

GENERAL NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY THAT ALL DIMENSIONS AND SQUARE FOOTAGE IS CORRECT PRIOR TO CONSTRUCTION. K&A HOME DESIGNS, INC. IS NOT RESPONSIBLE FOR ANY DIMENSIONING OR SQUARE FOOTAGE ERRORS ON CONSTRUCTION BEGINS.
2. ALL WALL 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. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION.

SQUARE FOOTAGE

HEATED SQUARE FOOTAGE		UNHEATED SQUARE FOOTAGE	
FIRST FLOOR=	2126	GARAGE=	617
SECOND FLOOR=	415	FRONT PORCH=	163
THIRD FLOOR=	N/A	SCREEN PORCH=	204
BASEMENT=	N/A	OPT. STUDY=	329
		STORAGE=	N/A

TOTAL HEATED= 2541 TOTAL UNHEATED= 1313

ATTIC VENTILATION CALCULATIONS

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

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

3240 SQ. FT. OF ATTIC/300= 10.8
EACH OF INLET AND OUTLET REQUIRED.

***WALL AND ROOF CLADDING DESIGN VALUES**

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

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

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

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

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

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

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)

2211 SQ. FT. OF CRAWLSPACE/1500

1.47 SQ. FT. OF REQUIRED VENTILATION

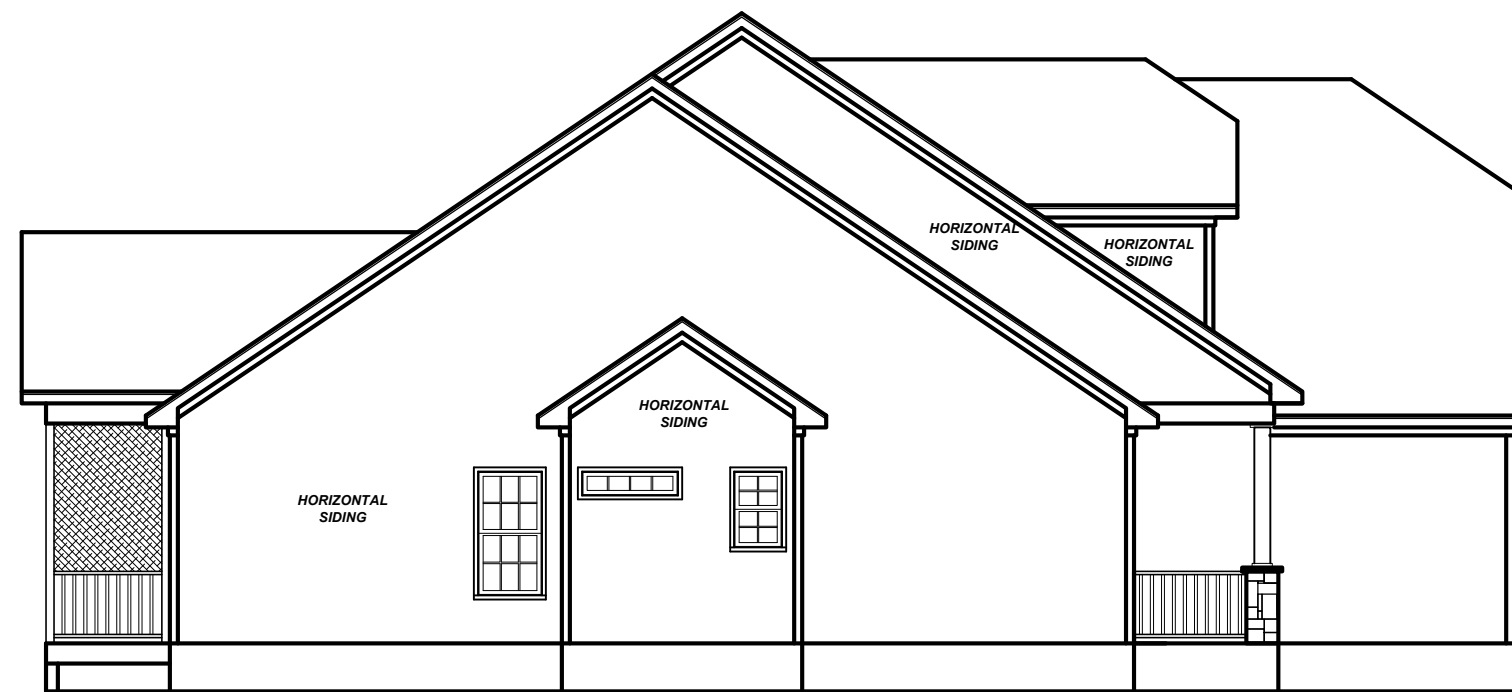
PROVIDED BY: 4 VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= 1.8 SQ. FT. OF VENTILATION

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

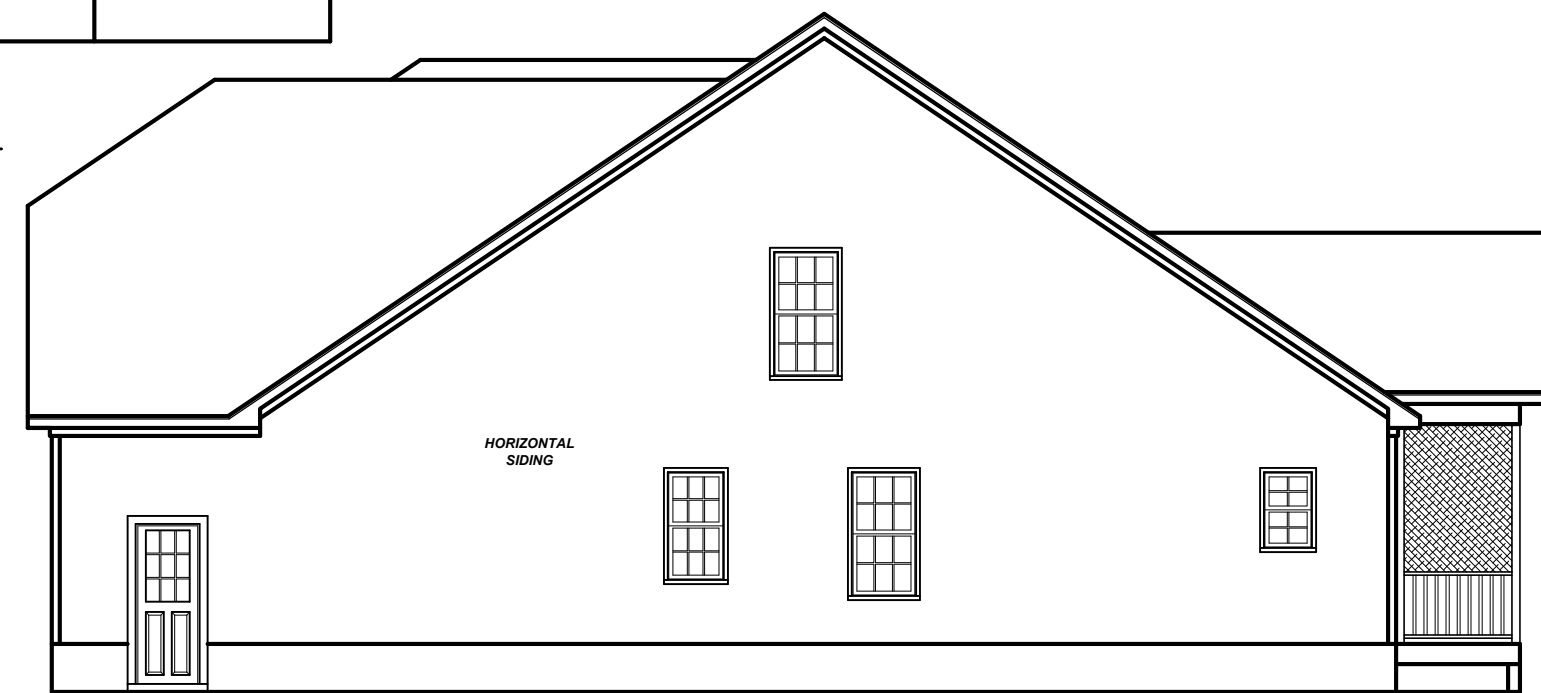


FRONT ELEVATION



LEFT ELEVATION

1/8" = 1'-0"



RIGHT ELEVATION

1/8" = 1'-0"



REAR ELEVATION

1/8" = 1'-0"

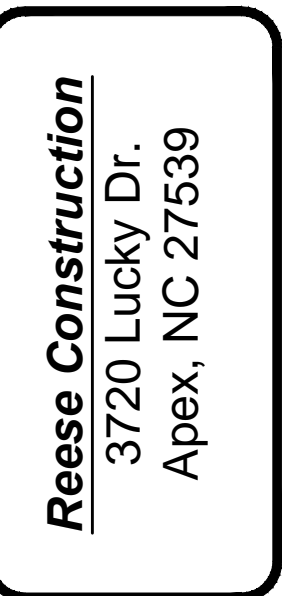
Project #	16KB-247
Date:	2-25-19
Drawn/Shown By:	KBB
Scale:	REFER TO ELEV.

REVISIONS		
No.	Date:	Remarks
1		
2		
3		
4		

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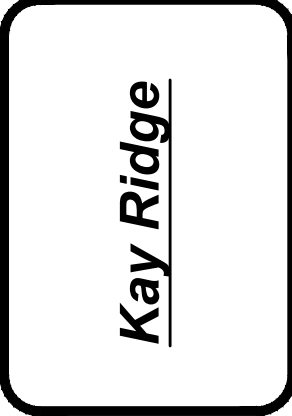


ELEVATIONS

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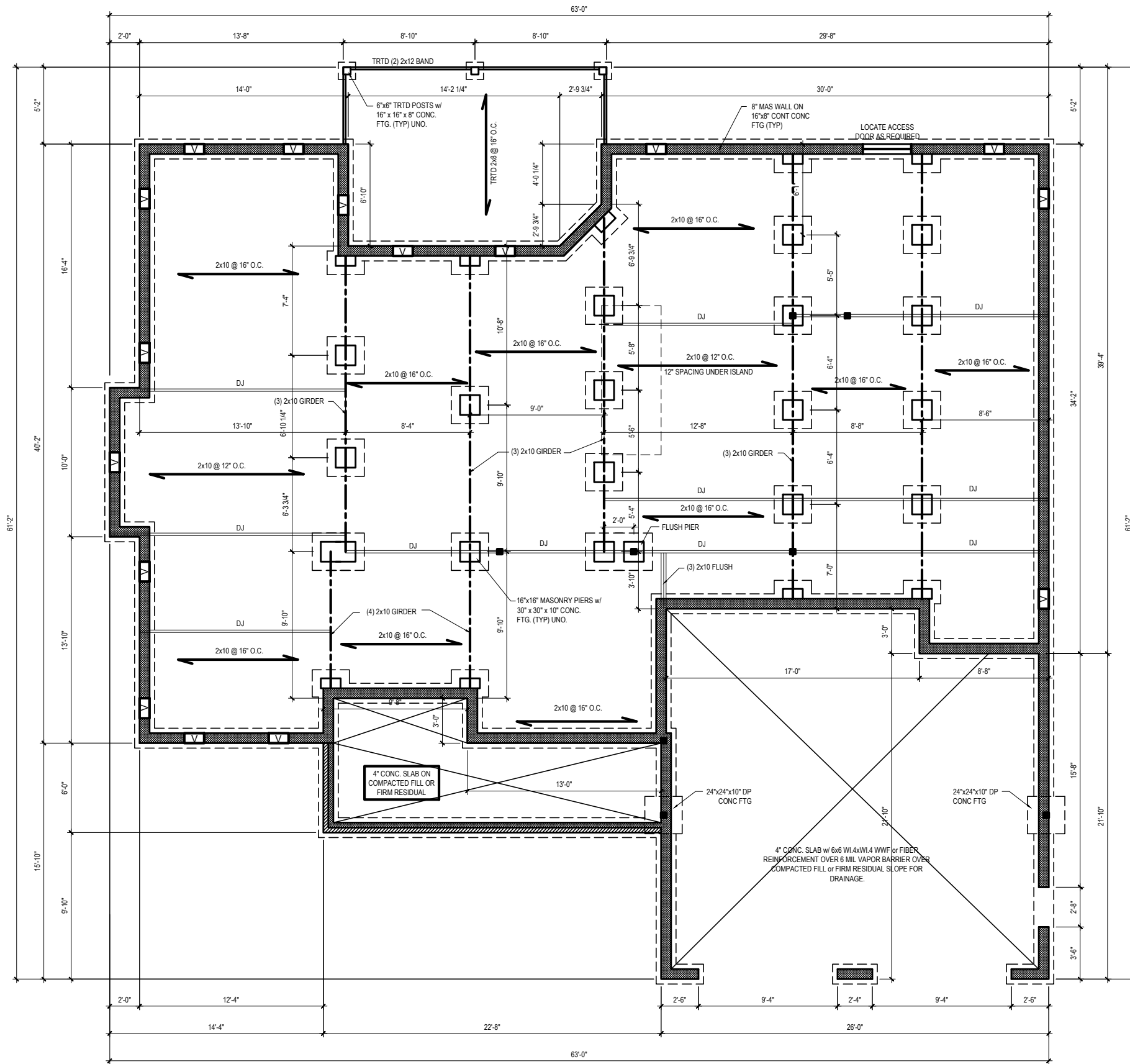


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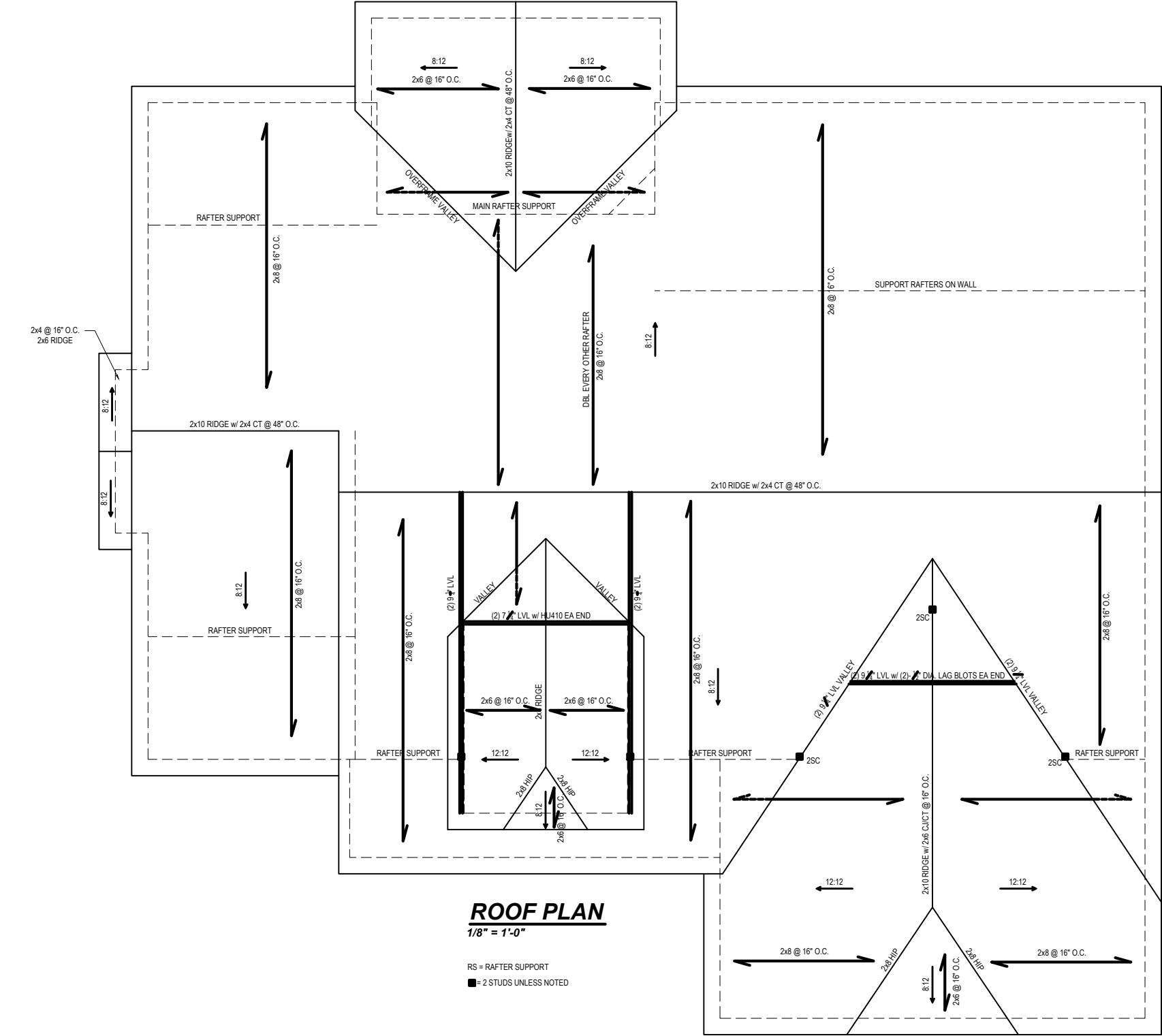
FOUNDATION / ROOF PLAN

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of 6

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FOUNDATION PLAN
1/8" = 1'-0"



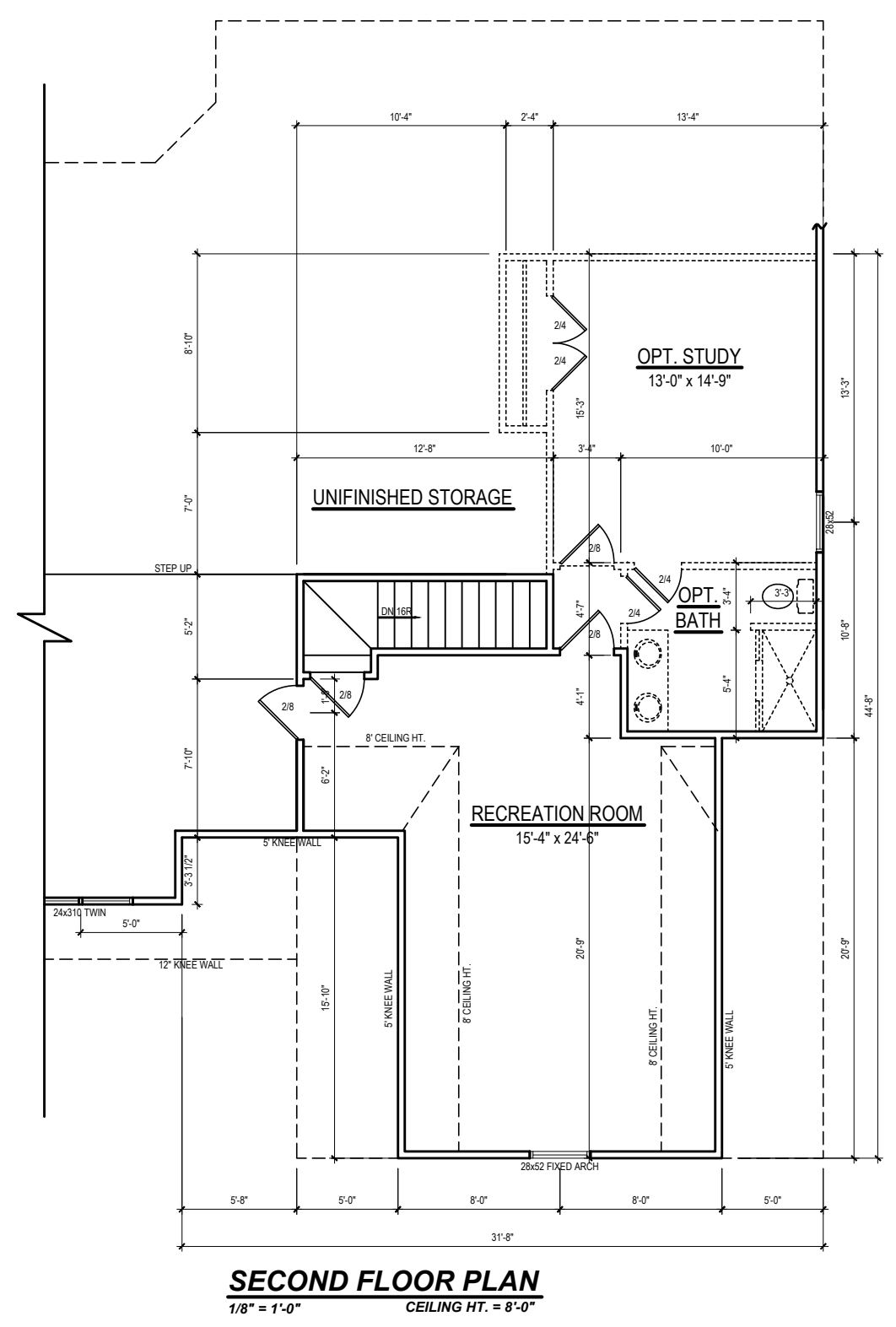
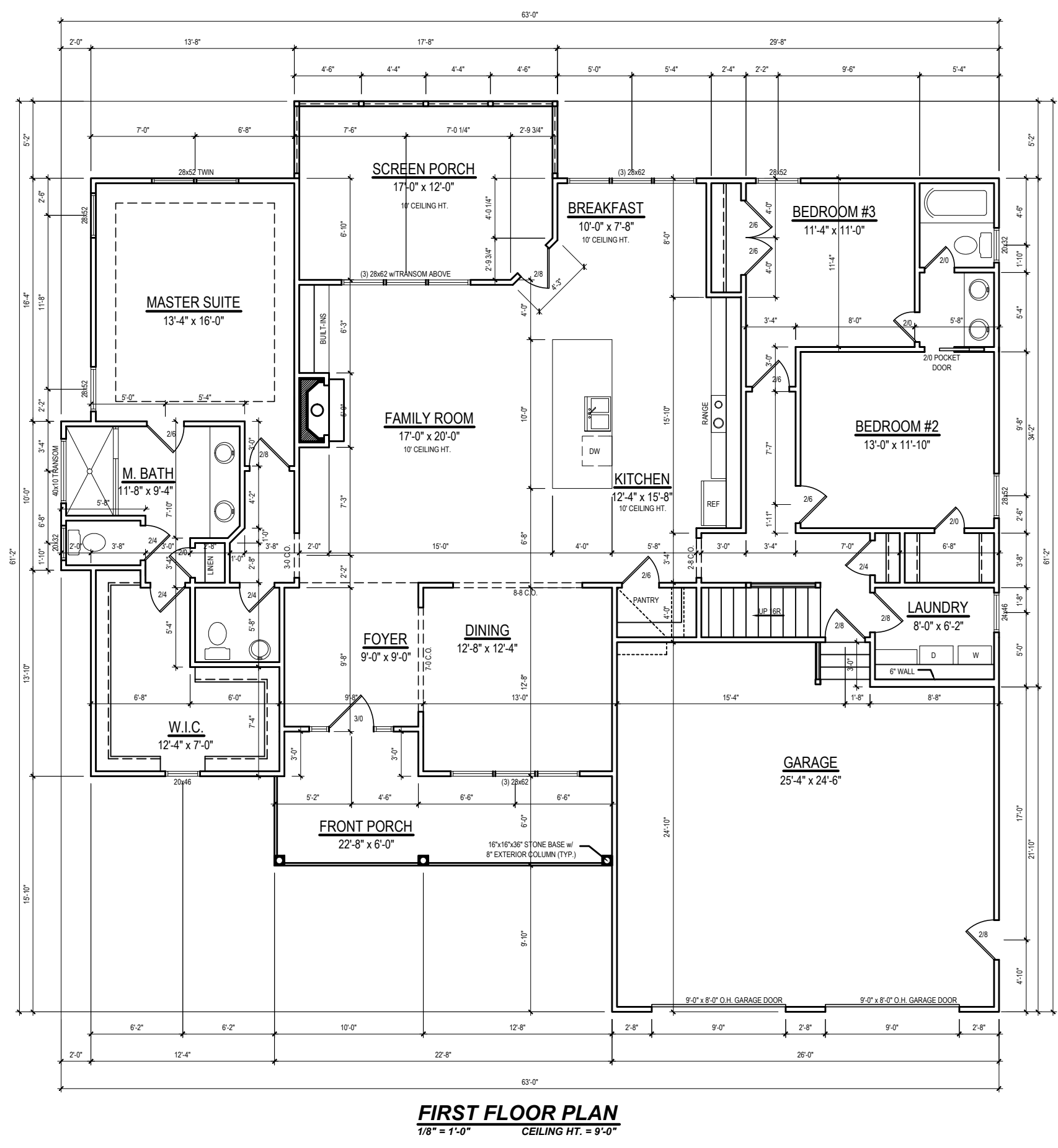
ROOF PLAN
1/8" = 1'-0"

RS = RAFTER SUPPORT
■ 2 STUDS UNLESS NOTED



Structural Engineering by:
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Phone: (919) 395-5618

*Engineers seal applies only to structural components on this document. Seal does not include construction means, methods, techniques, sequences, procure or safety precautions.
*Any deviations or discrepancies on plans are to be brought to the immediate attention of Mark E. Jones, PE. Failure to do so will void Mark E. Jones, PE liability.
Structural analysis based on 2018 North Carolina Residential Code.



Project:
16KB-247
Date:
2-25-19
Drawn/Checked By:
KBB
Scale:
1/8" = 1'-0"

REVISIONS		
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Kay Ridge

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1ST / 2ND FLOOR
PLAN

Sheet Number
3
of 6

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Kay Ridge

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STRUCTURAL NOTES

STRUCTURAL NOTES

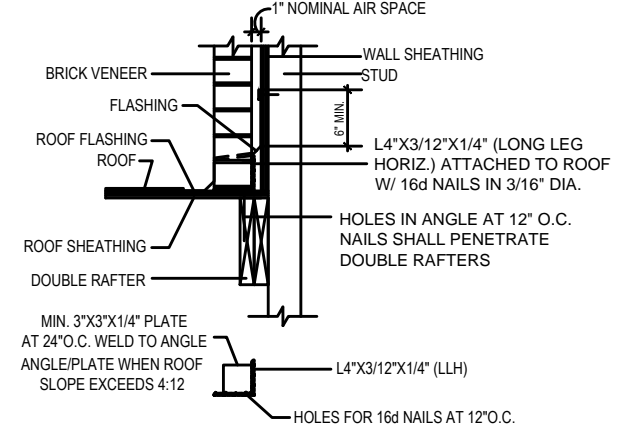
- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF "NORTH CAROLINA STATE 2018 RESIDENTIAL BUILDING CODE", IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.
- DESIGN LOADS:

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION (DL & LL)
ALL FLOORS	40	10	L/360
ATTIC (pull down access)	20	10	L/240
ATTIC (no access)	10	5	L/240
EXTERNAL BALCONY	60	10	L/360
ROOF	20	10	L/180
ROOF TRUSS	20	20	L/240
WIND LOAD	(BASED ON 115 MPH (3-second gusts))		
- MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
- CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE (UNO).
- MAXIMUM DEPTH OF UNBALANCED FILL AGAINST FOUNDATION WALLS TO BE LESS THAN 4'-0" WITHOUT USING SUFFICIENT WALL BRACING. REFER TO SECTION R404 OF 2018 NC BUILDING CODE FOR BACKFILL LIMITATIONS BASED ON WALL HEIGHT, WALL THICKNESS, SOIL TYPE, AND UNBALANCED BACKFILL HEIGHT
- ALL FRAMING LUMBER SHALL BE SYP #2 (Fb = 800 PSI) UNO. ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.
- ALL LOAD BEARING HEADERS SHALL BE (2x10 (UNO)). ALL WINDOW AND DOOR HEADERS SHALL BE SUPPORTED BY (1) JACK STUD AND (1) KING STUD AT EACH END UNLESS NOTED. ALL OTHER BEAMS SHALL BE SUPPORTED BY 2 STUDS OR THE AMOUNT OF STUDS REQUIRED FOR FULL BEARING AT EACH END UNLESS NOTED. POINT LOADS (STIFF KNEES, ETC.) SHALL CONSIST OF 2 STUDS UNLESS NOTED. ALL SUPPORTS OF 2 STUDS OR MORE SHALL BE TRANSFERRED THROUGH EACH FLOOR TO THE FOUNDATION.
- ALL EXTERIOR WALLS TO BE SHEATHED WITH MIN. 7/16" WOOD STRUCTURAL PANELS FASTENED WITH 8D NAILS 6" O.C. AT EDGES AND 12" O.C. AT INT. SUPPORTS. BLOCKING SHALL BE INSTALLED IF LESS THAN 50 PERCENT OF THE WALL LENGTH IS SHEATHED. WHERE BLOCKING IS REQ'D, ALL PANELS SHALL BE FASTENED AT 3" O.C. AT EDGES AND 6" O.C. AT INT. SUPPORTS.
- ALL STRUCTURAL STEEL SHALL ASTM A-36. STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3-1/2" INCHES AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO LAG SCREWS (1/2" DIAMETER AND 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOISTS ARE TOE NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.
- ANCHOR BOLT PLACEMENT PER SECTION R403.1.6. 1/2" DIAMETER ANCHOR BOLTS SPACED AT 6'-0" O.C. AND PLACED 12" FROM THE END OF EACH PLATE SECTION
- FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF 2018 NC BUILDING CODE
- WALL AND ROOF GLAZING VALUES:
WALL GLAZING SHALL BE DESIGNED FOR A 24.1 SQ.FT. OR GREATER POSITIVE AND NEGATIVE PRESSURE.
ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:
45.5 LBS/SQ.FT FOR ROOF PITCHES OF 0/12 TO 2.25/12
34.8 LBS/SQ.FT FOR ROOF PITCHES OF 2.25/12 TO 7/12
21.0 LBS/SQ.FT FOR ROOF PITCHES OF 7/12 TO 12/12
** MEAN ROOF HEIGHT 3' OR LESS
- FOR ROOF SLOPES FROM 2:12 THROUGH 4:12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQ. FTG. ARE CORRECT PRIOR TO CONSTRUCTION. DESIGNER IS NOT RESPONSIBLE FOR DIMENSIONING OR SQ. FTG. ERRORS ONCE CONSTRUCTION BEGINS

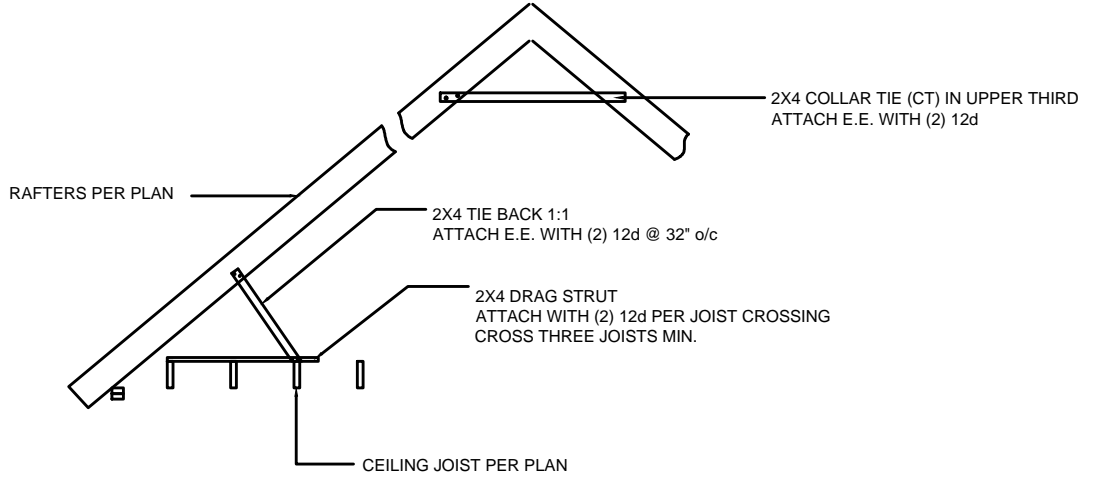
ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

Size of Angles (1,3)	Maximum Span (2,4)
3-1/2" x 3-1/2" x 1/4"	6'-0"
5" x 3-1/2" x 5/16"	10'-0"

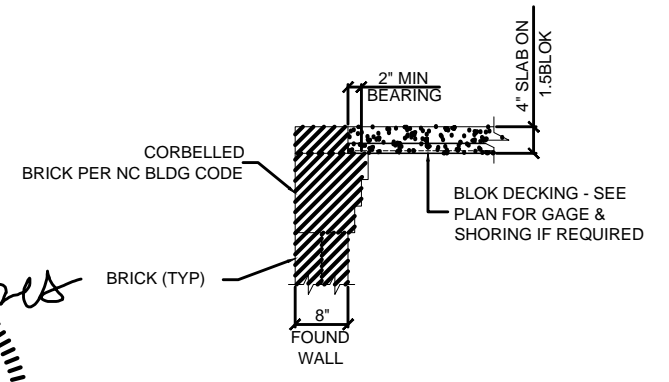
- Long leg of the angle shall be placed in a vertical position.
- Spans over 4' shall be shored up until cured.
- Steel members indicated are adequate typical examples; other steel members including light gauge steel meeting structural design requirements may be used.
- Spans over 10'-0" shall be designed in accordance with approved standard.



MASONRY VENEER DETAIL (FIG. 703.3(A))



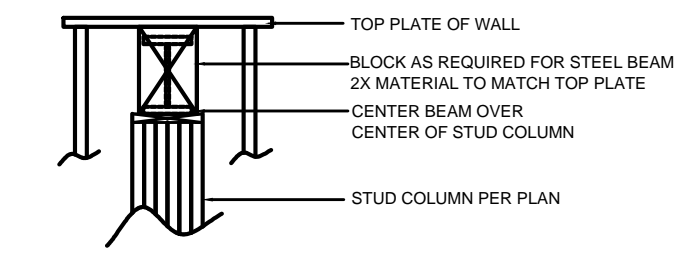
RAFTER TIE BACK DETAIL



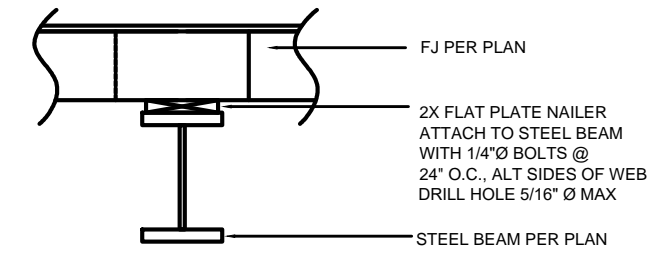
CONCRETE SLAB ON METAL DECKING DETAIL

TABLE N1102.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

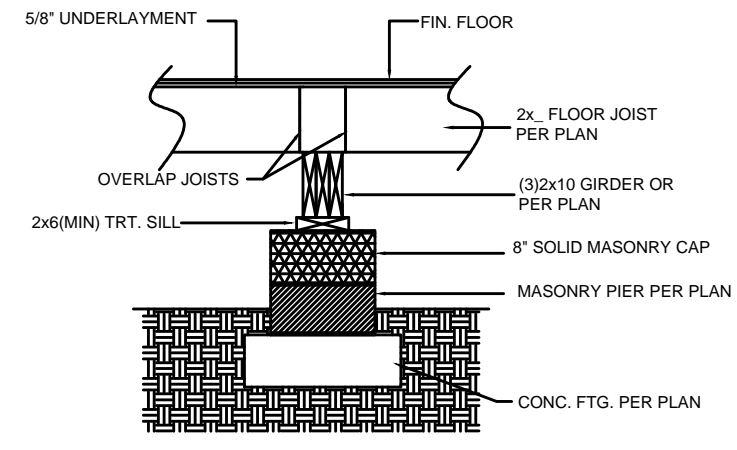
CLIMATE ZONE	MAXIMUM GLAZING U-FACTOR	MINIMUM INSULATION R-VALUE					
		CEILING	WALLS	FLOORS	BASEMENT WALLS	SLAB PERIMETER	CRAWL SPACE WALLS
3	.35	R-38 or R-30	R-15	R-19	R-5/13	R-0	R-5/13
4	.35	R-38 or R-30	R-15	R-19	R-10/15	R-10	R-10/15



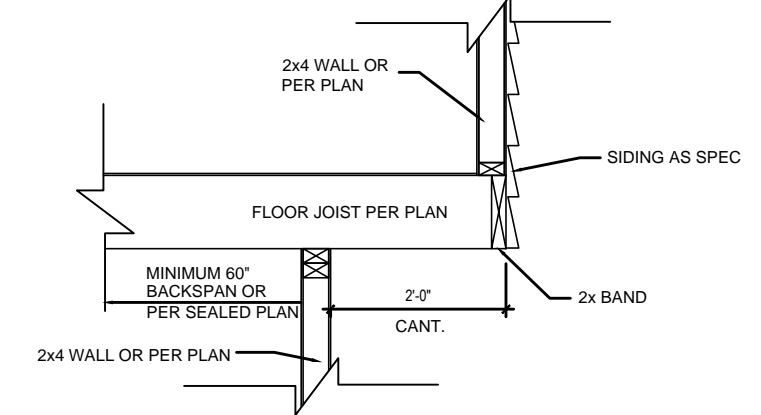
GARAGE BEAM STUD COLUMN DETAIL



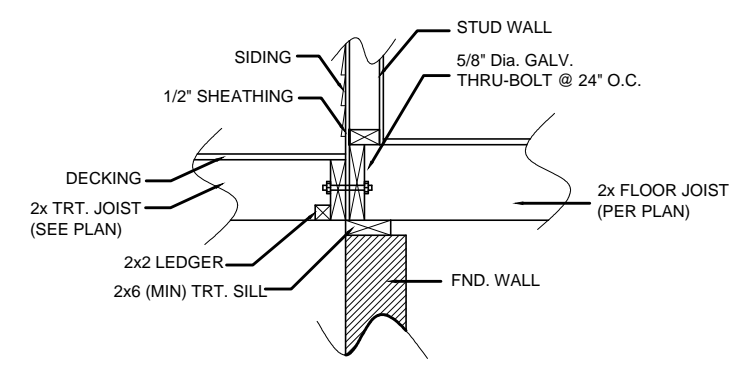
GARAGE BEAM LATERAL BRACING DETAIL



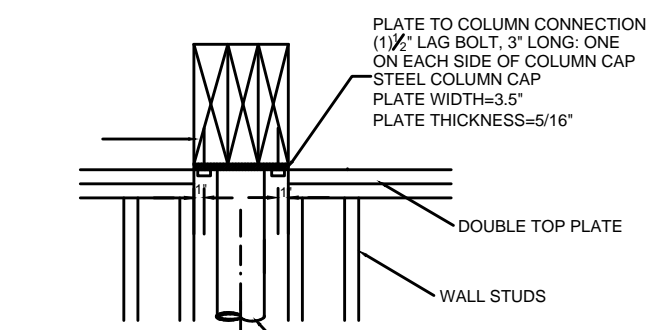
DROPPED GIRDER DETAIL



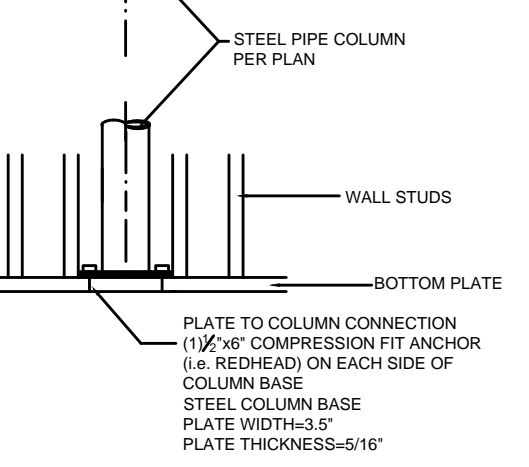
CANTILEVER FLOOR JOIST DETAIL



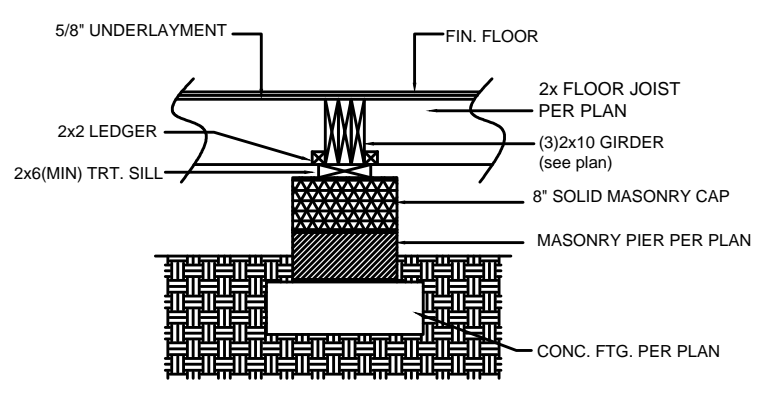
DECK ATTACHMENT



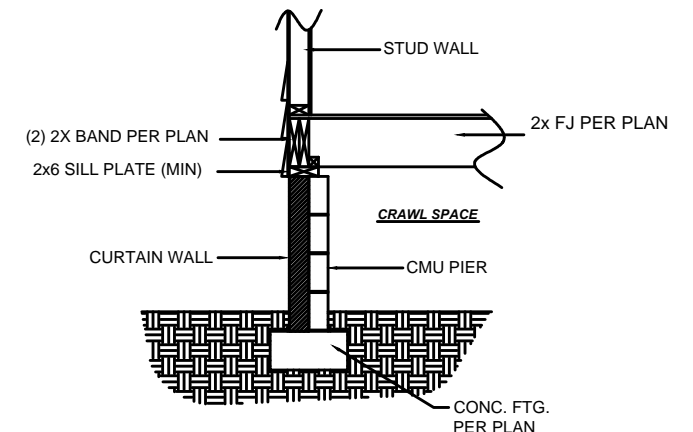
STEEL COLUMN AT WALL



FOUNDATION VENT DETAIL AT COMPACTED FILL



FLUSH GIRDER DETAIL



CURTAIN WALL DETAIL

1. MAXIMUM HEIGHT OF DECK SUPPORT POSTS AS FOLLOWS:

POST SIZE *	MAX POST HEIGHT **
4 X 4	8'-0"
6 X 6	20'-0"
***	OVER 20'-0"

* THIS TABLE IS BASED ON NO. 2 TREATED SOUTHERN PINE POSTS.
** FROM TOP OF FOOTING TO BOTTOM OF GIRDER
*** DECKS WITH POST HEIGHTS OVER 20'-0" SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT.

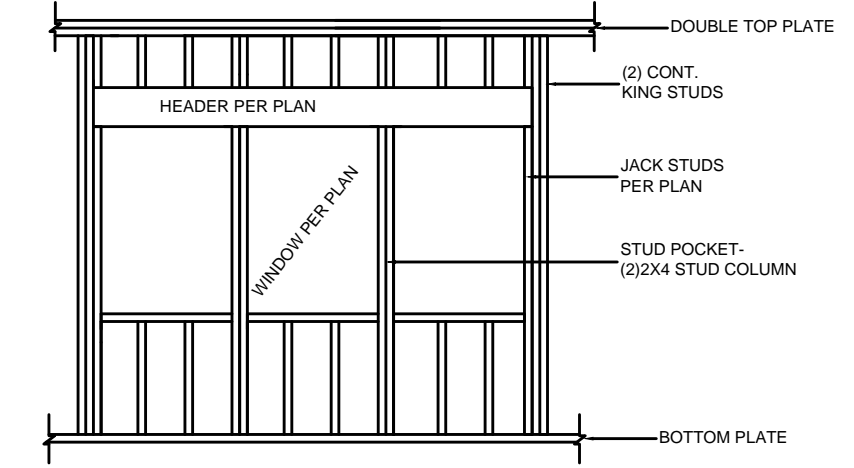
2. DECKS SHALL BE BRACED TO PROVIDE LATERAL STABILITY BY ONE OF THE METHODS:

- A. WHEN THE DECK FLOOR HEIGHT IS LESS THAN 4' AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION AM104, LATERAL BRACING IS NOT REQUIRED.
- B. 4X4 WOOD KNEE BRACES MAY BE PROVIDED ON EACH COLUMN IN BOTH DIRECTIONS. THE KNEE BRACES SHALL ATTACH TO EACH POST AT A POINT NOT LESS THAN 1/4 OF THE POST LENGTH FROM THE TOP OF THE POST, AND THE BRACES SHALL BE ANGLED BETWEEN 45° AND 60° FROM THE HORIZONTAL. KNEE BRACES SHALL BE NAILED TO THE POST AND THE GIRDER OR BOLTED WITH ONE 5/8" HOT DIPPED GALVANIZED BOLT AT EACH END OF THE BRACE.
- C. FOR FREESTANDING DECKS WITHOUT KNEE BRACES OR DIAGONAL BRACING, LATERAL STABILITY MAY BE PROVIDED BY EMBEDDING THE POSTS IN ACCORDANCE WITH THE FOLLOWING:

POST SIZE	MAX TRIBUTARY AREA	MAX POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4 X 4	48 SF	4'-0"	2'-6"	1'-0"
6 X 6	120 SF	6'-0"	3'-6"	1'-8"

D. 2x6 DIAGONAL VERTICAL ROSS-BRACING MAY BE PROVIDED IN TWO PERPENDICULAR DIRECTIONS FOR FREESTANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS.

DECK POST DETAILS



TYPICAL WINDOW STUD POCKET DETAIL

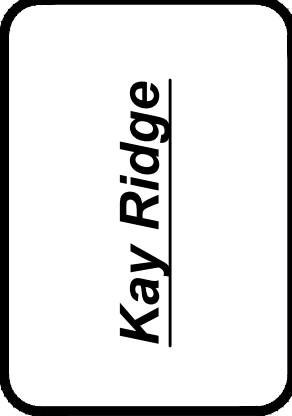
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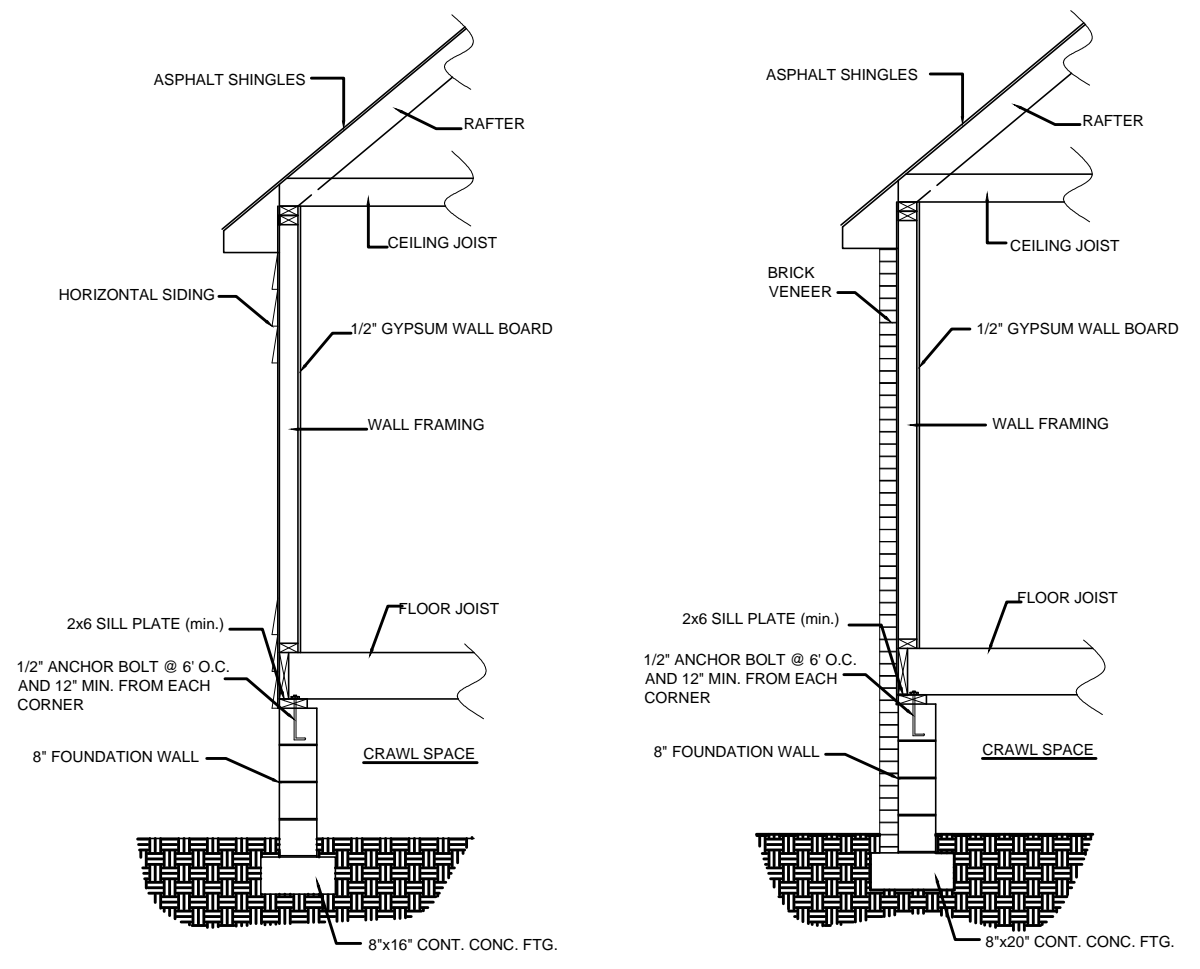


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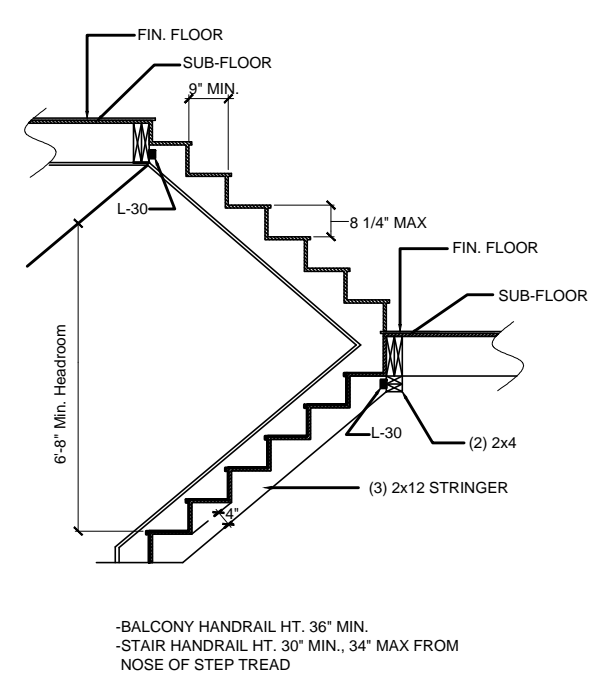
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STRUCTURAL NOTES

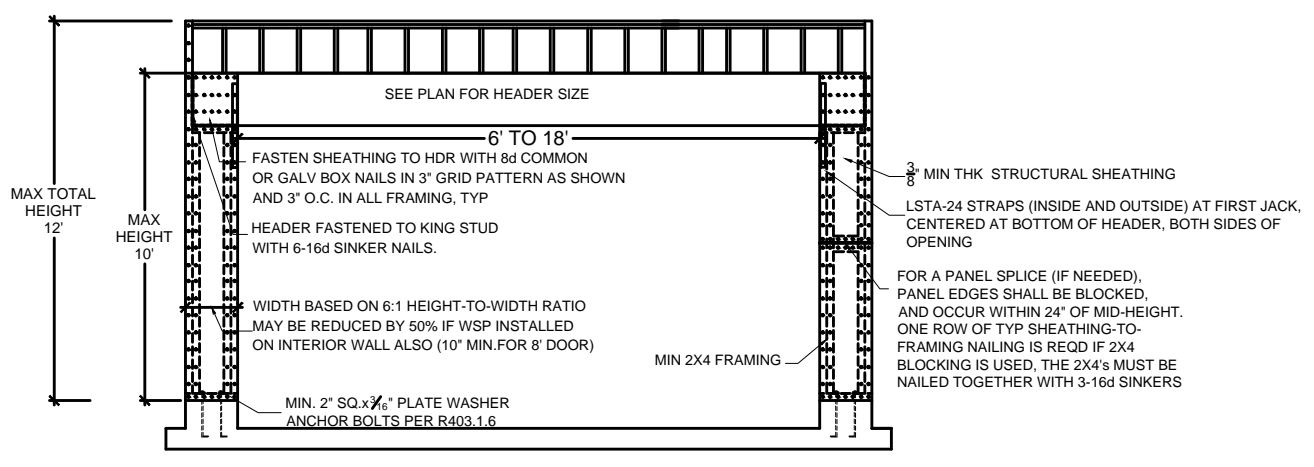


TYPICAL WALL DETAIL

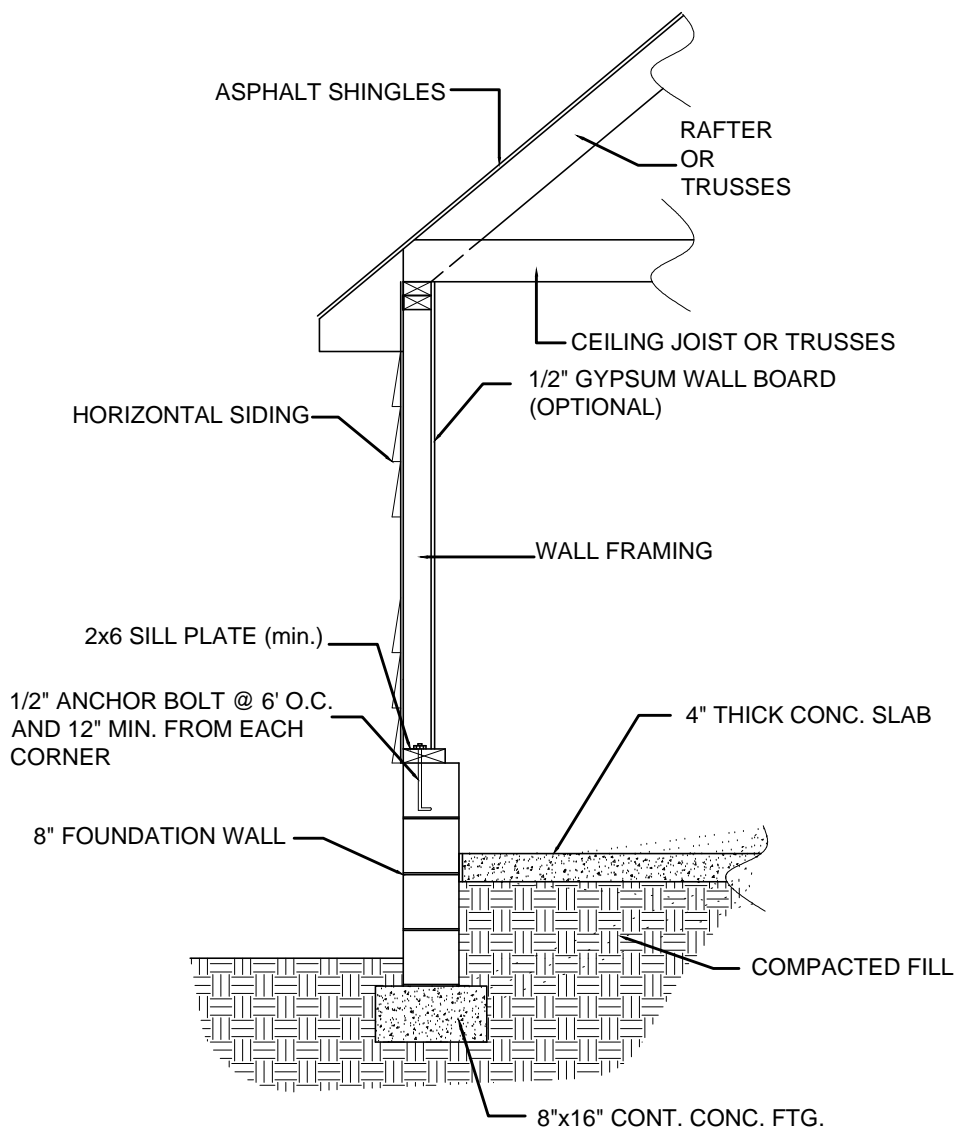
TYPICAL WALL DETAIL - BRICK VENEER



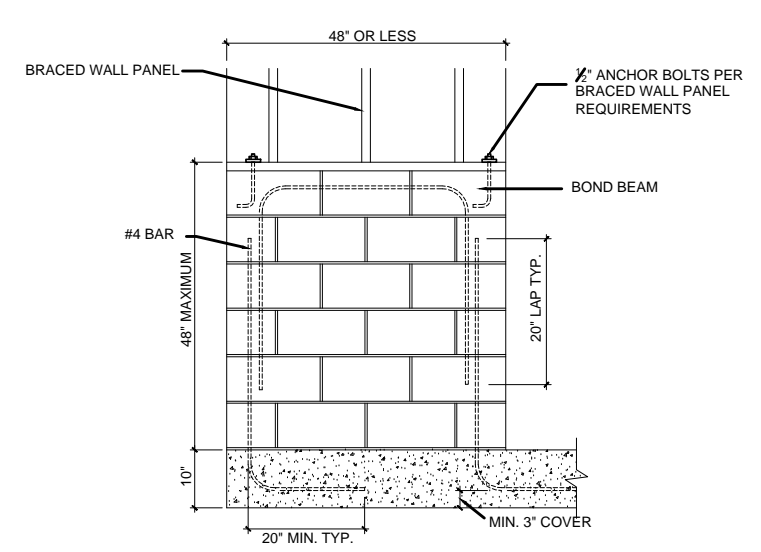
TYPICAL STAIRWAY DETAIL



METHOD CS-PF PORTAL FRAME



TYPICAL GARAGE WALL DETAIL



BRACED WALL LINE STEMWALL DETAIL



SECTION AM104
DECK ATTACHMENT

AM104.1 Deck attachment.
When a deck is supported at the structure by attaching the deck to the structure, Tables AM104.1(1) and AM104.1(2) shall apply for attaching the deck band to the structure.

TABLE AM104.1(1)
DECK ATTACHMENT FOR ALL STRUCTURES EXCEPT BRICK VENEER

FASTENERS	8' MAX JOIST SPAN ^a	16' MAX JOIST SPAN ^a
5/8" Hot dip galvanized bolts with nut and washer ^b	1 @ 3'-6" o.c. and	1 @ 1'-8" o.c. and
and	2 @ 8" o.c.	3 @ 6" o.c.
12d Common hot dip galvanized nails ^c		
	OR	
Self-Drilling Screw Fastener ^d	12" o.c. staggered	6" o.c. staggered

For SI: 1 inch = 25.4, 1 foot = 304.8 mm
a. Attachment interpolation between 9 foot and 16 foot joists span is allowed.
b. Minimum edge distance for bolts is 2 1/2 inches.
c. Nails must penetrate the supporting structure band a minimum of 1 1/2 inches.