDANCE WITH THE N.C.-R
- FLOOR SHEATHING PANELS SHALL BE LAID WITH FACE GRAIN OR STRENGTH AXIS PERPENDICULAR TO SUPPORTS AND WITH PANEL CONTINUOUS OVER TWO OR MORE SPANS. STRUCTURAL FLOOR SHEATHING SHALL COMPLY WITH THE PROVISIONS OF THE N.C.-R

REFER TO THE STRUCTURAL ENGINEER'S CURRENT SPECIFICATIONS, CALCULATIONS, AND PLANS FOR REQUIRED STRENGTH, GRADE, AND THICKNESS FOR PLYNOD FLOOR SHEATHING PANELS AND FOR DIAPHRAGM NAILING AND ADHESIVE REQUIREMENTS.

NHERE APPLICABLE, REFER TO THE SHEAR WALL SCHEDULE FOR REQUIRED STRENGTH, GRADE, AND THICKNESS OF PLYWOOD SHEAR PANELS AND FOR REQUIRED SHEAR WALL NAILING SCHEDULE.

IN ONE- AND TWO-FAMILY DWELLING CONSTRUCTION USING <u>HARD BOARD</u> OR ALUMINUM AS A SOFFIT MATERIAL, THE SOFFIT MATERIAL SHALL BE SECURELY ATTACHED TO FRAMING MEMBERS AND USE AN UNDERLAYMENT MATERIAL OF EITHER FIRE RETARDANT TREATED WOOD, 23/32 INCH NOOD SHEATHING OR 5/8 INCH GYPSUM BOARD, VENTING REQUIREMENTS APPLY TO BOTH SOFFIT AND WHOER ATMENT AND SHALL BE PER SECTION REOG OF THE NORTH CAROLINA RESIDENTIAL CODE. MHERE THE PROPERTY LINE IS IO FET OR MORE FROM THE BUILDING FACE, THE PROVISIONS OF THIS CODE SECTION DO NOT APPLY.

ALL FLOOR JOISTS SHALL BE DESIGNED I-JOIST WOOD FLOOR TRUSSES.

REFER TO THE STRUCTURAL ENGINEER'S CURRENT PLANS & CALCULATIONS

REFER TO MANUFACTURER FOR ALL LAYOUTS AND CALCULATIONS

FOR SIZE, SPACING, AND ANCHORAGE OF ALL FLOOR JOISTS; SIZE, LOCATION, AND ANCHORAGE OF ALL FLOOR BEAMS AND HEADERS;

ROOF FRAMING SHALL BE BY PRE-MANUFACTURED ROOF TRUSSES SPACED AT 24 INCHES ON CENTER UNLESS NOTED OTHERWISE.

THE MANUFACTURER SHALL SUPPLY TO THE ARCHITECT AND BUILDER CALCULATIONS AND SHOP DRAVINGS FOR APPROVAL OF DESIGN LOADS, CONFIGURATION (2 OR 3 POINT BEARING), VOLIME CEILING OPTIONS, AND SHEAR TRANSFER, PRIOR TO FABRICATION.

TRUSS MEMBERS SHALL NOT BE CUT, NOTCHED, DRILLED, SPLICED OR OTHERNISE ALTERED IN ANY MAY MITHOUT THE APPROVAL OF A REGISTERED DESIGN PROFESSIONAL. ALTERATIONS RESULTING IN THE ADDITION OF LOAD (E.G. HVAC EQUIPMENT, WATER HEATER) THAT EXCEEDS THE DESIGN LOAD FOR THE TRUSSES SHALL NOT BE PREMITED WITHOUT WRITTEN VERIFICATION THAT THE TRUSS IS CAPABLE OF SUPPORTING SUCH ADDITIONAL LOADING.

ALL CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHEREIN THE PROJECT IS TO BE BUILT.

MANUFACTURER IS TO SECURE BUILDING DEPARTMENT APPROVAL OF CALCULATIONS AND SHOP DRAWINGS PRIOR TO FABRICATION.

THE SIZE, HEIGHT, AND SPACING OF STUDS SHALL BE IN ACCORDANCE

STUDS SHALL BE PLACED WITH THEIR WIDE DIMENSION PERPENDICULAR TO THE WALL.

NOT LESS THAN THREE STUDS SHALL BE INSTALLED AT EACH CORNER OF AN EXTERIOR WALL.

MOOD STUD WALLS SHALL BE CAPPED WITH A DOUBLE TOP PLATE INSTALLED TO PROVIDE OVERLAPPING AT CORNERS AND INTERSECTIO WITH BEARING PARTITIONS. END JOINTS IN TOP PLATES SHALL BE OFFSET AT LEAST 24 INCHES. JOINTS NEED NOT OCCUR OVER STUDS. PLATES SHALL BE NOT LESS THAN 2-INCHES NOMINAL THICKNESS AND

VE A WIDTH AT LEAST EQUAL TO THE WIDTH OF THE STUDS, SEE

STUDS SHALL HAVE FULL BEARING ON NOMINAL 2 BY OR LARGER PLATE OR SILL HAVING A WIDTH AT LEAST EQUAL TO THE WIDTH OF THE STUDS.

WHERE JOISTS, TRUSSES OR RAFTERS ARE SPACED MORE THAN 16 INCHES ON CENTER AND THE BEARING STUDS BELOW ARE SPACED 24 INCHES ON CENTER, SUCH MEMBERS SHALL BEAR WITHIN 5 INCHES OF THE STUDS BENEATH, SEE EXCEPTIONS.

INTERIOR NONREARING WALLS SHALL BE PERMITTED TO BE CONSTRUCTED

INITERIOR NONBEANING WALLS SHALL BE PERMITED TO BE CONSTRUCT WITH 2-INCH-BY-3-INCH STIDS SPACED 24 INCHES ON CONTER OR, WHEN NOT A PART OF A BRACED WALL LINE, 2-INCH-BY-4-INCH FLAT STUDS SPACED IG INCHES ON CENTER, INTERIOR NONBEARING WALLS SHALL BE

CAPPED WITH AT LEAST & SINGLE TOP PLATE INTERIOR NONREARING

SHALL BE EIRERLOCKED IN ACCORDANCE WITH THE N.C.-R

THE BRACING OF WOOD TRUSSES SHALL COMPLY TO THEIR APPROPRIATE ENGINEERED DESIGN, PER THE N.C.-R

WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE N.C.-R

AND ALL RELATED FRAMING ISSUES.

ALL VERTICAL JOINTS OF PANEL SHEATHING SHALL OCCUR OVER, AND BE FASTENED TO, COMMON STUDS. HORIZONTAL JOINTS IN BRACED WALL PANELS SHALL OCCUR OVER, AND BE FASTENED TO, COMMON BLOCKING OF A MINIMM OF 11/2 INCH THICKNESS.

# WOOD & FRAMING

# (continued)

DRILLING AND NOTHING OF STUDS SHALL BE IN ACCORDANCE WITH THE

- NOTHCING, ANY STUD IN AN EXTERIOR WALL OR BEARING PARTITION MAY BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. STUDS IN NONBEARING PARTITIONS MAY BE NOTCHED TO A DEPTH NOT TO EXCEED 40 PERCENT OF A SINGLE STUD WIDTH. NOTCHING OF BEARING STUDS SHALL BE ON ONE EDGE ONLY AND NOT TO EXCEED ONE-FOURTH THE HEIGHT OF THE STUD. NOTCHING SHALL NOT OCCUR IN THE BOTTOM OR TOP 6 INCHES OF BEARING STUDS.
- DRILLING, ANY STUD MAY BE BORED OR DRILLED, PROVIDED THAT THE DIANETER OF THE RESULTING HOLE IS NO MORE THAN 60 PERCENT OF THE STUD NIDTH, THE EDGE OF THE HOLE IS NO MORE THAN 5/0" INCH TO THE EDGE OF THE STUD, AND THE HOLE SHALL NOT BE CLOSER THAN 6 INCHES FROM AN ADJACENT HOLE OR NOTCH, HOLES NOT EXCEEDING 3/4 INCH DIANETER CAN BE AS CLOSE AS I 1/2 INCHES ON CENTER SPACING, STUDD LOCATED IN EXTERIOR MALLS OR BEARING PARTITIONS DRILLED OVER 40 PERCENT AND UP TO 60 PERCENT SHALL ALSO BE DOUBLED WITH NO MORE THAN TWO SUCCESSIVE DOUBLED STUDS BORED.
- CUTTING AND NOTCHING OF STUDS SHALL BE PERMITTED TO BE INCREASED TO 65 FERCENT OF THE WIDTH OF THE STUD IN EXTERIOR AND INTERIOR WALLS AND BEARING PARTITIONS, PROVIDED THAT ONE OF THE FOLLOWING CONDITIONS ARE MET: THAT ONE OF THE FOLLOWING CONDITIONS ARE MET: (a) THE WALL SECTION IS REINFORCED NITH 1/2-INCH EXTERIOR GRADE FLYWOOD OR EQUIVALENT REINFORCEMENT ON THE NOTCHED SIDE OF THE WALL, PLYMOOD, IF USED, SHALL REACH FROM THE FLOOR TO CEILING AND AT LEAST ONE STUD FURTHER ON EACH SIDE OF THE SECTION THAT HAS BEEN NOTCHED OR CUT. (b) THE EXTERIOR WALLS OF A KITCHEN MAY BE REINFORCED BY FLACING 1/2-INCH FLYMOOD, IF USED, SHALL REACH FROM THE FLOOR TO CONITER-TOP HEIGHT AND AT LEAST ONE STUD FURTHER ON EACH SIDE OF THE SECTION THAT HAS BEEN NOTCHED OR CUT. NOTCHED OR CUT
- WHEN PIPING OR DUCTWORK IS PLACED IN OR PARTIALY IN AN EXTERIOR OR INTERIOR LOAD-BEARING WALL, NECESSITATION CUTTING, DRILLING OR NOTCHING OF THE TOP PLATE B MORE THAN 50 PERCENT OF ITS WIDTH A GALVANIZED METAL TIE OF NOT LESS THAN 0.054 INCH THICK AND I 1/2' NCHES WIDE SHALL BE FASTENED ACROSS AND TO THE PLATE AT EACH SIDE OF THE OPENING WITH NOT LESS THAN EIGHT IOU NAILS HAVING A MINIMU LENGTH OF I 1/2 INCHES (36 MM) AT EACH SIDE OR EQUIVALENT. THE METAL TIE MUST EXTEND A MINIMUM OF 6 INCHES PAST THE OPENING
- IO. HEADERS SHALL MEET THE REQUIREMENTS OF THE N.C.-R.
  - PROVIDE LATERAL BRACING PER THE N.C.-R
- FOUNDATION CRIPPLE WALLS SHALL MEET THE REQUIREMENTS OF THE N.C.-R CODE
- 14. WOOD STUD WALLS SHALL BE BRACED AS REQUIRED BY THE N.C.-R
- UNLESS COVERED BY INTERIOR OR EXTERIOR WALL COVERINGS OR SUEATHING MEETING THE MINIMUM RECONSTRUCTION FALL OVERINGS ONL STUD PARTITIONS OR VALLS WITH STUDS HAVING A HEIGHT-TO-LEAST THICKLESS RATIO EXCEEDING SO SHALL HAVE BRIDGING NOT LESS THAN 2 INCHES IN THICKLESS AND OF THE SAME WIDTH AS THE STUDS FITTED SHALLS VAND MAILED THEREFOR TO PROVIDE ADEQUATE LATERAL SUPPORT

#### FIRE BLOCKS AND DRAFT STOPS

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FIRE BLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICAL AND HORIZONTAL) AND TO FORM AN EFFECTIVE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND A ROOF SPACE, FIREBLOCKING SHALL BE REVOIDED IN WOOD-FRAME CONSTRUCTION IN THE LOCATIONS SPECIFIED IN THE N.C.-R

FIRE BLOCKING SHALL CONSIST OF 2 INCHES NOMINAL LUMBER, OR TWO THICK BEDECKING SIGNALE CONTRACT LIMBER WITH BROKEN LAP JOINTS, OR ONE THICKNESSES OF I-INCH NONINAL LIMBER WITH BROKEN LAP JOINTS, OR BACKED BY 25/52-INCH NOOD STRUCTURAL PANELS OR ONE THICKNESS OF 3/4-INCH PARTICLEBOARD WITH JOINTS BACKED BY 3/4-INCH PARTICLEBOARD, I/2-INCH GYTSOM BOARD, OR I/4-INCH CHENT-BASED

BATTS OR BLANKETS OF MINERAL WOOL OR GLASS FIBER OR OTHER APPROVED MATERIALS INSTALLED IN SUCH A MANNER AS TO BE SECURELY RETAINED IN PLACE SHALL BE PERMITTED AS AN ACCEPTABLE FIRE BLOCK.

BATTS OR BLANKETS OF MINERAL OR GLASS FIBER OR OTHER APPROVED NON-RIGID MATERIALS SHALL BE FERMITTED FOR COMPLIANCE WITH THE IC FOOT HORIZONTAL FIREBLOCKING IN MALLS CONSTRUCTED USING PARALLEL ROWS OF STUDS OR STAGERED STUDS, LOOSE FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIREBLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED FOR USE TO DEMONSTRATE ITS ABILITY TO REMAIN IN PLACE AND TO RETARD THE SPREAD OF FIRE AND HOT GASSES.

WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR/CELLING ASSEMBLY, DRAFTSTOPS SHALL BE INSTALLE SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED (JOO SQUARE FEET, DRAFTSTOPPING SHALL DIVIDE THE CONCEALED SPACE INT APPROXIMATELY COULD. AREAS, WHERE THE ASSEMBLY IS ENCLOSED BY A FLOOR MEMBRANE ABOVE AND A CELLING MEMBRANE BELOW, DRAFTSTOPPING SHALL BE PROVIDED IN FLOOR/CELLING ASSEMBLIES UNDI THE FOLLOWING CIRCUMSTANCES. INTO ASSEMBLIES UNDER

- CEILING IS SUSPENDED UNDER THE FLOOR FRAMING. I.
- FLOOR FRAMING IS CONSTRUCTED OF TRUSS-TYPE OPEN-WEB OR PERFORATED MEMBERS. 2.

#### HANDRAIL AND GUARDRAIL

GUARDRAIL OF 36" HIGH MIN. SHALL BE PROVIDED WHERE FINISHED GRADE OR FLOOR BELOW RAISED AREA EXCEEDS 30".

HANDRAIL AT STAIRS SHALL BE PROVIDED WHEN 4 OR MORE STAIR RISERS

# 0 HOME 8 8 . . . . . . . . . . . NORTH CAROLINA **50' SERIES** KB HOME NORTH CAROLINA DIVISION 4518 S. MIAMI BLVD. SUITE 180 DURHAM, NC 27703 TEL: (919) 768-7988 • FAX: (919) 472-0582 8 8 . . . . . . . . 2018 NORTH **CAROLINA STATE** BUILDING CODES . . . . . . . . . . . . . . . ISSUE DATE: 12/13/19 PROJECT No.: 1350999:57 DIVISION MGR.: MP REVISIONS: VENTILATION NC2008NCP/ 01/17/20 /KBA FOR INTERNAL USE ONL' ΡΙ.ΔΝ 150.1910-R HEET: GN1 SPEC. LEVEL 1 **RALEIGH-DURHAM** 50' SERIES

# THERMAL & MOISTURE

# PROTECTION

- PROVIDE ALL FLASHING, COUNTER-FLASHING, BITUTHENE, MEMBRANE WATERPROOFING, SHEET METAL, CAULKING, SEALANTS, ELASTOMERIC MALKING SUFFACES, AND RAIN GUTHERS AND/OR DIVERTERS WHERE REQUIRED, TO MAKE WORK COMPLETELY WATERPROOF.
- "CORROSION RESISTANCE" SHALL MEAN THE ABILITY OF A MATERIAL TO WITHSTAND DETERIORATION OF IT'S SURFACE OR IT'S PROPERTIES WHEN EXPOSED TO IT'S ENVIRONMENT.
- BALCONIES, LANDINGS, EXTERIOR STAIRWAYS, OCCUPIED ROOFS AND SIMILAR SURFACES EXPOSED TO THE NEATHER AND SEALED UNDER-NEATH SHALL BE WATERPROOFED AND SLOPED A MINIMUM OF 1/4 UNIT VERTICAL IN 12 UNITS HORIZONTAL (2% SLOPE) FOR DRAINAGE.
- PROVIDE A MINIMUM 2 INCH DROP FROM FINISHED INTERIOR FLOOR ELEVATION TO THE HIGHEST FLOOR ELEVATION OF ANY ADJOINING DECK OR BALCONY.
- ELASTOMERIC OR MEMBRANE DECK COATINGS SHALL BE INSTALLED FER MANUFACTURERS SPECIFICATIONS AT DECKS AND BALCONIES. COLOR, FINISH, AND DETAILING SHALL BE APPROVED BY OWNER/ BUILDER AND ARCHITECT.
- UNLESS DESIGNED TO DRAIN OVER DECK EDGES, DRAINS AND OVER-FLOMS OF ADEQUATE SIZE SHALL BE INSTALLED AT THE LOW POINTS OF THE DECK OR BALCONY.
- FOUNDATION WALLS WHERE THE OUTSIDE GRADE IS HIGHER THAN THE INSIDE GRADE SHALL BE WATER-PROOFED AND DAMPPROOFED IN ACCORDANCE WITH THE N.C.-R
- PARAPET WALLS SHALL BE PROPERLY COPED WITH NONCOMBUSTIBLE. PARAFEI MALES SHALL BE FROFENET OUTED MITH MONODHSTIDLE. WEATHERFROOF MATERIALS OF A MIDTH NO LESS THAN THE THICKNESS OF THE PARAFET NALL. PARAFET COINS SHALL EXTEND 2" MINIMUM DOWN THE FACES OF THE PARAFET.

#### FLASHING

- APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED APPROVED CORROSION-RESISTANT FLASHING SHALL BE APPLIED SHINGLE-FASHION IN A MANRER TO PREVENT ENTRY OF WATER INTO THE WALL 12. CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS, SELF-ADMERED MEMBRANES USED AS FLASHING IN COMPONENTS, SELF-ADMERED MEMBRANES USED AS FLASHING IN EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL COMPLY INITIA AMA TIL THE FLASHING SHALL EXTERIOR WALLS SHALL DE INSTALLED ON ROOF SLOPES OF 2 1/2 WITS VERTICAL INI 12 WITS HORIZONTAL (2-1/2:12) TO FOR WITS VERTICAL IN 12 WITS HORIZONTAL (2-1/2:12) TO FOR WITS VERTICAL IN 12 WITS HORIZONTAL (2-1/2:12) TO FOR WITS VERTICAL IN 12 WITS HORIZONTAL (2-1/2:12) TO FOR WITS VERTICAL IN 12 WITS HORIZONTAL (2-1/2:10) ZO BUE WADERLAYTENT ALLED AT ALL OF THE LOCATIONS STATED IN N.C.-R
- 2. AT ALL WINDOW AND DOOR OPENINGS USE FORTIFIBER WATER-RESISTIVE BARRIERS, I.C.C. ESR-1027, INSTALLED PER MANUFACTURER'S SPECIFICATIONS OR APPROVED EQUAL.
- ALL BEAMS, OUTLOOKERS, CORBELS, ETC. PROJECTED THROUGH З. EXTERIOR WALLS OR PENETRATING EXTERIOR FINISHES SHALL BE FLASHED WITH A MINIMUM O.OI9-INCH (NO. 26 SHEET METAL GAGE) CORROSION-RESISTANT METAL AND CAULKED
- ALL SHEET METAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS AND STANDARDS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMAC.N.J.) THE ARCHITECTURAL SHEET METAL MANUAL, AND SEALANT, WATERPROOFING AND RESTORATION INSTITUTE'S (SWR.I.) GUIDE -SEALANT'S: THE PROFESSIONAL'S GUIDE".
- SHEET METAL SHALL BE STEEL SHEET, HOT-DIPPED, TIGHT COATED 5. SALE INTERCONTRACTOR STATES AND AND SALVANIZED, CONTRACTOR AND SALVANIZED, CONFORMING TO A.S.T.M. A525 AND SHALL BE A NUMBER 24 SHEET METAL GAGE UNLESS OTHERWISE NOTED IN THESE NOTES, PLANS, OR MANUFACTURER'S SPECIFICATIONS.
- SHEET ALUMINUM SHALL CONFORM WITH FEDERAL SPECIFICATIONS QQ-A-359 AND A.S.T.M. B209 ALLOY 3003. 6.
- FABRICATE SHEET METAL WITH FLAT LOCK SEAMS AND SOLDER WITH TYPE AND FLUX RECOMMENDED BY MANUFACTURER. SEAL ALUMINUM SEAMS WITH EPOXY METAL SEAM CEMENT. WHERE REQUIRED FOR STRENGTH, RIVET SEAMS AND JOINTS.
- SHOP FABRICATE TO THE GREATEST EXTENT POSSIBLE IN ACCORDANCE MITH APPLICABLE STANDARDS TO PROVIDE A PERMANENTLY MATER-PROOF, MEATHER RESISTANT INSTALLATION.
- ASPHALT SHINGLES SHALL HAVE SELF-SEAL STRIPS OR BE INTERLOCKING, AND COMPLY WITH ASTM D 225 OR D 3462.
- BASE AND CAP FLASHING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, BASE FLASHING SHALL BE OF EITHER CORROSION-RESISTANT WETAL OF MINIMUM NOMINAL OO/04-INCH THICKNESS OR MINERAL SURFACE ROLL ROOFING HEIGHING A MINIMUM OF TT POUNDS PER IOS SQUARE FEET. CAP FLASHING SHALL BE CORROSION-RESISTANT METAL OF MINIMUM NOMINAL OO/9-INCH THICKNESS
- VALLEY LININGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS BEFORE APPLYING SHINGLES, VALLEY LININGS OF THE FOLLOWING TYPES SHALL BE PERMITTED AS STATED PER THE N.C.-R
- A CRICKET OR SADDLE SHALL BE INSTALLED ON THE RIDGE SIDE OF ANY CHIMNEY OR PENETRATION MORE THAN 30 INCHES WIDE AS MEASURED PERPENDICULAR TO THE SLOPE, CRICKET OR SADDLE COVERINGS SHALL BE SHEET METAL OR OF THE SAME MATERIAL AS THE ROOF COVERING. VIDE FLASHING AT THE INTERSECTION OF CRICKET OR SADDLE AND
- FLASHING AGAINST A VERTICAL SIDEWALL SHALL BE BY THE STEP-FLASHING METHOD PER NC-R. 13.
- 14 FLASHING AGAINST A VERTICAL FRONT WALL, AS WELL AS SOIL STACK SHALL BE APPLIED ACCORDING ENT PIPE AND CHIMNEY ELASHING TO THE ASPHALT SHINGLE MANUFACTURER'S PRINTED INSTRUCTIONS
- AT THE JUNCTURE OF ROOF VERTICAL SURFACES, FLASHING AND COUNTERFLASHING SHALL BE PROVIDED IN ACCORDANCE WITH TH 15. THE N.C.-R AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WHERE OF METAL, SHALL NOT BE LESS THAN O.O.I. INCH (NO. 26 GALVANIZED SHEET GAGE) CORROSION-RESISTANT METAL
- 16. VALLEY FLASHING FOR CONCRETE TILE ROOFS SHALL BE AS REQUIRED

#### ROOFING MATERIALS

- ROOF COVERINGS SHALL BE APPLIED IN ACCORDANCE WITH THE N.C.-R AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALLATION OF ROOF COVERINGS SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE N.C.-R
- ROOFS AND ROOF COVERINGS SHALL BE OF MATERIALS THAT ARE 2. COMPATIBLE WITH EACH OTHER AND WITH THE BUILDING OR STRUCTURE TO WHICH THE MATERIALS ARE APPLIED.
- ROOF COVERING MATERIALS SHALL CONFORM TO THE APPLICABLE STANDARDS LISTED IN THE N.C.-R IN THE ABSENCE OF APPLICABLE STANDARDS OR WHERE MATERIALS ARE OF QUESTIONABLE SUITABILITY, TESTING BY AN APPROVED TESTING AGENCY SHALL BE REQUIRED BY THE BUILDING OFFICIAL TO DETERMINE THE CHARACTER. QUALITY, AND LIMITATIONS OF APPLICATION OF THE MATERIALS.

# THERMAL & MOISTURE PROTECTION (continued)

- ROOF COVERING MATERIALS SHALL BE DELIVERED IN PACKAGES BEARING THE MANUFACTURER'S IDENTIFYING MARKS AND APPROVED TESTING AGENCY LABELS WHEN REQUIRED, BULK SHIFMENTS OF MATERIALS SHALL BE ACCOMPANIED BY THE SAME INFORMATION ISQUED IN THE FORM OF A CERTIFICATE OR ON A BILL OF LADING BY THE MANUFACTURER
- COMPOSITION ROOFING SHINGLES SHALL BE OF ASPHALT OR APPROVED RELATED MATERIALS AND MEET THE REQUIREMENT OF THE N.C.-R
- UNDERLAYMENT FOR ASPHALT SHINGLES SHALL CONFORM TO ASTM D 226 TYPE I, ASTM D 4864, TYPE I, OR ASTM D 6757. SELF-ADHERING FOLTMER MODIFIED BITUMEN SHEET SHALL COMPLY WITH ASTM D 1470
- ASPHALT SHINGLES SHALL COMPLY WITH ASTM D 225 OR ASTM D 3462.
- FASTENERS FOR ASPHALT SHINGLES SHALL BE GALVANIZED STEEL, STAINLESS STEEL, ALUMINUM, OR COPPER ROOFING NAILS, MINIMUM 12 GAES SHANK WITH A MINIMUM 33 INCH DIAVETER HEAD, ASTM F 1667, OF A LENGTH TO PENETRATE THROUGH THE ROOFING MATERIALS AND A MINIMUM OF 5/4 INCH HITO THE ROOF SHEATHING. WHERE THE ROOF SHEATHING 15 LESS THAN 3/4 INCH THICK, THE FASTENERS SHALL PENETRATE THROUGH THE SHEATHING. FASTENERS SHALL COMPLY WITH ASTM F 1667.
- ASPHALT SHINGLES SHALL HAVE THE MINIMUM NUMBER OF FASTENERS REQURED BY THE MANUFACTURER. FOR NORMAL APPLICATION, ASPHALT SHINGLES SHALL BE SECURED TO THE ROOF WITH NOT LESS THAN FOUR FASTENERS PER STRIP SHINGLE OR TWO FASTENERS PER INDIVIDUAL SHINGLE PER N.C.-R.
- IO. UNDERLAYMENT FOR ASPHALT SHINGLES SHALL BE APPLIED IN ACCOR-DANCE WITH THE N.C.-R
- THE INSTALLATION OF CLAY AND CONCRETE TILE SHALL COMPLY WITH THE PROVISIONS OF N.C.-R CLAY ROOF TILE SHALL COMLY WITH ASTM C 1167.

SLOPES OF 2 1/2 UNITS VERTICAL IN IZ UNITS HORIZONTAL (2-1/2:12) OR GREATER. FOR ROOF SLOPES FROM 2 1/2 UNITS VERTICAL IN 12 UNITS HORIZONTAL (2-1/2:12) TO FOUR UNITS VERTICAL IN 12 UNITS HORIZONTAL (4-12), DOUBLE UNDERLATMENT APPLICATION IS REQUIRED IN ACCORDANCE WITH THE N.C.-R

- UNDERLAYMENT FOR CLAY AND CONCRETE TILE SHALL CONFORM WITH ASTM D 226, TYPE II; ASTM D 2626 TYPE I; OR ASTM D 6380 CLASS M MINERAL SURFACED ROLL ROOFING.
- 15. CONCRETE ROOF TILE SHALL COMPLY WITH ASTM C 1492.
- NAILS SHALL BE CORROSION-RESISTANT AND NOT LESS THAN II GAGE, 16. NALES DALL BE COARDIGUESIDIAL LENGTH TO PENETRATE THE DECK SI/G-INCH HEAD, AND OF SUFFICIENT LENGTH TO PENETRATE THE DECK A MINIMUM OF 3/4-INCH OR THROUGH THE THICKNESS OF THE DECK WHICH-DYER IS LESS. ATTACHING WIRE FOR CLAY OR CONCRETE TILE SHALL NOT BE SHALLER THAN 0.008-INCH. PERIMETER FASTENING AREAS INCLUDE THREE TILE COURSES BUT NOT LESS THAN 36 INCHES FROM EITHER SIDE OF HIPS OR RIDGES AND EDGES OF EAVES AND GABLE RAKES.
- 17. CLAY AND CONCRETE ROOF TILES SHALL BE FASTENED IN ACCORDANCE WITH THE N.C.-R
- TILE SHALL BE APPLIED ACCORDING TO THE MANUFACTURERS INSTALLATION INSTRUCTIONS, BASED ON CLIMATIC CONDITIONS, ROOF SLOPE, UNDERLATMENT SYSTEM, AND TYPE OF TILE BEINS INSTALLED PER THE N.C.-R 18.
- THE INSTALLTION OF BUILT-UP ROOFS SHALL COMPLY WITH THE N.C.-R
- 20. BUILT-UP ROOFS SHALL HAVE A DESIGN SLOPE OF A MINIMUM OF ONE-FOUTH UNIT VERTICAL IN 12 UNITS HORIZONTAL (2-PERCENT SLOPE) FOR DRAINAGE, EXCEPT FOR COAL-TAR BUILT-UP ROOPS THAT SHALL HAVE A DESIGN SLOPE OF A MINIMUM ONE-EIGHTH UNIT VERTICAL IN 12 UNITS HORIZONTAL (1-PERCENT SLOPE).
- 21. BUILT-UP ROOF COVERING MATERIALS SHALL COMPLY WITH THE STANDARDS PER THE N.C.-R

#### EXTERIOR WALL COVERINGS

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- SEE FINISHES IN THESE GENERAL NOTES FOR EXTERIOR PLASTER
- MATERIALS USED FOR THE CONSTRUCTION OF EXTERIOR WALLS SHALL COMPLY WITH THE PROVISIONS OF THE N.C.-R

EXTERIOR WALLS SHALL PROVIDE THE BUILDING WITH A WEATHER-RESISTANT EXTERIOR WALL ENVELOPE. THE EXTERIOR WALL ENVELOPE SHALL INCLUDE FLASHING. THE EXTERIOR WALL ENVELOPE SHA BE DESIGNED AND CONSTRUCTED IN A MAINER THAT PREVENTS THE ACCUMULATION OF WATER WITHIN THE WALL ASSEMBLY BY PROVIDING A WATER-RESISTANT BARRIER BEHIND THE EXTERIOR VENER AS REQUIRED AND A MEANS OF DRAINING WATER THAT ENTERS THE ASSEMBLY TO THE EXTERIOR. PROTECTION ASAINST CONDENSATION IN THE EXTERIOR WALL ASSEMBLY SHALL BE PROVIDED. PE SHALL

ONE LAYER OF NO. 15 ASPHALT FELT, FREE FROM HOLES AND BREAKS, COMPLYING WITH ASTM D 226 FOR TYPE I FELT OR OTHER APPROVED WATER-RESISTIVE BARRIER SHALL BE APPLIED OVER STUDS OR SHEATHING OF ALL EXTERIOR WALLS, SUCH FELT OR MATERIAL SHALL BE APPLIED HORIZONTALLY, NITH THE UPPER LAYER LAPPED OVER THE LOWER LAYER NOT LESS THAN 2 INCHES. THERE FUT OR OTHER APPROVED MATERIAL BE LAPPED NOT LESS THAN 2 INCHES. THE FELT OR OTHER APPROVED MATERIAL BHALL BE CONTINUOUS TO THE FOP OF WALLS AND TERMINATED AT PENETRATIONS AND BUILDING APPENDAGES IN A MANNER TO MEET THE REQUIREMENTS OF THE EXTERIOR WALL ENVELOPE. HE EXTERIOR WALL ENVELOP

- FIBER CEMENT SIDING CONFORMING TO THE REQUIREMENTS OF THE N.C.-R AND FIBER CEMENT SIDING CONFORMING TO THE REQUIREMENTS OF THE N.C.-R. AND COMPLINE WITH ASTM D 3674 SHALL BE PERMITTED ON EXTERIOR WALLS OF BUILDINGS OF TYPE V CONSTRUCTION LOCATED IN AREAS WHERE THE ULTIMATE WIND SPEED SPECIFIED DOES NOT EXCEED IOO MILES PER HOUR AND THE BUILDING HEIGHT IS LESS THAN 40 FEET IN EXPOSURE C. MHERE CONSTRUCTION IS LOCATED IN AREAS WHERE THE ULTIMATE WIND SPEED EXCEEDS ISO MILES PER HOUR OR BUILDING HEIGHTS ARE IN EXCESS OF 40 FT, DATA INDICATING COMPLIANCE MIST BE SUBMITTED. FIBER CEMENT SIDIN SHALL BE SECURED TO BUILDING TO PROVIDE WEATHER PROTECTION FOR THE EXTERIOR WALLS OF THE BUILDING. FIBER CEMENT SIDING
- THE N.C.-R FIBER CEMENT SIDING SHALL BE APPLIED TO CONFORM WITH THE WEATHER-RESISTIVE BARRIER REQUIREMENTS FIBER CEMENT SIDING AND ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH APPROVED MANUFACTURER'S INSTRUCTIONS
- FIBER CEMENT SIDING FASTENERS AND ACCESSORIES SHALL MEET THE REQUIREMENTS OF THE N.C.-B
- EXTERIOR WALLS OF WOOD CONSTRUCTION SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE N.C.-R

# THERMAL & MOISTURE PROTECTION (continued)

- HARDBOARD SIDING SHALL CONFORM TO THE REQUIREMENTS OF AHA AI35,6 AND, WHERE USED STRUCTURALLY, SHALL BE SO IDENTIFIED BY THE LABEL OF AN APPROVED AGENCY.
- WOOD VENEERS ON EXTERIOR WALLS OF BUILDINGS OF TYPES I, II, III, AND IV CONSTRUCTION SHALL BE NOT LESS THAN I-INCH NOMINAL THICKNESS, 0.438-INCH EXTERIOR HARDBOARD SIDING OR 0.375-INCH EXTERIOR-TYPE WOOD STRUCTIRAL PANELS OR PARTICLE-BOARD AND SHALL CONFORM TO THE REQUIREMENTS OF THE N.C.-R
- FIBER-CEMENT LAP SIDING HAVING A MAXIMUM WIDTH OF 12 INCHES SHALL COMPLY WITH THE REQUIREMENTS OF ASTM CIB6, TYPE A, MINIMUM GRADE II, LAP SIDING SHALL BE LAPPED A MINIMUM OF 11/4 INCHES (32 MM) AND LAP SIDING NOT HAVING TONUE-AND-CROOVE END JOINTS SHALL HAVE THE ENDS SEALED WITH CAULKING, INSTALLED WITH AN H-SECTION JOINT COVER, LOCATED OVER A STRIP OF FLASHING OR SHALL BE DESIGNED TO COMPLY WITH NC-R, LAP SIDING COURSES MAY BE INSTALLED WITH THE FASTENER HEADS EXPOSED OR CONCELSED, ACCORDING TO NC-R OR APPROVED MANUFACTURERS' INSTALLATION INSTRUCTIONS.

#### INSULATION

- INSULATING MATERIALS, INCLUDING FACINGS, SUCH AS VAPOR RETARDERS OR VAPER-PERVEABLE VERDRANES,INSTALLED WITHIN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, INALL-ASSEMBLIES, CRANL SPACES AND ATTICS SHALL HAVE A FLAME-SPREAD INDEX NOT TO EXCEED 25 WITH AN ACCOMPANYING SMOKE-DEVELOPED INDEX NOT TO EXCEED 25 WITH AN ACCOMPANYING SMOKE-INDEX NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723
- DUCT INSULATION MATERIALS SHALL CONFORM TO THE FOLLOWING 2. VIREMENTS OF THE N.C.-R
- INSULATION AND COVERING ON PIPE AND TUBING SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450. SEE EXCEPTIONS. з.
- ALL EXPOSED INSULATION MATERIALS INSTALLED ON ATTIC FLOORS SHALL HAVE A CRITICAL RADIANT FLUX OF NOT LESS THAN 0.12 WATT PER SQUARE 17. CENTIMETER PER N.C.-R TESTS FOR CRITIAL RADIANT FLUX SHALL BE MADE IN ACCORDANCE WITH ASTM E 970.
- THE USE OF ABOVE DECK THERMAL INSULATION SHALL BE PERMITTED 5. PROVIDED SUCH INSULATION IS COVERED WITH AN APPROVED ROOF COVERING AND PASSES FM 4450 OR UL 1256 PER N.C.-R.
- CELLULOSE LOOSE-FILL INSULATION SHALL COMPLY WITH CPSC 16 6. CFR. PARTS 1209 AND 1404. EACH PACKAGE OF SUCH INSULATIN MATERIAL SHALL BE CLEARLY LABELED IN ACCORDANCE WITH CPSC 16 CFR, PARTS 1209 AND 1404.
- INSULATION IN FLOOR-CEILING ASSEMBLIES, ROOF-CEILING ASSEMBLIES, NALLS, CRAWL SPACES OR ATTICS SHALL BE EITHER OF THE BLOWN-IN CELLULOSE TYPE OR FIBERGLASS BATTS OR BLANKET TYPE PER BUILDER'S SPECIFICATIONS.
- THE ENERGY EFFICIENCY REQUIREMENTS INCLUDING I.E.C.C. BUT NOT LIMITED TO INSULATION "R" VALUES, PERCENTAGE OF GLAZING "U" VALUES, ETC. SHALL BE DETERMINED BY THE ADOPTED STATE AND LOCAL ENERGY CODE EQUIRENTS, REFER TO MECHANICAL PLANS FOR SPECIFICATIONS.
- THE BUILDING THERMAL ENVELOPE SHALL BE DURABLY SEALED WITH AN AIR BARRIER SYSTEM TO LIMIT INFILTRATION. THE SEALING METHODS BETWEEN DISSIMILAR MATERIALS SHALL ALLOW FOR DIFFERENTIAL EXPANSION AND CONTRACTION. FOR ALL HOMES, WHERE PRESENT, THE FOLLOWING SHALL BE CAULKED, GRALL HOMES, WHERE PRESENT, THE FOLLOWING SEALED WITH AN AIR BARRIER MATERIAL OR SOLID MATERIAL ON STATEMENT OF THE NORMAL AND AND AND AND AND WITH APPENDIX E-23 AND E-24 OF THE NC-R. I. BLOCKING AND SEALING FLOORCELING SYSTEMS AND UNDER KNEE WALLS OPEN TO UNCONDITIONED OR EXTERIOR SPACE. 2. CAPPING AND SEALING SHAFTS OR CHASES, INCLUDING FLUE

3. CAPPING AND SEALING SOFFIT OR DROPPED CEILING AREAS

FRAMED CAVITY WALLS, THE EXTERIOR THERMAL ENVELOPE WALL INSULATION SHALL BE INSTALLED IN SUBSTANTIAL CONTACT AND CONTINUOUS ALIGNMENT MITH THE BUILDING ENVELOPE AIR BARRIER, INSULATION SHALL BE SUBSTANTIALLY FREE FROM INSTALLATION GAPS, VOIDS, OR COMPRESSION, FOR FRAMED WALLS, THE CAVITY INSULATION SHALL BE ENCLOSED ON ALL SIDES WITH A RIGID WATERIAL OR AN AIR BARRIER MATERIAL, WALL INSULATION SHALL BE ENCLOSED AT THE FOLLOWING LOCATIONS WHEN INSTALLED ON EVTERIOR WALLS BEING CONFERED SY SIDES WHEN 10. NGTALLED ON EXTERIOR WALLS PRIOR TO BEING COVERED BY SUBSEQUENT CONSTRUCTION, CONSISTENT WITH APPENDIX E-2.3 AND E-2.4 OF NC-R:

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I. TUBS 2. SHORERS 3. STAIRS 4. FIREPLACE UNITS ENCLOSURE OF WALL CAVITY INSULATION ALSO APPLIES TO WALLS THAT ADJOIN ATTIC SPACES BY PLACING A RIGID MATERIAL OR AIR BARRIER MATERIAL ON THE ATTIC SIDE.

# DOORS & WINDOWS

- SEE FLOOR PLANS AND ELEVATIONS FOR SIZES AND TYPES OF DOORS AND WINDOWS AND FOR ANY DIVIDED LITE PATTERNS. COLORS SHALL BE APPROVED BY THE BUILDER AND ARCHITECT.
- OPENINGS FROM A PRIVATE GARAGE DIRECTLY INTO A ROOM USED FOR SILEEPING PURPOSES SHALL NOT BE PERMITTED. OTHER OPENINGS DETIVEEN THE GARAGE AND RESIDENCE SHALL EQUIPPED MITH SOLID MOOD DOORS NOT LESS THAN I 3/8 INCHES IN THICKNESS, SOLID OR HONEYCOMB CORE STEEL DOORS NOT LESS THAN I 3/6 INCHES THICK, OR 20-MINUTE FIRE-RATED DOORS.
- NO DOUBLE FRENCH DOORS SHALL BE USED UNLESS THERE IS A SUFFICIENT OVERHANG OR COVERED PATIO COVERING THESE DOORS. NO DOUBLE WOOD FRENCH DOORS SHALL BE USED IN ANY CASE.
- PROVIDE SECURITY HARDWARE FOR ALL DOORS AND WINDOWS IANCE WITH ALL STATE AND LOCAL CODE REQUIREMENTS.
- ALL AUTOMATIC GARAGE DOOR OPENERS REQUIRE THE INCLUSION OF A PHOTOELECTRIC SENSOR, EDGE SENSOR OR SOME OTHER SIMILAR DEVICE FOR REMOTE OPERATION AND AS A SAFETY PRE-CAUTION TO PREVENT THE DOOR FROM CLOSING MHEN SOMETHING IS BLOCKING THE PATH OF THE DOOR. SEE MANUFACTURER'S INSTALLTION INSTRUCTIONS
- ALL MANUFACTURED WINDOWS AND SLIDING GLASS DOORS SHAL 6. MEET THE AIR INFILTRATION STANDARDS OF THE CURRENT AMERICAN FIBER CEMENT SIDING SHALL BE APPLIED OVER SHEATHING OR MATERIALS LISTED INATIONAL STANDARDS INSTITUTE A.S.T.M. E283-73 WITH A PRESSURE DIFFERENTIAL OF 1.57 POUNDS PER SQUARE FOOT AND SHALL BE CERTIFIED AND LABELED
  - BASEMENTS, HABITABLE ATTICS AND EVERY SLEEPING ROOM SHALL AVE AT LEAST ONE OPENABLE EMERGENCY ESCAPE AND RESCUE OPENING
  - WHERE EMERGENCY ESCAPE AND RESCUE OPENINGS ARE PROVIDED 8. HEY SHALL HAVE A SILL HEIGHT OF NOT MORE THAN 44 INCHES ABOVE THE FLOOR
  - EMERGENCY ESCAPE AND RESCUE OPENINGS WITH A FINISHED SILL HEIGHT BELOW THE ADJACENT GROUND ELEVATION SHALL BE PROVIDED WITH A WINDOW WELL

# DOORS & WINDOWS (continued)

- ALL EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING OF NOT LESS THAN 5 SQUARE FEET IN THE CASE OF GROUND FLOOR LEYEL WINDOW AND NOT LESS THAN 5.T SQUARE FEET IN THE CASE OF AN UPPER STORY WINDOW.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM CLEAR OPENING HEIGHT OF 24 INCHES.
- ALL EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL HAVE A MINIMUM NET CLEAR OPENING WIDTH OF 20 INCHES.
- EMERGENCY ESCAPE AND RESCUE OPENINGS SHALL BE OPERATIONAL FROM THE INSIDE OF THE ROOM NITHOUT THE USE OF KEYS, TOOLS OR SPECIAL KNOWLEDGE.
- THE MINIMUM HORIZONTAL AREA OF THE WINDOW WELL SHALL BE 9 SQUARE FEET, NITH A MINIMUM HORIZONTAL PROJECTION AND WIDTH OF 36 INCHES. THE AREA OF THE WINDOW WELL SHALL ALLOW HERREFEVEY ESCAPE AND RESCUE OFENING TO BE FULLY OFENED PERT THE N.C.-R THE LADDER OR STEPS REQUIRED SHALL BE PERMITTED TO ENCROACH A MAXIMUM OF 6" INTO THE REQUIRED SHALL DE PERMITTED TO ENCROACH A MAXIMUM OF 6"
- MINDOW WELLS WITH A VERTICAL DEPTH GREATER THAN 44 INCHES SHALL BE EQUIPPED WITH A PERMANENTLY AFFIXED LADDER OR STEPS USABLE WITH THE WINDOW IN THE FULLY OPEN POSITION.
- BARS GRILLES COVERS SCREENS OR SIMILAR DEVICES ARE PERMITTED TO BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PERMITTED TO BE PLACED OVER EMREGENCY ESCAPE AND RESCUE OPENNES, BULKHEAD ENCLOSURES, OR WINDOW WELLS THAT SERVE SUCH OPENNES, PROVIDED THE MINIMUM NET CLEAR OPENNES SUE COMPLES WITH THE NC-R AND SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY, TOOL, SPECIAL KNONLEDE OR FORCE GREATER THAN THAT WHICH IS REQUIRED FOR NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING
- ALL INTERIOR EGRESS DOORS AND A MINIMUM OF ONE EXTERIOR EGRESS The Interval Barleys Louves and a minimum of one exterior eggess Door shall be readull of openable from the side from which egges Is to be made without the use of a key or special knowledge or Effort.

#### GLAZING & SAFETY GLAZING

BEING DESTROYED.

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3.4

- HABITABLE ROOMS SHALL HAVE AN AGGREGATE GLAZING AREA OF NOT LESS THAN & PERCENT OF THE FLOOR AREA OF SUCH ROOMS. NATURAL VENTILATION SHALL BE THROUGH WINDOWS, SKYLIGHTS, DOORS, LOUVERS OR OTHER APPROVED OPENINGS TO THE OUTDOOR AIR. SUCH OPENINGS SHALL BE PROVIDED WITH READY ACCESS OR SHALL OTHERWISE BE READILY CONTROLLABLE BY THE BUILDING OCCUPANTS, THE OPENABLE AREA TO THE OUTDOORS SHALL BE NOT LESS THAN 4 PERCENT OF THE FLOOR AREA BEING VENTILATED.
- BATHROOMS, WATER CLOSET COMPARTMENTS AND OTHER SIMILAR 2. ROOMS SHALL BE PROVIDED WITH AGGREGATE GLAZING AREAS I WINDONS OF NOT LESS THAN 3 SQUARE FEET, ONE-HALF OF WHICH MUST BE OPENABLE.

EXCEPT AS INDICATED, EACH PANE OF GLAZING INSTALLED IN HAZARDOUS LOCATIONS SHALL BE PROVIDED WITH MANUFACTURER'S DESIGNATION SPECIFYING MHO APPLIED THE DESIGNATION, DESIGNATING THE TYPE OF GLASS AND THE SAFETY GLAZING STANDARD WITH MHICH IT COMPLIES, MHICH IS VISIBLE IN THE FINAL INSTALLATION. THE DESIGNATION SHALL BE ACID ETCHED, SANDBLASTED, CERANIC-FIRED, LASER ETCHED, ENBOSSED, OR BE OF A TYPE WHICH ONCE APPLIED CANNOT BE REMOVED WITHOUT DENILS DESTORTED

INDIVIDUAL GLAZED AREAS, INCLUDING GLASS MIRRORS IN HAZARDOUS

THE FOLLOWING SHALL BE CONSIDERED SPECIFIC HAZARDOUS LOCATIONS FOR THE PURPOSES OF GLAZING:

SLIDING IN ALL TIALD AND DOORS SLIDING AND BIFOLD DOORS SLIDING IN AN INDIVIDUAL FIRED OR OPERABLE PANEL IN THE SAME PLANE AS A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN 24-INCHES OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTON EDGE IS LESS THAN 60 INCHES ABOVE THE FLOOR OR MALKING

3.I EXPOSED AREA OF AN INDIVIDUAL PANE LARGER THAN 9 SQUARE

ONE OR MORE WALKING SURFACES WITHIN 36 INCHES, MEASURED HORIZONTALLY AND IN A STRAIGHT LINE, OF THE GLAZING.

GLAZING IN GUARDS AND RAILINGS, INCLUDING STRUCTURAL BALUSTER PANELS AND NONSTRUCTURAL IN-FILL PANELS, REGARDLESS OF AREA OR HEIGHT ABOYE A MALKING SURFACE.

GLAZING IN DOORS AND ENCLOSURES FOR HOT TUBS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS AND SHOWERS, GLAZING ENCLOSING THESE COMPARTMENTS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60 INCHES MEASURED

GLAZING IN WALLS AND FENCES ENCLOSING INDOOR AND OUTDOOR SWIMMING POOLS, HOT TUBS AND SPAS IMPERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60 INCHES ABOVE A WALKING SUFFACE AND MITHIN 60 INCHES HORIZONTALLY OF THE WATER'S EDGE. THIS

LL APPLY TO SINGLE GLAZING AND ALL PANES IN MULTIPLE

GLAZING ADJACENT TO STAIRWAYS, LANDINGS AND RAMPS WITHIN 36 INCHES HORIZONTALLY OF A WALKING SURFACE WHEN THE EXPOSED

SLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF STAIRWAYS NHERE THE GLAZING IS LESS THAN 36 INCHES ABOVE THE LANDING AND WITHIN A 60-INCH HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING.

SURFACE OF THE GLAZING IS LESS THAN 36 INCHES ABOVE THE PLANE

VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE.

THE ADJACENT WALKING SURFACE.

HINGED SHOWER DOORS SHALL OPEN OUTWARD.

CONSERVATION CODE.

GLAZING SHALL BE IN ACCORDANCE WITH ENERGY COMPLIANCE

CALCULATIONS BASED ON A LOCALLY ADOPTED ENERGY CODE, THE MODEL ENERGY CODE OR THE INTERNATIONAL ENERGY

IN DWELLING UNITS, WHERE THE OPENING OF AN OPERABLE WINDOW IS

FLOOR OF THE ROOM IN WHICH THE WINDOW IS LOCATED, OPERABLE

SECTIONS OF WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW

ARE LOCATED WITHIN 24 INCHES (610 MM) OF THE FINISHED FLOOR

IN DALLING WITH, MENL THE OFENDED AN OFFENDED BLUE WIDDATED GRADE LOCATED MORE THAN 72 INCHES (1829 MM) ABOVE THE FINISHED GRADE OR SURFACE BELOW, THE LOWEST PART OF THE CLEAR OPENING OF THE WINDOW SHALL BE A MINIMUM OF 24 INCHES (6/O MM) ABOVE THE FINISHED

PASSAGE OF A 4 INCH (102 MM) DIAMETER SPHERE WHERE SUCH OPENINGS

GLAZING IN ALL FIXED AND OPERABLE PANELS OF SWINGING,

GLAZING IN AN INDIVIDUAL FIXED OR OPERABLE PANEL THAT MEETS ALL OF THE FOLLOWING CONDITIONS:

3.2 BOTTOM EDGE LESS THAN 18 INCHES ABOVE THE FLOOR.

3.3 TOP EDGE MORE THAN 36 INCHES ABOVE THE FLOOR

LOCATIONS SHALL PASS THE TEST REQUIREMENTS OF CPSC 16 CFR, PART 1201. GLAZING SHALL COMPLY WITH CPSC 16.

# FINISHES

#### GYPSUM BOARD

GYPSUM WALLBOARD SHALL BE INSTALLED IN CONFORMANCE WITH THE CURRENT EDITION OF THE NORTH CAROLINA RESIDENTIAL CODE AND ALL STATE AND LOCAL BUILDING CODES. THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.

MATERIALS. ALL GYPSUM BOARD MATERIALS AND ACCESSORIES SHALL CONFORM TO ASTM C 22, C 475, C 514, C 1002, C 1047, C 117, C 117, C 1276, C 1366, AN C 1650 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE NC.-R ADMESIVES FOR THE INSTALLATION OF GYPSUM BOARD SHALL CONFORM TO ASTM C 557.

SYPSUM BOARD MATERIALS SHALL CONFORM TO THE APPROPRIATE STANDARDS LISTED IN THE NG.-R WHERE REQUIRED FOR FIRE PROTECTION, CONFORM TO THE NG.-R

INTERIOR GYPSUM BOARD SHALL NOT BE INSTALLED WHERE IT IS DIRECTLY EXPOSED TO THE WEATHER OR TO WATER.

ALL EDGES AND ENDS OF GYPSUM BOARD SHALL OCCUR ON THE FRAMING MEMBERS, EXCEPT THOSE EDGES AND ENDS THAT ARE PERFENDICULAR TO THE FRAMING MEMBERS. EDGES AND ENDS OF GYPSUM BOARD SHALL BE IN MODERATE CONTACT EXCEPT IN CON-CEALED SPACES WHERE FIRE-RESISTACE-RATED CONSTRUCTION, SHEAR RESISTANCE, OR DIAPHRAGM ACTION IS NOT REQUIRED. CEALED SPACES WHERE FIRE-RESISTACE-RATED CONSTRUCTION,

FASTENERS AT THE TOP AND BOTTOM PLATES OF VERTICAL ASSEMBLIES, FASTENERS AT THE TOP AND BOTTOM PLATES OF VERTICAL ASSEMBLIES, OR THE EDGES AND ENDS OF HORIZONTAL ASSEMBLIES PERPENDICULAR TO SUPPORTS, AND AT THE WALL LINE MAY BE OMITTED EXCEPT ON SHEAR-RESISTING ELEMENTS OR FIRE- RESISTIVE ASSEMBLIES, FASTENERS ALL BE APPLIED IN SUCH A MANNER AS NOT TO FRACTURE THE FACE PAPER WITH THE FASTENER HEAD.

GYPSUM BOARD USED AS THE BASE OR BACKER FOR ADHESIVE SITES AND ADDRESS AND ADDRESS TO A ADDRESS TO A ADDRESS TO ADDRESS AND ADDRESS CEILINGS WHERE FRAMING SPACING DOES NOT EXCEED 12 INCHES ON CENTER FOR 1/2-INCH-THICK OR 16 INCHES FOR 5/8-INCH-THICK GYPSUM BOARD WATER-RESISTANT GYPSUM BOARD SHALL NOT BE INSTALLED OVER A VAPOR RETARDER IN A SHOWER OR TUB COMPARTMENT, OUT OR EXPOSED EDGES, INCLUDING THOSE AT WALL INTERSECTIONS, SHALL BE SEALED AS RECOMMENDED BY THE MANUFACTURER.

WATER RESISTANT GYPSUM BACKING BOARD SHALL NOT BE USED WHERE THERE WILL BE DIRECT EXPOSURE TO WATER, OR IN AREAS SUBJECT TO CONTINUOUS HIGH HUMIDITY.

WHEN APPLYING A WATER-BASED TEXTURE MATERIAL. THE MINIMUM MICH AFFLING AVAILARED SELL LA LIKE MALENTAL THE MINIMUM GYPSUM BOARD THICKNESS SHALL BE INCREASED FROM 3/3 INCH TO 1/2 INCH FOR 16-INCH ON CENTER FRAMING OR 1/2 INCH SAG-RESISTANT GYPSUM CEILING BOARD SHALL BE USED.

#### EXTERIOR LATH

ALL LATH AND LATH ATTACHMENTS SHALL BE OF CORROSION RESISTANT MATERIAL

BACKING OR A LATH SHALL PROVIDE SUFFICIENT RIGIDITY TO PERMIT PLASTER APPLICATION.

WHERE LATH ON VERTICAL SURFACES EXTENDS BETWEEN RAFTERS OR OTHER SIMILAR PROJECTING MEMBERS, SOLID BACKING SHALL BE INSTALLED TO PROVIDE SUPPORT FOR LATH AND ATTACHMENTS.

GYPSUM LATH OR GYPSUM BOARD SHALL NOT BE USED, EXCEPT THAT ON HORIZONTAL SUPPORTS OF CEILINGS OR ROOF SOFFITS IT MAY BE USED AS BACKING FOR METAL LATH OR WIRE FABRIC LATH AND CEMENT PLASTER

UNLESS SPECIFIED OTHERWISE, ALL WALL COVERINGS SHALL BE SECURELY UNLESS SPECIFIED OTHERNIS, ALL NALL COVENINGS SHALL BE SECURELT FASTENED FER THE N.C. ROR WITH OTHER APPROVED ALUMINM, STAINLESS STEEL, ZINC-COATED OR OTHER APPROVED CORROSION-RESISTIVE FASTENERS, NHERE THE BASIC WIND SPEED IS 110 MILES PER HOUR OR HIGHER, THE ATTACHMENT OF WALL COVERINGS SHALL BE DESIGNED TO RESIST THE COMPONENT AND CLADDING LOADS SPECIFIED AND ADJUSTED FOR HEIGHT AND EXPOSURE.

A MINIMUM 0.019-INCH (NO. 26 GALVANIZED SHEET GAGE), CORROSION-RESISTANT MEEP SCREED OR PLASTIC WEEP SCREED, WITH A MINIMUM VERTICAL. ATTACHMENT FLANGE OF 31/2 INCHES SHALL BE PROVIDED AT OR BELOW THE FOUNDATION PLATE LINE ON EXTERIOR STUD MALLS IN ACCORDANCE WITH ASTM C 920. THE WEEP SCREED SHALL BE PLACED A MINIMUM OF 4 INCHES ABOVE THE EARTH OR 2 INCHES ABOVE PLACED A MINIMUM OF 4 INCHES ABOVE THE EARTH OR 2 INCHES ABOVE PLACED A MINIMUM OF 4 INCHES ABOVE THE EARTH OR 2 INCHES ABOVE PLACED A REAS AND SHALL BE OF A TYPE THAT MILL ALLOW TRAPPED WATER TO DRAIN TO THE EXTERIOR OF THE BUILDING. THE WEATHER-RESISTANT BARRIER SHALL LAP THE ATTACHMENT FLANGE. THE EXTERIOR LATH SHALL COVER AND TERMINATE ON THE ATTACHMENT FLANGE OF THE WEEP SCREED. A MINIMUM O.019-INCH (NO. 26 GALVANIZED SHEET GAGE),

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PLASTERING WITH PORTLAND CEMENT PLASTER SHALL BE NOT LESS THAN THREE COATS WHEN APPLIED OVER METAL LATH OR WIRE LATH AND SHALL BE NOT LESS THAN TWO COATS WHEN APPLIED OVER MASONRY, CONCRETE, PRESSURE-PRESERVATIVE TREATED WOOD OR DECAY-RESISTANT WOOD OR SYPSUM BACKINS. IF THE PLASTER SURFACE IS COMPLETELY COVERED BY VENEER OR OTHER FACING MATERIAL OR IS COMPLETELY CONCEALED, PLASTER APPLICATION NEED BE ONLY TWO COATS, PROVIDED THE TOTAL THICKNESS IS AS SET FORTH PER THE N.C.-R

ON WOOD-FRAME CONSTRUCTION WITH AN ON-GRADE FLOOR SLAB SYSTEM, EXTERIOR FLASTER SHALL BE APPLIED TO COVER, BUT NOT EXTEND BELOW LATH, PAPER AND SCREED.

THE PROPORTION OF AGGREGATE TO FIBER CEMENT MATERIALS SHALL BE AS SET FORTH PER THE N.C.-R

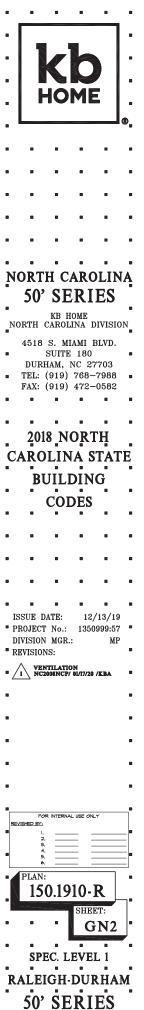
ONLY APPROVED PLASTICITY AGENTS AND APPROVE AMOUNTS THEREOF MAY BE ADDED TO PORTLAND CEMENT. WHEN PLASTIC CEMENT IS USED, NO ADDITIONAL LINE OR PLASTICIZERS SHALL BE ADDED. HYDRATED LIME OR THE EQUIVALENT AMOUNT OF LIME PUTTY USED AS A PLASTICIZER MAY BE ADDED TO CEMENT PLASTER OR CEMENT AND LIME PLASTER IN AN AMOUNT NOT TO EXCEED THAT SET FORTH IN ASTM C 926

GYPSUM PLASTER SHALL NOT BE USED ON EXTERIOR SURFACES

PLASTER COATS SHALL BE PROTECTED FROM FREEZING FOR A PERIOD OF NOT LESS THAN 24 HOURS AFTER SET HAS OCCURRED PLASTER SHALL BE APPLIED WHEN THE AMBIENT TEMPERATURE IS HIGHER THAN 40 DEGREES F (4 DEGREES C), UNLESS PROVISIONS ARE MADE TO KEEP CEMENT PLASTER WORK ABOVE 40 DEGREES I (4 DEGREES C), PRIOR TO & DURING APPLICATION AND 48 HOURS HEREAFTER

COLOR AND FINISH TO BE SELECTED AND APPROVED BY OWNER/ BUILDER AND ARCHITECT

A I-COAT EXTERIOR PLASTER SYSTEM SUCH AS "MAGNA WALL" I.C.C. NO. ER-4776. "EXPO FIBREWALL" I.C.C. NO. ER-4368. OR APPROVED EQUAL MAY BE USED IN LIEU OF A 3-COAT EXTERIOR PLASTER SYSTEM



# MECHANICAL & PLUMBING

#### HVAC

- ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN CONFORMANCE WITH THE NORTH CAROLINA RESIDENTIAL AND MECHANICAL CODE. INSTALLATIONS OF MECHANICAL APPLIANCES, EQUIPMENT AND SYSTEMS NOT ADDRESSED BY THIS CODE SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE NORTH CAROLINA RESIDENTIAL AND FUEL GAS CODE.
- CONTRACTOR SHALL DESIGN ENTIRE H.V.A.C. SYSTEM AND SUBMIT DRAWINGS FOR OWNER/BUILDER'S APPROVAL PRIOR TO ORDERIN MATERIALS OR EQUIPMENT.
- WHERE AIR CONDITIONING IS AN OPTIONAL FEATURE, HEATING SYSTEMS MUST BE DESIGNED AND DUCT WORK SIZED TO ACCOMMODATE FUTURE AIR CONDITIONING NEEDS.
- WHERE THE PRIMARY HEATING SYSTEM IS A FORCED-AIR FURNACE, AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE TO MAINTAIN DIFFERENT THEMERATURE SET POINTS AT DIFFERENT THES OF THE DAY, THIS THERMOSTAT SHALL INCLUDE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55 DEG, F (13 C) OR UP TO 85 DEG, F (29 C).
- 5. ALL DUCTWORK SHALL CONFORM TO THE REQUIREMENTS OF THE
- COMBUSTION AIR SHALL BE PROVIDED FOR FORCED AIR UNITS IN ACCORDANCE WITH N.C.-R
- CONTRACTOR TO PROVIDE BOOT IN DUCTWORK WHEN OPTIONAL "HONEYWELL" OR "CARRIER" ELECTRONIC AIR CLEANER IS PROVIDED. 7.
- 8. DUCTS IN THE GARAGE AND DUCTS PENETRATING THE WALLS OR CEILINGS EEPARATING THE DWELLING FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO. 26 GAGE SHEET STEEL OR OTHER APPROVED MATERIAL AND SHALL HAVE NO OPENINGS INTO THE GARAGE PER N.C.-R
- EXTERIOR-GRADE INSTALLATIONS. EQUIPMENT AND APPLIANCES INSTALLED ABOVE GRADE LEVEL SHALL BE SUPPORTED ON A SOLID BASE OR APPROVED MATERIAL A MINIMUM OF 2 INCHES THICK.
- 10. UNDER-FLOOR INSTALLATION. SUSPENDED EQUIPMENT SHALL BE A MINIMUM OF 6 INCHES ABOVE THE ADJOINING GRADE.
- CRAWL SPACE SUPPORTS. IN A CRAWL SPACE, A MINIMUM OF 2-INCH CRAFL STACE SOFTCRIS. IN A CRAFL STACE, A MINIMUM OF 2010 THICK SOLID BASE, 2-1004 (SI MW) THICK FORMED CONCETE, OR STACKED MASONRY WITS HELD IN PLACE BY MORTAR OR OTHER APPROVED METHOD. THE MATER HEATER SHALL BE SUPPORTED NOT LESS THAN 2 INCHES ABOVE GRADE.
- 12. DRAINAGE, BELOW-GRADE INSTALLATIONS SHALL BE PROVIDED WITH A NATURAL DRAIN OR AN AUTOMATIC LIFT OR SUMP PUMP, FOR PIT REQUIREMENTS REFER TO N.C.-M

#### VENTING

- IN LIEU OF REQUIRED EXTERIOR OPENINGS FOR NATURAL VENTILATION L. IN LIEU OF REQUIRED EXTENSOR OFENNES FOR NATURAL VENTILATION IN BATHROOMS CONTAINING A BATHTUR, SHORER OR COMBINATION THEREOF, A MECHANICAL VENTILATION SYSTEM MAY BE PROVIDED. THE MINIMW VENTILATION RATES SHALL BE SO COM FOR INTERMITTENT VENTILATION OR 20 CFM FOR CONTINUOUS VENTILATION, VENTILATION AIR FROM THE SPACE SHALL BE EXHAUSTED DIRECTLY TO THE OUTSIDE FER NG-R
- 2. EXHAUST DUCTS SHALL TERMINATE OUTSIDE THE BUILDING AND SHALL BE EQUIPPED WITH BACKDRAFT DAMPERS.
- RANGE HOODS SHALL DISCHARGE TO THE OUTDOORS THROUGH A DUCT. THE DUCT SERVING THE HOOD SHALL HAVE A SMOOTH INTERIOR SURFACE, SHALL BE AIR TIGHT, SHALL BE EQUIPPED WITH A BACK-DRAFT DAMPER AND SHALL BE INDEPENDENT OF ALL OTHER EXHAUST SYSTEMS, DUCTS SERVING RANGE HOODS SHALL NOT TERMINATE IN AN ATTIC OR CRAML SPACE OR AREAS INSIDE THE BUILDING, DUCTS SERVING RANGE HOODS SHALL BE CONSTRUCTED OF GALVANIZED STEEL, STAINLESS STEEL OR з.
- WHERE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND WHERE MECHANICAL OR NATURAL VENTILATION IS OTHERWISE PROVIDED, LISTED AND LABELED DUCTLESS RANGE HOODS SHALL NOT BE REQUIRED TO DISCHARGE TO THE OUTDOORS PER N.C.-M
- DUCTS FOR DOMESTIC KITCHEN COOKING APPLIANCES EQUIPPED MITH DOWN DRAFT EXHAUST SYSTEMS SHALL BE PERMITTED TO BE CONSTRUCTED OF SCHEDULE 40 PVC PIPE PROVIDED THAT TH INSTALLATION COMPLIES WITH ALL OF THE FOLLOWING PER N.C.-M
- THE DUCT SHALL BE INSTALLED UNDER A CONCRETE SLAB POURED ON GRADE.
- THE UNDERFLOOR TRENCH IN WHICH THE DUCT IS INSTALLED SHALL BE COMPLETELY BACKFILLED WITH SAND OR GRAVEL. в.
- THE PVC DUCT SHALL EXTEND NOT GREATER THAN I INCH ABOVE THE INDOOR CONCRETE FLOOR SURFACE. с.
- D. THE PVC DUCT SHALL EXTEND NOT GREATER THAN I INCH ABOVE GRADE OUTSIDE THE BUILDING.
- E. THE PVC DUCTS SHALL BE SOLVENT CEMENTED.
- EXHAUST HOOD SYSTEMS CAPABLE OF EXHAUSTING IN EXCESS OF 400 CPM SHALL BE PROVIDED WITH MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST AIR RATE THAT IS IN EXCESS OF 400 CUBIC FEET PER MINUTE, SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH A TEN MINUE. SOUTH INACUT AND STALL BE LAUTOMATICALLY CONTROLLED TO MEANS OF CLOSHRE AND SHALL BE AUTOMATICALLY CONTROLLED TO START AND OPERATE SIMULTANEOUSLY WITH THE EXHAUST SYSTEM. DAMPERS SHALL BE ACCESSIBLE FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION
- DOMESTIC WATER HEATERS, UNLESS SPECIFIED OTHERWISE BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, SHALL BE VENTED TO THE OUTSIDE AIR BY A TYPE 'B' VENT AND COMPLY WITH THE REQUIREMENTS OF THE N.C.-M

#### PLUMBING

- A POTABLE WATER SUPPLY SYSTEM SHALL BE DESIGNED, INSTALLED ١. AND MAINTAINED IN SUCH A MANNER SO AS TO PREVEN AND THAINIAINED IN SOCH THANNER SOLAS I DEVENT SYSTEM. BACKFLOW PRE- VENTER APPLICATIONS SHALL CONFORM TO
- 2. THE SUPPLY LINES OR FITTINGS FOR EVERY PLUMBING FIXTURE SHALL BE INSTALLED SO AS TO PREVENT BACKFLOW. PLUMBING FIXTURE FITTINGS SHALL PROVIDE BACKFLOW PROTECTION IN ACCORDANCE WITH ASME AU2.18.1

# MECHANICAL &

# PLUMBING (continued)

8.

- ALL DEVICES, APPLICTENANCES, APPLIANCES AND APPARATUS INTENDED TO SERVE SOME SPECIAL FUNCTION, SUCH AS STERILIZATION, DISTIL-LATION, PROCESSING, COOLING, OR STORAGE OF ICE OR FOODED, AND THAT CONNECT TO THE WATER SUPPLY SYSTEM, SHALL BE PROVIDED WITH PROTECTION AGAINST BACKFLOW AND CONTAMINATION OF THE WATER SUPPLY SYSTEM, WATER FUMPS, FILTERS, SOFTEMERS, TANKS AND ALL OTHER APPLIANCES AND DEVICES THAT HANDLE OR TREAT POTABLE WATER SHALL BE PROTECTED AGAINST CONTAMINATION.
- WATER SERVICE PIPING SHALL BE PROTECTED IN ACCORDANCE WITH N.C.-P SECTIONS AND EXCEPTIONS)
- FIXTURE FITTINGS, FALCETS AND DIVERTERS SHALL BE CONNECTED TO THE WATER DISTRIBUTION SYSTEM SO THAT HOT WATER CORRESPONDS TO THE LEFT SIDE OF THE FITTINGS.
- DIVERTERS FOR SINK FAUCETS WITH A SECONDARY OUTLET CONSISTING OF A FLEXIBLE HOSE AND SPRAY ASSEMBLY SHALL CONFORM TO ASTM AI2.10.11 N ADDITION TO THE REQUIREMENTS IN N.C.-P
- THE INSTALL ATION OF A WATER SERVICE OR WATER DISTRIBUTION PIPE THE INSTALLATION OF A WATER SERVICE OR WATER DISTRIBUTION PIPE SHALL BE FROHIBITED IN SOIL AND GROUND WATER THAT IS CONTAMINATED. GROUND WATER CONDITIONS SHALL BE REQUIRED TO ACCERTAIN THE ACCEPTABULITY OF THE WATER SERVICE OR WATER DISTRIBUTION PIPING MATERIAL FOR THE SPECIFIC INSTALLATION, WHERE DETRIMENTAL CONDITIONS EXIST, APPROVED ALTERNATIVE MATERIALS OR ROUTING SHALL BE REQUIRED.
- WATER DISTRIBUTION PIPE SHALL CONFORM TO NSF 61 AND SHALL CONFORM TO ONE OF THE STANDARDS LISTED IN N.C.-FLUMBING. ALL WATER DISTRIBUTION PIPE AND TUBING SHALL HAVE A MINIMUM PRESSURE RATING OF 100 PSI AT 180 DEGREES F.
- PIPE PASSING THROUGH CONCRETE OR CINDER WALLS AND FLOORS OR ٩. FILE PASING INCOME CONCELLE OF UNIT AND ALL AND A AND FLOORS ON OTHER CORROSIVE MATERIAL SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY A PROTECTIVE SHEATHING OR WRAPPING OR OTHER MEANS THAT MILL WITHSTAND ANY REACTION FROM THE LINE AND ACID OF CONCRETE, CINDER OR OTHER CORROSIVE MATERIAL SHEATHING OR WRAPPING SHALL ALLOW FOR EXPANSION AND CONTRACTION OF PIPING TO PREVENT ANY RUBBING ACTION. MINIMUM WALL THICKNESS OF MATERIAL SHALL BE 0.025-INCH
- PIPES PASSING UNDER OR THROUGH WALLS SHALL BE PROTECTED FROM 10. PHYSICAL DAMAGE PER NC-R.
- PIPING SHALL BE INSTALLED SO AS TO PREVENT DETRIMENTAL STRAINS FILING STALL BE INSTALLED SO AS INFRAVENT DE INFRANTAS STANIS AND STREESES IN THE PIPE. PROVISIONS SHALL BE MADE TO PROTECT PIPING FROM DAMAGE RESULTING FROM EXPANSION, CONTRACTION AND STRUCTURAL STRESSES OR STRAINS WITHIN BUILDING COMPONENTS.
- WATER PIPES INSTALLED IN A WALL EXPOSED TO THE EXTERIOR SHALL BE LOCATED ON THE HEATED SIDE OF THE WALL INSULATION, IN OTHER CASES, WATER, SOLL AND PASTE PIPES SHALL NOT BE INSTALLED OUTSIDE OF A BUILDING, IN WOONDITIONED ATTICS, INCONDITIONED UTILITY ROOMS OR IN ANY OTHER FLACE SUBJECTED TO FREEZING TEMPERATURES UNLESS ADEQUATE PROVISION IS MADE TO PROTECT SUCH PIPES FROM FREEZING BY A WINNIM OF R-65 INSULATION DETERMINED AT 15 DEG. F IN ACCORDANCE WITH ASTM CITT OR HEAT OR BOTH 12.

OR BOTH. EXTERIOR WATER SUPPLY SYSTEM PIPING SHALL BE INSTALLED NOT LESS THAN 6 INCHES BELOW THE FROST LINE AND NOT LESS THAN 12 INCHES BELOW GRADE.

- BUILDING SEWER PIPE SHALL CONFORM TO ONE OF THE STANDARDS 13. LISTED IN N.C-R
- BUILDING SEMER PIPE FITTINGS SHALL BE APPROVED FOR INSTALLATION WITH THE PIPING MATERIAL INSTALLED AND SHALL CONFORM TO THE RESPECTIVE PIPE STANDARDS OR ONE OF THE STANDARDS LISTED IN
- WHERE WASTE LINE DROPS OCCUR IN A LOCATION WHERE THE SOUND OF A FLUSHED TOILET MAY BE INDESIRABLE, SUCH AS IN WALLS OR PARTITIONS ADJACENT TO EATING ROOMS, USE CAST IRON PIPING OR SIMILAR APPROVED HARD OR DENSE PIPING TO MITIGATE SOUND. 15.
- CLEANOUTS ON BUILDING SEWERS SHALL BE LOCATED AS SET FORTH IN 16.
- THE MAXIMUM WATER CONSUMPTION FLOW RATES AND QUANTITIES FOR ALL PLUMBING FIXTURES SHALL BE IN ACCORDANCE WITH N.C.-R.
- INDIVIDUAL SHOWER AND TUB/SHOWER COMBINATION VALVES SHALL BE EQUIPPED WITH CONTROL VALVES OF THE PRESSURE-BALANCE, THERMOSTATIC-MIXING OR COMBINATION PRESSURE-BALANCE/ THERMOSTATIC-MIXING VALVE TYPES WITH A HIGH LIMIT STOP IN ACCORDANCE WITH ASSE 10/6/ ASSME AIL200(CSA BIZZIG, AND SHALL E INSTALLED AND ADJISTED PER MANUFACTURE'S INSTRUCTIONS. AND SHALL BE
- GAS AND ELECTRIC WATER HEATERS HAVING AN IGNITION SOURCE SHALL ELEVATED SUCH THAT THE SOURCE OF IGNITION IS NOT LESS THAN 18 INC ABOVE THE GARAGE FLOOR. REFER TO N.C.-R FOR EXCEPTION.
- WATER HEATERS, (JSING SOLID, LIQUID OR GAS FUEL) WITH THE EXCEPTION OF THOSE HAVING DIRECT VENT SYSTEMS, SHALL NOT BE INSTALLED IN BATHROOMS AND BEDROONS OR IN A CLOSET WITH ACCESS ONLY THROUGH A BEDROOM OR BATHROOM, HOVEVER, WATER HEATERS OF THE AUTOMATIC STORAGE TYPE MAY BE INSTALLED AS REPLACEMENT IN A BATHROOM, WHEN APPROVED BY THE PLUMBING OFFICIAL, PROVIDED THEY ARE VENTED AND SUPPLIED WITH ADEQUATE COMBUSTION AIR. 20.
- IN SEISMIC DESIGN CATEGORIES DO, DI AND D2 AND TOWNHOUSES IN SEISMIC DESIGN CATEGORY C, WATER HEATERS SHALL BE ANCHORED OR STRAPPED IN THE UPPER ONE-THIED AND IN THE LOWER ONE-THIRD OF THE APPLIANCE TO RESIST A HORIZONTAL FORCE EQUAL TO ONE-THIRD OF THE APPLIANCE MEIGHT OF THE WATER HEATER, ACTING IN ANY HORIZONTAL DIRECTION, OR IN ACCORDANCE WITH THE APPLIANCE MANUFACTURER'S RECOMMENDATIONS. 21
- 22. APPLIANCES LOCATED IN A GARAGE OR CARPORT SHALL BE PRO-TECTED FROM IMPACT BY A MOVING VEHICLE.
- 23. WHERE WATER HEATERS OR HOT WATER STORAGE TANKS ARE INSTALLED IN: MHERE WALEK HEALEN OK HOT MALER SICKAGE LANKS ARE NO TALLEV IN: REMOTE LOCATIONS SUCH AS SUSPENDED CEILING, ATTICS, ABOVE OCCUPIED SPACES, OR UNVENTILATED CRAWL SPACES, A LOCATION WHERE WATER LEAKAGE FROM THE TANK WILL CAUSE DAMAGE TO PRIMARY STRUCTURAL MEMBERS, THE TANK OR WATER HEATER SHALL BE INSTALLED IN A GALVANIZED STEEL PAN HAVING A MINIMUM THICKNESS OF 24 GAGE. OR OTHER PANS APPROVED FOR SUCH USE.
- WHERE CLOTHES WASHING MACHINES ARE LOCATED ON WOOD FRAMED 24 FLOORS WHERE LEAKAGE WOULD CAUSE DAMAGE, A GALVANIZED STEEL PAN HAVING A MINIMUM THICKNESS OF 24 GAGE, OR OTHER PANS APPROVED FOR SUCH USE SHALL BE PROVIDED

# MECHANICAL & PLUMBING (continued)

- APPLIANCES AND EQUIPMENT USED FOR HEATING WATER OR STORING HOT MATER SHALL BE PROTECTED BY A SEPARATE FREESURE-RELIEF VALVE AND A SEPARATE TEMPERATURE- RELIEF VALVE OR A COMBINATION PRESSURE-AND-TEMPERATURE RELIEF VALVE, RELIEF VALVES SHALL HAVE A MINIMM RATED CAPACITY FOR THE EQUIPMENT SERVED AND SHALL CONFORM TO ANSI 2212. THE RELIEF VALVE SHALL NOT BE USED AS A MEANS OF CONTROLLING THERMAL EXPANSION.
- THE WATER SUPPLY TO A DISHWASHER SHALL BE PROTECTED AGAINST BACKFLON BY AN AIR GAP COMPLYING WITH ASME AII2.13 OR AII2.12 THAT IS INSTALLED INTEGRALLY WITHIN THE MACHINE OR A BACKFLOW PREVENTER IN ACCORDANCE WITH THE NC-R. 26.
- SINK AND DISHWASHER, THE COMBINED DISCHARGE FROM A DISHWASHER AND A ONE- OR TWO-COMPARTMENT SINK, WITH OR WITHOUT A FOOD-WASTE DISPOSER, SHALL BE SERVED BY A TRAP OF NOT LESS THAN II/2 INCHES (36 MH) IN OUTSIDE DIAMETER. THE DISHWASHER DISCHARGE PIPE OR TUBING SHALL RISE TO THE UNDERSIDE OF THE CONTRE' AND SHALL BE SECURELY FASTENED TO THE UNDERSIDE OF THE SINK RIM OR COUNTER BEFORE CONNECTING TO THE HEAD OF THE FOOD-WASTE DISPOSER OR TO A WYE FITTING IN THE SINK TAILPIECE.

#### FIREPLACES

- FACTORY-BUILT FIREPLACES SHALL BE LISTED AND LABELED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING. FACTORY-BUILT FIREPLACES SHALL BE TESTED IN ACCORDANCE WITH UL 121.
- 2. FIREPLACES ARE TO BE PROVIDED WITH AN EXTERIOR AIR SUPPLY

# ELECTRICAL

- ALL MATERIALS AND APPLIANCES. INSTALLATION AND CONSTRUCTION METHODS SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE OR CURRENT SAE REQUIREMENTS.
- ALL ELECTRICAL SYSTEMS, CIRCUITS, FIXTURES AND EQUIPMENT SHALL 2. BE GROUNDED IN A MANNER COMPLYING WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.
- ALL WIRING SHALL BE SO INSTALLED THAT, WHEN COMPLETED, THE з. SYSTEM WILL BE FREE FROM SHORT CIRCUITS AND FROM GROUNDS OTHER THAN AS REQUIRED OR PERMITTED IN N.E.C. ARTICLE 250.
- ELECTRIC EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORK-MANI IKE MANNER
- ALL 125-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE RECEPTACLES 5. ALL LEVYOL , STOLET HAS, IS AND EARLIED RELOCTIONED ROLES GROUND- FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. THE GROUND-FAULT CIRCUIT-INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.
  - A. BATHROOMS.
  - B. GARAGES AND ALSO ACCESSORY BUILDINGS THAT HAVE A FLOOR LOCATED AT OR BELOW GRADE LEVEL NOT INTENDED AS HABITABLE ROOMS AND LIMITED TO STORAGE AREAS, WORK AREAS, AND AREAS OF SIMILAR USE.
  - C. OUTDOORS.
  - CRAML SPACES. WHERE THE CRAML SPACE IS AT OR BELOW GRADE LEVEL. D.
- UNFINISHED PORTIONS OR AREAS OF THE BASEMENT NOT INTENDED AS HABITABLE ROOMS. E.
- KITCHENS. WHERE THE RECEPTACLES ARE INSTALLED TO SERVE
- G. SINKS, WHERE RECEPTACLES ARE INSTALLED WITHIN 6 FT FROM THE TOP INSIDE EDGE OF THE BOWL OF THE SINK.
- BOAT HOUSES.
- BATHTUBS OR SHOWER STALLS WHERE RECEPTACLES ARE INSTALLED MITHIN  $6^{\prime}$  OF THE OUTSIDE EDGE OF THE BATHTUB OR SHOWER STALL.
- J. LAUNDRY AREAS
- DISHWASHER GFCI PROTECTION IS NOT REQUIRED FOR OUTLETS THAT SUPPLY DISHWASHERS INSTALLED IN DWELLING UNIT LOCATIONS
- CRAWL SPACE LIGHTING OUTLETS. GFCI PROTECTION SHALL BE PROVIDED FOR LIGHTING OUTLETS NOT EXCEEDING 120 VOLTS INSTALLED IN CRAWL SPACES.
- APPLIANCE RECEPTACLE OUTLETS INSTALLED IN A DWELLING UNIT FOR SPECIFIC APPLIANCES, SUCH AS LANDRY EQUIPMENT, SHALL BE INSTALLED WITHIN 6 FEET OF THE INTENDED LOCATION OF THE APPLIANCE.
- IN EVERY KITCHEN, FAMILY ROOM, DINING ROOM, LIVING ROOM, PARLOR, LIBRARY, DEN, SUNROOM, BEDROOM, RECREATION ROOM, OR SIMILAR ROOM OR AREA OF DWELLING UNITS, RECEPTACLE OUTLETS SHALL BE INSTALLED SO THAT NO POINT ALONG THE FLOOR LINE IN ANY WALL SPACE IS MORE THAN 6 FEET, MEASURED HORIZONTALLY, FROM AN OUTLET IN THAT SPACE, INCLUDING ANY WALL SPACE 2 FEET OR MORE IN WIDTH (INCLUDING SPACE WALL SPACE 2 FEET OR MORE IN WIDTH (INCLUDING SPACE MEASURED AROUND CORRESS) AND UNBROKEN ALONG THE FLOOR LINE BY DOORNAYS AND SIMILAR OPENINGS, FIREPLACES, AND FIXED CABINETS, AND THE MALL SPACE ACTORNED BY FIXED PANELS IN EXTERIOR WALLS, BUT EXCLUDING SLIDING PANELS IN EXTERIOR MALLS, THE WALL SPACE AFFORDED BY FIXED ROOM DIVIDERS, SUCH AS FREESTANDING BARCHTPE CONTRESS OR RAILINGS, SUCH AS FREESTANDING DARTYPE CONTRESS OR RAILINGS, SUCH AS FREESTANDING THE 6 FOOT MEASUREMENT.
- IN THE KITCHEN, PANTRY, BREAKFAST ROOM, DINING ROOM, OR SIMILAR AREA OF A DWELLING UNIT, THE TWO OR MORE 20-AMPERE SHALL-APPLIANCE BRANCH CIRCUITS REQUIRED SHALL SERVE ALL WALL AND FLOOR RECEPTACLE JUTLETS, ALL COUNTERTOP OUTLETS, AND RECEPTACLE OUTLETS FOR REFRIGERATION EQUIPMENT. THE TWO OF MORE SMALL-APPLIANCE BRANCH CIRCUITS SHALL HAVE NO OTHER OUTLETS
- 10. IN KITCHENS, PANTRIES, BREAKFAST ROOMS, DINING ROOMS AND SIMILAR AREAS OF DWELLING UNITS, RECEPTACLE OUTLETS FOR COUNTER SPACES SHALL BE INSTALLED IN ACCORDANCE WITH THE
- (I) A RECEPTACLE OUTLET SHALL BE INSTALLED AT EACH WALL COUNTER SPACE 12 INCHES OR WIDER. RECEPTACLE OUTLETS SHALL BE INSTALLED SO THAT NO POINT ALONG THE WALL LINE IS MORE THAN 24 INCHES MEASURED HORIZONTALLY FROM A RECEPTACLE OUTLET IN THAT SPACE.

# ELECTRICAL (continued)

- (2) AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED AT EACH ISLAND COUNTER SPACE WITH A LONG DIMENSION OF 24 INCHES OR GREATER AND A SHORT DIMENSION OF 12 INCHES OR GREATER.
- AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED AT EACH PENNSULAR COUNTER SPACE WITH A LONG DINENSION OF 24 INCHES OR GREATER AND A SHORT DIMENSION OF 12 INCHES OR GREATER. A PENNSULAR COUNTERTOP IS MEASURED FROM CONNECTING PERPENDICULAR WALL.
- TWO SEPARATE COUNTERTOP SPACES. EACH COUNTERTOP SPACE SHALL COMPLY WITH APPLICABLE REQUIREMENTS.
- (5) RECEPTACLE OUTLETS SHALL BE LOCATED NOT MORE THAN 20 INCHES ABOVE THE COUNTERTOP, RECEPTACLE OUTLETS RENDERED NOT READILY ACCESSIBLE BY APPLIANCES FASTENED IN PLACE, APPLIANCE GARASES, SINCS, OR RANGETORS AS COVERED IN 4) ABOVE, OR APPLIANCES OCCUPYING DEDICATED SPACE SHALL NOT BE CONSIDERED AS THESE REQUIRED OUTLETS.
- AT LEAST ONE WALL RECEPTACLE OUTLET SHALL BE INSTALLED IN BATHROOMS WITHIN 3 FEET OF THE OUTSIDE EDGE OF EACH BASIN, THE RECEPTACLE OUTLET SHALL BE LOCATED IN WALL OR PARTITION THAT IS ADJACENT TO THE BASIN OR BASIN CONTERTOP, OR INSTALLED ON THE SIDE OR FACE OF THE BASIN CABINET NOT MORE THAN 12" BELOW THE COUNTERTOP
- 12. IN DWELLING UNITS, AT LEAST ONE RECEPTACLE OUTLET SHALL BE INSTALLED IN AREAS DESIGNATED FOR THE INSTALLATION OF LAUNDRY EQUIPMENT.
- IN EACH ATTACHED GARAGE AND IN EACH DETACHED GARAGE WITH 13. ELECTRIC POWER, THE BRANCH CIRCUIT SUPPLYING THI ELECTION OF A CALL NOT SUPPLY OUTLIES OUTSIDE OF THE GARAGE. AT LEAST ONE RECEPTACLE OUTLIET SHALL BE INSTALLED IN EACH VEHICLE BAY.
- 14. CABLE- OR RACEWAY-TYPE WIRING METHODS INSTALLED IN A GROOVE. TO BE COVERED BY HALLE VIRING PILINDS INFINILLEU IN GOVE, TO BE COVERED BY WALLEBOARD, SIDING, PANELING, CARPETING, OK SIMILAR FINISH, SHALL BE PROTECTED BY 1/16 INCH THICK STEEL PLATE, SLEEVE, OK EQUIVALENT OR BY NOT LESS THAN I-1/4 INCH TREE SPACE FOR THE FULL LENGTH OF THE GROOVE IN WHICH THE CABLE OR RACEWAY S INSTALLED.
- 15. RECEPTACLES IN DAMP OR WET LOCATIONS.

17.

18.

OCATION

UNIQUE COMBINATION

CONNECTED TO A CENTRAL STATION

WITH THE NC-R R314.3

SMOKE DETECTORS

2

З.

- A RECEPTACLE INSTALLED OUTDOORS IN A LOCATION PROTECTED FROM WEATHER OR IN OTHER DAMP LOCATIONS SHALL HAVE AN ENCLOSURE FOR THE RECEPTACLE THAT IS WEATHERRROOF WHEN THE RECEPTACLE IS COVERED. (ATTACHNENT PLUG CAP NOT INSERTED AND RECEPTACLE COVERS CLOSED.)
- ALL IS- AND 20- AMPERE, I25- AND 250-VOLT RECEPTACLES INSTALLED IN A WET LOCATION SHALL HAVE AN EXCLOSURE THAT IS WEATHER PROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. AN OUTLET BOX HOOD INSTALLED FOR THIS PURPOSE SHALL BE LISTED AND SHALL BE IDENTIFIED AS "EXTRA DUT", ALL IS- AND 20- AMPERE, IS- AND 250-VOLT NONLOCKING RECEPTACLES SHALL BE LISTED WEATHER RESISTANT TYPE.

I6. LIGHTING EQUIPMENT. NOT LESS THAN 15 PERCENT OF THE PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL CONTAIN ONLY HIGH-EFFICACY LAMPS

ALL 120-VOLT, SINGLE PHASE, IS- AND 20-AMPERE BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, DRALORS, LIBRARES, DENS, BEDROMS, SUNROOMS, RECREATION ROOMS, CLOSETS, HALLMAYS, OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY AN ARC-FAULT CIRCUIT INTERVIPTERS), COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT. THE ARC-FAULT CIRCUIT INTERVIPTERS CHAIL OR INSTALLED IN A DEADING AND THE ARC-FAULT CIRCUIT

BUILDINGS SHALL BE PROVIDED WITH APPROVED ADDRESS IDENTIFICATION. THE ADDRESS IDENTIFICATION SHALL BE LEGIBLE AND PLACED IN A POSITION THAT IS VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.

. RECEPTACLES LOCATED MORE THAN  $5^{1}_{2}$  Above the FLOOR.

4. NON-GROUNDING RECEPTACLES USED FOR REPLACEMENTS

DIMMER-CONTROLLED RECEPTACLES. A RECEPTACLE SUPPLYING LIGHTING LOADS SHALL NOT BE CONNECTED TO A DIMMER UNLESS THE PLUGRECEPTACLE COMBINATION IS A NONSTANDARD COMPIGURATION TYPE THAT IS SPECIFICALLY LISTED AND IDENTIFIED FOR EACH SUCH

SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE APPROVED MANUFACTURER'S INSTRUCTIONS AND NC-R R314

HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 12

ALL SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THIS CODE AND THE

HOUSEHOLD FIRE ALARM SYSTEMS INSTALLED IN ACCORDANCE WITH NEPA

ALARM SYSTEM SHALL PROVIDE THE SAME LEVEL OF SMOKE DETECTION

AND ALARM AS REQUIRED BY THE NC-R FOR SMOKE ALARMS IN THE

EVENT THE FIRE ALARM PANEL IS REMOVED OR THE SYSTEM IS NOT

REQUIRED SMOKE DETECTORS SHALL BE LOCATED IN ACCORDANCE

72 THAT INCLUDE SMOKE ALARMS, OR A COMBINATION OF SMOKE DETECTOR

AND AUDIBLE NOTIFICATION DEVICE INSTALLED AS REQUIRED BY THE NC-R R314.3 FOR SMOKE ALARMS, SHALL BE PERMITTED. THE HOUSEHOLD FIRE

THIS CODE AND THE

2. RECEPTACLES THAT ARE PART OF A LUMINAIRE OR APPLIANCE.

3. A SINGLE RECEPTACLE OR A DUPLEX RECEPTACLE FOR TWO APPLIANCES LOCATED WITHIN DEDICATED SPACE FOR EACH APPLIANCE THAT, IN NORMAL USE, IS NOT EASILY MOVED FROM ONE PLACE TO ANOTHER, AND THAT IS CORD-AND-PLUG CONVECTED.

LIGHT FIXTURES WITHIN CLOTHES CLOSETS SHALL BE INSTALLED IN ACCORDANCE WITH N.E.C.

NTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE

TAMPER-RESISTANT RECEPTACLES IN DWELLING UNITS IN ALL AREAS, ALL NON-LOCKING TYPE 125-VOLT I5-AND 20-AMPERE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES. EXCEPTIONS LISTED BELOW.

ELECTRICAL (continued)

#### CARBON MONOXIDE ALARMS

CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED CUTSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS, WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM

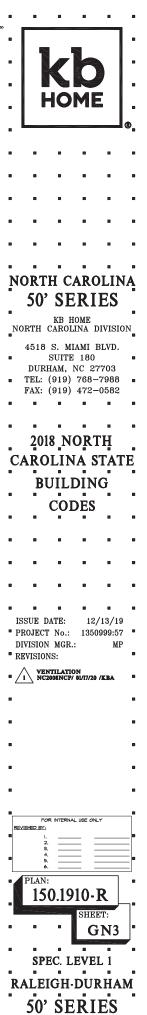
SINGLE STATION CARBON MONOXIDE ALARMS SHALL BE LISTED AS COMPLYING MITH UL 2024 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE NC-R R3I5 AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

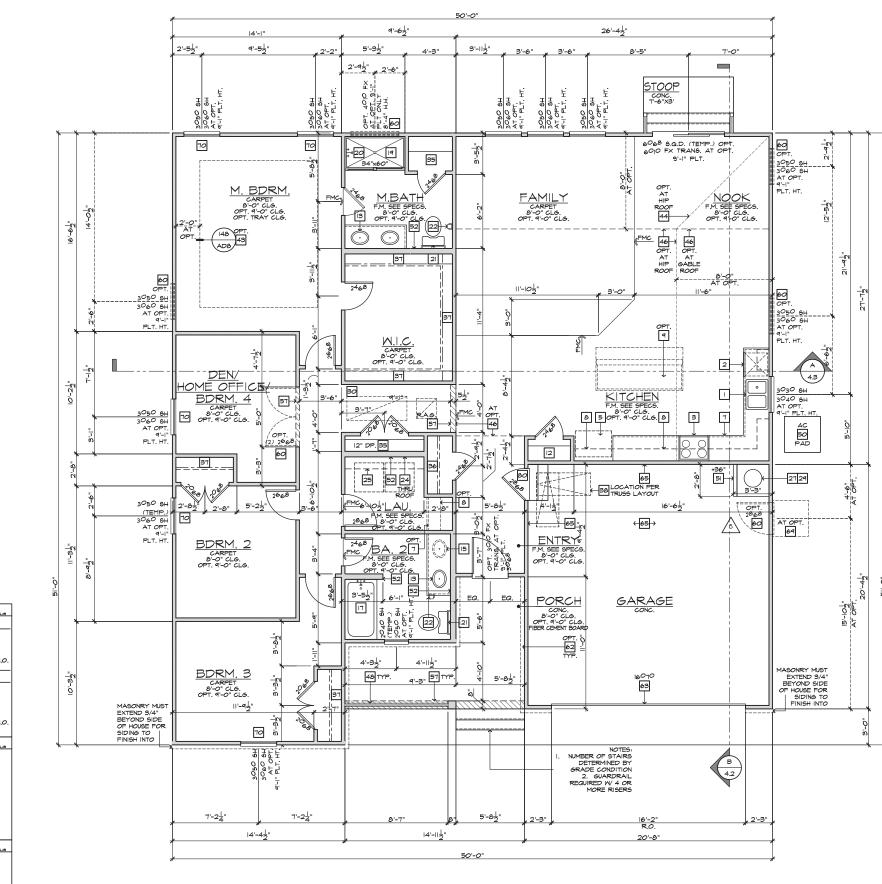
COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF INDIVIDUAL CARBON MONOXIDE OR SMOKE ALARMS.

DRYER VENT

2.

THE DRYER DUCT IS REQUIRED TO IDENTIFY THE LENGTH IN ACCORDANCE WITH SECTION MI502.4.5

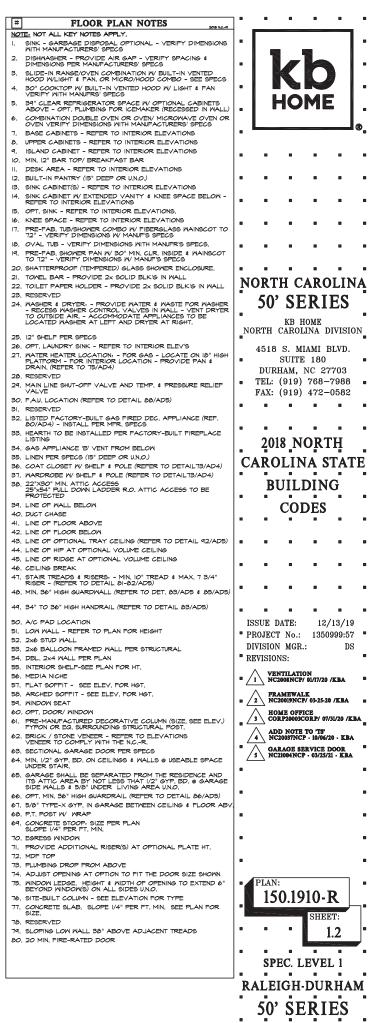


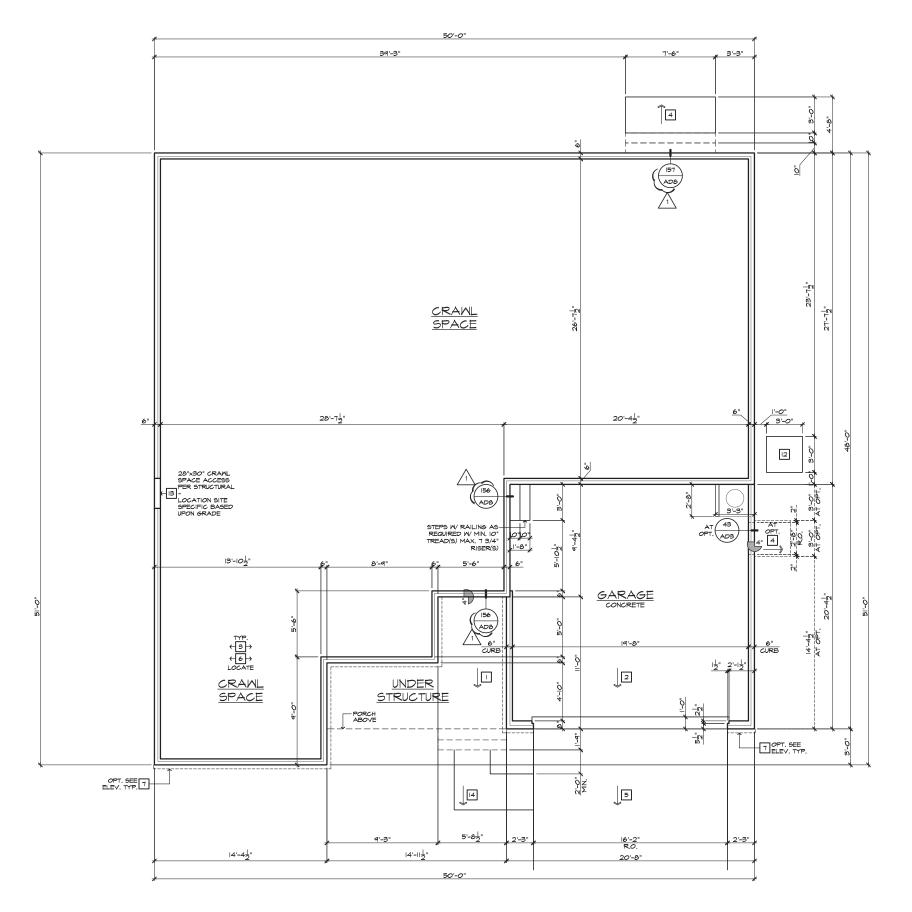


INTERIOR KEY						
P	LATE NOTI	ES 2018 N.CR				
	PLATE NO					
WINDOW HEADER HEI     2nd FLOOR WINDOW     ENTRY DOOR HEIGHT     SLIDING GLASS DOO     INTERIOR SOFFIT HEI     TRAY CEILING     INTERIOR DOOR HEIG	HDR. HEIGHT: ; R HEIGHT: GHT:	6-8" U.N.O. 7'-0" U.N.O. 6'-8" U.N.O. 6'-8" (TEMP.) 7'-4" U.N.O. 7" RISE INTO TRUSS U.N.O. 6'-8" U.N.O.				
۹'-۱"	PLATE NO	DTES				
<ul> <li>MINDOM HEADER HEI, MINDOM HEADER HEI, 4010 MINDOM OVER, ENTRY DOOR HEIGHT</li> <li>ENTRY DOOR HEIGHT</li> <li>SLIDING GLASS DOO</li> <li>INTERIOR SOFFIT HEI</li> <li>TRAY CEILING:</li> <li>INTERIOR DOOR HEIG</li> </ul>	GHT 2nd FL: TUB HDR. HGT.: ; R HEIGHT: GHT:	8-0" UNO. T-8" UNO. 6-8" UNO. 6-8" (TEMP) 8-0" UNO. 7" RISE INTO TRUSS UNO. 6-8" UNO.				
GENERAL PLAN NOTES						
ALL CEILING HEIGHTS PER HEIGHTS, U.N.O. ALL INTERIOR DOORS TO						
U.N.O. (REFER TO PLAN FO		URE 15/0 THICK,				
ALL GARAGE SERVICE DOORS TO BE HOLLOW CORE EXTERIOR GRADE (REFER TO PLAN FOR SIZE).						
ALL HOUSE TO GARAGE I (REFER TO PLAN FOR SIZ		20-MINUTE FIRE-RATED				
ALL ENTRY DOORS AND SOLID CORE   3/4" THICK	EXTERIOR FREM (REFER TO PL	AN FOR SIZE).				
ALL FLOOR MATERIAL CI DOOR JAMBS, U.N.O.	HANGES TO OC	CUR AT CENTER OF				
STAIR DATA NOTES						
14" DEEP T.J.I. FLOOR JO 14 TREADS AT 10" EA	FIRST FLOOR WITH \$1" FLATE HEIGHT: 14" DEEP T.J.I, FLOOR JOISTS WITH 3/4" T&G DECKING. 14 TREADS AT 10" EACH 15 RISERS AT T-10" EACH					
FIRST FLOOR WITH 9-1" PI 14" DEEP T.J.I. FLOOR JO 15 TREADS AT 10" EA 16 RISERS AT 7-3/4"	NSTS WITH 3/4"	T&G DECKING.				

# FLOOR PLAN 'A' AT CRAWL SPACE ('B/C/D' SIMILAR)

SCALE |/4"=|'-0" (22"X34") - |/8"=|'-0" (||"X|7")





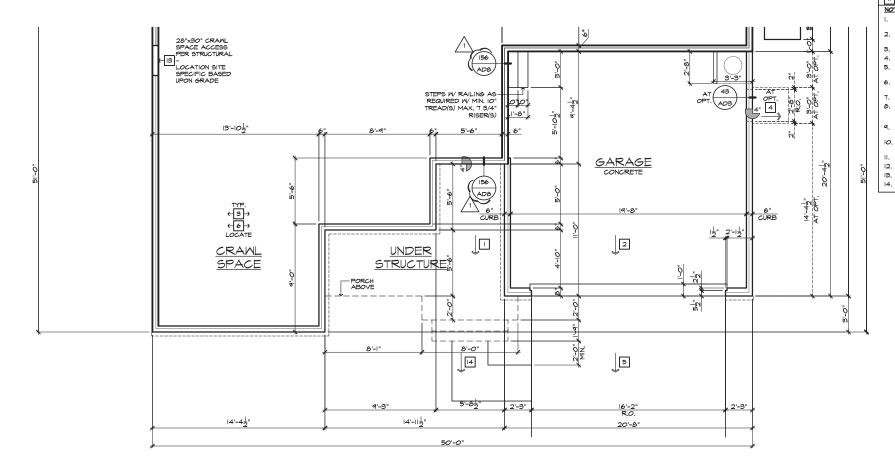
 CRAML SPACE PLAN 'A'

 SCALE I/4\*=I'-0" (22"X34") - I/6"=I'-0" (II"XI7")

#	FOUNDATION PLAN NOTES 200 NG. R
1.	CONCRETE PATIO/PORCH SLAB PER STRUCTURAL- SLOPE
2.	1/4" PER FT. MIN. CONCRETE GARAGE SLAB PER STRUCTURAL- SLOPE 1/8" PER. 1-0" MIN. TOWARD DOOR OPENING.
з.	FOUNDATION PER STRUCTURAL.
4.	STAIR LANDING: 36"x36" MIN.
5.	CONCRETE DRIVEWAY SLOPE 1/4" PER FT. MIN. AWAY FROM GARAGE DOOR OPENING.
6.	PROVIDE UNDER FLOOR VENTILATION
7.	4" TOE KICK FOR MASONRY VENEER.
8.	3" DIAMETER CONCRETE FILLED PIPE BOLLARD 36" HIGH WITH MIN. 12" EMBEDMENT INTO CONCRETE.
٩.	REFER TO CIVIL DRAWINGS FOR ALL FINISH SURFACE ELEVATIONS.
10.	VERIFY LOCATION OF PIER FOOTINGS PER STRUCTURAL
н.	4" MIN. 7 3/4" MAX. TO HARD SURFACE.
12.	A/C PAD. VERIFY LOCATION.
13.	CRAWL SPACE ACCESS
14.	36" WIDE WALKWAY- SLOPE 1/4" PER FT. MIN.
	R FLOOR VENTING AREA
NDE	R FLOOR AREA SHALL COMPLY WITH NCRC 2018
NDE	R FLOOR AREA CALCULATION = 1910 SQ. FT. / 150 12.73 SQ. FT
EQU	RED AREA X 144 = 1883 50. IN.
ENT	LATION PROVIDED:
8)	FOUNDATION VENTS 105 SQ. IN.= 1890 SQ. IN.
	CRANLSPACE VENT TO BE LOCATED WITHIN 5'-O" OF THE CORNER OF
HES	TEM WALL
$\swarrow$	

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PARTIAL CRAWL SPACE PLAN 'C'

SCALE |/4"=1'-0" (22"X34") - |/8"=1'-0" (||"X|7")

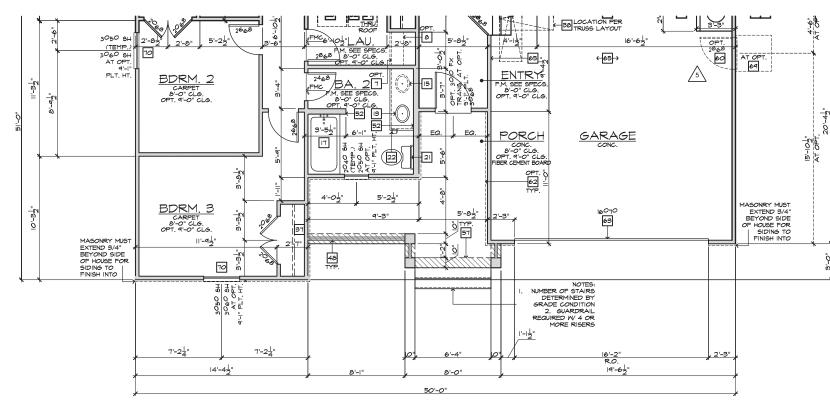
BASIC PLAN AT OPTIONAL CRAWL SPACE

FOUNDATION PLAN NOTES	L .				
27E: NOT ALL KEY NOTES APPLY. CONCRETE PATIO/PORCH SLAB PER STRUCTURAL- SLOPE					
I/4" PER FT. MIN.				$\mathbb{Z}_{-}$	
CONCRETE GARAGE SLAB PER STRUCTURAL- SLOPE 1/8" PER 1'-0" MIN. TOWARD DOOR OPENING. FOUNDATION PER STRUCTURAL.	. 8				
STAIR LANDING: 36"x36" MIN.					
CONCRETE DRIVEWAY SLOPE 1/4" PER FT. MIN. AWAY FROM GARAGE DOOR OPENING.					
PROVIDE UNDER FLOOR VENTILATION			HU		
4" TOE KICK FOR MASONRY VENEER.					
3" DIAMETER CONCRETE FILLED PIPE BOLLARD 36" HIGH WITH MIN. 12" EMBEDMENT INTO CONCRETE.	•				
REFER TO CIVIL DRAWINGS FOR ALL FINISH SURFACE		_	_	_	_
ELEVATIONS. VERIFY LOCATION OF PIER FOOTINGS PER					•
STRUCTURAL 4" MIN. 7 3/4" MAX. TO HARD SURFACE.					
4" MIN. 7 3/4" MAX. TO HARD SURFACE. . A/C PAD. VERIFY LOCATION.					
. CRAWL SPACE ACCESS . 36" WIDE WALKWAY- SLOPE 1/4" PER FT. MIN.					
		-	_	-	-
	-	•	-	-	-
	8 3.7-	• • • •		*	8 \ T   T \ Y \ Y
	_N(				DLIN
		50	' SE	ERI	ES
	•			IOME	
	NC	ORTH			DIVISIO
		4518	S. M	TAME	BIVD
		4010	SUITE		
			HAM,		
			(919)		
	_	FAX:	(919)	472-	-0582
	•				
		20	18 N	OR]	ГН
	C	-	-	-	TAT
		-AR(		A D	
		B	UIL	DIN	G
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			COI	DES	
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					)999:57
			N MGR		MP
	R R	EVISIO	NS:		
	• /		NTILATI	ON / 01/17/20	/KBA
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		F	OR INTERNA	AL USE ON	LY

\_\_\_\_ PLAN: 150.1910-R . . .

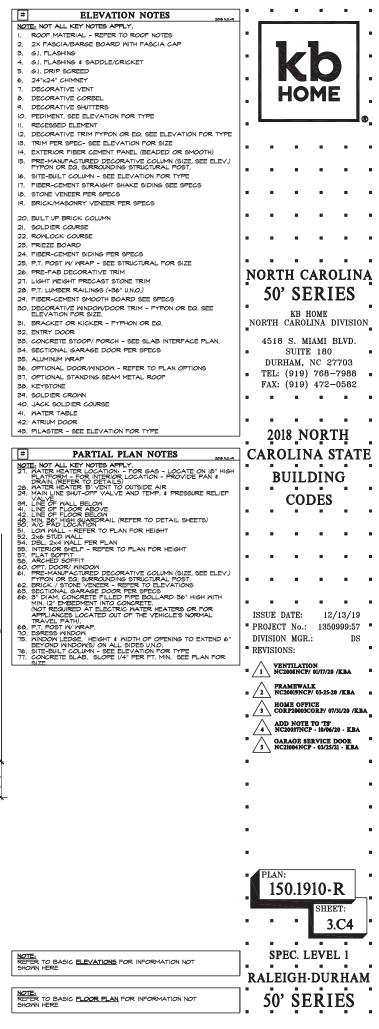
2.5 spec. level 1 raleigh-durham 50' SERIES

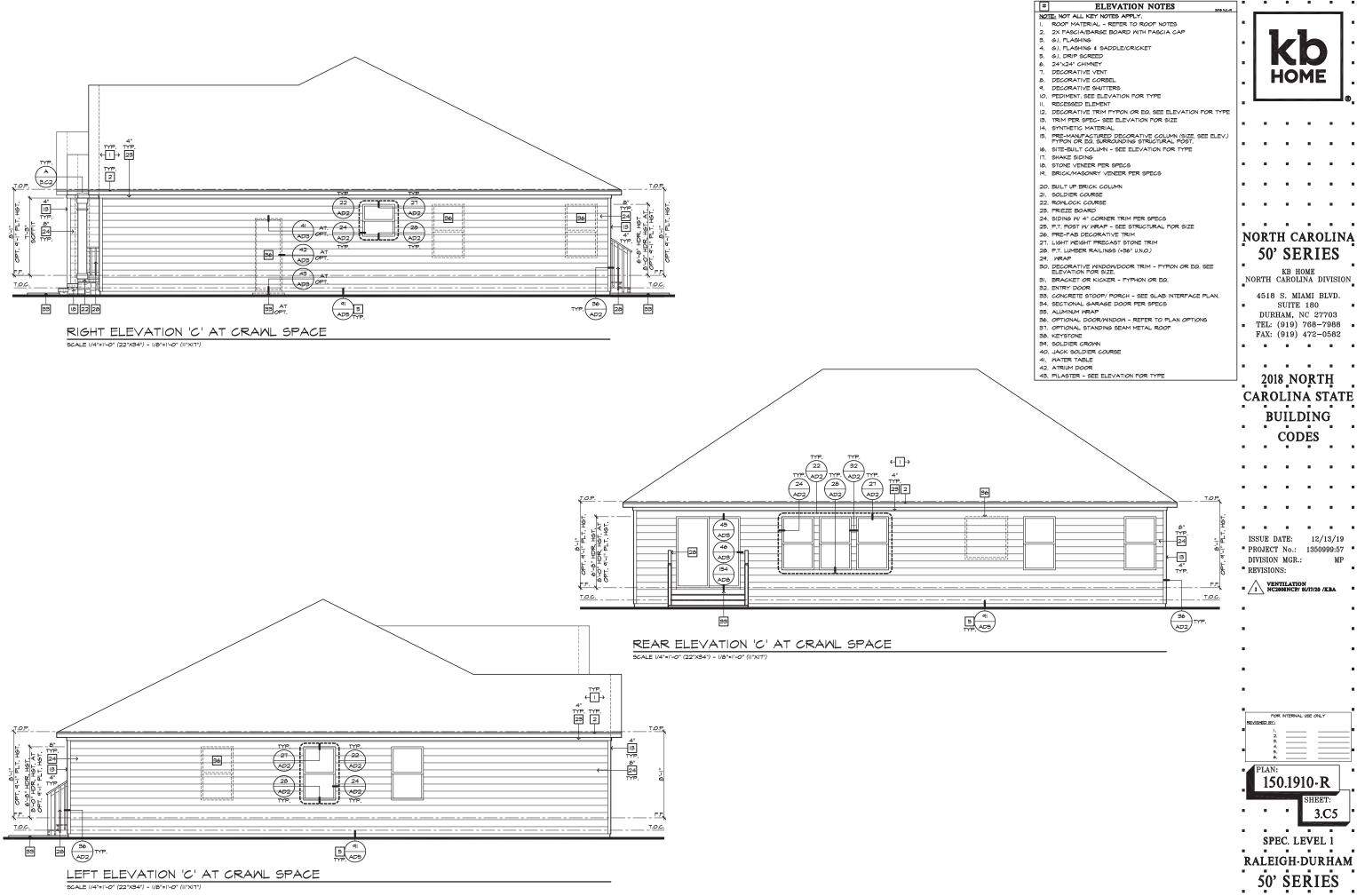
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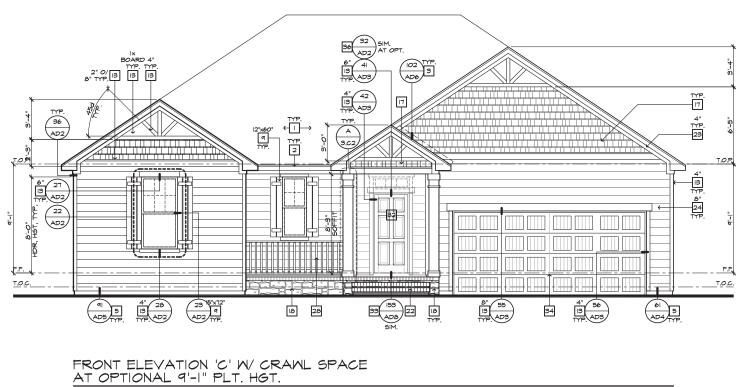


PARTIAL FLOOR PLAN 'C' AT CRAWL SPACE

SCALE I/4"=I'-O" (22"X34") - I/8"=I'-O" (II"XI7")

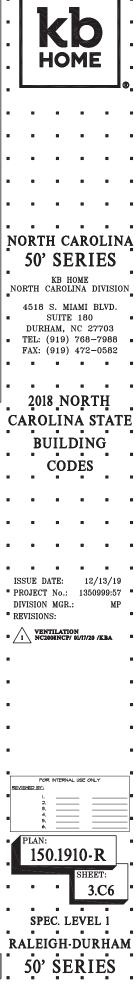


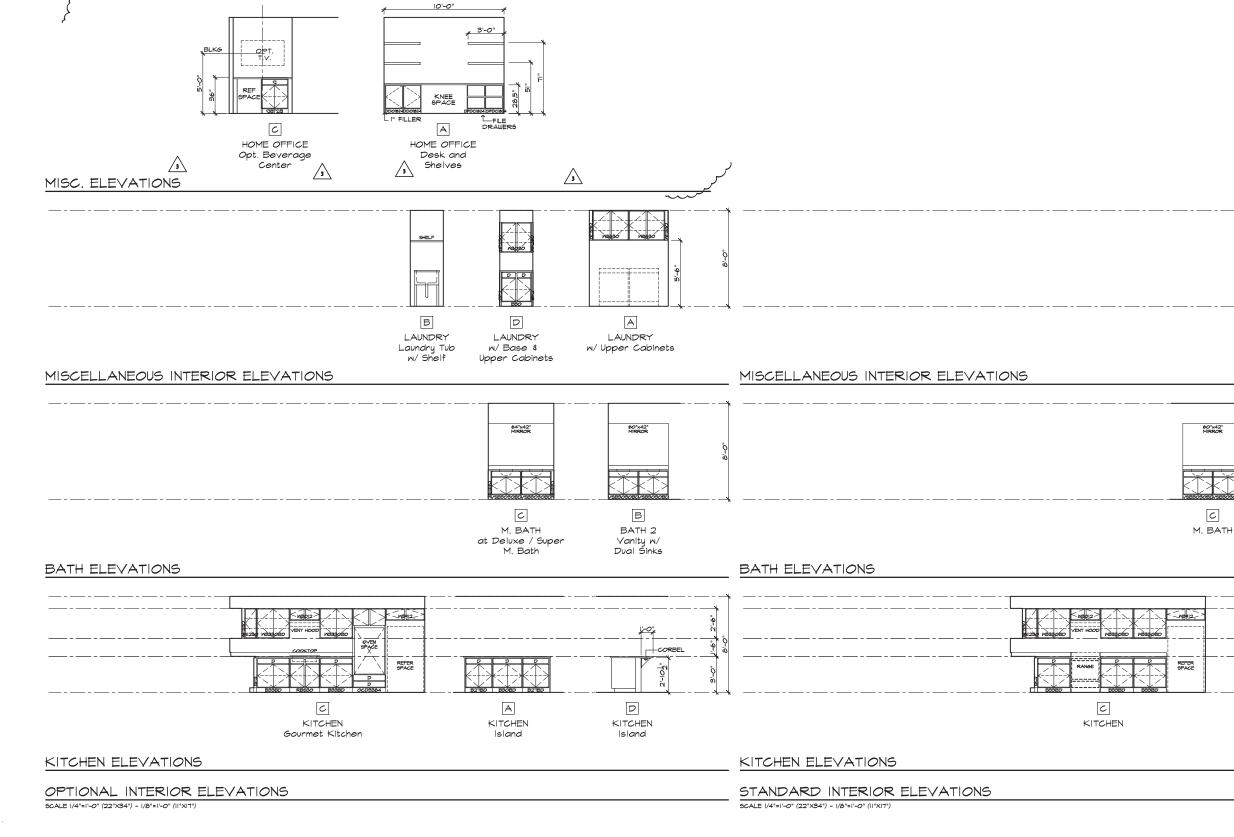


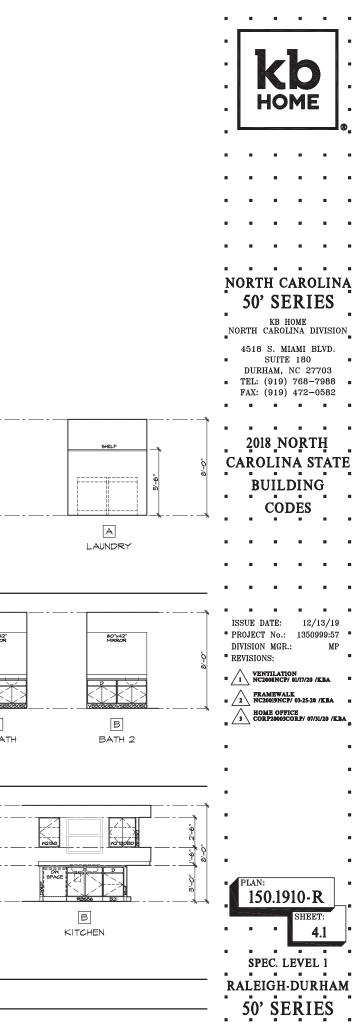


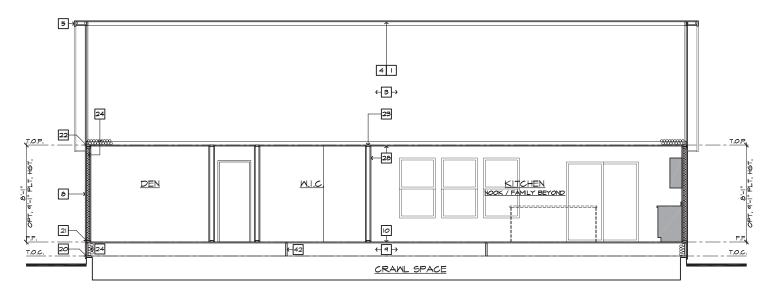
SCALE |/4"=|'-0" (22"X34") - |/8"=|'-0" (||"X|7")

#	ELEVATION NOTES	"				
NO	TE: NOT ALL KEY NOTES APPLY.	1				
١.	ROOF MATERIAL - REFER TO ROOF NOTES					
2.	2X FASCIA/BARGE BOARD WITH FASCIA CAP			$\geq$		
з.	G.I. FLASHING				7	
4.	G.I. FLASHING & SADDLE/CRICKET	-		$\mathbb{N}$		$\cap$
5.	G.I. DRIP SCREED					
6.	24"x24" CHIMNEY				8	
7.	DECORATIVE VENT			Ш/		ME
8.	DECORATIVE CORBEL					
٩.	DECORATIVE SHUTTERS	-				
10.	PEDIMENT. SEE ELEVATION FOR TYPE					
н.	RECESSED ELEMENT					
12.	DECORATIVE TRIM FYPON OR EQ. SEE ELEVATION FOR TYPE					
13.	TRIM PER SPEC- SEE ELEVATION FOR SIZE					
14.	SYNTHETIC MATERIAL	-	-	_		-
15.	PRE-MANUFACTURED DECORATIVE COLUMN (SIZE, SEE ELEV.)					
	FYPON OR EQ. SURROUNDING STRUCTURAL POST.			8		8
	SITE-BUILT COLUMN - SEE ELEVATION FOR TYPE					
	STONE VENEER PER SPECS	-	-	-		-
19.	BRICK/MASONRY VENEER PER SPECS					
20	BUILT UP BRICK COLUMN			8		
21.	SOLDIER COURSE					
22.	ROWLOCK COURSE					
	FRIEZE BOARD					
	SIDING W/ 4" CORNER TRIM PER SPECS		_	_		_
25.	P.T. POST W/ WRAP - SEE STRUCTURAL FOR SIZE					8
	PRE-FAB DECORATIVE TRIM	l N	OR'	TH	CA	ARC
	LIGHT WEIGHT PRECAST STONE TRIM	8				
	P.T. LUMBER RAILINGS (+36" U.N.O.)		- 50	r s	F	RI
	WRAP		50			1/1
30.	. DECORATIVE WINDOW/DOOR TRIM - FYPON OR EQ. SEE ELEVATION FOR SIZE.				зн	
	BRACKET OR KICKER - FYPHON OR EQ.	_N	ORTH	CAF	SOLI	NA I
32.	ENTRY DOOR					
33.	CONCRETE STOOP/ PORCH - SEE SLAB INTERFACE PLAN.		451	8 S.	ML	AMI I
34.	SECTIONAL GARAGE DOOR PER SPECS			SU	TE	180
	ALUMINUM WRAP		DU	RHAM	1. N	IC 27
	OPTIONAL DOOR/WINDOW - REFER TO PLAN OPTIONS					768-
	OPTIONAL STANDING SEAM METAL ROOF					
	KEYSTONE		FAX	: (91	9)	472-
	SOLDIER CROWN			8		
	JACK SOLDIER COURSE					
	WATER TABLE	_	-	_		_
	ATRIUM DOOR					
43.	PILASTER - SEE ELEVATION FOR TYPE		20	)18_	N	)R1
				.10		- 17 I
		C	'AR		IN	A C
		C			114	ч р



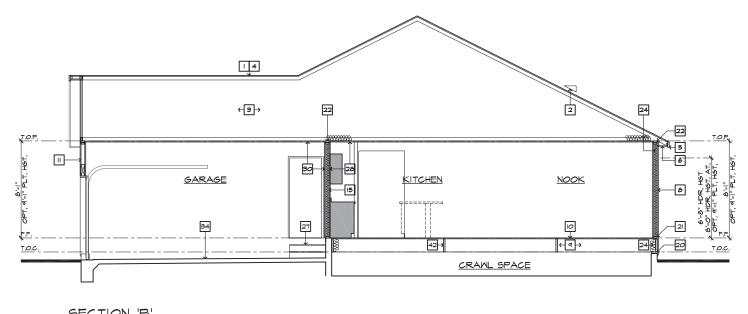






 $\frac{\text{SECTION } {}^{1}\text{A} {}^{1}}{\text{5cale } {}^{1/4^{u}=1^{l}-0^{u}} \left( 22^{u} \times 34^{u} \right) - {}^{1/8^{u}=1^{l}-0^{u}} \left( (||^{u} \times 17^{u}) - 1/8^{u} + 1/8^$ 

AT CRAWL SPACE



12/13/19

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MP

83 

VENTILATION NC2008NCP/ 01/17/20 /KBA

FOR INTERNAL USE ONLY

PLAN: 150.1910-R

spec. level 1 raleigh-durham 50' SERIES

SHEET:

4.3

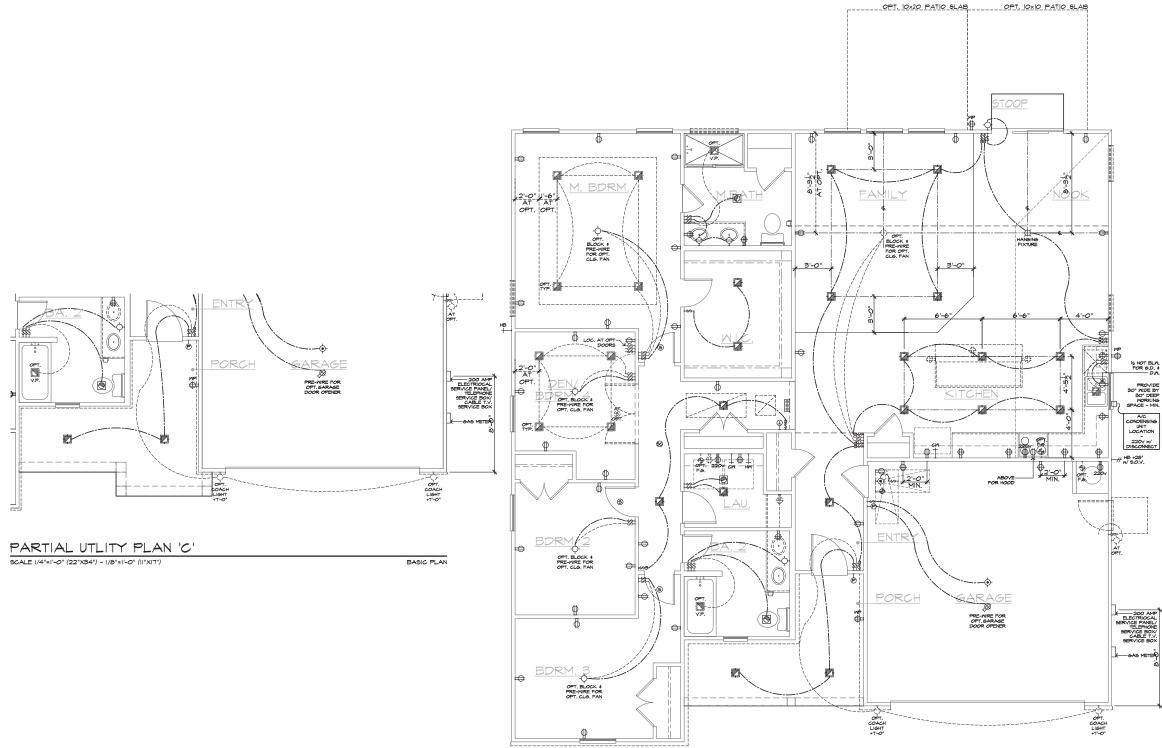
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ISSUE DATE:

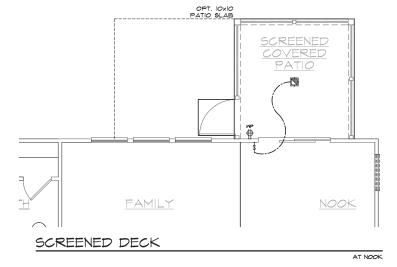
DIVISION MGR .:

REVISIONS:

#	SECTION NOTES	"		8		8	
NO	TE: NOT ALL KEY NOTES APPLY.	1					
Т.	ROOF MATERIAL - REFER TO ROOF NOTES	8					8
2.	ROOF PITCH - REFER TO ROOF NOTES		<b>1</b>		$\geq$		
з.	PRE-MANUFACTURED WOOD ROOF TRUSS SYSTEM - SEE STRUCTURAL & TRUSS CALCS	8					8
4.	ROOF SHEATHING PER STRUCTURAL						
5.	2x FASCIA/BARGE BOARD						
6.	CONT. SOFFITED EAVE W/ VENTING					-	
7.	G.I. FLASHING - ROOF TO WALL			HO			- I
8.	EXTERIOR FINISH PER ELEVATIONS					-	
٩.	FLOOR FRAMING PER STRUCTURAL						
10.	FLOOR SHEATHING PER STRUCTURAL						
н.	HEADER PER STRUCTURAL						
	FLUSH BEAM PER STRUCTURAL		-		-	-	-
	DROPPED BEAM PER STRUCTURAL	<b>–</b>	-	-	-	-	
	FLAT/ ARCHED SOFFIT PER PLAN						
	2x4 STUD WALL				8		
	2X6 STUD WALL						
	2x6 BALLOON FRAMED WALL PER STRUCTURAL						
	DBL. 2x4 WALL PER PLAN	-	-	-	-	-	-
	2x CRIPPLES © 16" O.C. 2x PRESSURE TREATED SILL PLATE						
	2x FRESSURE TREATED SILL FLATE		8		8	8	
	DBL. 2X TOP PLATE @ EXTERIOR & BEARING WALLS						
	IX OVER 2X TOP PLATE @ INTERIOR & DEARING WALLS						
	WALLS						
	INSULATION MATERIAL PER ENERGY CALCULATIONS						
	MIN. 36" HIGH GUARD - SEE PLAN FOR HEIGHT	1.			. – .		
	LOW WALL - SEE PLAN FOR HEIGHT	N	ORI	CH C	ARC	)LIN	A/
	STAIR TREADS AND RISERS PER PLAN: - MIN. 10" TREAD & MAX. 7 3/4" RISER	8		' SE			
	INTERIOR FINISH: - MIN. 1/2" GYP. BD. @ WALLS & SAG RESISTANT OR 5/8" DRYWALL @ CEILING		50	<b>D</b> L		ĽŊ	
	MIN. 1/2" GYP. BD. ON CEILING & WALLS ( USEABLE SPACE UNDER STAIRS.	N N	ORTH	KB H CAROL		oivisi	ON
30.	GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NOT LESS THAT I/2" GYP. BD. $\odot$ GARAGE SIDE WALLS $4$ 5/8" UNDER LIVING AREA U.N.O.	8		8 S. M			
	MATERIAL TO UNDERSIDE OF ROOF SHEATHING			SUITE			
	INTERIOR SHELF - MIN. 1/2" GYP. BD. OVER 3/8" PLY WD.	-	DUT	RHAM,		7709	-
33.	CONCRETE PATIO/ PORCH SLAB PER STRUCTURAL - SLOPE I/4" PER FT. MIN.						_
	CONCRETE GARAGE SLAB PER STRUCTURAL - SLOPE 2" MIN.			(919)			
	CONCRETE FOUNDATION PER STRUCTURAL		FAX:	(919)	472-	-0582	
36.	LINE OF OPTIONAL TRAY CEILING/ STEP CEILING		8	8		8	
37.	LINE OF OPTIONAL VOLUME CEILING						
38.	PROFILE OF OPTIONAL COVERED PATIO						
39.	EXTERIOR SOFFIT MATERIAL - REFER TO ELEVATIONS.	-					-
	8" BLOCK WALL		- 20	18_N	OR'	ГН	
41.	5/8" TYPE-X DRYWALL @ GARAGE CEILING						- 10
42.	WHEN THERE IS USABLE SPACE ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR-CEILING ASSEMBLY IN A		AK	DLIN			
	SINGLE-FAMILY DWELLING, DRAFT STOPS SHALL BE INSTALLED	۲ k	- -		ייזח		
	SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1,000 SQUARE FEET. DRAFTSTOPPING SHALL DIVIDE		В	UIL	VIN	U	
	THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS.			8			
				COI	DES		
		-	-	-	-	-	-

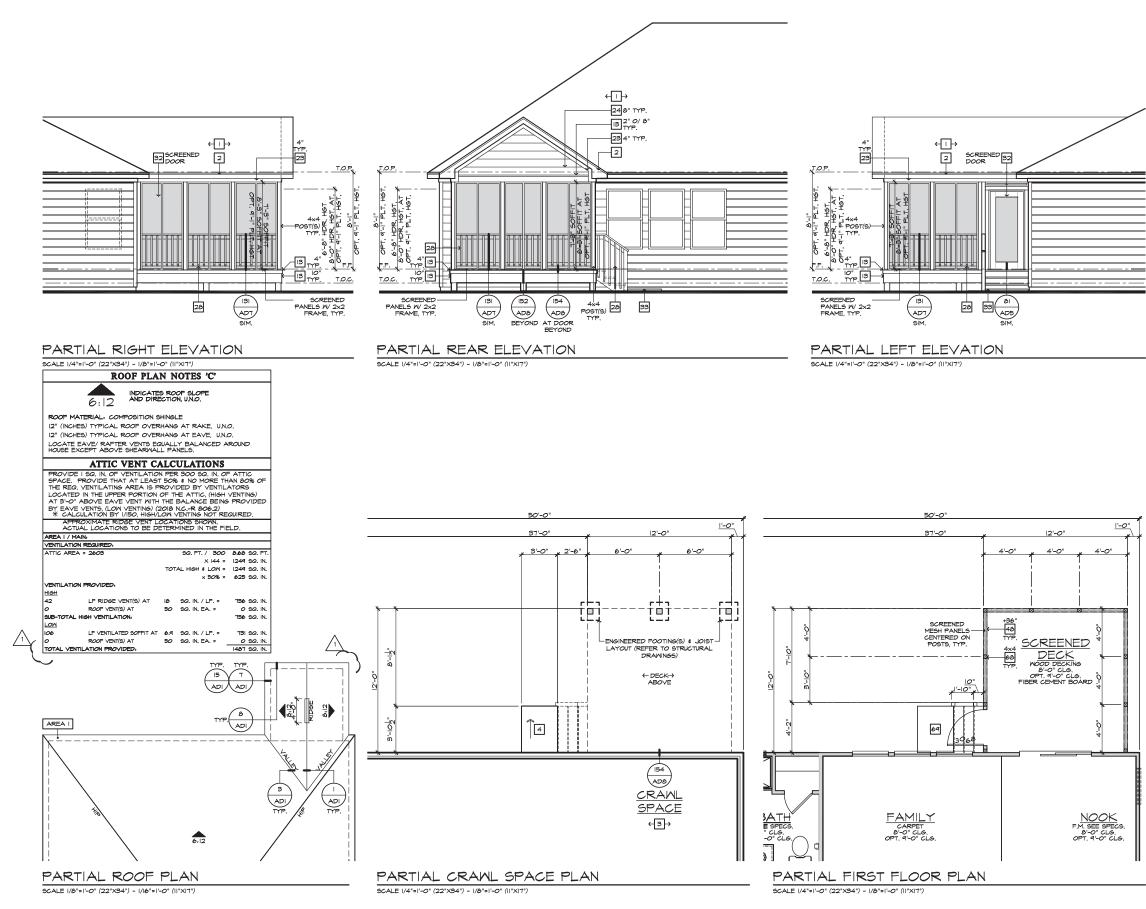


	UTILITY LEGEND		8	8		6
€	120V DUPLEX CONVENIENCE RECEPTACLE ARC FAULT(AFCI) AND TAMPER RESISTANT(TR) 12" ABV, FIN, FLR, TYPICAL UNO.	•			_	
⊖ MP 6FI						
⊕ MP ⊖ 6FI	120V (TR) RECEPTAGLE W/ GFI CIRCUIT			K		
<b>ĕ</b>		•				
ч				HO	M	
)	120v (AFCI & TR) RECESSED FLOOR RECEPTACLE W COVER					
€	120V (AFCI & TR) DUPLEX CONVENIENCE RECEPTACLE SWITCH CONTROLLED, 1/2 HOT					
<b>∋ 220</b> v	220V SINGLE CONVENIENCE RECEPTACLE HEIGHT NOTED AS PER PLAN					
<del></del>	TWO-POLE LIGHT SWITCH AT 42" ABY, FIN, FLR,	•		•		
A- 3	6" ABOVE COUNTER U.N.O. THREE-POLE LIGHT SWITCH		8			
A 4	FOUR-POLE LIGHT SMITCH					
)- W.P.	WALL MOUNTED LIGHT FIXTURE W/ WATER RESISTANT HOUSING					
5-	WALL MOUNTED INCANDESCENT LIGHT FIXTURE					
>	WALL MOUNTED FLUORESCENT LIGHT FIXTURE	•				
<b>}</b> -	CEILING MOUNTED INCANDESCENT LIGHT FIXTURE					
<b>⊳</b>	CEILING MOUNTED FLUORESCENT LIGHT FIXTURE	N	- ראר	сн с	ARC	- 11 I N
χ	HANGING INCANDESCENT	141				
	LIGHT FIXTURE		20	' SE	SKI	E2
D S	RECESSED INCANDESCENT DIRECTIONAL LIGHT FIXTURE (EYE BALL)				IOME	
2	RECESSED INCANDESCENT LIGHT FIXTURE LIGHTING - TRAVERSE II LED FIXTURE - PER	NO	RTH	CAROI	LINA I	OIVISI
<b>]</b>	RECESSED INCANDESCENT LIGHT FIXTURE		4518	S. M		BLVD.
} w.₽.	W/WATER RESISTANT HOUSING	•	DUE	SUITE HAM,	E 180 NC 2'	7703
5	RECESSED FLUORESCENT LIGHT FIXTURE			(919)		
	RECESSED EXHAUST FAN RECESSED EXHAUST FAN/ INCANDESCENT		FAX:	(919)	472-	-0582
ž	LIGHT COMBINATION	•		8		
ž	RECESSED EXHAUST FAN/ FLUORESCENT LIGHT COMBINATION					
)	INCANDESCENT WALL SCONCE		20	18_N	OR1	ГН
	ILLUMINATED ADDRESS SIGN - VISIBLE FROM STREET					
			AK(	DLIN	A S	
0 0	24"x48" FLUORESCENT LIGHT BOX (CEILING MOUNTED)		B	UIL	DIN	G
i				~~		
				COL	DES	
ll i –			_	-	-	-
e ¦	12"x48" FLUORESCENT LIGHT BOX (CEILING MOUNTED)	•		8	8	
			-	-	-	-
Ð	OPTIONAL PRE-WIRED CEILING FAN AND SWITCH - LOCATED IN CENTER OF ROOM U.N.O.	-		-	-	-
Ð	CEILING MOUNTED JUNCTION BOX	•				
J	WALL MOUNTED JUNCTION BOX		_	_		_
	DOOR CHIME	-	SUE	DATE:	-	/13/19
™ 9	CATV RECEPTACLE PUSH BUTTON	1		T No.:		)999:57
4	PHONE OUTLET			N MGR	.:	MF
	SERVICE BOX	R	EVISIO	NS:		
+ нв	HOSE BIB	•/		NTILATI	ON / 01/17/20	/KBA
≁ нв	HOSE BIB W/ S.O.V.	7		AMEWAI	LIK	
+ см	WATER STUB FOR ICE MAKER APPROVED CEILING MOUNTED	•∠	2 \ NG	20019NC	r/ 03-25-2	0 /KBA
9	MOKE DETECTOR TO BE HARD WIRED WITH BATTERY BACK-UP AND INTERCONNECTED					
8	APPROVED CARBON MONOXIDE ALARM/ SMOKE DET.					
	THERMOSTAT (VERIFY LOCATION W/ HVAC PLAN) GAS TAP	•				
X	GAS KEY - FIREPLACE GAS VALVES SHALL BE LOCATED OUTSIDE OF REQUIRED HEARTH AREA, BUT NO MORE THAN 48" FROM GAS OUTLET	[				
SM	ITCHING FOR 24" MIN. SEPERATION	•				
RC OP	NOMS W/ CLG. FAN OF ELECTRICAL BOXES TIONS AS SHOWN BELOW					
GHT / F ½ НО						
		•				
_	\$\$ 1 1 5\$\$ 2-0° (J 6#1 MIN. 7	6				
SECC	NDARY MASTER GARAGE					
		•	PLAN	1:		
SHO	HANICAL, ELECTRICAL AND PLUMBING SYSTEMS ARE NN FOR INTENT ONLY. THESE SYSTEMS SHALL BE NEERED BY OTHERS. THE CONTRACTOR SHALL BE PONSIBLE FOR PROPER INSTALLATION AND	$\left  \right\rangle$	15	50.19	10-	R
PLA	CEMENT. ALL HEIGHTS SHOWN ARE TO CENTERLINE	•			SHE	
OF F	IXTURE.				N.	
RECI IN A	VIDE SMITCH, LIGHT, I2OV (AFCI & TR) DUPLEX EPTACLE, & FUEL GAS STUB OR 22OV RECEPTACLE TTIC FOR F.A.U PER COMMUNITY SPECIFICATIONS.					5.1
SMO	KE DETECTORS IN ROOMS WITH VOLUME CEILING TO	•				
20 F	LOCATED AT HIGHEST POINT OF CEILING FOOT #4 REBAR FOR UFER GROUND AND		SP "	EC. L	EVE.	
ADD	RFACE PLAN FOR LOCATION.		ALE	IGH	DU	RHA
INTE						
. 200	AMP ELECTRICAL PANEL (DEFAULT). ELECTRICAL N CHECK PERMIT REQUIRED IF LOAD EXCEED 400	8	1		Ē	<b>–</b> ~



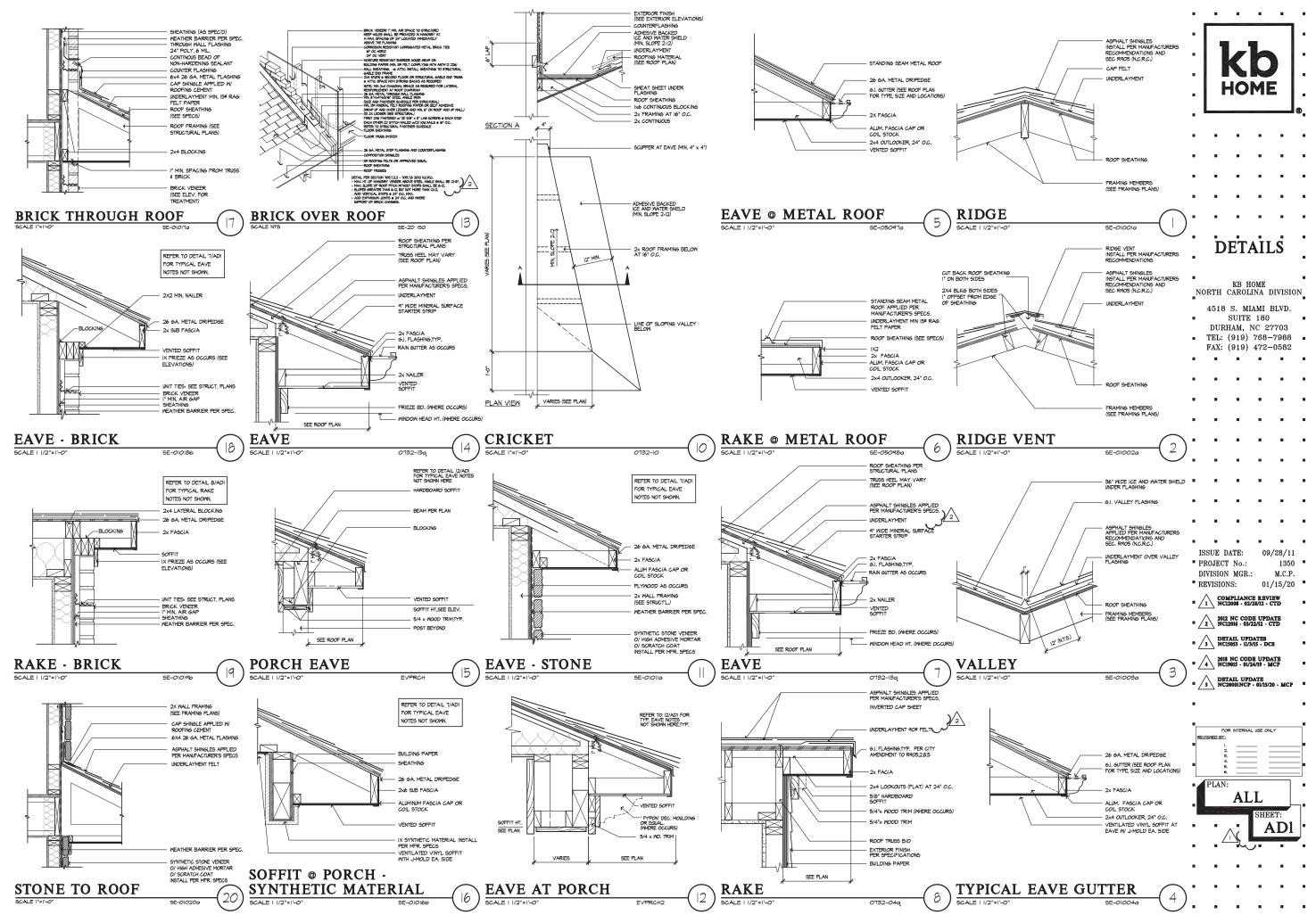
	UTILITY LEGEND	
÷	120V DUPLEX CONVENIENCE RECEPTACLE	
II MP GFI	ARC FAULT(AFCI) AND TAMPER RESISTANT(TR) 12" ABV. FIN. FLR. TYPICAL U.N.O. 120v (TR) RECEPTACLE W GFI CIRCUIT	
r∰ MP	W/ WATER RESISTANT HOUSING	
itti efi Itti efi	120V (TR) RECEPTACLE W/ GFI CIRCUIT	
с,	FUSED DISCONNECT	HOME
$\odot$	120v (AFCI & TR) RECESSED FLOOR RECEPTACLE W COVER	
⊕	120v (AFGI & TR) DUPLEX CONVENIENCE RECEPTACLE SWITCH CONTROLLED, 1/2 HOT	
<b>⊫⊖</b> 220 v	220V SINGLE CONVENIENCE RECEPTACLE	
.0	HEIGHT NOTED AS PER PLAN TWO-POLE LIGHT SWITCH AT 42" ABV. FIN. FLR.	
+69-	8" ABOVE COUNTER U.N.O.	
⊷-3 ⊷-4	THREE-POLE LIGHT SWITCH FOUR-POLE LIGHT SWITCH	
ю-м.р.	WALL MOUNTED LIGHT FIXTURE	
	W/ WATER RESISTANT HOUSING	
ŀ¢·	WALL MOUNTED INCANDESCENT LIGHT FIXTURE	
ŀ\$ŀ-	WALL MOUNTED FLUORESCENT LIGHT FIXTURE	
÷	CEILING MOUNTED INCANDESCENT LIGHT FIXTURE	
	CEILING MOUNTED FLUORESCENT	NODTU CADALIN
	LIGHT FIXTURE HANGING INCANDESCENT	NORTH CAROLIN
¤ Ŧ	LIGHT FIXTURE	50' SERIES
Ð	RECESSED INCANDESCENT DIRECTIONAL LIGHT FIXTURE (EYE BALL)	KB HOME
Ø		NORTH CAROLINA DIVISI
	LIGHTING - TRAVERSE II LED FIXTURE - PER SPECS	4518 S. MIAMI BLVD.
(О́р м.р. —	RECESSED INCANDESCENT LIGHT FIXTURE W/ WATER RESISTANT HOUSING	<ul> <li>SUITE 180</li> <li>DURHAM, NC 27703</li> </ul>
¢ •	RECESSED FLUORESCENT LIGHT FIXTURE	■ TEL: (919) 768-7988
© ©	RECESSED EXHAUST FAN RECESSED EXHAUST FAN/ INCANDESCENT	FAX: (919) 472-0582
	LIGHT COMBINATION	
Ø	RECESSED EXHAUST FAN/ FLUORESCENT LIGHT COMBINATION	
D	INCANDESCENT WALL SCONCE	2018 NORTH
]	ILLUMINATED ADDRESS SIGN - VISIBLE FROM STREET	
		CAROLINA STAT
il li	24"x48" FLUORESCENT LIGHT	BUILDING
¦	BOX (CEILING MOUNTED)	
		CODES
i∥i		
	12"x48" FLVORESCENT LIGHT BOX (CEILING MOUNTED)	
®		
0	AND SWITCH - LOCATED IN CENTER OF ROOM U.N.O. CEILING MOUNTED JUNCTION BOX	
нQ	WALL MOUNTED JUNCTION BOX	
	DOOR CHIME	ISSUE DATE: 12/13/19
⊢₽	CATV RECEPTACLE	PROJECT No.: 1350999:57
⊢® ⊢∎	PUSH BUTTON PHONE OUTLET	DIVISION MGR.: MF
]	SERVICE BOX	REVISIONS:
_ _+ нв	HOSE BIB	VENTILATION NC2008NCP/ 01/17/20 /KBA
-# HB	HOSE BIB W/ S.O.V.	
— см	WATER STUB FOR ICE MAKER APPROVED CEILING MOUNTED	-
9	SMOKE DETECTOR TO BE HARD WIRED WITH BATTERY BACK-UP AND INTERCONNECTED	
⊗	APPROVED CARBON MONOXIDE ALARM/ SMOKE DET.	
⊢⊕ ⊢⊕	THERMOSTAT (VERIFY LOCATION W/ HVAC PLAN) GAS TAP	•
	GAS TAF GAS KEY - FIREPLACE GAS VALVES SHALL BE LOCATED OUTSIDE OF REQUIRED HEARTH AREA.	
· <del>X</del>	LOCATED OUTSIDE OF REQUIRED HEARTH AREA, BUT NO MORE THAN 48" FROM GAS OUTLET	
SM	ITCHING FOR 24" MIN. SEPERATION OMS W CLG. FAN OF ELECTRICAL BOXES	
OP	AS SHOWN BELOW	   19
LIGHT / F ½ HO		FOR INTERNAL USE ONLY REVIEWED BY:
=		B
<u>SECC</u>	NDARY MASTER GARAGE NOTES	6
I. MEG	HANICAL ELECTRICAL AND PLUMBING SYSTEMS ARE	PLAN:
SHO) ENGI	IN FOR INTENT ONLY. THESE SYSTEMS SHALL BE NEERED BY OTHERS. THE CONTRACTOR SHALL BE ONSIBLE FOR PROPER INSTALLATION AND	150.1910-R
PLA	CONSIBLE FOR FROPER INSTALLATION AND CEMENT. ALL HEIGHTS SHOWN ARE TO CENTERLINE IXTURE.	SHEET:
2 PRO	VIDE SWITCH LIGHT 120V (AECL & TR) DUPLEX	5.3
	EPTACLE, & FUEL GAS STUB OR 220V RECEPTACLE TTIC FOR F.A.U PER COMMUNITY SPECIFICATIONS.	
3. SMO BE	KE DETECTORS IN ROOMS WITH VOLUME CEILING TO LOCATED AT HIGHEST POINT OF CEILING	SPEC. LEVEL 1
4. 20 F	FOOT #4 REBAR FOR UFER GROUND AND ITIONAL COLD WATER GROUND, REFER TO SLAB	
INTE	RFACE PLAN FOR LOCATION.	RALEIGH-DURHA
5. 200 PLAI AMP	AMP ELECTRICAL PANEL (DEFAULT). ELECTRICAL N CHECK PERMIT REQUIRED IF LOAD EXCEED 400 S	50' SERIES
AMP		I JU SEVIES

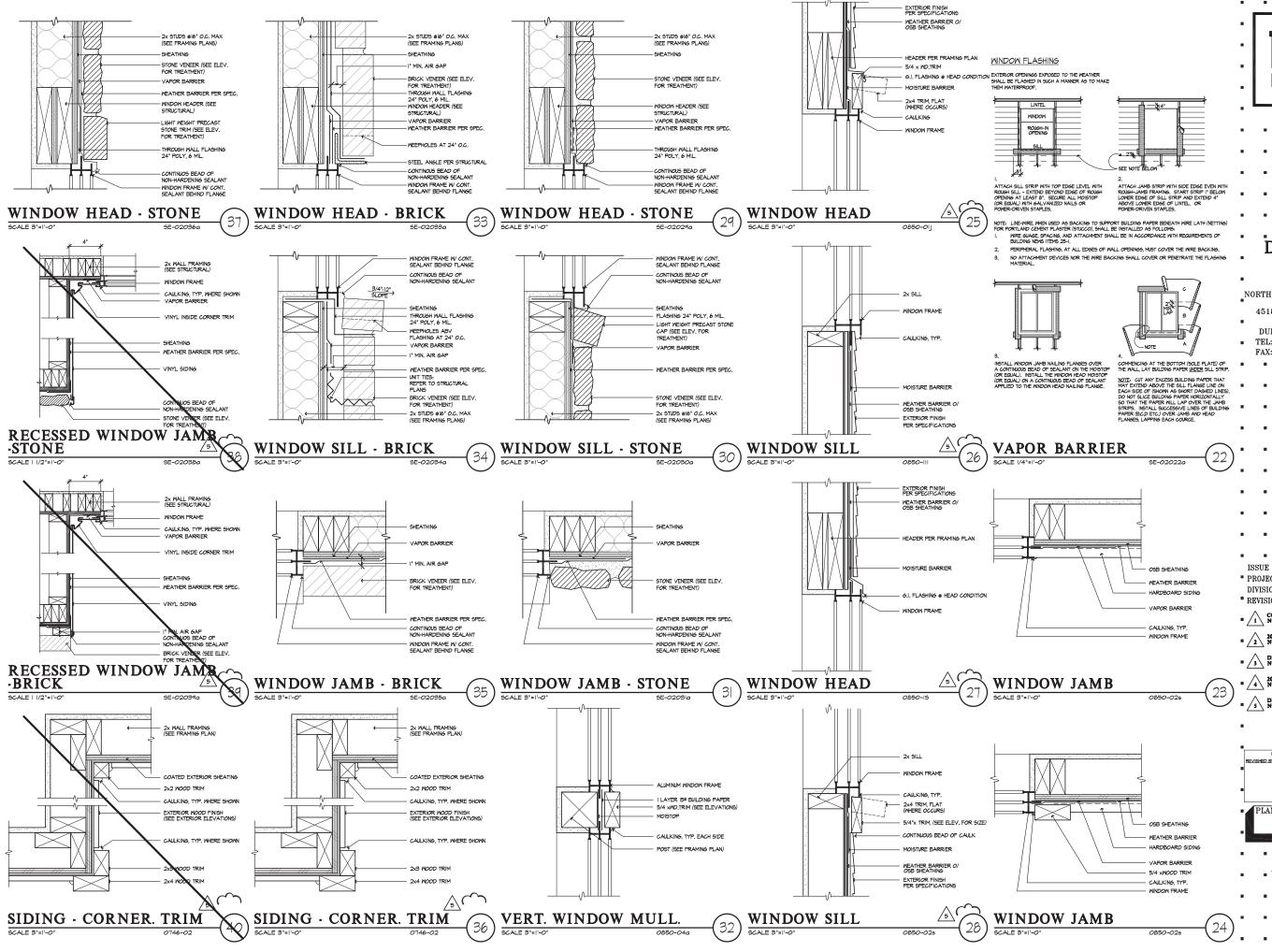
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SCREENED-IN COVERED DECK AT CRAWL SPACE 'C'

<b>#</b> ELEVATION NOTES	,
#         ELEVATION NOTES           NOTE: NOT ALL KEY NOTES APPLY.	
I. ROOF MATERIAL - REFER TO ROOF NOTES	· I I
2. 2X FASCIA/BARGE BOARD WITH FASCIA CAP	
<ol> <li>G.I. FLASHING</li> <li>G.I. FLASHING &amp; SADDLE/CRICKET</li> </ol>	
5. G.I. DRIP SCREED	
6. 24"×24" CHIMNEY	
7. DECORATIVE VENT 8. DECORATIVE CORBEL	I HOME I
9. DECORATIVE CORBEL 9. DECORATIVE SHUTTERS	
IO. PEDIMENT. SEE ELEVATION FOR TYPE	
II. RECESSED ELEMENT	8
12. DECORATIVE TRIM FYPON OR EQ. SEE ELEVATION FOR TYPE	
<ul> <li>IS. TRIM PER SPEC- SEE ELEVATION FOR SIZE</li> <li>SYNTHETIC MATERIAL</li> </ul>	
15. PRE-MANUFACTURED DECORATIVE COLUMN (SIZE, SEE ELEV.)	
FYPON OR EQ. SURROUNDING STRUCTURAL POST.	
16. SITE-BUILT COLUMN - SEE ELEVATION FOR TYPE	
17. SHAKE SIDING 18. STONE VENEER PER SPECS	
19. BRICK/MASONRY VENEER PER SPECS	
20. BUILT UP BRICK COLUMN 21. SOLDIER COURSE	
21. SOLDIER COURSE 22. ROWLOCK COURSE	
23. FRIEZE BOARD	
24. SIDING W/ 4" CORNER TRIM PER SPECS	
25. P.T. POST W WRAP - SEE STRUCTURAL FOR SIZE	
26. PRE-FAB DECORATIVE TRIM	NORTH CAROLIN
27. LIGHT WEIGHT PRECAST STONE TRIM 28. P.T. LUMBER RAILINGS (+36" U.N.O.)	
28. P.T. LUMBER RAILINGS (+36" U.N.O.) 29. WRAP	50' SERIES
30. DECORATIVE WINDOW/DOOR TRIM - FYPON OR EQ. SEE	•
ELEVATION FOR SIZE.	KB HOME
31. BRACKET OR KICKER - FYPHON OR EQ. 32. ENTRY DOOR	NORTH CAROLINA DIVISION
32. ENTRY DOOR 33. CONCRETE STOOP/ PORCH - SEE SLAB INTERFACE PLAN.	4518 S. MIAMI BLVD.
34. SECTIONAL GARAGE DOOR PER SPECS	SUITE 180
35. ALUMINUM WRAP	DURHAM, NC 27703
36. OPTIONAL DOOR/WINDOW - REFER TO PLAN OPTIONS	■ TEL: (919) 768-7988
37. OPTIONAL STANDING SEAM METAL ROOF	FAX: (919) 472-0582
38. KEYSTONE 39. SOLDIER CROWN	FAA. (818) 4(2-0302
40. JACK SOLDIER COURSE	
4I. WATER TABLE	
42. ATRIUM DOOR	
43. PILASTER - SEE ELEVATION FOR TYPE	2018 NORTH
# PARTIAL PLAN NOTES	] CAROLINA STAT
NOTE: NOT ALL KEY NOTES APPLY.	
21. WATER HEATER LOCATION: - FOR GAS - LOCATE ON 18" HIGH PLATFORM - FOR INTERIOR LOCATION - PROVIDE PAN & DRAIN. (REFER TO DETAILS) 28. WATER HEATER 'B' VENT TO OUTSIDE AIR	BUILDING
28. WATER HEATER 'B' VENT TO OUTSIDE AIR	
29. MAIN LINE SHUT-OFF VALVE AND TEMP. & PRESSURE RELIEF	CODES
99, LINE OF WALL BELOW 41. LINE OF FLOOR ABOVE 42. LINE OF FLOOR BELOW	
42. LINE OF FLOOR BELOW 48. MIN. 36" HIGH GUARDRAIL (REFER TO DETAIL SHEETS) 50. A/C PAD LOCATION	
51. LOW WALL - REFER TO PLAN FOR HEIGHT	
52. 2x6 STUD WALL 54. DBL. 2x4 WALL PER PLAN	
55 INTERIOR SHELE - REFER TO PLAN FOR HEIGHT	
57. FLAT SOFFIT 58. ARCHED SOFFIT 60. OPT. DOOR, MINDOW	
<ol> <li>PRE-MANUFACTURED DECORATIVE COLUMN (SIZE, SEE ELEV.)</li> </ol>	
FYPON OR EQ. SURROUNDING STRUCTURAL POST. 62. BRICK / STONE VENEER - REFER TO ELEVATIONS	
62. BKICK / SIONE VENEEK - KEFEK ID ELEVATIONS 63. SECTIONAL GARAGE DOOR PER SPECS 66. 3" DIAM. CONCRETE FILLED PIPE BOLLARD 36" HIGH WITH MIN. 12" EMBEDMENT INTO CONCRETE.	
MIN. 12" EMBEDMENT INTO CONCRETE. (NOT REQUIRED AT ELECTRIC WATER HEATERS OR FOR	
APPLIANCES LOCATED OUT OF THE VEHICLE'S NORMAL TRAVEL PATH).	ISSUE DATE: 12/13/19
68. P.T. POST W/ WRAP.	PROJECT No.: 1350999:57
70. EGRESS WINDOW 75. WINDOW LEDGE. HEIGHT & WIDTH OF OPENING TO EXTEND 6"	DIVISION MGR.: MP
BEYOND WINDOW(S) ON ALL SIDES U.N.O. 76. SITE-BUILT COLUMN - SEE ELEVATION FOR TYPE	REVISIONS:
77. CONCRETE SLAB. SLOPE 1/4" PER FT. MIN. SEE PLAN FOR	A
- Al Zela -	VENTILATION NC2008NCP/ 01/17/20 /KBA
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NOTE: IRC 2018-NC-R	PLAN:
THE CRAWL SPACE IS TO BE CONDITIONED PER NC-R SECTION R409.	150.1910-R
THE CRAWL SPACE VAPOR RETARDER (BARRIER) IS TO BE PER	130.1910-IX
NC-R SECTION R409.2.	SHEET:
NOTE: REFER TO BASIC ROOF PLAN FOR INFORMATION NOT	7 8
REFER TO BASIC ROOF PLAN FOR INFORMATION NOT SHOWN HERE	8.C2
NOTE.	
REFER TO BASIC ELEVATIONS FOR INFORMATION NOT	SDEC LEVEL 1
SHOWN HERE	SPEC. LEVEL 1
NOTE: REFER TO BASIC ELOOR PLAN FOR INFORMATION NOT	DALEIGU DUDUAL
SHOWN HERE	] RALEIGH-DURHAN
	<b>50' SERIES</b>

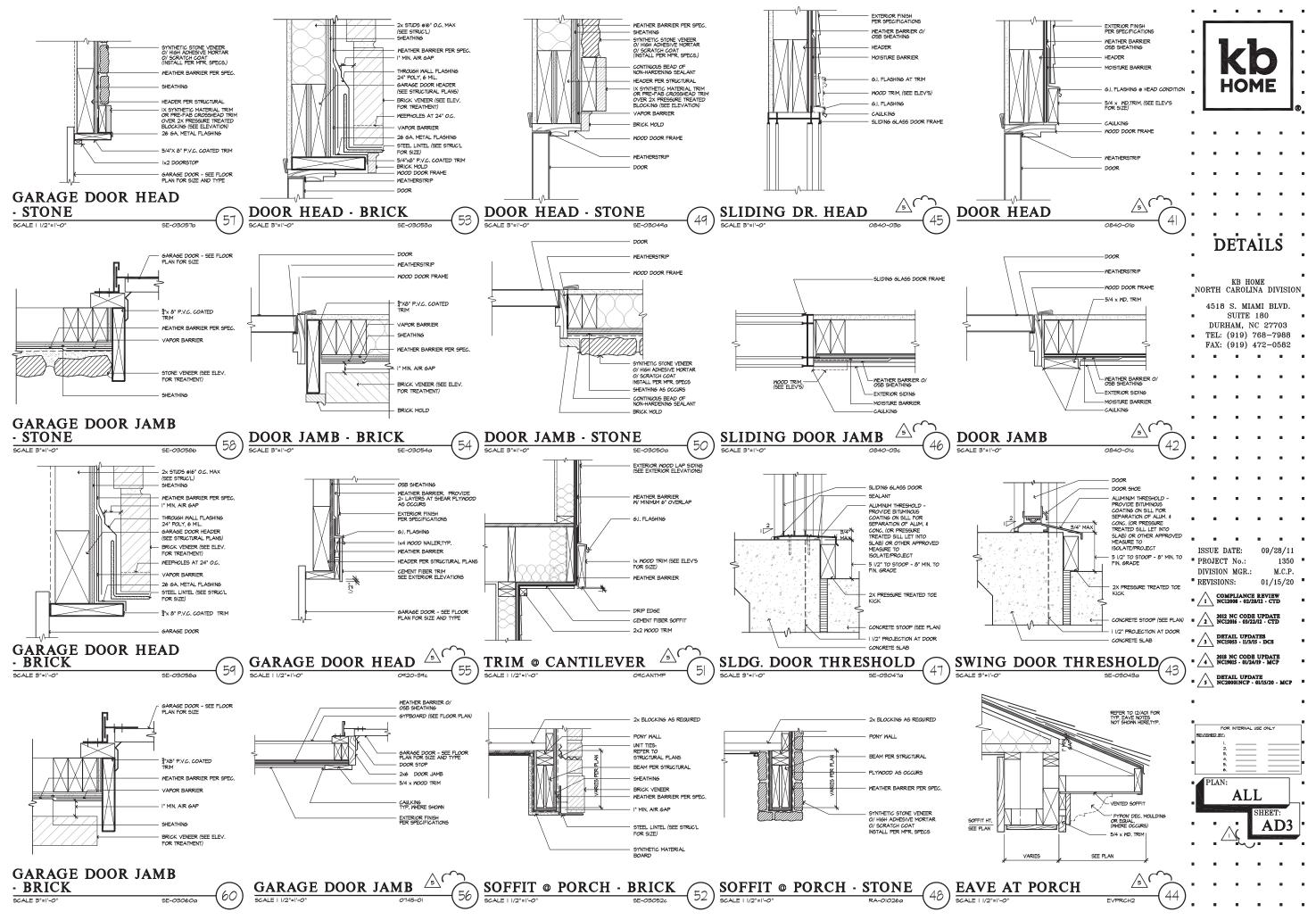


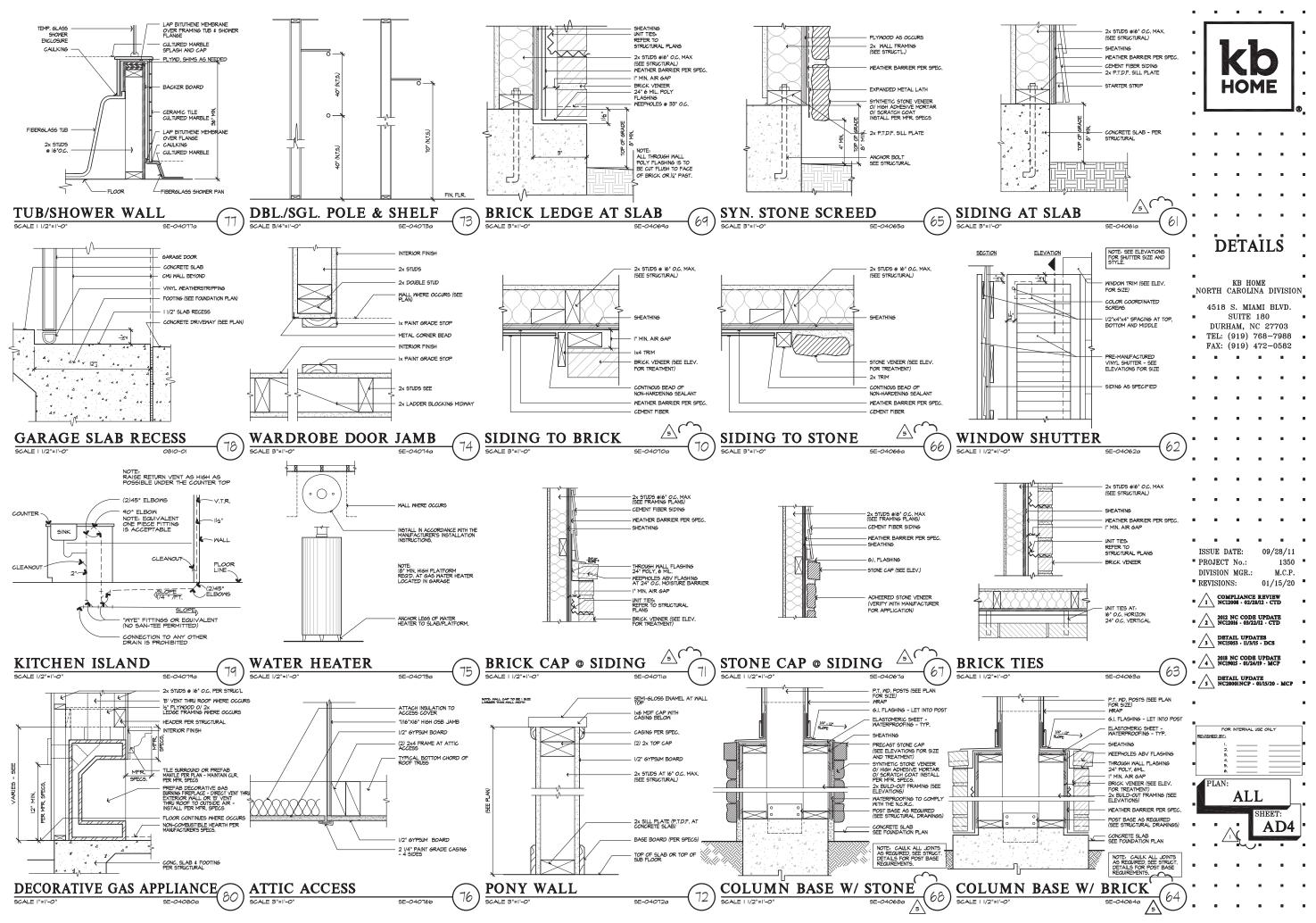


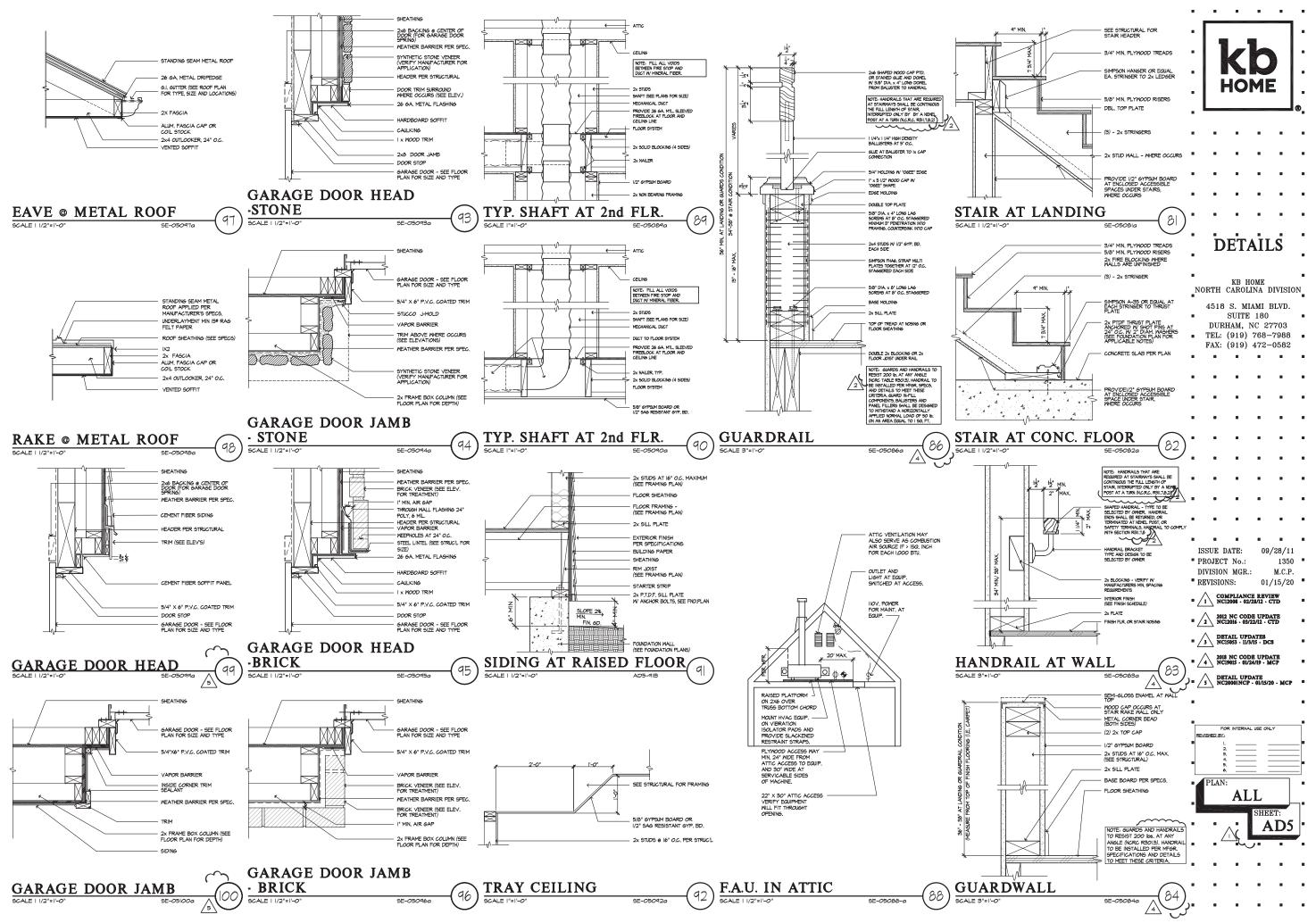


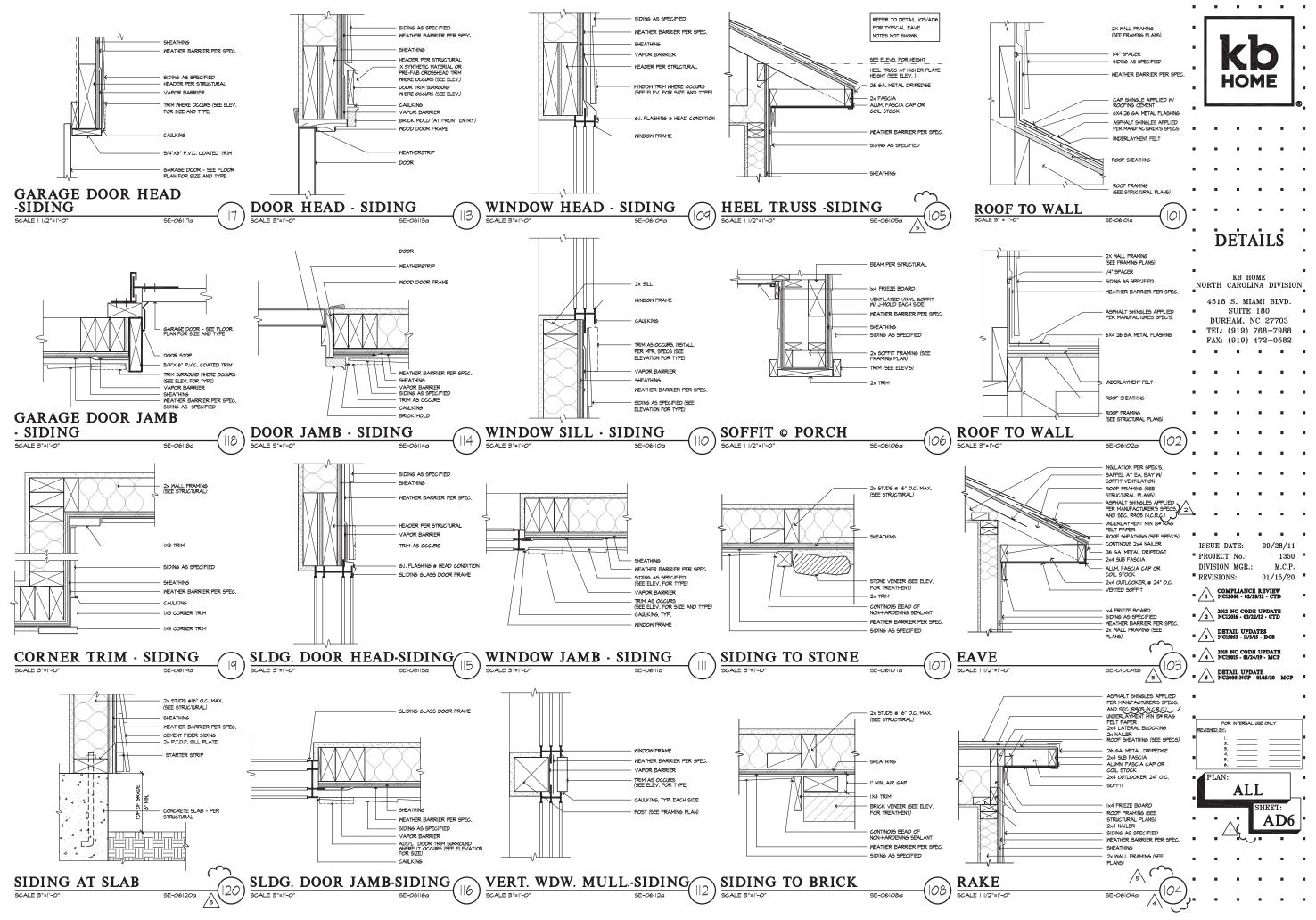
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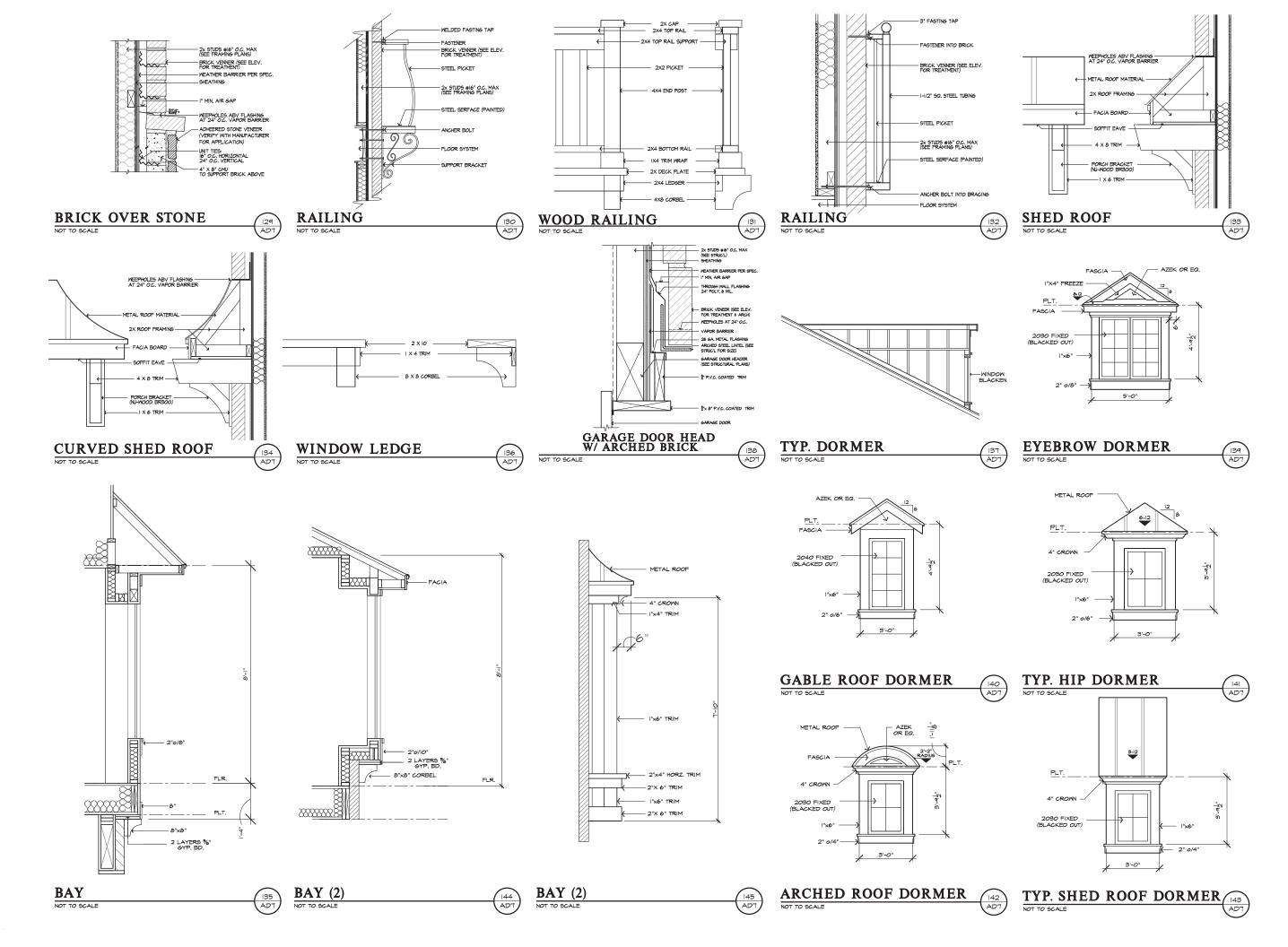
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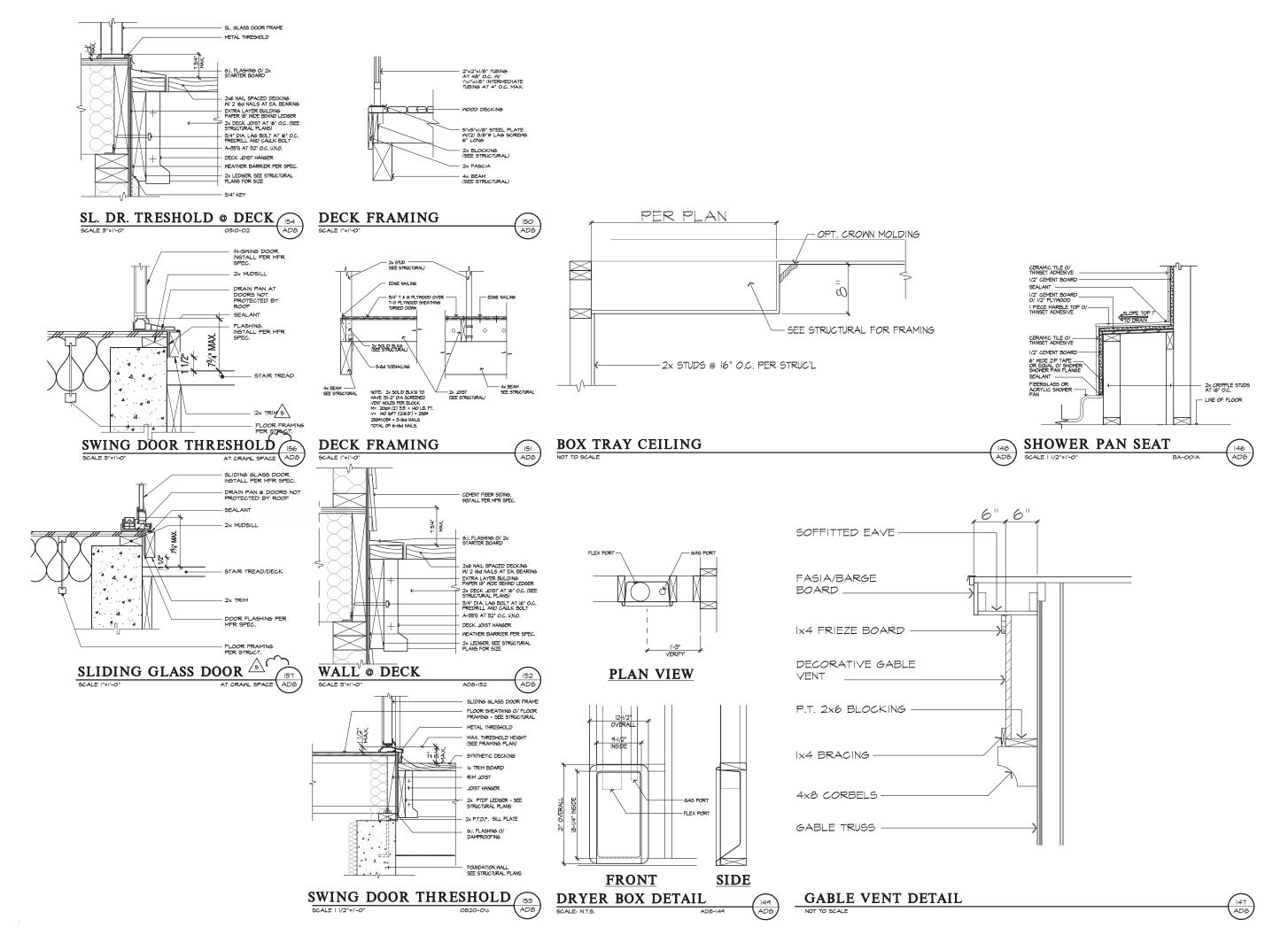






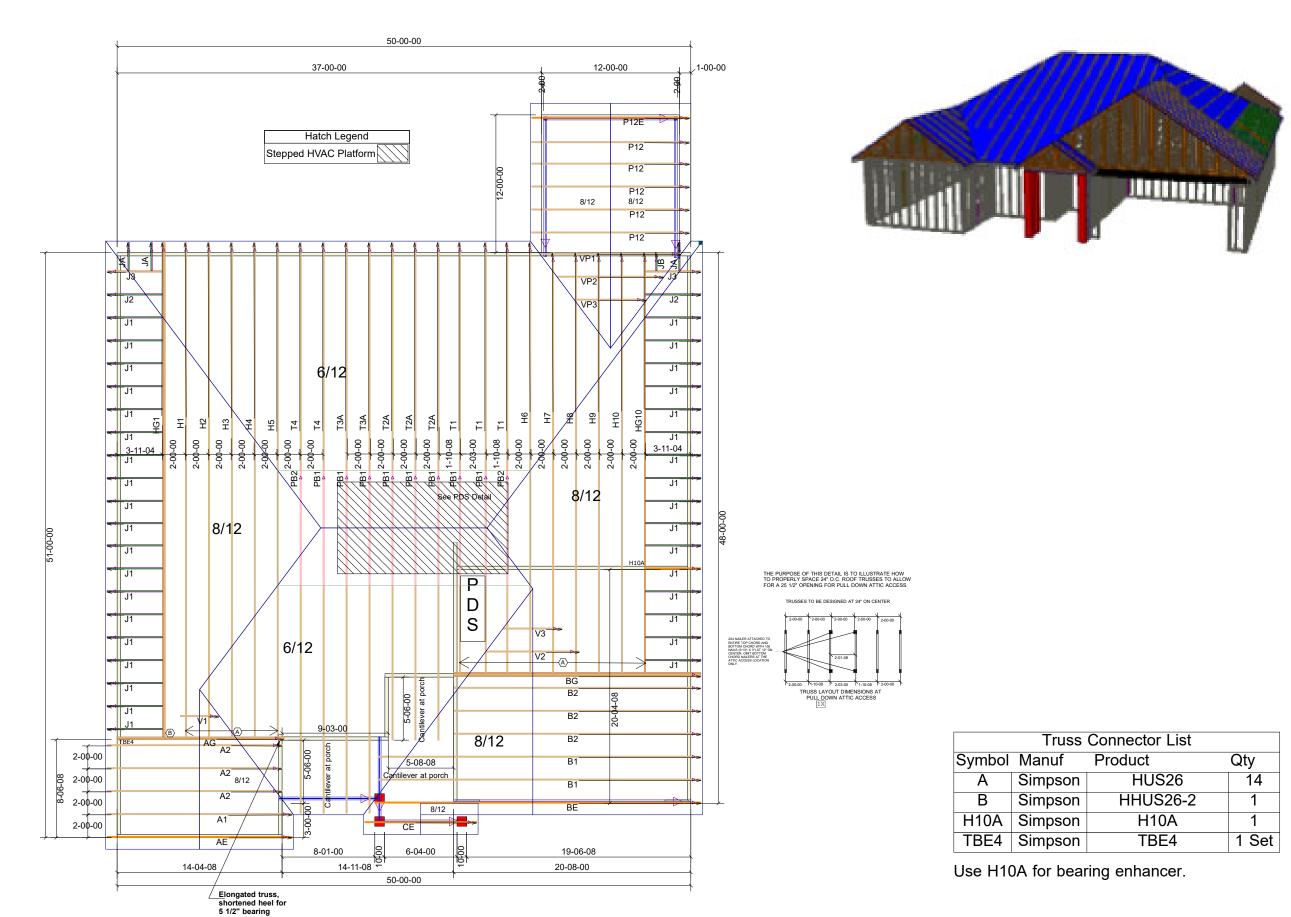
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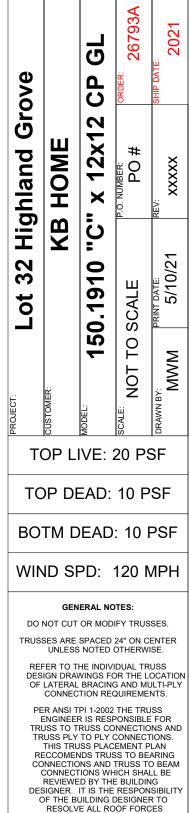
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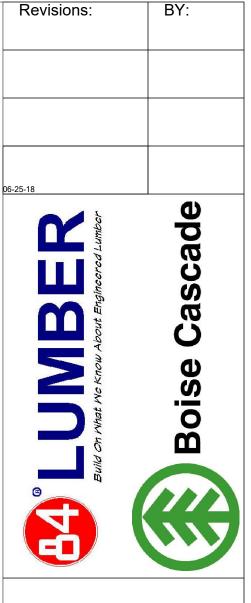
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Squash Blocks Required Under The Ends Of All LVL And Point Loads For Load Transfer - See Details

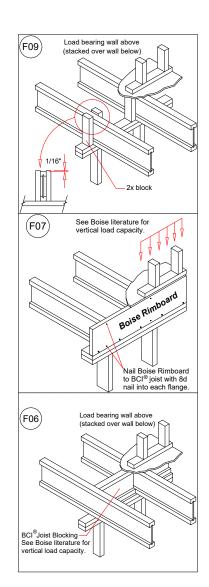
# First Floor Layout

# KB Homes 1910 32 Highland Grove



	Products		
у	Product	Length	Plies
	11-7/8" BCI® 5000s-1.8	34' 0"	1
	11-7/8" BCI <sup>®</sup> 5000s-1.8	34' 0"	2
	11-7/8" BCI® 5000s-1.8	28' 0"	1
	11-7/8" BCI® 5000s-1.8	18' 0"	1
	11-7/8" BCI® 5000s-1.8	9' 0"	1
	11-7/8" BCI® 5000s-1.8	4' 0"	1
	1-3/4" x 9-1/4" VERSA-LAM® LVL 2.1E 3100 SP	28' 0"	2
	1-3/4" x 9-1/4" VERSA-LAM® LVL 2.1E 3100 SP	22' 0"	2
	1-3/4" x 9-1/4" VERSA-LAM® LVL 2.1E 3100 SP	18' 0"	2
	1-3/4" x 9-1/4" VERSA-LAM® LVL 2.1E 3100 SP	12' 0"	2
	1" x 11-7/8" BC RIM BOARD OSB	12' 0"	1
	11-7/8" BCI® 5000s-1.8	2' 0"	1
	11-7/8" BCI® 5000s-1.8	2' 0"	1

or Summary				
nuf	Product			
pson	IUS2.06/11.88			



SALES PRESENTATION DRAWING No structural or dimensional check has been made of this de drawings of the building, therefore purchaser is to check an approve all dimsensions, quantities, loads, and details carefu This drawing has not been check by Boise Engineering.

KB Homes 1910 32 Highland Grove 84 Lumber EWP

BC FRAMER II Plan Date: 12132019 Structural Date: 10172019 By: JP Sheet: 1

All I-Joist and Versa-Lam Beams Must be Installed per The Boise Cascade Installation Guide!

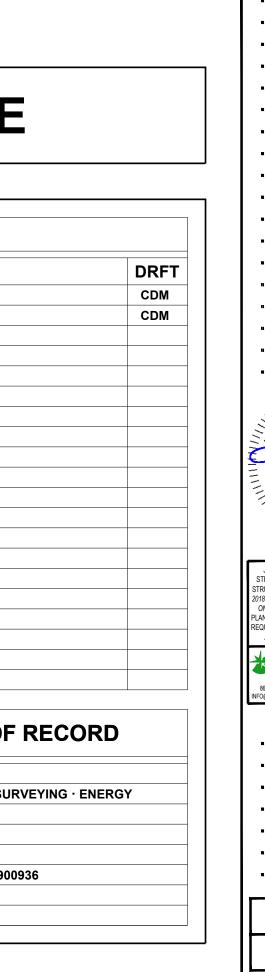
# **STRUCTURAL PLANS FOR:**



# 150.1910 - RH GARAGE

# PLAN RELEASE / REVISIONS REV DATE ARCH PLAN VERSION REVISION DESCRIPTION 04/28/2021 1910-150-01350 RH D5 032521 INITIAL SETUP OF LAYOUT 04/28/2021 1910-150-01350 RH D5 032521 CREATED LOT-SPECIFIC STRUCTURAL LAYOUT FROM MASTER PLAN AND EWP LAYOUT 04/28/2021 1910-150-01350 RH D5 032521 CREATED LOT-SPECIFIC STRUCTURAL LAYOUT FROM MASTER PLAN AND EWP LAYOUT 04/28/2021 1910-150-01350 RH D5 032521 CREATED LOT-SPECIFIC STRUCTURAL LAYOUT FROM MASTER PLAN AND EWP LAYOUT 0

CODE	ENGINEER OF
ALL CONSTRUCTION, WORKMANSHIP, AND MATERIAL QUALITY AND SELECTION SHALL BE PER: 2018 NORTH CAROLINA STATE BUILDING CODE: RESIDENTIAL CODE	JDS Consulting, PLLC DESIGN · ENGINEERING · SURV 8600 'D' JERSEY COURT RALEIGH, NC 27617 FIRM LIC. NO: P-0961 PROJECT REFERENCE: 219009
	ALL CONSTRUCTION, WORKMANSHIP, AND MATERIAL QUALITY AND SELECTION SHALL BE PER: 2018 NORTH CAROLINA STATE BUILDING CODE:





NOTE: ALL CHAPTERS, SECTIONS, TABLES, AND FIGURES CITED WITHOUT A PUBLICATION TITLE ARE FROM THE APPLICABLE RESIDENTIAL CODE (SEE TITLE SHEET).

#### GENERAL

- 1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. FURTHERMORE, CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, AND SAFETY ON SITE. NOTIFY JDS Consulting, PLLC IMMEDIATELY IF DISCREPANCIES ON PLAN EXIST.
- 2. BRACED-WALL DESIGN IS BASED ON SECTION R602.10 WALL BRACING. PRIMARY PRESCRIPTIVE METHOD TO BE CS-WSP. SEE WALL BRACING PLANS AND DETAILS FOR ADDITIONAL INFORMATION

ALL NON-PRESCRIPTIVE SOLUTIONS ARE BASED ON GUIDELINES ESTABLISHED IN THE AMERICAN SOCIETY OF CIVIL ENGINEERS PUBLICATION ASCE 7 AND THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION - SPECIAL DESIGN PROVISIONS FOR WIND AND SEISMIC.

SEISMIC DESIGN SHALL BE PER SECTION R301.2.2 - SEISMIC 3. PROVISIONS, INCLUDING ASSOCIATED TABLES AND FIGURES, BASED ON LOCAL SEISMIC DESIGN CATEGORY.

#### DESIGN LOADS

ASSUMED SOIL BEARING-CAPACITY	2,000 PSF
	LIVE LOAD
ULTIMATE DESIGN WIND SPEED	115 MPH, EXPOSURE B
GROUND SNOW	15 PSF
ROOF	20 PSF
RESIDENTIAL CODE TABLE R301.5	LIVE LOAD (PSF)
DWELLING UNITS	40
SLEEPING ROOMS	30
ATTICS WITH STORAGE	20
ATTICS WITHOUT STORAGE	10
STAIRS	40
DECKS	40
EXTERIOR BALCONIES	60
PASSENGER VEHICLE GARAGES	50
FIRE ESCAPES	40
GUARDS AND HANDRAILS	200 (pounds, concentrated)

COMPONENT AND CLADDING LOADS. INCLUDING THOSE FOR DOORS AND WINDOWS, SHALL BE DERIVED FROM TABLES R301.2(2) AND R301.2(3) FOR A BUILDING WITH A MEAN ROOF HEIGHT OF 35 FEET, LOCATED IN EXPOSURE B

KS

KING STUD COLUMN

LAMINATED VENEER

PRESSURE TREATED

SQUARE FOOT (FEET)

SHELF / SHELVES SHEATHING

MECHANICAL

MANUFACTURER

NOT TO SCALE

REFRIGERATOR

ROUGH OPENING

ROOF SUPPORT

STUD COLUMN

SINGLE JOIST

STUD POCKET

THICK(NESS)

TRIPLE JOIST

TRIPLE RAFTER

TOP OF CURB / CONCRETE

UNLESS NOTED OTHERWISE CLOTHES WASHER WATER HEATER WELDED WIRE FABRIC EXTRA JOIST

TREAD TEMPERED GLASS

#### ABBREVIATIONS

ADDR	EVIATIONS	LVL	LAMINATED
		LVL	LUMBER
ABV	ABOVE	МАХ	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICA
ALT	ALTERNATE	METR	MANUFACT
BRG	BEARING	MIN	MINIMUM
BSMT CANT	BASEMENT	NTS	NOT TO SC
CANT	CANTILEVER	OA	OVERALL
CLG	CEILING JOIST CEILING	OC	ON CENTER
CLG	CONCRETE MASONRY UNIT	PT	PRESSURE
CNIU	CASED OPENING	R	RISER
COL	COLUMN	REF	REFRIGERA
COL	CONCRETE	RFG	ROOFING
CONC	CONTINUOUS	RO	ROUGH OPE
D	CLOTHES DRYER	RS	ROOF SUPP
DBL	DOUBLE	SC	STUD COLU
DIAM	DIAMETER	SF	SQUARE FC
DJ	DOUBLE JOIST	SH	SHELF / SHI
DN	DOWN	SHTG	SHEATHING
DP	DEEP	SHW	SHOWER
DR	DOUBLE RAFTER	SIM	SIMILAR
DSP	DOUBLE STUD POCKET	SJ	SINGLE JOI
EA	EACH	SP	STUD POCK
EE	EACH END	SPEC'D	SPECIFIED
EQ	EQUAL	SQ	SQUARE
EX	EXTERIOR	т	TREAD
FAU	FORCED-AIR UNIT	TEMP	TEMPERED
FDN	FOUNDATION	THK	THICK(NES
FF	FINISHED FLOOR	TJ	TRIPLE JOIS
FLR	FLOOR(ING)	тос	TOP OF CU
FP	FIREPLACE	TR	TRIPLE RAP
FTG	FOOTING	TYP	TYPICAL
HB	HOSE BIBB	UNO	UNLESS NO
HDR	HEADER	W	CLOTHES W
HGR	HANGER	WH	WATER HEA
JS	JACK STUD COLUMN	WWF	WELDED W
		XJ	EXTRA JOIS

## MATERIALS

INTERIOR / TRIMMED FRAMING LUMBER SHALL BE #2 SPRUCE PINE FIR (SPF) WITH THE FOLLOWING DESIGN PROPERTIES (#2 SOUTHERN YELLOW PINE MAY BE SUBSTITUTED):

Fb = 875 PSI Fv = 70 PSI E = 1.4E6 PSI

2. FRAMING LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, CONCRETE, OR MASONRY SHALL BE PRESSURE TREATED #2 SOUTHERN YELLOW PINE (SYP) WITH THE FOLLOWING DESIGN PROPERTIES:

Fb = 975 PSI Fv = 95 PSI E = 1.6E6 PSI

3. LVL STRUCTURAL MEMBERS TO BE LAMINATED VENEER LUMBER WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:

Fb = 2600 PSI Fv = 285 PSI E = 1.9E6 PSI

PSL STRUCTURAL MEMBERS TO BE PARALLEL STRAND LUMBER 4. WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:

Fb = 2900 PSI Fv = 290 PSI E = 2.0E6 PSI

5. LSL STRUCTURAL MEMBERS TO BE LAMINATED STRAND LUMBER WITH THE FOLLOWING MINIMUM DESIGN PROPERTIES:

Fb = 2250 PSI Fv = 400 PSI E = 1.55E6 PSI

- STRUCTURAL STEEL WIDE-FLANGE BEAMS SHALL CONFORM TO ASTM A992. Fy = 50 KSI
- REBAR SHALL BE DEFORMED STEEL CONFORMING TO ASTM A615, GRADE 60.
- 8. POURED CONCRETE COMPRESSIVE STRENGTH TO BE A MINIMUM 3,000 PSI AT 28 DAYS. MATERIALS USED TO PRODUCE CONCRETE SHALL COMPLY WITH THE APPLICABLE STANDARDS LISTED IN AMERICAN CONCRETE INSTITUTE STANDARD ACI 318 OR ASTM C1157.
- CONCRETE SUBJECT TO MODERATE OR SEVERE WEATHERING PROBABILITY PER TABLE R301.2(1) SHALL BE AIR-ENTRAINED WHEN REQUIRED BY TABLE R402.2.
- 10. CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE PUBLICATION 530: BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES AND COMPANION COMMENTARIES AND THE MASONRY SOCIETY PUBLICATION TMS 402/602: BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES.
- 11. MORTAR SHALL COMPLY WITH ASTM INTERNATIONAL STANDARD
- 12. INDICATED MODEL NUMBERS FOR ALL METAL HANGERS, STRAPS, FRAMING CONNECTORS, AND HOLD-DOWNS ARE SIMPSON STRONG-TIE BRAND, EQUIVALENT USP BRAND PRODUCTS ARE ACCEPTABLE.
- 13. REFER TO I-JOIST EQUIVALENCE CHART ON I-JOIST DETAIL SHEET FOR SUBSTITUTION OF MANUFACTURER SERIES.

#### FOUNDATION

- MINIMUM ALLOWABLE SOIL BEARING CAPACITY IS ASSUMED TO BE 2,000 PSF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SOIL BEARING CAPACITY IF UNSATISFACTORY CONDITIONS EXIST
- 2. CONCRETE FOUNDATION WALLS TO BE SELECTED AND CONSTRUCTED PER SECTION R404 OR AMERICAN CONCRETE INSTITUTE STANDARD ACI 318.
- MASONRY FOUNDATION WALLS TO BE SELECTED AND CONSTRUCTED PER SECTION R404 AND/OR AMERICAN CONCRETE INSTITUTE PUBLICATION 530: BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES AND COMPANION COMMENTARIES AND/OR THE MASONRY SOCIETY PUBLICATION TMS 402/602: BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES.
- CONCRETE WALL HORIZONTAL REINFORCEMENT TO BE PER TABLE R404.1.2(1) OR AS NOTED OR DETAILED. CONCRETE WALL VERTICAL REINFORCEMENT TO BE PER TABLES R404.1.2(3 AND 4) OR AS NOTED OR DETAILED, ALL CONCRETE WALLS SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 6.
  - TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL Α. SUPPORT AT THE TOP AND BOTTOM. FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER В. SECTION R405.
- 5. PLAIN-MASONRY WALL DESIGN TO BE PER TABLE R404.1.1(1) OR AS NOTED OR DETAILED. MASONRY WALLS WITH VERTICAL REINFORCEMENT TO BE PER TABLES R404.1.1 (2 THROUGH 4) OR AS NOTED OR DETAILED. ALL MASONRY WALLS SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 6.
  - A. TABLES ASSUME THAT WALLS HAVE PERMANENT LATERAL SUPPORT AT THE TOP AND BOTTOM.
  - WALL REINFORCING SHALL BE PLACED ACCORDING TO в FOOTNOTE (c) OF THE TABLES (REINFORCING IS NOT CENTERED IN WALL).
  - C. FOUNDATION DRAINS ARE ASSUMED AT ALL WALLS PER SECTION R405.
- 6. WOOD SILL PLATES TO BE ANCHORED TO THE FOUNDATION WITH 1/2" DIAMETER ANCHOR BOLTS WITH MINIMUM 7" EMBEDMENT. SPACED A MAXIMUM OF 6'-0" OC AND WITHIN 12" FROM THE ENDS OF EACH PLATE SECTION. INSTALL MINIMUM (2) ANCHOR BOLTS PER SECTION. SEE SECTION R403.1.6 FOR SPECIFIC CONDITIONS.
- 7. THE UNSUPPORTED HEIGHT OF SOLID MASONRY PIERS SHALL NOT EXCEED TEN TIMES THEIR LEAST DIMENSION. UNFILLED, HOLLOW PIERS MAY BE USED IF THE UNSUPPORTED HEIGHT IS NOT MORE THAN FOUR TIMES THEIR LEAST DIMENSION
- CENTERS OF PIERS TO BEAR IN THE MIDDLE THIRD OF THE FOOTINGS, AND GIRDERS SHALL CENTER IN THE MIDDLE THIRD OF THE PIERS.
- 9. ALL FOOTINGS TO HAVE MINIMUM 2" PROJECTION ON EACH SIDE OF FOUNDATION WALLS (SEE DETAILS).
- 10. ALL REBAR NOTED IN CONCRETE TO HAVE AT LEAST 2" COVER FROM EDGE OF CONCRETE TO EDGE OF REBAR
- 11. FRAMING TO BE FLUSH WITH FOUNDATION WALLS.
- 12. WITH CLASS 1 SOILS, VAPOR BARRIER AND CRUSHED STONE MAY BE OMITTED

## FRAMING

- 3.
- STRUCTURAL COMPONENTS.
- CONSTRUCTION.

7

- LUMBER.

  - DETAILS.
- SPECIFICATIONS

- C.
- D.
- DRAWINGS.

- EACH END OF FLITCH BEAM.

- EXTERIOR RIM JOIST / BOARD
- SHALL BE MET.

ALL BEARING HEADERS TO BE (2) 2x6 SUPPORTED W/ MIN (1) JACK STUD AND (1) KING STUD EACH END, UNO.

ALL NON-BEARING HEADERS TO BE (2) 2x4, UNO.

NON-BEARING INTERIOR WALLS NOT MORE THAN 10' NOMINAL HEIGHT AND NOT SHOWN AS BRACED WALLS MAY BE FRAMED WITH 2x4 STUDS @ 24" OC.

SOLID BLOCKING TO BE PROVIDED AT ALL POINT LOADS THROUGH FLOOR LEVELS TO THE FOUNDATION OR TO OTHER

5. ALL BEAMS SPECIFIED ARE MINIMUM SIZES ONLY. LARGER MEMBERS MAY SUBSTITUTED AS NEEDED FOR EASE OF

6. ALL EXTERIOR WALLS TO BE FULLY SHEATHED WITH 7/16" OSB

PORCH / PATIO COLUMNS TO BE 4x4 MINIMUM PRESSURE-TREATED

A. ATTACH PORCH COLUMNS TO SLAB / FDN WALL USING ABA, ABU, ABW, OR CPT SIMPSON POST BASES TO FIT COLUMN SIZES NOTED ON PLAN -OR- ANY OTHER COLUMN CONNECTION WITH 500# UPLIFT CAPACITY.

B. ATTACH PORCH COLUMNS TO PORCH BEAMS USING AC OR BC SIMPSON POST CAPS TO FIT COLUMN SIZES NOTED ON PLAN -OR- ANY OTHER COLUMN CONNECTION WITH 500# UPLIFT CAPACITY.

C. TRIM OUT COLUMN(S) AND BEAM(S) PER BUILDER AND

8. ALL ENGINEERED WOOD PRODUCTS (LVL, PSL, LSL, ETC.) SHALL BE INSTALLED WITH CONNECTIONS PER MANUFACTURER

ENGINEERED WOOD FLOOR SYSTEMS AND ROOF TRUSS SYSTEMS: A. SHOP DRAWINGS FOR THE SYSTEMS SHALL BE PROVIDED TO THE ENGINEER OF RECORD FOR REVIEW AND COORDINATION BEFORE CONSTRUCTION. TRUSS PROFILES SHALL BE SEALED BY THE TRUSS MANUFACTURER

INSTALLATION OF THE SYSTEMS SHALL BE PER MANUFACTURER'S INSTRUCTIONS. TRUSS LAYOUT AND PLACEMENT BY MANUFACTURER TO

COINCIDE WITH THE SUPPORT LOCATIONS SHOWN IN THESE

10. ALL BEAMS TO BE CONTINUOUSLY SUPPORTED LATERALLY AND SHALL BEAR FULL WIDTH ON THE SUPPORTING WALLS OR COLUMNS INDICATED, WITH A MINIMUM OF THREE STUDS, UNO.

11. ALL STEEL BEAMS TO BE SUPPORTED AT EACH END WITH A MIN BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH. BEAMS MUST BE ATTACHED AT EACH END WITH A MINIMUM OF FOUR 16d NAILS OR TWO 1/2" x 4" LAG SCREWS, UNO.

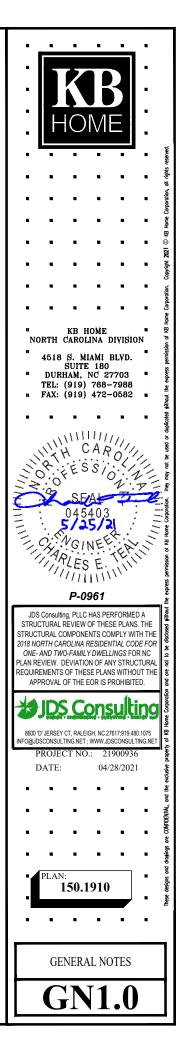
12. STEEL FLITCH BEAMS TO BE BOLTED TOGETHER USING (2) ROWS OF 1/2" DIAMETER BOLTS (ASTM 307) WITH WASHERS PLACED UNDER THE THREADED END OF THE BOLT. BOLTS TO BE SPACED AT 24" OC (MAX) AND STAGGERED TOP AND BOTTOM OF BEAM (2' EDGE DISTANCE, WITH TWO BOLTS TO BE LOCATED AT 6" FROM

13. WHEN A 4-PLY LVL BEAM IS USED, ATTACH WITH (1) 1/2" DIAMETER BOLT, 12" OC, STAGGERED TOP AND BOTTOM, 1 1/2" MIN FROM ENDS. ALTERNATE EQUIVALENT ATTACHMENT METHOD MAY BE USED, SUCH AS SDS, SDW, OR TRUSSLOK SCREWS (SEE MANUFACTURER SPECIFICATIONS).

14. FOR STUD COLUMNS OF 4-OR-MORE STUDS, INSTALL SIMPSON STRONG-TIE CS16 STRAPS ACROSS STUDS @ 30" OC, 6" MAX FROM PLATES, ON INSIDE FACE OF COLUMN (EXTERIOR WALL), ON BOTH FACES OF COLUMN (INTERIOR WALL).

15. FLOOR JOISTS ADJACENT AND PARALLEL TO THE EXTERIOR FOUNDATION WALL SHALL BE PROVIDED WITH FULL-DEPTH SOLID BLOCKING, NOT LESS THAN TWO (2) INCHES NOMINAL IN THICKNESS, PLACED PERPENDICULAR TO THE JOIST AT SPACING NOT MORE THAN FOUR (4) FEET. THE BLOCKING SHALL BE NAILED TO THE FLOOR SHEATHING, THE SILL PLATE, THE JOIST, AND THE

16. BRACED WALL PANELS SHALL BE FASTENED TO MEET THE UPLIFT-RESISTANCE REQUIREMENTS IN CHAPTERS 6 AND 8 OF THE APPLICABLE CODE (SEE TITLE SHEET). REQUIREMENTS OF THE STRUCTURAL DRAWINGS THAT EXCEED THE CODE MINIMUM



FASTENER SCHEDULE				
CONNECTION	3" x 0.131" NAIL	3" x 0.120" NAIL		
JOIST TO SILL PLATE	(4) TOE NAILS	(4) TOE NAILS		
SOLE PLATE TO JOIST / BLOCKING	NAILS @ 8" OC (typical) (4) PER 16" SPACE (at braced panels)	NAILS @ 8" OC (typical) (4) PER 16" SPACE (at braced panels)		
STUD TO SOLE PLATE	(4) TOE NAILS	(4) TOE NAILS		
TOP OR SOLE PLATE TO STUD	(3) FACE NAILS	(4) FACE NAILS		
RIM JOIST OR BAND JOIST TO TOP PLATE OR SILL PLATE	TOE NAILS @ 6" OC	TOE NAILS @ 4" OC		
BLOCKING BETWEEN JOISTS TO TOP PLATE OR SILL PLATE	(4) TOE NAILS	(4) TOE NAILS		
DOUBLE STUD	NAILS @ 8" OC	NAILS @ 8" OC		
DOUBLE TOP PLATES	NAILS @ 12" OC	NAILS @ 12" OC		
DOUBLE TOP PLATES LAP (24" MIN LAP LENGTH)	(12) NAILS IN LAPPED AREA, EA SIDE OF JOINT	(12) NAILS IN LAPPED AREA, EA SIDE OF JOINT		
TOP PLATE LAP AT CORNERS AND INTERSECTING WALLS	(3) FACE NAILS	(3) FACE NAILS		
OPEN-WEB TRUSS BOTTOM CHORD TO TOP PLATES OR SILL PLATE (PARALLEL TO WALL)	NAILS @ 6" OC	NAILS @ 4" OC		
BOTTOM CHORD OF TRUSS TO TOP PLATES OR SILL PLATE (PERPENDICULAR TO WALL)	(3) TOE NAILS	(3) TOE NAILS		

#### SEE <u>TABLE R602.3(1)</u> FOR ADDITIONAL STRUCTURAL-MEMBER FASTENING REQUIREMENTS.

DETAILS AND NOTES ON DRAWINGS GOVERN.

#### BALLOON WALL FRAMING SCHEDULE (USE THESE STANDARDS UNLESS NOTED OTHERWISE ON THE FRAMING PLAN SHEETS)

	MAX HEIGHT (PLATE TO PLATE)
FRAMING MEMBER SIZE	115 MPH ULTIMATE DESIGN WIND SPEED
2x4 @ 16" OC	10'-0"
2x4 @ 12" OC	12'-0"
-	
2x6 @ 16" OC	15'-0"
2x6 @ 12" OC	17'-9"
2x8 @ 16" OC	19'-0"
2x8 @ 12" OC	22'-0"
(2) 2x4 @ 16" OC	14'-6"
(2) 2x4 @ 12" OC	17'-0"
(2) 2x6 @ 16" OC	21'-6"
(2) 2x6 @ 12" OC	25'-0"
(2) 2x8 @ 16" OC	27'-0"
(2) 2x8 @ 12" OC	31'-0"
(2) 2x4 @ 12" OC (2) 2x6 @ 16" OC (2) 2x6 @ 12" OC (2) 2x8 @ 16" OC	17'-0" 21'-6" 25'-0" 27'-0"

- a. ALL HEIGHTS ARE MEASURED SUBFLOOR TO TOP OF WALL PLATE.
- b. WHEN SPLIT-FRAMED WALLS ARE USED FOR HEIGHTS OVER 12', THE CONTRACTOR SHALL ADD 6' MINIMUM OF CS16 COIL STRAPPING (FULLY NAILED), CENTERED OVER THE WALL BREAK.
- c. FINGER-JOINTED MEMBERS MAY BE USED FOR CONTINUOUS HEIGHTS WHERE TRADITIONALLY MILLED LUMBER LENGTHS ARE LIMITED.
- d. FOR GREATER WIND SPEED, SEE ENGINEERED SOLUTION FOR CONDITION IN DRAWINGS.

## ROOF SYSTEMS

TRUSSED ROOF - STRUCTURAL NOTES

1. PROVIDE CONTINUOUS BLOCKING THROUGH STRUCTURE FOR ALL POINT LOADS.

DENOTES OVER-FRAMED AREA

- 2.
- 3. MINIMUM 7/16" OSB ROOF SHEATHING
- 4. TRUSS LAYOUT AND PLACEMENT BY MANUFACTURER TO COINCIDE WITH THE SUPPORT LOCATIONS SHOWN. TRUSS PROFILES SHALL BE SEALED BY THE TRUSS MANUFACTURER. TRUSS PLANS TO BE COORDINATED WITH THE SEALED STRUCTURAL DRAWINGS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
- 5. MANUFACTURER TO PROVIDE REQUIRED UPLIFT CONNECTION.
- 6. PROVIDE H2.5A (MINIMUM) OR EQUIVALENT AT EACH TRUSS-TO-TOP PLATE CONNECTION AT OVER-FRAMED AREAS, UNLESS NOTED OTHERWISE.
- 7. UPLIFT CONNECTION TO BE CARRIED THROUGH TO FLOOR SYSTEM.

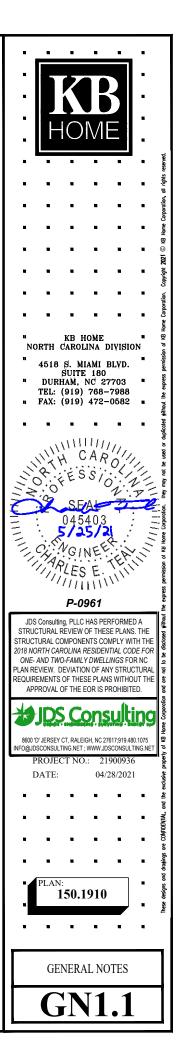
#### STICK-FRAMED ROOF - STRUCTURAL NOTES

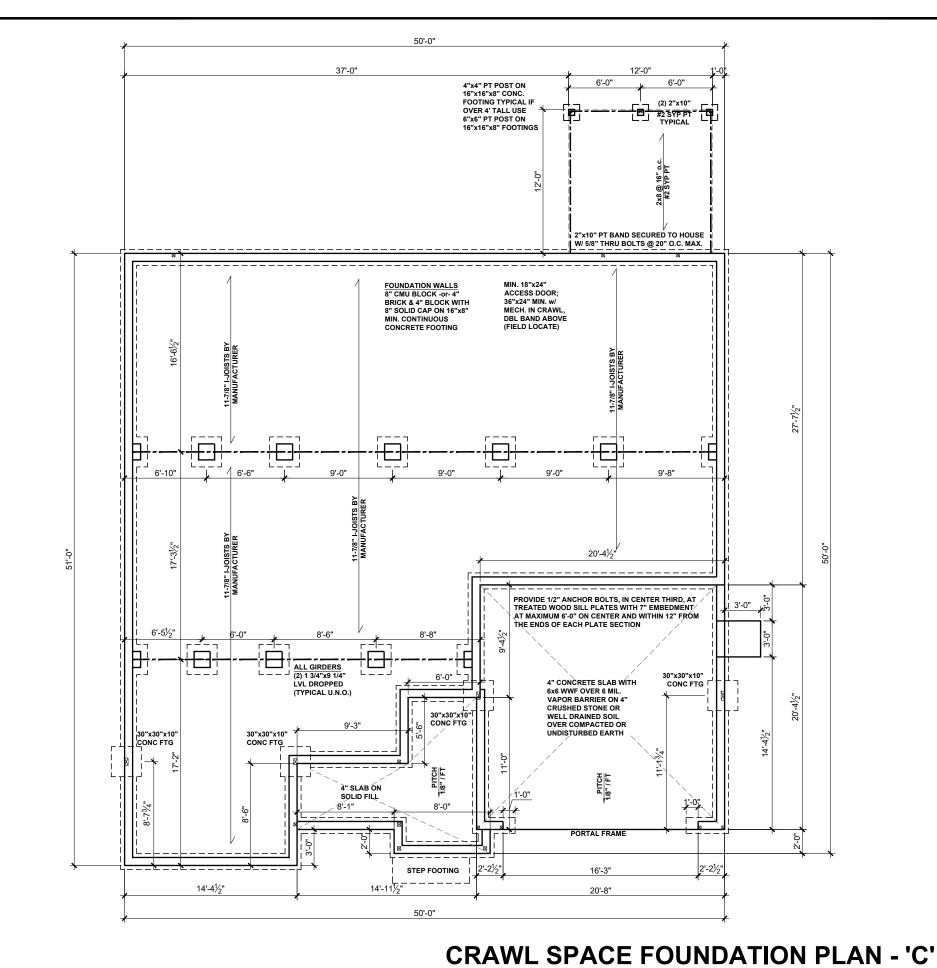
- 1. PROVIDE 2x4 COLLAR TIES AT 48" OC AT UPPER THIRD OF RAFTERS, UNLESS NOTED OTHERWISE.
- 2. FUR RIDGES FOR FULL RAFTER CONTACT.
- 3. PROVIDE CONTINUOUS BLOCKING THROUGH STRUCTURE FOR ALL POINT LOADS.
- 4. DENOTES OVER-FRAMED AREA
- 5. MINIMUM 7/16" OSB ROOF SHEATHING
- PROVIDE 2x4 RAFTER TIES AT 16" OC AT 45° BETWEEN RAFTERS AND CEILING JOISTS. USE (4) 16d NAILS AT EACH CONNECTION. RAFTER TIES MAY BE SPACED AT 48" OC AT LOCATIONS WHERE NO KNEE WALLS ARE INSTALLED.
- 7. PROVIDE H2.5A (MINIMUM) OR EQUIVALENT AT EACH RAFTER-TO-TOP PLATE CONNECTION AT OVER-FRAMED AREAS, UNLESS NOTED OTHERWISE.
- 8. UPLIFT CONNECTION TO BE CARRIED THROUGH TO FLOOR SYSTEM.

BRICK VENEER LINTEL SCHEDULE			
SPAN	STEEL ANGLE SIZE	END BEARING LENGTH	
UP TO 42"	L3-1/2"x3-1/2"x1/4"	8" (MIN. @ EACH END)	
UP TO 72"	L6"x4"x5/16"* (LLV)	8" (MIN. @ EACH END)	
OVER 72"	L6"x4"x5/16"* (LLV) ATTACH LINTEL w/ 1/2" THRU BOLT @ 12" OC, 3" FROM EACH END		

\* FOR QUEEN BRICK: LINTELS AT THIS CONDITION MAY BE 5"x3-1/2"x5/16"

NOTE: BRICK LINTELS AT SLOPED AREAS TO BE 4"x3-1/2"x1/4" STEEL ANGLE WITH 16D NAILS IN 3/16" HOLES IN 4" ANGLE LEG AT 12" OC TO TRIPLE RAFTER. WHEN THE SLOPE EXCEEDS 4:12 A MINIMUM OF 3"x3"x1/4" PLATES SHALL BE WELDED AT 24" OC ALONG THE STEEL ANGLE.

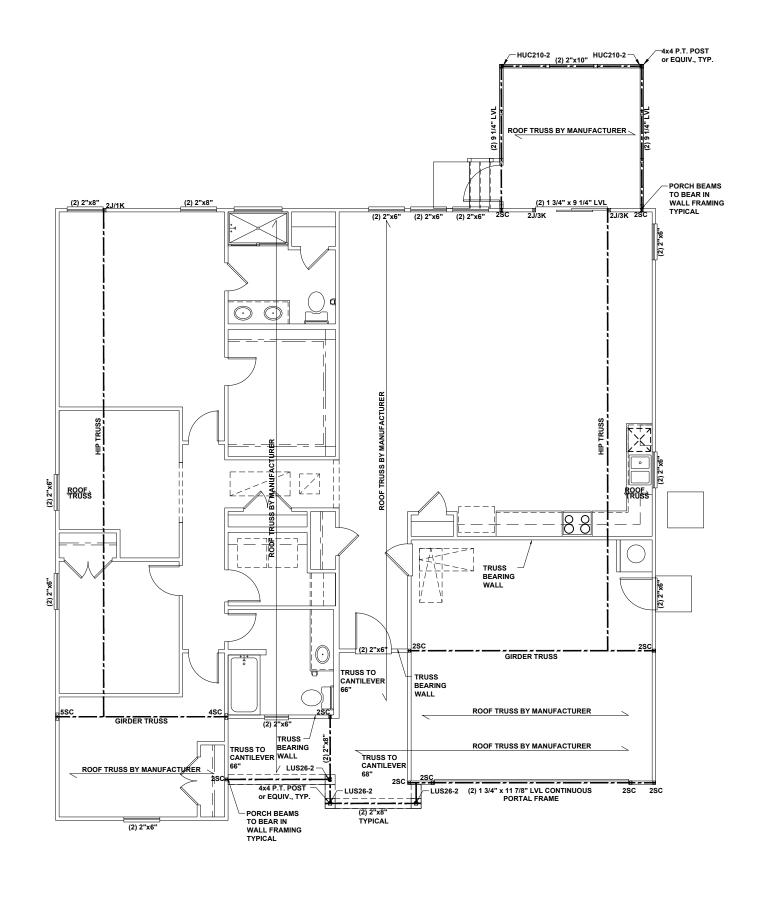




SCALE: 1/8"=1'-0"

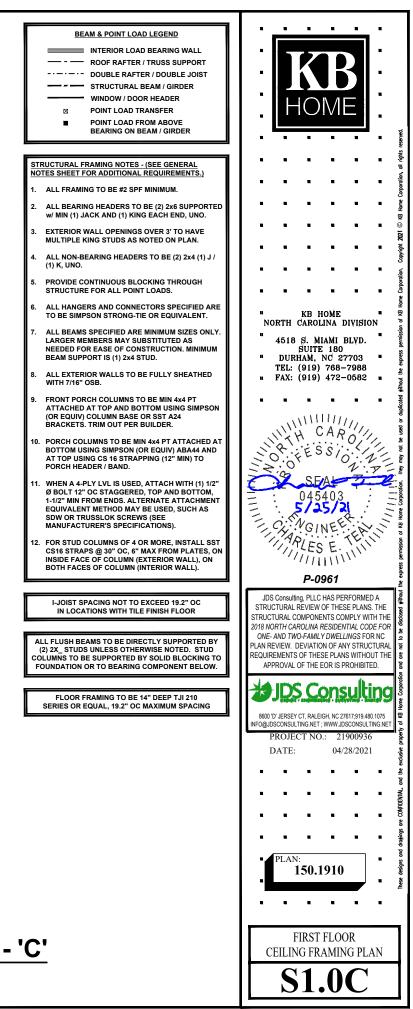
	BEAM & POINT LOAD	LEGEND		
INTERIOR LOAD BEARING WALL				
	- ROOF RAFTER / T	TRUSS SUPPORT		
	DOUBLE RAFTER	R / DOUBLE JOIST		
	- STRUCTURAL BE	AM / GIRDER		
	WINDOW / DOOR	HEADER		
	POINT LOAD TRA	NSFER		
•	POINT LOAD FRO BEARING ON BEA			
	ST SPACING NOT TO EX OCATIONS WITH TILE F			
	BAR @ CENTER OF AL L LOAD BEARING FOO			
	R FRAMING TO BE 11 7 OR EQUAL, 19.2" OC M			
**RE	FER TO I-JOIST EQUIVA	LENCE CHART		
SUBS	ON I-JOIST DETAIL SH TITUTION OF MANUFAC			
F	OUNDATION STRUCTU	RAL NUTES:		
1. CC	DNCRETE BLOCK PIER	SIZE SHALL BE:		
SIZE	HOLLOW MASONRY	SOLID MASONRY		
8x16	UP TO 32" HIGH	UP TO 5'-0" HIGH		
12x16	UP TO 48" HIGH UP TO 64" HIGH	UP TO 9'-0" HIGH		
16x16 24x24	UP TO 64" HIGH	UP TO 12'-0" HIGH		
WITH 3	0" x 30" x 10" CONCRET	E FOOTING, UNO.		

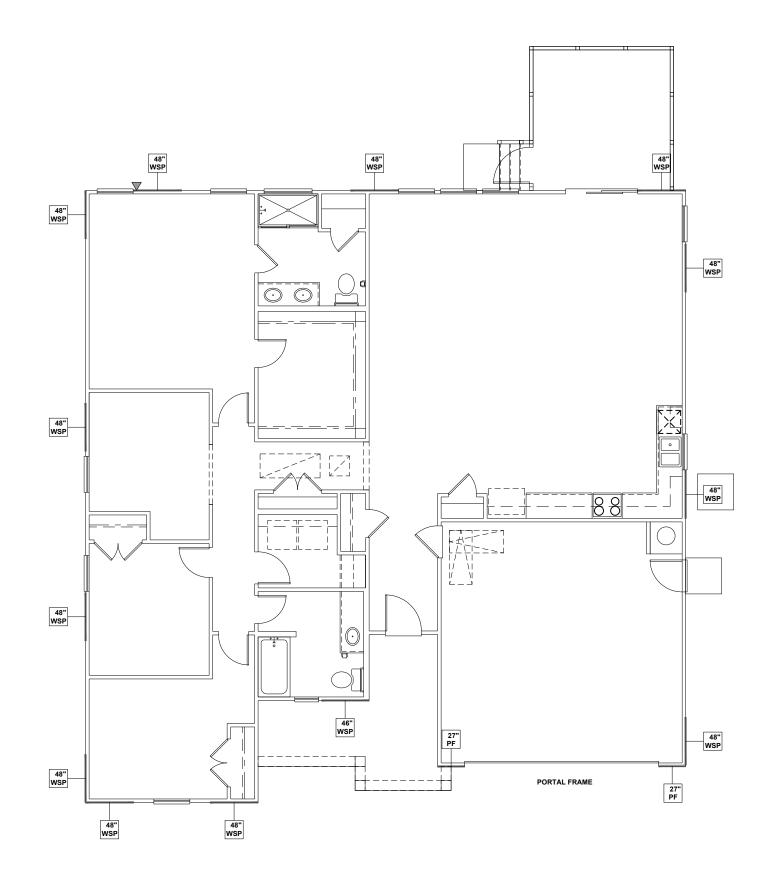




FIRST FLOOR CEILING FRAMING PLAN - 'C'

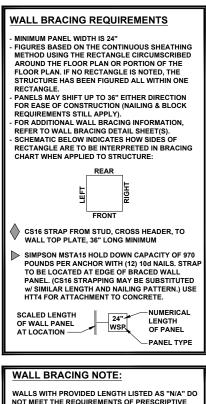
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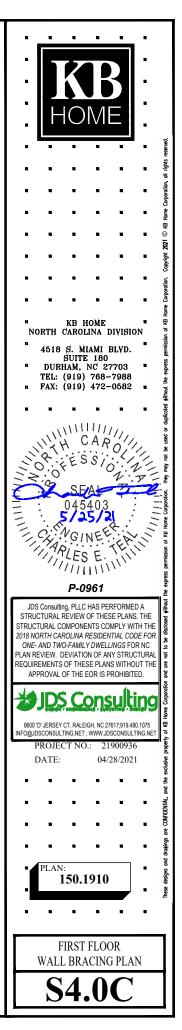
FIRST FLOOR WALL BRACING PLAN - 'C'

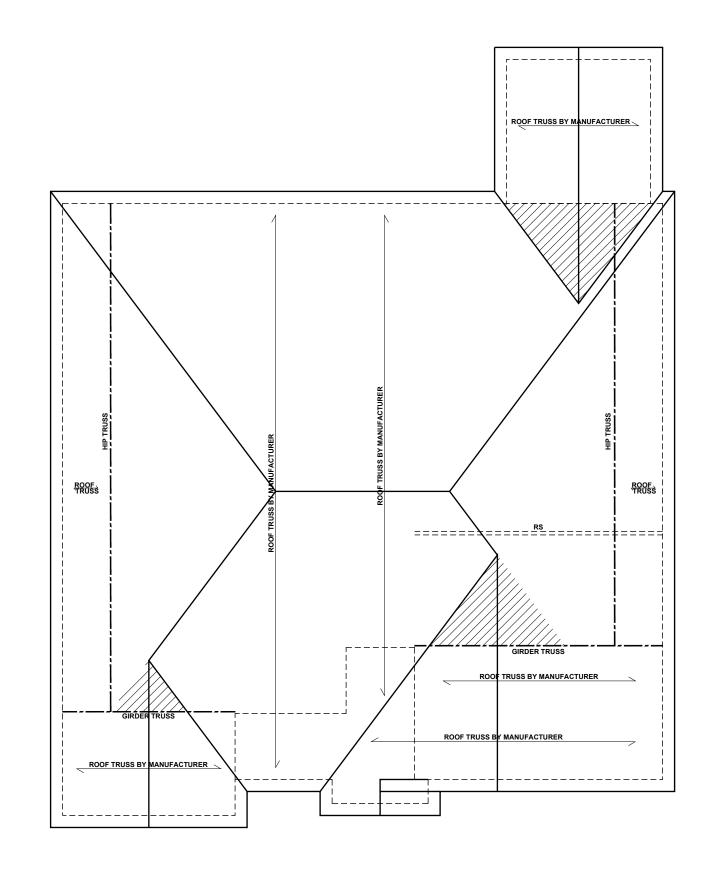
SCALE: 1/8"=1'-0"



NOT MEET THE REQUIREMENTS OF PRESCRIPTIVE WALL BRACING FOUND IN THE NCRC. THESE WALLS HAVE BEEN ENGINEERED BASED ON DESIGN GUIDELINES ESTABLISHED IN ASCE-07 AND THE NDS WIND & SEISMIC PROVISIONS SUPPLEMENT.

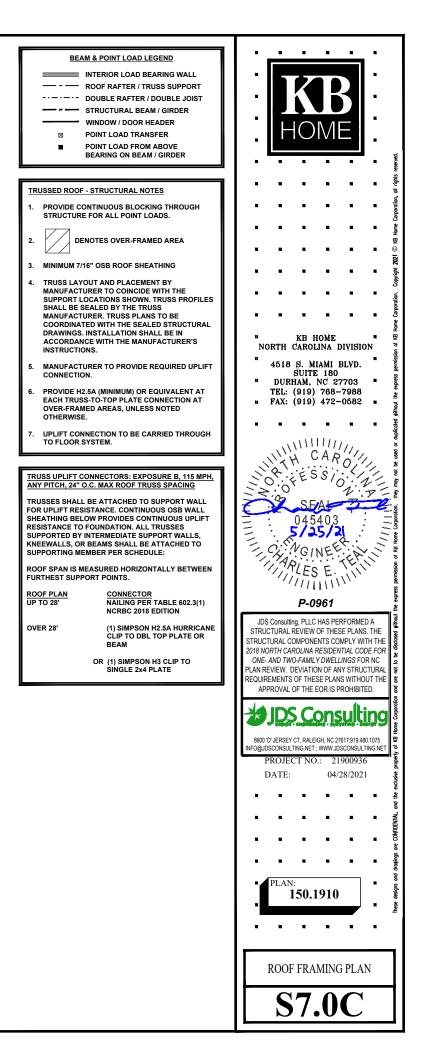
WALL BRACING: RECTANGLE 1			
SIDE	REQUIRED LENGTH	PROVIDED LENGTH	
FRONT	6.5 FT.	17.0 FT.	
RIGHT	6.5 FT.	16.0 FT.	
REAR	6.5 FT.	12.0 FT.	
LEFT	6.5 FT.	12.0 FT.	

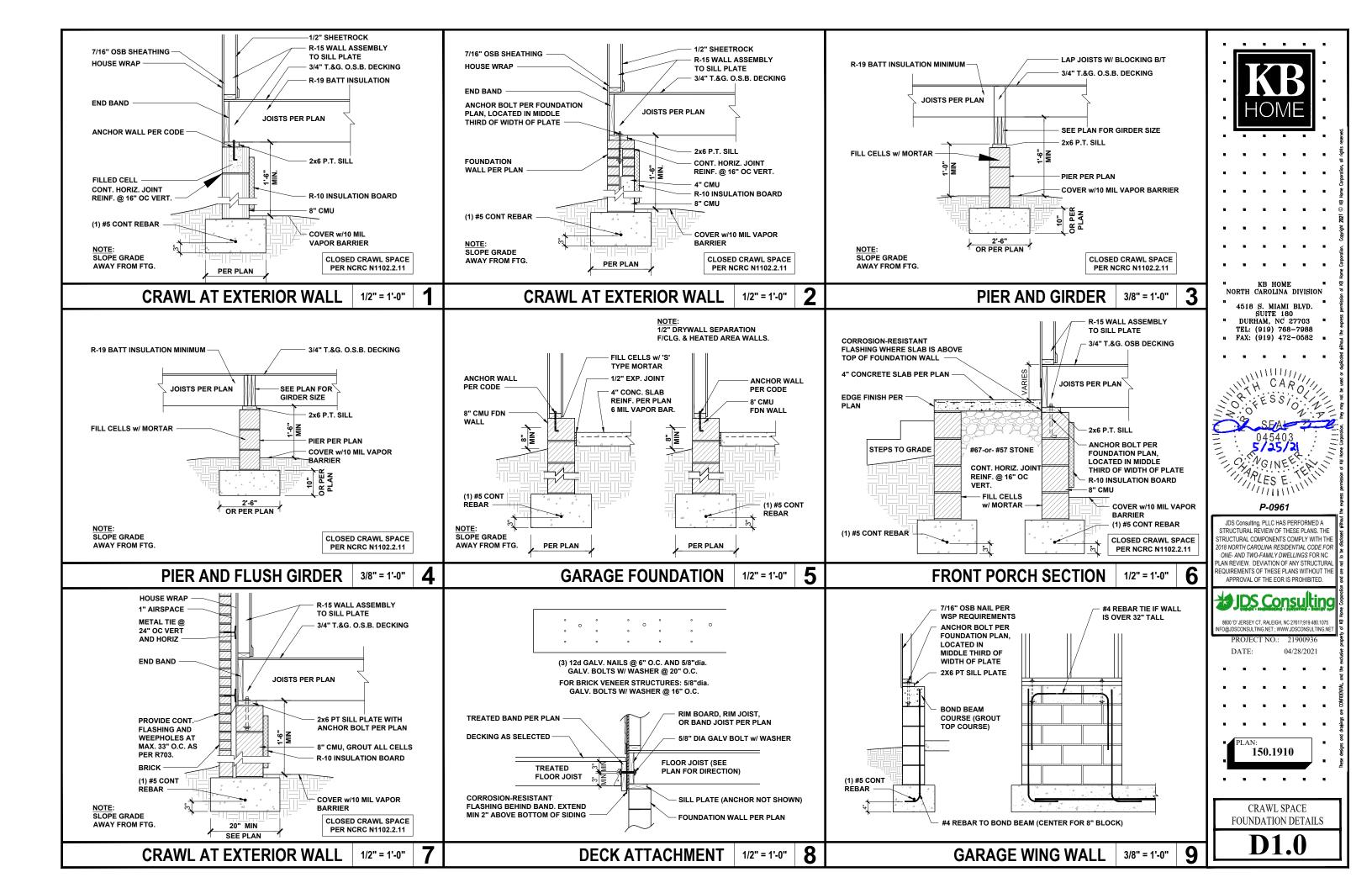


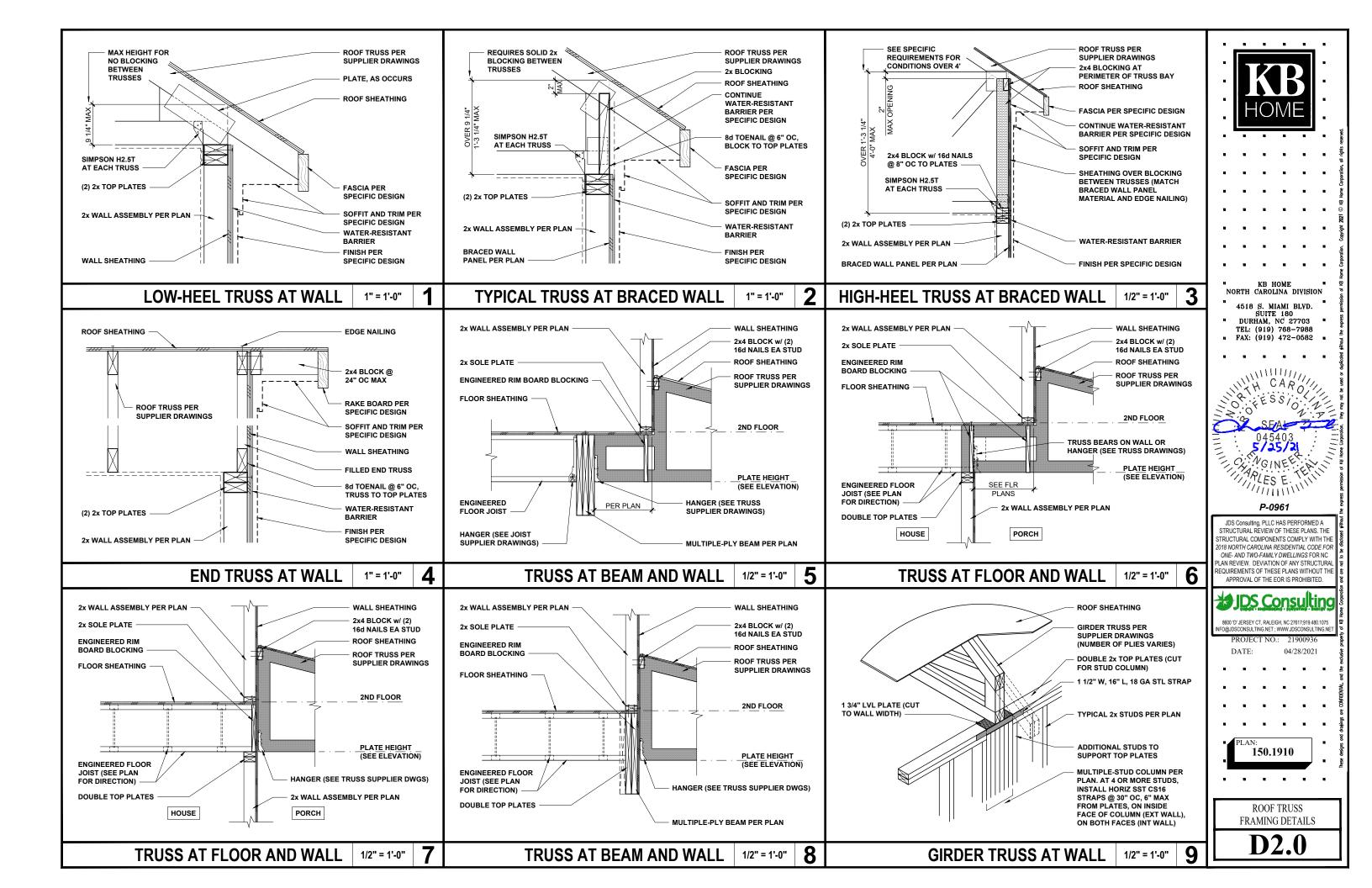


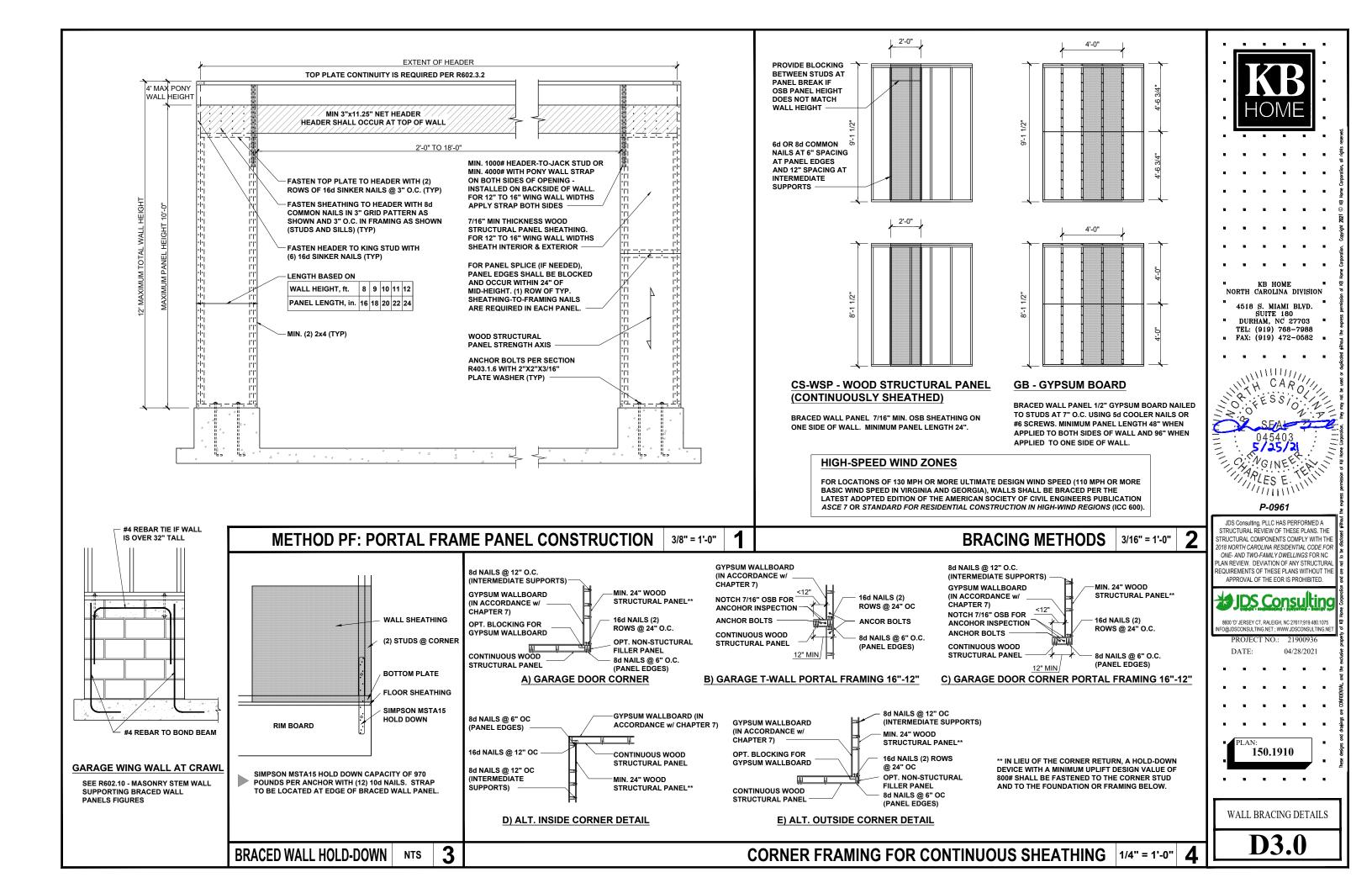
**ROOF FRAMING PLAN - 'C'** 

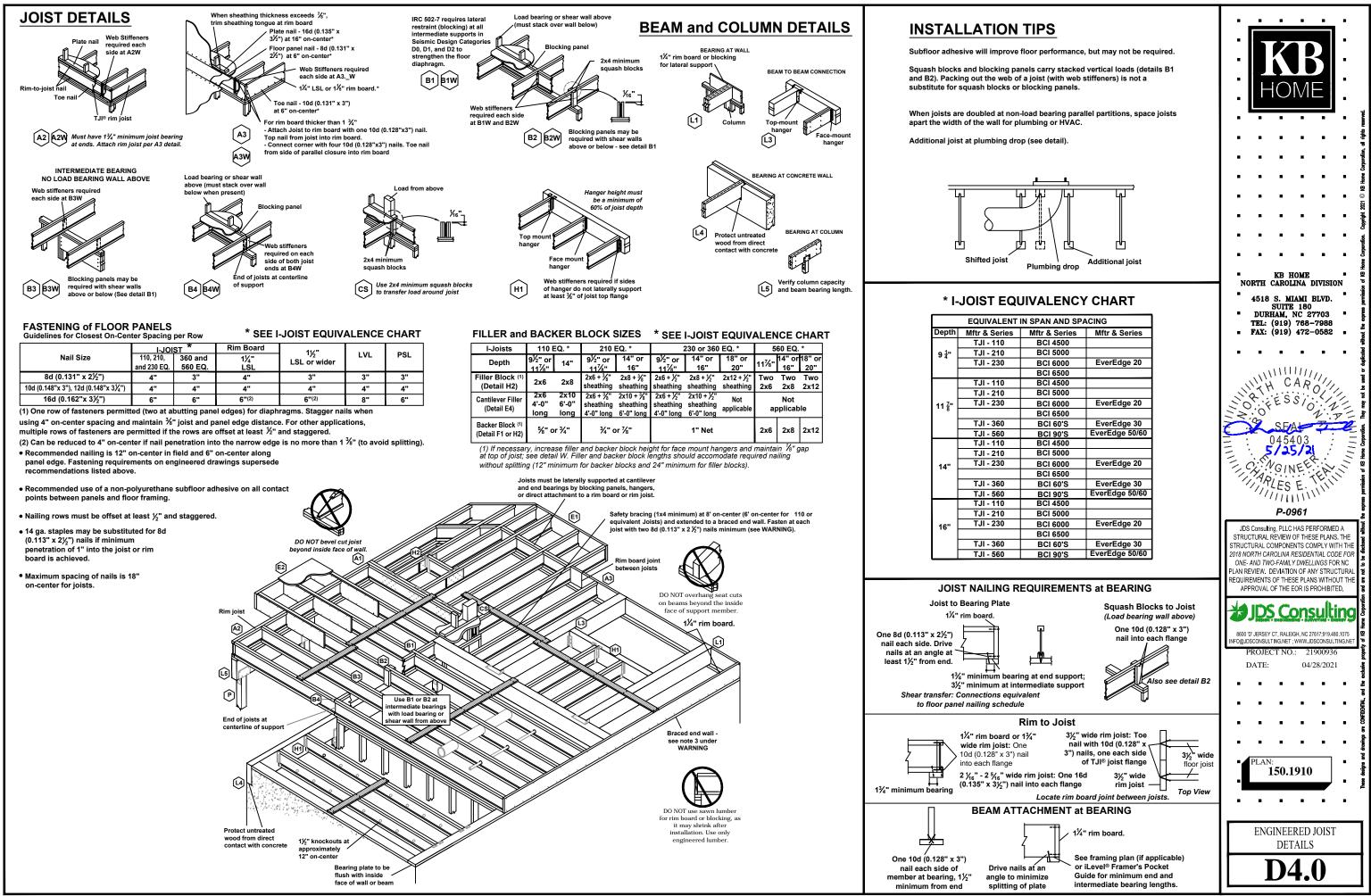
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ENT IN SPAN AND SPACING			
es	Mftr & Series	Mftr & Series	
	BCI 4500		
	BCI 5000		
	BCI 6000	EverEdge 20	
	BCI 6500		
	BCI 4500		
	BCI 5000		
	BCI 6000	EverEdge 20	
	BCI 6500		
	BCI 60'S	EverEdge 30	
	BCI 90'S	EverEdge 50/60	
	BCI 4500		
	BCI 5000		
	BCI 6000	EverEdge 20	
	BCI 6500		
	BCI 60'S	EverEdge 30	
	BCI 90'S	EverEdge 50/60	
	BCI 4500		
	BCI 5000		
	BCI 6000	EverEdge 20	
	BCI 6500		
	BCI 60'S	EverEdge 30	
	BCI 90'S	EverEdge 50/60	