GENERAL NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL DIMENSIONS, ROOF PITCHES, AND SQUARE FOOTAGE ARE CORRECT PRIOR TO CONSTRUCTION. K&A HOME DESIGNS, INC. IS NOT RESPONSIBLE FOR ANY DIMENSIONING, ROOF PITCH, OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
2. ALL WALLS SHOWN ON THE FLOOR PLANS ARE DRAWN AT 4" UNLESS NOTED OTHERWISE.
3. ALL ANGLED WALL SHOWN ON THE PLANS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
4. STUD WALL DESIGN SHALL CONFORM TO ALL NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS.
5. DO NOT SCALE PLANS. DRAWING SCALE MAY BE DISTORTED DUE TO COPIER IMPERFECTIONS.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA RESIDENTIAL STATE BUILDING CODE, 2018 EDITION.

SQUARE FOOTAGE

HEATED SQUARE FOOTAGE		UNHEATED SQUARE FOOTAGE	
FIRST FLOOR=	2758	GARAGE=	1099
SECOND FLOOR=	1323	FRONT PORCH=	153
THIRD FLOOR=	N/A	SCREEN PORCH=	336
BASEMENT=	N/A	OPT. BEDROOM=	282
		STORAGE=	578

TOTAL HEATED= 4081 **TOTAL UNHEATED= 2448**

CRAWL SPACE VENTILATION CALCULATIONS

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

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

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

2758 SQ. FT. OF CRAWL SPACE/1500

1.83 SQ. FT. OF REQUIRED VENTILATION

PROVIDED BY: 5 VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= 2.25 SQ. FT. OF VENTILATION

FOUNDATION DRAINAGE- WATERPROOFING PER SECTIONS 405 & 406.

ATTIC VENTILATION CALCULATIONS

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

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

4344 SQ. FT. OF ATTIC/300= 14.48

EACH OF INLET AND OUTLET REQUIRED.

****WALL AND ROOF CLADDING DESIGN VALUES***

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

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

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

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

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

***** MEAN ROOF HEIGHT 30' OR LESS***

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

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

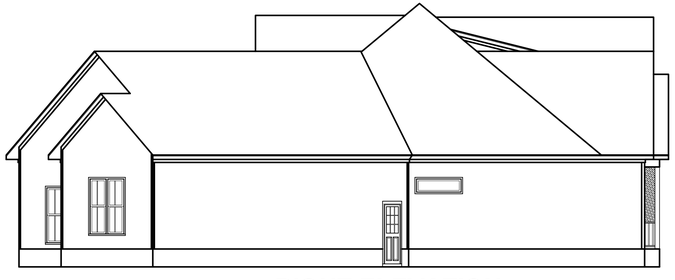
08/16/2021

Harnett COUNTY NORTH CAROLINA

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

REAR ELEVATION
1/8" = 1'-0"

LEFT ELEVATION
1/8" = 1'-0"



RIGHT ELEVATION
1/8" = 1'-0"

Project #: 20-198
Date: 8-14-20
Drawn/Design By: KBB
Scale: REFER TO ELEV.

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

9101 Ten-Ten Rd.
Raleigh, NC 27603
Office: (919) 302-0693
Website: www.KandAHomeDesigns.com
Email: Kent@KandAHomeDesigns.com

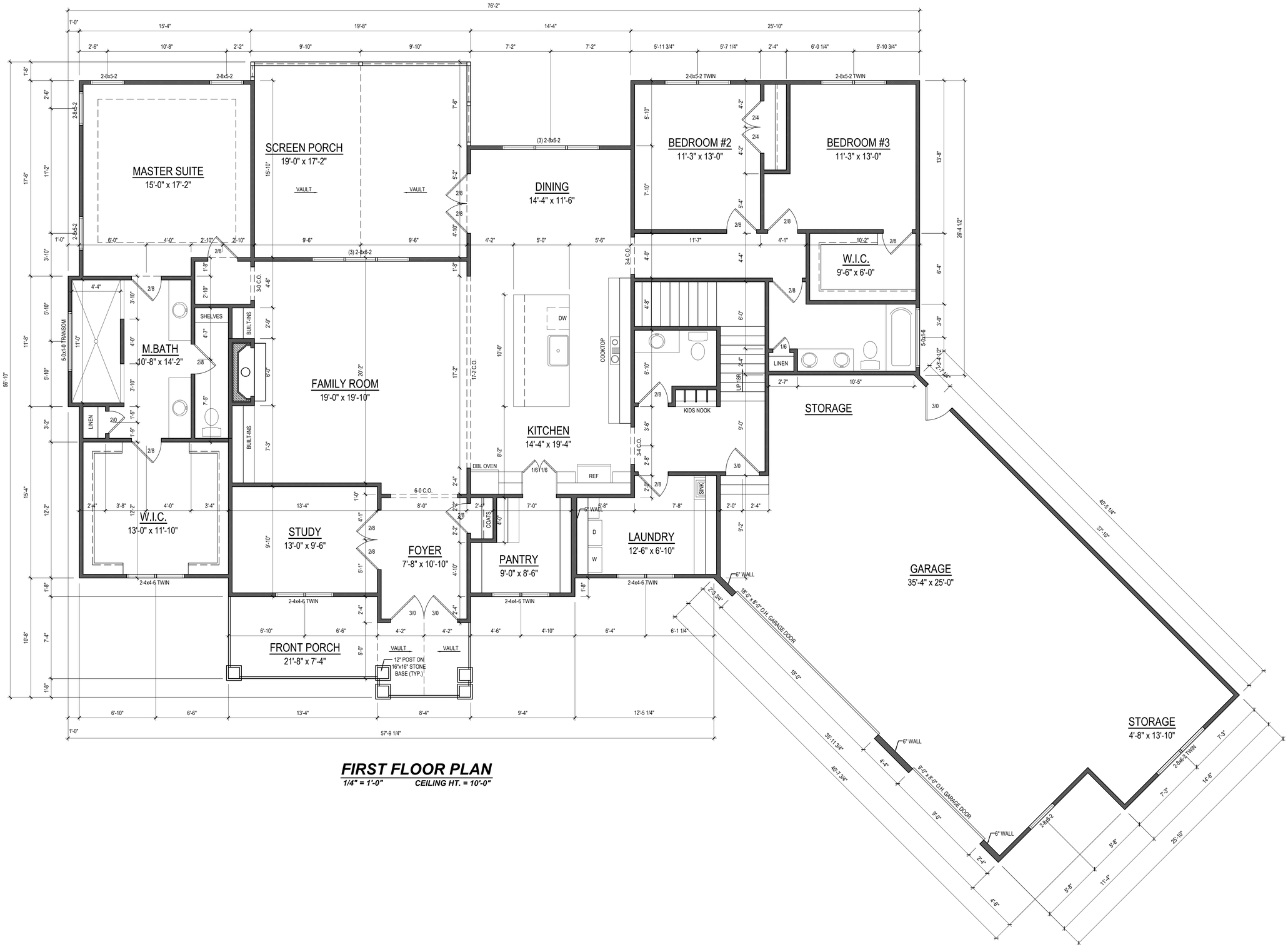
K&A HOME DESIGN Inc.

Project Name: Culver Residence

Client Name: Triangle Home Pros LLC
6312 Lauraca Lane
Fuquay Varina, NC 27526

ELEVATIONS

Sheet Number 1 of 3



FIRST FLOOR PLAN

1/4" = 1'-0" *CEILING HT. = 10'-0"*

Project #:	20-198
Date:	8-14-20
Drawn/Design By:	KBB
Scale:	1/4" = 1'-0"

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

9101 Ten-Ten Rd.
Raleigh, NC 27603
Office: (919) 302-0693
Website: www.KandAHomeDesigns.com
Email: Kent@KandAHomeDesigns.com

K&A HOME DESIGN Inc.

Project Name: ***Culver Residence***

Client Name: ***Triangle Home Pros LLC***
6312 Lauraca Lane
Fuquay Varina, NC 27526

FIRST FLOOR

Sheet Number

2

of 3

SECOND FLOOR PLAN

1/4" = 1'-0" *CEILING HT. = 9'-0"*

Project #:
20-198
Date:
8-14-20
Drawn/Design By:
KBB
Scale:
1/4" = 1'-0"

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

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

K&A HOME DESIGN Inc.

Website: www.KandAHomeDesigns.com
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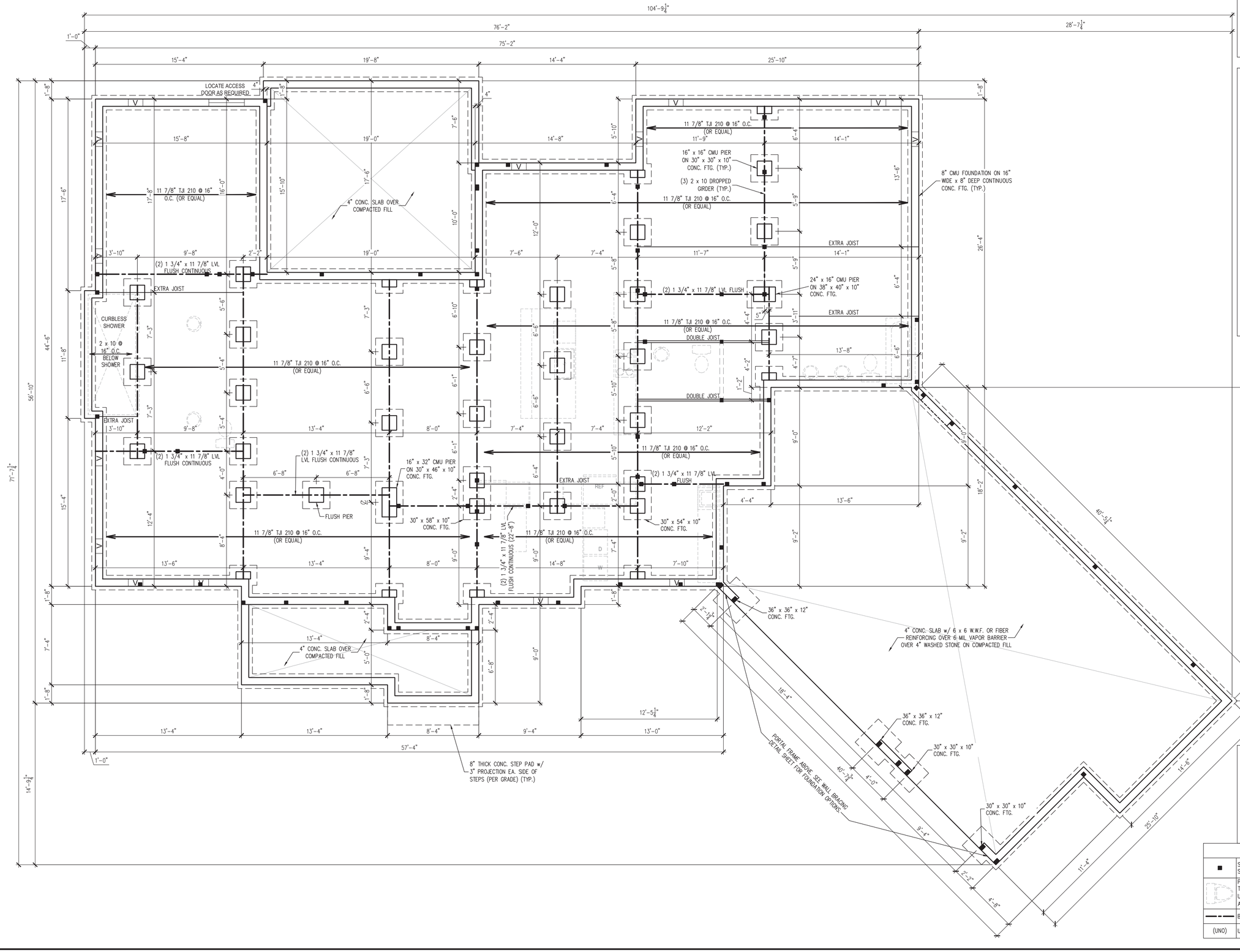
Project Name:
Culver Residence

Client Name:
Triangle Home Pros LLC
6312 Lauraca Lane
Fuquay Varina, NC 27526

SECOND FLOOR

Sheet Number
3
of 3



CRAWL SPACE VENTILATION CALCULATION

2756 SQ. FT. OF CRAWL SPACE DIVIDED BY 150 EQUALS 18.37 SQ. FT. OF NET FREE AREA REQUIRED. SEE SECTION R408.1 OF THE 2018 NCRC (2015 IRC).

FREE VENT AREA MAY BE REDUCED TO 1/1500 IF AN APPROVED VAPOR BARRIER IS INSTALLED OVER 100% OF THE CRAWL FLOOR AND VENTS ARE INSTALLED TO PERMIT CROSS-VENTILATION OF CRAWL SPACE.

SEE SECTION R408.1.1 OF THE 2018 NCRC.

CODE NOTES: 120 MPH ULTIMATE DESIGN WIND SPEED w/ MEAN ROOF HEIGHT LESS THAN 30':

1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OR ARCHITECTURAL LAYOUT INCLUDING ROOF SYSTEM.
2. STRUCTURAL DESIGN PER NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
3. INSTALL 1/2" ANCHOR BOLTS 6'-0" O.C. AND WITHIN 1'-0" FROM END OF EACH CORNER. ANCHOR BOLTS MUST EXTEND A MINIMUM OF 7" INTO MASONRY OR CONCRETE. LOCATE BOLT WITHIN MIDDLE THIRD OF PLATE WIDTH.
4. MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
5. EXTERIOR WALLS DESIGNED FOR 120 MPH WINDS.
6. WALL CLADDING DESIGNED FOR +15.5 PSF AND −20 PSF (+/− INDICATE POSITIVE / NEGATIVE PRESSURE (TYP).
7. ROOF CLADDING DESIGNED FOR +14.2 PSF AND −18 PSF FOR ROOF PITCHES 7/12 TO 12/12 AND +10 PSF AND −36 PSF FOR ROOF PITCHED 2.25/12 TO 7/12.
8. INSTALL 7/16" OSB SHEATHING ON ALL EXTERIOR WALLS OF ALL STORIES IN ACCORDANCE WITH SECTION R602.10.3 OF THE NCRC, 2018 EDITION. SEE THE WALL BRACING NOTES AND DETAILS SHEET FOR MORE INFORMATION.
9. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NCRC, 2018 EDITION.
10. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

CRAWL SPACE STRUCTURAL NOTES

1. ALL FRAMING LUMBER TO BE #2 SPF (UNO). ALL TREATED LUMBER TO BE #2 SYP (UNO).
2. INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO THE FLOOR JOISTS WHERE NOTED ON THE PLANS.
3. SHADED PIERS TO BE FILLED SOLID.
4. INSTALL JOINT REINFORCEMENT @ 16" O.C. TO SECURE MULTIPLE WYTHE FOUNDATION WALLS TOGETHER.
5. REFER TO NOTES AND DETAIL PAGES FOR ADDITIONAL INFORMATION.

LEGEND

■	STUD COLUMNS ON FLOOR ABOVE THAT REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION.
D	PLUMBING OR APPLIANCES ON THE FLOOR ABOVE TO HELP ELIMINATE FRAMING CONFLICTS WITH UTILITIES. (FOR REFERENCE ONLY, SEE ARCHITECTURAL DRAWINGS)
	BEAM OR GIRDER AS NOTED
(UNO)	UNLESS NOTED OTHERWISE

PREPARED UNDER THE SUPERVISION OF:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038485 1/29/2021 JACOB ERNEST SMITH

J. SMITH STRUCTURAL ENGINEERING, PLLC.
1532 CONE AVE. • APEX, NC 27502
(919) 864-1430 • jsmithstructural@gmail.com
N.C. CERTIFICATE NUMBER: P-2212

CULVER RESIDENCE
TRIANGLE HOME PROS, LLC

REVISIONS:

DRAWN BY: K&A HOME DESIGN, INC

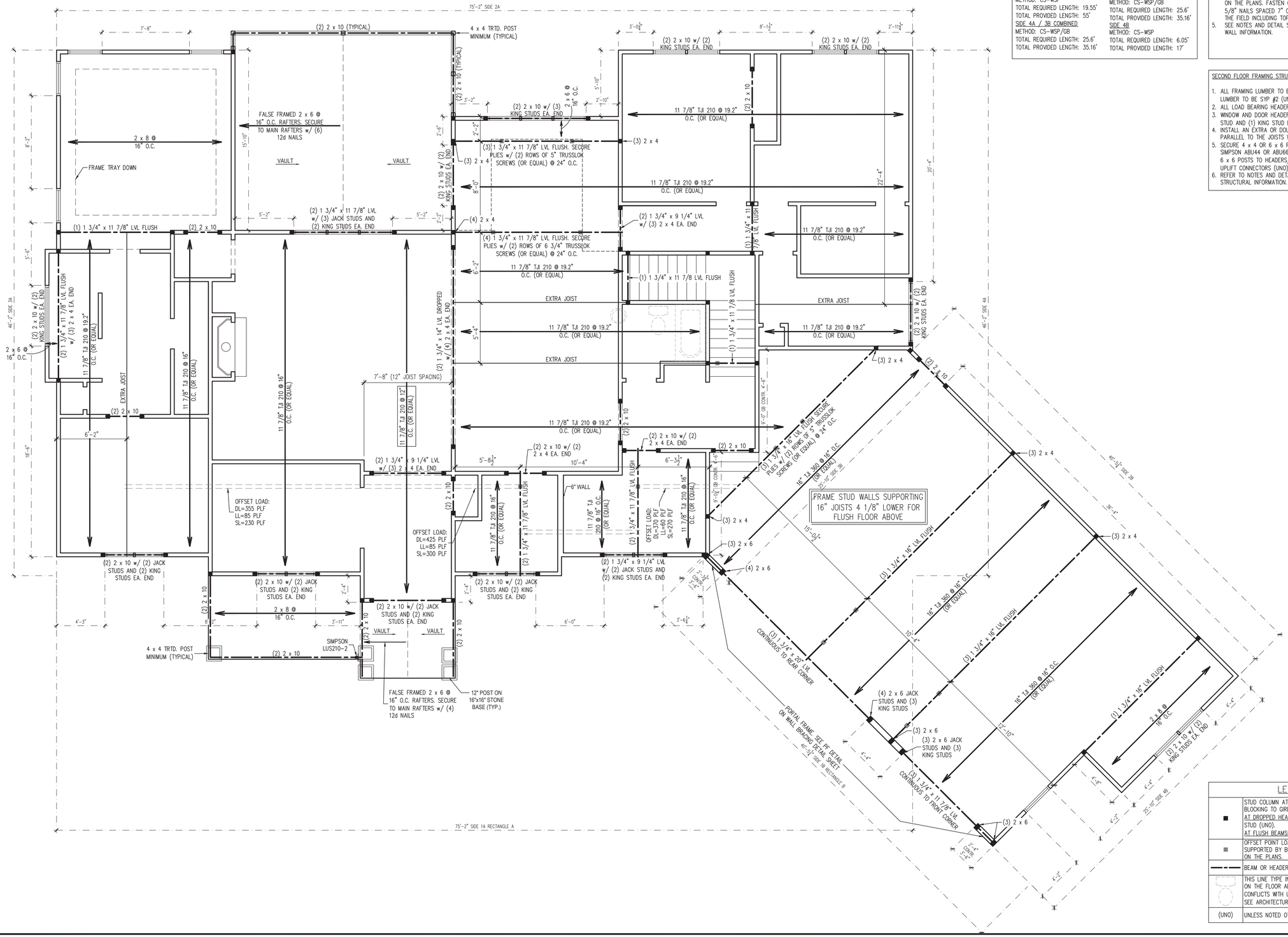
ENGINEERED BY: J. SMITH

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

DATE: 1-29-2021

SHEET: 1 OF: 6

S-1
CRAWLSPACE FOUNDATION PLAN



BRACED WALL DESIGN SUMMARY:

RECTANGLE A		RECTANGLE B	
SIDE 1A		SIDE 1B	
METHOD:	CS-WSP	METHOD:	CS-WSP/PF
TOTAL REQUIRED LENGTH:	12.35'	TOTAL REQUIRED LENGTH:	3.66'
TOTAL PROVIDED LENGTH:	25.83'	TOTAL PROVIDED LENGTH:	16'
SIDE 2A		SIDE 2B	
METHOD:	CS-WSP	METHOD:	CS-WSP
TOTAL REQUIRED LENGTH:	12.35'	TOTAL REQUIRED LENGTH:	3.66'
TOTAL PROVIDED LENGTH:	38.16'	TOTAL PROVIDED LENGTH:	36.33'
SIDE 3A		SIDE 3B / 4A COMBINED	
METHOD:	CS-WSP	METHOD:	CS-WSP/GB
TOTAL REQUIRED LENGTH:	19.55'	TOTAL REQUIRED LENGTH:	25.6'
TOTAL PROVIDED LENGTH:	55'	TOTAL PROVIDED LENGTH:	35.16'
SIDE 4A / 3B COMBINED		SIDE 4B	
METHOD:	CS-WSP/GB	METHOD:	CS-WSP
TOTAL REQUIRED LENGTH:	25.6'	TOTAL REQUIRED LENGTH:	6.05'
TOTAL PROVIDED LENGTH:	35.16'	TOTAL PROVIDED LENGTH:	17'

BRACED WALL DESIGN NOTES:

1. BRACED WALL DESIGN PER SECTION R602.10 OF THE NCRC 2018 EDITION.
2. SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB PER THE CS-WSP METHOD.
3. "CS-WSP" REFERS TO "CONTINUOUS SHEATHING – WOOD STRUCTURAL PANELS." CONTRACTOR IS TO INSTALL 7/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
4. "GB" REFERS TO "GYPSUM BOARD" CONTRACTOR IS TO INSTALL 1/2" (MIN.) GYPSUM WALL BOARD WHERE NOTED ON THE PLANS. FASTEN GB WITH 1 1/4" SCREWS OR 1 5/8" NAILS SPACED 7" O.C. ALONG PANEL EDGES AND IN THE FIELD INCLUDING TOP AND BOTTOM PLATES.
5. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

SECOND FLOOR FRAMING STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE SPF #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO.)
2. ALL LOAD BEARING HEADERS TO BE (2) 2 x 10 (UNO).
3. WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO.)
4. INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO THE JOISTS WHERE NOTED ON THE PLANS.
5. SECURE 4 x 4 OR 6 x 6 POSTS TO CONCRETE/MASONRY w/ SIMPSON ABU44 OR ABU66 POST BASES. SECURE 4 x 4 OR 6 x 6 POSTS TO HEADERS/BEAMS w/ 700 LB CAPACITY UPLIFT CONNECTORS (UNO).
6. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

LEGEND

■	STUD COLUMN AT POINT LOADS THAT REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. AT DROPPED HEADERS: (1) JACK STUD AND (1) KING STUD (UNO). AT FLUSH BEAMS: (2) STUDS (UNO)
■	OFFSET POINT LOAD FROM FLOOR ABOVE. MUST BE SUPPORTED BY BEAM, JOIST, OR BLOCKING AS NOTED ON THE PLANS.
——·——	BEAM OR HEADER AS NOTED
	THIS LINE TYPE INDICATES PLUMBING OR APPLIANCES ON THE FLOOR ABOVE TO HELP ELIMINATE FRAMING CONFLICTS WITH UTILITIES. (FOR REFERENCE ONLY, SEE ARCHITECTURAL DRAWINGS)
(UNO)	UNLESS NOTED OTHERWISE

PREPARED UNDER THE SUPERVISION OF:

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(919) 864-1430 • jsmithstructural@gmail.com
N.C. CERTIFICATE NUMBER: P-2212

CULVER RESIDENCE
TRIANGLE HOME PROS, LLC

REVISIONS:

DRAWN BY: K&A HOME DESIGN, INC

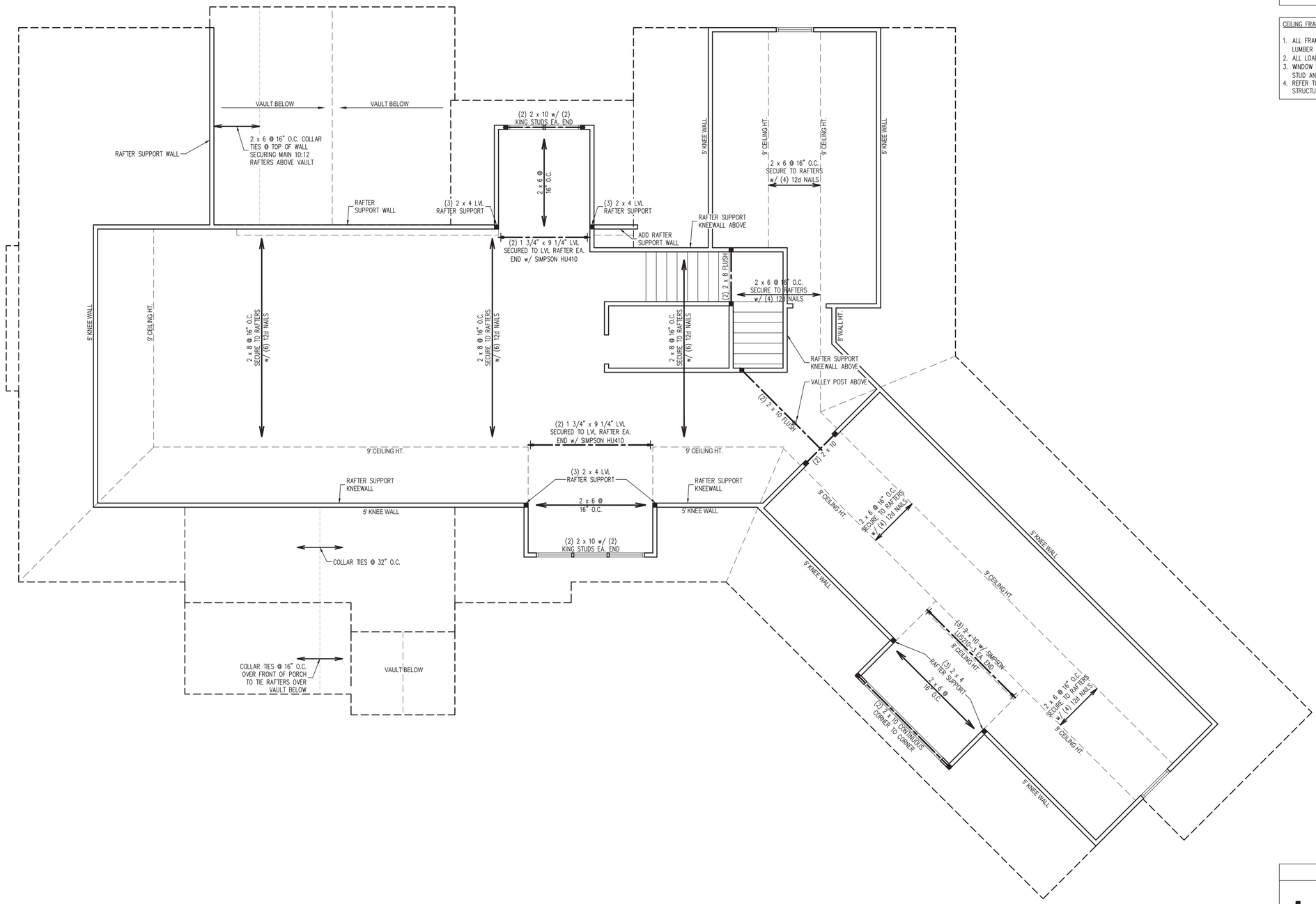
ENGINEERED BY: J. SMITH

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

DATE: 1-29-2021

SHEET: 2 OF: 6

S-2
SECOND FLOOR FRAMING PLAN



BRACED WALL DESIGN NOTES:

1. BRACED WALL DESIGN PER SECTION R602.10 OF THE NCRC 2018 EDITION.
2. PER SECTION R602.10.3.2 OF THE 2018 NCRC, THE AMOUNT OF BRACING ON THE SECOND FLOOR EXCEEDS THE AMOUNT REQUIRED FOR THE FIRST FLOOR AND NO BRACED WALL ANALYSIS IS REQUIRED.
3. SHEATH ALL EXTERIOR WALLS WITH 7/16" OSB PER THE CS-WSP METHOD.
4. "CS-WSP" REFERS TO "CONTINUOUS SHEATHING – WOOD STRUCTURAL PANELS." CONTRACTOR IS TO INSTALL 7/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
5. SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

CEILING FRAMING STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE SPF #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO.)
2. ALL LOAD BEARING HEADERS TO BE (2) 2 x 8 (UNO).
3. WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO.)
4. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

LEGEND	
■	STUD COLUMN AT POINT LOADS THAT REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. AT DROPPED HEADERS: (1) JACK STUD AND (1) KING STUD (UNO). AT FLUSH BEAMS: (2) STUDS (UNO)
■	OFFSET POINT LOAD FROM FLOOR OR ROOF FRAMING ABOVE. MUST BE SUPPORTED BY BEAM, JOIST, OR BLOCKING AS NOTED ON THE PLANS.
———	BEAM OR HEADER AS NOTED
(UNO)	UNLESS NOTED OTHERWISE

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CULVER RESIDENCE
TRIANGLE HOME PROS, LLC

REVISIONS:

DRAWN BY: K&A HOME DESIGN, INC

ENGINEERED BY: J. SMITH

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

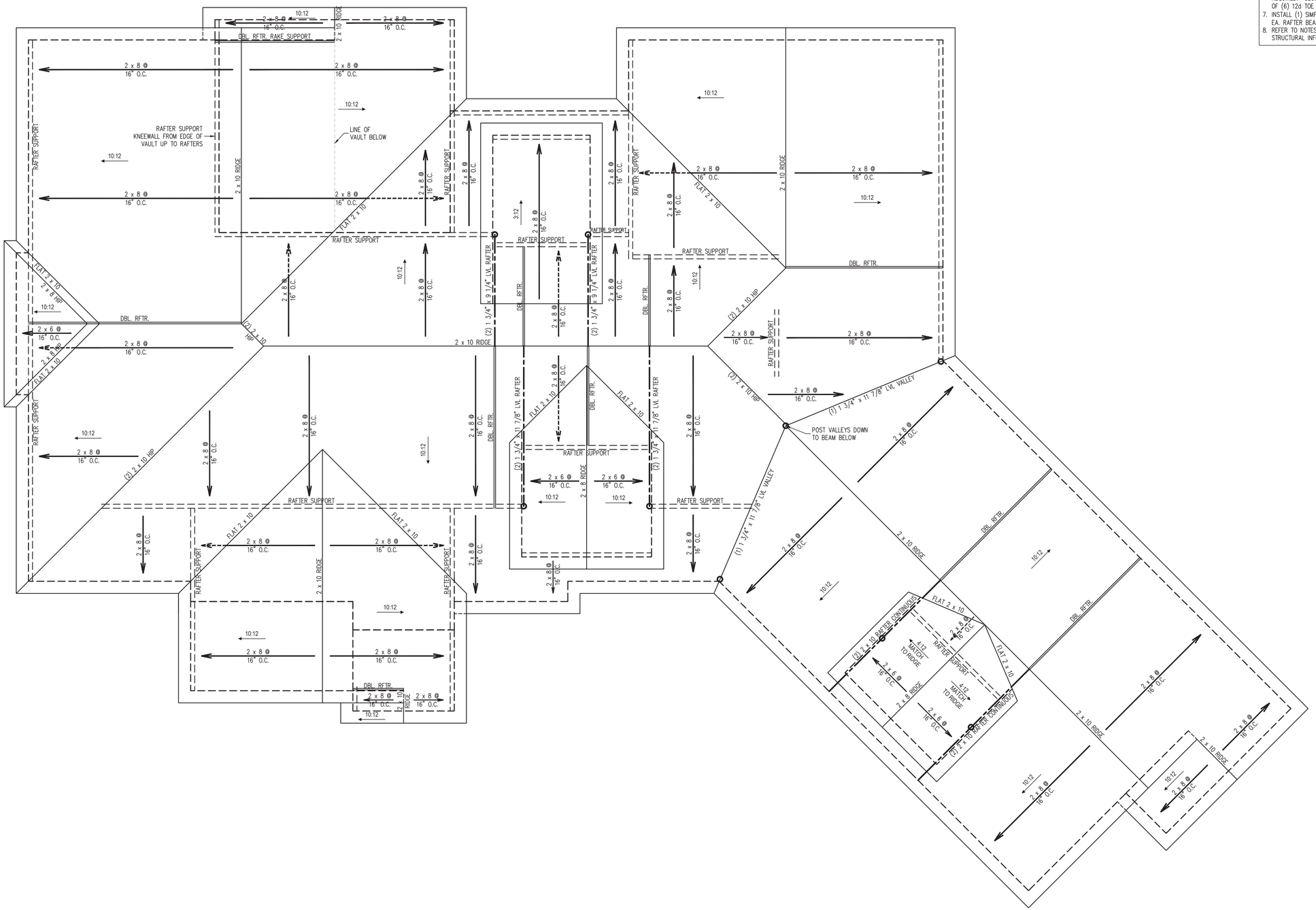
DATE: 1-29-2021

SHEET: 3 OF: 6

S-3
CEILING FRAMING PLAN

ROOF FRAMING STRUCTURAL NOTES:

1. ALL FRAMING LUMBER TO BE #2 SPF (UNO).
2. SHEATH ROOF w/ 7/16" OSB SHEATHING SECURED w/ 8d NAILS @ 6" O.C. ALONG EDGES AND 12" O.C. IN THE FIELD.
3. CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF SUPPORT.
4. STICK FRAME OVER-FRAMED ROOF SECTIONS W/ 2 x 8 RIDGES, 2 x 6 RAFTERS @ 16" O.C. AND FLAT 2 x 10 VALLEYS OR USE VALLEY TRUSSES.
5. HIP SPLICES ARE TO BE SPACED 8'-0" O.C. MINIMUM. FASTEN MEMBERS WITH (3) ROWS OF 12d NAILS @ 16" O.C.
6. FASTEN FLAT VALLEYS TO RAFTERS OR TRUSSES WITH SIMPSON H2.5A HURRICANE TIES @ 32" O.C. MAX. PASS HURRICANE TIES THROUGH NOTCH IN ROOF SHEATHING IF REQUIRED. SECURE RAFTERS TO FLAT VALLEYS WITH A MIN. OF (6) 12d TOE NAILS.
7. INSTALL (1) SIMPSON H2.5A HURRICANE TIE (OR EQUAL) @ EA. RAFTER BEARING.
8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.



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TRIANGLE HOME PROS, LLC

REVISIONS:

DRAWN BY: K&A HOME DESIGN, INC

ENGINEERED BY: J. SMITH

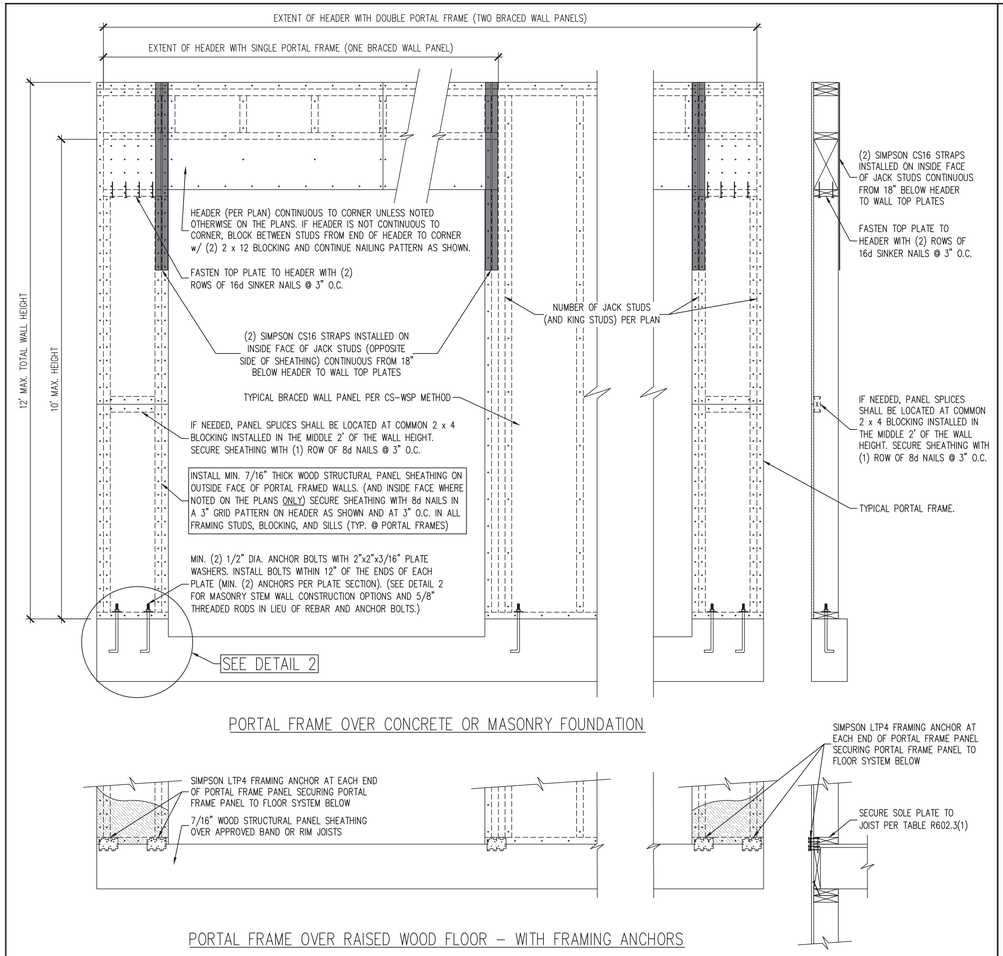
SCALE: 1/4" = 1'-0"

DATE: 1-29-2021

SHEET: 4 OF: 6

S-4

ROOF FRAMING PLAN

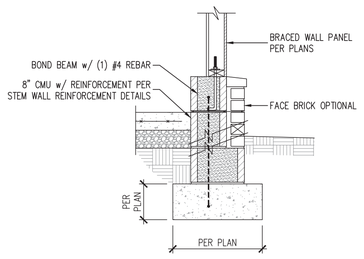


PORTAL FRAME OVER CONCRETE OR MASONRY FOUNDATION

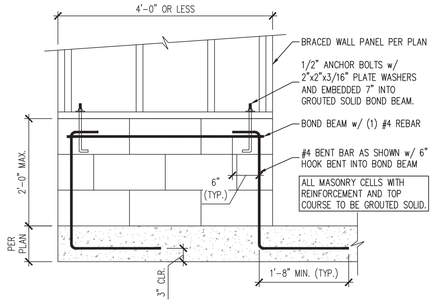
PORTAL FRAME OVER RAISED WOOD FLOOR – WITH FRAMING ANCHORS

1 PF PORTAL FRAME DETAIL

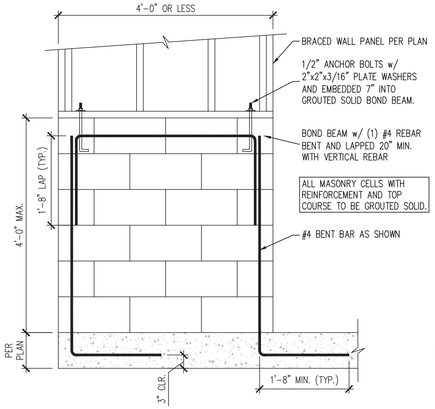
SCALE: 3/4" = 1'-0" (REFERENCE FIGURE R602.10.1)



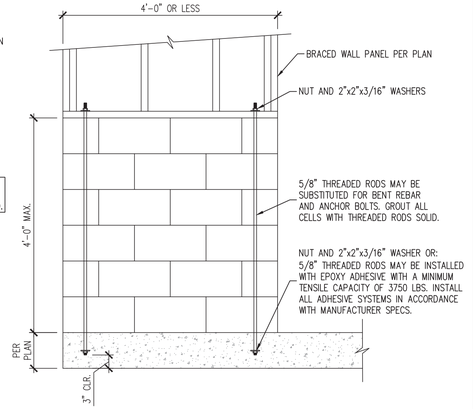
TYPICAL STEM WALL SECTION



SHORT STEM WALL REINFORCEMENT



TALL STEM WALL REINFORCEMENT



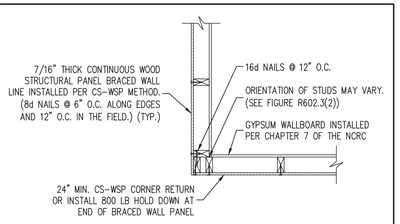
OPTIONAL STEM WALL REINFORCEMENT IN LIEU OF BENT REBAR AND ANCHOR BOLTS

2 MASONRY STEM WALL DETAILS FOR WALLS 48" LONG OR LESS

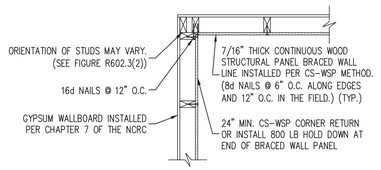
SCALE: 3/4" = 1'-0" (REFERENCE FIGURE R602.10.4.3)

GENERAL WALL BRACING NOTES:

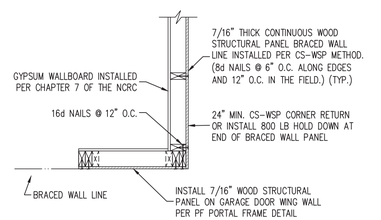
1. WALL BRACING DESIGNED IN ACCORDANCE WITH CHAPTER 6 OF THE 2018 NORTH CAROLINA RESIDENTIAL BUILDING CODE (NCRC). TABLES AND FIGURES REFERENCED ARE FROM THE 2018 NCRC. REFER TO THE 2018 NCRC FOR ADDITIONAL INFORMATION AS NEEDED.
2. SEE STRUCTURAL SHEETS FOR THE BRACED WALL DESIGN SUMMARY WHICH SPECIFIES THE TOTAL AMOUNT OF BRACING REQUIRED AND PROVIDED ALONG EACH BRACED WALL LINE ON EACH FLOOR (WHERE REQUIRED). THE LENGTH AND LOCATION OF BRACED WALLS, HOLD DOWN(S) TYPE AND LOCATIONS, AND ANY SPECIAL NOTES OR REQUIREMENTS DETERMINED BY ENGINEERED DESIGN ARE INCLUDED ON EACH STRUCTURAL FLOOR PLAN (WHERE REQUIRED).
3. ALL EXTERIOR WALLS ARE TO BE SHEATHED ON THE EXTERIOR FACE WITH 7/16" OSB WOOD STRUCTURAL PANELS IN ACCORDANCE WITH THE CS-WSP METHOD AS SPECIFIED IN SECTION R602.10.3 OF THE 2018 NCRC UNLESS NOTED OTHERWISE (UNO).
4. CS-WSP REFERS TO THE "CONTINUOUS SHEATHING – WOOD STRUCTURAL PANELS" WALL BRACING METHOD. 7/16" OSB SHEATHING SHALL BE INSTALLED ON ALL SHEATHABLE SURFACES OF ALL EXTERIOR WALLS ATTACHED w/ 6d COMMON NAILS OR 8d (2 1/2" LONG x 0.113" DIAMETER) NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD (UNO).
5. THE INTERIOR SIDE OF ALL EXTERIOR WALLS AND BOTH SIDES OF INTERIOR WALLS SHALL BE SHEATHED WITH 1/2" GYPSUM WALL BOARD. WHEN NOT USING BRACING METHOD "GB", GYPSUM WALL BOARD SHALL BE FASTENED PER TABLE R702.3.5. BRACING METHOD "GB" WALL BOARD SHALL BE FASTENED PER TABLE R602.10.1
6. "GB" REFERS TO THE "GYPSUM BOARD" WALL BRACING METHOD. WHERE NOTED ON THE PLANS, 1/2" (MIN.) GYPSUM WALL BOARD SHALL BE INSTALLED ON BOTH SIDES OF THE BRACED WALL FASTENED WITH 1 1/4" #6 SCREWS OR 1 5/8" 5d COOLER NAILS SPACED 7" O.C. ALONG PANEL EDGES AND 7" O.C. ALONG INTERMEDIATE SUPPORTS (UNO).
7. THE REQUIRED BRACED WALL LENGTHS FOR EACH SIDE OF THE CIRCUMSCRIBED RECTANGLE ARE INTERPOLATED PER TABLE R602.10.3. METHOD CS-WSP CONTRIBUTES ITS ACTUAL LENGTH, METHOD GB CONTRIBUTES .5 ITS ACTUAL LENGTH, AND METHOD PF CONTRIBUTES 1.5 TIMES ITS ACTUAL LENGTH.



CS-WSP OUTSIDE CORNER DETAIL



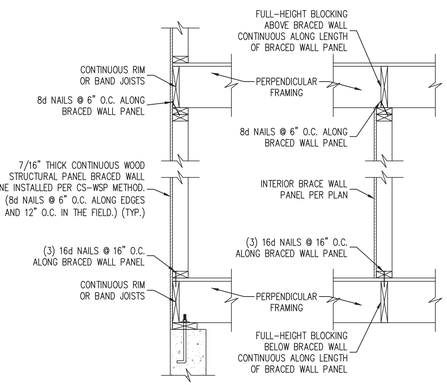
CS-WSP INSIDE CORNER DETAIL



CS-WSP GARAGE DOOR CORNER DETAIL

6 TYPICAL EXTERIOR CORNER FRAMING DETAILS

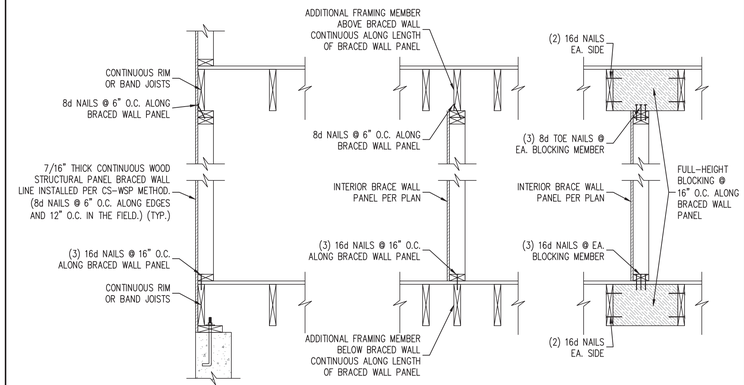
SCALE: 3/4" = 1'-0" (REFERENCE FIGURES R602.10.3(4) AND (5))



BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING

3

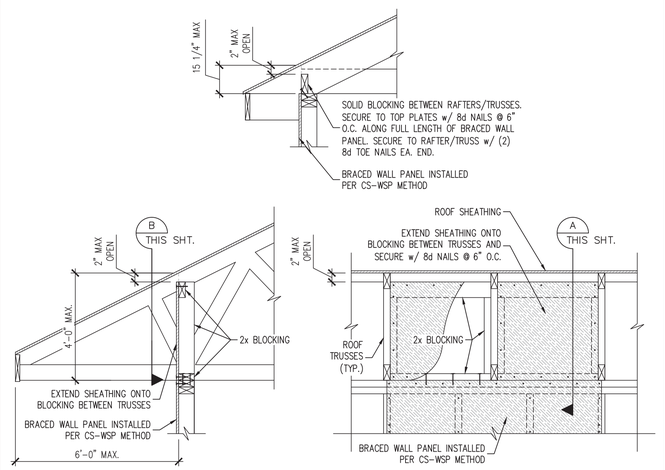
SCALE: 3/4" = 1'-0" (REFERENCE FIGURE R602.10.4.4(1))



BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING

4

SCALE: NTS (REFERENCE FIGURE R602.10.4.4(2))



SECTION A ELEVATION B

BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS OR TRUSSES

5

SCALE: NTS (REFERENCE FIGURES R602.10.4.5(1) AND (3))

PREPARED UNDER THE SUPERVISION OF:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 038485 1/27/2021 JACOB ERNEST SMITH

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REVISIONS:

DRAWN BY: K&A HOME DESIGN, INC

ENGINEERED BY: J. SMITH

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

DATE: 1-29-2021

SHEET: 5 OF: 6

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WALL BRACING DETAIL SHEET

GENERAL NOTES

1. ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS INCLUDING ROOF RAFTERS, HIPS, VALLEYS, RIDGES, FLOORS, WALLS, BEAMS, HEADERS, COLUMNS, CANTILEVERS, OFFSET LOAD BEARING WALLS, PIERS, GIRDER SYSTEM AND FOOTING. ENGINEER'S SEAL DOES NOT CERTIFY DIMENSIONAL ACCURACY OF ARCHITECTURAL LAYOUT INCLUDING ROOF. ENGINEER'S SEAL DOES NOT APPLY TO I-JOIST OR FLOOR/ROOF TRUSS LAYOUT DESIGN AND ACCURACY.

2. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE (NCRC), 2018 EDITION, PLUS ALL LOCAL CODES AND REGULATIONS. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK. NOR WILL THE ENGINEER BE RESPONSIBLE FOR THE CONTRACTORS FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

3. STRUCTURAL DESIGN BASED ON THE PROVISIONS OF THE NCRC, 2018 EDITION (R301.4 – R301.7)

DESIGN CRITERIA:	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (IN)
ATTIC WITH LIMITED STORAGE	20	10	L/240 (L/360 w/ BRITTLE FINISHES)
ATTIC WITHOUT STORAGE	10	10	L/360
DECKS	40	10	L/360
EXTERIOR BALCONIES	40	10	L/360
FIRE ESCAPES	40	10	L/360
HANDRAILS/GUARDRAILS	200 LB OR 50 (PLF)	10	L/360
PASSENGER VEHICLE GARAGE	50	10	L/360
ROOMS OTHER THAN SLEEPING ROOM	40	10	L/360
SLEEPING ROOMS	30	10	L/360
STAIRS	40	10	L/360
WIND LOAD	(BASED ON TABLE R301.2(4) WIND ZONE AND EXPOSURE)		
GROUND SNOW LOAD: Pg	20 (PSF)		

– I-JOIST SYSTEMS DESIGNED WITH 12 PSF DEAD LOAD AND DEFLECTION (IN) OF L/480
– FLOOR TRUSS SYSTEMS DESIGNED WITH 15 PSF DEAD LOAD

4. FOR 115 AND 120 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.1.6 OF THE NCRC, 2018 EDITION. FOR 130 MPH, 140 MPH, AND 150 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 4504 OF THE NCRC, 2018 EDITION.

5. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NCRC, 2018 EDITION.

FOOTING AND FOUNDATION NOTES

1. FOUNDATION DESIGN BASED ON A MINIMUM ALLOWABLE BEARING CAPACITY OF 2000 PSF. CONTACT GEOTECHNICAL ENGINEER IF BEARING CAPACITY IS NOT ACHIEVED.

2. FOR ALL CONCRETE SLABS AND FOOTINGS, THE AREA WITHIN THE PERIMETER OF THE BUILDING ENVELOPE SHALL HAVE ALL VEGETATION, TOP SOIL AND FOREIGN MATERIAL REMOVED. FILL MATERIAL SHALL BE FREE OF VEGETATION AND FOREIGN MATERIAL. THE FILL SHALL BE COMPACTED TO ASSURE UNIFORM SUPPORT OF THE SLAB, AND EXCEPT WHERE APPROVED, THE FILL DEPTHS SHALL NOT EXCEED 24" FOR CLEAN SAND OR GRAVEL. A 4" THICK BASED COURSE CONSISTING OF CLEAN GRADED SAND OR GRAVEL SHALL BE PLACED. A BASE COURSE IS NOT REQUIRED WHERE A CONCRETE SLAB IS INSTALLED ON WELL-DRAINED OR SAND-GRAVEL MIXTURE SOILS CLASSIFIED AS GROUP 1, ACCORDING TO THE UNITED SOIL CLASSIFICATION SYSTEM IN ACCORDANCE WITH TABLE R405.1 OF THE NCRC, 2018 EDITION.

3. PROPERLY DEWATER EXCAVATION PRIOR TO POURING CONCRETE WHEN BOTTOM OF CONCRETE SLAB IS AT OR BELOW WATER TABLE. IF APPLICABLE, 3/4" – 1" DEEP CONTROL JOINTS ARE TO BE SAWED WITHIN 4 TO 12 HOURS OF CONCRETE FINISHING AND WALL LOCATIONS HAVE BEEN MARKED. ADJUST WHERE NECESSARY.

4. CONCRETE SHALL CONFORM TO SECTION R402.2 OF THE NCRC, 2018 EDITION. CONCRETE REINFORCING STEEL TO BE ASTM A615 GRADE 60. WELDED WIRE FABRIC TO BE ASTM A185. MAINTAIN A MINIMUM CONCRETE COVER AROUND REINFORCING STEEL OF 3" IN FOOTINGS AND 1 1/2" IN SLABS. FOR POURED CONCRETE WALLS, CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE INSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 3/4". CONCRETE COVER FOR REINFORCING STEEL MEASURED FROM THE OUTSIDE FACE OF THE WALL SHALL NOT BE LESS THAN 1 1/2" FOR #5 BARS OR SMALLER, AND NOT LESS THAN 2" FOR #6 BARS OR LARGER.

5. MASONRY UNITS TO CONFORM TO ACE 530/ASCE 5/TMS 402. MORTAR SHALL COMFORM TO ASTM C270.

6. THE UNSUPPORTED HEIGHT OF MASONRY PIERS SHALL NOT EXCEED FOUR TIMES THEIR LEAST DIMENSION FOR UNFILLED HOLLOW CONCRETE MASONRY UNITS AND TEN TIMES THEIR LEAST DIMENSION FOR SOLID OR SOLID FILLED PIERS. PIERS MAY BE FILLED SOLID WITH CONCRETE OR TYPE M OR S MORTAR. PIERS AND WALLS SHALL BE CAPPED WITH 8" OF SOLID MASONRY.

7. THE CENTER OF EACH OF THE PIERS SHALL BEAR IN THE MIDDLE THIRD OF ITS RESPECTIVE FOOTING. EACH GIRDER SHALL BEAR IN THE MIDDLE THIRD OF THE PIERS.

8. ALL CONCRETE AND MASONRY FOUNDATION WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OF THE NCRC, 2018 EDITION OR IN ACCORDANCE WITH ACI 318, ACI 332, NCMA TR68-A OR ACE 530/ASCE 5/TMS 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1.1(1), R404.1.1(2), R404.1.1(3), OR R404.1.1(4) OF THE NCRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1.1(5) OF THE NCRC, 2018 EDITION. STEP CONCRETE FOUNDATION WALLS TO 2 x 6 FRAMED WALLS AT 16" O.C. WHERE GRADE PERMITS (UNO).

FRAMING NOTES

1. ALL FRAMING LUMBER SHALL BE #2 SPF MINIMUM (Fb = 875 PSI, Fv = 375 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (Fb = 975 PSI, Fv =175 PSI, E = 1600000 PSI) UNLESS NOTED OTHERWISE (UNO).

2. LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb =2600 PSI, Fv = 285 PSI, E = 1900000 PSI. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fb = 2325 PSI, Fv = 310 PSI, E = 1550000 PSI. PARALLEL STRAND LUMBER (PSL) UP TO 7" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2500 PSI, E =1800000 PSI. PARALLEL STRAND LUMBER (PSL) MORE THAN 7" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: Fc = 2900 PSI, E = 2000000 PSI. INSTALL ALL CONNECTIONS PER MANUFACTURER'S SPECIFICATIONS.

3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATIONS

A.	W AND WT SHAPES:	ASTM A992
B.	CHANNELS AND ANGLES:	ASTM A36
C.	PLATES AND BARS:	ASTM A36
D.	HOLLOW STRUCTURAL SECTIONS:	ASTM A500 GRADE B
E.	STEEL PIPE:	ASTM A53, GRADE B, TYPE E OR S

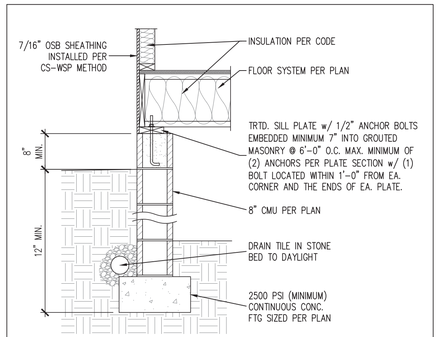
4. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH (UNO). PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED AT THE BOTTOM FLANGE TO EACH SUPPORT AS FOLLOWS (UNO):

A. WOOD FRAMING	(2) 1/2" DIA. x 4" LONG LAG SCREWS
B. CONCRETE	(2) 1/2" DIA. x 4" WEDGE ANCHORS
C. MASONRY (FULLY GROUTED)	(2) 1/2" DIA. x 4" LONG SIMPSON TITEN HD ANCHORS

5. ALL BEAMS, HEADERS, OR GIRDER TRUSSES PARALLEL TO WALL ARE TO BEAR FULLY ON (1) JACK OR (2) STUDS MINIMUM OR THE NUMBER OF JACKS OR STUDS NOTED. ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY (3) STUDS OR LESS ARE TO HAVE 1 1/2" MINIMUM BEARING (UNO). ALL BEAMS OR GIRDER TRUSSES PERPENDICULAR TO WALL AND SUPPORTED BY MORE THAN (3) STUDS OR OTHER NOTED COLUMN ARE TO BEAR FULLY ON SUPPORT COLUMN FOR ENTIRE WALL DEPTH (UNO). BEAM ENDS THAT BUTT INTO ONE ANOTHER ARE TO EACH BEAR EQUAL LENGTHS (UNO).

6. ALL I-JOIST OR TRUSS LAYOUTS ARE TO BE IN COMPLIANCE WITH THE OVERALL DESIGN SPECIFIED ON THE PLANS. ALL DEVIATIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD PRIOR TO INSTALLATION.

7. BRACED WALL PANELS SHALL BE CONSTRUCTED ACCORDING TO THE NORTH CAROLINA RESIDENTIAL CODE 2018 EDITION WALL BRACING CRITERIA. THE AMOUNT, LENGTH, AND LOCATION OF BRACING SHALL COMPLY WITH ALL APPLICABLE TABLES IN SECTION R602.10.



TYPICAL CRAWL SPACE FOUNDATION DETAIL

SCALE: 3/4"=1'-0"

PREPARED UNDER THE SUPERVISION OF:

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

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SHEET: 6 OF: 6

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STRUCTURAL NOTES