

**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**

<u>HEATED SQUARE FOOTAGE</u>		<u>UNHEATED SQUARE FOOTAGE</u>	
FIRST FLOOR=	2059	GARAGE=	580
SECOND FLOOR=	879	FRONT PORCH=	225
THIRD FLOOR=	N/A	SCREEN PORCH=	279
BASEMENT=	N/A	DECK=	N/A
		STORAGE=	N/A
<b>TOTAL HEATED=</b>	<b>2938</b>	<b>TOTAL UNHEATED=</b>	<b>1084</b>

**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)**

2059 SQ. FT. OF CRAWL SPACE/1500

1.37 SQ. FT. OF REQUIRED VENTILATION

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

VENTILATION EACH= 1.80 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 VENTILATION PROVIDED BY EAVE VENTS.

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

3143 SQ. FT. OF ATTIC/300= 10.48

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 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**



**FRONT ELEVATION**

1/4" = 1'-0"



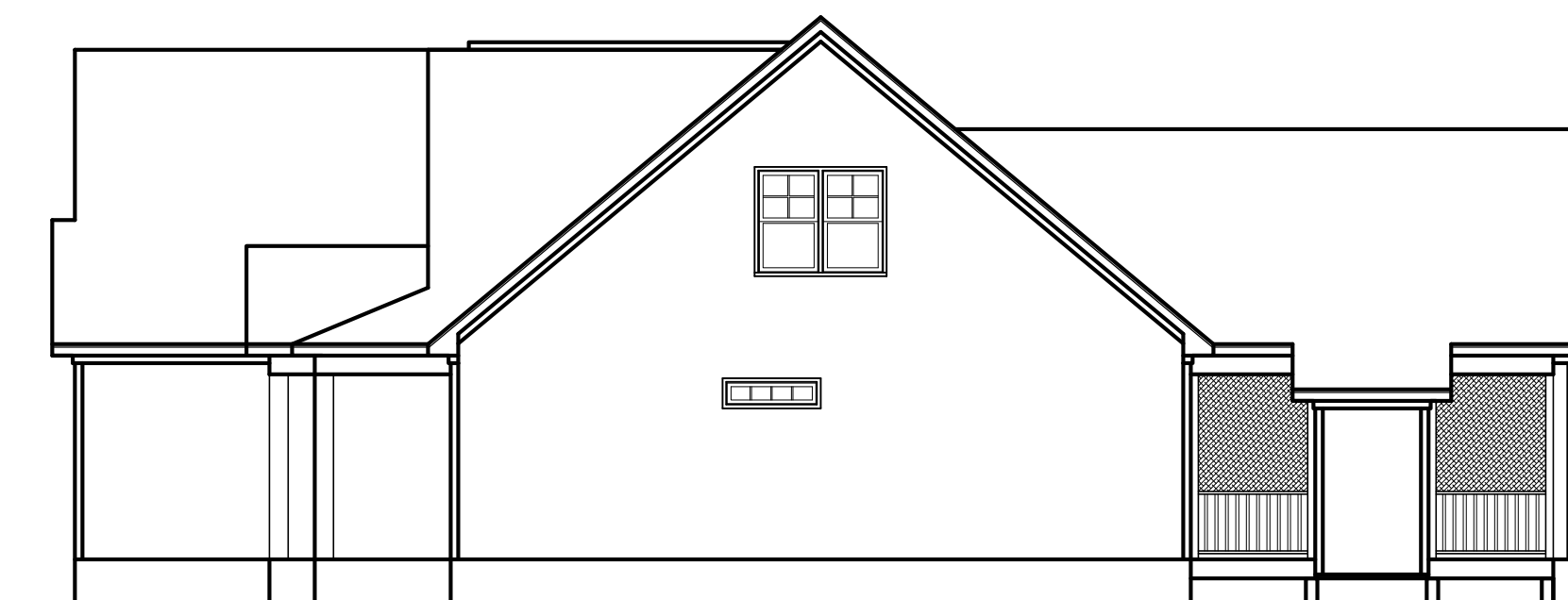
**REAR ELEVATION**

1/8" = 1'-0"



**LEFT ELEVATION**

1/8" = 1'-0"



**RIGHT ELEVATION**

1/8" = 1'-0"

Project #:	20-287
Date:	3-22-22
Drawn/Design By:	KBB
Scale:	REFER TO ELEV.

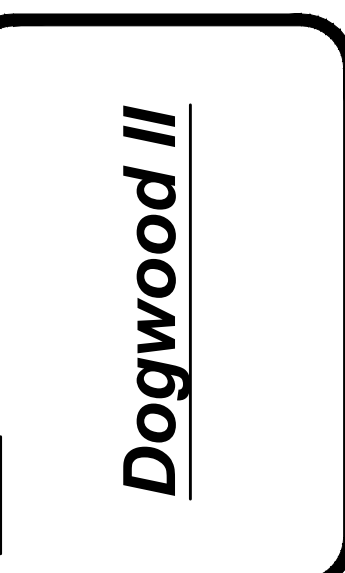
REVISIONS		
No.	Date	Remarks
1		
2		
3		
4		

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



Website: www.KandAHomeDesigns.com

Email: Kent@KandAHomeDesigns.com

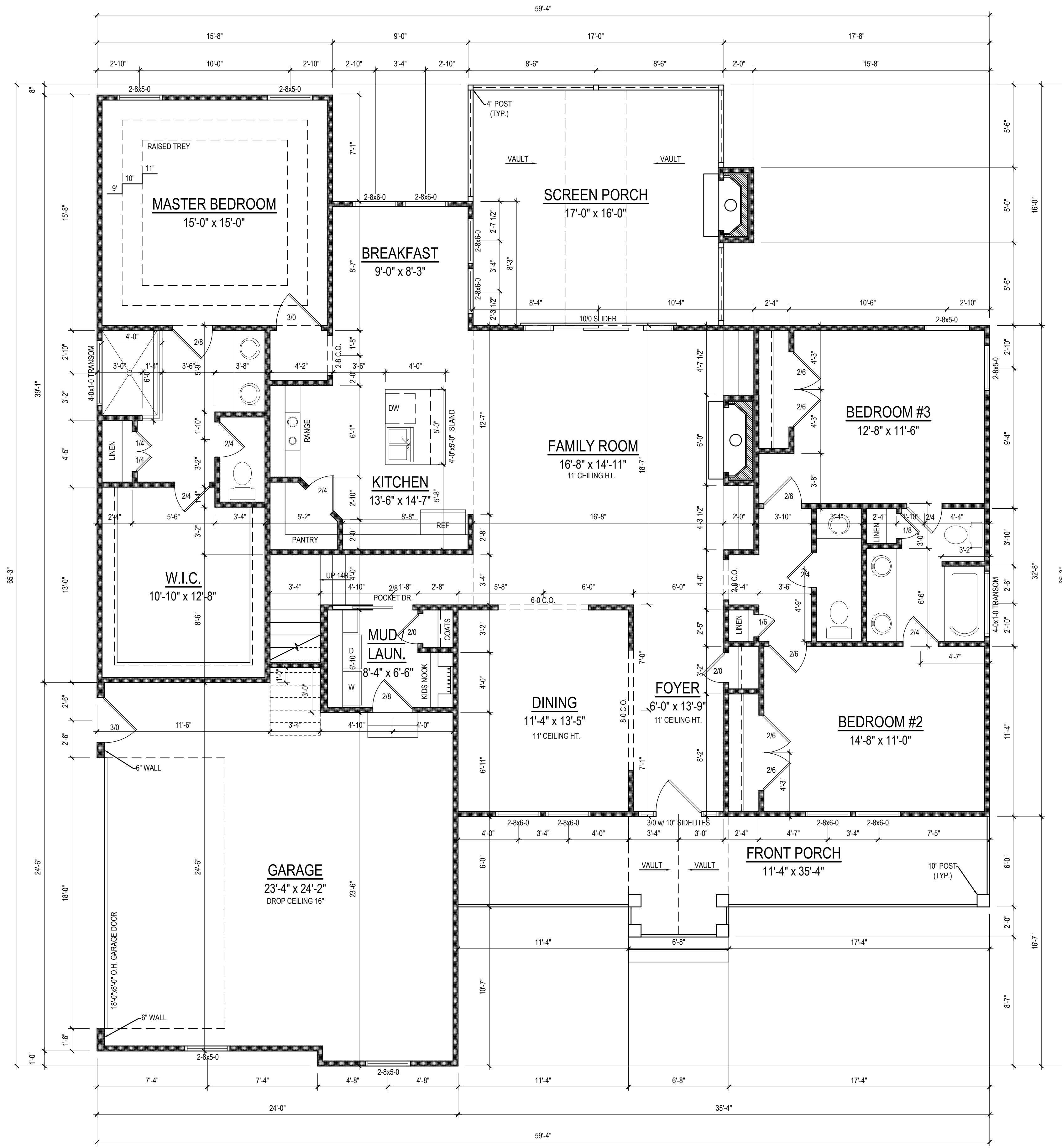


**Kara Homes**  
1001 Proquire St.  
Suite 101  
Fuquay-Varina, NC 27526

ELEVATIONS

Sheet Number  
**1**  
of 3





**FIRST FLOOR PLAN**  
 1/4" = 1'-0" CEILING HT. = VARIES

Project No.	20-287
Date	3-22-22
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.KandHomeDesigns.com

Email: Kent@KandHomeDesigns.com

**Dogwood II**

**Kara Homes**  
 1001 Proquire St.  
 Suite 101  
 Fuquay-Varina, NC 27526

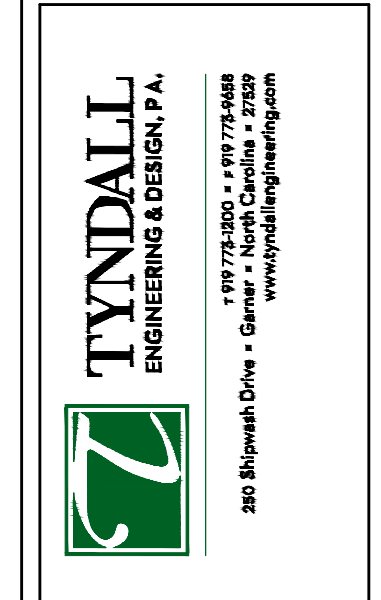
FIRST FLOOR

Sheet Number  
**2**  
 of 3





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 \*Please review these documents carefully. Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.



**TYNDALL**  
 ENGINEERING & DESIGN P.A.  
 1197 W. 17th Street, Suite 100  
 Cary, NC 27513  
 919.775.4444  
 www.tyndallengineering.com

Client: **KARA HOMES INC.**  
 Project: **DOGWOOD II**

**FOUNDATION PLAN  
 1ST FLOOR FRAMING**

Project #: 2201-010207  
 Date: 6/27/2022  
 Engineer By: HJS  
 DWG. Checked By: AWL  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks

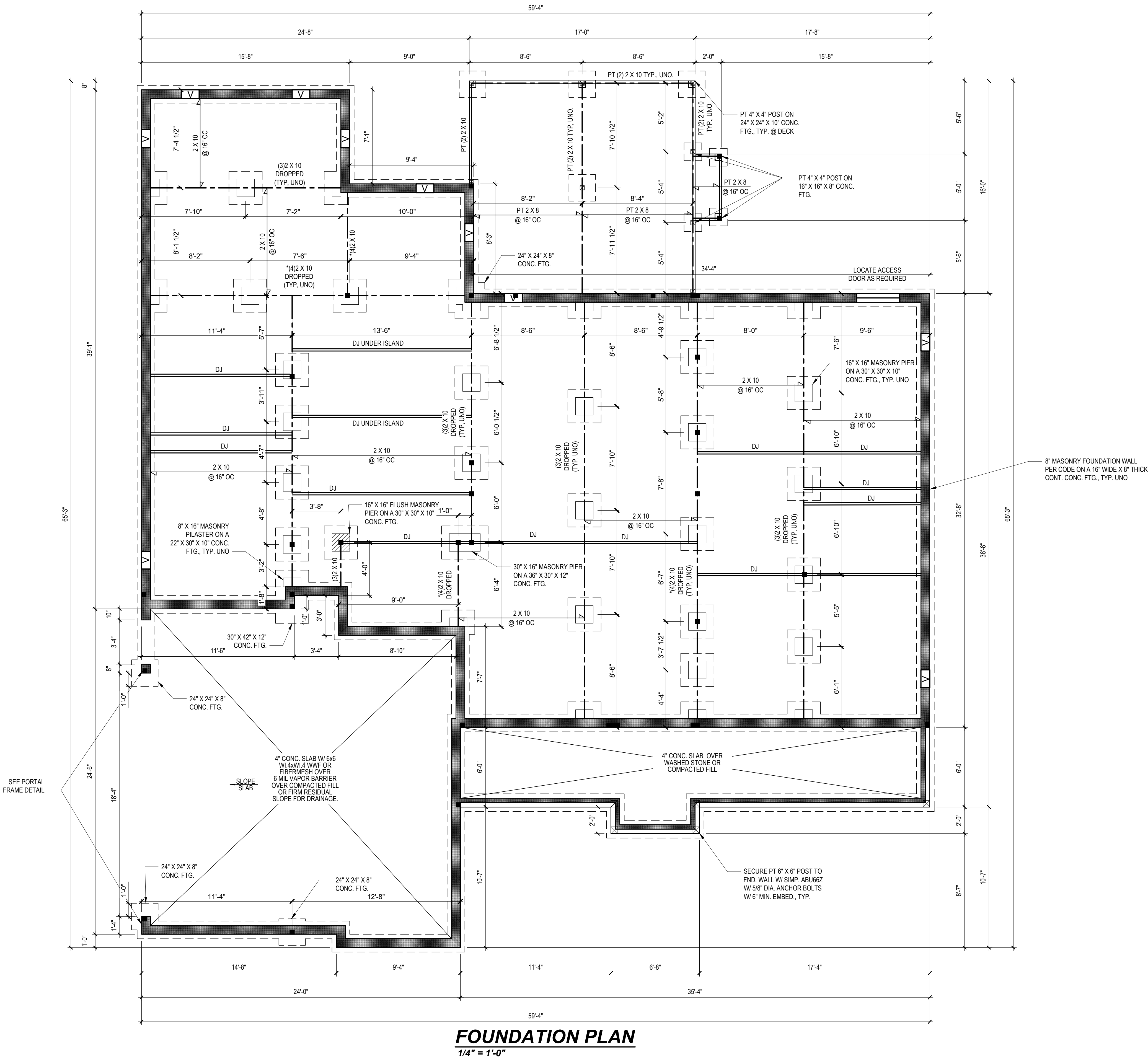
Sheet Number  
**S1**  
 1 of 7

**DESIGN LOADS**

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
FLOOR (primary)	40	10	L/360	L/240
FLOOR (secondary)	40	10	L/360	L/240
ATTIC (w/ storage)	20	10	L/240	L/180
ATTIC (no access)	10	5	L/240	L/180
EXTERNAL BALCONY	40	10	L/360	L/240
ROOF	20	10	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	BASED ON 120 MPH (EXPOSURE B)			
SEISMIC	BASED ON SEISMIC ZONES B & C			

- 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.
  - IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, P.A. IS NOT RESPONSIBLE FOR DIMENSIONS AND SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
  - ALL LUMBER SHALL BE SYP #2 (UNO)  
 ALL LVL LUMBER TO BE 1 7/8" WIDE NOMINAL EACH SINGLE MEMBER AND F<sub>b</sub> = 2600 PSF, E = 1.9M PSF  
 (E LEVEL MICRO-LAM)  
 ALL LVL LUMBER IS TO BE 1.55E (F<sub>b</sub> = 2325 PSF)
  - ALL LOAD BEARING EXTERIOR WINDOW HEADERS ARE TO BE (2) 2x10 w/ (1) 2x4 JACK STUD (U.N.O.) AND KING STUDS PER TABLE R602.7.5, AND TOGETHER w/ (2) 1/4" NAILS @ 8" O.C. PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 8'-5". MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-4". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
  - ALL INTERIOR LOAD BEARING HEADERS TO BE (2) 2x10 (U.N.O.) REFER TO TABLES R602.7(1) AND R602.7(2) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS (UNO)
  - REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10' 0" IN HEIGHT.
  - ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50  
 F<sub>y</sub> = 50 KSI MIN. (UNO)
  - ALL EXTERIOR LUMBER TO BE #2 SYP PT
  - ALL CONCRETE, f<sub>c</sub> = 3000 PSF MIN.
  - PRESUMPTIVE BEARING CAPACITY = 2000 PSF
  - 1/2" ANCHOR BOLTS SPACED AT MAXIMUM OF 6'-0" O.C. AND NOT MORE THAN 12" FROM THE CORNER. THERE SHALL BE A MINIMUM OF (2) BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3'-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY.
  - PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
  - PROVIDE A MINIMUM OF 50# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
  - PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.4 OF THE 2018 IRC.
  - MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
  - UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
  - METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.

\*NOTE: SECURE 4-PLY W/ 1/2" Ø THRU-BOLTS @ 24" O.C. (OR EQUIV. STRUCTURAL SCREWS)



**FOUNDATION PLAN**  
 1/4" = 1'-0"

FILENAME: \\ESDORP\ENR\2022\STRUCTURAL\PROJECTS\2201-010207 - DOGWOOD II\CAD\_FILES\2201-010207\_L1.FRW SWID BY: SIMWESH LAST PLOT DATE: 7/6/2022 10:00 AM



**DESIGN LOADS**

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
FLOOR (primary)	40	10	L/360	L/240
FLOOR (secondary)	10	10	L/360	L/240
ATTIC (w/ storage)	20	5	L/240	L/180
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ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	BASED ON 120 MPH (EXPOSURE B)			
SEISMIC	BASED ON SEISMIC ZONES A & C			

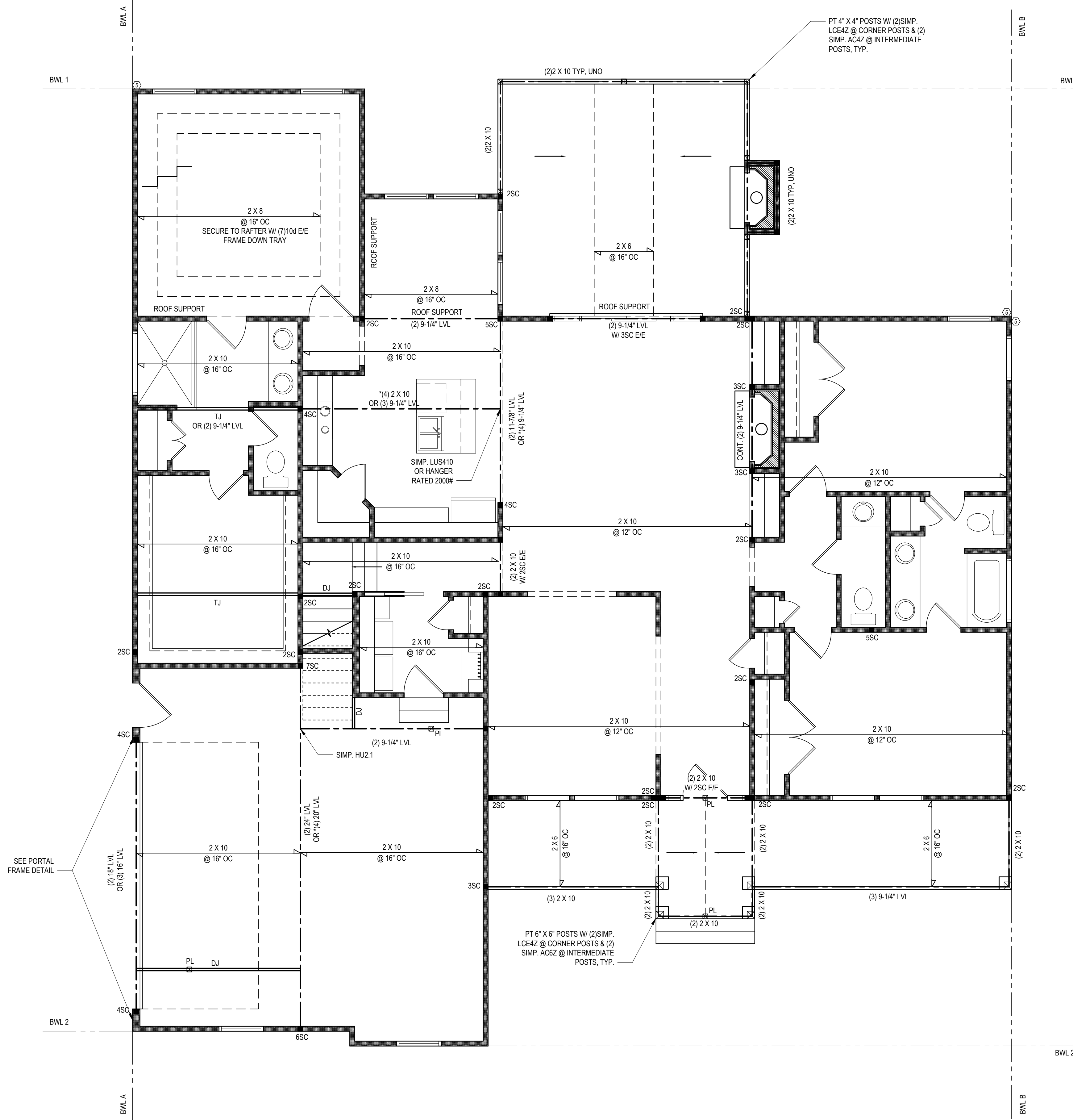
**STRUCTURAL NOTES:**

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- IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, P.A. IS NOT RESPONSIBLE FOR DIMENSIONS AND SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
- ALL LUMBER SHALL BE SYP #2 (UNO)  
ALL LVL LUMBER TO BE 1 7/8" WIDE NOMINAL EACH SINGLE MEMBER AND F<sub>b</sub> = 2500 PSF, E = 1.9M PSF
- (E) LEVEL (MICROLUM)  
ALL LVL LUMBER IS TO BE 1.55E (F<sub>b</sub> = 2325 PSF)
- ALL LOAD BEARING EXTERIOR WINDOW HEADERS ARE TO BE (2) 2x10 (U.N.O.) (1) 2x4 JACK STUD (U.N.O.) AND KING STUDS PER TABLE R602.7.5 AND TOGETHER W/ (2) 1/4" NAILS @ 8" O.C. PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 8'-0". MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-0". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
- ALL INTERIOR LOAD BEARING HEADERS TO BE (2) 2x10 (U.N.O.) REFER TO TABLES R602.7(1) AND R602.7(2) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS (UNO)
- REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10' IN HEIGHT.
- ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50  
F<sub>y</sub> = 50 KSI MIN. (UNO)
- ALL EXTERIOR LUMBER TO BE #2 SYP PT
- ALL CONCRETE, f<sub>c</sub> = 3000 PSF MIN.
- PRESUMPTIVE BEARING CAPACITY = 2000 PSF
- 1/2" ANCHOR BOLTS SPACED AT MAXIMUM OF 6'-0" O.C. AND NOT MORE THAN 12" FROM THE CORNER. THERE SHALL BE A MINIMUM OF (2) BOLTS PER PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3'-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY.
- PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
- PROVIDE A MINIMUM OF 50# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
- PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.4 OF THE 2018 IRC.
- MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.

**STRUCTURAL SHEATHING NOTES**

- DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS
- WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2018 NRC.
- BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.3. REFER TO SECTION R602.10.4 FOR LOAD PATH DETAILS INCLUDING CONNECTIONS & SUPPORT OF BRACED WALL PANELS.
- REFERENCE FIGURE R602.10.4.3 OF THE 2018 NRC.
- INTERIOR BRACED WALL PANELS (BWP) INDICATED SHALL BE SHEATHED IN ACCORDANCE WITH THE (S) METHOD OR WSP METHOD AS PRESCRIBED IN SECTION R602.10.1 (UNO)
- (S) 1/2" GYPSUM BOARD (GB) MINIMUM LENGTH OF 8'-0" (ISOLATED PANELS) OR 4'-0" (CONTINUOUS SHEATHING). SECURE W/ 50 COOLER NAILS (OR EQUAL PER TABLE R702.3.5) SPACED @ 7" O.C. AT PANEL EDGES, INCLUDING TOP AND BOTTOM PLATES & 7" O.C. AT INTERMEDIATE SUPPORTS
- (W) 3/8" WOOD STRUCTURAL PANEL (WSP) SECURE W/ 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS
- EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.3 (UNO)
- ALL SHEATHABLE SURFACES OF EXTERIOR WALLS (INCLUDING AREAS ABOVE AND BELOW OPENINGS AND CABLE END WALLS) SHALL BE CONTINUOUSLY SHEATHED WITH WOOD STRUCTURAL PANEL (WSP) SHEATHING WITH A MINIMUM THICKNESS OF 3/8". SHEATHING SHALL BE SECURED WITH MINIMUM 6d COMMON NAILS SPACED AT 6" O.C. AT PANEL EDGES AND SPACED AT 12" O.C. AT INTERMEDIATE SUPPORTS. MINIMUM BRACED WALL PANEL LENGTHS WITH CS-WSP METHOD SHALL BE AS FOLLOWS:  
-24" ADJACENT TO OPENINGS NOT MORE THAN 87% OF WALL HEIGHT  
-30" ADJACENT TO OPENINGS GREATER THAN 87% AND LESS THAN 85% OF WALL HEIGHT  
-48" FOR OPENINGS GREATER THAN 85% OF WALL HEIGHT
- SHEATH INTERIOR & EXTERIOR
- FOR CS-WSP METHOD, A MINIMUM 24" BRACED WALL PANEL CORNER RETURN SHALL BE PROVIDED AT BOTH ENDS OF A BRACED WALL LINE IN ACCORDANCE WITH FIGURE R602.10.3(4). IN LIEU OF A CORNER RETURN, EITHER A MIN. 48" BRACED WALL PANEL SHALL BE PROVIDED AT THE CORNER OR A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT DESIGN VALUE OF 800# SHALL BE FASTENED TO THE EDGE OF THE BRACED WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FRAMING BELOW.
- MINIMUM 800# HOLD-DOWN DEVICE

NOTE: SECURE 4-PLY W/ 1/2" O THRU-BOLTS @ 24" O.C. (OR EQUIV. STRUCTURAL SCREWS)



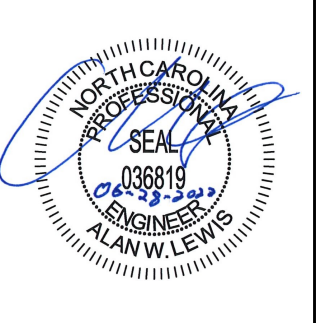
BRACING PANEL LENGTHS REQUIRED:  
B/W A = 8.9 FT  
B/W B = 8.9 FT  
B/W 1 = 9.4 FT  
B/W 2 = 9.4 FT

BRACING PANEL LENGTHS PROVIDED:  
B/W A = 35.7 FT CS-WSP  
B/W B = 47.7 FT CS-WSP  
B/W 1 = 31.3 FT CS-WSP  
B/W 2 = 29.7 FT CS-WSP

**FIRST FLOOR PLAN**

1/4" = 1'-0"

\*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
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**TYNDALL**  
ENGINEERING & DESIGN, P.A.  
1107 W. 10th Street, Suite 100  
Raleigh, NC 27601  
919.775.4444  
www.tyndallengineering.com

Client: **KARA HOMES INC.**  
Project: **DOGWOOD II**

**1ST FLOOR HEADER  
2ND FLOOR FRAMING**

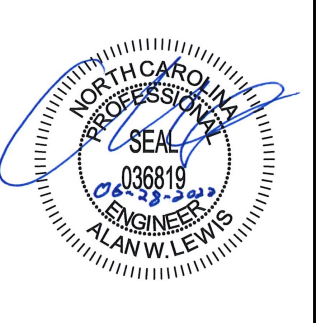
Project #: 2201-010207  
Date: 6/27/2022  
Engineered by: HJS  
DWG. Checked By: AWL  
Scale: SEE PLAN

**REVISIONS**

No.	Date	Remarks

FILENAME: \\A:\ESD\DRN\B\2022\STRUCTURE\PROJECTS\2201-010207\2201-010207\_1.FDW SWD BY: SIMWESH LAST PLOT DATE: 7/6/2022 10:00 AM

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**TYNDALL**  
 ENGINEERING & DESIGN P.A.  
 280 Blywood Drive • Garner • North Carolina • 27529  
 919 774-2010 • 919 774-4444  
 www.tyndallengineering.com

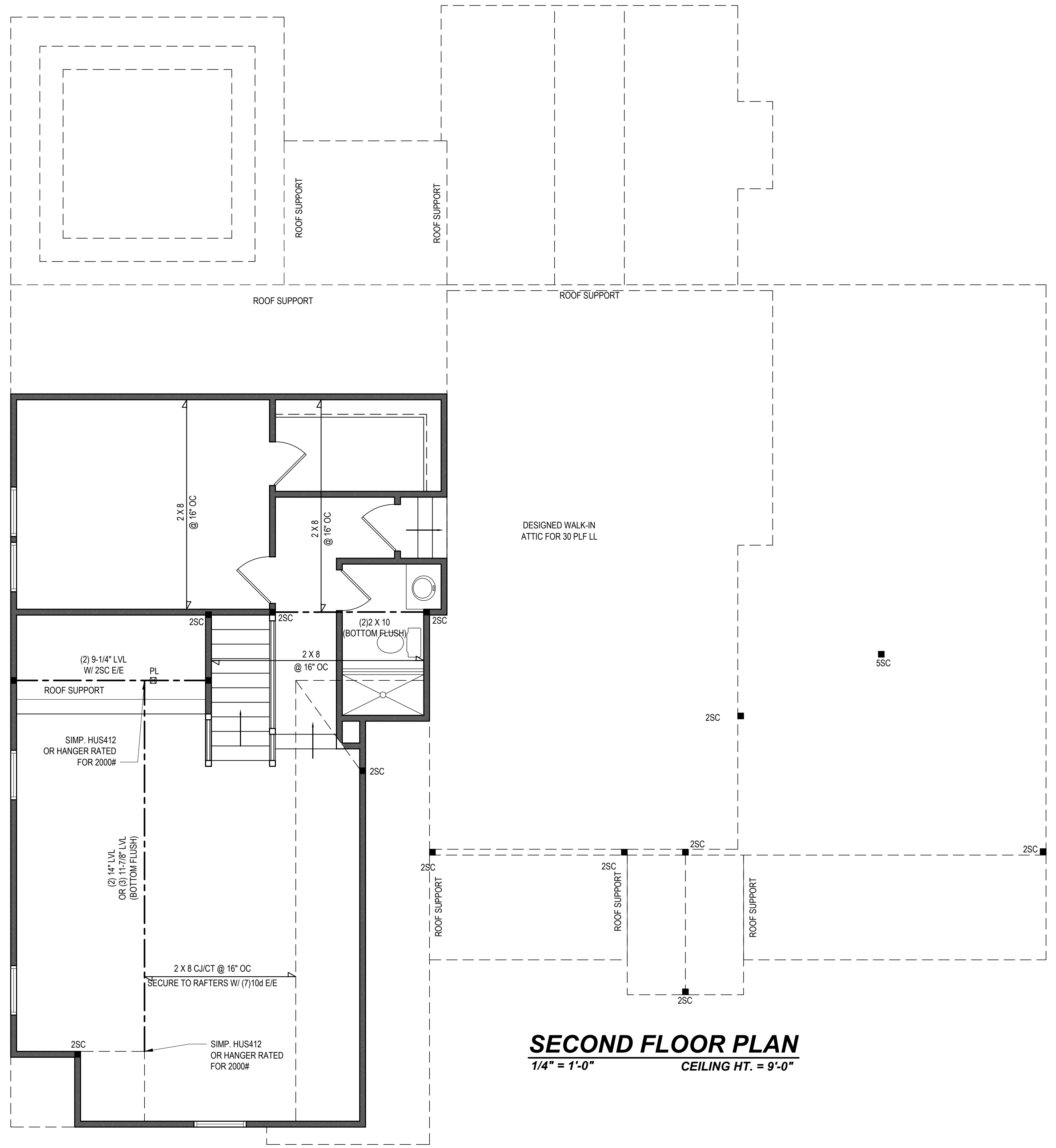
Client: **KARA HOMES INC.**  
 Project: **DOGWOOD II**

**2ND FLOOR HEADER**  
**2ND FLR. CLG. FRAMING**

Project #: 2201-010207  
 Date: 6/27/2022  
 Engineered by: HJS  
 DWG. Checked By: AWL  
 Scale: SEE PLAN

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Sheet Number  
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 3 of 7

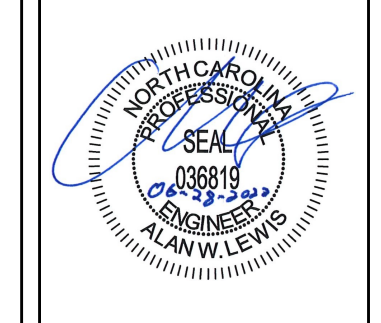


**SECOND FLOOR PLAN**  
 1/4" = 1'-0" CEILING HT. = 9'-0"

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 DATE: 6/27/2022 10:00 AM



Engineers and designers do not include construction means, methods, techniques, sequences, procedures or safety precautions. Any deviation or discrepancy on plans are to be brought to the immediate attention of Tyn dall Engineering & Design, P.A. Failure to do so will void Tyn dall Engineering & Design, P.A. liability. Please review these documents carefully. Tyn dall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.



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1107 W. 24th St. • Raleigh, NC 27601  
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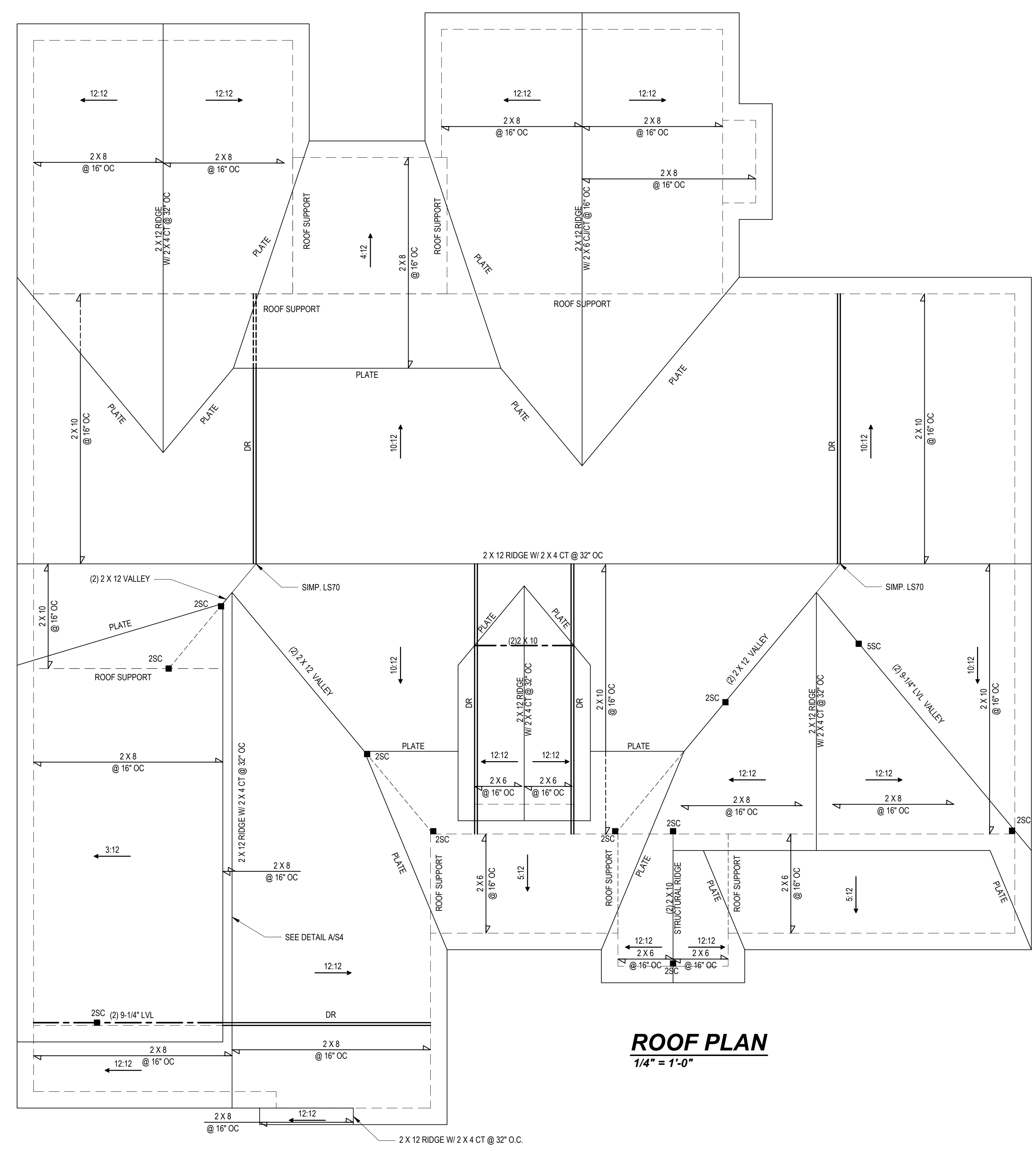
Client: **KARA HOMES INC.**  
Project: **DOGWOOD II**

# ROOF PLAN

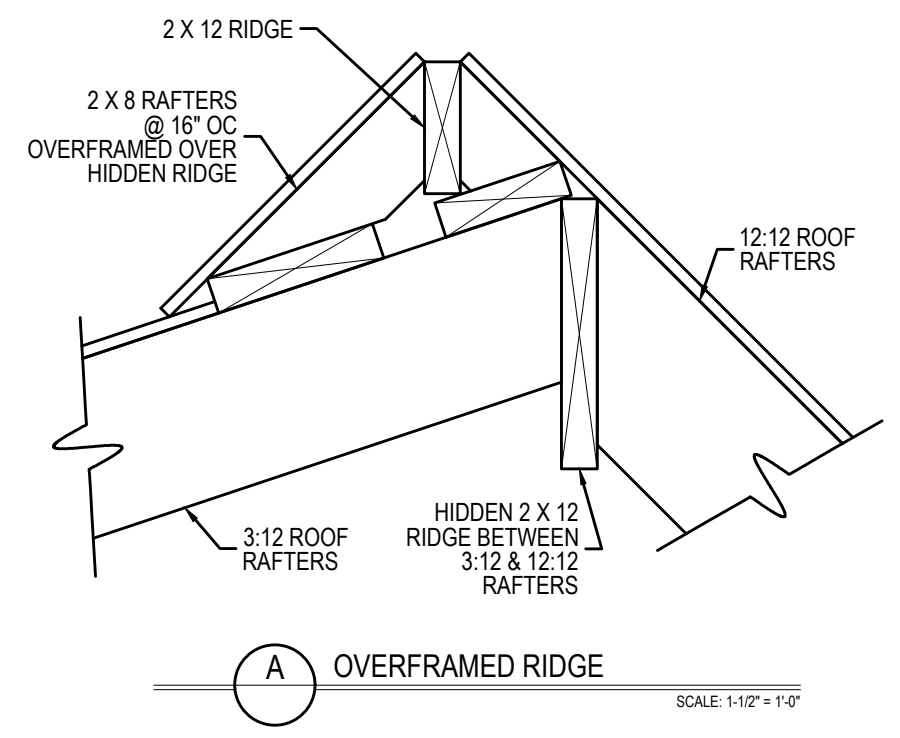
Project #: 2201-010207  
Date: 6/27/2022  
Engineered by: HJS  
DWG. Checked By: AWL  
Scale: SEE PLAN

No.	Date	Remarks

Sheet Number  
**S4**  
4 of 7



**ROOF PLAN**  
1/4" = 1'-0"



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**STRUCTURAL NOTES**

1) ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REQUIREMENTS OF 'NORTH CAROLINA STATE 2018 RESIDENTIAL BUILDING CODE', IN ADDITION TO ALL LOCAL CODES AND REGULATIONS.

2) DESIGN LOADS:

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
ALL FLOORS	40	10	L/360	L/240
ATTIC (w/ walk up stairs)	30	10	L/360	L/240
ATTIC (pull down access)	20	10	L/240	L/180
ATTIC (no access)	10	5	L/240	L/180
EXTERNAL BALCONY	40	10	L/360	L/240
ROOF	20	20	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	BASED ON 120 MPH (EXPOSURE B)			
SEISMIC	SEISMIC ZONES A, B & C			

- 3) MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
- 4) CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE. (U.N.C.)
- 5) MAXIMUM DEPTH OF UNBALANCED FILL AGAINST FOUNDATION WALLS TO BE LESS THAN 4'-0" WITHOUT USING SUFFICIENT WALL BRACING. REFER TO SECTION R602.3 FOR BACKFILL LIMITATIONS BASED ON WALL HEIGHT, WALL THICKNESS, SOIL TYPE, AND UNBALANCED BACKFILL HEIGHT.
- 6) ALL FRAMING LUMBER SHALL BE SYP #2 (Fb = 800 PSI, BASED ON D/10) (U.N.C.)  
ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.  
ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2000 PSI, E = 1.9M PSI (U.N.C.)  
ALL LS LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2325 PSI, E = 1.8M PSI (U.N.C.)  
ALL PSL LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2400 PSI, E = 1.8M PSI (U.N.C.)
- 7) ALL LOAD BEARING EXTERIOR HEADERS SHALL BE AT (2) 2x10 (U.N.C.) REFER TO TABLE R602.7(1) & (2) FOR JACK STUD REQUIREMENTS FOR HEADER SPANS FOR INTERIOR AND EXTERIOR LOAD CONDITIONS UNLESS SPECIFICALLY NOTED ON PLANS.
- 8) ALL STRUCTURAL STEEL W-SHAPES (I-BEAMS) SHALL BE ASTM A992 GRADE 50.  
ALL STEEL ANGLES, PLATES, AND C-CHANNELS SHALL BE ASTM A36.  
ALL STEEL PIPE SHALL BE ASTM A53 GRADE B.
- 9) STEEL BEAMS SHALL BE SUPPORTED AT EACH END WITH A MINIMUM BEARING LENGTH OF 3 1/2" AND FULL FLANGE WIDTH. PROVIDE SOLID BEARING FROM BEAM SUPPORT TO FOUNDATION. BEAMS SHALL BE ATTACHED TO EACH SUPPORT WITH TWO (2) LAG SCREWS (1/2" x 4" LONG). LATERAL SUPPORT IS CONSIDERED ADEQUATE PROVIDED THE JOISTS ARE TIED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.
- 10) PROVIDE ANCHOR BOLT PLACEMENT PER SECTION 403.1.6; 1/2" ANCHOR BOLTS SPACED AT 6'-0" O.C. AND PLACED 12" FROM THE END OF EACH PLATE SECTION. ANCHOR BOLTS SHALL BE SPACED AT 3'-0" O.C. FOR BASEMENTS. ANCHOR BOLT SHALL EXTEND 7" INTO CONCRETE OR MASONRY. THE BOLTS SHALL BE LOCATED IN THE MIDDLE THIRD OF THE WIDTH OF THE PLATE. THERE SHALL BE A MINIMUM TWO ANCHOR BOLTS PER PLATE SECTION.
- 11) FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF NC BUILDING CODE.
- 12) WALL AND ROOF CLADDING VALUES:  
WALL CLADDING SHALL BE DESIGNED FOR 28.0 POUNDS PER SQUARE FOOT (LBS/SQFT) OR GREATER POSITIVE AND NEGATIVE PRESSURE.  
ROOF VALLES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:  
39.0 LBS/SQFT FOR ROOF PITCHES 0/12 TO 1/12  
36.0 LBS/SQFT FOR ROOF PITCHES 1/12 TO 6/12  
18.0 LBS/SQFT FOR ROOF PITCHES 6/12 TO 12/12  
\*MEAN ROOF HEIGHT 3'-0" OR LESS
- 13) FOR ROOF SLOPES FROM 2/12 THROUGH 4/12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER.
- 14) REFER TO SECTION R602.3 FOR FRAMING OF ALL WALLS OVER 10'-0" IN HEIGHT.
- 15) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 N.C.R.C.
- 16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- 17) REFER TO TABLE N1102.1 FOR PRESCRIPTIVE BUILDING ENVELOPE THERMAL COMPONENT CRITERIA.
- 18) PSL COLUMNS DESIGNED WITH MAXIMUM HEIGHT OF 9'-0" (U.N.C.)
- 19) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.C.)
- 20) MAXIMUM MASONRY PER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- 21) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSION OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.

**DEFINITIONS FOR COMMON ABBREVIATIONS**

ALT = ALTERNATE	MAX = MAXIMUM
CANT = CANTILEVER	MIN = MINIMUM
CJ = CEILING JOIST	NOM = NOMINAL
CMU = CONCRETE MASONRY UNIT	O.C. = ON CENTER
COL = COLUMN	PL = POINT LOAD
CONC = CONCRETE	PT = PRESSURE TREATED
CONT = CONTINUOUS	REIN = REINFORCED
CT = COLLAR TIE	REQD = REQUIRED
DBL = DOUBLE	RJ = ROOF JOIST
DIA = DIAMETER	RS = ROOF SUPPORT
DJ = DOUBLE JOIST	SC = STUD COLUMN
DR = DOUBLE RAFTER	SCH = SCHEDULE
EA = EACH	SPEC = SPECIFIED
EE = EACH END	THK = THICK
FJ = FLOOR JOIST	TJ = TRIPLE JOIST
FND = FOUNDATION	TRTD = TREATED
FTG = FOOTING	TYP = TYPICAL
GALV = GALVANIZED	UNO = UNLESS NOTED OTHERWISE
HORIZ = HORIZONTAL	W = WIDE FLANGE BEAM
HT = HEIGHT	WWF = WELDED WIRE FABRIC
MANUF = MANUFACTURER	XJ = EXTRA JOIST

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. MAXIMUM TRIBUTARY AREA IS BASED ON 128 TOTAL SQUARE FEET WHICH MAY BE LOCATED AT DIFFERENT LEVELS.  
\*\* 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 THESE METHODS:

- A. THE DECK FLOOR HEIGHT IS LESS THAN 4'-0" AND THE DECK IS ATTACHED TO THE STRUCTURE IN ACCORDANCE WITH SECTION (4) ABOVE. LATERAL BRACING IS NOT REQUIRED.
- B. 4 x 4 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 1/3 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 BOLTED TO THE POST AND GIRDER 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 SQ. FT.	4'-0"	2'-6"	1'-0"
6 x 6	120 SQ. FT.	6'-0"	3'-6"	1'-8"

D. 2 x 6 DIAGONAL VERTICAL CROSS BRACING MAY BE PROVIDED IN TWO (2) PERPENDICULAR DIRECTIONS FOR FREESTANDING DECKS OR PARALLEL TO THE STRUCTURE AT THE EXTERIOR COLUMN LINE FOR ATTACHED DECKS. THE 2 x 6 SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8" HOT DIPPED GALVANIZED BOLT AT EACH END OF EACH BRACING MEMBER.

E. FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 46.

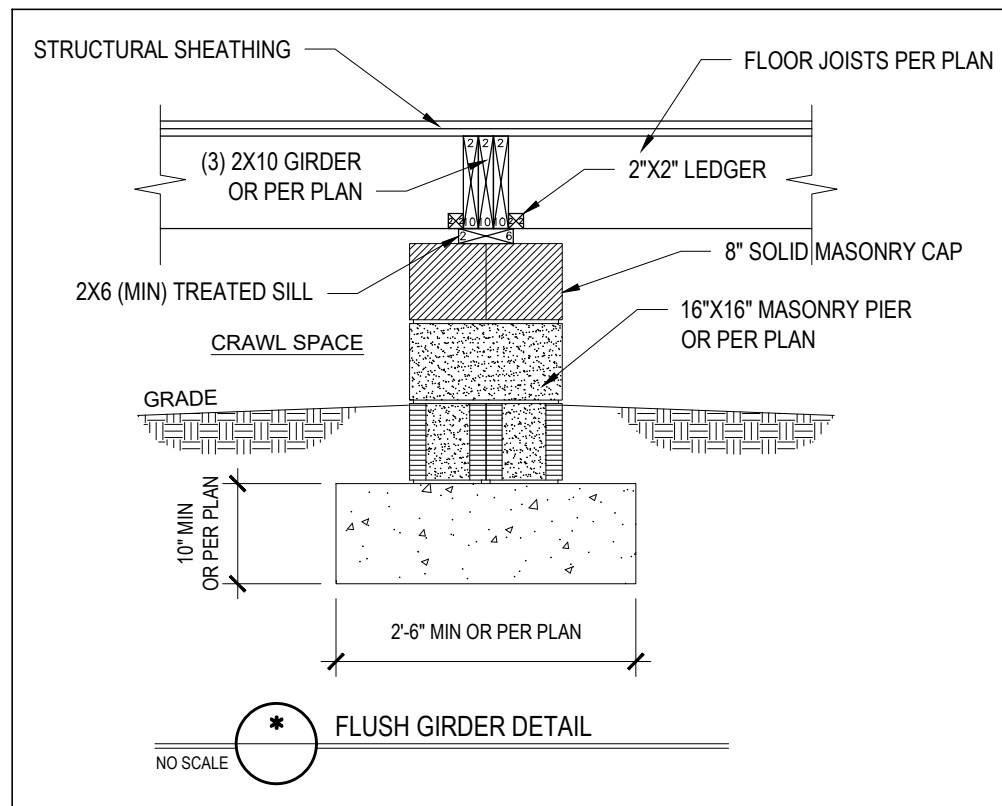
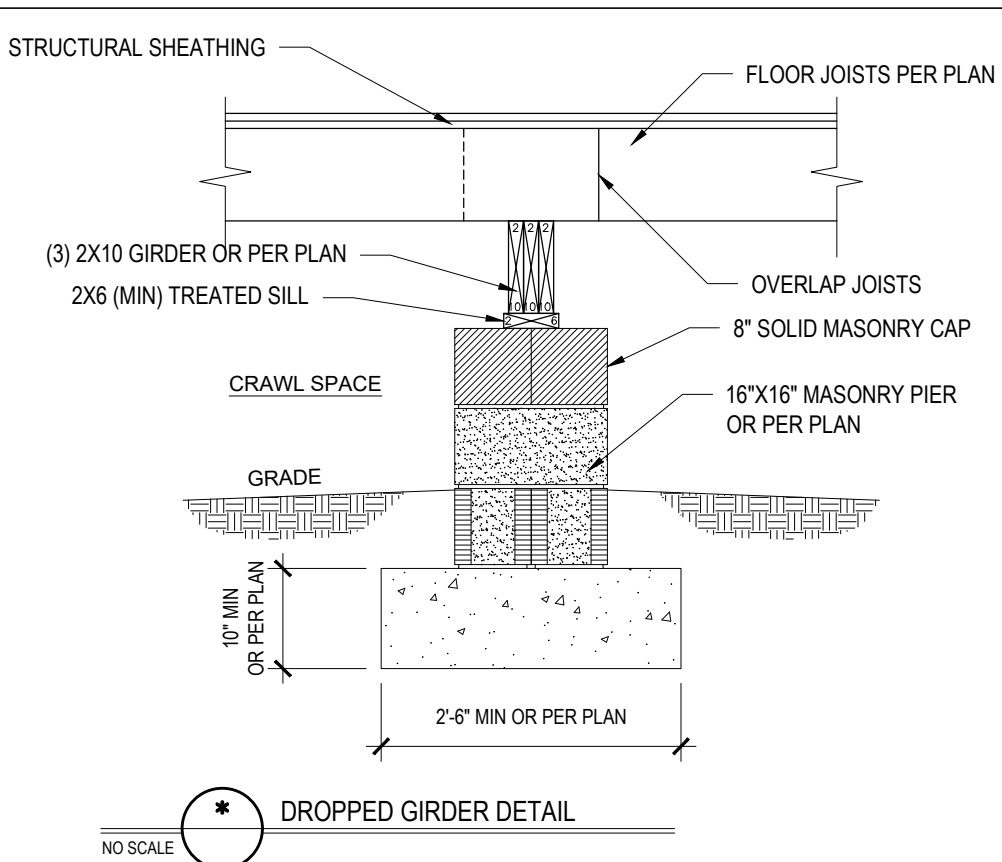


TABLE N1102.1 CLIMATE ZONES 3-5

CLIMATE ZONES	FENESTRATION U-FACTOR <sup>a</sup>	SKYLIGHT U-FACTOR <sup>b</sup>	GLAZED FENESTRATION SHGC <sup>c,d,e</sup>	CEILING <sup>m</sup> R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT <sup>o,q</sup> WALL R-VALUE	SLAB <sup>d</sup> R-VALUE AND DEPTH	CRAWL SPACE <sup>r</sup> WALL R-VALUE
3	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5 h	5/13 or 5/10 cont	19	5/13	0	5/13
4	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5 h	5/13 or 5/10 cont	19	10/15	10	10/15
5	0.35	0.55	NR	38 or 30 cont	19, or 13 + 5 h, or 15 + 3 h	13/17 or 13/12.5 cont	30 <sup>g</sup>	10/15	10	10/19

- NO SCALE
- \* TABLE N1102.1 CLIMATE ZONES 3-5
- a. R-VALUES ARE MINIMUM U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF INSULATION, THE INSTALLED VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
- b. THE FENESTRATION U-FACTOR COLUMN EXCLUDES SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.
- c. "010" MEANS R-15 CONTINUOUS INSULATION (SPACING) ON THE INTERIOR OR EXTERIOR OF THE HOME OR IN A CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL OR CRAWL SPACE WALL.
- d. FOR MONOLITHIC SLAB INSULATION SHALL BE APPLIED FROM THE INSULATION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR MINIMUM OF 24" BELOW GRADE. WHENEVER IS USED FOR EXISTING SLAB INSULATION SHALL EXTEND TO THE BOTTOM OF THE FOUNDATION WALL OR 24" ABOVE GRADE. R-14 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR HEATED SLABS.
- e. SEE LIST.
- f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WINTERHEATING LOCATIONS AS DEFINED BY EQUATION N1102.7 AND TABLE N1102.7.
- g. OR INSULATION EQUIVALENT TO FILL THE FRAMING CAVITY. 10" MINIMUM.
- h. THE FIRST VALUE IS CAVITY INSULATION. THE SECOND VALUE IS CONTINUOUS INSULATION. 10" IS 10" MEANS R-13 CAVITY INSULATION PLUS R-13 INSULATED SHEATHING. 18" MEANS R-15 CAVITY INSULATION. PLUS R-3 INSULATED SHEATHING. EXISTING SHEATHING COVERS 25% OR LESS OF THE EXTERIOR INSULATION BEARING IS NOT REQUIRED WHERE THE STRUCTURAL BEARING IS USED. EXISTING SHEATHING COVERS MORE THAN 25% PRESENT OF THE EXTERIOR SHALL BE SUBSTITUTED WITH INSULATION BEARING AT LEAST 18" x 2" MEANS R-13 CAVITY INSULATION PLUS R-3 SHEATHING.
- i. FOR MASS WALLS THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR MASS WALL.
- j. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF THIS GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A U-FACTOR NO GREATER THAN 0.35 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- k. IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF THIS GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A SHGC NO GREATER THAN 0.35 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
- l. R-10 SHALL BE ADDED TO THE REQUIRED INSULATION REQUIREMENT WHERE THE FULL HEIGHT OF ANCHOR BOLTS OR INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE LEVELS. OTHERWISE R-8 INSULATION IS REQUIRED WHERE NEGLIGIBLE CLEARANCE EXISTS OR INSULATION MUST EXTEND TO EITHER THE INSULATION Baffle OR WITHIN 1/8" OF THE ROOF BEAM.
- m. TABLE VALUE REQUIRED EXCEPT FOR ROOF EDGE WHERE THE SPACE IS LIMITED BY THE PITCH OF THE ROOF. THERE THE INSULATION MUST FILL THE SPACE UP TO THE AIR Baffle.
- n. IF EXTERIOR AIR IS COMPRESSED AND NOT FLOWING IN A TYPICAL 1" FRAMING CAVITY IS DEEMED TO COMPLY. INSULATION BATT'S RATED R-15 OR HIGHER COMPRESSED AND INSTALLER IN A WALL IS NOT PERMITTED TO COMPLY.
- o. BASEMENT WALL MEETING THE MINIMUM MASS WALL SPECIFIC HEAT CONTENT REQUIREMENT MAY USE THE MASS WALL R-VALUE AS THE MINIMUM REQUIREMENT.

1950 SQ. FT. OF CRAWL SPACE / 150 = 13 SQ. FT. OF REOD VENTILATION WITHOUT CROSS VENTILATION  
13 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 15 VENTS REQ'D (BASED ON 8" X 16" VENTS)

-OR-

1950 SQ. FT. OF CRAWL SPACE / 1500 = 1.3 SQ. FT. OF REOD VENTILATION WITH CROSS VENTILATION  
1.3 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 2 VENTS REQ'D (BASED ON 8" X 16" VENTS)

1) VENT LOCATIONS MAY VARY FROM THOSE SHOWN ON PLAN, HOWEVER VENTS SHALL BE PLACED TO PROVIDE ADEQUATE VENTILATION AT ALL POINTS AND TO PREVENT DEAD AIR POCKETS.

2) THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/100 OF THE CRAWL SPACE GROUND AREA WHERE THE REQUIRED OPENING IS TO PROVIDE CROSS VENTILATION OF THE CRAWL SPACE. THE INSTALLATION OF OPERABLE LOADERS SHALL NOT BE PROHIBITED. ONE FOUNDATION VENT SHALL BE INSTALLED FOR EACH 100 SQ. FT. OF CRAWL SPACE. RAINWATER ENTRY WHEN THE CRAWL SPACE IS BUILT ON A SLOPED SITE, THE WALL FOUNDATION SHALL BE CONSTRUCTED WITH WALL VENT OPENINGS. VENT DAMPS SHALL BE PROVIDED WHEN THE BOTTOM OF THE FOUNDATION VENT OPENING IS LESS THAN 6 INCHES ABOVE THE FINISHED EXTERIOR GRADE.

WALL VENTED CRAWL SPACES REQUIRE FULL COVERAGE GROUND VAPOR RETARDERS.

**CRAWL SPACE VENTILATION CALCULATION**

NO SCALE

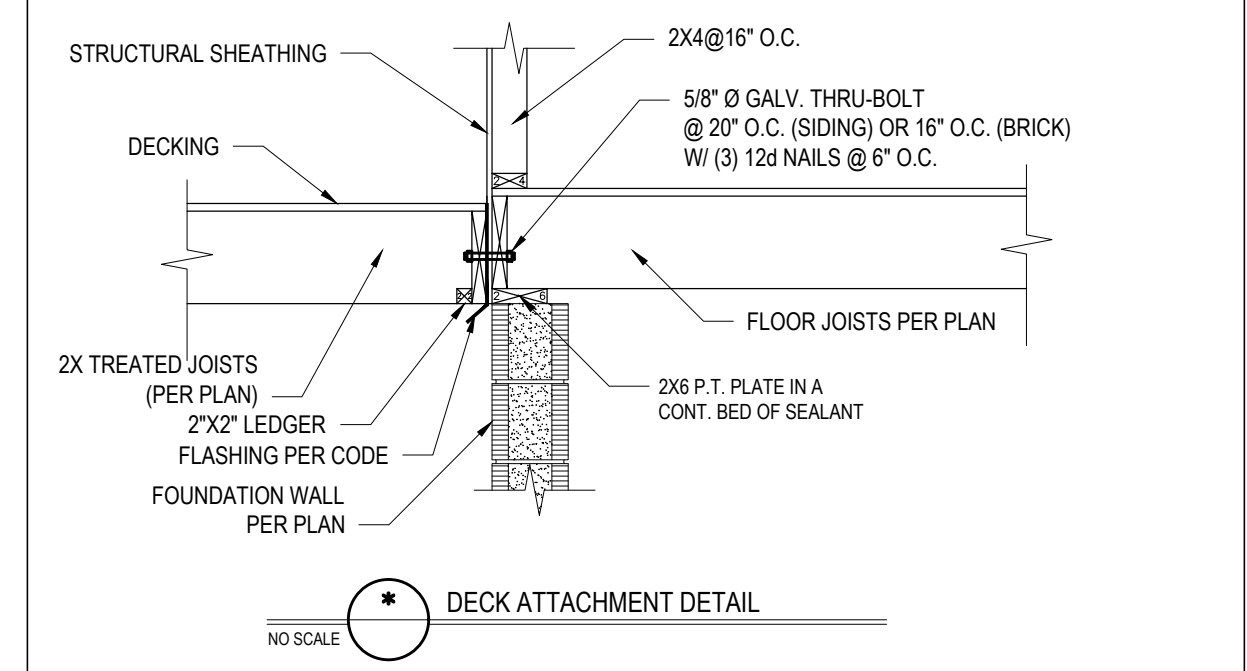
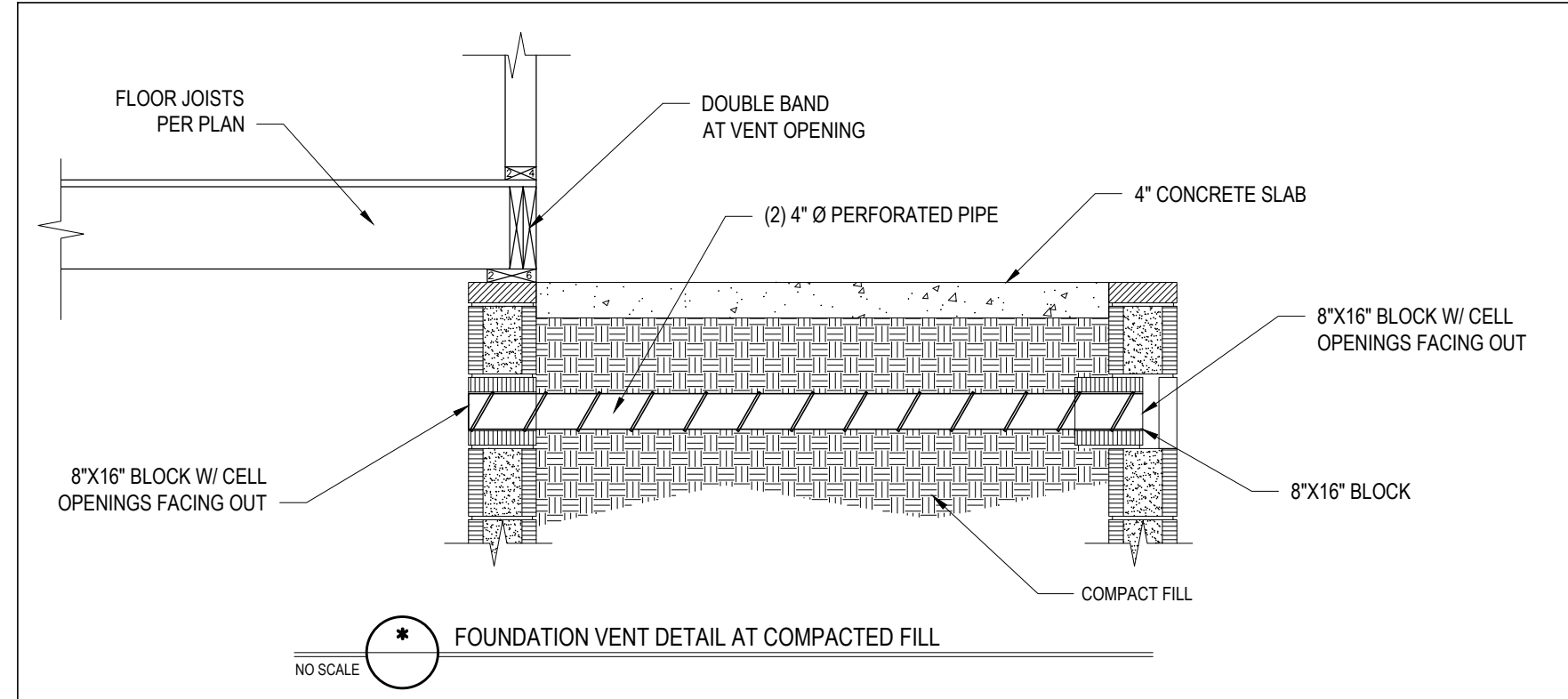
1250 SQ. FT. OF ATTIC / 300 = 5 SQ. FT. INLETS/OUTLETS REQUIRED

1) CALCULATION BASED ON VENTILATION USED AT LEAST 3' ABOVE THE COMB VENTS WITH THE BALANCE OF VENTILATION PROVIDED BY GIVE VENTS.

2) COUNTERSINKS SHALL HAVE A 1" MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DOCK AND THE INSULATION.

**ATTIC VENTILATION CALCULATION**

NO SCALE



\* Engineers and does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
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\* Please review these documents carefully. Tyndall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.

**TYNDALL ENGINEERING & DESIGN P.A.**  
1107 W. 10th St., Suite 100  
Raleigh, NC 27601  
919.775.2100 • 919.775.4444  
www.tyndallengineering.com

**KARA HOMES INC.**  
Client: **DOGWOOD II**

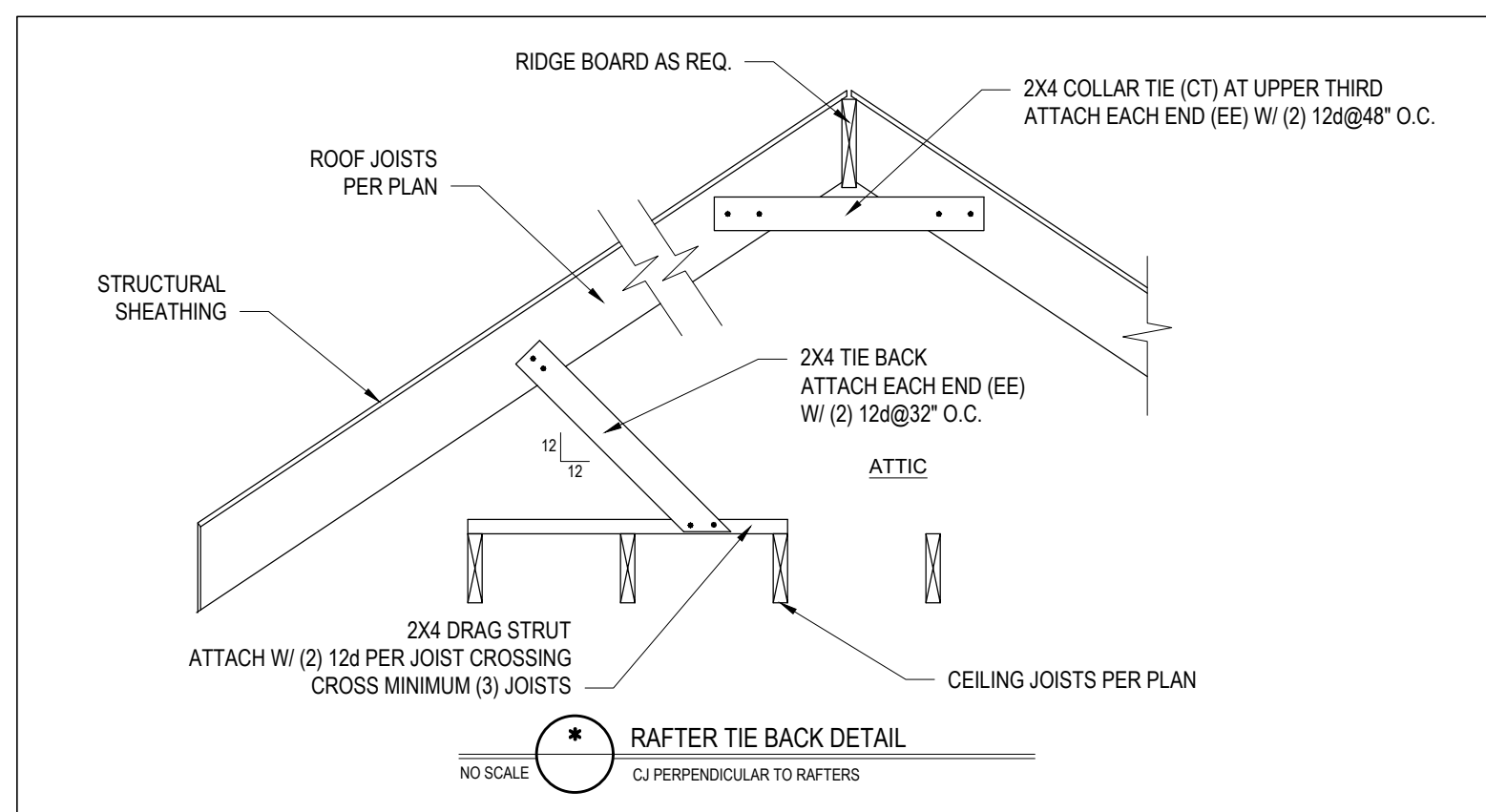
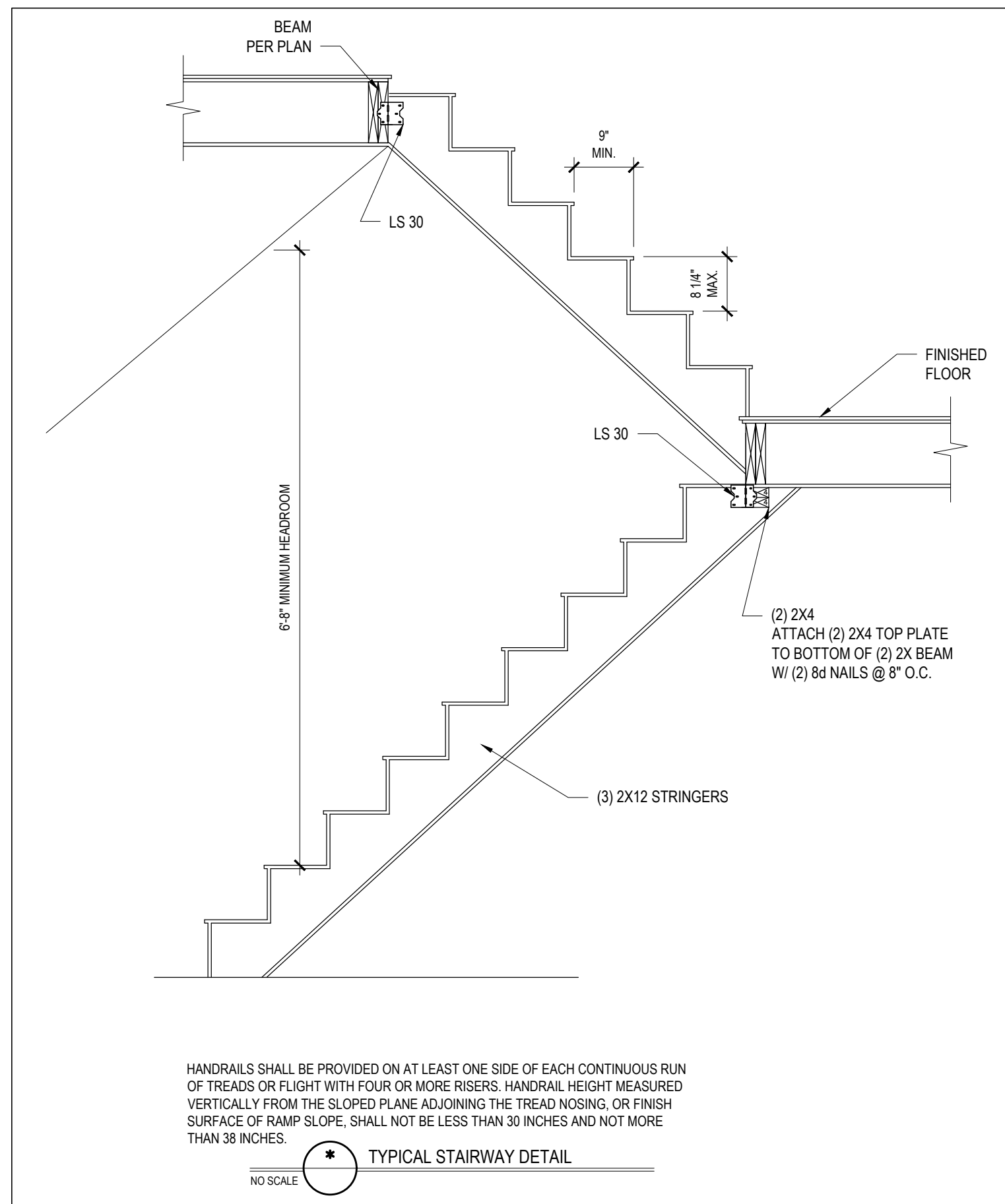
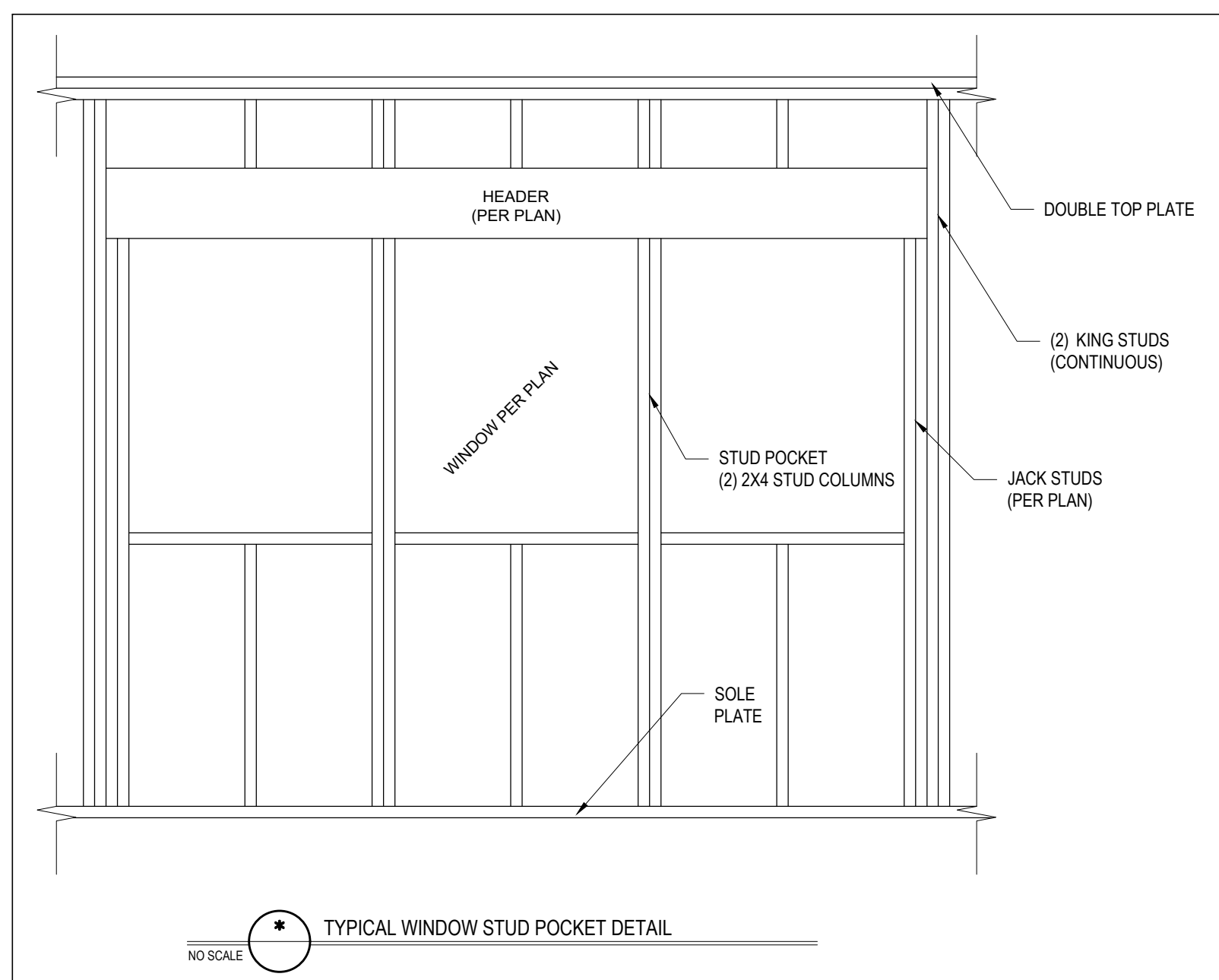
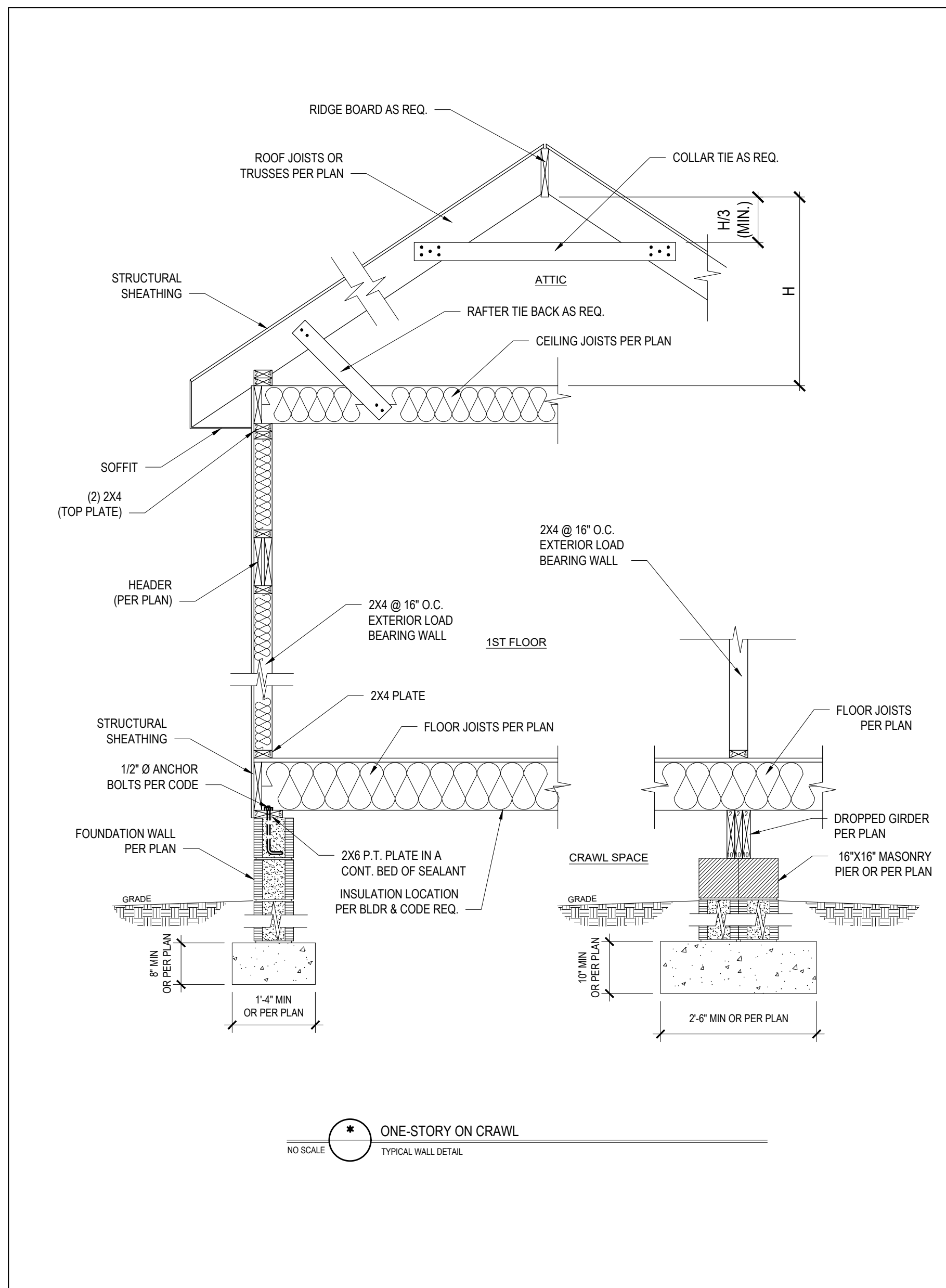
**STANDARD DETAILS**

Project #: 2201-010207  
Date: 6/27/2022  
Engineered by: HJS  
DWG. Checked by: AWL  
Scale: SEE PLAN

No.	Date	Remarks

Sheet Number **D1**  
5 of 7

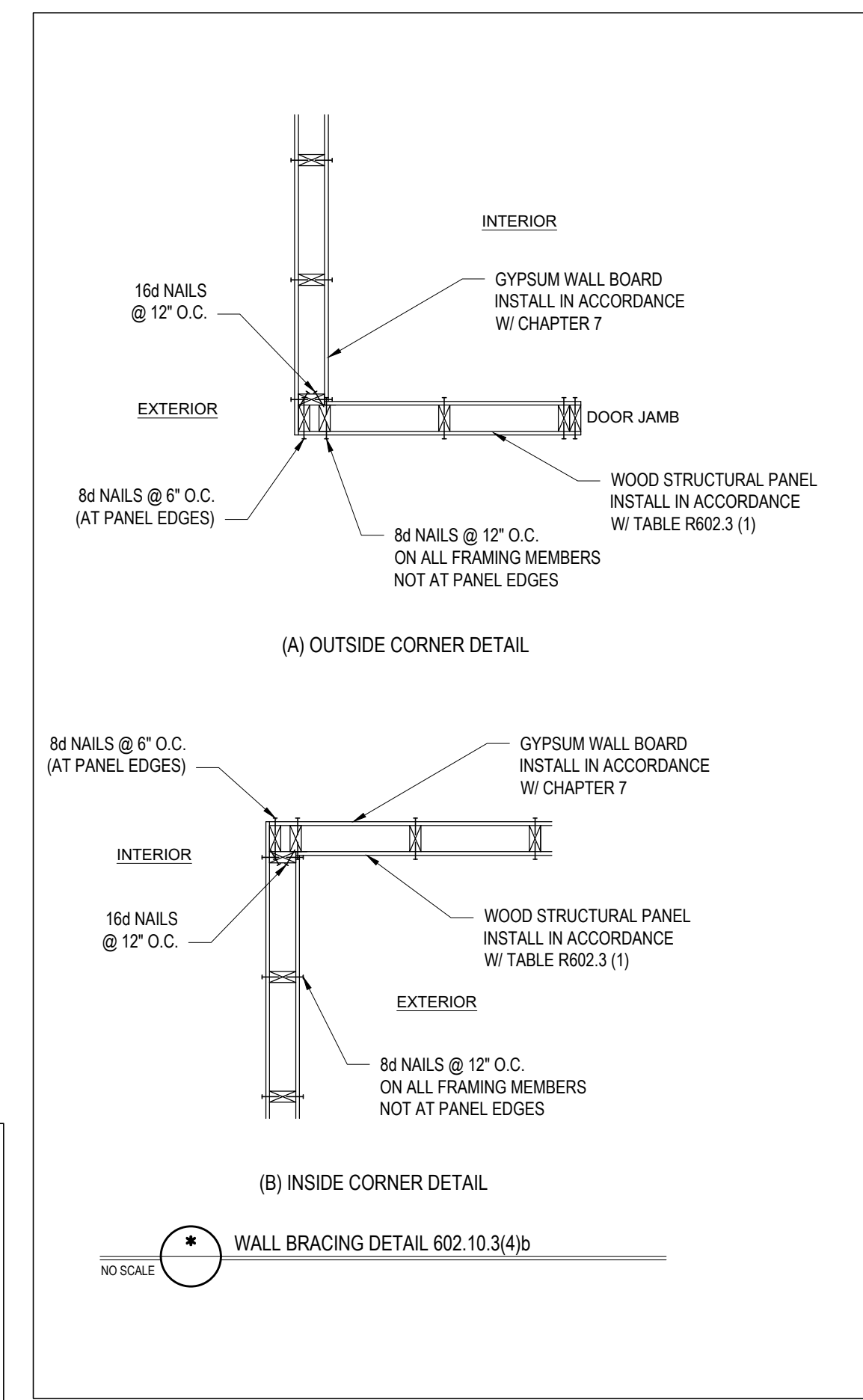




SIZE OF ANGLE (1,3)	NO STORY ABOVE (5)	1 STORY ABOVE (5)	2 STORIES ABOVE (5)	# OF 1/2" (OR EQUIV.) REINFORCING BARS IN REINFORCED LINTEL (2,4,5)
L 3 x 3 x 1/4	6'-0"	4'-6"	3'-0"	1
L 4 x 3 x 1/4	8'-0"	6'-0"	4'-6"	1
L 5 x 3 1/2 x 5/16	10'-0"	8'-0"	6'-0"	2
L 6 x 3 1/2 x 5/16	14'-0"	9'-6"	7'-0"	2
2L 5 x 3 1/2 x 5/16	20'-0"	12'-0"	9'-6"	4

- LONG LEG OF THE ANGLE SHALL BE PLACED IN A VERTICAL POSITION.
- DEPTH OF REINFORCED LINTELS SHALL NOT BE LESS THAN 8" AND ALL CELLS OF HOLLOW MASONRY LINTELS SHALL BE GROUTED. REINFORCING BARS SHALL EXTEND NOT LESS THAN 8" INTO THE SUPPORT.
- STEEL MEMBERS INDICATED ARE ADEQUATE TYPICAL EXAMPLES; OTHER STEEL MEMBERS MEETING STRUCTURAL DESIGN REQUIREMENTS SHALL BE PERMITTED TO BE USED.
- EITHER STEEL ANGLE OR REINFORCED LINTEL SHALL SPAN OPENING.
- SPANS OVER 4'-0" SHALL BE SHORED UP UNTIL CURED.

MASONRY VENEER SUPPORT FIG 703.8.3.1



Engineers and designers shall 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 Tyn dall Engineering & Design, P.A. Failure to do so will void Tyn dall Engineering & Design, P.A. liability. Please review these documents carefully. Tyn dall Engineering & Design, P.A. will interpret that all dimensions, recommendations, etc. presented in these documents were deemed acceptable once construction begins.

**TYNDALL ENGINEERING & DESIGN P.A.**  
1197724310 • 410 774 444  
300 Blytheville Drive • Cary, NC 27513 • www.tyndallengineering.com

**KARA HOMES INC.**  
Client: **DOGWOOD II**

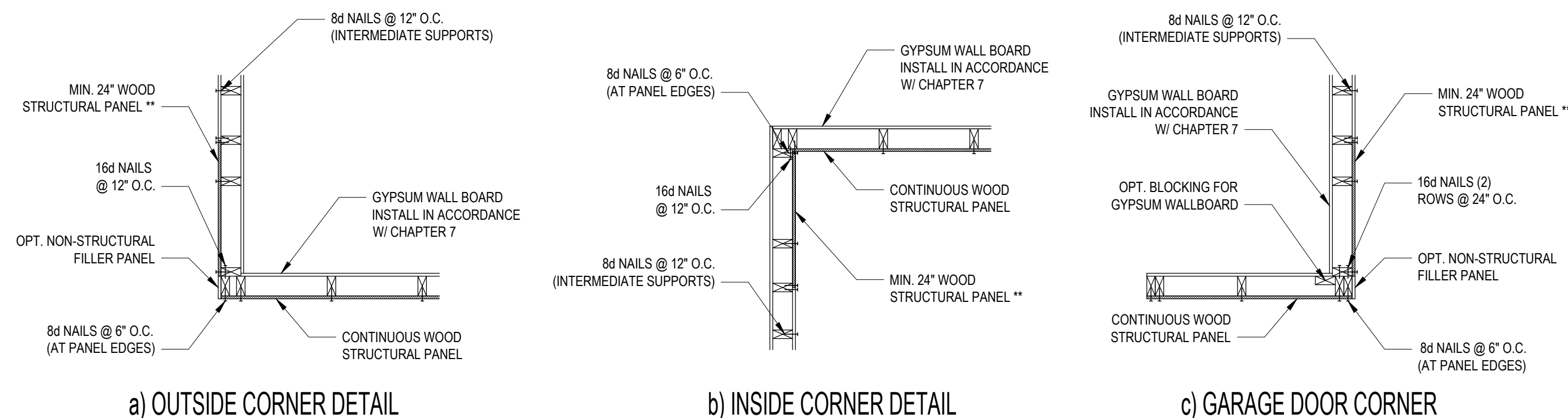
**STANDARD DETAILS**

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Sheet Number **D2**  
6 of 7





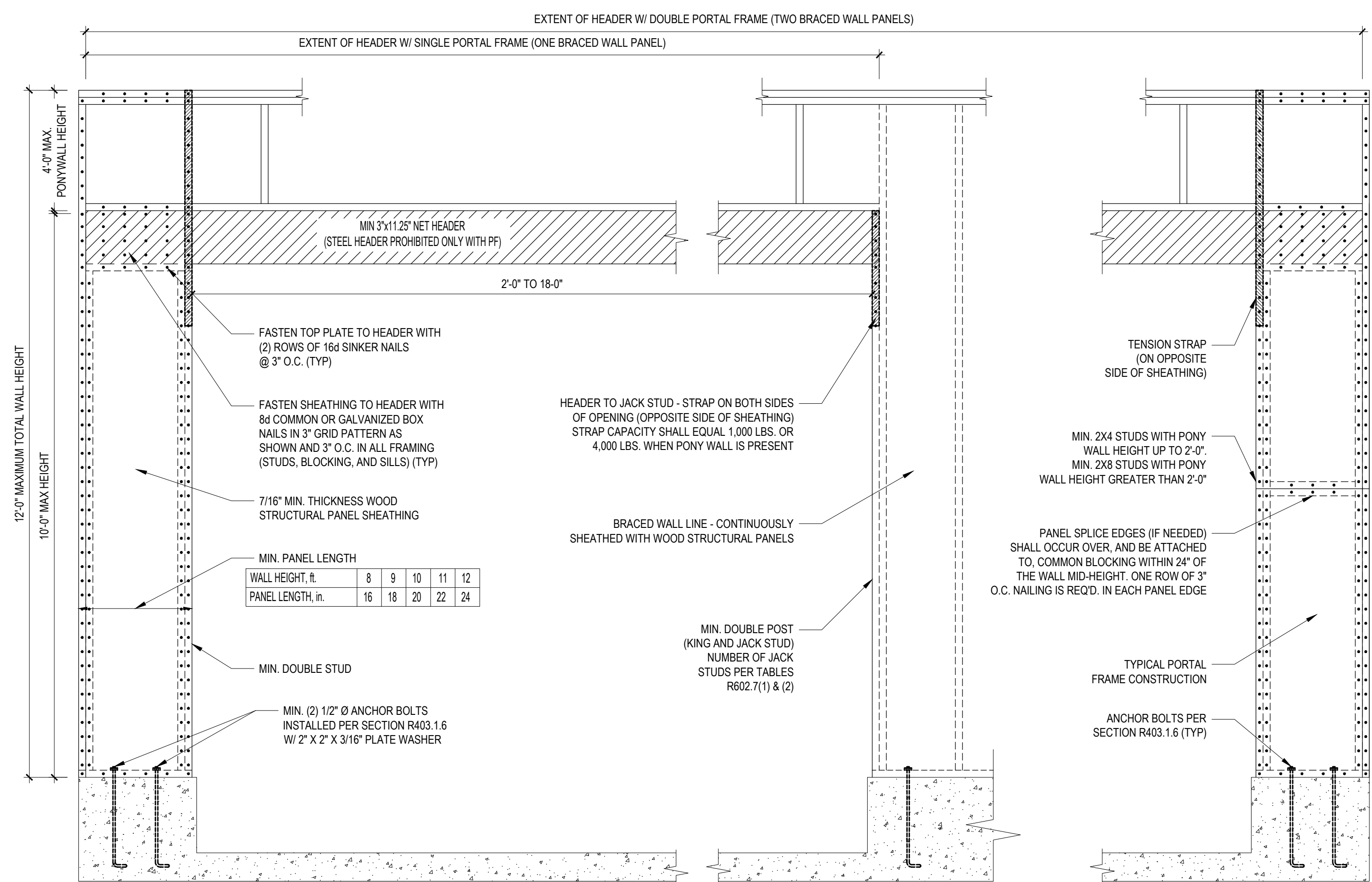
**B1: TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING**  
NO SCALE

- STRUCTURAL SHEATHING NOTES**
- DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS.
  - WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10.3 OF THE 2018 NCR.
  - BRACING REQUIREMENTS SHALL BE PER TABLE R602.10.3. REFER TO SECTION R602.10.4 FOR LOAD PATH DETAILS INCLUDING CONNECTIONS & SUPPORT OF BRACED WALL PANELS.
  - REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCR.
  - INTERIOR BRACED WALL PANELS (BWP) INDICATED SHALL BE SHEATHED IN ACCORDANCE WITH THE GB METHOD OR WSP METHOD AS PRESCRIBED IN SECTION R602.10.1 (UNO).
  - 12\"/>

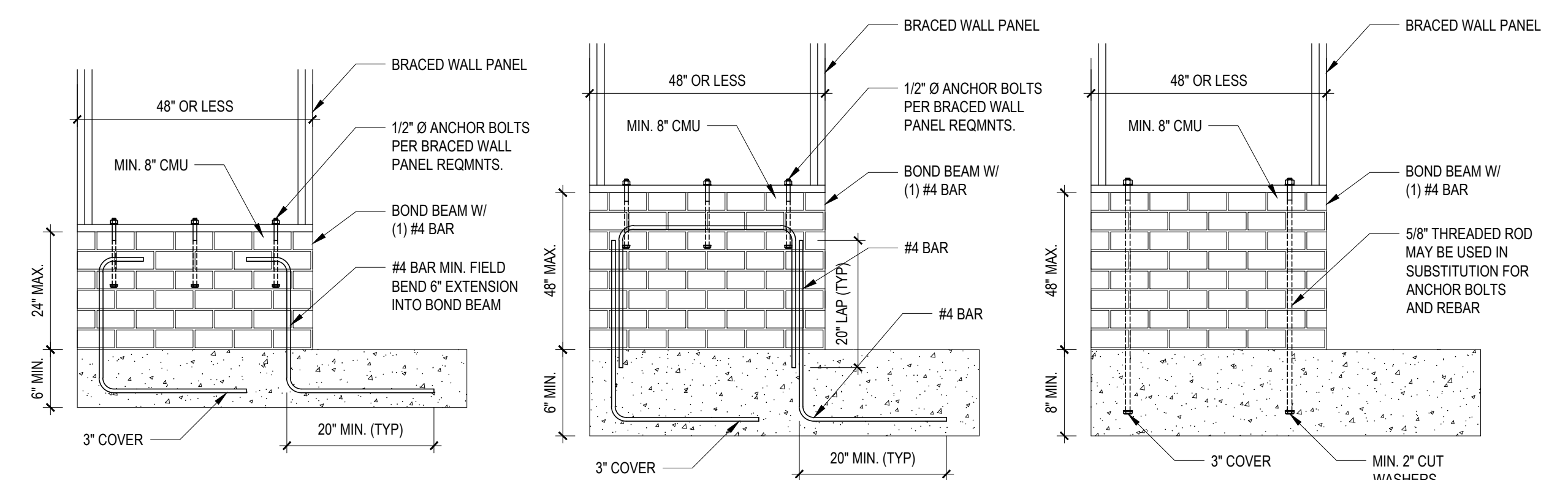
**REQUIRED BRACED WALL PANEL CONNECTIONS**

METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ 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 NAIL** @ 7" O.C.	5d COOLER NAIL** @ 7" O.C.
WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.

\*\*OR EQUIVALENT PER TABLE R702.3.5  
**B3: BRACE WALL PANEL CONNECTIONS**  
NO SCALE

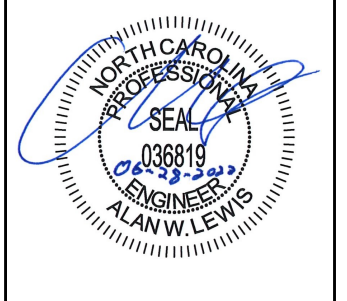


**B2: METHOD PF: PORTAL FRAME CONSTRUCTION**  
FIGURE R602.10.1



**B4: MASONRY STEM WALL SUPPORTING BRACED WALL PANELS**  
FIGURE R602.10.4.3 OF THE 2018 NCR  
NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

\*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
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**TYNDALL**  
ENGINEERING & DESIGN P.A.  
110775000 • 919 778 4444  
www.tyndallengineering.com  
300 Blytheville Drive • Garner • North Carolina • 27828

Client: **KARA HOMES INC.**  
Project: **DOGWOOD II**

**SHEATHING DETAILS**

Project #: 2201-010207  
Date: 6/27/2022  
Engineered by: HJS  
Checked by: AWL  
Scale: SEE PLAN

**REVISIONS**

No.	Date	Remarks

Sheet Number  
**D3**  
7 of 7

FILENAME: \\ESDORP\BNC\2022 STRUCTURE PROJECTS\2201-010207 - KARA HOMES - DOGWOOD II\CAD FILES\2201-010207\_LINING SWED BY: SUMESH LAST PLOT DATE: 7/6/2022 10:00 AM