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, 3. ANY ON SITE CHANGES OR VARIATIONS FROM PLANS SHOUN MUST BE VERIFIED WITH DESIGNER OR ENGINEER TO MEET LOCAL CODES, GUIDELINES, LOAD CALCULATIONS ETC





OUNER / CONTRACTOR NOTES:

THE SEALING OF THIS PLAN FOR A LOT SPECIFIC ISSUE, AUTHORIZES THE CONSTRUCTION FROM THESE PLANS FOR ONE HOUSE ON ONE LOT FOR THE LOT PECIFIC REFERENCED IN TILLELLOCK UNSEALED PLANS MUST NOT BUSED FOR CONSTRUCTION CONSTRUCTION FROM THESE PLANS MUST DE FROM THE ATEST AFFROMED DATE PLANS, INCLUDING REVISIONS AND ADDENDA.

2. THE SEALING OF THIS FLAN FOR A MASTER FLAN SET ISSUE, AUTHORIZES TH CONSTRUCTION FRONT THESE FLANS FOR MULTIFLE HOUSES ON MULTIFLE LOTS FER BUILDER WITH DESGARDER INCOLLEGE OF CONSTRUCTION FROM UNBEALED FLANS TUBT SE FROM THE LATEST APPROVED DATE FLANS, OUSTRUCTION FROM THESE FLANS MUST BE FROM THE LATEST APPROVED DATE FLANS, OUSTRUCTION FROM ISIONS AND ADDENDA.

CONSTRUCTION DEVIATING FROM THESE PLANS WILL INVALIDATE THEIR PLANS REVIEW PERMITTED USE. THE DESIGNER MUST BE NOTIFIED IMPEDIATES PC CONSTRUCTION DEVIATING FROM DEVICTED OR PML THEO IMPORTATION HEREIN. LETTER FROM THE DESIGNER MAY BE OSTAINED FOR A FEE TO VERIFY HE FLASSIBUTY AND COMPUTABILITY OF ANY CHANGES HOURVER THE DUNER/CONTRACTOR ASSUMES ALL RISK FROM DEVIATING FROM THESE PLANS.

. DO NOT SCALE DRAWINGS, BUT RATHER INQUIRE INFORMATION FROM YESKINER. REPRODUCTION OF THESE DRAWINGS ARE PROHIBITED UNLESS (RANTED WRITTEN CONSENT FROM DESIGNER,

. THE OUNER AND/OR CONTRACTOR 19 RESPONSIBLE FOR OBTAINING THE DLIQUIRG INFORTATION (NON-EXHAUSTIVE) BUILDING FERMITS, 81TE NGNEERING NICLIDING BURRETING, TOPOGRAPHIC STUDIES, GEOTECHNICAL EFORTS, AND SEPTIC FERMITS: INTERIOR CASELLORK DESIGN: PLUMBING, ECHANICAL, AND ELECTRICAL DESIGN.

BUILDING CODE NOTES

THIS PLAN HAS BEEN DESIGNED UNDER THE 2018 NORTH CAROLINA RESIDENTIAL CODE

APPLICABLE CODES: N.C. FIRE CODE, 2018 N.C. MECHANICAL CODE, 2018 N.C. PLUMBING CODE, 2018 N.C. ENERGY CODE, 2018 N.C. ELECTRICAL CODE, 2017 N.C. GAS CODE 2018 BUILDING DATA:

Construction Type: <u>V-B</u> Use Group: <u>R-3</u> Number of Stories: 2 Building Ridge Height: (Elevation A) = (+/-) 32'-3" Building Ridge Height: (Elevation B) = (+-) 32'-3''Building Ridge Height: (Elevation C) = (N/A)Building Ridge Height: (Elevation D) = (+/-) 32'-3" Building Ridge Height: (Elevation E) . (+/-) 32'-3" Mean Roof Height: (Elevation A) = (+/-)25'-8" Mean Roof Height: (Elevation B) = (+/-) 25'-8" Mean Roof Height: (Elevation C) = (N/A) lean Roof Height: (Elevation D) = (+/-) 25'-8" Mean Roof Height: (Elevation E) = (+/-) 25'-8" NOTE: HEIGHTS LISTED ABOVE ARE BASED ON MONO SLAB GRADE LINES PROVIDED ON EXTERIOR ELEVATIONS SHEETS. BUILDER / NOPECTIONS OFFICIAL TO VERIFY FINAL GRADE HEIGHT IN FIELD AS REQUIRED. CONSTRUCTION NOTES:

THE FOLLOWING IS A NON-EXHAUSTIVE LIST OF SOME COMMONLY MISSED CODE REQUIREMENTS AND ARE ENFORCEABLE IN THE CONSTRUCTION FROM THESE PLANS. SEE THE N.C. RESIDENTIAL CODE BOOK FOR MORE INFO.

LE (R2064) ALL GLAZING WITHIN 24" OF EITHER OIDE OF A DOOR IN A CLOSED POSITION, AND ON THE SAME WALL PLANE SHALL BE TEMPERED. ALL WINDOWS THAT MEET ALL OF THE FOLLOWING CONDITIONS SHALL BE TEMPERED. AN INDIVIDUAL PANES OF MIN. 9 SF. B) BOTTOM EDGE IS WITHIN B" OF INFERED. ALL WINDOWS THAT LEAST 36" ABOVE FLOOR AND D) GLAZING IS WITHIN B" OF HOR C) TOP EDGE IS AT TEMPERED GLAZING IS ALSO REQUIRED WITHIN SO" OF HOT TUBS OR STARL LEADING AND FINISHEDGES. TEMPERED WIDOWS ALSO REQUIRED FER REMAINDER OF THIS TEMPERED GLAZING AND FINISH EDGES. CODE SECTION.

2. (R380) ALL SLEEPING ROOMS AND BASEMENTS WITH HABITABLE SPACE SHALL HAVE AT LEAST ONE EGRESS WINDOW CONFORMING TO THE FOLLOWING: A) MIN. 40 SF. CLEAR OPENING: B) MIN TOTAL GLASS GREAC OF S0 GOROND FLOOR WINDOW AND 51 SF. (UPPER STORT WINDOW). IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHOSE THE PROPER CONCENTING WINDOW AND HAVE EGRESS WINDOWS PROPERLY DISTRIBUTED AND INSTALLED AS REQUIRED.

(R312) ALL INTERIOR EGRESS DOORS AND A MINIMUM OF ONE EXTERIOR EGRESS DOOR SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE.

4. (R31(15) MAXIMUM STAIR RISER HEIGHT SHALL BE 3-1/4*, AND MINIMUM TREAD SHALL BE 9*.

5. (R3143) SMOKE ALARMS SHALL BE INSTALLED AND INTERCONNECTED, WITH BATTERY BACK-UP IN THE FOLLOWING AREAS: EACH SLEEPING ROOM: IN THE AREA (HALLWAY RIGHT OUTSIDE THE SLEEPING ROOMS AND EACH STORY, THE ONE OUTSIDE THE SLEEPING ROOMS WILL SATISFY THAT STORY.

6. (R402.12) ALL LUMBER SHALL BE PRESSURE TREATED AND DRIED AFTER TREATMENT IN ACCORDANCE WITH AWPA UI AND SHALL BEAR THE LABEL OF AN ACCREDITED AGENCY.

 (R406.1) BITUMINOUS DAMPPROOFING SHALL BE APPLIED TO EXTERIOR FOUNDATIONS OF ALL HABITABLE AND USABLE (STORAGE, ETC.) SPACES. 8. (R408.12) INSTALL ONE FOUNDATION VENT WITHIN 3' OF EACH CORNER (NOT ONE EACH SIDE OF EACH CORNER).

9. (R103.4) FLASH ALL VALLEYS AND WALL/ROOF INTERSECTIONS, AND CHIMNEY AND OTHER ROOF PENETRATIONS. USE ICE AND WATER SHIELD ON ALL ROOFS LESS THAN 4.12 SLOPE. LUASHING TO BE NON-CORROSIVE.

(6. (19971)) BUILDER TO LOCATE 22%30° ATTIC ACCESS IN ALL ATTICS WITHOUT STAIR ACCESS LOCATE ACCESS TO PROVIDE A 30° CLEAR SPACE ABOVE ACCESS DOOR-THP.

(RIØØ) MASONRY FIREPLACE WALLS TO BE MIN, 8" THICK, AND MIN, 2" TO FRAMING, POURED HEARTHS TO HAVE MIN "4"0" OC. EACH WAY, HEARTHS TO BE MIN, 20" FROM FIREBOX AND HAVE MIN, I'S WIDER THAN FIREBOX ON EACH SIDE.

12. (R403.16) ANCHOR BOLTS SHALL BE MIN, % DIAMETER 4 SHALL EXTEND A MINIMUM T'INTO MASONRY OR CONCRETE, ANCHOR BOLTS TO BE NO MORE THAN 6' O.C. AND WITHIN 12' OF THE CORNER

(R315) INSTALL APPROVED CARBON MONOXIDE ALARY OUTSIDE EACH BEDROOM AND IN IMMEDIATE VICINITY OF EACH SEPARATE SLEEPING AREA.

14. ALL WINDOUS SHALL BE LABELED TO CONFORM WITH AAMANUWDA WILS2 BUILDER TO VERIFY MIN DP CLASSIFICATION FOR ALL WINDOUS BASED ON LOCATION SINGLE HORES ARE BUILT BASED ON REQUIREMENTS FOR THAT WIND ZONE AREA.

15. IF CRAWL SPACE FOUNDATION OPTION 19 USED BUILDER TO LOCATE ACCESS PER CURRENT CODE REQ. WITH 36*324" (TIN) CLEAR OPENING IF NO HYAC LOCATED IN CRAWL OR 36*356" (TIN) WITH HYAC LOCATED IN CRAWL SPACE AREA.

	TABLE NII02.12 (R402.12)							
	FENESTRATION U-FACTOR	FENEST. SHGC	CEILING R-VALUE	FRAME WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	R-VALUE	CRAWL WALL R-VALUE
3	Ø.35	030	38 OR 30 CONT.	15, 13+2,5	19	5/13	ø	5/13
4	Ø.35	0.30	38 OR 30 CONT.	15, 13+2.5	19	IØ/15	۱ø	10/15
5	0.35	NR	38 OR 30 CONT.	19, 13+5, OR 15+3	30	10/15	ю	iØ/19

STRUCTURAL DESIGN FIRM DATA:

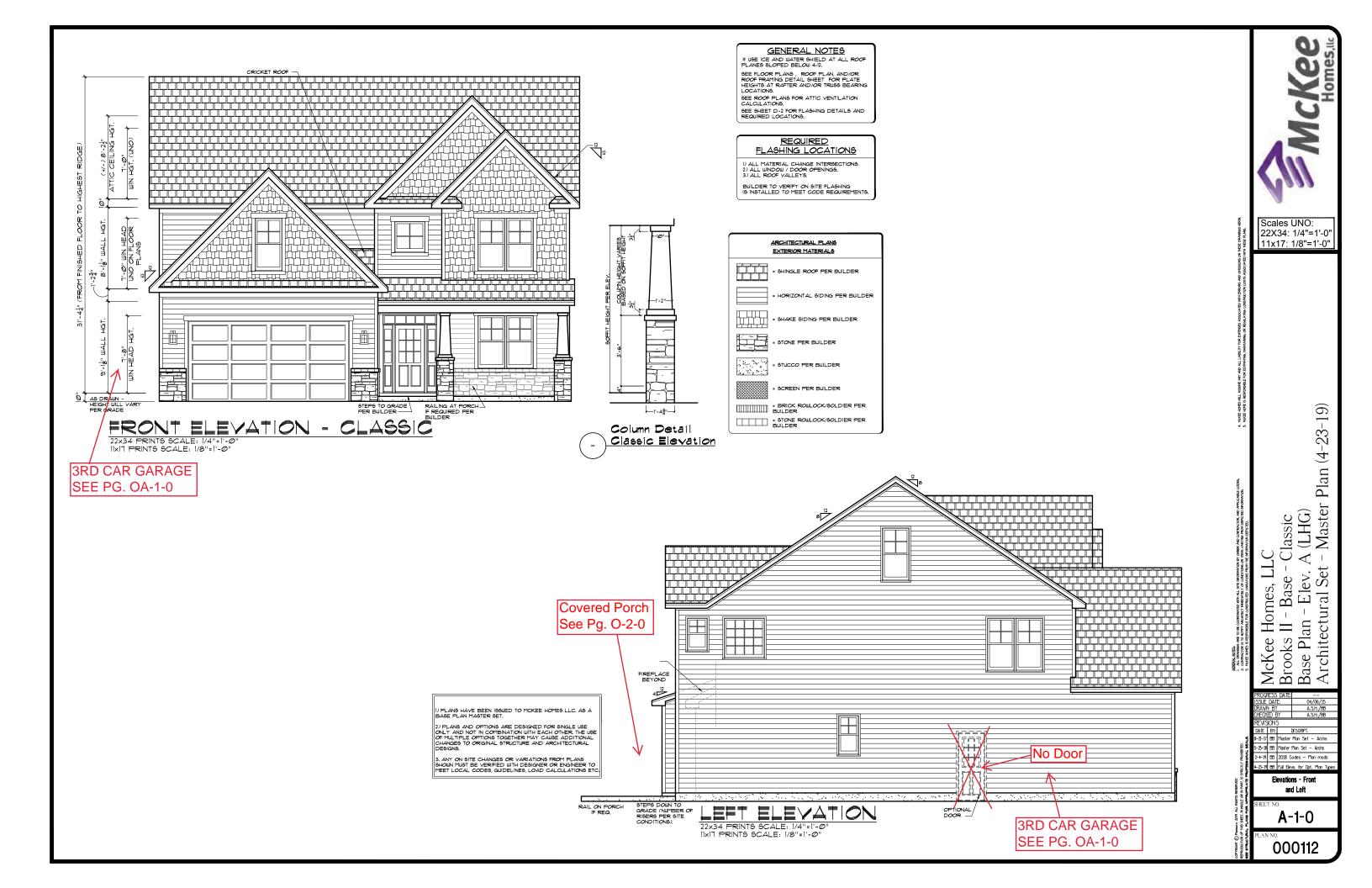
	FIRM NAME	TELEPHONE NUMBER
Structural Designer	Engineering Tech Associates	919-844-1661
	ENGNINEER NAME	LICENSE NUMBER
		C-381Ø

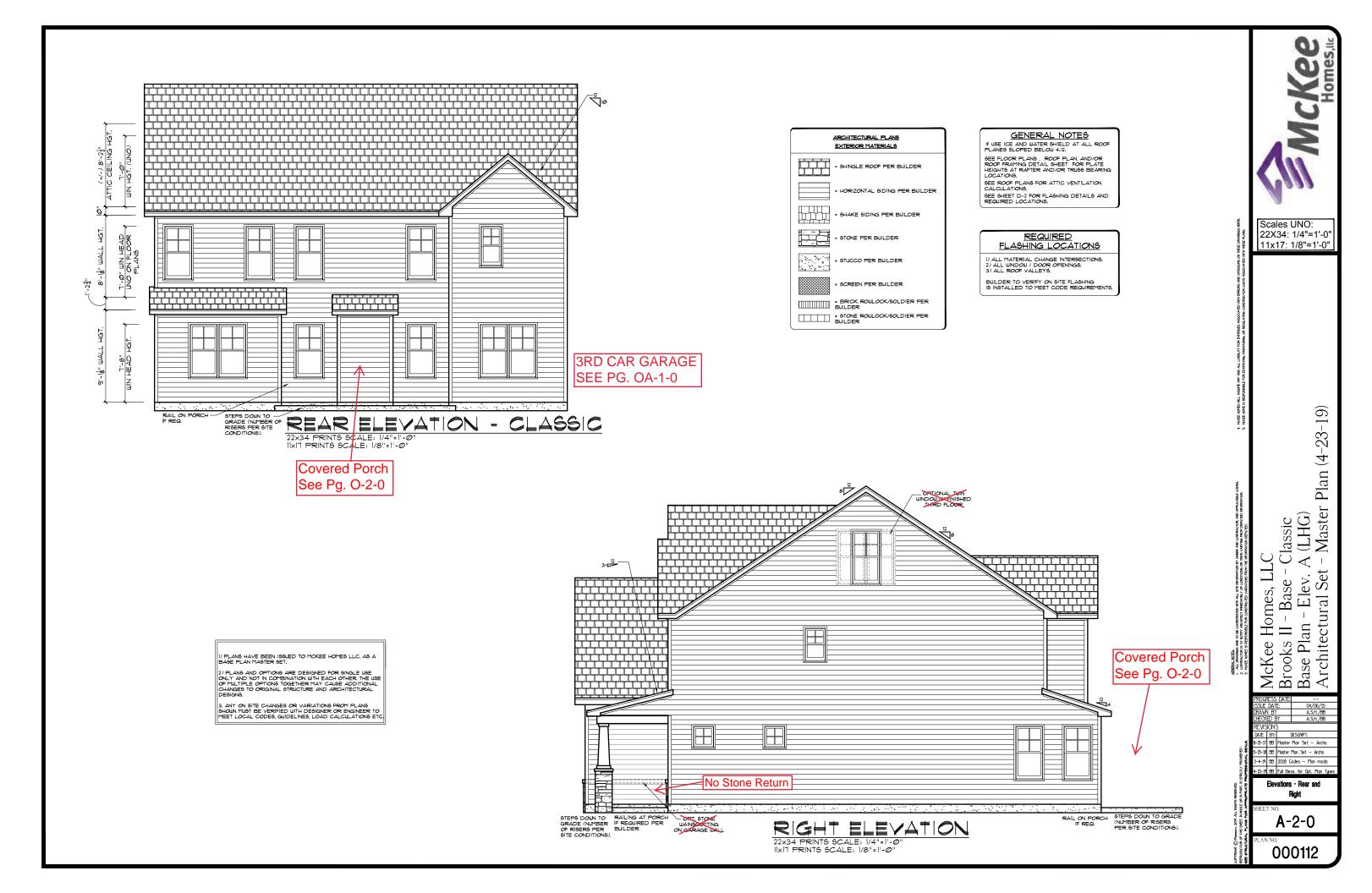
NOTE: PLANS ARE TO BE COORDINATED WITH STRUCTURAL DESIGNS AND TRUSS PLANS BY BUILDER THE COORDINATION AND/OR VERFICATION OF ANY STRUCTURAL MEMBERS, TRUSS PLANS AND/OR INFORMATION FROM OTHERS IS NOT THE RESPONSIBILITY OF PLAN DESIGN FROM IF ANY DISCREPANCIES WITH FLOOR PLANS, ELEVATIONS OR DETAILS ARE DISCOVERED THE BUILDER SHALL NOTIFY PLANWORK PRIOR TO SUBMITTING FLANS FOR PRIVIT OR BEFORE CONSTRUCTION BEGINS TO ADJUST FLANS AR DEFOED TO MEET NEEDS.

PROJECT SQUARE FOOTAGES

BROOKS II - CLA	5510
Heated Square Footage	
First Floor	1329
Second Floor	1,525
Total =	2,92
Unheated Square Footage	
Covered Porch - Front	133
Garage (Front Load)	491
Garage (Side Load Opt)	502
Patio - Rear	221
Walk-Up Attic (Unf. Mech)	115
Walk-up Attic (5/0 Clg.) (Opt, Finished or Unfin,)	530

_	Crawlspace Vent Calculations - Brooks II - Classic
A	Crawl Space Area 1,329
В	Ventable Area Required by Code (without vapor barrier) 8.8
2	Ventable Area Required by Code (with vapor barrier) 0. Number of vents required (without vapor barrier) 19.
-	Number of vents required (with vapor barrier) 19. Number of vents required (with vapor barrier). (See notes) 2.
	Formulas:
	B = A / 150
	C = A / 1500
	D = B / 0.47 (sqft of net venting area per vent)
	E = C / 0.47 (sqft of net venting area per vent) Notes:
	1. Builder must adjust ventilation calculations if using vents
	with a net area that is different than 0.47 sqft per vent.
	2. One foundation vent must be placed within 3 feet of each major come
	in the building. 3. Foundation vents must be placed to allow for cross ventilation.
-	
	OR OPT. CLOSED CRAWLSPACE
Γ	NOT APPLICABLE ON THIS
L	ARCHITECTURAL BASE MASTER
L	
	PLAN SET - SEE STRUCTURAL FILES
-	
E	IF SEALED CRAWLSPACE SYSTEM IS USED AREA MUST
15	TRUCTED PER THE 2018 N.C. RESIDENTIAL BUILDING CO
	ROOF VENTLATION INFO.
=	
	Roof Ventilation - Brooks II - Classic
_	A Ceiling area (square footage) 1,953
	B Sqft. of ventilation required 13.0
_	ormulas: B = A / 150 otes:
N	ilder to calculate quantities and types of yents to make up the
Na Bu	uilder to calculate quantities and types of vents to make up the inimum requirement. Attic ventilation shall be approximately 50%
Na Bu m	nimum requirement. Attic ventilation shall be approximately 50%
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Na Bu m	nimum requirement. Attic ventilation shall be approximately 50%
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FRONT PORCH

BOX PIER

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FRAME

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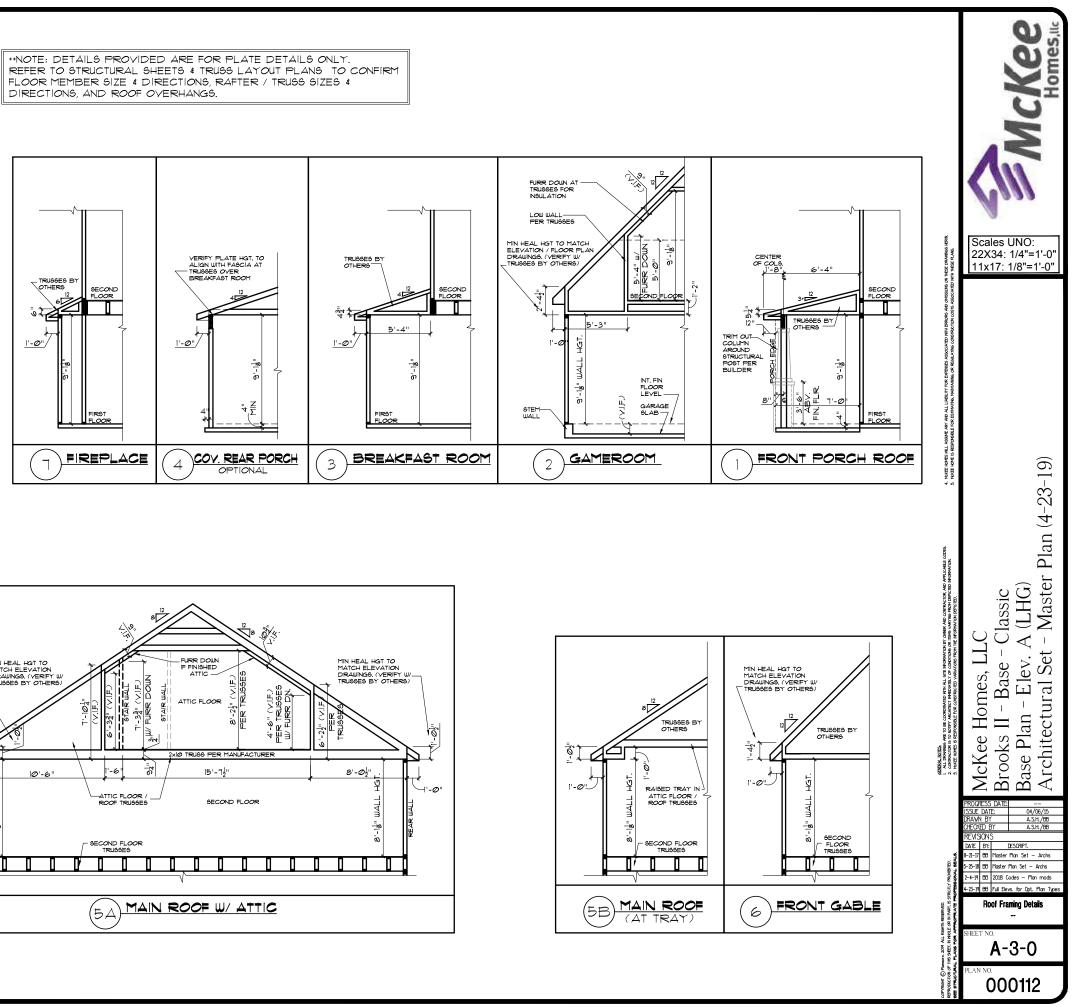
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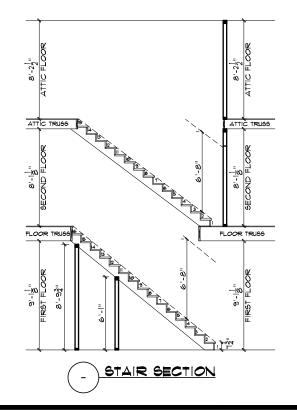
STONE

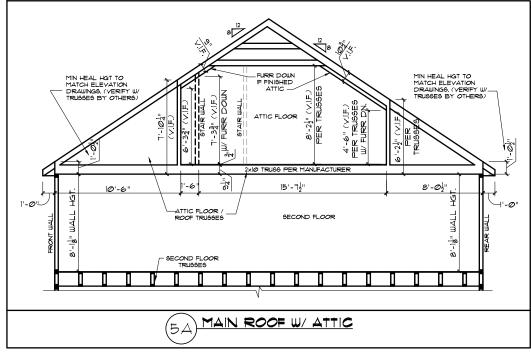
WRAP

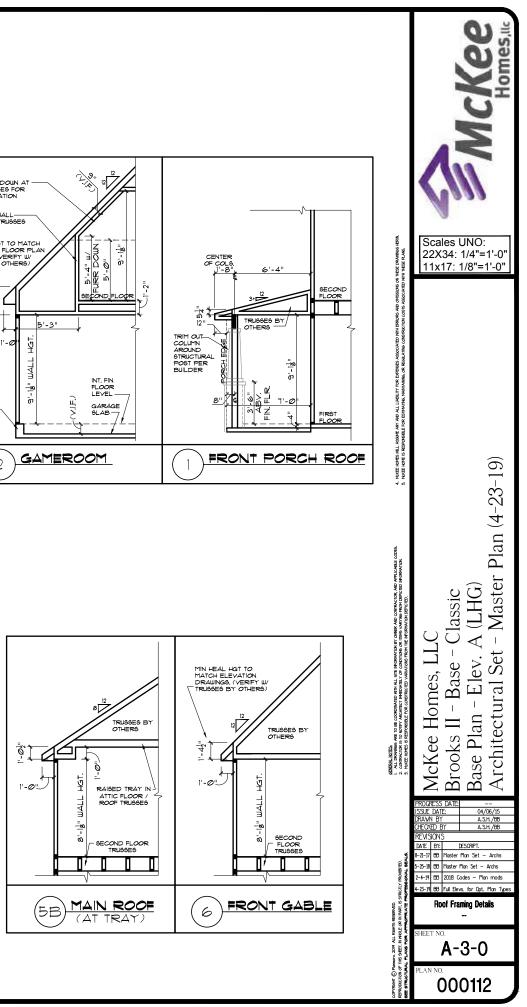
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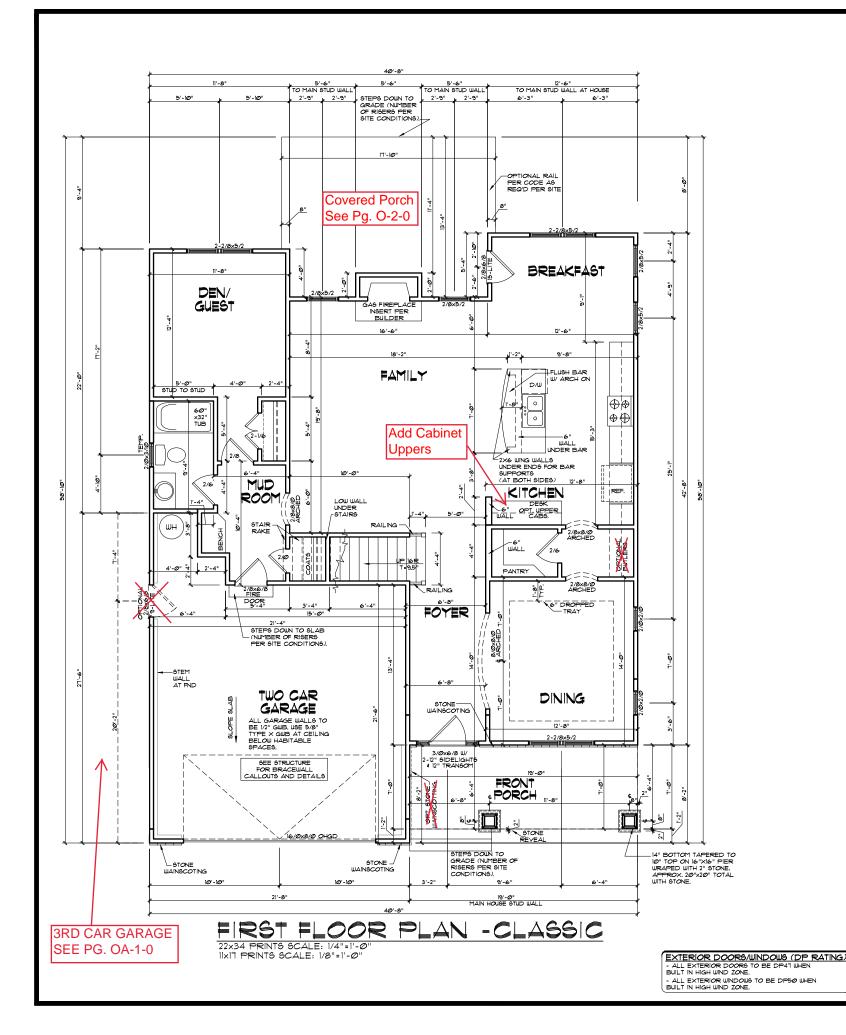
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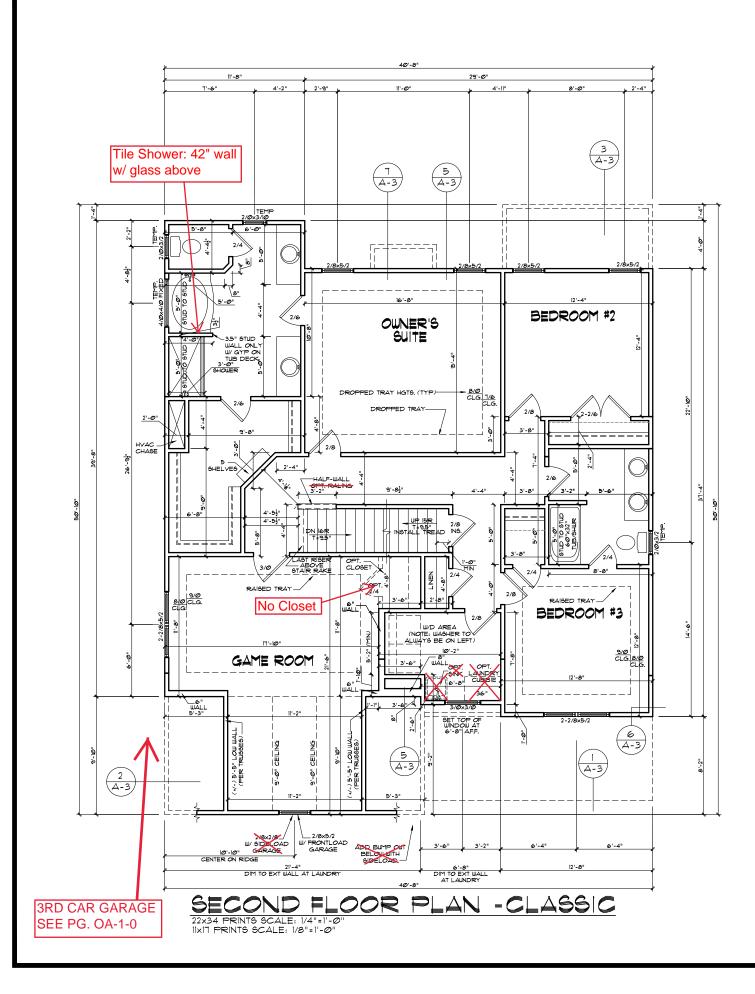
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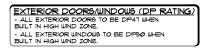
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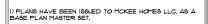
WINDOW FALL PREVENT IF ANY PART OF THE CLEAR OPE MORE THAN 72" ABOVE THE EXTI MUST BE AT LEAST 24" ABOVE T

BROOKS II - CLASSIC Heated Square Footage First Floor 1,329 Second Floor 1,598 Total = 2,921 Unheated Square Footage	omendore can these redonented to the control of the	Scales UNO: 22X34: 1/4"=1'-0" 11x17: 1/8"=1'-0"
SUBJECT STATE SUBJECT STATE <td< td=""><td>AL REMER: AL REMER: 1. AL RANNES 2. CAMPACKER REPORT: 2. CAMPACKER REPORT: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 4. NACE WAS AND ADDRESS PROVIDED: 5. NACE WAS ADDRESS PROVIDED</td><td>Lage Procession A Lage Process LLC A Lage Process II - Base - Classic B Lage Process II - Base - Classic Strong Apply Processic Strong Apply Processic B Lage Process II - Base - Classic B Lage Processic Strong Apply Processic B Lage Processic B Lage Processic B Apply Procesproperties <t< td=""></t<></td></td<>	AL REMER: AL REMER: 1. AL RANNES 2. CAMPACKER REPORT: 2. CAMPACKER REPORT: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 3. NACE WAS PROVIDED: 4. NACE WAS AND ADDRESS PROVIDED: 5. NACE WAS ADDRESS PROVIDED	Lage Procession A Lage Process LLC A Lage Process II - Base - Classic B Lage Process II - Base - Classic Strong Apply Processic Strong Apply Processic B Lage Process II - Base - Classic B Lage Processic Strong Apply Processic B Lage Processic B Lage Processic B Apply Procesproperties <t< td=""></t<>
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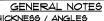


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WALL THICKNESS / ANGLES ALL EXTERIOR STUD WALLS ARE DRAWN 4" THICK UNO ALL INTERIOR STUD WALLS ARE DRAWN 4" THICK UNO. ANGLED WALLS ARE DRAWN @ 45" UN.O.

ANGLED WALLS ARE DRAIN # 45' UNO. EGRESS ALL BEDROM MIDDON WHICH CONDRYS TO EXCRESS MIDDON WHICH CONDRYS TO EXCRESS MIDDON WHICH CONDRYS TO EXCRESS MIDTHET IS THE CONTRACTOR'S REPORTS MIDTHET IS THE CONTRACTOR'S REPORTS MIDTHET'S ESCRESS SIZING PER CODE BASED ON CHOSEN MANUFACTURER, AS PRODUCT SIZES MAY VARY.

WALL/CEILING HEIGHTS

WALL AND CEILING HEIGHTS NOTES ARE BASED ON NOMINAL WALL SIZE (IE. A 3'-1 1/8" ACTUAL WALL HEIGHT IS LABELED 3/0 ON THE PLANS).

ALL YAULTED OR SLOPED CEILINGS ARE TO BE FURRED DOWN TO ACCOMMODATE REQUIRED CEILING INSULATION AND I" AIRSPACE. YERIPY CODES FOR INFORMATION ON INSULATION REQUIREMENTS.

STAIR TREADS ARE MEASURED FROM NOSING TO NOSING (NN). MAXIMUM STAIR RISE HEIGHT TO BE NO GREATER THAN 8-1/4"

ITECTURAL PLANS WALL LEGEND
 STANDARD STUD WALL INT OR EXT IF EXT SEE ELEVATIONS FOR SIDING STYLE THICKNESS OF WALL NOTED IN PLAN NOTES OR AT WALL LOCATIONS
 STANDARD STUD WALL WITH 5" BRICK VENEER FOUNDATION WALL LEDGE STUD THICKNESS 4S NOTED IN PLAN NOTES OR AT WALL LOCATIONS
 STANDARD STUD WALL WITH STACKED STONE VENEER STUD THICKNESS AS NOTED IN FLAN NOTES OR AT WALL LOCATIONS (NOTE BUILDER TO VERIFY STONE THICKNESS (NOTE FULAN DESIGNER IF THICKNESS IS MORE THAN 5" BEFORE FOOTINGS ARE POURED)
 STANDARD STUD WALL WITH APPLIED STONE VENEER STUD THICKNESS AS NOTED IN PLAN NOTES OR AT WALL LOCATIONS (NOTE: NO FOUNDATION SUPPORT IS REPRESENTED ON STRUCTURAL PLANS) IF STACKED STONE IS TO BE USED BUILDER MUST NOTIFY PLAN DESIGER BEFORE FOOTINGS ARE POURED
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 STANDARD STUD WALL WITH 5" FOUNDATION LEDGE FOR LOW BRICK OR STACKED STONE WAINSCOTING, SEE ELEVATIONS FOR HEIGHT 4 FINISH MATERIAL AT EXT STUD WALL ABOVE, STUD THICKNESS AS NOTED IN PLAN NOTES OR AT WALL LOCATIONS
= HALF WALL WITH 1x CAP (42" HEIGHT UNLESS NOTED OTHERWISE ON PLANS)

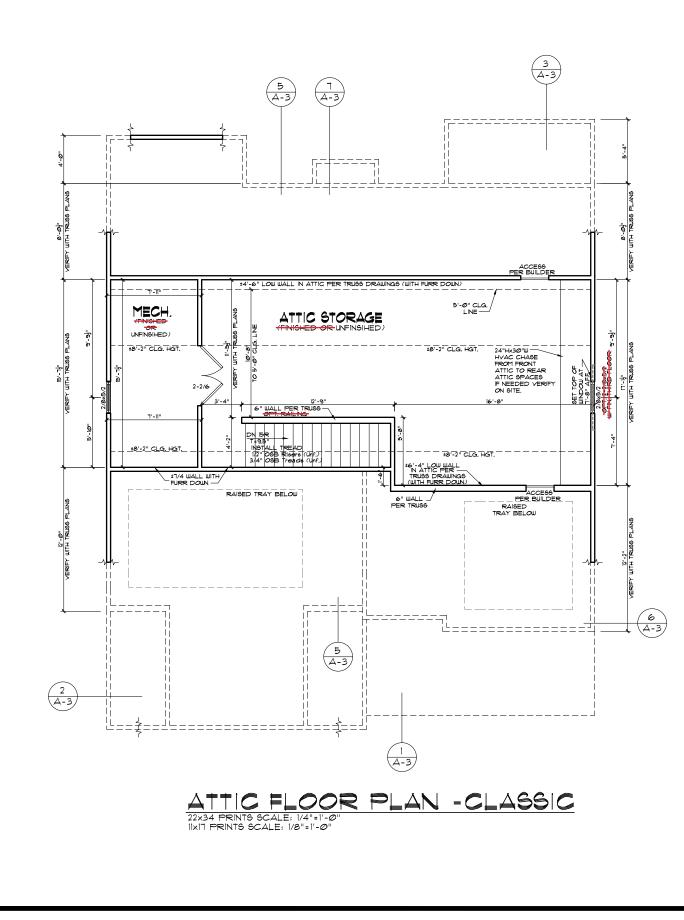
EVENTION PROTECTION

EVENTION FROTECTION LEAR OPENING OF THE OPERABLE PORTION OF A WINDOW IS LOCATED THE EXTERIOR GRADE THEN THE LOWEST PART OF THE CLEAR OPENING ABOVE THE FLOOR OF THE ROOM IN WHICH IT IS LOCATED.

IXED UNIT NOT ALLOW THE PASSAGE OF A 4- INCH DIAMETER SPHERE. IPPED WITH A WINDOW FALL PREVENTION DEVICE MEETING ASTM F2090. IPPED WITH AN APPROVED WINDOW OPENING LIMITING DEVICE.

NOTE: WHEN USED WITH AN EMERGENCY ESCAPE AND RESCUE WINDOW, OPENING LIMITING DEVICES AND FALL PREVENTION DEVICES MUST BE APPROVED FOR EMERGENCY ESCAPE AND RESCUE PROVISIONS.





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EXTERIOR DOORS/WINDOUS (DP RATING) - ALL EXTERIOR DOORS TO BE DP41 WHEN BUILT IN HIGH WIND ZONE. - ALL EXTERIOR WINDOWS TO BE DP50 WHEN BUILT IN HIGH WIND ZONE.

ATTIC NOTES

I. KNEEWALLS IN UNFINISHED ATTIC ARE OPTIONAL, UNLESS USED TO SUPPORT RAFTERS (SEE STRUCTURAL SHEETS), KNEEWALL LOCATION-NEIGHT MAY BE ADJUSTED IN THE FIELD IF THESE WALLS ARE NOT LOAD BEARING.

2. CEILING LINES SHOWN IN UNFINISHED ATTIC MAY BE JUST FOR REPRESENTATION OF FUTURE FLAT CEILINGS, IF A FLAT CEILING IS DESIRED, THIS WILL HAVE TO BE COORDINATED WITH THE STRICTURAL PLANS.

GENERAL NOTES

WALL THICKNESS / ANGLES ALL EXTERIOR STUD WALLS ARE DRAWN 4" THICK UNO ALL INTERIOR STUD WALLS ARE DRAWN 4" THICK UNO. ANGLED WALLS ARE DRAWN @ 45' UN.O.

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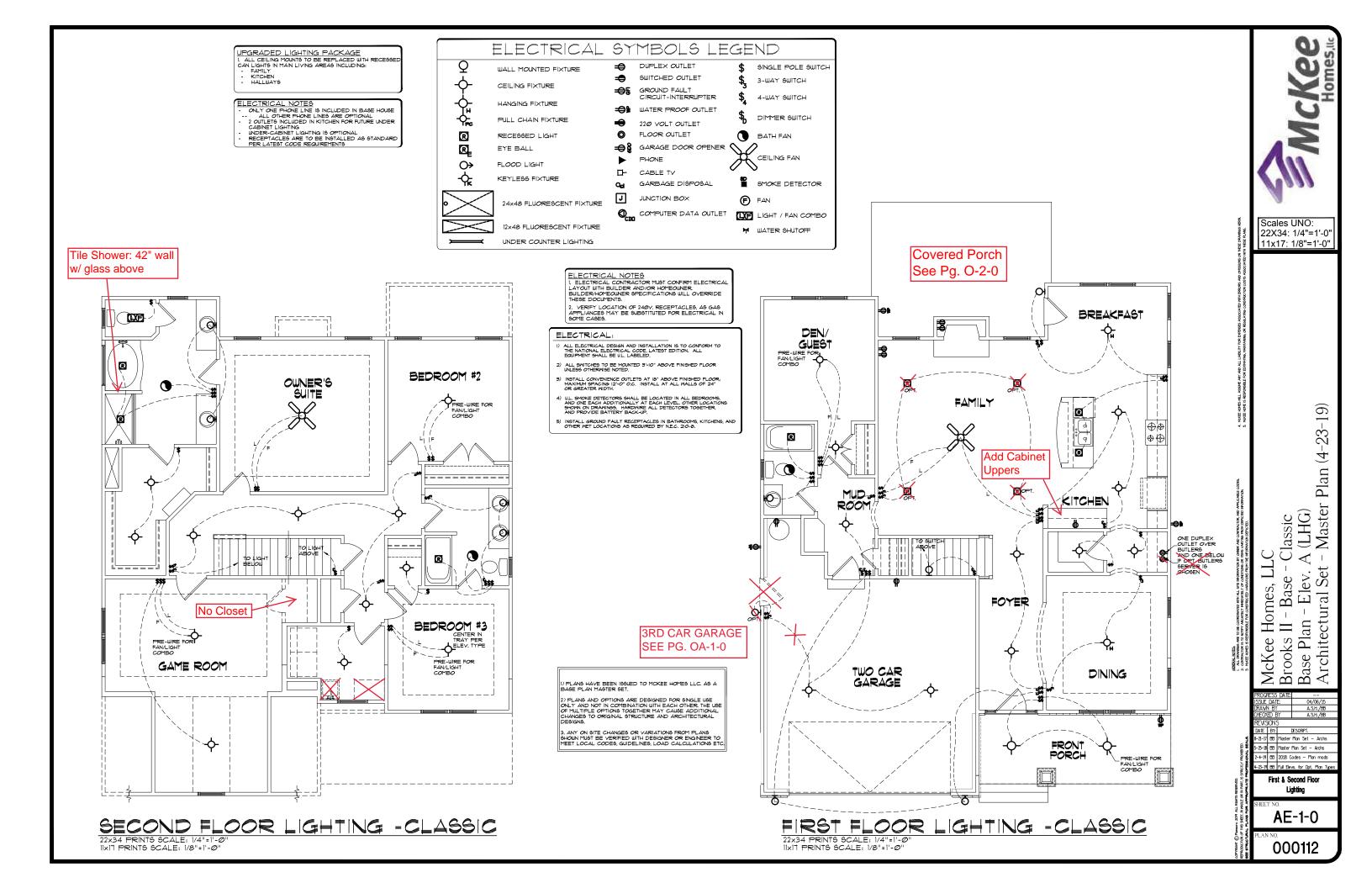
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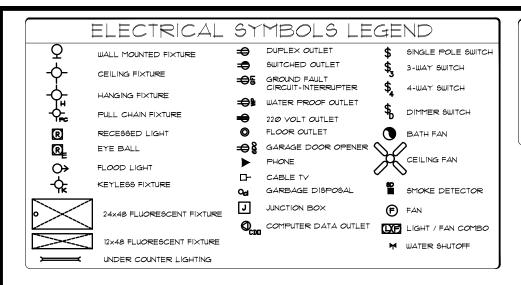
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NOTE: WHEN USED WITH AN EMERGENCY ESCAPE AND RESCUE WINDOW, OPENING LIMITING DEVICES AND FALL PREVENTION DEVICES MUST BE APPROVED FOR EMERGENCY ESCAPE AND RESCUE PROVISIONS.



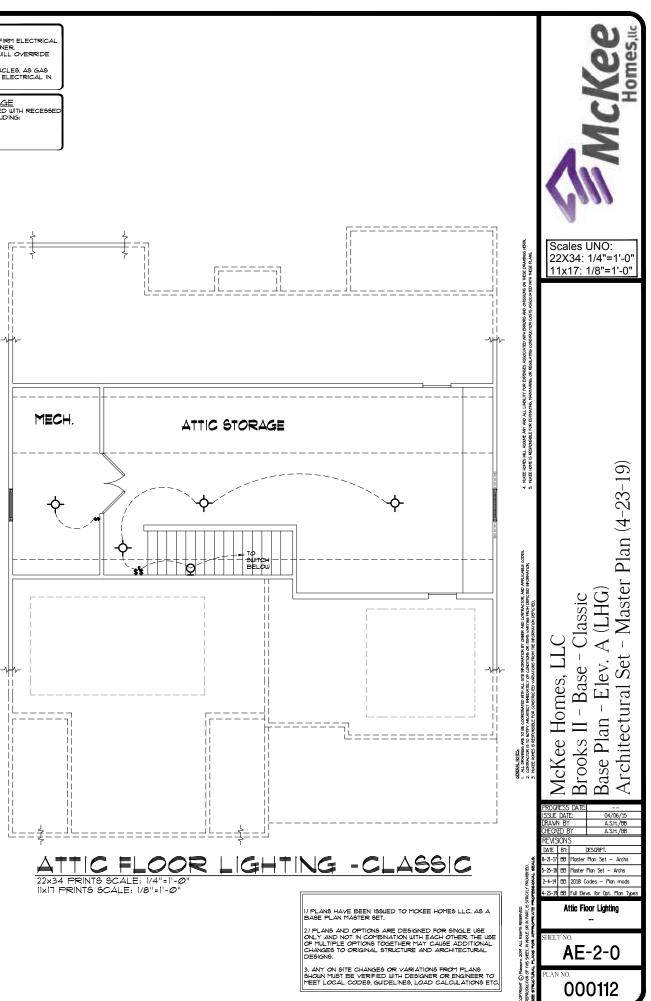




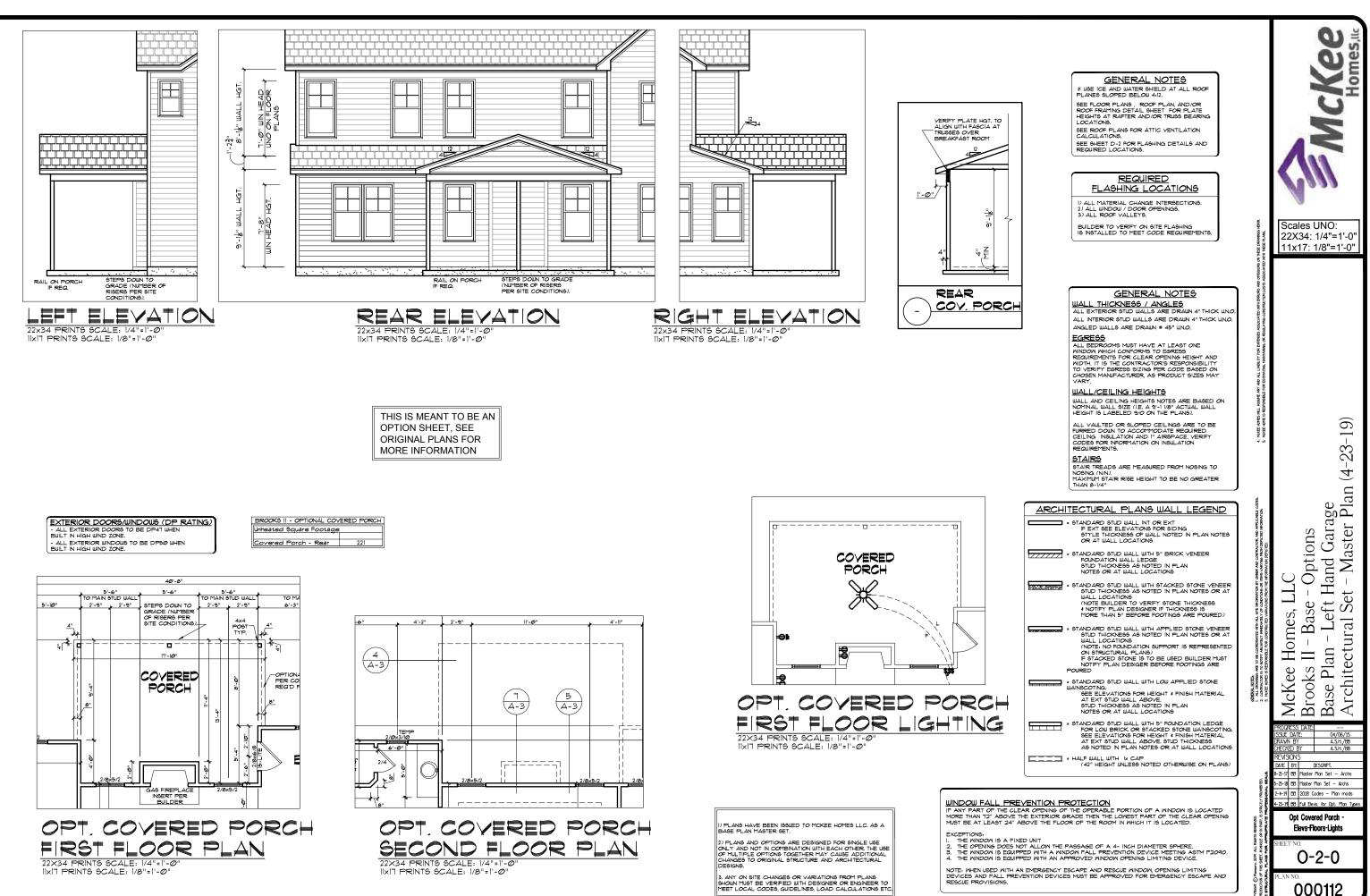
ELECTRICAL:

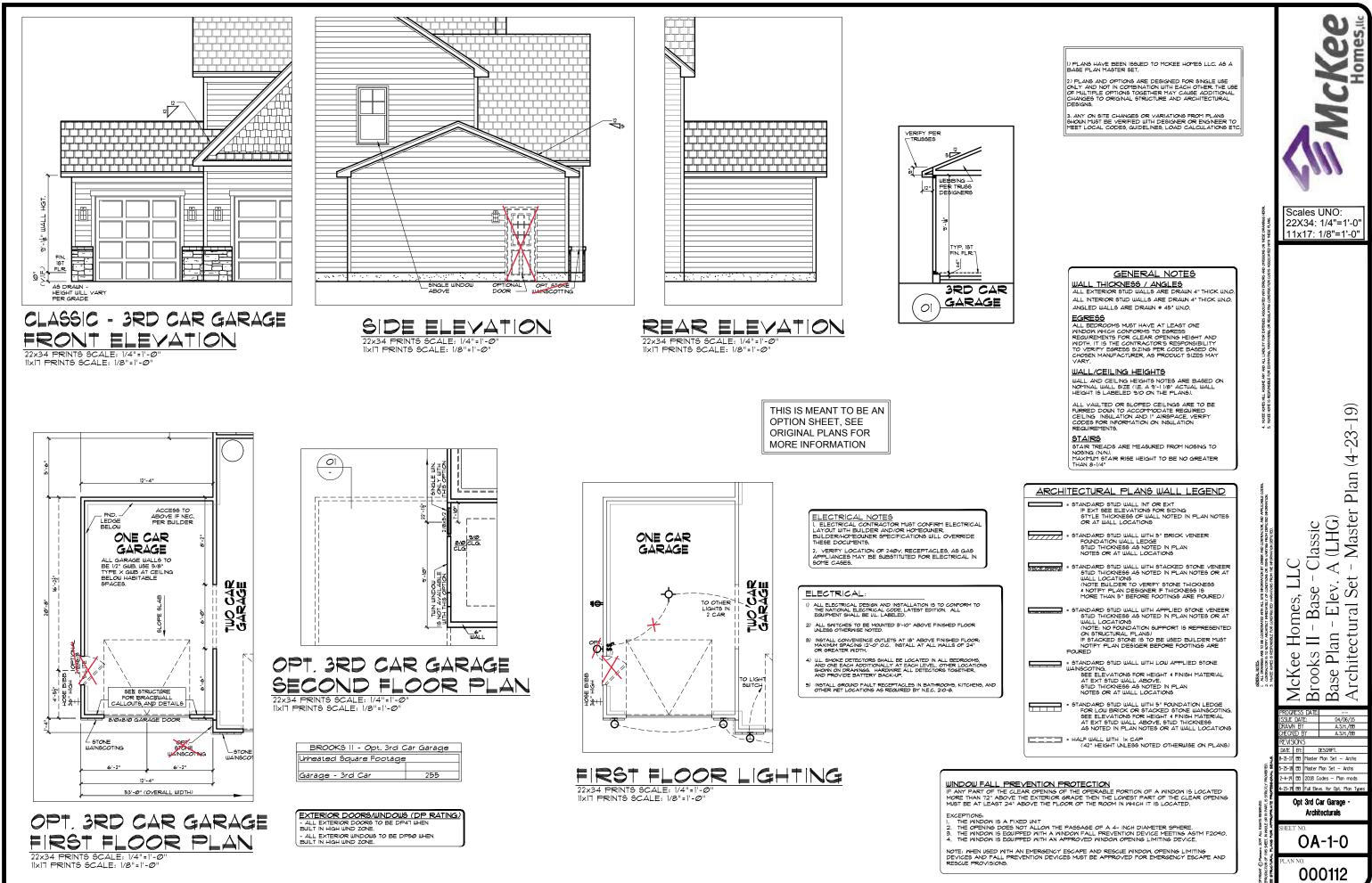
- ALL ELECTRICAL DESIGN AND INSTALLATION IS TO CONFORM TO THE NATIONAL ELECTRICAL CODE, LATEST EDITION. ALL EQUIPMENT SHALL BE UL. LABELED.
- 2) ALL SWITCHES TO BE MOUNTED 3'-10" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
- INSTALL CONVENIENCE OUTLETS AT 18" ABOVE FINISHED FLOOR; MAXIMUM SPACING 12"-0" O.C. INSTALL AT ALL WALLS OF 24" OR GREATER WIDTH.
- UL SMOKE DETECTORS SHALL BE LOCATED IN ALL BEDROOMS, AND ONE EACH ADDITIONALLY AT EACH LEVEL, OTHER LOCATIO SHOWN ON DRAWINGS. HARDWIRE ALL DETECTORS TOGETHER, AND PROVIDE BATTERY BACK-UP.
- INSTALL GROUND FAULT RECEPTACLES IN BATHROOMS, KITCHENS, OTHER WET LOCATIONS AS REQUIRED BY N.E.C. 210-8.

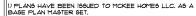
- ELECTRICAL NOTES 1. ELECTRICAL CONTRACTOR MUST CONFIRM ELECTRICAL LAYOUT WITH BUILDER AND/OR HOMEOWER BUILDER'NOMEOWER PECIFICATIONS WILL OVERRIDE THESE DOCUMENTS. 2. VERIFY LOCATION OF 240V. RECEPTACLES, AS GAS APPLIANCES MAY BE SUBSTITUTED FOR ELECTRICAL IN SOME CASES.
- UPGRADED LIGHTING PACKAGE 1. ALL CEILING MOUNTS TO BE REPLACED WITH RECESS CAN LIGHTS IN MAIN LIVING AREAS INCLUDING: FAMILY KAITCHEN KAITCHEN HALLWAYS

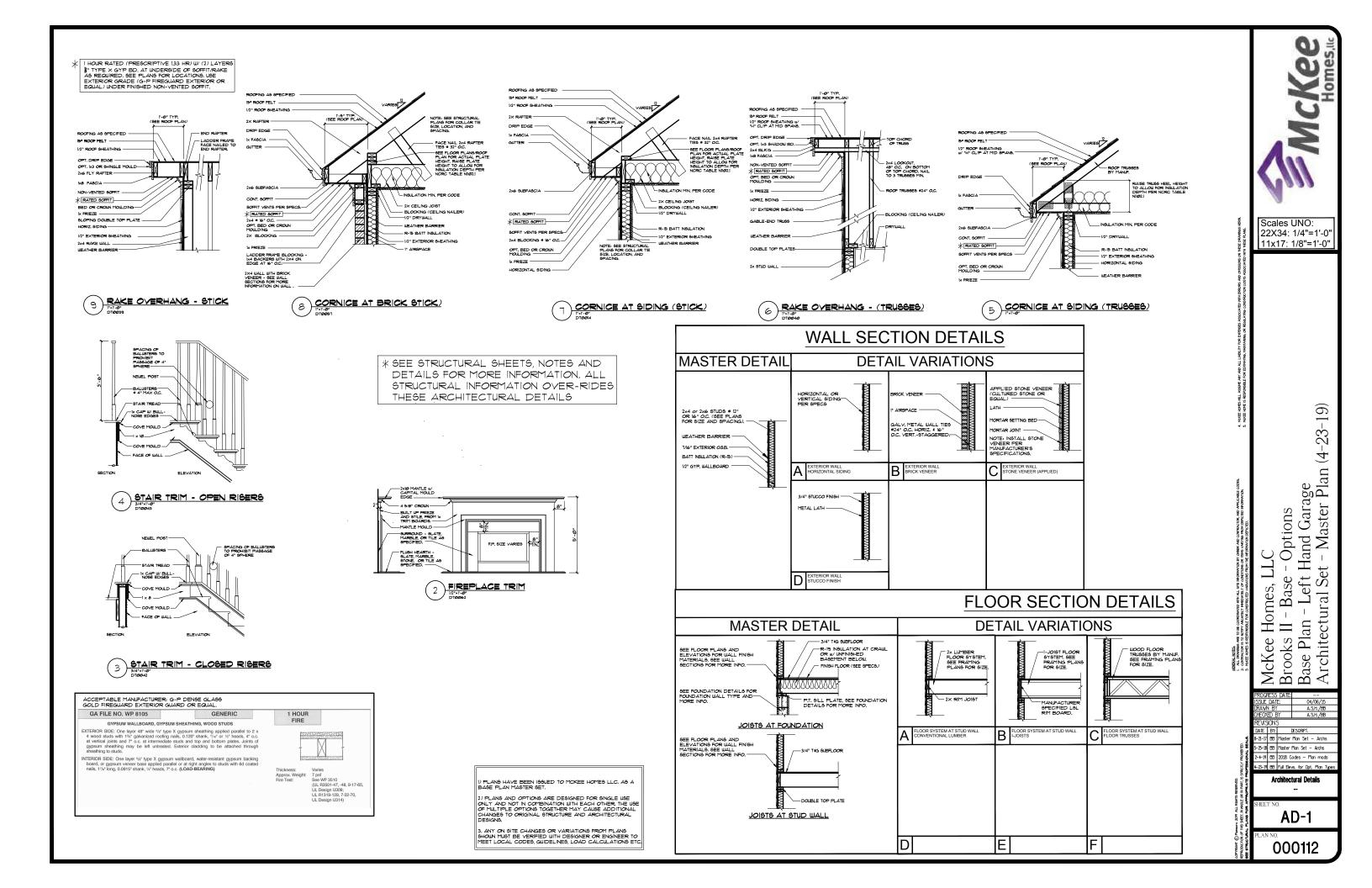


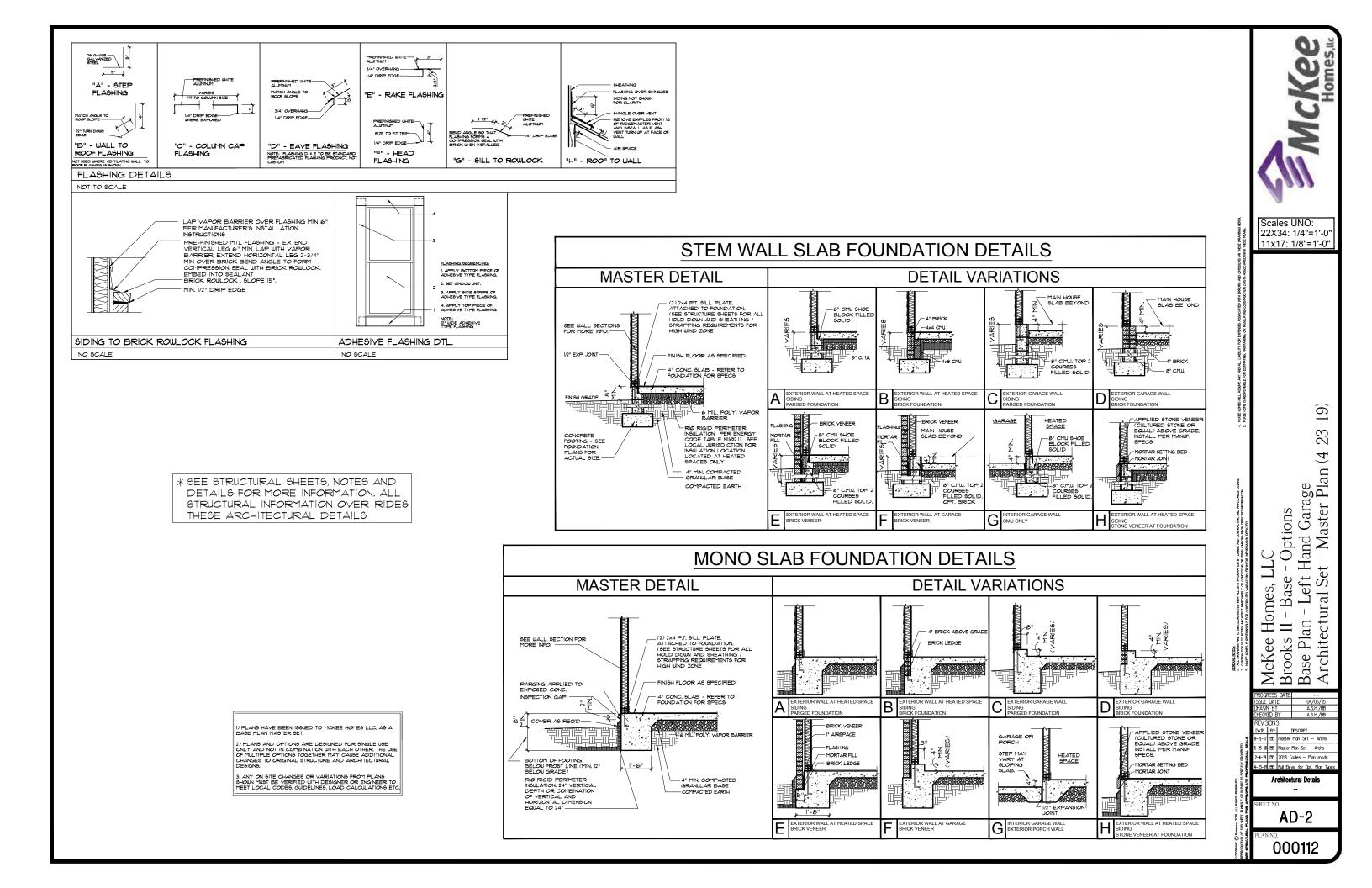
THIS IS MEANT TO BE AN OPTION SHEET, SEE ORIGINAL PLANS FOR MORE INFORMATION











DESIGN SPECIFICATIONS:

Construction Type: Commerical 🗌 Residential 🛛

Applicable Building Codes:

• 2018 North Carolina Residential Building Code with All Local Amendments • ASCE 1-10: Minimum Design Loads for Buildings and Other Structures

 ASCE 7-10: Minim 	um Design Lo	ads for Builo	lings and Oth	er Structures		
Design Loads:						
1. Roof Live Lo						
	ntional 2x					
	Attic Truss		60	PSF		
2. Roof Dead L						
	ntional 2x					
3. Snow				PSF		
	ince Factor		1 <i>.</i> Ø			
4. Floor Live Lo						
	uelling					
	ng Areas					
	-					
	ger Garage			.50 PSF		
5. Floor Dead L						
	1Ø f					
	5.2. I-Joist					
	russ					
6. Ultimate Desig				MPH		
	ire					
	ince Factor		1 <i>.</i> Ø			
6.3. Wind B						
6.3.1.						
6.3.2.	~					
7. Component ar	nd Cladding (in PSF)				
MEAN ROOF	UP TO 30'	30'1"-35'	35'1"-40'	40'1"-45'		
HT.						
ZONE 1	16.7,-18.0	17.5,-18.9	18.2,-19.6	18.7,-20.2		
ZONE 2	16.7,-21.0	17.5,-22.1	18.2,-22.9	18.7,-23.5		
ZONE 3	16.7,-21.0	17.5,-22.1	18.2,=22.9	18.7,-23.5		
ZONE 4	18.2,-19.0	19.2,-20.0	19.9,-20.7	20.4,-21.3		
ZONE 5	18.2,-24.Ø	19.2,-25.2	19.9,-26.1	20.4,-26.9		

8. Seismic

- 8.1. Site Class ... 8.2. Design Category
- 8.3. Importance Factor .
- 8.4. Seismic Use Group.
- 8.5. Spectral Response Acceleration
- 8.5.1. Sms = %q 8.5.2. Sml = %q
- 8.6. Seismic Base Shear
- 8.6.1. Vx =
- 8.6.2.Vy =
- 8.7. Basic Structural System (check one)
 - 🛛 Bearing Wall
 - Building Frame □ Moment Frame

 - Dual w/ Special Moment Frame Dual w/ Intermediate R/C or Special Steel
 - 🗌 Inverted Pendulum
- 8.8. Arch/Mech Components Anchored
- 8.9. Lateral Design Control: Seismic 🗌 🛛 Wind 🖂
- 9. Assumed Soil Bearing Capacity 2000psf

- GENERAL STRUCTURAL NOTES:
- The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT
- shall be considered the same entity. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction
- to stabilize the structure. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur.
- Any structural elements or details not fully developed on the construction drawings shall be completed under the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for review before any construction begins. The shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings for dimensions, or for actual field conditions, is not the responsibility of the SER or SUMMIT.
- Verification of assumed field conditions is not the responsibility of the SER. The contractor shall verify the field conditions for accuracy and report any discrepancies to SUMMIT before construction begins.
- The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings
- This structure and all construction shall conform to all applicable sections of the international residential code.
- 8. This structure and all construction shall conform to all
- applicable sections of local building codes.
- 9. All structural assemblies are to meet or exceed to requirements of the current local building code.

FOUNDATIONS:

The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.

- 2. The bottom of all footings shall extend below the frost line for the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade.
- 3. Any fill shall be placed under the direction or recommendation of a licensed professional engineer.
- 4. The resulting soil shall be compacted to a minimum of 95% maximum dry density.
- 5. Excavations of footings shall be lined temporarily with a 6 mil polyethylene membrane if placement of concrete does not occur within 24 hours of excavation.
- 6. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material.

STRUCTURAL STEEL:

- Structural steel shall be fabricated and erected in accordance with the American Institute of Steel Construction "Code of Standard Practice for Steel Buildings and Bridges" and the manual of Steel Construction "Load Resistance Factor Design" latest editions.
- Structural steel shall receive one coat of shop applied rust-inhibitive paint.
- All steel shall have a minimum yield stress (F_{μ}) of 36 ksi unless otherwise noted.
- Welding shall conform to the latest edition of the American Welding Society's Structural Welding Code AWS D1.1. Electrodes for shop and field welding shall be class ETØXX. All welding shall be performed by a certified welder per the above standards.

CONCRETE:

- Concrete shall have a normal weight aggregate and a minimum compressive strength (f'c) at 28 days of 3000 psi, unless otherwise noted on the plan.
- Concrete shall be proportioned, mixed, and placed in accordance with the latest editions of ACI 318: "Building Code Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings".
- 3. Air entrained concrete must be used for all structural elements exposed to freeze/thaw cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows: 3.1. Footings: 5%
 - 3.2. Exterior Slabs: 5%
- 4. No admixtures shall be added to any structural concrete without written permission of the SER.

- Construction".

- CONCRETE REINFORCEMENT:

- standard.
- ASTM A615, grade 60.
- size/spacing as the horizontal reinforcement with a class B tension splice. 8. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masonry shall be a minimum of 48 bar diameters.



STRUCTURAL PLANS PREPARED FOR:

BROOKS

PROJECT ADDRESS: TBD

OWNER: McKee Homes 109 Hay St., Suite 301 Fayetteville, NC 28301

DESIGNER: Planworx Architecture PA 5711 Six Forks Rd. #100 Raleigh, NC 27609

These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of record (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory & Testing, P.C. before construction begins.

<u>PLAN</u>	ABBREVIATIONS:		
AB	ANCHOR BOLT	PT	PRESSURE TREATED
AFF	ABOVE FINISHED FLOOR	RS	ROOF SUPPORT
CJ	CEILING JOIST	SC	STUD COLUMN
CLR	CLEAR	SJ	SINGLE JOIST
DJ	DOUBLE JOIST	SPF	SPRUCE PINE FIR
DSP	DOUBLE STUD POCKET	SST	SIMPSON STRONG-TIE
EE	EACH END	SYP	SOUTHERN YELLOW PINE
ΕW	EACH WAY	ТJ	TRIPLE JOIST
NTS	NOT TO SCALE	TSP	TRIPLE STUD POCKET
OC	ON CENTER	TYP	TYPICAL
PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
P51	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC

Roof truss and floor joist layouts, and their corresponding loading details, were not provided to SUMMIT Engineering, Laboratory & Testing, P.C. (SUMMIT) prior to the initial design. Therefore, truss and joist directions were assumed based on the information provided by MCKEE HOMES. Subsequent plan revisions based on roof truss and floor joist layouts shall be noted in the revision list, indicating the date the layouts were provided. Should any discrepancies become apparent, the contractor shall notify SUMMIT immediately.

Concrete slabs-on-grade shall be constructed in accordance with ACI 302.IR-96: "Guide for Concrete Slab and Slab

The concrete slab-on-grade has been designed using a subgrade modulus of k=250 pci and a design loading of 200 psf. The SER is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions not in accordance with the above assumptions. Control or saw cut joints shall be spaced in interior slabs-on-grade at a maximum of 15'-0" O.C. and in exterior slabs-on-grade at a maximum of 10'-0" unless otherwise noted. Control or saw cut joints shall be produced using conventional process within 4 to 12 hours after the slab has been finished 9. Reinforcing steel may not extend through a control joint. Reinforcing steel may extend through a saw cut joint. 10. All welded wire fabric (W.W.F.) for concrete slabs-on-grade shall be placed at mid-depth of slab. The W.W.F. shall be securely supported during the concrete pour.

Fibrous concrete reinforcement, or fibermesh, specified in concrete slabs-on-grade may be used for control of cracking due to shrinkage and thermal expansion/contraction, lowered water migration, an increase in impact capacity, increased abrasion resistance, and residual strength.

Fibermesh reinforcing to be 100% virgin polypropylene fibers containing no reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement. Application of fibermesh per cubic yard of concrete shall equal a minimum of 0.1% by volume (1.5 pounds per cubic yard) Fibermesh shall comply with ASTM CIII6, any local building code requirements, and shall meet or exceed the current industry

5. Steel reinforcing bars shall be new billet steel conforming to

6. Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of Standard Practice for Detailing Concrete Structures" Horizontal footing and wall reinforcement shall be continuous and shall have 90° bends, or corner bars with the same

- 9. Where reinforcing dowels are required, they shall be equivalent in size and spacing to the vertical reinforcement. The dowel shall extend 48 bar diameters vertically and 20 bar diameters into the footing.
- 10. Where reinforcing steel is required vertically, dowels shall be provided unless otherwise noted.

WOOD FRAMING:

- Solid sawn wood framing members shall conform to the specifications listed in the latest edition of the "National Design Specification for Wood Construction" (NDS). Unless otherwise noted, all wood framing members are designed to be Southern-Yellow-Pine (SYP) #2.
- LVL or PSL engineered wood shall have the following minimum design values:
 - 2.1. E = 1,300,000 psi
 - 2.2. Fb = 2600 psi
 - 2.3.Fv = 285 psi
 - 2.4.Fc = 700 psi
- Wood in contact with concrete, masonry, or earth shall be pressure treated in accordance with AWPA standard C-15. All other moisture exposed wood shall be treated in accordance with AWPA standard C-2
- Nails shall be common wire nails unless otherwise noted. 5. Lag screws shall conform to ANSI/ASME standard B18.2.1-1981. Lead holes for lag screws shall be in accordance with NDS specifications.
- All beams shall have full bearing on supporting framing members unless otherwise noted.
- Exterior and load bearing stud walls are to be 2x4 SYP #2 @ 16" O.C. unless otherwise noted. Studs shall be continuous from the sole plate to the double top plate. Studs shall only be discontinuous at headers for window/door openings. A minimum
- of one king stud shall be placed at each end of the header. King studs shall be continuous. Individual studs forming a column shall be attached with one 10d
- nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
- . Multi-ply beams shall have each ply attached with (3) 10d nails @ 24" O.C. 10. Four and five ply beams shall be bolted together with (2) rows
- of 1/2" diameter through bolts staggered @ 16" O.C. unless noted otherwise.

<u>SHEET LIST:</u>

Sheet No.	Description	
CSI	Cover Sheet, Specifications, Revisions	
Sl.Øm	Monolithic Slab Foundation	
Sl.Øs	Stem Wall Foundation	
SI.Øc	Crawl Space Foundation	
S1.Øb	Basement Foundation	
S2.Ø	Basement Framing Plan	
\$3 <i>.</i> Ø	First Floor Framing Plan	
\$4 <i>.</i> Ø	Second Floor Framing Plan	
S5.Ø	Roof Framing Plan	
S6.Ø	Basement Bracing Plan	
ST.Ø	First Floor Bracing Plan	
58.0	Second Floor Bracing Plan	

<u>REVISION LIST:</u>

Revision No.	Date	Project No.	Description
1	5.8.19	22336R	Added opt. two garage doors to Craftsman Elev
2	6.20.19	22336R2	Revised per new truss drawings
3	7.9.19	22336R3	Revised per new truss drawings
4	11.8.19	22336R4	Updated floor beams to floor depth and updated opt. 3rd car garage beam

WOOD TRUSSES:

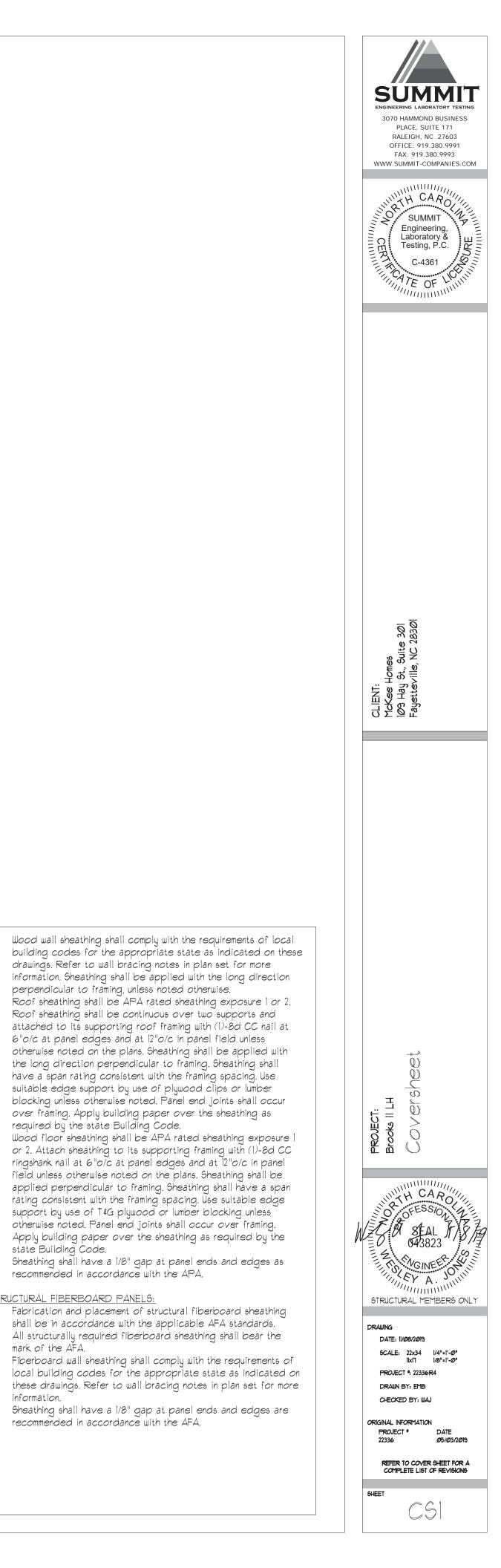
- The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall assume no responsibility for the correctness for the structural design for the wood trusses.
- The wood trusses shall be designed for all required loadings as specified in the local building code, the ASCE Standard "Minimum Design Loads for Buildings and Other Structures." (ASCE 7-10), and the loading requirements shown on these specifications. The truss drawings shall be coordinated with all other construction documents and provisions provided for loads shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses.
- The trusses shall be designed, fabricated, and erected in accordance with the latest edition of the "National Design Specification for Wood Construction." (NDS) and "Design Specification for Metal Plate Connected Wood Trusses."
- The truss manufacturer shall provide adequate bracing information in accordance with "Commentary and Recommendations for Handling, Installing, and Bracing Metal Plate Connected Wood Trusses" (HIB-91). This bracing, both temporary and permanent, shall be shown on the shop drawings.
- Also, the shop drawings shall show the required attachments for the trusses. Any chords or truss webs shown on these drawings have been
- shown as a reference only. The final design of the trusses shall be per the manufacturer.

EXTERIOR WOOD FRAMED DECKS:

Decks are to be framed in accordance with local building codes and as referenced on the structural plans, either through code references or construction details.

WOOD STRUCTURAL PANELS:

- Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA standards.
- All structurally required wood sheathing shall bear the mark of the APA.



FOUNDATION NOTES:

- 1. FOUNDATIONS TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 4 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
- 2. STRUCTURAL CONCRETE TO BE $F_c = 3000$ PSI, PREPARED AND PLACED IN ACCORDANCE WITH ACI STANDARD 318.
- 3. FOOTINGS TO BE PLACED ON UNDISTURBED EARTH, BEARING A MINIMUM OF 12" BELOW ADJACENT FINISHED GRADE, OR AS OTHERWISE DIRECTED BY THE CODE ENFORCEMENT OFFICIAL.
- 4. FOOTING SIZES BASED ON A PRESUMPTIVE SOIL BEARING CAPACITY OF 2000 PSF. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE SUITABILITY OF THE SITE SOIL CONDITIONS AT THE TIME OF CONSTRUCTION.
- 5. FOOTINGS AND PIERS SHALL BE CENTERED UNDER THEIR RESPECTIVE ELEMENTS, PROVIDE 2" MINIMUM FOOTING PROJECTION FROM THE FACE OF MASONRY.
- 6. MAXIMUM DEPTH OF UNBALANCED FILL AGAINST MASONRY WALLS TO BE AS SPECIFIED IN SECTION R404.1 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
- 1. PILASTERS TO BE BONDED TO PERIMETER FOUNDATION WALL.
- 8. PROVIDE FOUNDATION WATERPROOFING, AND DRAIN WITH POSITIVE SLOPE TO OUTLET AS REQUIRED BY SITE CONDITIONS.
- 9. PROVIDED PERIMETER INSULATION FOR ALL FOUNDATIONS PER 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE.
- 10. CORBEL FOUNDATION WALL AS REQUIRED TO ACCOMMODATE BRICK VENEERS.
- CRAWL SPACE TO BE GRADED LEVEL, AND CLEARED OF ALL DEBRIS.
 FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018 NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 1" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
- 13. ABBREVIATIONS:
 - DJ = DOUBLE JOISTSJ =GT = GIRDER TRUSSFT = 8SC = STUD COLUMNDR =EE = EACH ENDTR =TJ = TRIPLE JOISTOC =CL = CENTER LINEPL =
 - SJ = SINGLE JOIST FT = FLOOR TRUSS DR = DOUBLE RAFTER TR = TRIPLE RAFTER OC = ON CENTER PL = POINT LOAD
- 14. ALL PIERS TO BE 16"x16" MASONRY AND ALL PILASTERS TO BE 8"x16"
- MASONRY, TYPICAL. (UNO) 15. WALL FOOTINGS TO BE CONTINUOUS CONCRETE, SIZES PER STRUCTURAL PLAN.
- 16. A FOUNDATION EXCAVATION OBSERVATION SHOULD BE CONDUCTED BY A PROFESSIONAL GEOTECHNICAL ENGINEER, OR HIS QUALIFIED REPRESENTATIVE. IF ISOLATED AREAS OF YIELDING MATERIALS AND/OR POTENTIALLY EXPANSIVE SOILS ARE OBSERVED IN THE FOOTING EXCAVATIONS AT THE TIME OF CONSTRUCTION, SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. MUST BE PROVIDED THE OPPORTUNITY TO REVIEW THE FOOTING DESIGN PRIOR TO CONCRETE PLACEMENT.
- 17. ALL FOOTINGS & SLABS ARE TO BEAR ON UNDISTURBED SOIL OR 95% COMPACTED FILL, VERIFIED BY ENGINEER OR CODE OFFICIAL.

REFER TO BRACED WALL PLAN FOR PANEL LOCATIONS AND ANY REQUIRED HOLD-DOWNS. ADDITIONAL INFORMATION PER SECTION R602,10,4 AND FIGURE R602,10,3(4) OF THE 2018 NCRC.

NOTE: ALL EXTERIOR FOUNDATION DIMENSIONS ARE TO FRAMING AND NOT BRICK VENEER, UNO

NOTE: A 4" CRUSHED STONE BASE COURSE IS NOT REQUIRED WHEN SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP I PER TABLE R405.1

REINFORCE GARAGE PORTAL WALLS PER FIGURE R602.10.4.3 OF THE 2018 NCRC. (TYP)

BEAM POCKETS MAY BE SUBSTITUTED FOR MASONRY PILASTERS AT GIRDER ENDS. BEAM POCKETS SHALL HAVE A MINIMUM 4" SOLID MASONRY BEARING.

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

DECK JOISTS SHALL BE SPACED AT A MAX. 12" O.C. WHEN DECK BOARDS ARE INSTALLED DIAGONALLY.

THESE PLANS ARE DESIGNED IN ACCORDANCE WITH ARCHITECTURAL PLANS PROVIDED BY MCKEE HOMES COMPLETED/REVISED ON <u>04/23/2019</u>. IT IS THE RESPONSIBILITY OF THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY 4 TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, LABORATORY 4 TESTING, P.C. CANNOT GUARANTEE THE ADEQUACY OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

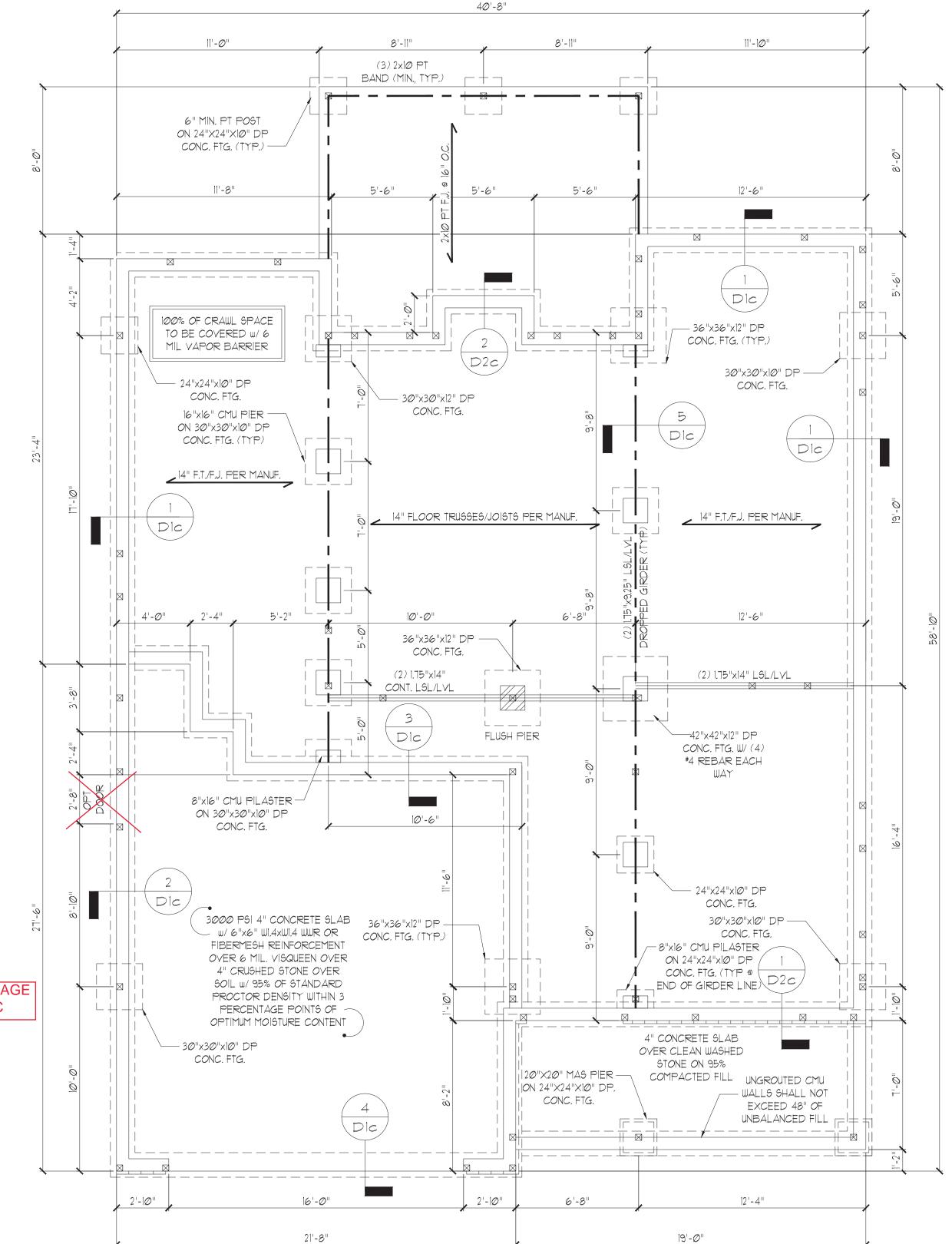
STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

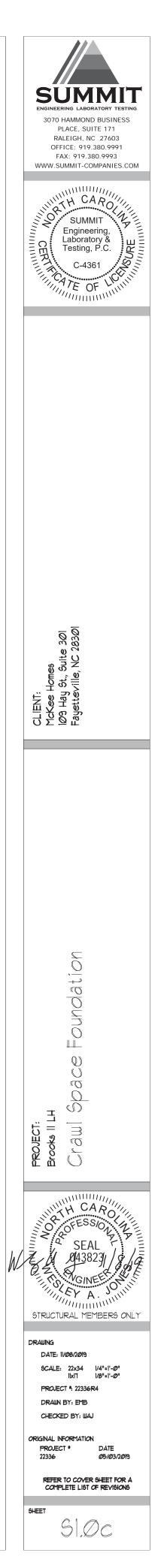
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

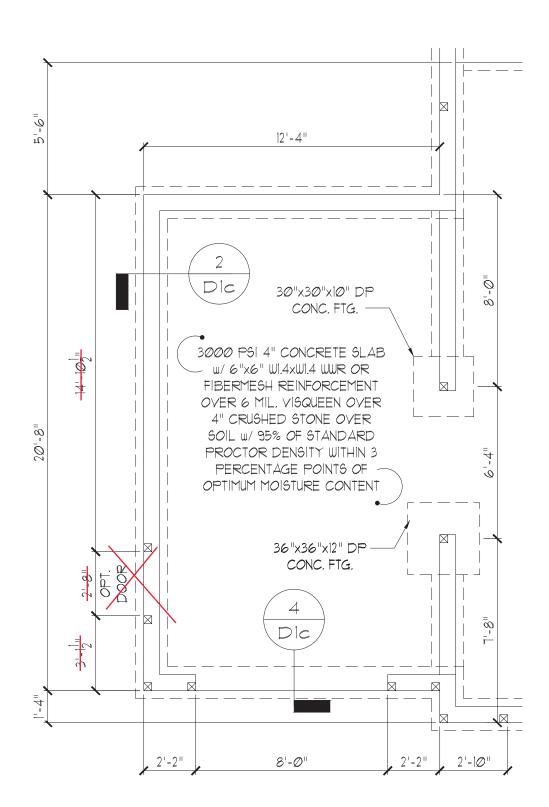
CRAWL SPACE FOUNDATION PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



3RD CAR GARAGE SEE PG. S1.4C 18"x24" MIN. CRAWL SPACE ACCESS DOOR TO BE LOCATED IN FIELD PER BUILDER. PROVIDE MIN. (2) 2x10 HEADER OVER DOOR W/ MIN. 4" BEARING EACH END. AVOID SHOWN POINT LOADS.





OPT. 3RD CAR GARAGE

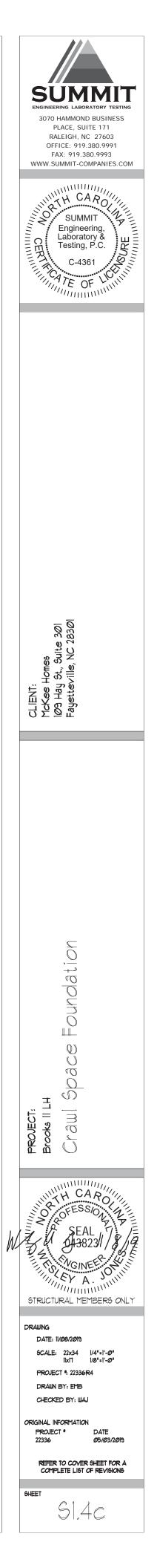
STRUCTURAL MEMBERS ONLY

ENGINEERING SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS ON THIS DOCUMENT, SEAL DOES NOT INCLUDE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES OR SAFETY PRECAUTIONS. ANY DEVIATIONS OR DISCREPANCIES ON PLANS ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. FAILURE TO DO SO WILL VOID SUMMIT LIABILITY.

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

CRAWL SPACE FOUNDATION PLAN

SCALE: 1/4"=1'-Ø" ON 22"x34" OR 1/8"=1'-Ø" ON 11"x17"



GENERAL STRUCTURAL NOTES:

- 1. CONSTRUCTION SHALL CONFORM TO 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE WITH ALL LOCAL AMENDMENTS.
- 2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS. CONTRACTOR SHALL COMPLY WITH THE CONTENTS OF THE DRAWING FOR THIS SPECIFIC PROJECT. ENGINEER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THIS PLAN.
- 3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY BRACING REQUIRED TO RESIST ALL FORCES ENCOUNTERED DURING ERECTION.
- 4. PROPERTIES USED IN THE DESIGN ARE AS FOLLOWS: MICROLLAM (LVL): $F_b = 2600$ PSI, $F_v = 285$ PSI, $E = 1.9x10^6$ PSI PARALLAM (PSL): $F_b = 2900$ PSI, $F_v = 290$ PSI, $E = 1.25x10^6$ PSI
- ALL WOOD MEMBERS SHALL BE #2 SYP UNLESS NOTED ON PLAN. ALL STUD COLUMNS AND JOISTS SHALL BE #2 SYP (UNO).
 ALL BE AMS SHALL BE SUPPORTED WITH A (2) 274 #2 SYR STUD COLUMN
- 6. ALL BEAMS SHALL BE SUPPORTED WITH A (2) 2x4 #2 SYP STUD COLUMN AT EACH END UNLESS NOTED OTHERWISE.
- ALL REINFORCING STEEL SHALL BE GRADE 60 BARS CONFORMING TO ASTM A615 AND SHALL HAVE A MINIMUM COVER OF 3".
 FOUNDATION ANCHORAGE SHALL BE CONSTRUCTED PER THE 2018
- NORTH CAROLINA RESIDENTIAL CODE SECTION R403.1.6. MINIMUM 1/2" DIA. BOLTS SPACED AT 6'-0" ON CENTER WITH A 1" MINIMUM EMBEDMENT INTO MASONRY OR CONCRETE. ANCHOR BOLTS SHALL BE 12" FROM THE END OF EACH PLATE SECTION. MINIMUM (2) ANCHOR BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE LOCATED IN THE CENTER THIRD OF THE PLATE.
- 9. CONTRACTOR TO PROVIDED LOOKOUTS WHEN CEILING JOISTS SPAN
- PERPENDICULAR TO RAFTERS.
 10. FLITCH BEAMS, 4-PLY LVLS AND 3-PLY SIDE LOADED LVLS SHALL BE BOLTED TOGETHER WITH 1/2" DIA. THRU BOLTS SPACED AT 24" O.C. (MAX) STAGGERED OR EQUIVALENT CONNECTIONS PER DETAIL 1/D3f. MIN. EDGE DISTANCE SHALL BE 2" AND (2) BOLTS SHALL BE LOCATED MINIMUM 6" FROM EACH END OF THE BEAM.
- ALL NON-LOAD BEARING HEADERS SHALL BE (1) FLAT 2x4 SYP #2, DROPPED. FOR NON-LOAD BEARING HEADERS EXCEEDING 8'-0" IN WIDTH AND/OR WITH MORE THAN 2'-0" OF CRIPPLE WALL ABOVE, SHALL BE (2) FLAT 2x4 SYP #2, DROPPED. (UNLESS NOTED OTHERWISE)
 ABBREVIATIONS:
- DJ = DOUBLE JOIST
- GT = GIRDER TRUSS SC = STUD COLUMN
- SC = STUD COLUMN EE = EACH END
- TJ = TRIPLE JOIST CL = CENTER LINE
- DR = DOUBLE RAFTER TR = TRIPLE RAFTER OC = ON CENTER PL = POINT LOAD

SJ = SINGLE JOIST

FT = FLOOR TRUSS

SHADED WALLS INDICATED LOAD BEARING WALLS

NOTE: REDUCE JOIST SPACING UNDER TILE FLOORS, GRANITE COUNTERTOPS AND/OR ISLANDS.

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

NOTE:

EARING WALL ABOVE. PROVIDE BLOCKING UNDER JOIST SUPPORTED LOAD BEARING WALL.

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STRUCTURAL MEMBERS ONLY

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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

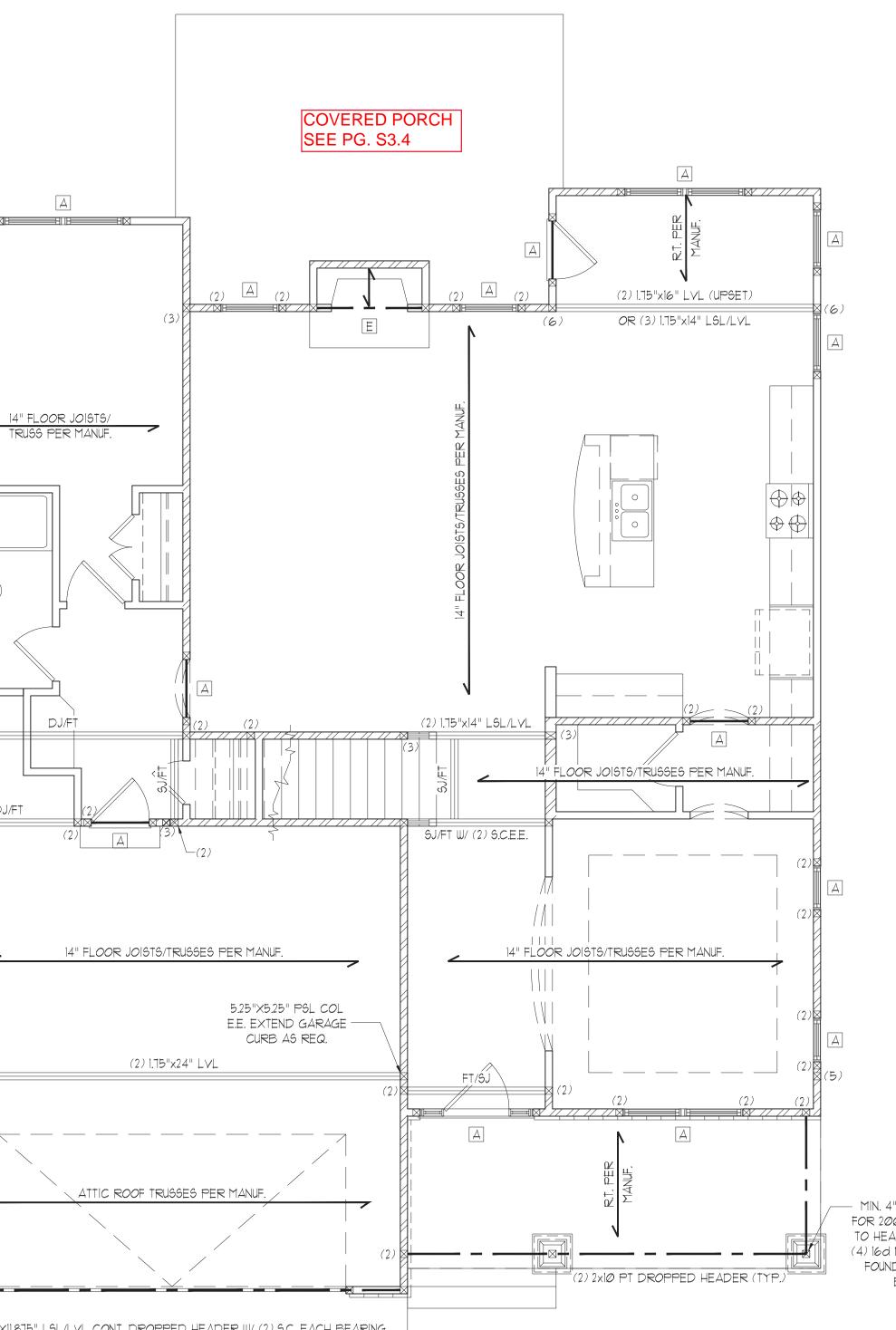
FIRST FLOOR FRAMING PLAN

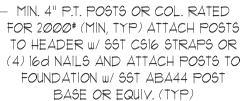
SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"

_ DJ/FT

3RD CAR GARAGE

SEE PG. S3.4





(2) 1.75"X11.875" LSL/LVL CONT. DROPPED HEADER W/ (2) S.C. EACH BEARING FRAME PORTAL WALL PER DETAIL 1/DIF

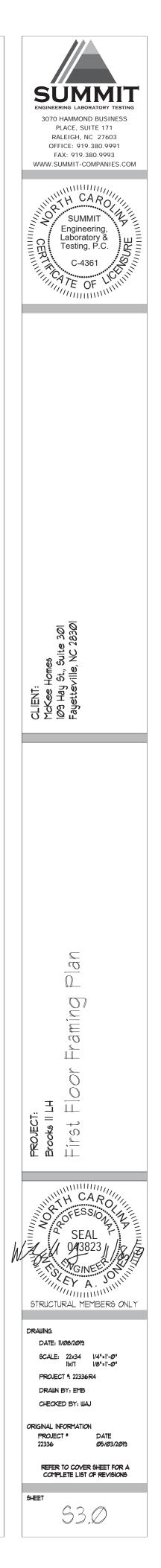
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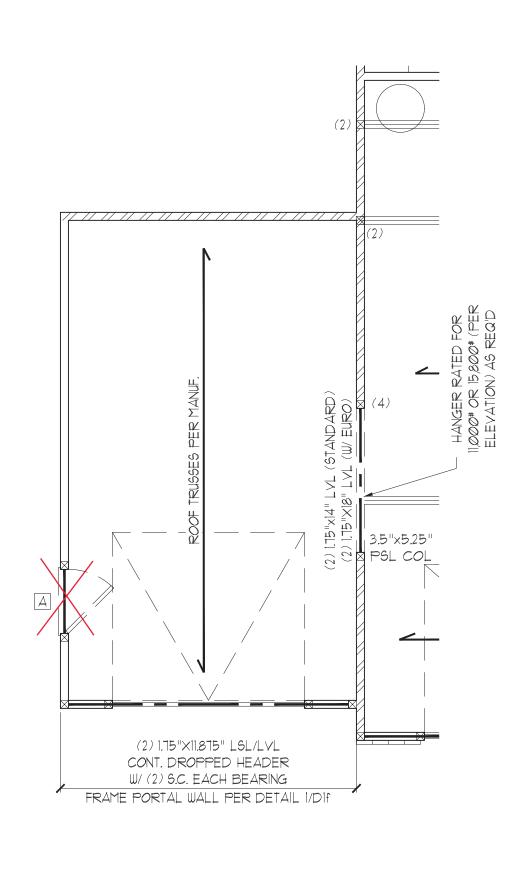
[
HEADER SCHEDULE				
TAG	SIZE	JACKS (EACH END)		
А	(2) 2x6	(1)		
В	(2) 2x8	(2)		
С	(2) 2x1Ø	(2)		
D	(2) 2x12	(2)		
E	(2) 9-1/4" LSL/LVL	(3)		
F	(3)2x6	(1)		
G	(3)2x8	(2)		
Н	(3)2x1Ø	(2)		
	(3) 2x12	(3)		
NOTES: 1. HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. 2. ALL HEADERS TO BE DROPPED (U.N.O.). 3. STUD COLUMNS NOTED ON PLAN OVERRIDE STUD COLUMNS LISTED ABOVE (U.N.O.). 4. OPENINGS LESS THAN 3'-0" USE (1) KING STUD AT E.E. OPENINGS 3'-1" TO 4'-0" USE (2) KING STUDS AT E.E. OPENINGS 4'-1" TO 8'-0" USE (3) KING STUDS AT E.E. OPENINGS 8'-1" TO 12'-0" USE (5) KING STUDS AT E.E. OPENINGS 12'-1" TO 16'-0" USE (6) KING STUDS AT E.E.				

 LINTEL (UN.O.)
 LINTEL SCHEDULE:
 STEEL ANGLES TO HAVE MINIMUM 4" BEARING ONTO BRICK AT EACH END.
 L3x3x1/4"
 L5x3"x1/4"
 L5x3-1/2x5/16"
 L5x3-1/2"x5/16" ROLLED OR EQUAL ARCHED COMPONENT.
 SECURE LINTEL TO HEADER w/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR (3))

ALL HEADERS WHERE BRICK IS USED, TO BE:

WALL STUD SCHEDULE (10 FT HEIGHT)					
STUD SIZE		STUD SPACING (O.C.)			
	ROOF ONLY ROOF & ROOF & NON-LOAD 1 FLOOR 2 FLOORS BEARING				
2×4	24"	16"	12"	24"	
2x6	24"	24"	16"	24"	
NOTES: 1. BRACED WALLS STUDS SHALL BE A MAX. OF 16" O.C. 2. STUDS SUPPORTS OPTIONAL WALK-UP ATTIC SHALL BE SPACED A MAX. OF 16" O.C. 3. TWO STORY WALLS SHALL BE FRAMED W/ 2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED W/ CROSS BRACING @ 6'-0" O.C. VERTICALLY.					





OPT. 3RD CAR GARAGE

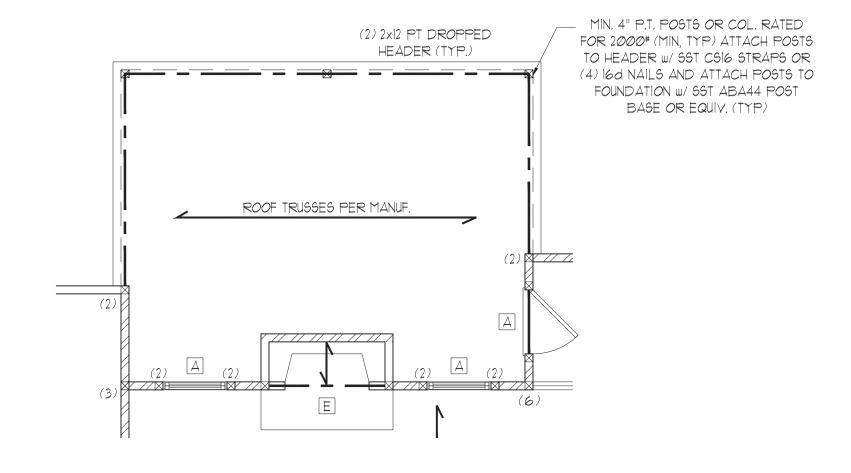
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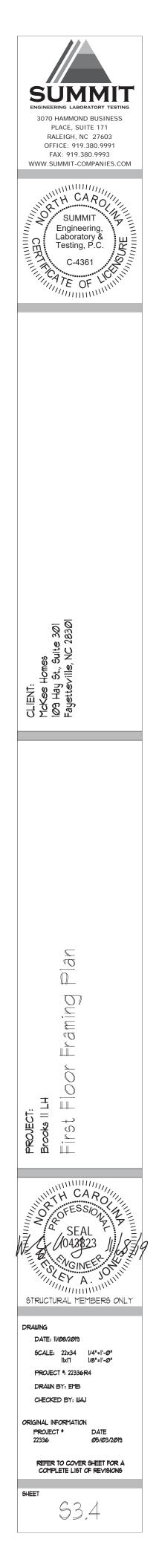
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



<u>OPT. COVERED PORCH</u>



SCALE: 1/4"=1'-Ø" ON 22"x34" OR 1/8"=1'-Ø" ON 11"x17"

STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

SECOND FLOOR FRAMING PLAN

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THE CLIENT TO NOTIFY SUMMIT ENGINEERING, LABORATORY & TESTING, P.C. IF ANY CHANGES ARE MADE TO THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION. SUMMIT ENGINEERING, OF THESE STRUCTURAL PLANS WHEN USED WITH ARCHITECTURAL PLANS DATED DIFFERENTLY THAN THE DATE LISTED ABOVE.

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JOIST & BEAM SIZES SHOWN ARE MINIMUMS, BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

SHADED WALLS INDICATED LOAD BEARING WALLS

1. BRACED WALLS STUDS SHALL BE A MAX. OF 16" O.C. 2. STUDS SUPPORTS OPTIONAL WALK-UP ATTIC SHALL BE SPACED A MAX. OF 16" O.C. 3. TWO STORY WALLS SHALL BE FRAMED w/ 2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED W/ CROSS BRACING @ 6'-0" O.C. VERTICALLY.

ROOF & ROOF & NON-LOAD ROOF ONLY 1 FLOOR 2 FLOORS BEARING 12 " 24" 2x4 24" 16" 24" 24" 2x6 24" 16" NOTES:

WALL STUD SCHEDULE (10 FT HEIGHT) STUD SIZE STUD SPACING (O.C.)

(4) L5x3-1/2"x5/16" ROLLED OR EQUAL ARCHED COMPONENT. SECURE LINTEL TO HEADER W/ (2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR (3))

1 L3x3x1/4" 2 L5x3"x1/4" 3 L5x3-1/2x5/16"

STEEL ANGLES TO HAVE MINIMUM 4" BEARING ONTO BRICK AT EACH END.

LINTEL SCHEDULE:

() LINTEL (U.N.O.)

HEADER SCHEDULE

SIZE

(2) 2x6

(2) 2x8

(2) 2x1Ø

(2) 2x12

(2) 9-1/4" LSL/LVL

(3)2x6

(3) 2x8 (3) 2x1Ø

(3) 2x12

1. HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION.

JACKS (EACH END)

(1)

(2)

(2)

(2)

(3)

(1)

(2)

(2)

(3)

TAG

Δ

B

С

D

E

F

G

H

NOTES:

2. ALL HEADERS TO BE DROPPED (U.N.O.).

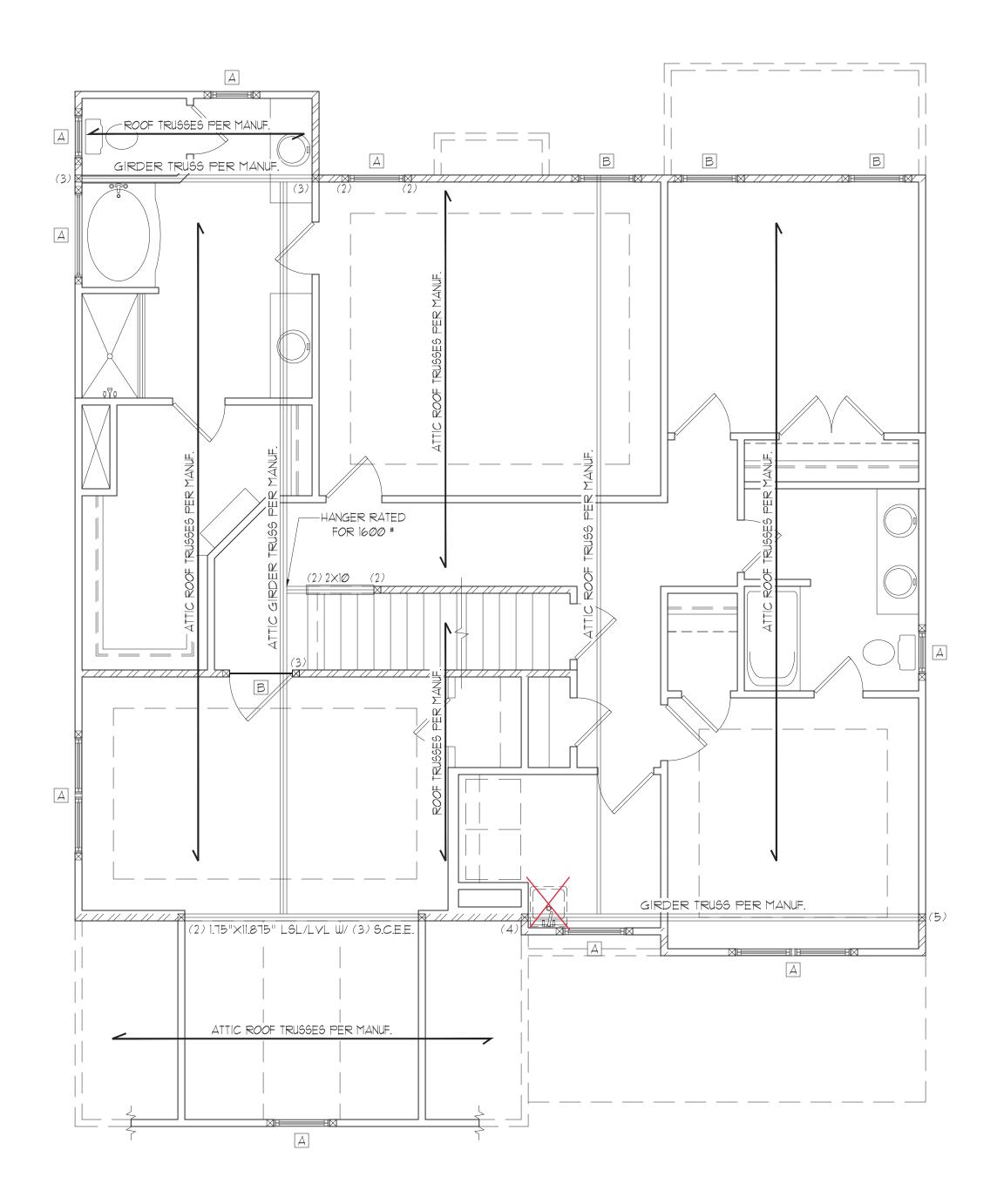
COLUMNS LISTED ABOVE (U.N.O.).

3. STUD COLUMNS NOTED ON PLAN OVERRIDE STUD

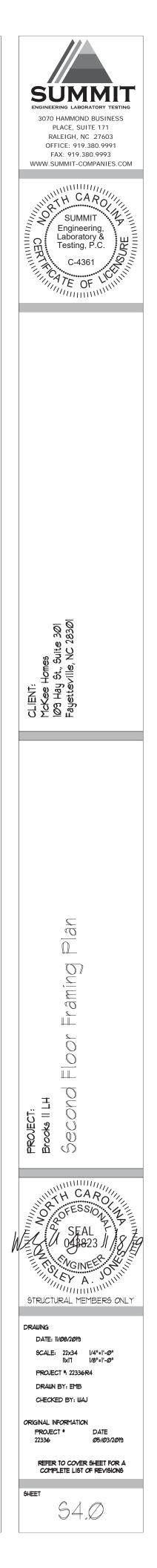
4. OPENINGS LESS THAN 3'-O" USE (1) KING STUD AT E.E. OPENINGS 3'-1" TO 4'-0" USE (2) KING STUDS AT E.E. OPENINGS 4'-1" TO 8'-0" USE (3) KING STUDS AT E.E. OPENINGS 8'-1" TO 12'-0" USE (5) KING STUDS AT E.E.

OPENINGS 12'-1" TO 16'-0" USE (6) KING STUDS AT E.E.

ALL HEADERS WHERE BRICK IS USED, TO BE:



CLASSIC



HEADER SCHEDULE TAG SIZE JACKS (EACH END) (2) 2x6 Δ (1)(2) 2x8 (2) В (2) 2x1Ø (2) С D (2) 2x | 2(2) (2) 9-1/4" LSL/LVL (3) F F (3) 2x6 (1)G (3)2x8 (2) (3) 2x1Ø (2) Н (3) 2x12 (3) NOTES: I. HEADER SIZES SHOWN ON PLANS ARE MINIMUMS. GREATER HEADER SIZES MAY BE USED FOR EASE OF CONSTRUCTION. 2. ALL HEADERS TO BE DROPPED (U.N.O.).

3. STUD COLUMNS NOTED ON PLAN OVERRIDE STUD COLUMNS LISTED ABOVE (U.N.O.).
4. OPENINGS LESS THAN 3'-O" USE (1) KING STUD AT E.E. OPENINGS 3'-1" TO 4'-O" USE (2) KING STUDS AT E.E. OPENINGS 4'-1" TO 8'-O" USE (3) KING STUDS AT E.E. OPENINGS 8'-1" TO 12'-O" USE (5) KING STUDS AT E.E. OPENINGS 12'-1" TO 16'-O" USE (6) KING STUDS AT E.E.

ALL HEADERS WHERE BRICK IS USED, TO BE:

LINTEL (U.N.O.)

LINTEL SCHEDULE:

STEEL ANGLES TO HAVE MINIMUM 4" BEARING ONTO BRICK AT EACH END.

_

() L3x3x1/4"

2 L5x3"x1/4"

3 L5x3-1/2x5/16"

(4) L5x3-1/2"x5/16" ROLLED OR EQUAL ARCHED COMPONENT.

SECURE LINTEL TO HEADER w/(2) 1/2" DIAMETER LAG SCREWS STAGGERED @ 16" O.C. (TYP FOR 3)

 WALL STUD SCHEDULE (10 FT HEIGHT)

 STUD SIZE

 STUD SPACING (0.C.)

		UND OF A		
	ROOF ONLY	ROOF ∉ 1 FLOOR	ROOF ∉ 2 FLOORS	NON-LOAD BEARING
2×4	24"	16"	12"	24"
2x6	24"	24"	16"	24"
<u>NOTES:</u> 1. BRACED	WALLS STUDS	3 SHALL BE ,	4 MAX <i>. O</i> F 16	" O.C.

2. STUDS SUPPORTS OPTIONAL WALK-UP ATTIC SHALL BE SPACED A MAX. OF 16" O.C.

3. TWO STORY WALLS SHALL BE FRAMED w/ 2x4 STUDS @ 12" O.C. OR 2x6 STUDS @ 16" O.C. BALLOON FRAMED w/ CROSS BRACING @ 6'-0" O.C. VERTICALLY.

SHADED WALLS INDICATED LOAD BEARING WALLS

JOIST & BEAM SIZES SHOWN ARE MINIMUMS. BUILDER MAY INCREASE DEPTH FOR EASE OF CONSTRUCTION.

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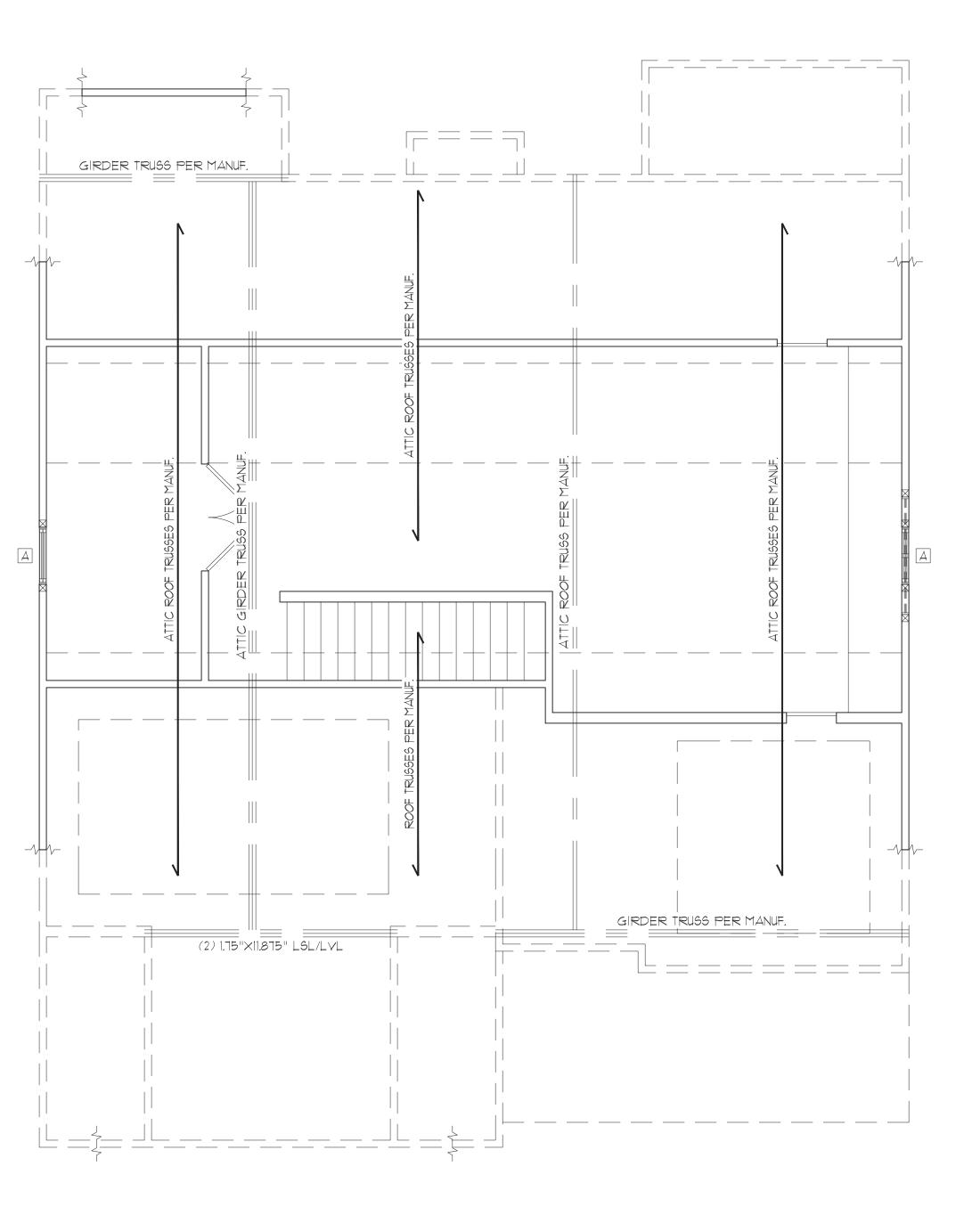
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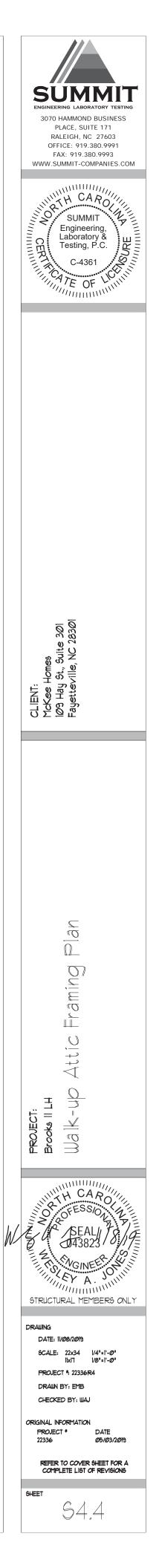
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

WALK-UP ATTIC FRAMING PLAN

SCALE: 1/4"=1'-Ø" ON 22"x34" OR 1/8"=1'-Ø" ON 11"x17"



CLASSIC



TRUSS UPLIFT CONNECTOR SCHEDULE				
MAX, UPLIFT	ROOF TO WALL	FLOOR TO FLOOR	FLOOR TO FND	
600 LBS	H2.5A	PER WALL SHEATHIN	G & FASTENERS	
12 <i>00</i> LBS	(2) H2.5A	CS16 (END = 11")	DTT2Z	
1450 LBS	HTS2Ø	CS16 (END = 11")	DTT2Z	
2 <i>000</i> LBS	(2) MTS2Ø	(2) CS16 (END = 11")	DTT2Z	
2900 LBS	(2) HTS2Ø	(2) CS16 (END = 11")	HTT4	
3685 LBS	LGT3-SDS2.5	MSTC52	HTT4	
 ALL PRODUCTS LISTED ARE SIMPSON STRONG-TIE. EQUIVALENT PRODUCTS MAY BE USED PER MANUFACTURER'S SPECIFICATIONS. UPLIFT VALUES LISTED ARE FOR SYP #2 GRADE MEMBERS. REFER TO TRUSS LAYOUT PER MANUF. FOR UPLIFT VALUES AND TRUSS TO TRUSS CONNECTIONS. CONNECTORS SPECIFIED BY TRUSS MANUFACTURER OVERRIDE THOSE LISTED ABOVE. CONTACT SUMMIT FOR REQUIRED CONNECTORS WHEN LOADS 				

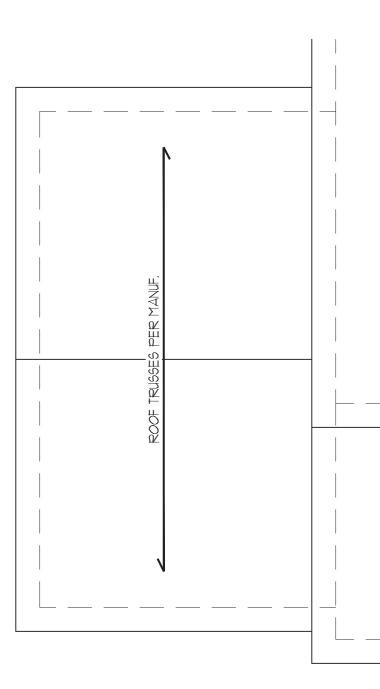
NOTE: IST PLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP, UNO)

EXCEED THOSE LISTED ABOVE.

NOTE: ROOF TRUSSES SHALL BE SPACED TO SUPPORT FALSE FRAMED DORMER WALLS (TYP, UNO)

REFER TO DETAIL 5/D3F FOR EYEBROW, RETURN OR SHED ROOF FRAMING REQUIREMENTS. (TYP FOR ROOFS PROTRUDING MAXIMUM 24" FROM STRUCTURE)

NOTE: TRUSS UPLIFT LOADS SHALL BE DETERMINED PER TRUSS MANUFACTURER IN ACCORDANCE WITH SECTION R&02.11.11. WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST THE WIND UPLIFT LOAD PATH IN ACCORDANCE WITH METHOD 3 OF SECTION R602.3.5 OF THE 2018 NCRC. REFER TO BRACED WALL PLANS FOR SHEATHING AND FASTENER REQUIREMENTS.



<u>OPT. 3RD CAR GARAGE</u>

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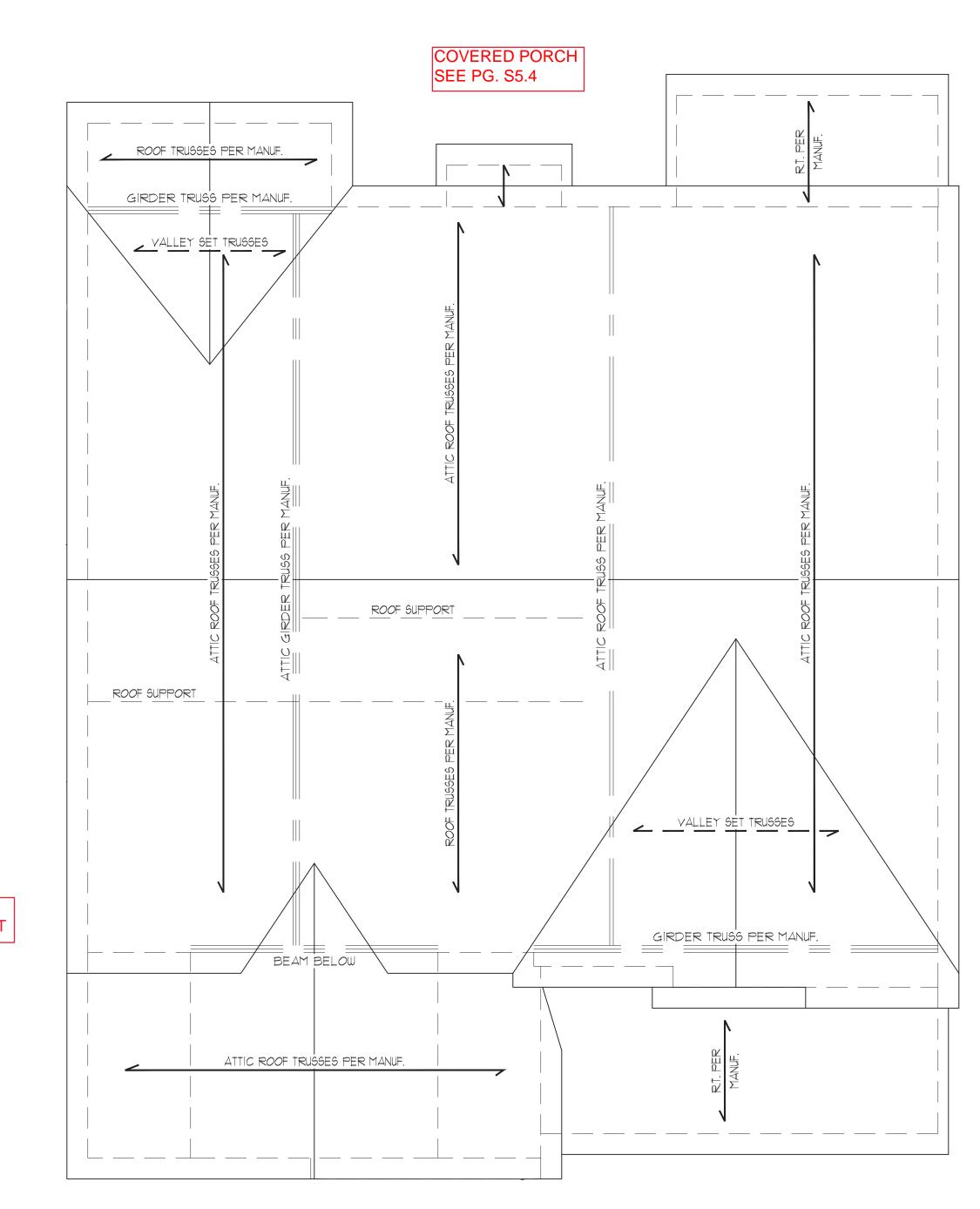
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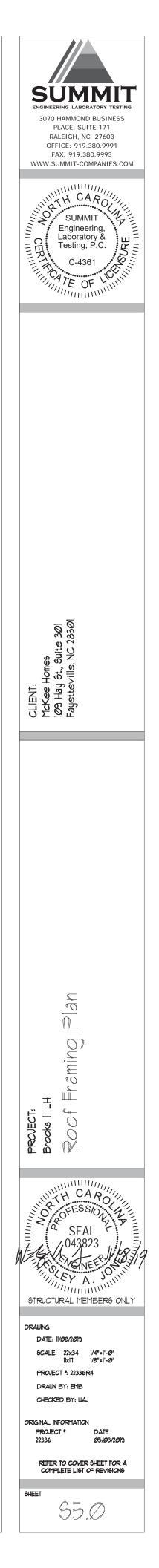
ROOF FRAMING PLAN

SCALE: 1/4"=1'-Ø" ON 22"x34" OR 1/8"=1'-Ø" ON 11"x17"



3RD CAR GARAGE SEE DETAIL TO LEFT

CLASSIC



TRUSS UPLIFT CONNECTOR SCHEDULE			
MAX, UPLIFT	ROOF TO WALL	FLOOR TO FLOOR	FLOOR TO FND
600 LBS	H2.5A	PER WALL SHEATHIN	NG ≰ FASTENERS
12 <i>00</i> LBS	(2) H2.5A	CS16 (END = 11")	DTT2Z
1450 LBS	HTS2Ø	CS16 (END = 11")	DTT2Z
2 <i>000</i> LBS	(2) MTS2Ø	(2) CS16 (END = 11")	DTT2Z
2900 LBS	(2) HTS2Ø	(2) CS16 (END = 11")	HTT4
3685 LBS	LGT3-SDS2.5	MSTC52	HTT4
 ALL PRODUCTS LISTED ARE SIMPSON STRONG-TIE. EQUIVALENT PRODUCTS MAY BE USED PER MANUFACTURER'S SPECIFICATIONS. UPLIFT VALUES LISTED ARE FOR SYP #2 GRADE MEMBERS. REFER TO TRUSS LAYOUT PER MANUF. FOR UPLIFT VALUES AND TRUSS TO TRUSS CONNECTIONS. CONNECTORS SPECIFIED BY TRUSS MANUFACTURER OVERRIDE THOSE LISTED ABOVE. CONTACT SUMMIT FOR REQUIRED CONNECTORS WHEN LOADS EXCEED THOSE LISTED ABOVE. 			

NOTE: IST PLY OF ALL SHOWN GIRDER TRUSSES TO ALIGN WITH INSIDE FACE OF WALL (TYP, UNO)

NOTE: ROOF TRUSSES SHALL BE SPACED TO SUPPORT FALSE FRAMED DORMER WALLS (TYP, UNO)

REFER TO DETAIL 5/D3F FOR EYEBROW, RETURN OR SHED ROOF FRAMING REQUIREMENTS. (TYP FOR ROOFS PROTRUDING MAXIMUM 24" FROM STRUCTURE)

NOTE: TRUSS UPLIFT LOADS SHALL BE DETERMINED PER TRUSS MANUFACTURER IN ACCORDANCE WITH SECTION R802.11.1.1. WALL SHEATHING AND FASTENERS HAVE BEEN DESIGNED TO RESIST THE WIND UPLIFT LOAD PATH IN ACCORDANCE WITH METHOD 3 OF SECTION R602.3.5 OF THE 2018 NCRC. REFER TO BRACED WALL PLANS FOR SHEATHING AND FASTENER REQUIREMENTS.

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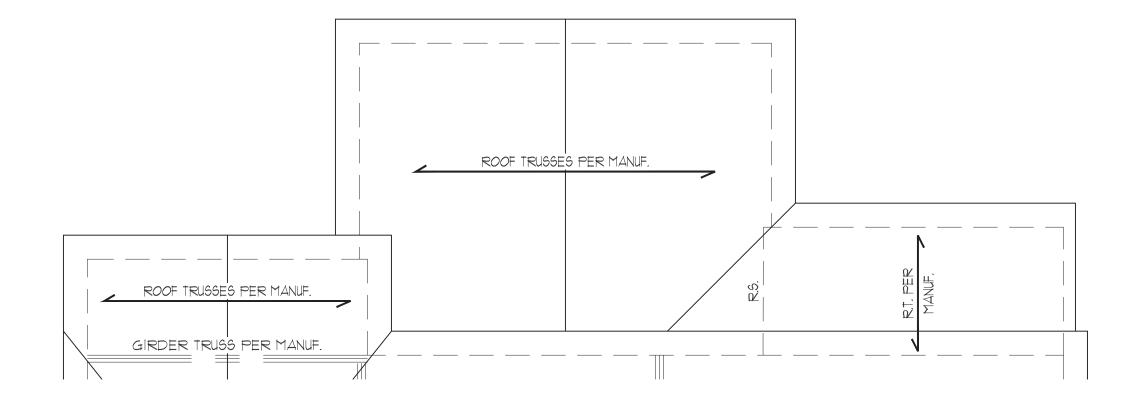
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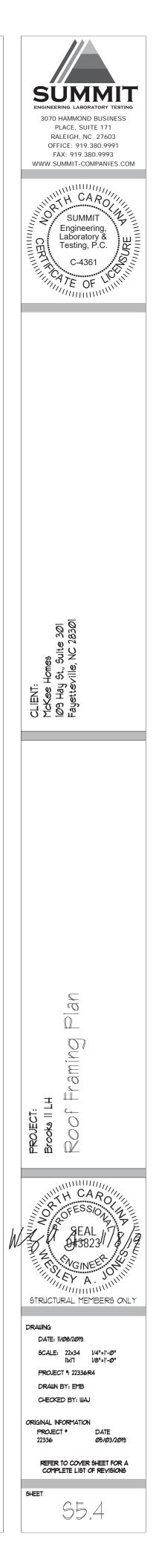
STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

ROOF FRAMING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



OPT. COVERED PORCH



	REQUIRED	BRACED W	ALL PANEL CONNE	CTIONS
			REQUIRED	CONNECTION
METHOD	MATERIAL	MIN. THICKNESS	@ PANEL EDGES	@ INTERMEDIATE SUPPORTS
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
PF	WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.1	PER FIGURE R602.10.1
	·	**OR EQUIVALEN	T PER TABLE R102,3,5	

BRACED WALL NOTES:

- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2018 INTERNATIONAL RESIDENTIAL CODE WITH ALL LOCAL AND STATE AMENDMENTS.
- 2. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE DESIGN WIND SPEEDS UP TO 130 MPH. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES.
- 4. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN
- ACCORDANCE WITH TABLE R602.10.1 5. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL
- NOT EXCEED 10 FEET FOR ISOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS. 6. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.1.
- 1. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
- 8. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
- 9. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
- 10. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 12 FEET OF EACH END OF A BRACED WALL LINE.
- 11. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 21 FEET.
- 12. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.4.3 OF THE 2018 IRC OR DETAIL 2/D2f. 13. BRACED WALL PANEL CONNECTIONS TO FLOOR/CEILING SHALL BE
- CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.4
- 14. BRACED WALL PANEL CONNECTIONS TO ROOF SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION R602.10.4.5
- 15. CRIPPLE WALLS AND WALK OUT BASEMENT WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.104.6
- 16. PORTAL WALLS SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R6Ø2.1Ø.1 (UNO) 17. ON SCHEMATIC, SHADED WALLS INDICATE BRACED WALL PANELS.
- 18. ABBREVIATIONS:

GB = GYPSUM BOARD PF = PORTAL FRAME

WSP = WOOD STRUCTURAL PANEL CS-XXX = CONT. SHEATHED ENG = ENGINEERED SOLUTION PF-ENG = ENG, PORTAL FRAME

INSTALL HOLD-DOWNS FOR BRACED WALL END CONDITIONS PER SECTION R602.10.4 AND FIGURE R602.10.3(4) OF THE 2018 NCRC.

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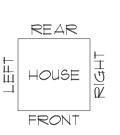
STRUCTURAL MEMBERS ONLY

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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

FIRST FLOOR BRACING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



20

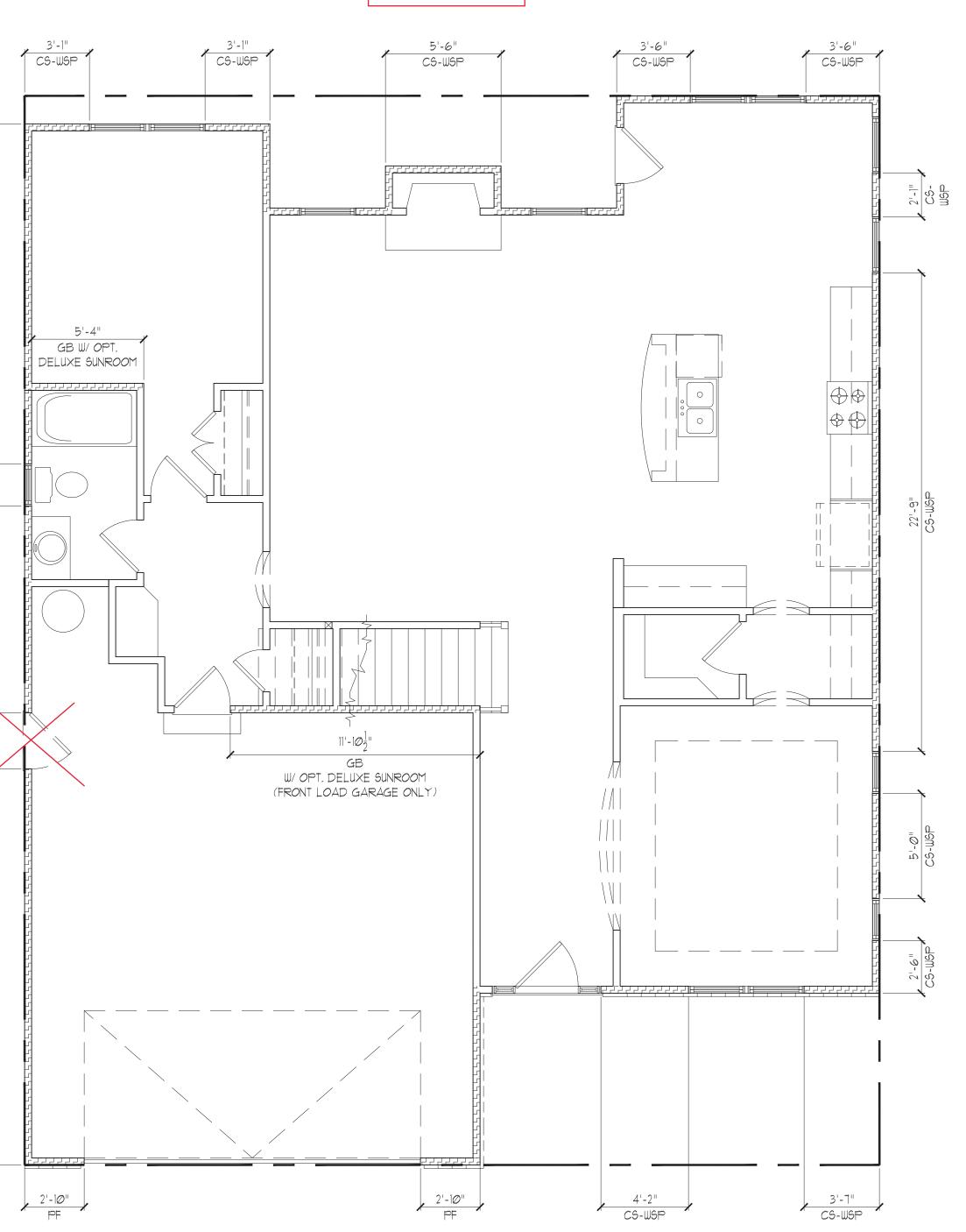
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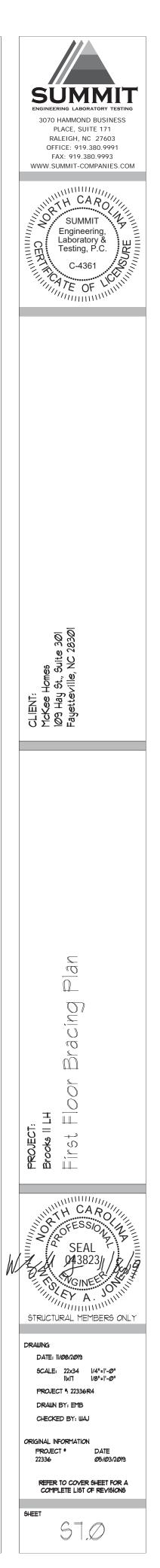
3RD CAR GARAGE

SEE PG. S7.4



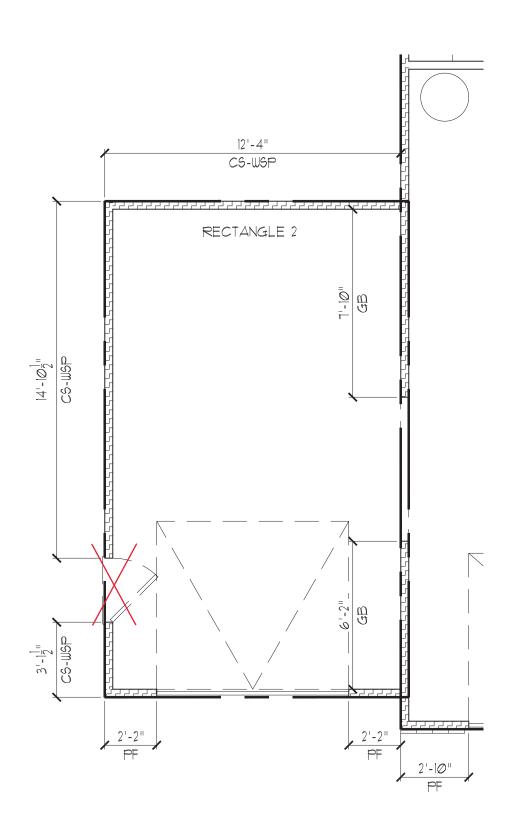
COVERED PORCH

CLASSIC



FIRST FLOOR BRACING (FT)				
	CLASSIC			
	REQUIRED	PROVIDED		
FRONT	16.1	16.2		
LEFT	13.1	44.8		
REAR	16.1	18.6		
RIGHT	13.1	32.3		
FIRST FL	_OOR BRAC	ING (FT)		

OPT. SIDE LOAD GARAGE				
REQUIRED PROVIDED				
FRONT	16.4	24 <i>.</i> Ø		
LEFT	13,1	3Ø.2		
REAR	16.4	18.6		
RIGHT	13,1	32.3		



<u>OPT. 3RD CAR GARAGE</u>

FIRST FLOOR BRACING (FT)				
RECTANGLE 1				
	REQUIRED PROVIDED			
FRONT	16.1	*VARIES*		
LEFT	13.1	29.0		
REAR	16.1	18.6		
RIGHT	13.1	32.3		

FIRST FLOOR BRACING (FT)

RECTANGLE 2			
REQUIRED PROVIDED			
FRONT	3.2	6.5	
LEFT	2.3	18.0	
REAR	3.2	12.3	
RIGHT	2.3	3.5	

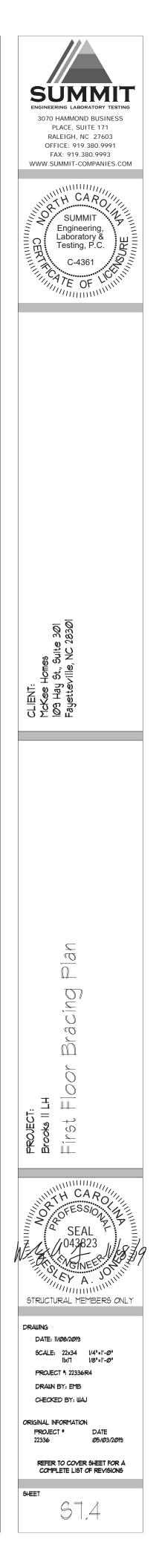
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FIRST FLOOR BRACING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"



REQUIRED	BRACED W	ALL PANEL CONNE	CTIONS	
		REQUIRED CONNECTION		
MATERIAL	MIN, THICKNESS	@ PANEL EDGES	@ INTERMEDIATE SUPPORTS	
WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.	
GYPSUM BOARD	1/2"	5d COOLER NAILS** @ 7" O.C.	5d COOLER NAILS** @ 7" O.C.	
WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.	
WOOD STRUCTURAL PANEL	7/16"	PER FIGURE R602.10.1	PER FIGURE R602.10.1	
	MATERIAL WOOD STRUCTURAL PANEL GYPSUM BOARD WOOD STRUCTURAL PANEL WOOD STRUCTURAL	MATERIALMIN. THICKNESSWOOD STRUCTURAL PANEL3/8"GYPSUM BOARD1/2"WOOD STRUCTURAL PANEL3/8"WOOD STRUCTURAL PANEL3/8"	MATERIAL MIN. THICKNESS @ PANEL EDGES WOOD STRUCTURAL 3/8" 6d COMMON NAILS PANEL 3/8" 6d COOLER NAILS** GYPSUM BOARD 1/2" 5d COOLER NAILS** WOOD STRUCTURAL 3/8" 6d COMMON NAILS WOOD STRUCTURAL 3/8" 6d COMMON NAILS WOOD STRUCTURAL 3/8" 6d COMMON NAILS WOOD STRUCTURAL 1/6" PER EIGURE R602101	

BRACED WALL NOTES:

- WALLS SHALL BE DESIGNED IN ACCORDANCE WITH SECTION R602.10 FROM THE 2018 INTERNATIONAL REGIDENTIAL CODE WITH ALL LOCAL AND STATE AMENDMENTS.
- 2. WALLS ARE DESIGNED FOR SEISMIC ZONES A-C AND ULTIMATE DESIGN WIND SPEEDS UP TO 130 MPH.
- 3. REFER TO ARCHITECTURAL PLAN FOR DOOR/WINDOW OPENING SIZES. 4. BRACING MATERIALS, METHODS AND FASTENERS SHALL BE IN
- ACCORDANCE WITH TABLE R602.10.1
- 5. ALL BRACED WALL PANELS SHALL BE FULL WALL HEIGHT AND SHALL NOT EXCEED 10 FEET FOR IGOLATED PANEL METHOD AND 12 FEET FOR CONTINUOUS SHEATHING METHOD WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
- 6. MINIMUM PANEL LENGTH SHALL BE PER TABLE R602.10.1.
- 1. THE INTERIOR SIDE OF EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED CONTINUOUSLY WITH MINIMUM 1/2" GYPSUM BOARD (UNO).
- 8. FOR CONTINUOUS SHEATHING METHOD, EXTERIOR WALLS SHALL BE SHEATHED ON ALL SHEATHABLE SURFACES INCLUDING INFILL AREAS BETWEEN BRACED WALL PANELS, ABOVE AND BELOW WALL OPENINGS, AND ON GABLE END WALLS.
- 9. FLOORS SHALL NOT BE CANTILEVERED MORE THAN 24" BEYOND THE FOUNDATION OR BEARING WALL BELOW WITHOUT ADDITIONAL ENGINEERING CALCULATIONS.
- 10. A BRACED WALL PANEL SHALL BE LOCATED WITHIN 12 FEET OF EACH END OF A BRACED WALL LINE.
- 11. THE MAXIMUM EDGE DISTANCE BETWEEN BRACED WALL PANELS SHALL NOT EXCEED 21 FEET.
- 12. MASONRY OR CONCRETE STEM WALLS WITH A LENGTH OF 48" OR LESS SUPPORTING A BRACED WALL PANEL SHALL BE DESIGNED IN ACCORDANCE WITH FIGURE R602.10.4.3 OF THE 2018 IRC OR DETAIL 2/D2f.
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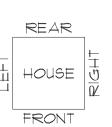
STRUCTURAL MEMBERS ONLY

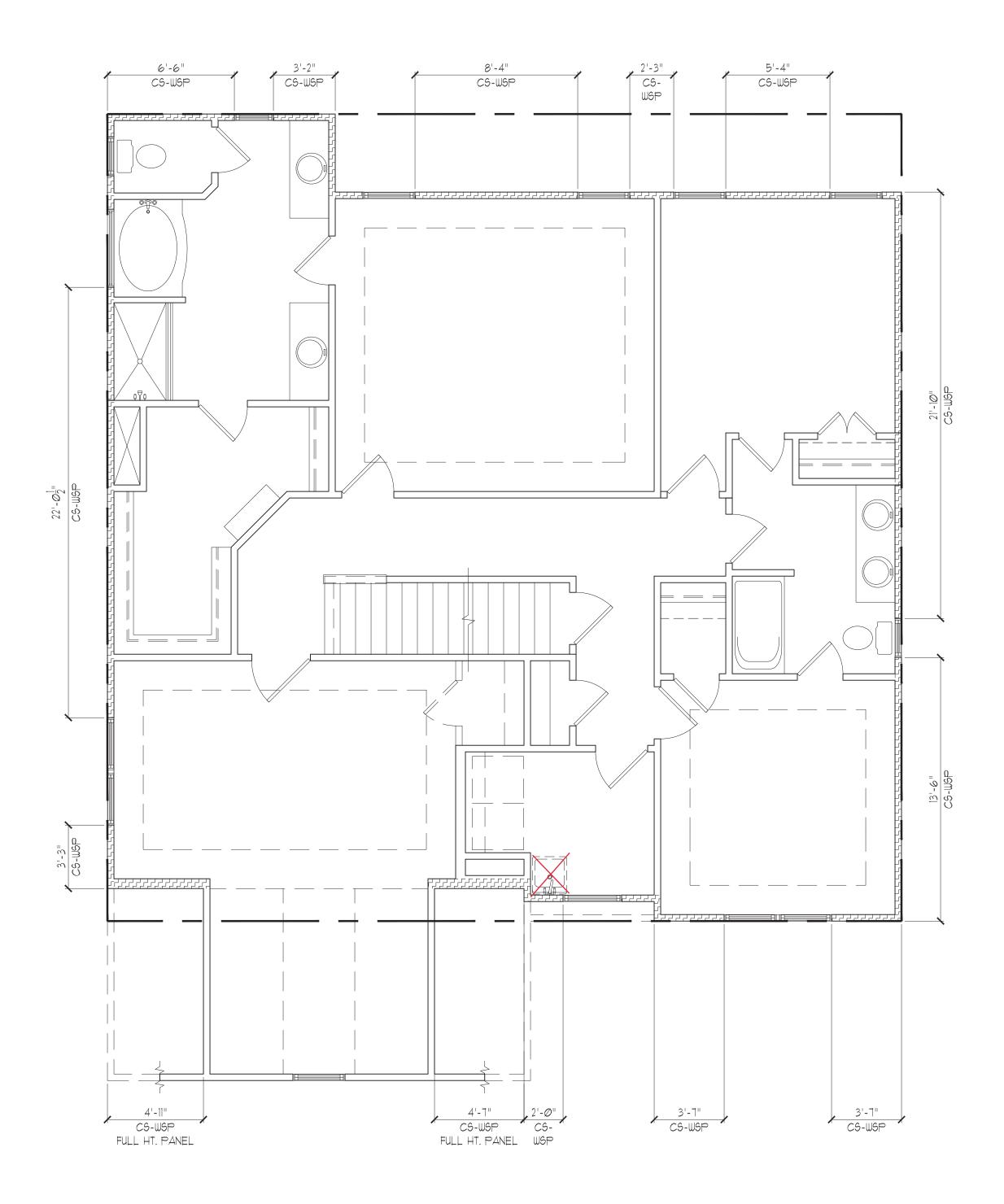
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STRUCTURAL ANALYSIS BASED ON 2018 NCRC.

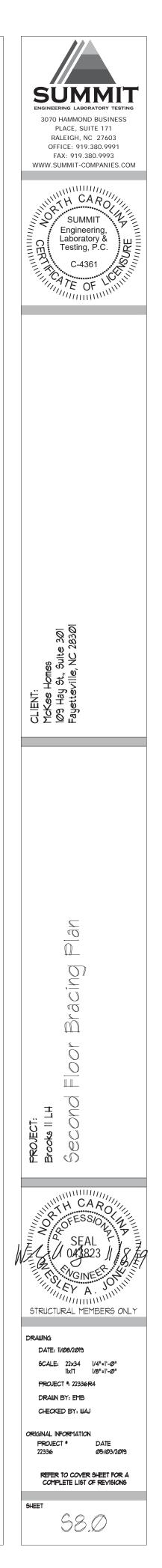
SECOND FLOOR BRACING PLAN

SCALE: 1/4"=1'-0" ON 22"x34" OR 1/8"=1'-0" ON 11"x17"





CLASSIC



SECOND FLOOR BRACING (FT)				
CONTINUOUS SHEATHING METHOD				
	REQUIRED	PROVIDED		
FRONT	6.3	18.6		
LEFT 6.2 25.2				
REAR	6.3	25.5		
RIGHT	6.2	35.3		

	DE5/GN SPECIFICATIONS: Construction Type: Commerical Residential Image: Second S	ENGINEERING LABORATORY TESTING	Sheet No. Description C6I Cover Sheet, Specifications, Revisions Dim Monolithic Slab Foundation Details Dis Shem Wall Foundation Details Dic Crawl Space Foundation Details Dib Basement Foundation Details Dif Framing Details
	4. Floor Live Loads 40 PGF 41. Typ. Duelling 40 PGF 42. Sleeping Areas 30 PGF 43. Decks 40 PGF 44. Passenger Garage 50 PGF 55. Floor Dead Loads 50 PGF 52. I-Joint Izx 10 PGF 53. Floor True 15 PGF 6. Ultimate Design Wind Speed (3 sec. gust) 130 MPH 61. Exposure B 62. Importance Factor 10 63. Wind Speed Yu = 63. Vu =	Standard Details PROJECT ADDRESS: TBD McKee Homes 109 Hay St., Suite 301 Fayetteville, NC 28301 DESIGNER:	Revision Date Project Description No. Date Project Description I UIU9 - Updated to 2018 NCRC
	1. Component and Cladding (in PSF) MEAN ROOF UP TO 30 30"1"-35' 351"-40' 40"1"-45' HT. ID 70 30 30"1"-35' 351"-40' 40"1"-45' ZONE 1 16.1,-180 115,-18.9 182,-19.6 181,-202 ZONE 2 161,-210 115,-22.1 182,-22.9 181,-23.5 ZONE 3 16.1,-210 115,-22.1 182,-22.9 181,-23.5 ZONE 4 182,-19.0 192,-20.2 193,-26.1 204,-26.3 2. Design Category C 83. Importance Factor C 8.1. Botte Class D 20,-25.2 193,-26.1 204,-26.3 8.2. Design Category C 83. Importance Factor C 8.3. Importance Factor L0 84. Selamic Use Group I 8.4. Setamic Use Group I 85.1 Sms = %g 86.1 Vx = 86.2 Vy = 8.1. Basic Structural System (check one) IX Bastring Uall Implement Frame Building Frame Building Frame Dual w/ Special Moment Frame Dual w/ Special Moment Frame Inverted Pendulum 8.4. Acthtech Components Achobred Commonets Achobred	These drawings are to be coordinated with the architectural, mechanical, plumbing, electrical, and civil drawings. This coordination is not the responsibility of the structural engineering of coord (SER). Should any discrepancies become apparent, the contractor shall notify SUMMIT Engineering, Laboratory 4 Testing, P.C. before construction begins. ELAN ABBREVIATIONS: AB ANCHOR BOLT PT PRESSURE TREATED AF ABOVE FINISHED FLOOR R5 ROOF SUPPORT CJ. CELLING JOIST SC STUD COLUMN CLR CLEAR SJ SINGLE JOIST D DOUBLE JOIST SF SPRUCE PINE FIR DSP DOUBLE STUD POCKET S61 SIMPSON STRONGS-TIE EE EACH MAD STP SOUTHERN YELLOW PINE EW EACH WAY TJ TRIPLE STUD POCKET OC ON CENTER TYP TYPICAL PSF POUNDS PER SQUARE FOOT UNO INLESS NOTED OTHERWISE PSI POUNDS PER SQUARE INCH WELDED WIRE FABRIC	Image: Construction of the sector of the
 GENERAL STRUCTURAL NOTES: The design professional whose seal appears on these drawings is the structural engineer of record (SER) for this project. The SER bears the responsibility of the primary structural elements and the performance of this structure. No other party may revise, alter, or delete any structural aspects of these construction documents without written permission of SUMMIT Engineering. Laboratory 4 Testing, P.C. (SUMMIT) or the SER. For the purposes of these construction documents the SER and SUMMIT shall be considered the same entity. The structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure. The SER is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The SER will not be held responsible for the contractor's failure to conform to the contract documents, should any non-conformities occur. Any structural elements or details not fully developed on the construction drawings shall be completed inder the direction of a licensed professional engineer. These shop drawings shall be submitted to SUMMIT for reviewed for overall compliance as it relates to the structural design of this project. Verification of the shop drawings will be reviewed for overall compliance as it relates to the structural design of this project. Verification of the SER the contractor shall verify the field conditions, is not the responsibility of the SER of SUMMIT. Verification of assumed field conditions for accuracy and report any discrepancies to SUMMIT before construction begins. The SER is not responsible for any secondary structural elements or non-structural elements, except for the elements specifically noted on the structural drawings. This structure and all construction shall conform to all applicable sections of the international residential code. This structure and all	 the region in which the structure is to be constructed. However, the bottom of all footings shall be a minimum of 12" below grade. Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95% maximum dry density. Excavations of footings shall be lined temporarily with a 6 mill polyathylene membrane if placement of concrete data of a monotonic of a scavation. No concrete shall be placed against any subgrade containing water, ice, frost, or loose material. STRICTURAL STEEL: Structural steel shall be fabricated and erected in accordance in manual of steel Construction "Load Resistance Factor Design" latest editions. Biructural steel shall have a minimum yield stress (Fy) of 36 kis unless otherwise noted. Concrete shall have a normal weight aggregate and a minimum compressive strength (F₂) at 28 days of 30000 psi, unless otherwise noted. Concrete shall have a normal weight aggregate and a minimum cole the proportioned, mixed, and placed in accordance with the latest editions of ACI 30⁶. Concrete shall have a normal weight aggregate and a minimum cole the placed in accordance with the latest editions of ACI 30⁶. Detailing, fabrication, or fibermesh shall comply requirements, and shall 	 discrepancies become apparent, the contractor shall notify SUMMIT immediately. discrepancies become apparent, the contractor shall notify SUMMIT immediately. discrepancies become apparent, the contractor shall notify SUMMIT immediately. discrepancies become apparent, the contractor shall notify SUMMIT immediately. discrepancies become apparent, the contractor shall notify SUMMIT immediately. discrepancies become apparent, the contractor shall be contract with accordance with the above assumptions. to there reinforcing steel is required vertically dow provided unless otherwise noted. Solid sam wood framing members shall conform to apportide through a sam cut joint. Solid sam wood framing members are de Specification for Wood Construction? (ND other wise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted, all wood framing members are de Specification for Wood Construction? (ND otherwise noted and babe on context with AWPA standard C-2 Wood Int context with AWPA standard C-2 Wall be any be well be in accordance with AWPA standard C-2 Nalls shall be common wire nalls unless otherwise noted. Exterior and load bearing stud wills are to be 2 Wood It, any local building code in eact or wood the ouble top plate. Studs shall be commin sole plate to the double top plate	The douel I. The wood truss manufacturer/fabricator is responsible for the design of the wood trusses. Submit sealed shop drawings and supporting calculations to the SER for review prior to fabrication. The SER shall have a minimum of five (5) days for review. The review by the SER shall review for overall compliance with the design documents. The SER shall review for overall compliance with the design documents. The SER shall review for overall compliance with the design documents. The SER shall review for overall compliance with the design documents. The SER shall review for overall compliance with the design documents. The SER shall review for the screaters is specifications. The truss of the wood trusses. 50. Inless The wood trusses shall be designed for all required loadings as specifications. The truss drawings should not the select of the trustes. 60. Complexity of the trusses. The trusses shall be designed, fabricated with all other construction documents and provisions provided for load shown on these drawings including but not limited to HVAC equipment, piping, and architectural fixtures attached to the trusses. 8. The trusses shall be designed, fabricated, and erected in accordance with the latest colition of the "National Design Specification for Meal Plate Connected Wood Trusses." 9. The trusses shall be designed, fabricated, and erected in accordance with the altest edition of the "National Design Specification for Meal Plate Connected Wood Trusses." 9. The trusses shall be designed, fabricated, and erected in accordance with the altest edition of the "Stational Design Specification for Meal Plate Connected Wood Trusses." 9. The trusse det with the shop drawings. Also, the shop drawings shall show the required attachments

- Initial studies and be contributed in Individual studies forming a column shall be attached with one loci nail $e \in 0^{\circ}$ O.C. staggered. The studi column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer. Multi-ply beams shall have each ply attached with (3) loci nails e
- 24" 0'C
- noted otherwise.

- All structurally required wood sheathing shall bear the mark of the APA.

- 4
- FOUNDATIONS: I. The structural engineer has not performed a subsurface investigation. Verification of this assumed value is the responsibility of the owner or the contractor. Should any adverse soil condition be encountered the SER must be contacted before proceeding.

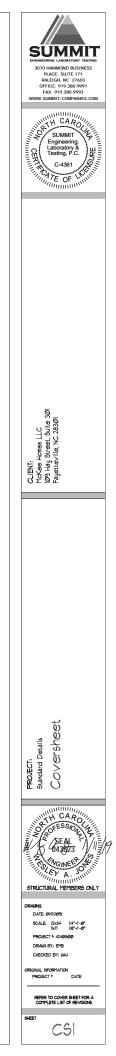
of the current local building code.

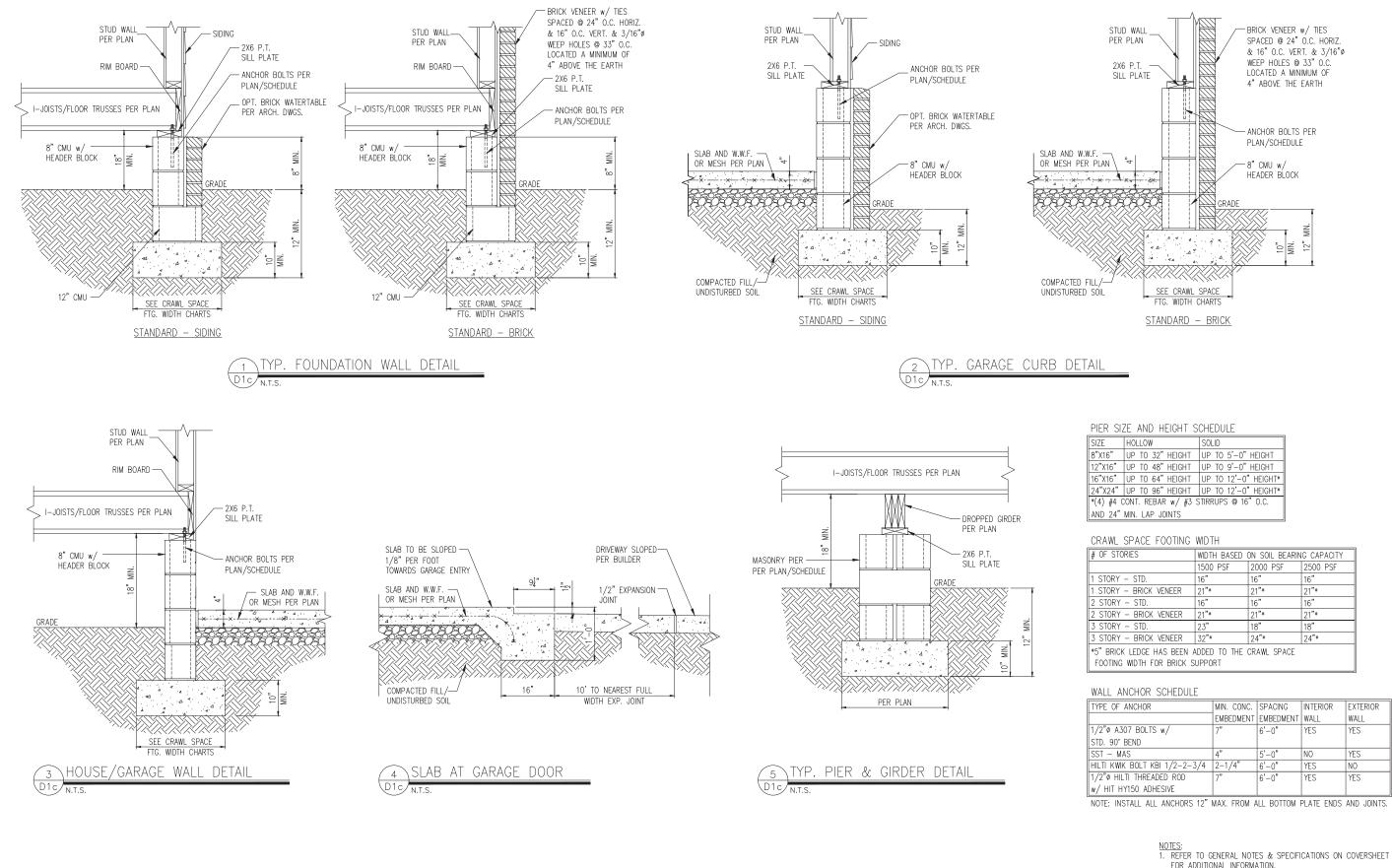
- Requirements for Reinforced Concrete" and ACI 301: "Specifications for Structural Concrete for Buildings". Air entrained concrete must be used for all structural elements
- exposed to freeze/thau cycles and deicing chemicals. Air entrainment amounts (in percent) shall be within -1% to +2% of target values as follows: 3.1. Footings: 5% 3.2. Exterior Glabs: 5%

- No admixtures shall be added to any structural concrete without written permission of the SER.
- Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the latest edition of ACI 315: "Manual of
- be in accordance with the latest edition of ACI 3B: "Manual of Standard Practice for Detailing Concrete Structures" Horizontal footing and wall reinforcement shall be continuous and shall have 30° bends, or corner bars with the same size/spacing as the horizontal reinforcement with a class B tension splice. Lap reinforcement as required, a minimum of 40 bar diameters for tension or compression unless otherwise noted. Splices in masorry shall be a minimum of 48 bar diameters.

- Four and five ply beams shall be bolted together with (2) rows of 1/2" diameter through bolts staggered @ 16" O.C. unless not of how to be and the staggered of the
- codes and as referenced on the structural plans, either through code references or construction details.
- UDOD STRUCTURAL PANELS: 1. Fabrication and placement of structural wood sheathing shall be in accordance with the APA Design/Construction Guide "Residential and Commercial," and all other applicable APA

3.	Wood wall sheathing shall comply with the requirements of local
	building codes for the appropriate state as indicated on these drawings. Refer to wall bracing notes in plan set for more information. Sheathing shall be applied with the long direction perpendicular to framing, unless noted otherwise.
4.	Roof sheathing shall be APA rated sheathing exposure I or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with (1)-8d CC nail at 6'o/c at panel edges and at 12'o/c in panel field unless
	otherwise noted on the plans. Sheathing shall be applied with the long direction perpendicular to framing. Sheathing shall have a span rating consistent with the framing spacing, Use suitable edge support by use of plywood clips or lumber
	blocking unless otherwise noted. Panel end joints shall occur over framing. Apply building paper over the sheathing as required by the state Building Code.
5.	Wood floot sheathing shall be APA rated sheathing exposure I or 2. Attach sheathing to its supporting framing with (1)-8d CC ringshark hall at 6'o/c at panel edges and at 12'o/c in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing, Sheathing shall have a span rating consistent with the framing spacing. Use suitable edge support by use of T4G plywood or lumber blocking unless otherwise noted. Panel end joints shall occur over framing. Appli building paper over the sheathing as required by the state Building Code.
6.	Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.
<u>STR</u> I. 2.	<u>UCTURAL FIBERBOARD PANELS:</u> Fabrication and placement of structural fiberboard sheathing shall be in accordance with the applicable AFA standards. All structurally required fiberboard sheathing shall bear the
3.	The source of the source in the source of th
4.	Sheathing shall have a 1/8" gap at panel ends and edges are recommended in accordance with the AFA.





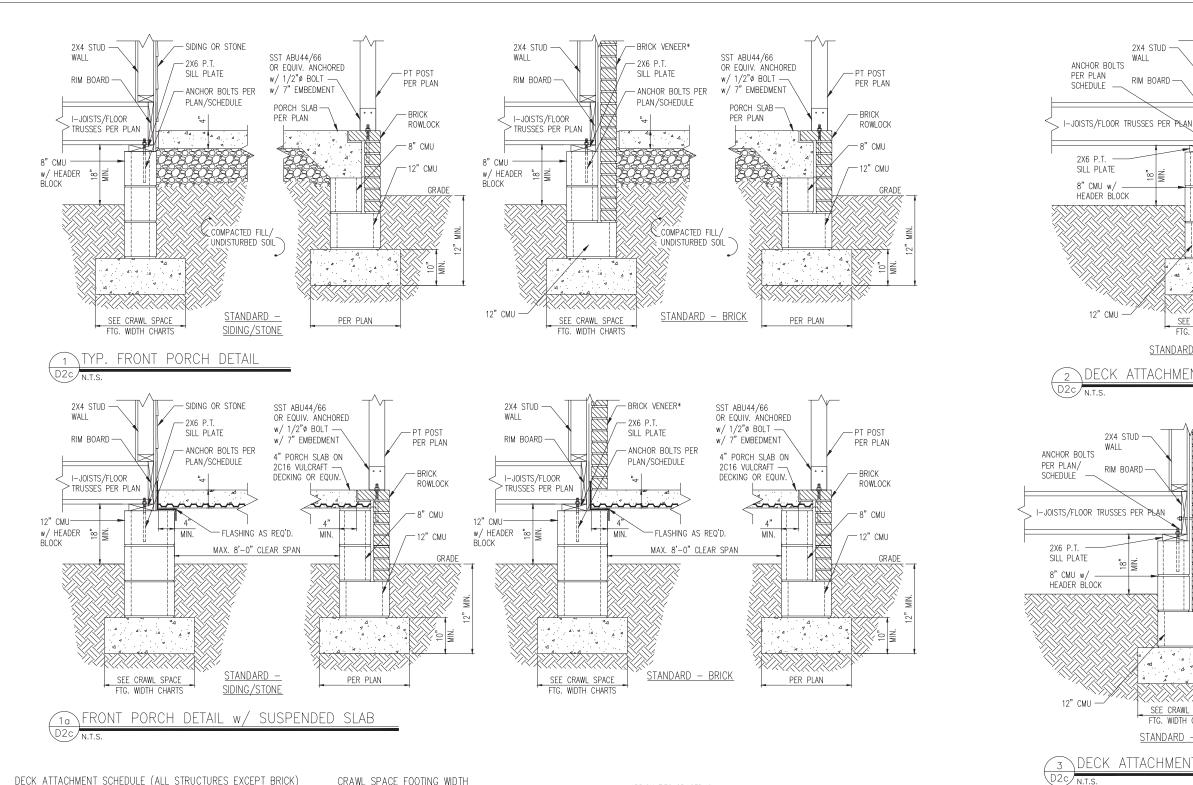
HOLLOW	SOLID			
UP TO 32" HEIGHT	UP TO 5'-0" HEIGHT			
	UP TO 9'-0" HEIGHT			
UP TO 64" HEIGHT	UP TO 12'-0" HEIGHT*			
UP TO 96" HEIGHT	UP TO 12'-0" HEIGHT*			
ONT. REBAR w/ #3 STIRRUPS @ 16" O.C.				
MIN. LAP JOINTS				

RIES	WIDTH BASED ON SOIL BEARING CAPACITY			
	1500 PSF	2000 PSF	2500 PSF	
- STD.	16"	16"	16"	
- BRICK VENEER	21"*	21"*	21"*	
- STD.	16"	16"	16"	
- BRICK VENEER	21"*	21"*	21"*	
- STD.	23"	18"	18"	
- BRICK VENEER	32"*	24"*	24"*	
LEDGE HAS BEEN ADDED TO THE CRAWL SPACE WIDTH FOR BRICK SUPPORT				

ANCHOR	MIN. CONC.	SPACING	INTERIOR	EXTERIOR
	EMBEDMENT	EMBEDMENT	WALL	WALL
607 BOLTS w/	7"	6'-0"	YES	YES
BEND				
AS	4"	5'-0"	NO	YES
K BOLT KBI 1/2-2-3/4	2-1/4"	6'-0"	YES	NO
TI THREADED ROD	7"	6'-0"	YES	YES
Y150 ADHESIVE				

- FOR ADDITIONAL INFORMATION.
- 2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE. 3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS,
- SLOPES AND DEPRESSIONS. 4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
- 5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
- 6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.2.10 OF THE 2018 NCRC





DECK ATTACHMENT SCHEDULE	(ALL STRUCTURES EXCEPT BRICK)	
--------------------------	-------------------------------	--

FASTENERS	MAX. 8'-0" JOIST	MAX. 16'-0" JOIST
	SPAN	SPAN
5/8" GALV. BOLTS w/ NUT & WASHER ^b	(1) @ 3'-6" O.C.	(1) @ 1'-8" O.C.
AND	AND	AND
12d COMMON GALV NAILS ^C	(2) @ 8" 0 C	(3) @ 6" 0 C

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED. b. MINIMUM EDGE DISTANCE FOR BOLTS IS 22".

c. NAILS MUST PENETRATE THE SUPPORTING STRUCTURE BAND A MINIMUM OF $1\frac{1}{2}^{n}$

DECK ATTACHMENT SCHEDULE (BRICK STRUCTURES)

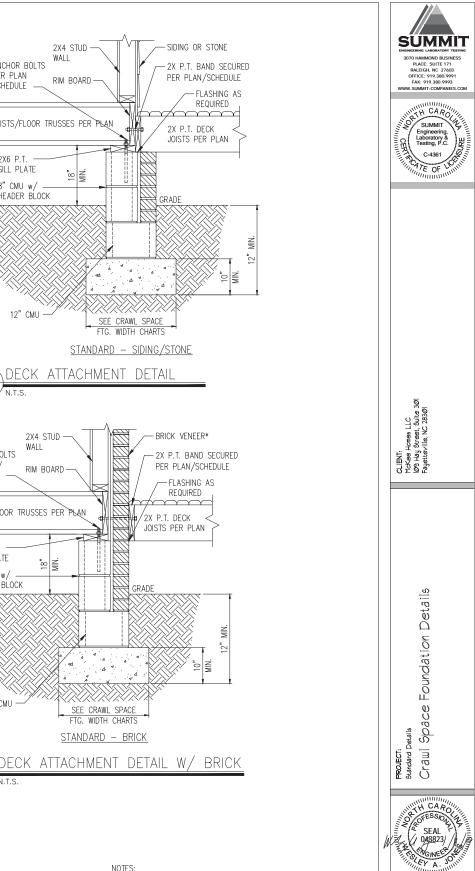
FASTENERS	MAX. 8'-0" JOIST	MAX. 16'-0" JOIST
	SPAN	SPAN
5/8" GALV. BOLTS w/ NUT & WASHER ^b	(1) @ 2'-4" O.C.	(1) @ 1'-4" O.C.

a. ATTACHMENT INTERPOLATION BETWEEN 8' AND 16' JOIST SPANS IS ALLOWED. b. MINIMUM EDGE DISTANCE FOR BOLTS IS $2\frac{1}{2}$ ".

CRAWL SPACE FOOTING WIDTH

# OF STORIES	WIDTH BASED ON SOIL BEARING CAPACITY			
	1500 PSF	2000 PSF	2500 PSF	
1 STORY - STD.	16"	16"	16"	
1 STORY - BRICK VENEER	21"*	21"*	21"*	
2 STORY - STD.	16"	16"	16"	
2 STORY - BRICK VENEER	21"*	21"*	21"*	
3 STORY - STD.	23"	18"	18"	
3 STORY - BRICK VENEER	32"*	24"*	24"*	
*5" BRICK LEDGE HAS BEEN ADDED TO THE CRAWL SPACE FOOTING WIDTH FOR BRICK SUPPORT				

*BRICK TIES SPACED @ 24" O.C. HORIZ. & 16" O.C. VERT. AND 3/16"Ø WEEP HOLES @ 33" O.C. LOCATED A MINIMUM OF 4" ABOVE THE EARTH



NOTES: 1. REFER TO GENERAL NOTES & SPECIFICATIONS ON COVERSHEET FOR ADDITIONAL INFORMATION.

N.T.S

- 2. PROVIDE 6 MIL VAPOR BARRIER UNDER ALL SLABS-ON-GRADE. 3. SEE ARCH. DWGS. FOR ALL TOP OF THE SLAB ELEVATIONS,
- SLOPES AND DEPRESSIONS. 4. REFER TO STRUCTURAL PLANS AND FRAMING DETAILS FOR BRACED WALL PANEL LAYOUT, DIMENSIONS, ATTACHMENT AND CONNECTIONS
- 5. REFER TO LOCAL AND STATEWIDE CODES FOR ADDITIONAL AMENDMENTS AND REQUIREMENTS NOT SHOWN
- 6. PERIMETER INSULATION SHOWN AS REQUIRED BY LOCAL CLIMATE ZONE. INSTALL PER TABLE N1102.2.10 OF THE 2018 NCRC

REFER TO COVER SHEET FOR A COMPLETE LIST OF REVISIONS

D2c

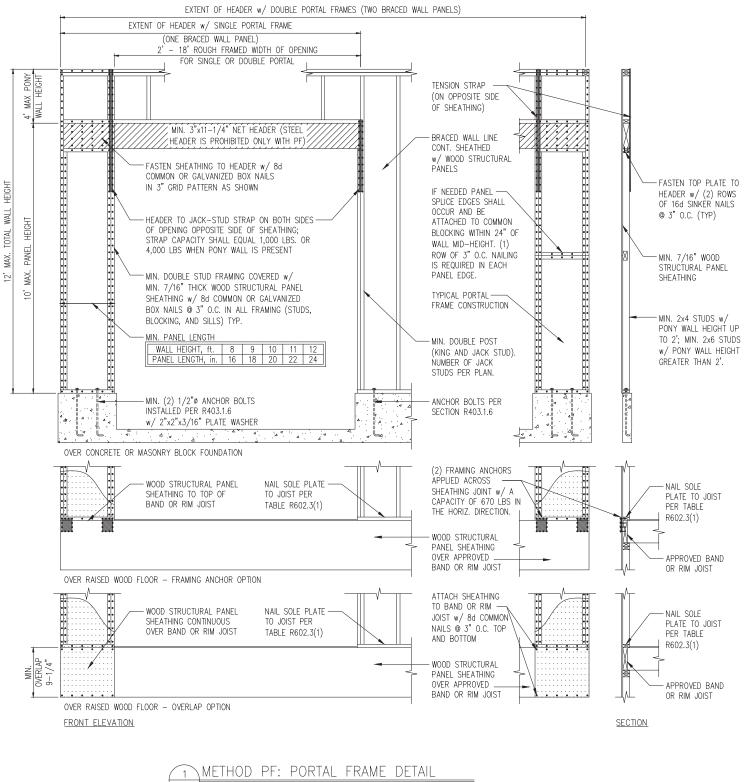
STRUCTURAL MEMBERS ONLY

SCALE: 22x34 1/4"+1"-Ø" 1x11 1/8"+1"-Ø"

PROJECT * 4240500 DRAWN BY; EMB CHECKED BY: WAJ

PROJECT PROJECT DATE

DRAWING DATE: 01/1/2019



D1f 3/8" = 1'-0"

