

FIELD & REDLINE NOTES



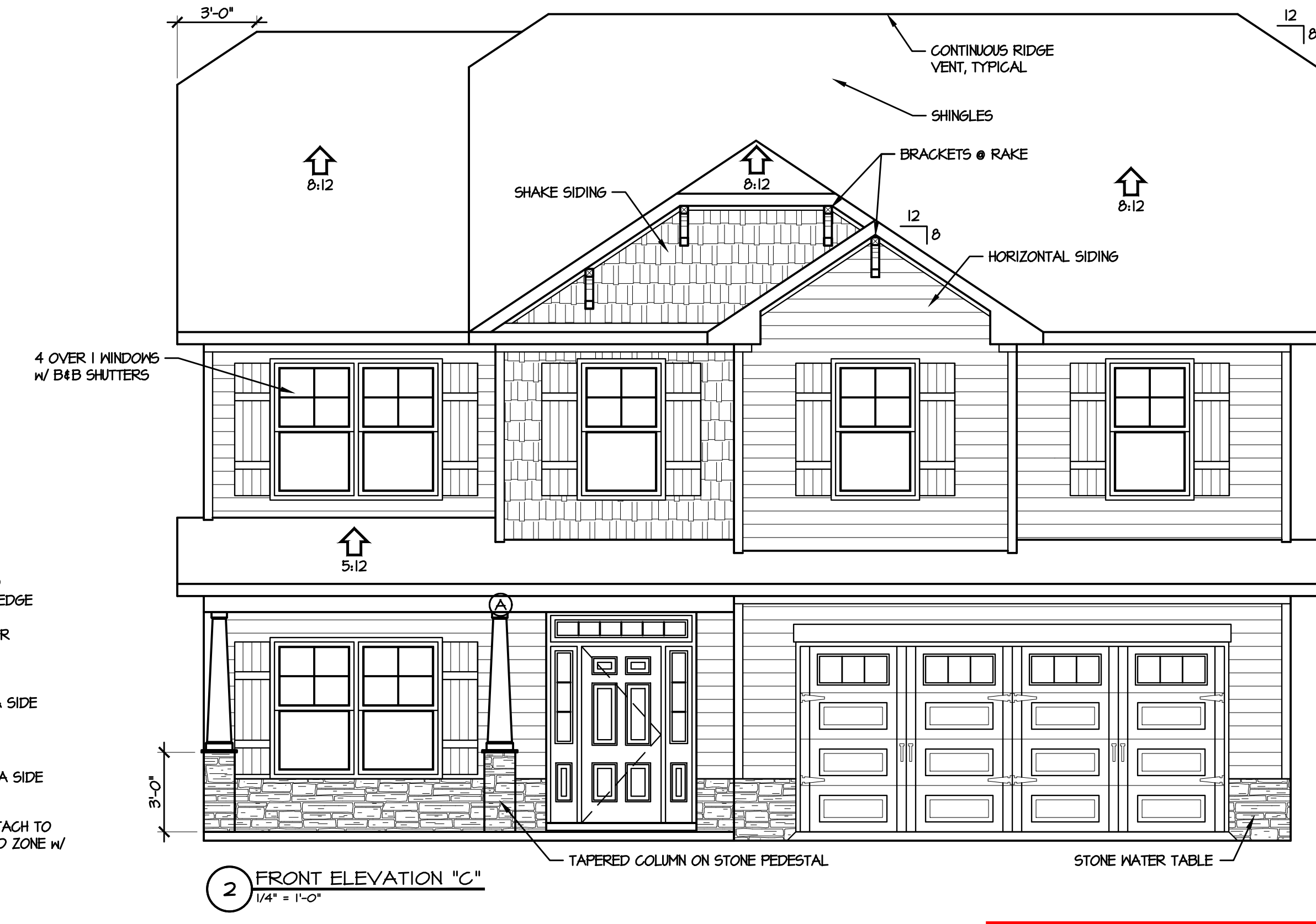
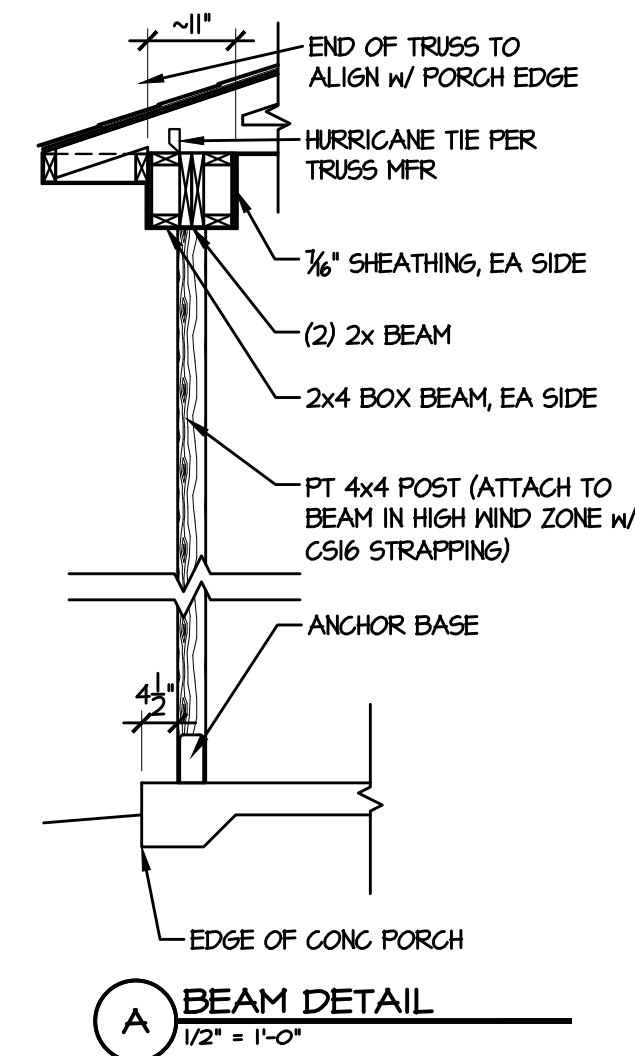
**SPACE DATA**

FIRST FLOOR, HEATED:	475 SF
SECOND FLOOR, HEATED:	1350 SF
FRONT PORCH:	100 SF
REAR PORCH OPTION:	120 SF
GARAGE:	443 SF
3rd CAR GARAGE OPTION:	280 SF

**ATTIC VENT CALC'S.**

ATTIC AREA: 1350 S.F.

GABLE VENTS:	N/A
RIDGE VENTS:	45 L.F. / 6 SF. (60%)
SOFFIT VENT:	65 L.F. / 4 SF. (40%)
RATIO:	$\frac{10}{1350} = \frac{1}{135}$

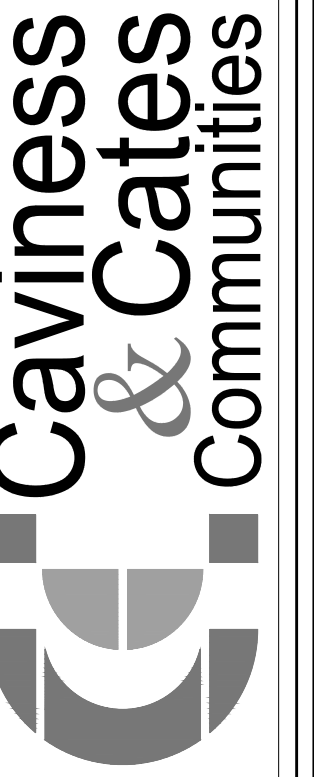
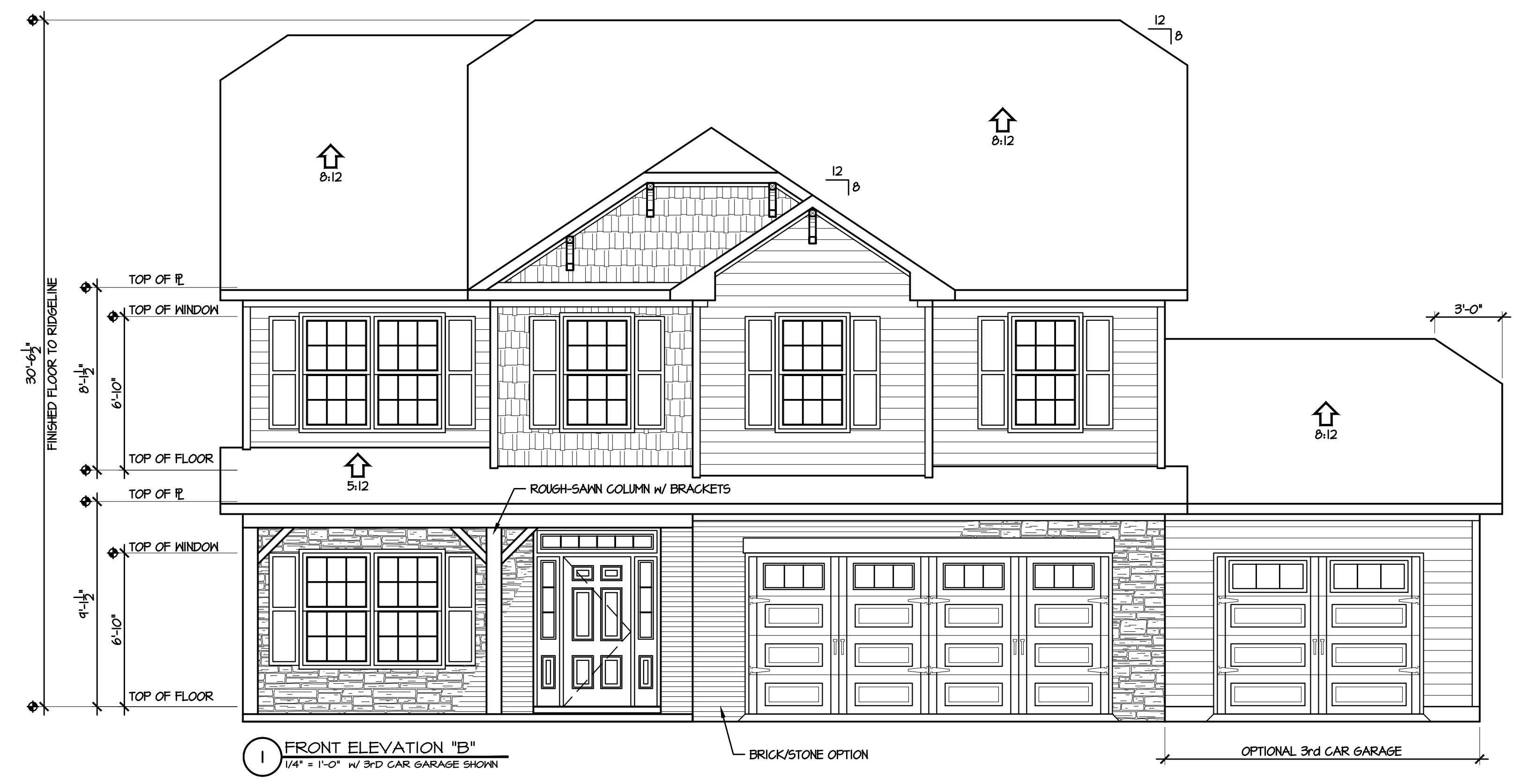
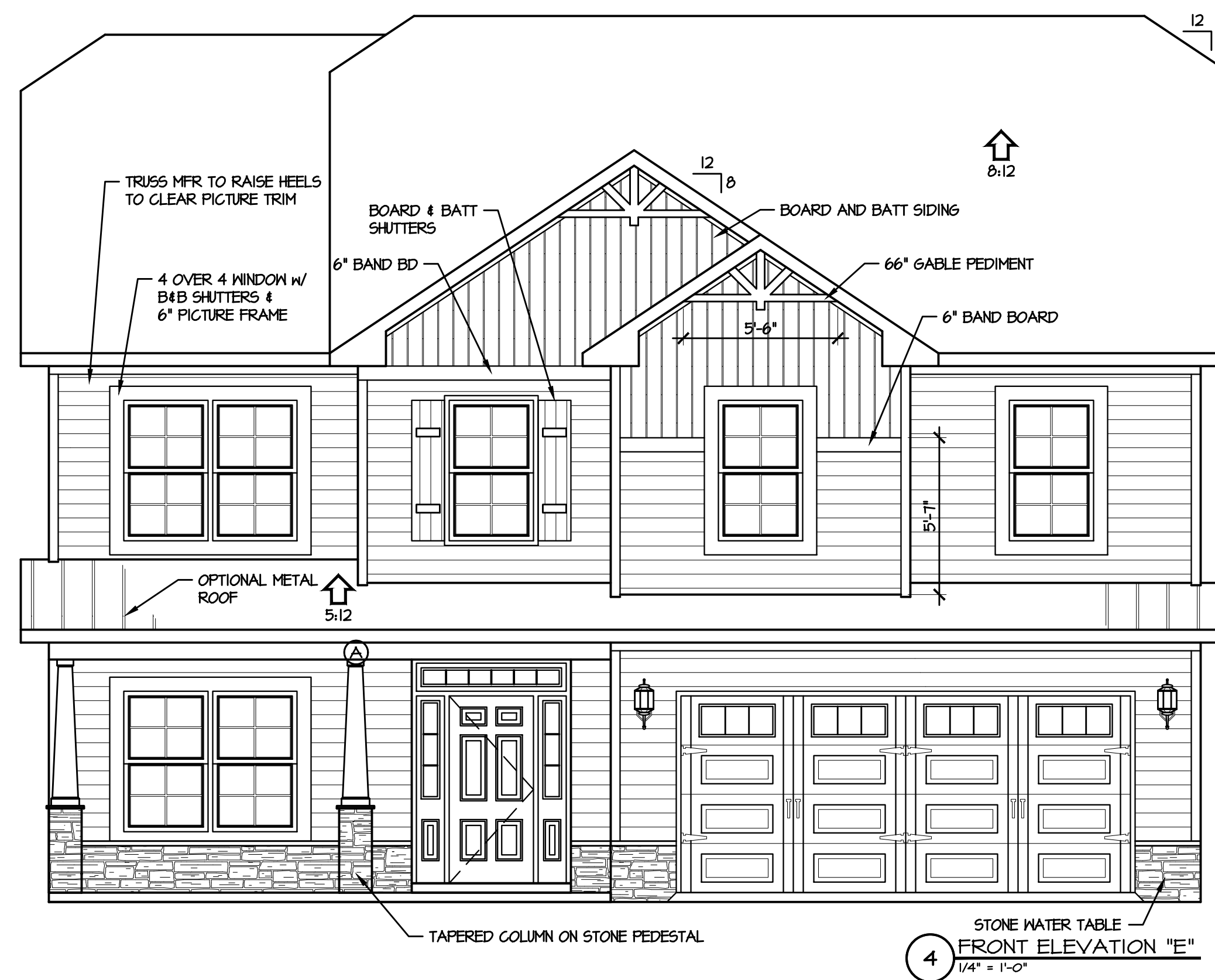


NOTICE TO CONTRACTOR  
All construction must comply with governing Building Codes and is subject to field inspection and verification.

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

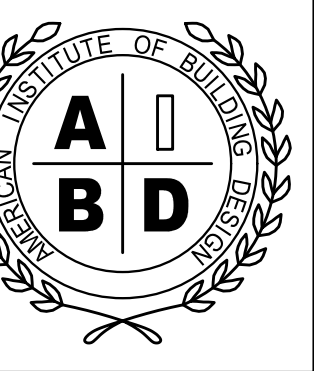
10/14/2020

**HARNETT COUNTY**  
NORTH CAROLINA



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639 Executive Place  
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Sales: 910-240-4210  
Fax: 910-481-0585



TODD TUCKER 34-156  
FORTIFIED-WISE™  
PROFESSIONAL  
910-824-1474

CC 2325

ELEVATIONS

PLAN NUMBER:

PLAN NO:  
CC 2325

DATE:  
FEBRUARY 2020

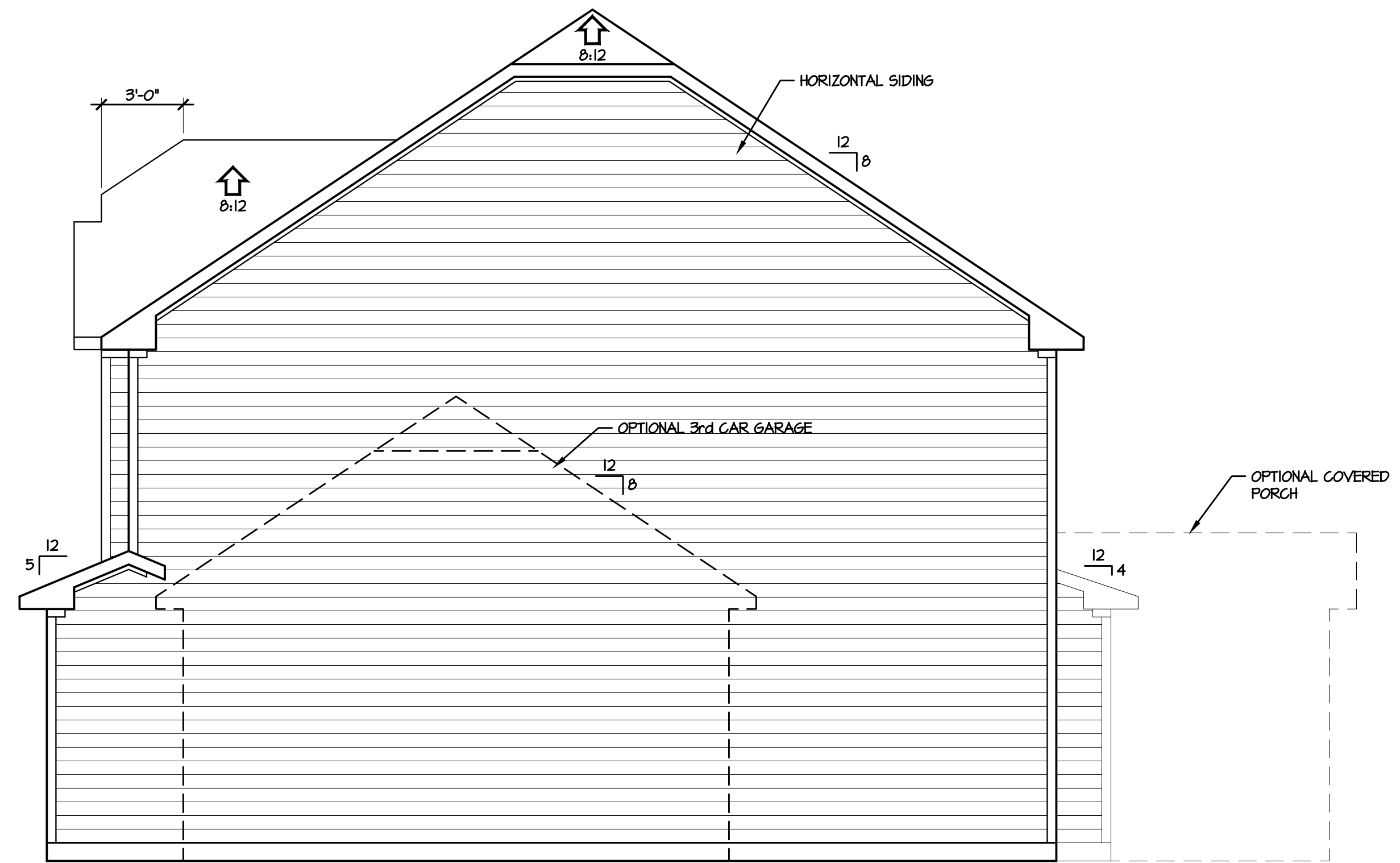
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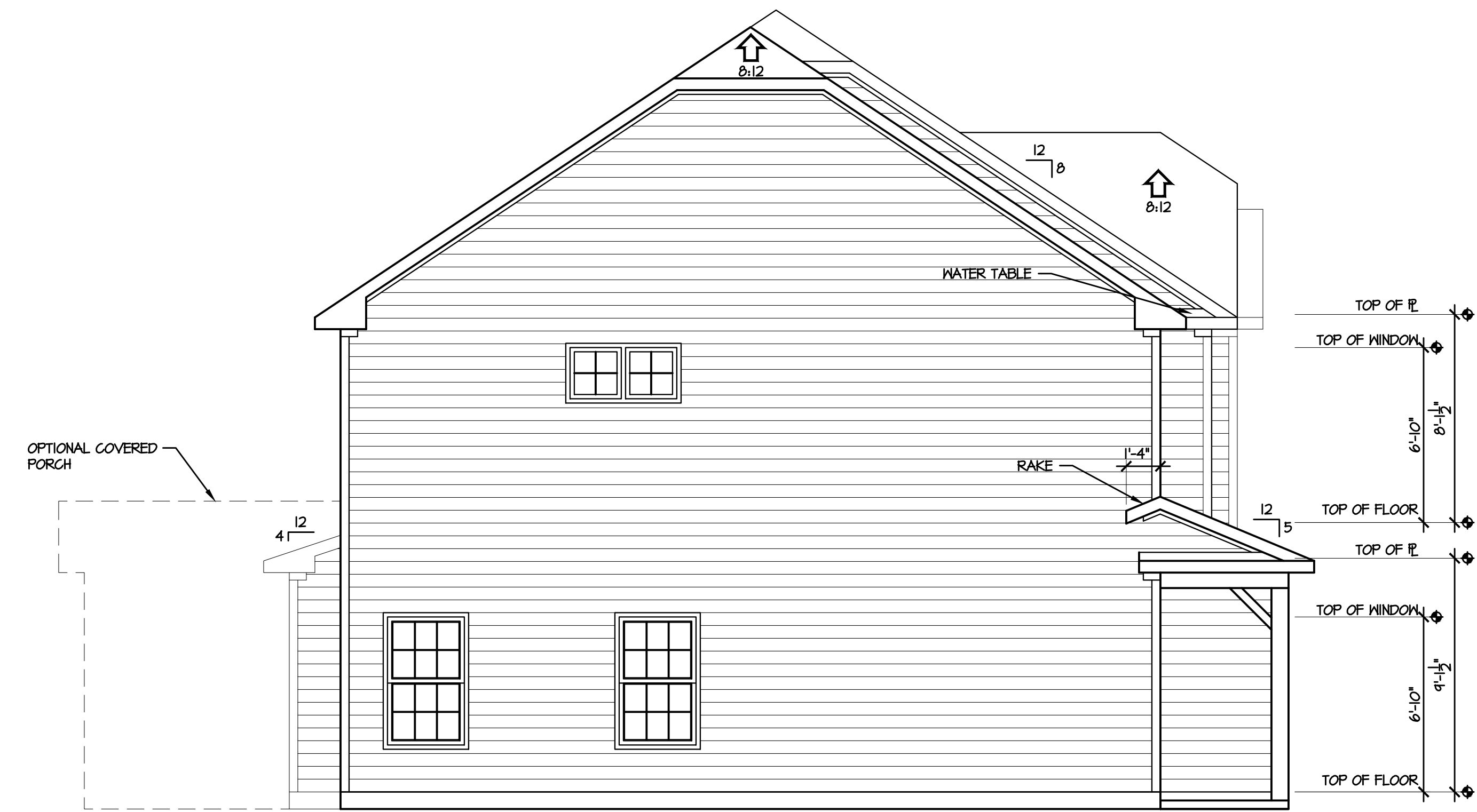
1



3 REAR ELEVATION  
1/4" = 1'-0" FOUR BEDROOM OPTION

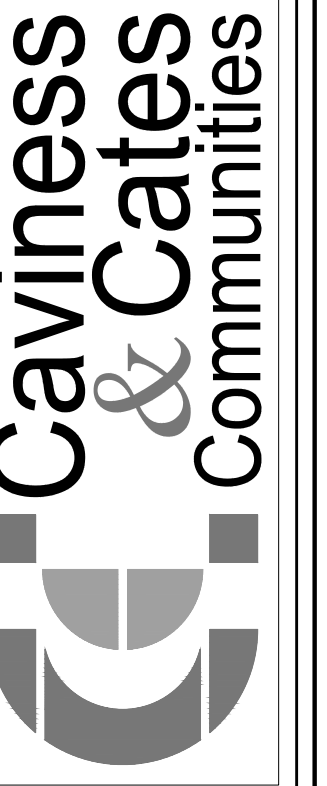


2 RIGHT SIDE ELEVATION  
1/4" = 1'-0"



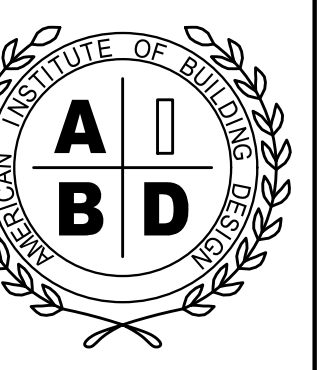
1 LEFT SIDE ELEVATION  
1/4" = 1'-0"

FIELD & REDLINE NOTES

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NATIONAL COUNCIL OF  
ARCHITECTS  
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PLAN NUMBER:  
**CC 2325**

SHEET TITLE:  
**ELEVATIONS**

PLAN NO:  
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DATE:  
**FEBRUARY 2020**

REVISIONS:

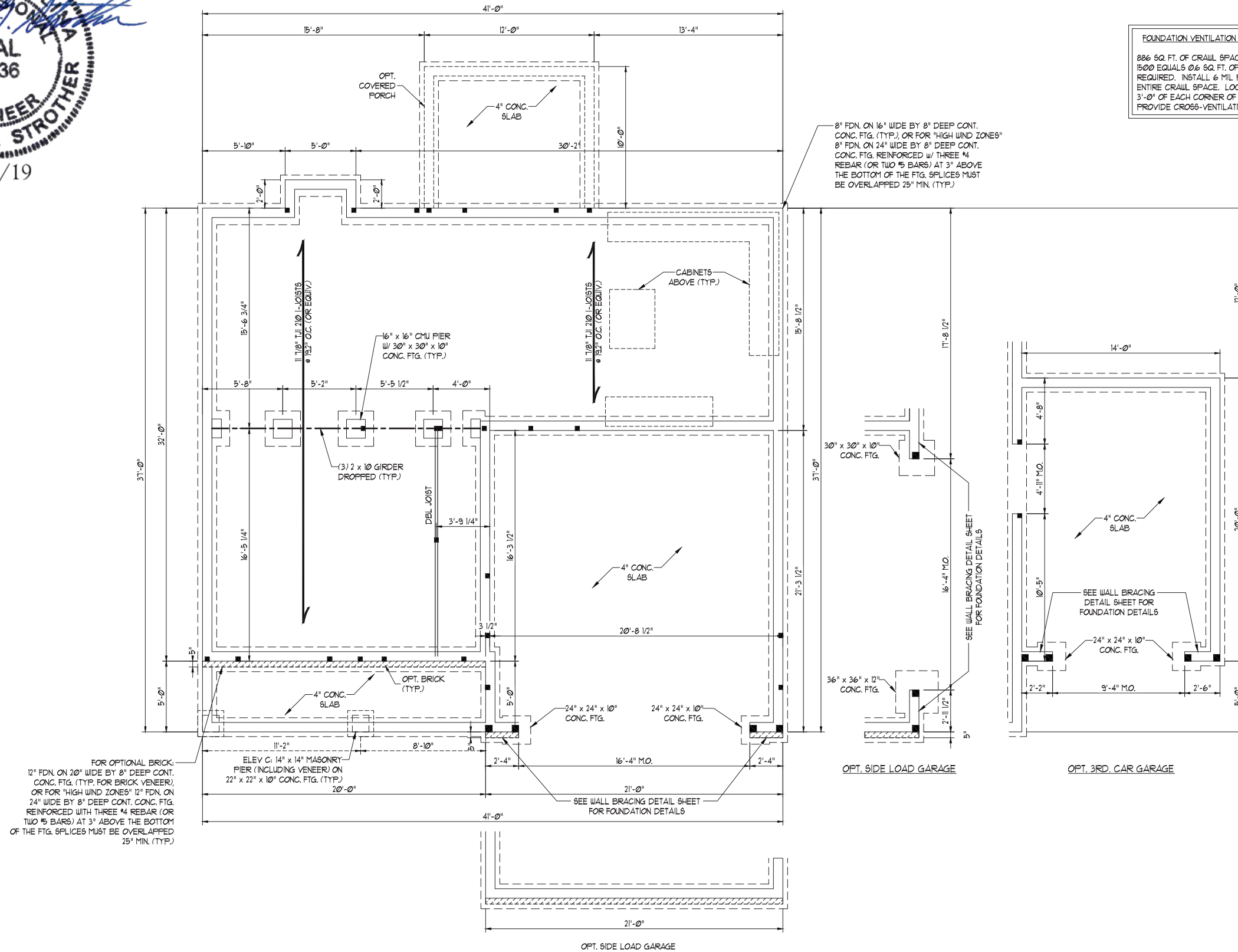

SHEET NO.:

**2**

T:\Caviness and Cates\CC 2156 2325\Current Plans\CC 2325 GR 2x16 2-26-20.dwg, 2/26/2020 9:23:00 AM, 1:1



**SCALE NOTE:**  
 LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
 11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



**FOUNDATION VENTILATION CALCULATION**  
 886 SQ. FT. OF CRAWL SPACE DIVIDED BY 1500 EQUALS 0.6 SQ. FT. OF NET FREE AREA REQUIRED. INSTALL 6 MIL POLY TO COVER ENTIRE CRAWL SPACE. LOCATE VENTS WITHIN 3'-0" OF EACH CORNER OF THE BUILDING TO PROVIDE CROSS-VENTILATION.

- STRUCTURAL NOTES:**
1. ALL FRAMING LUMBER TO BE #2 SFF (UNO). ALL TREATED LUMBER TO BE #2 SYP (UNO).
  2. INSTALL AN EXTRA OR DOUBLE JOIST UNDER WALLS PARALLEL TO FLOOR JOISTS WHERE NOTED ON THE PLANS.
  3. SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION.
  4. SHADED PIERS TO BE FILLED SOLID.
  5. INSTALL LADDER WIRE #16" O.C. TO SECURE MULTIPLE W/ THE FOUNDATION WALLS TOGETHER.
  6. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

- 150 MPH ULTIMATE DESIGN WIND SPEED NOTES FOR LESS THAN 30' MEAN ROOF HEIGHT:**
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 WITH SPECIAL CONSIDERATION TO CHAPTER 45 ("HIGH WIND ZONES") FOR 150 MPH WINDS.
  3. BUILDER IS TO PROVIDE FRAMING CONNECTIONS AS REQUIRED BY CHAPTER 45 ("HIGH WIND ZONES") FOR 150 MPH WINDS OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
  4. FOUNDATION ANCHORAGE TO COMPLY WITH SECTION 4504 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
  5. MEAN ROOF HEIGHT IS LESS THAN 30 FEET.
  6. WALL CLADDING DESIGNED FOR +4.3 PSF AND -31 PSF (+/- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP.)).
  7. ROOF CLADDING DESIGNED FOR +2.2 PSF AND -28 PSF FOR ROOF PITCHES 1/2 TO 1/2 AND +4 PSF AND -51 PSF FOR ROOF PITCHES 2.25/2 TO 1/2.
  8. 1/6" OSB SHEATHING IS REQUIRED ON ALL EXTERIOR WALLS.
  9. WALLS TO BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION AND AS NOTED ON PLANS.
  10. ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRC, 2018 EDITION.

- 120 MPH ULTIMATE DESIGN WIND SPEED NOTES FOR LESS THAN 30' MEAN ROOF HEIGHT:**
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 1" 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 +5.5 PSF AND -20 PSF (+/- INDICATE POSITIVE / NEGATIVE PRESSURE (TYP.)).
  7. ROOF CLADDING DESIGNED FOR +4.3 PSF AND -18 PSF FOR ROOF PITCHES 1/2 TO 1/2 AND +0 PSF AND -36 PSF FOR ROOF PITCHES 2.25/2 TO 1/2.
  8. INSTALL 1/6" OSB SHEATHING ON ALL EXTERIOR WALLS OF ALL STOREYS IN ACCORDANCE WITH SECTION R602.10.3 OF THE NRC, 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 NRC, 2018 EDITION.
  10. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

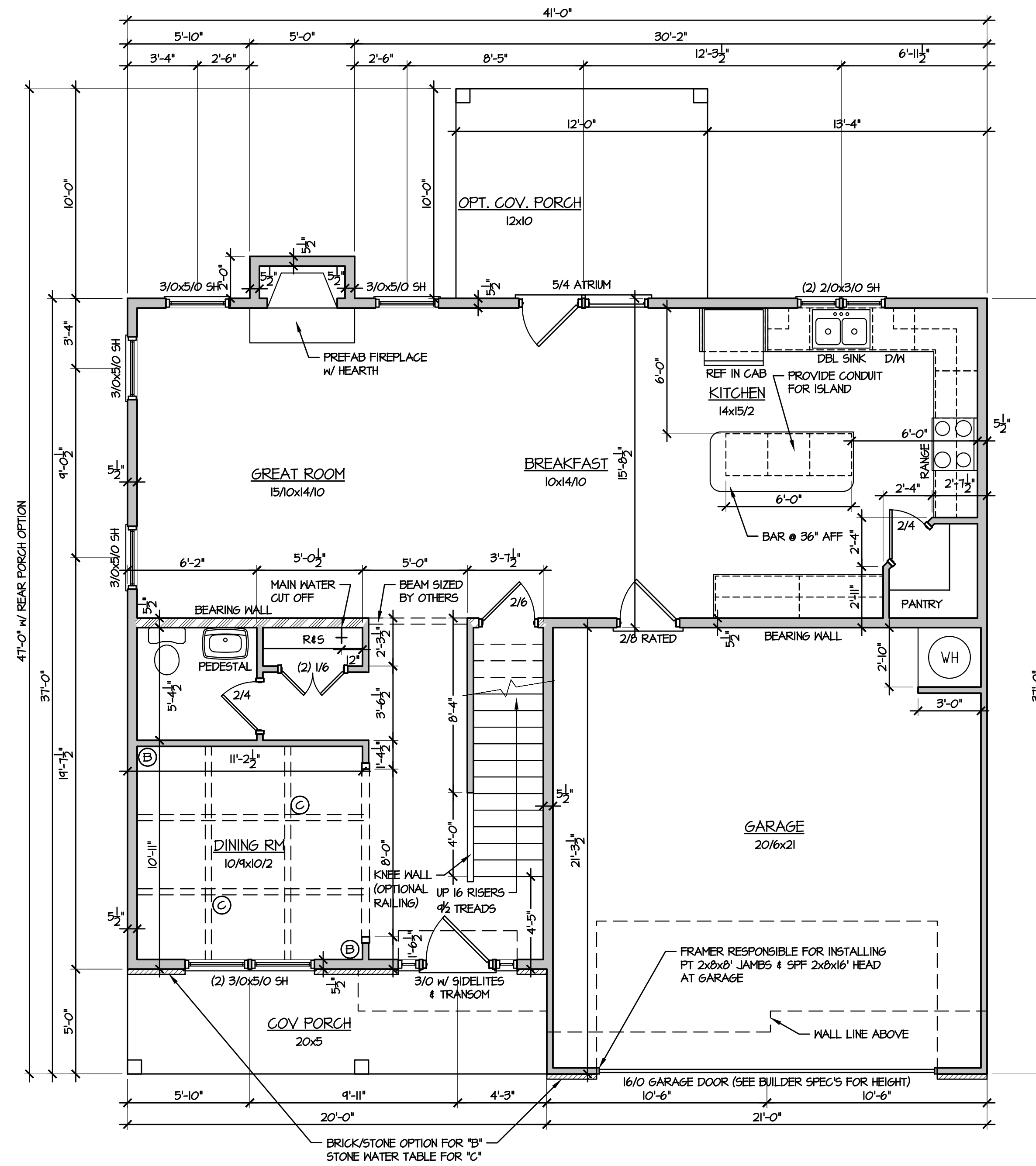
**J.S. THOMPSON ENGINEERING, INC**  
 606 WADE AVE., SUITE 104 RALEIGH, NC 27605  
 PHONE: (919) 789-9919 FAX: (919) 789-9921  
 N.C. LICENSE NO. C-1733

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 CAVINESS AND CATES

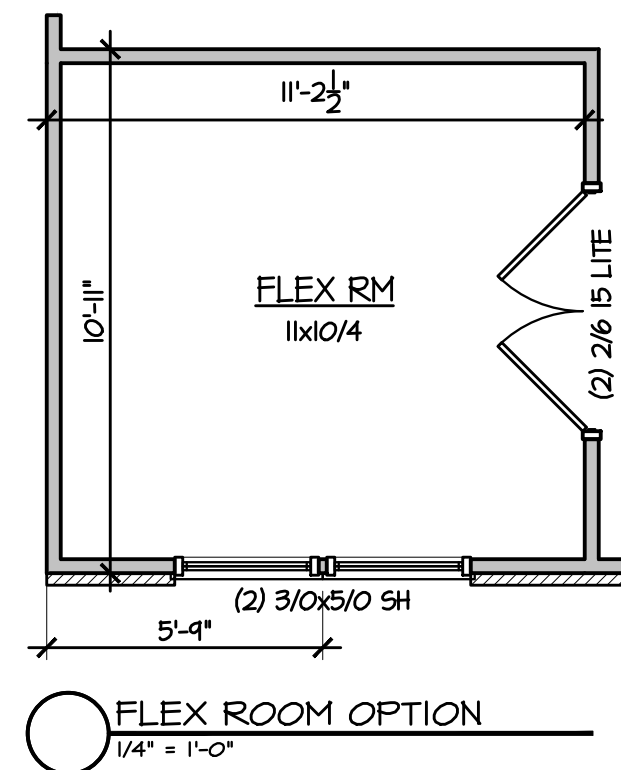
DATE: FEBRUARY 19, 2019  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: CAROLINA RESIDENTIAL DESIGN GROUP  
 ENGINEERED BY: WFB

SHEET 1 OF 6  
 S-1a  
 CRAWL FOUNDATION PLAN

FIELD & REDLINE NOTES



1 FIRST FLOOR PLAN  
1/4" = 1'-0"



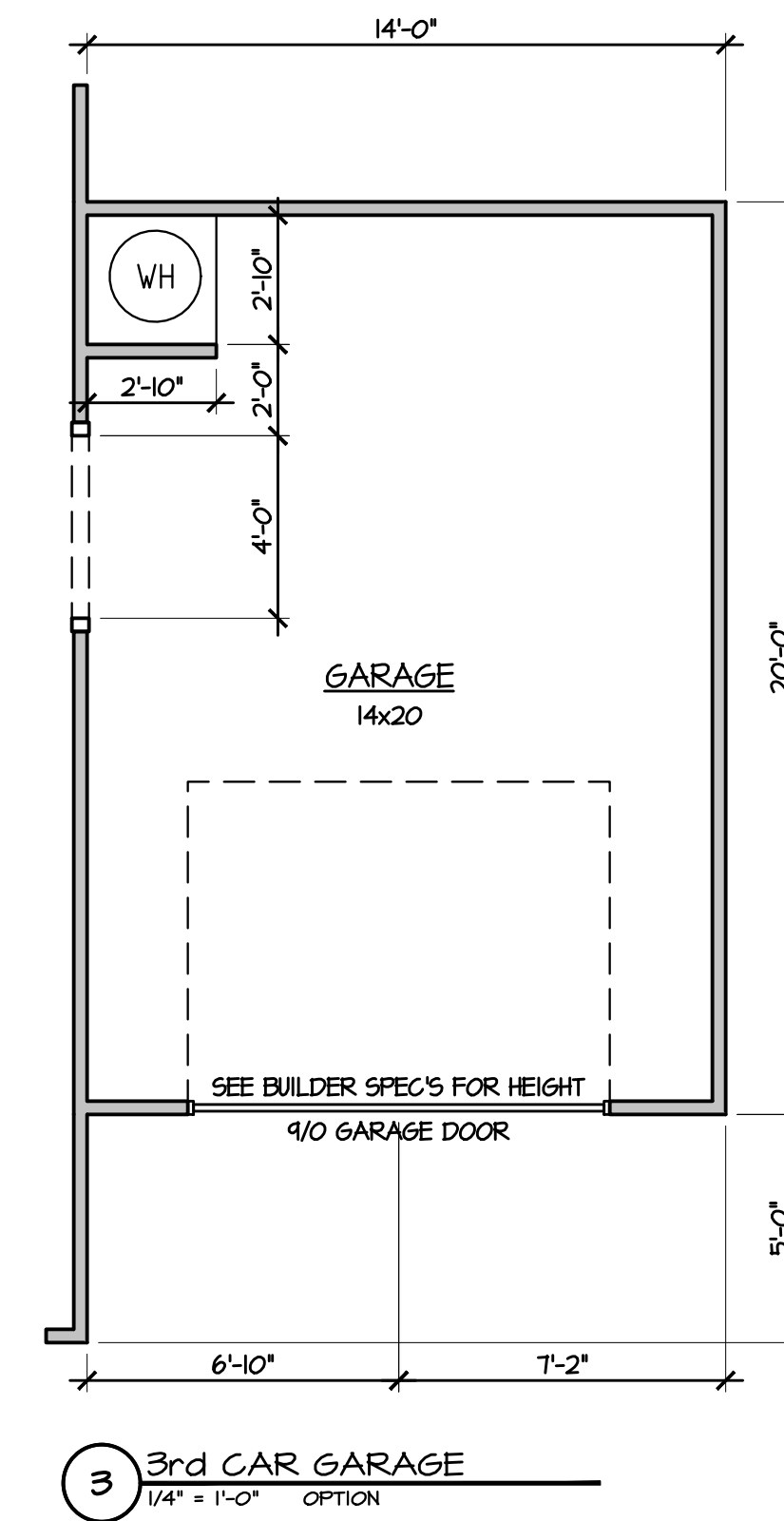
FLEX ROOM OPTION  
1/4" = 1'-0"

GENERAL NOTE:  
ALL 2x4 WALLS DRAWN AS 3 1/2"  
ALL 2x6 WALLS DRAWN AS 5 1/2"

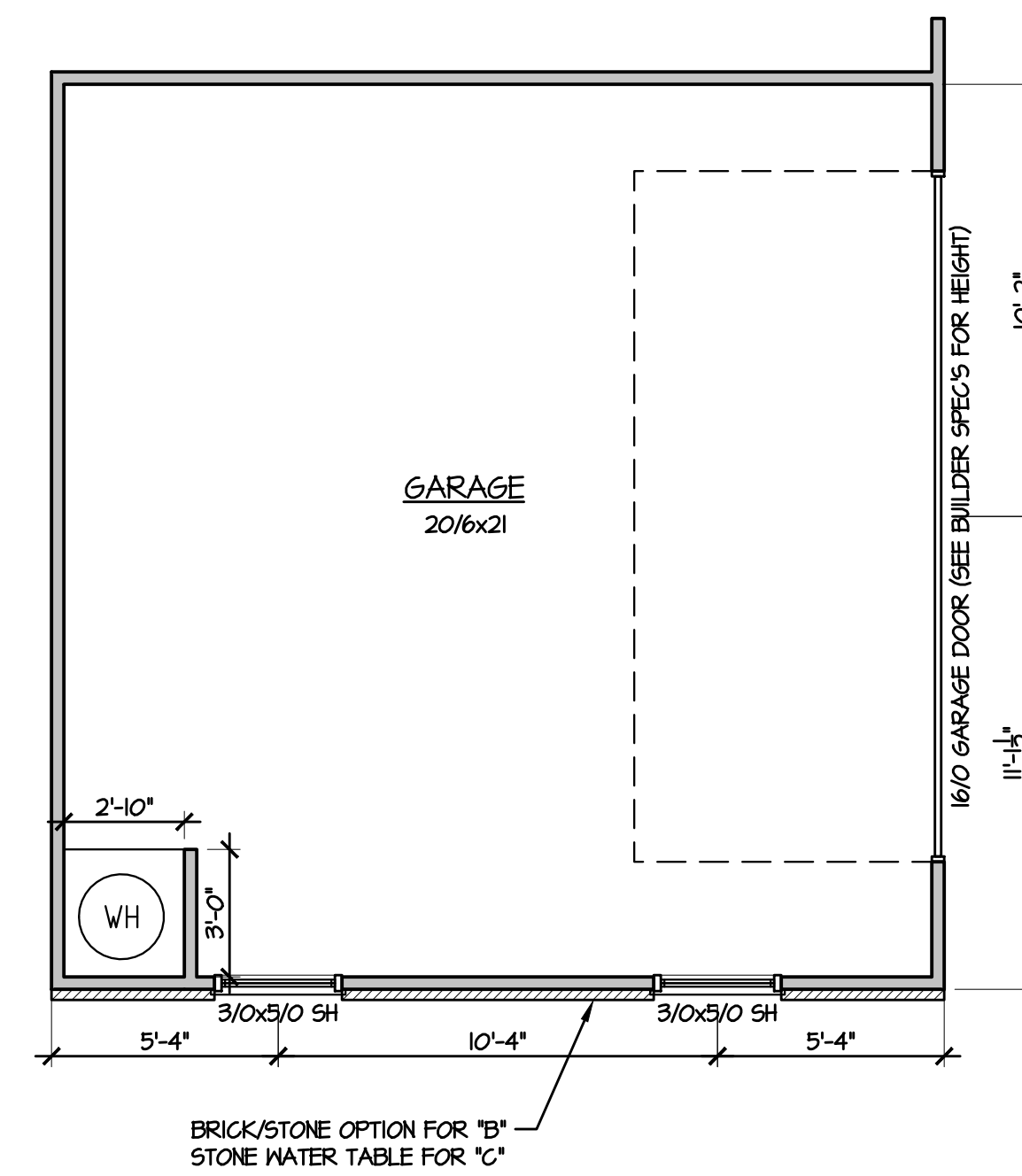
INTERIOR BEARING WALL

ALL EXTERIOR DIMENSIONS INCLUDE  
WALL SHEATHING

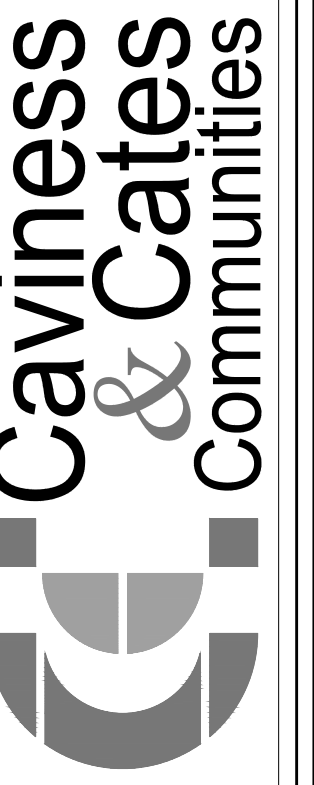
ALL WALLS ARE 2x4 WALLS UNLESS OTHERWISE NOTED



3 3rd CAR GARAGE  
1/4" = 1'-0" OPTION

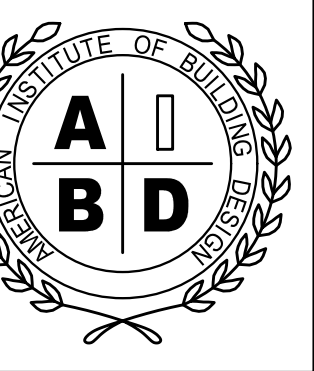


2 SIDE LOAD GARAGE  
1/4" = 1'-0"



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PLAN NUMBER:  
CC 2325

SHEET TITLE:  
FIRST FLOOR PLAN

PLAN NO:  
CC 2325

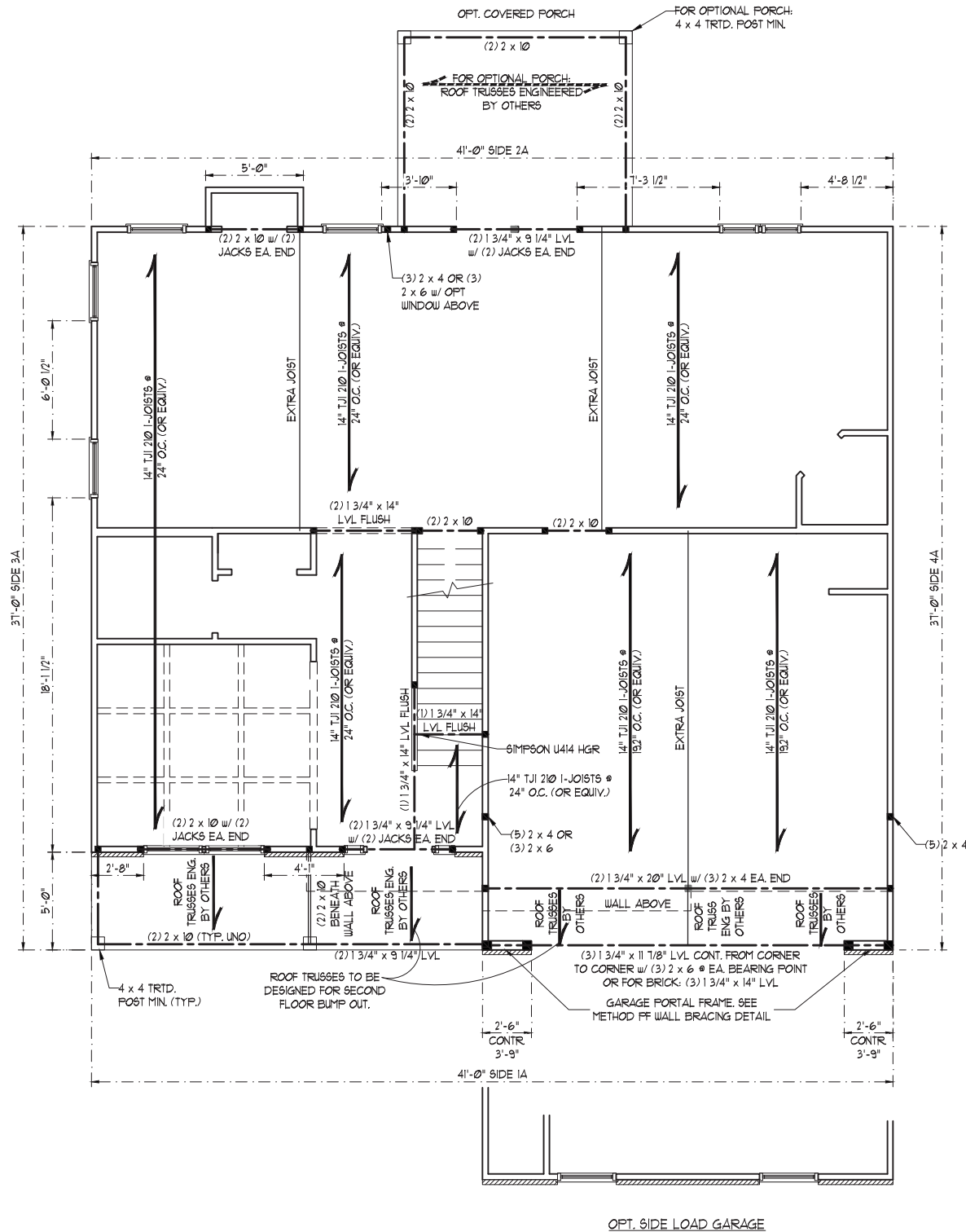
DATE:  
FEBRUARY 2020

REVISIONS:


SHEET NO:

3





**BRACED WALL DESIGN NOTES:**

- BRACED WALL DESIGN PER SECTION R602.10 OF THE NCRC 2018 EDITION.
- CS-WSP REFERS TO "CONTINUOUS SHEATHING - WOOD STRUCTURAL PANELS" CONTRACTOR IS TO INSTALL 1/16" OSB ON ALL EXTERIOR WALLS ATTACHED w/ 8d NAILS SPACED 6" O.C. ALONG PANEL EDGES AND 12" O.C. IN THE FIELD.
- 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 1" O.C. ALONG PANEL EDGES AND IN THE FIELD INCLUDING TOP AND BOTTOM FLATES.
- BRACED WALL DESIGN APPLIED IN WIND ZONES UP TO 130 MPH. FOR HIGH WIND ZONES, BRACE WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 45 OF THE NCRC 2018 EDITION.
- SEE NOTES AND DETAIL SHEETS FOR ADDITIONAL BRACED WALL INFORMATION.

**SCALE NOTE:**

LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

**\*NOTE:** ALL EXTERIOR WALLS AND ATTIC WALLS ARE TO BE 2 x 4 @ 16" O.C. MIN. (UNO). 2 x 6 @ 24" O.C. EXTERIOR WALLS MAY BE CONSTRUCTED IN LIEU OF 2 x 4 WALLS. ALL INTERIOR LOAD BEARING WALLS ARE TO BE 2 x 4 @ 16" O.C. (UNO) AND NON-LOAD BEARING INTERIOR WALLS ARE TO BE 2 x 4 @ 24" O.C. (UNO).

**BRACED WALL DESIGN**

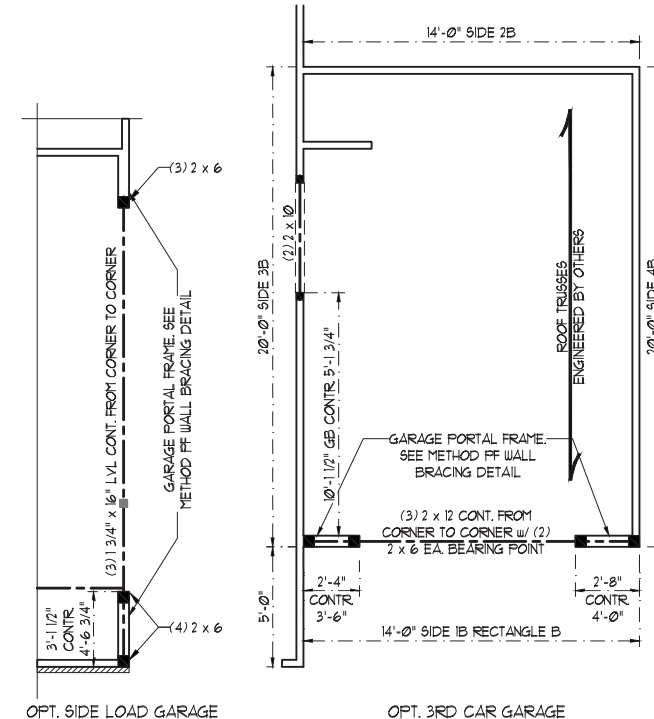
RECTANGLE A		RECTANGLE B	
SIDE 1A (FRONT LOAD)	SIDE 1B	SIDE 1B	SIDE 1B
METHOD: CS-WSP/FF	METHOD: FF-CS-WSP	METHOD: FF-CS-WSP	METHOD: FF-CS-WSP
TOTAL REQUIRED LENGTH: 12'	TOTAL REQUIRED LENGTH: 4.56'	TOTAL REQUIRED LENGTH: 4.56'	TOTAL REQUIRED LENGTH: 4.56'
TOTAL PROVIDED LENGTH: 14.25'	TOTAL PROVIDED LENGTH: 1.5'	TOTAL PROVIDED LENGTH: 1.5'	TOTAL PROVIDED LENGTH: 1.5'
SIDE 2A	SIDE 2B	SIDE 2B	SIDE 2B
METHOD: CS-WSP	METHOD: CS-WSP	METHOD: CS-WSP	METHOD: CS-WSP
TOTAL REQUIRED LENGTH: 12'	TOTAL REQUIRED LENGTH: 4.56'	TOTAL REQUIRED LENGTH: 4.56'	TOTAL REQUIRED LENGTH: 4.56'
TOTAL PROVIDED LENGTH: 20.83'	TOTAL PROVIDED LENGTH: 1.4'	TOTAL PROVIDED LENGTH: 1.4'	TOTAL PROVIDED LENGTH: 1.4'
SIDE 3A	SIDE 3B / 4A	SIDE 3B / 4A	SIDE 3B / 4A
METHOD: CS-WSP	METHOD: CS-WSP	METHOD: CS-WSP	METHOD: CS-WSP
TOTAL REQUIRED LENGTH: 13.1'	TOTAL REQUIRED LENGTH: 16.6'	TOTAL REQUIRED LENGTH: 16.6'	TOTAL REQUIRED LENGTH: 16.6'
TOTAL PROVIDED LENGTH: 24.2'	TOTAL PROVIDED LENGTH: 22.1'	TOTAL PROVIDED LENGTH: 22.1'	TOTAL PROVIDED LENGTH: 22.1'
SIDE 4A	SIDE 4B	SIDE 4B	SIDE 4B
METHOD: CS-WSP/FF	METHOD: CS-WSP	METHOD: CS-WSP	METHOD: CS-WSP
TOTAL REQUIRED LENGTH: 13.1'	TOTAL REQUIRED LENGTH: 3.5'	TOTAL REQUIRED LENGTH: 3.5'	TOTAL REQUIRED LENGTH: 3.5'
TOTAL PROVIDED LENGTH: 22.6'	TOTAL PROVIDED LENGTH: 2.0'	TOTAL PROVIDED LENGTH: 2.0'	TOTAL PROVIDED LENGTH: 2.0'

**LINTEL SCHEDULE FOR BRICK/NATURAL STONE SUPPORT**

LENGTH (FT.)	SIZE OF LINTEL
UP TO 4 FT.	L 3 1/2 x 3 1/2 x 1/4
4-8	L 5 x 3 1/2 x 5/16 LLV
8 AND GREATER	L 6 x 4 x 5/16 LLV

- BRICK SUPPORT NOTES:**
- LINTEL SCHEDULE APPLIES TO ALL OPENINGS IN BRICK VENEER (UNO). SEE ARCH DIGGS. FOR SIZE AND LOCATION OF OPENINGS.
  - (LLV) = LONG LEG VERTICAL
  - LENGTH = CLEAR OPENING
  - EMBED ALL ANGLE IRONS MIN. 4" EACH SIDE INTO VENEER TO PROVIDE BEARING.
  - FOR ALL HEADERS 8'-0" AND GREATER IN LENGTH, ATTACH STEEL ANGLE TO HEADER w/ 1/2" LAG SCREWS @ 12" O.C. STAGGERED.
  - FOR ALL BRICK SUPPORT @ ROOF LINES, FASTEN (2) 2 x 10 BLOCKING BETWEEN STUDS w/ (4) 12d NAILS PER PLY. FASTEN A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING w/ (2) 1/2" LAG SCREWS @ 12" O.C. STAGGERED. SEE SECTION R103.8.2.1 OF THE 2018 NCRC FOR ADDITIONAL BRICK SUPPORT INFORMATION.
  - PRECAST REINFORCED CONCRETE LINTELS ENGINEERED BY OTHERS MAY BE USED IN LIEU OF STEEL LINTELS.

- STRUCTURAL NOTES:**
- ALL FRAMING LUMBER TO BE SPP #2 (UNO). ALL TREATED LUMBER TO BE SYP #2 (UNO).
  - ALL LOAD BEARING HEADERS TO BE (2) 2 x 10 SPP #2 OR SYP #2 (KILN DRIED) (UNO). HEADERS HAVE BEEN DESIGNED BASED ON CALCULATED LOADS. CODE TABLES HAVE NOT BEEN USED.
  - WINDOW AND DOOR HEADERS TO BE SUPPORTED w/ (1) JACK STUD AND (1) KING STUD EA. END (UNO). SEE TABLE R602.15 FOR ADDITIONAL KING STUD REQUIREMENTS.
  - SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. ALL SQUARES TO BE (2) STUDS (UNO).
  - SPECIFIED SIMPSON STRONG-TIE PRODUCTS MAY BE SUBSTITUTED WITH THOSE MANUFACTURED BY USP STRUCTURAL CONNECTORS PROVIDED THAT THE LOAD CAPACITY AND FUNCTION IS EQUIVALENT.
  - ALL 4 x 4 POSTS SHALL BE ANCHORED TO SLABS w/ SIMPSON ABU44 POST BASES (OR EQUAL) AND 6 x 6 POSTS w/ ABU66 POST BASES (OR EQUAL) (UNO). ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 100 LB CAPACITY UPLIFT CONNECTORS AT TOP (UNO).
  - FOR FIBERGLASS, ALUMINUM, OR COLUMN ENG. BY OTHERS, SECURE TO SLAB w/ (2) METAL ANGLES USING 2" CONC. SCREWS. FASTEN ANGLES TO COLUMNS w/ 1/4" THROUGH BOLTS w/ NUTS AND WASHERS. LOCATE ANGLES ON OPPOSITE SIDES OF COLUMN. THROUGH BOLTS MUST BE INSTALLED PRIOR TO SETTING COLUMN.
  - REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.



**TABLE R602.15**  
MINIMUM NUMBER OF FULL HEIGHT STUDS AT EACH END OF HEADERS IN EXTERIOR WALLS

HEADER SPAN (FEET)	MAXIMUM STUD SPACING (INCHES) (PER TABLE R602.15)	
UP TO 3'	16	24
4'	2	1
8'	3	2
12'	5	3
16'	6	4

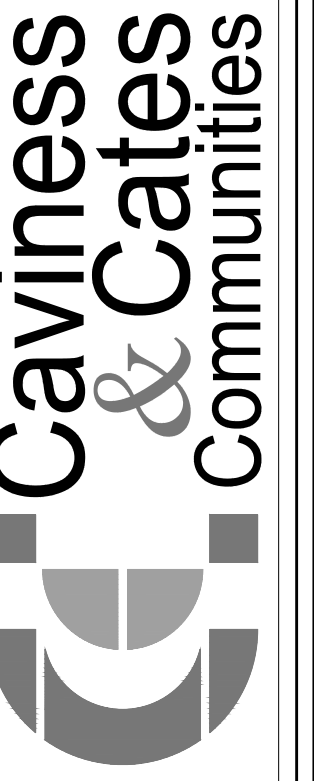
**J.S. THOMPSON ENGINEERING, INC**  
606 WADE AVE., SUITE 104 RALEIGH, NC 27605  
PHONE: (919) 789-9919 FAX: (919) 789-9921  
N.C. LICENSE NO. C-1733

CC2325  
CAVINESS AND GATES

DATE: FEBRUARY 19, 2019  
SCALE: 1/4" = 1'-0"  
DRAWN BY: CAROLINA RESIDENTIAL DESIGN GROUP  
ENGINEERED BY: WFB

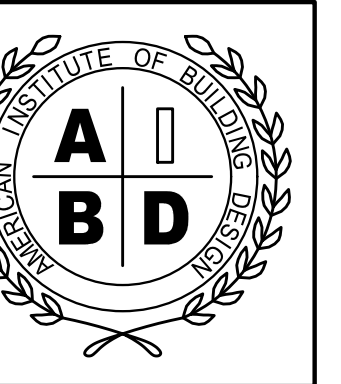
SHEET 4 OF 6  
S-2  
SECOND FLOOR FRAMING PLAN

FIELD & REDLINE NOTES



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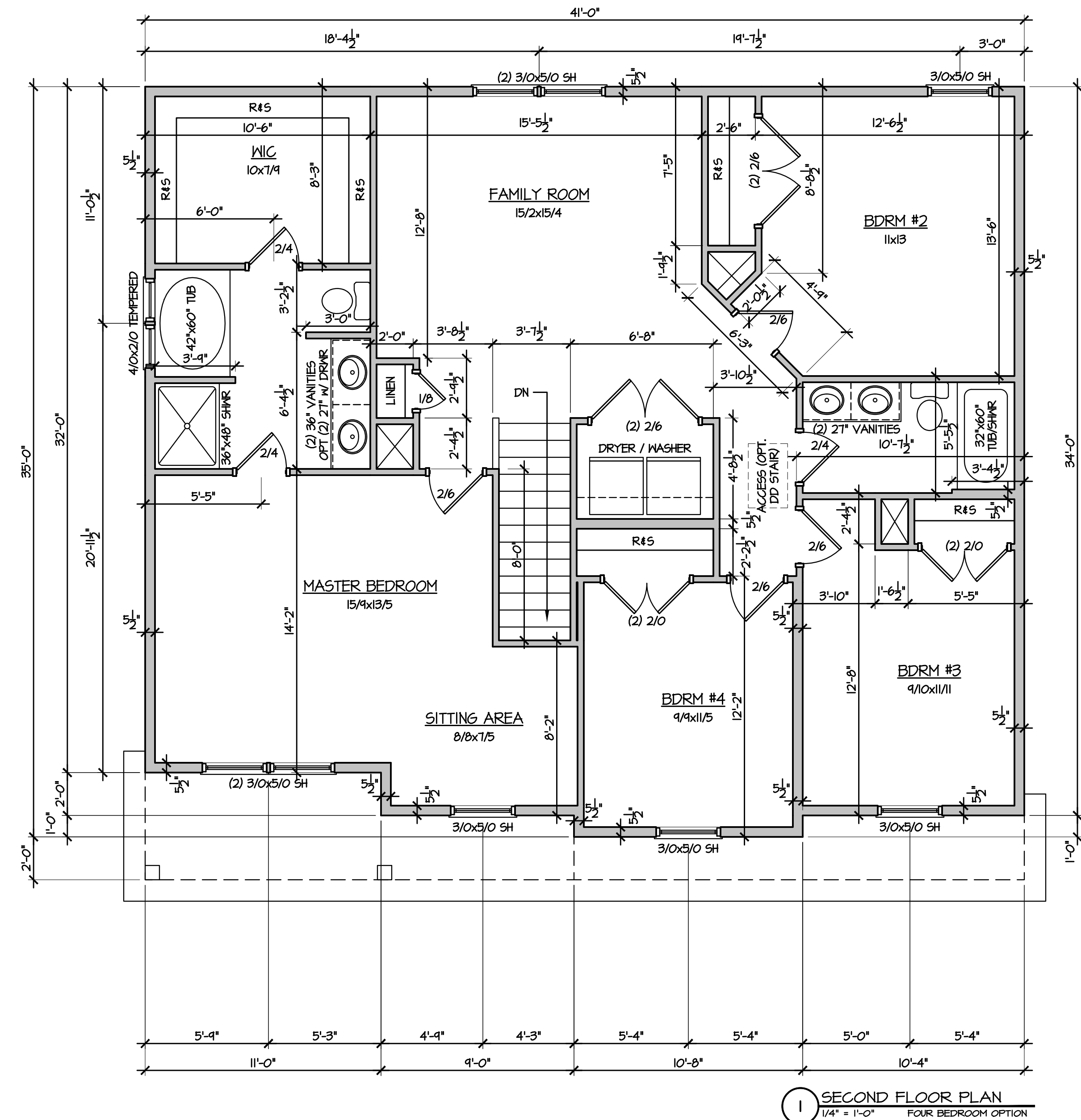
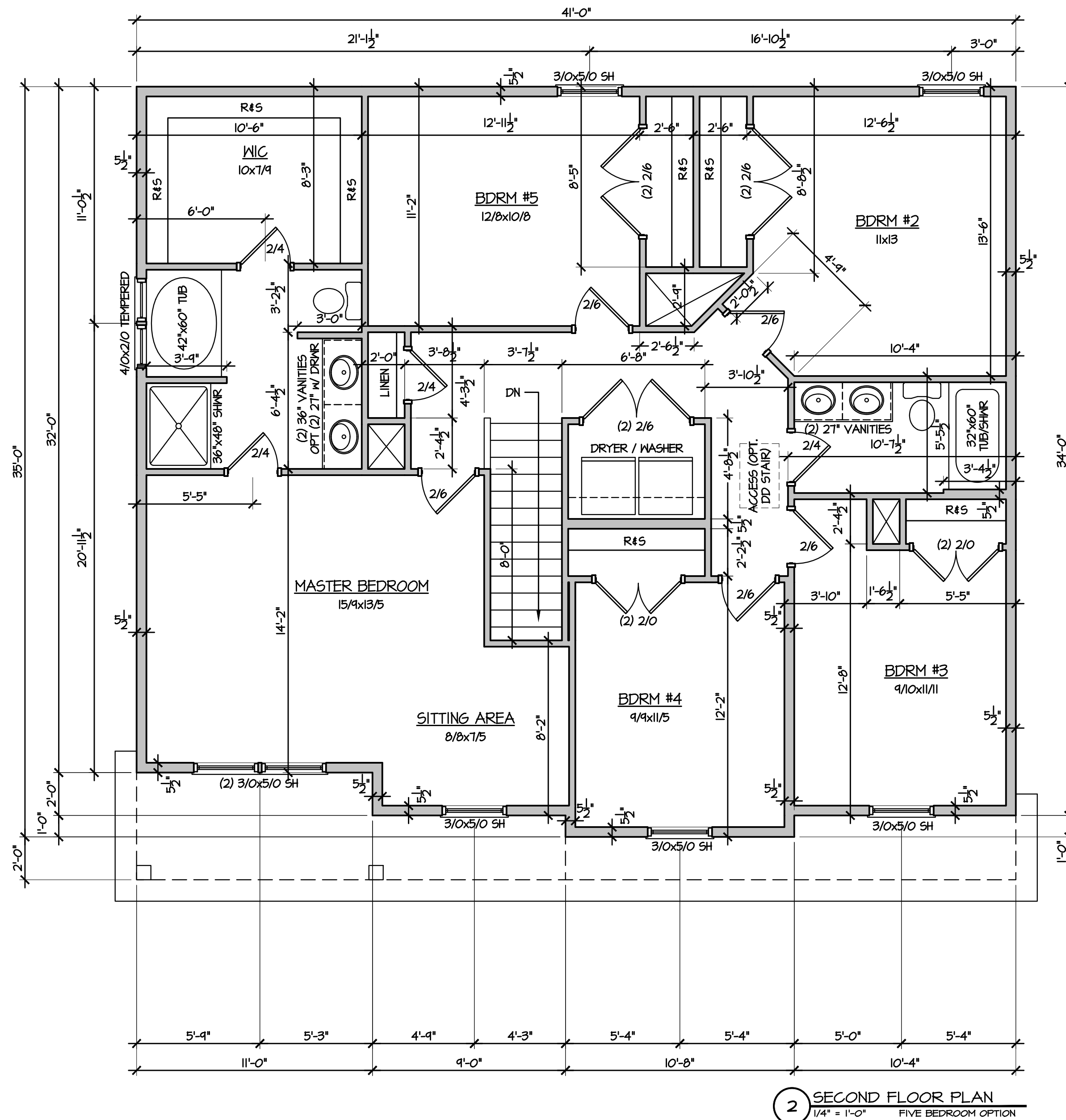
PLAN NUMBER: CC 2325  
SHEET TITLE: SECOND FLOOR PLANS

PLAN NO: CC 2325

DATE: FEBRUARY 2020

REVISIONS:


SHEET NO: 4

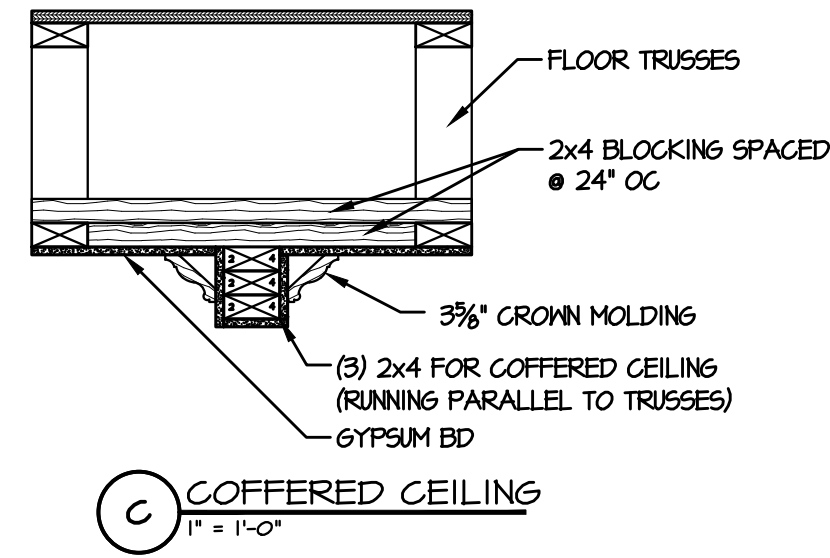


GENERAL NOTE:  
ALL 2x4 WALLS DRAWN AS 3 1/2"  
ALL 2x6 WALLS DRAWN AS 5 1/2"

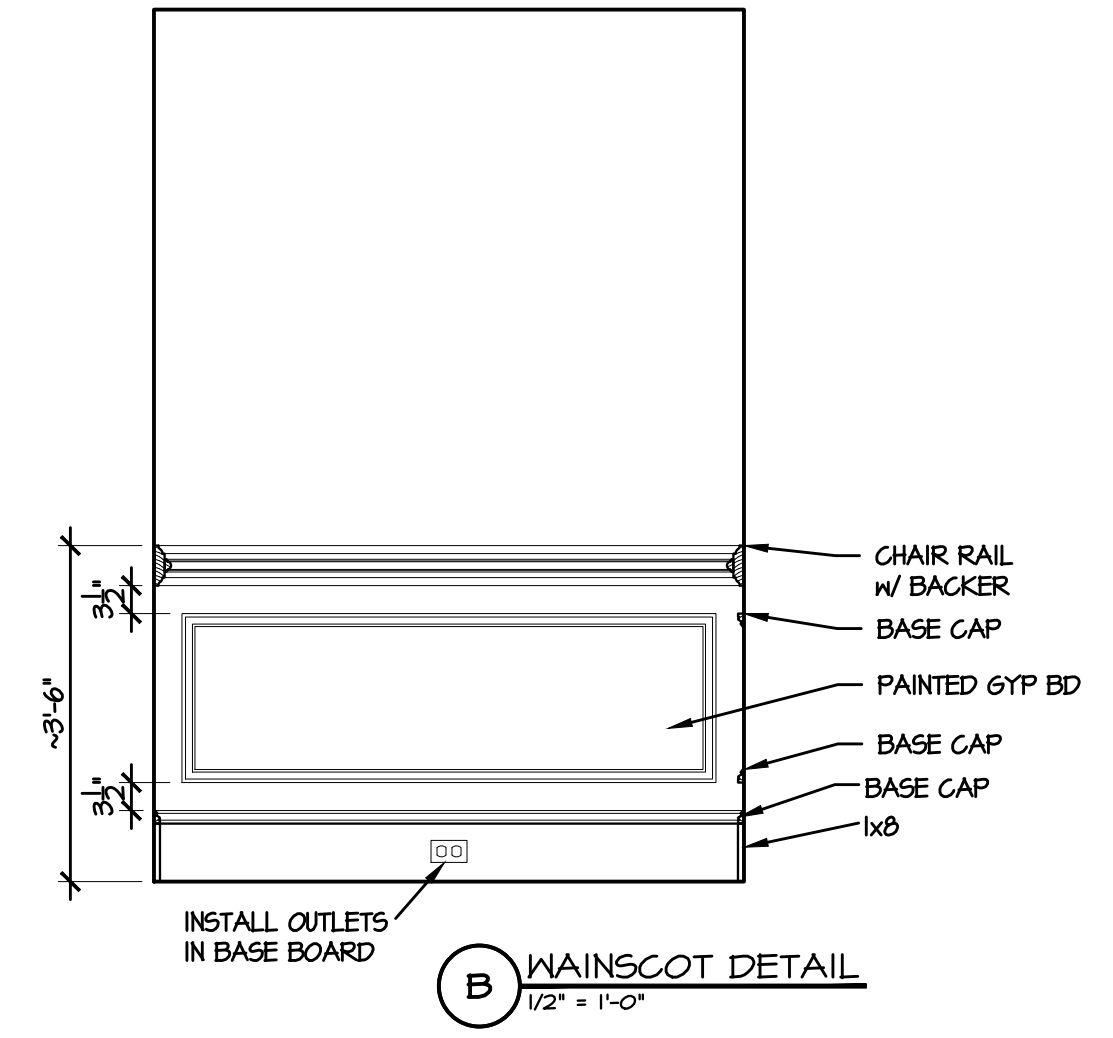
INTERIOR BEARING WALL

ALL EXTERIOR DIMENSIONS INCLUDE  
WALL SHEATHING

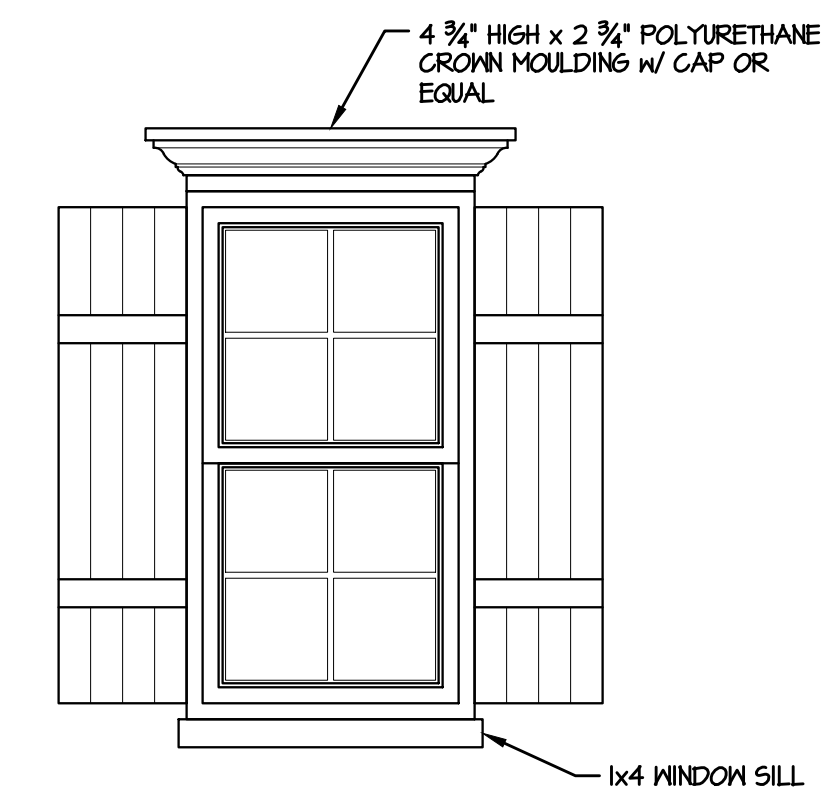
ALL WALLS ARE 2x4 WALLS UNLESS OTHERWISE NOTED



**C** COFFERED CEILING  
1/2" = 1'-0"



**B** WAINSCOT DETAIL  
1/2" = 1'-0"



**A** WINDOW TRIM-ELEVATION D  
1/2" = 1'-0"

CC 2325

PLAN NUMBER:

PLAN NO:  
CC 2325

DATE:  
FEBRUARY 2020

REVISIONS:

NO.	DESCRIPTION

SHEET NO:

D

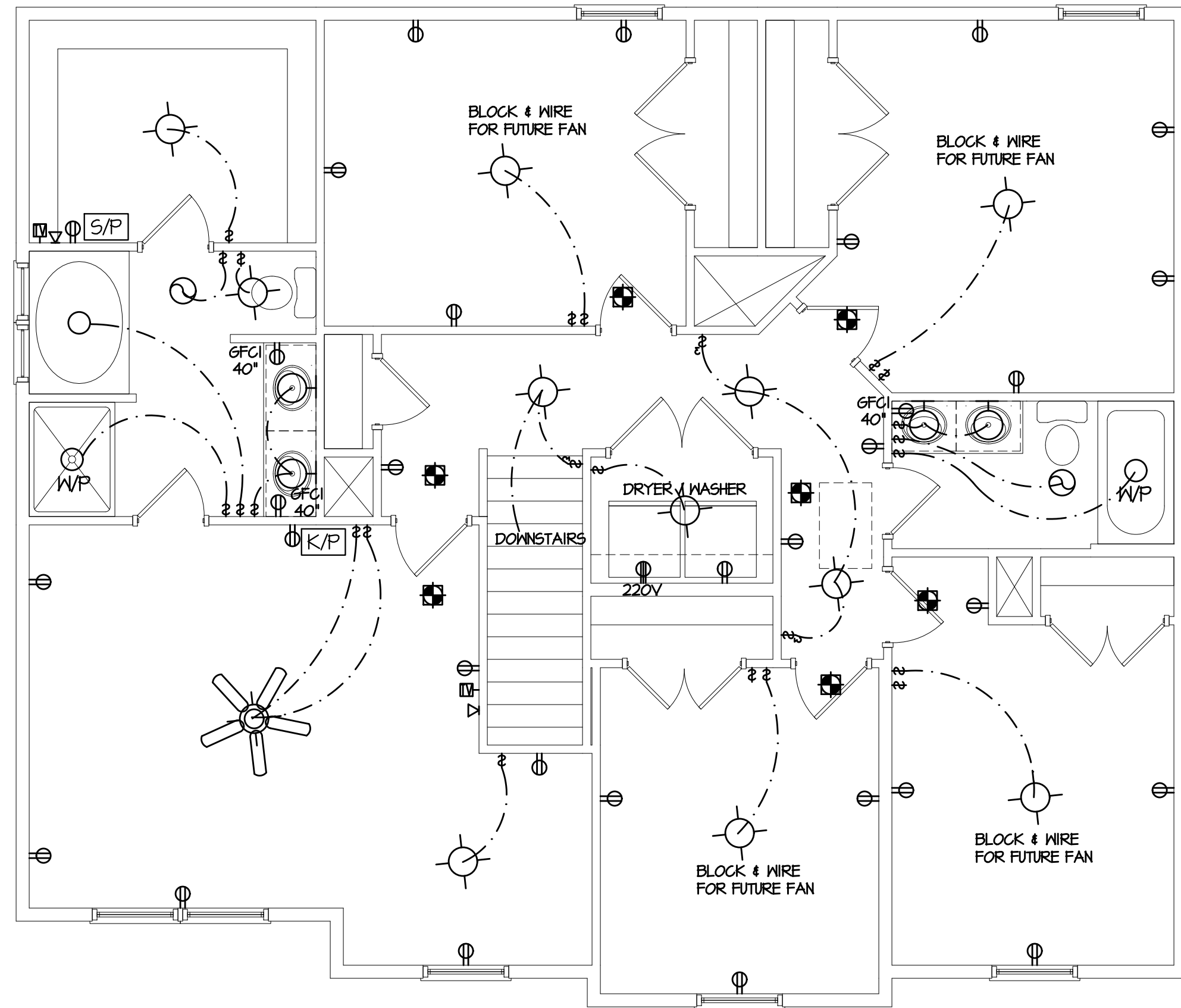
DETAILS

SHEET TITLE:

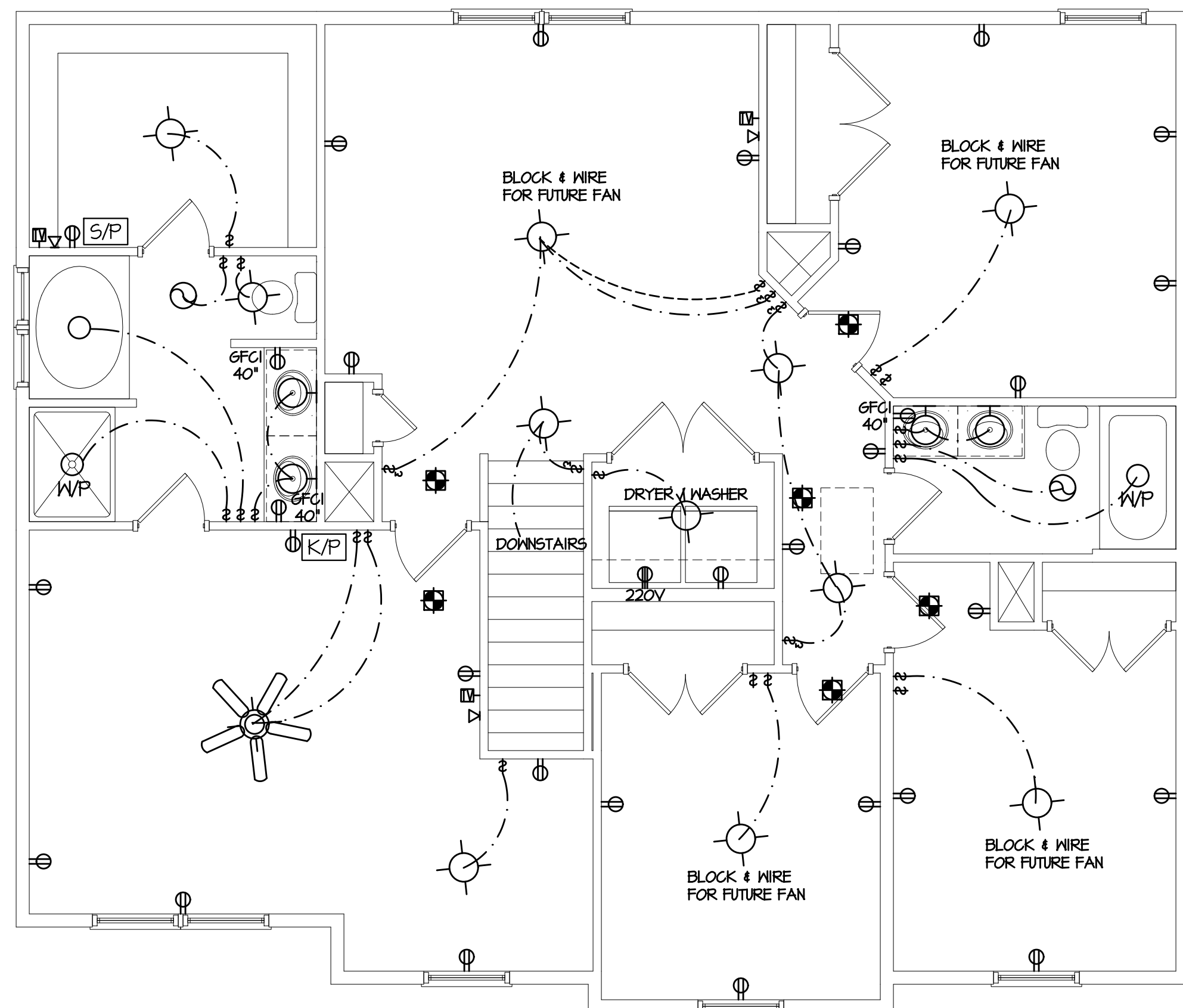
ELECTRICAL LEGEND

	CEILING FAN w/ LIGHT		FLOOD LIGHT w/ MOTION SENSOR		ONE POLE SWITCH
	CEILING FAN ON DIMMER SWITCH		EXHAUST FAN		THREE-WAY SWITCH
	CEILING-MOUNTED FLUORESCENT LIGHT		EXHAUST FAN w/ LIGHT		FOUR-WAY SWITCH
	CEILING-MOUNTED LIGHT		WATER-PROOF RECESS LIGHT		DIMMER SWITCH
	WALL-MOUNTED LIGHT		RECESS LIGHT		WATER-PROOF SWITCH
	UL-APPROVED SMOKE DETECTOR		EYEBALL (DIRECTIONAL) LIGHT		GROUND-FAULT SWITCH
			TELEPHONE JACK/PHONE CAT-5		SURROUND SOUND CEILING SPEAKER
			CABLE TV JACK/RG-6		DOOR CONTACT
			1/2 HOT OUTLET		DIRECTIONAL MOTION SENSOR
			WATER-PROOF OUTLET		SECURITY KEYPAD
			OUTLET MOUNTED XX" A.F.F.		20" ON-Q ENCLOSURE HOUSING PHONE, CABLE, ALARM & REQUIRES 110V OUTLET
			FLOOR OUTLET (LOG. BY OWNER)		SURROUND SOUND TERMINATION POINT-PHONE, CABLE, SS & FUTURE PIPE WILL TERMINATE IN ONE PHONE/CABLE JACK & SPOUT PLATE
			220 VOLT OUTLET		
			GROUND-FAULT OUTLET		
			WALL OUTLET		
			QUADRAPLEX WALL OUTLET		
			THERMOSTAT		

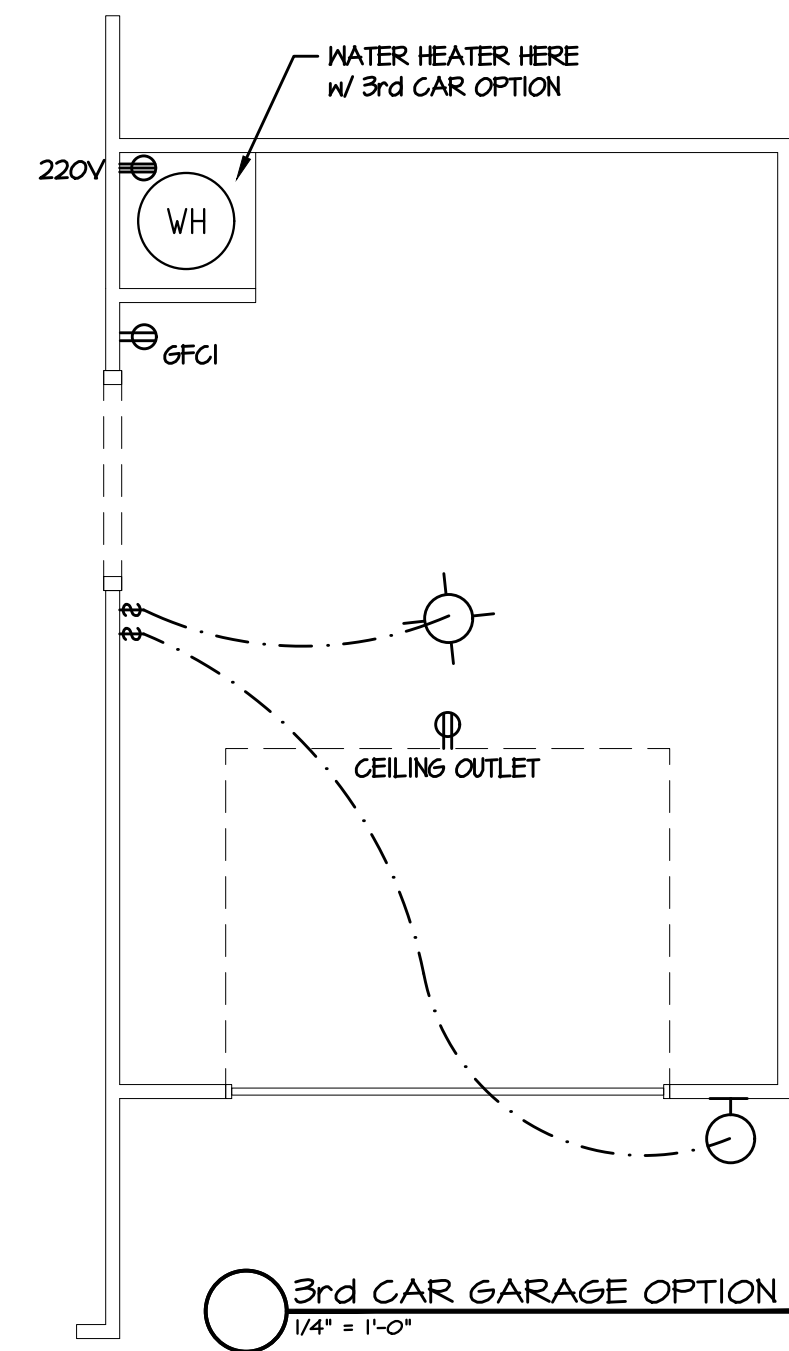
FIELD & REDLINE NOTES

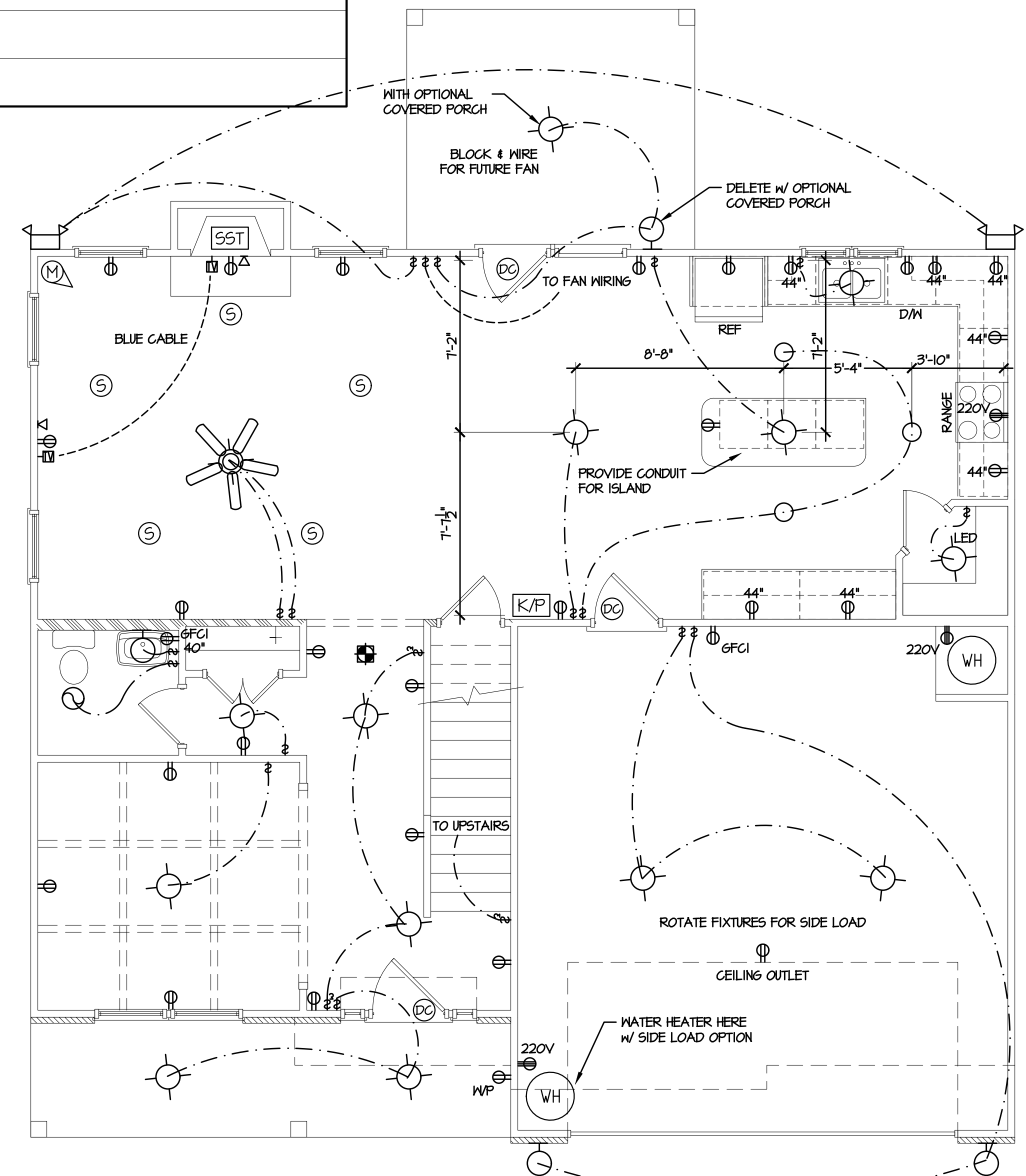
3 SECOND FLOOR PLAN  
1/4" = 1'-0" FIVE BEDROOM OPTION



2 SECOND FLOOR PLAN  
1/4" = 1'-0" FOUR BEDROOM OPTION



3rd CAR GARAGE OPTION  
1/4" = 1'-0"

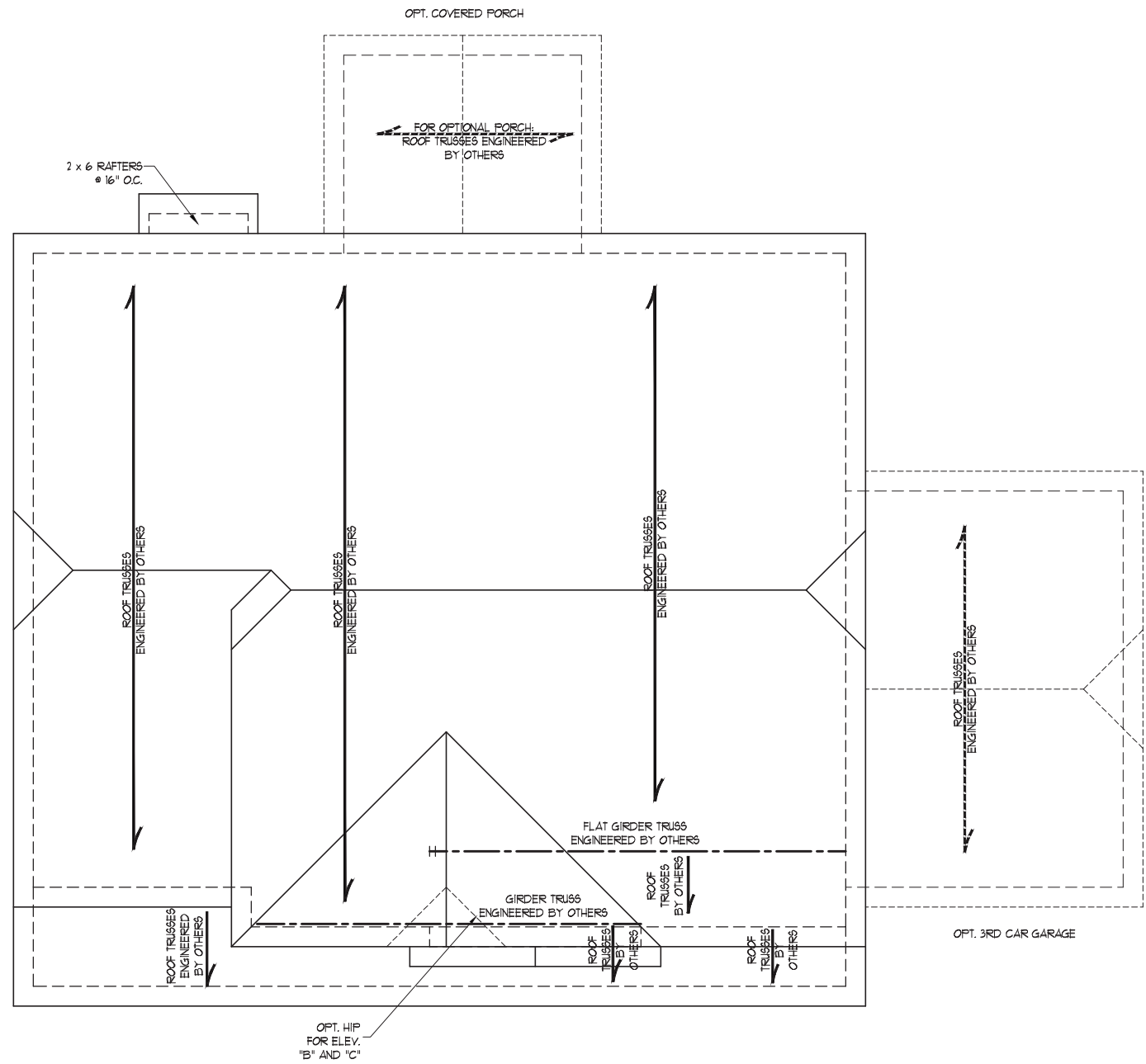


1 FIRST FLOOR PLAN  
1/4" = 1'-0"





SCALE NOTE:  
 LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
 11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE



ATTIC VENT CALCULATION:  
 1517 SQ. FT. OF ATTIC DIVIDED BY 150 REQUIRES 10 SQ. FT. OF NET FREE VENTILATING AREA (MIN.)

- STRUCTURAL NOTES:
1. ALL FRAMING LUMBER TO BE #2 SFF (UNO).
  2. CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF SUPPORT.
  3. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS.
  4. HIP SPLICES ARE TO BE SPACED A MIN. OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS @ 16" O.C. (TYP.)
  5. 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.
  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. EACH RAFTER IS TO BE FASTENED TO THE FLAT VALLEY WITH A MIN. OF (6) 12d TOE NAILS.
  7. REFER TO SECTION R802.11 OF THE 2018 NRC FOR REQUIRED UPLIFT RESISTANCE AT RAFTERS AND TRUSSES.
  8. REFER TO NOTES AND DETAIL SHEETS FOR ADDITIONAL STRUCTURAL INFORMATION.

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 N.C. LICENSE NO.: C-1733

CC2325  
 CAVINESS AND CATES



DATE: FEBRUARY 19, 2019  
 SCALE: 1/4" = 1'-0"  
 DRAWN BY: CAROLINA RESIDENTIAL DESIGN GROUP  
 ENGINEERED BY: WFB

SHEET 6 OF 6  
 S-4  
 ROOF FRAMING PLAN

2/19/19





SCALE NOTE:  
LARGE FORMAT PRINTS ARE TO SCALE AS NOTED.  
11" x 17" PRINTS ARE ONE HALF THE NOTED SCALE

**GENERAL NOTES**

- 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.
  - ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE NORTH CAROLINA RESIDENTIAL CODE (NRC), 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.
  - STRUCTURAL DESIGN BASED ON THE PROVISIONS OF THE NRC, 2018 EDITION (R301.4 - R301.1)
- | DESIGN CRITERIA:                 | LIVE LOAD (P <sub>LF</sub> )                      | DEAD LOAD (P <sub>DF</sub> ) | 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: P <sub>g</sub> | 20 (P <sub>DF</sub> )                             |                              |                                   |
- I-JOIST SYSTEMS DESIGNED WITH 12 P<sub>DF</sub> DEAD LOAD AND DEFLECTION (IN) OF L/480
  - FLOOR TRUSS SYSTEMS DESIGNED WITH 15 P<sub>DF</sub> DEAD LOAD
- FOR 15 AND 20 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION R403.16 OF THE NRC, 2018 EDITION. FOR 130 MPH, 140 MPH, AND 150 MPH WIND ZONES, FOUNDATION ANCHORAGE IS TO COMPLY WITH SECTION 4504 OF THE NRC, 2018 EDITION.
  - ENERGY EFFICIENCY COMPLIANCE AND INSULATION VALUES OF THE BUILDING TO BE IN ACCORDANCE WITH CHAPTER 11 OF THE NRC, 2018 EDITION.

**FOOTING AND FOUNDATION NOTES**

- FOUNDATION DESIGN BASED ON A MINIMUM ALLOWABLE BEARING CAPACITY OF 2000 P<sub>SF</sub>. CONTACT GEOTECHNICAL ENGINEER IF BEARING CAPACITY IS NOT ACHIEVED.
- 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 34" 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 R403.1 OF THE NRC, 2018 EDITION.
- 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 SAILED WITHIN 4 TO 12 HOURS OF CONCRETE FINISHING AND WALL LOCATIONS HAVE BEEN MARKED. ADJUST WHERE NECESSARY.
- CONCRETE SHALL CONFORM TO SECTION R402.2 OF THE NRC, 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.
- MASONRY UNITS TO CONFORM TO ACE 530/ASCE 5/TMS 402. MORTAR SHALL CONFORM TO ASTM C170.
- 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 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.
- 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.
- ALL CONCRETE AND MASONRY FOUNDATION WALLS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF SECTION R404 OF THE NRC, 2018 EDITION OR IN ACCORDANCE WITH ACI 318, ACI 332, NCMAT 608-A OR ACE 530/ASCE 5/TMS 402. MASONRY FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(1), R404.1(2), R404.1(3), OR R404.1(4) OF THE NRC, 2018 EDITION. CONCRETE FOUNDATION WALLS ARE TO BE REINFORCED PER TABLE R404.1(5) OF THE NRC, 2018 EDITION. STEP CONCRETE FOUNDATION WALLS TO 2 x 6 FRAMED WALLS AT 16" O.C. WHERE GRADE PERMITS (UNO).

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**FRAMING NOTES**

- ALL FRAMING LUMBER SHALL BE #2 SFF MINIMUM (F<sub>b</sub> = 875 P<sub>SI</sub>, F<sub>v</sub> = 375 P<sub>SI</sub>, E = 1600000 P<sub>SI</sub>) UNLESS NOTED OTHERWISE (UNO). ALL TREATED LUMBER SHALL BE #2 SYP MINIMUM (F<sub>b</sub> = 975 P<sub>SI</sub>, F<sub>v</sub> = 175 P<sub>SI</sub>, E = 1600000 P<sub>SI</sub>) UNLESS NOTED OTHERWISE (UNO).
- LAMINATED VENEER LUMBER (LVL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F<sub>b</sub> = 2600 P<sub>SI</sub>, F<sub>v</sub> = 285 P<sub>SI</sub>, E = 1900000 P<sub>SI</sub>. LAMINATED STRAND LUMBER (LSL) SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F<sub>b</sub> = 2325 P<sub>SI</sub>, F<sub>v</sub> = 310 P<sub>SI</sub>, E = 1500000 P<sub>SI</sub>. PARALLEL STRAND LUMBER (PSL) UP TO 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F<sub>c</sub> = 2500 P<sub>SI</sub>, E = 1800000 P<sub>SI</sub>. PARALLEL STRAND LUMBER (PSL) MORE THAN 1" DEPTH SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES: F<sub>c</sub> = 2920 P<sub>SI</sub>, E = 2000000 P<sub>SI</sub>. INSTALL ALL CONNECTIONS PER MANUFACTURER'S SPECIFICATIONS.
- 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
- 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

LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDING THE JOISTS ARE TOE NAILED TO THE 2x NAILER ON TOP OF THE STEEL BEAM, AND THE 2x NAILER IS SECURED TO THE TOP OF THE STEEL BEAM w/ (2) ROWS OF SELF TAPPING SCREWS @ 16" O.C. OR (2) ROWS OF 1/2" DIAMETER BOLTS @ 16" O.C. IF 1/2" BOLTS ARE USED TO FASTEN THE NAILER, THE STEEL BEAM SHALL BE FABRICATED w/ (2) ROWS OF 9/16" DIAMETER HOLES @ 16" O.C.
- SQUARES DENOTE POINT LOADS WHICH REQUIRE SOLID BLOCKING TO GIRDER OR FOUNDATION. SHADED SQUARES DENOTE POINT LOADS FROM ABOVE WHICH REQUIRE SOLID BLOCKING TO SUPPORTING MEMBER BELOW.
- ALL LOAD BEARING HEADERS TO CONFORM TO TABLE R602.1(1) AND R602.1(2) OF THE NRC, 2018 EDITION OR BE (2) 2 x 6 WITH (1) JACK AND (1) KING STUD EACH END (UNO), WHICHEVER IS GREATER. ALL HEADERS TO BE SECURED TO EACH JACK STUD WITH (4) 8d NAILS. ALL BEAMS TO BE SUPPORTED WITH (2) STUDS AT EACH BEARING POINT (UNO). INSTALL KING STUDS PER SECTION R602.15 OF THE NORTH CAROLINA RESIDENTIAL CODE, 2018 EDITION.
- 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).
- FLITCH BEAMS SHALL BE BOLTED TOGETHER USING 1/2" DIAMETER BOLTS (ASTM A307) WITH WASHERS PLACED AT THREADED END OF BOLT. BOLTS SHALL BE SPACED AT 24" CENTERS (MAXIMUM), AND STAGGERED AT TOP AND BOTTOM OF BEAM (2" EDGE DISTANCE), WITH (2) BOLTS LOCATED AT 6" FROM EACH END (UNO).
- 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.
- 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.
- PROVIDE DOUBLE JOIST UNDER ALL WALLS PARALLEL TO FLOOR JOISTS. PROVIDE SUPPORT UNDER ALL WALLS PARALLEL TO FLOOR TRUSSES OR I-JOISTS PER MANUFACTURER'S SPECIFICATIONS. INSTALL BLOCKING BETWEEN JOISTS OR TRUSSES FOR POINT LOAD SUPPORT FOR ALL POINT LOADS ALONG OFFSET LOAD LINES.
- FOR ALL HEADERS SUPPORTING BRICK VENEER THAT ARE LESS THAN 8'-0" IN LENGTH, REST A 6" x 4" x 5/16" STEEL ANGLE WITH 6" MINIMUM EMBEDMENT AT SIDES FOR BRICK SUPPORT (UNO). FOR ALL HEADERS 8'-0" AND GREATER IN LENGTH, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO HEADER WITH 1/2" LAG SCREWS AT 12" O.C. STAGGERED FOR BRICK SUPPORT. FOR ALL BRICK SUPPORT AT ROOF LINES, BOLT A 6" x 4" x 5/16" STEEL ANGLE TO (2) 2 x 10 BLOCKING INSTALLED w/ (4) 12d NAILS EA. PLY BETWEEN WALL STUDS WITH (2) ROWS OF 1/2" LAG SCREWS AT 12" O.C. STAGGERED AND IN ACCORDANCE WITH SECTION R103.2(1) OF THE NRC, 2018 EDITION.
- FOR STICK FRAMED ROOFS: CIRCLES DENOTE (3) 2 x 4 POSTS FOR ROOF MEMBER SUPPORT. HIP SPLICES ARE TO BE SPACED A MINIMUM OF 8'-0". FASTEN MEMBERS WITH THREE ROWS OF 12d NAILS AT 16" O.C. FRAME DORMER WALLS ON TOP OF DOUBLE OR TRIPLE RAFTERS AS SHOWN (UNO).
- FOR TRUSSED ROOFS: FRAME DORMER WALLS ON TOP OF 2 x 4 LADDER FRAMING AT 24" O.C. BETWEEN ADJACENT ROOF TRUSSES. STICK FRAME OVER-FRAMED ROOF SECTIONS WITH 2 x 8 RIDGES, 2 x 6 RAFTERS AT 16" O.C. AND FLAT 2 x 10 VALLEYS (UNO).
- ALL 4 x 4 AND 6 x 6 POSTS TO BE INSTALLED WITH 100 LB CAPACITY UPLIFT CONNECTORS TOP AND BOTTOM (UNO). POSTS MAY BE SECURED USING ONE SIMPSON H6 OR L7512 UPLIFT CONNECTOR FASTENED TO THE BAND AT THE BOTTOM AND THE BEAM AT THE TOP OF EACH POST. ONE 16" SECTION OF SIMPSON C516 COIL STRAPPING WITH (8) 8d HDG NAILS AT EACH END MAY BE USED IN LIEU OF EACH TWIN STRAP IF DESIRED. FOR MASONRY OR CONCRETE FOUNDATION USE SIMPSON POST BASE.



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STANDARD STRUCTURAL NOTES

DATE: OCTOBER 29, 2018  
DRAWN BY: JES  
ENGINEERED BY: JST

SHEET:  
STRUCTURAL NOTES

2/19/19