

**GENERAL NOTES:**

- 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.
- ALL WALLS SHOWN ON THE FLOOR PLANS ARE DRAWN AT 4" UNLESS NOTED OTHERWISE.
- ALL ANGLED WALL SHOWN ON THE PLANS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
- STUD WALL DESIGN SHALL CONFORM TO ALL NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS.
- DO NOT SCALE PLANS. DRAWING SCALE MAY BE DISTORTED DUE TO COPIER IMPERFECTIONS.
- 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=	1507	GARAGE=	N/A
SECOND FLOOR=	1070	FRONT PORCH=	333
THIRD FLOOR=	N/A	CVD.PORCH=	478
BASEMENT=	N/A	SIDE PORCH=	33
		STORAGE=	N/A
<b>TOTAL HEATED=</b>	<b>2577</b>	<b>TOTAL UNHEATED=</b>	<b>844</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)*

N/A SQ. FT. OF CRAWL SPACE/1500

N/A SQ. FT. OF REQUIRED VENTILATION

PROVIDED BY: N/A VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= N/A 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.

2351 SQ. FT. OF ATTIC/300= 7.84

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"



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



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



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

Project #:	20-201
Date:	8-7-20
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



**Mooneyham Residence**

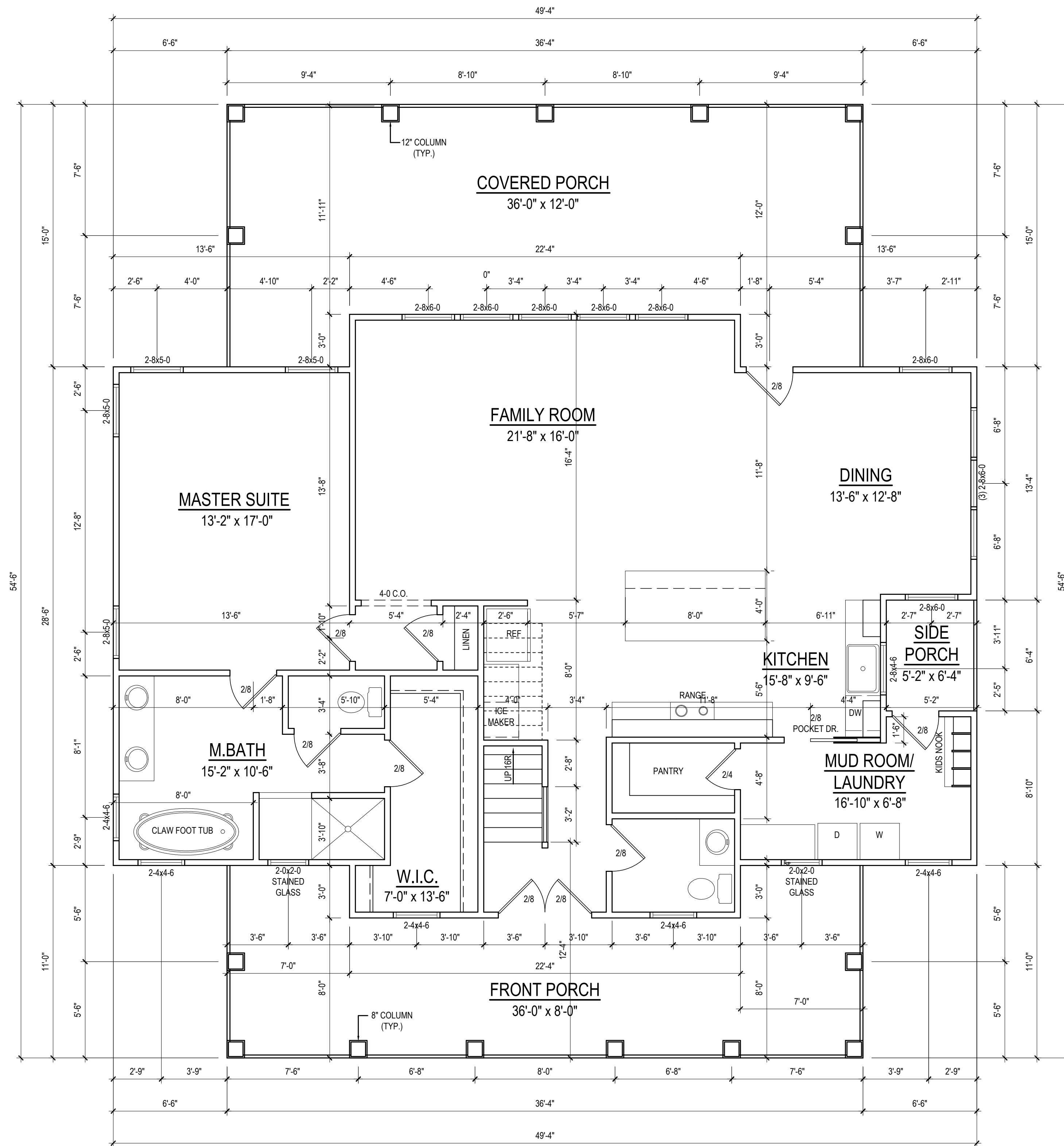
**Isaac Mooneyham**  
2121 Maizefield Ln.  
Fuquay-Varina, NC 27526

ELEVATIONS

Sheet Number  
**1**  
of 3

Website: www.KandHomeDesigns.com  
Email: Kent@KandHomeDesigns.com





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

Project No.	20-201
Date	8-7-20
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



**Mooneyham Residence**

**Isaac Mooneyham**  
 2121 Maizefield Ln.  
 Fuquay-Varina, NC 27526

FIRST FLOOR

Sheet Number  
**2**  
 of 3

Email: Kent@KandHomeDesigns.com Website: www.KandHomeDesigns.com

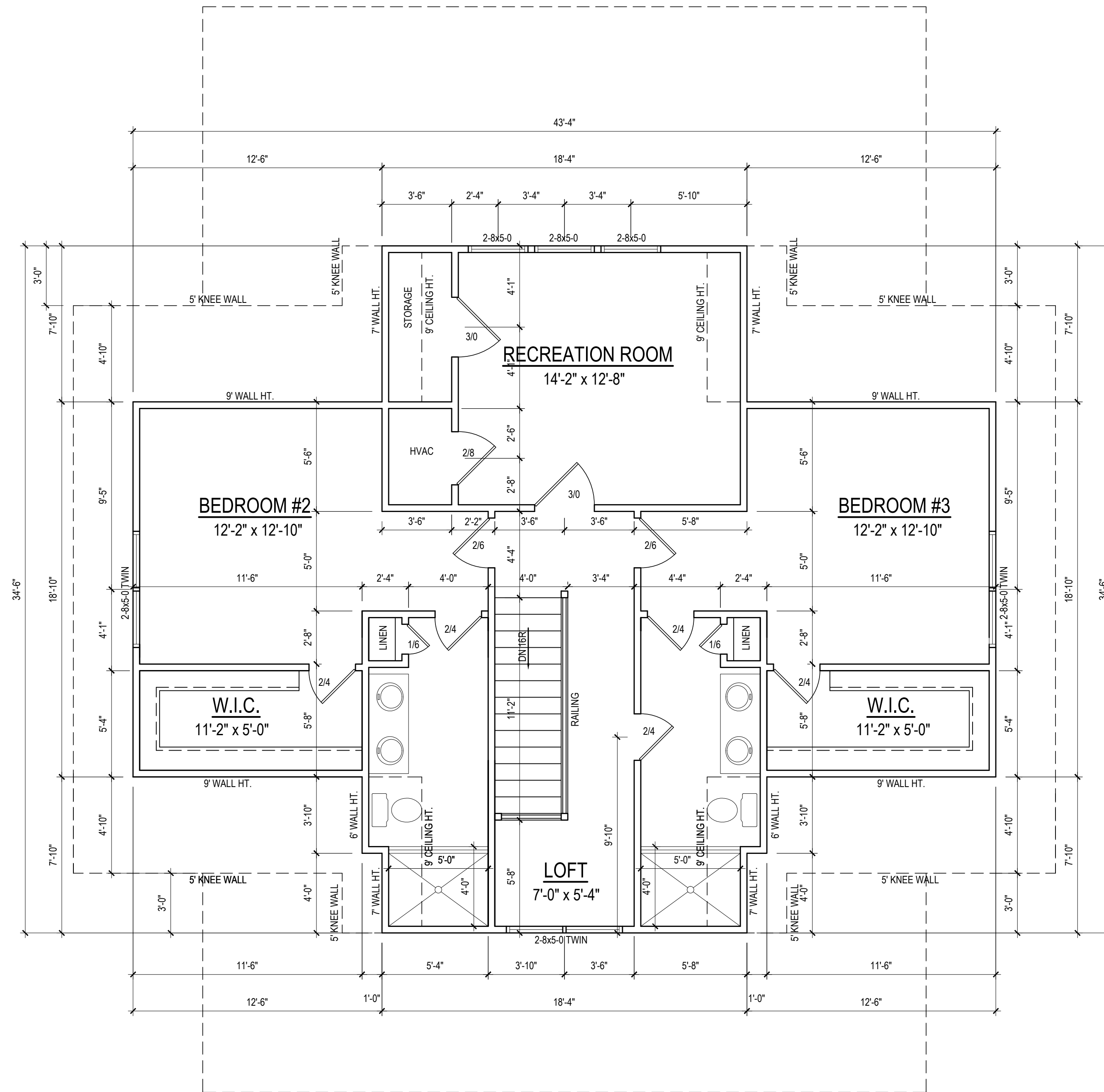
**STRUCTURAL NOTES**

- 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 RESIDENTIAL 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 (2)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 3-12" 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 PROVIDING 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 RESIDENTIAL BUILDING CODE
- WALL AND ROOF CLADDING VALUES:  
WALL CLADDING 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/SQFT FOR ROOF PITCHES OF 0/12 TO 2.25/12  
34.8 LBS/SQFT FOR ROOF PITCHES OF 2.25/12 TO 7/12  
21.0 LBS/SQFT FOR ROOF PITCHES OF 7/12 TO 12/12  
\*\* MEAN ROOF HEIGHT 30' 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

**TABLE N1102.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT**

CLIMATE ZONE	MAXIMUM GLAZING U-FACTOR	MINIMUM INSULATION R-VALUE					
		CEILINGS	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



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

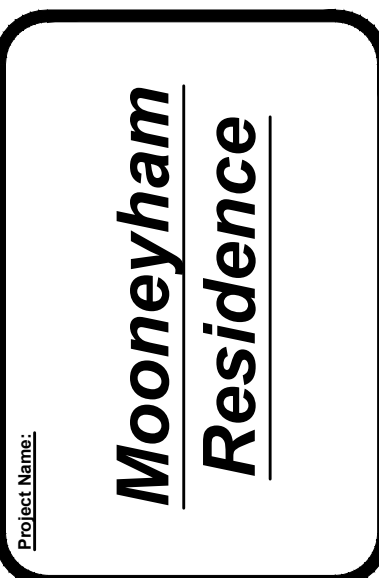
Project #:	20-201
Date:	8-7-20
Drawn/Design By:	KBB
Scale:	1/4" = 1'-0"

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



**Isaac Mooneyham**  
2121 Maizefield Ln.  
Fuquay-Varina, NC 27526

SECOND FLOOR

Sheet Number  
**3**  
of 3



**GENERAL NOTES:**

- 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.
- ALL WALLS SHOWN ON THE FLOOR PLANS ARE DRAWN AT 4" UNLESS NOTED OTHERWISE.
- ALL ANGLED WALL SHOWN ON THE PLANS ARE 45 DEGREES UNLESS NOTED OTHERWISE.
- STUD WALL DESIGN SHALL CONFORM TO ALL NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS.
- DO NOT SCALE PLANS. DRAWING SCALE MAY BE DISTORTED DUE TO COPIER IMPERFECTIONS.
- 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=	N/A	GARAGE=	896
SECOND FLOOR=	631	FRONT PORCH=	N/A
THIRD FLOOR=	N/A	CVD.PORCH=	N/A
BASEMENT=	N/A	SIDE PORCH=	N/A
		STORAGE=	N/A
<b>TOTAL HEATED=</b>	<b>631</b>	<b>TOTAL UNHEATED=</b>	<b>896</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)

N/A SQ. FT. OF CRAWL SPACE/1500

N/A SQ. FT. OF REQUIRED VENTILATION

PROVIDED BY: N/A VENTS AT 0.45 SQ. FT. NET FREE

VENTILATION EACH= N/A 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.

896 SQ. FT. OF ATTIC/300= 2.99

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.

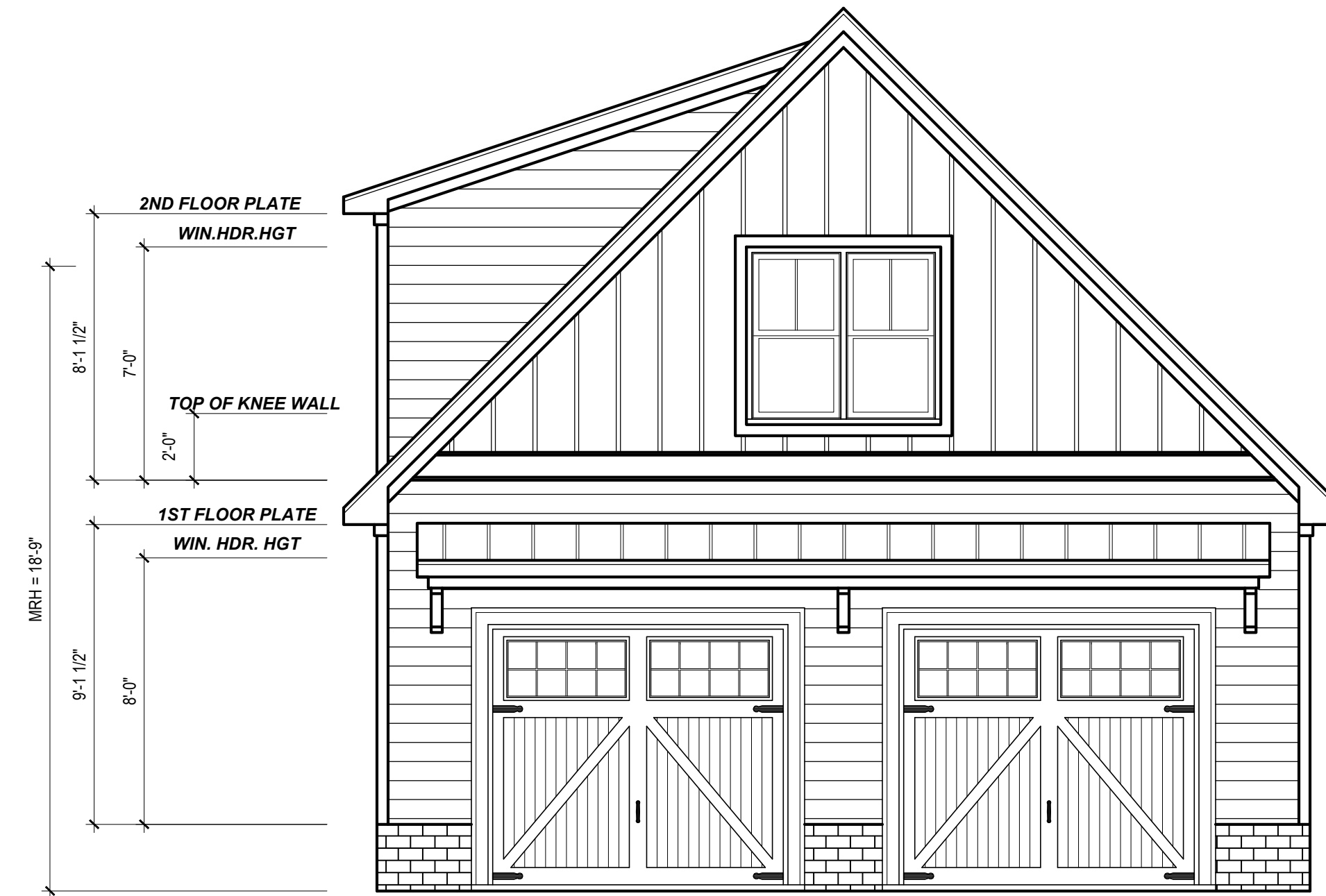
- ROOF VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:

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

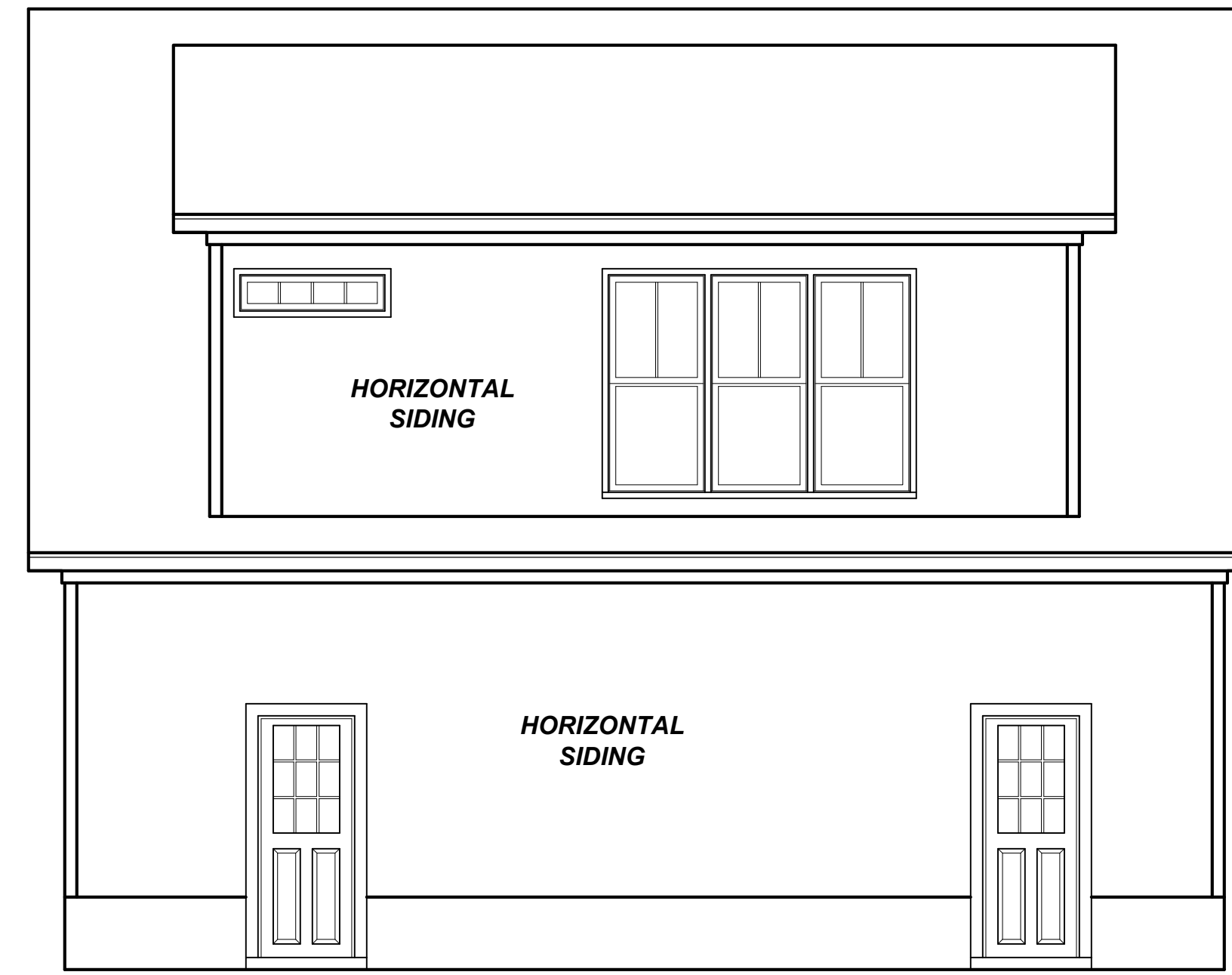
21 LBS. PER SQ. FT. FOR ROOF PITCHES OF 7/12 TO 12/12

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



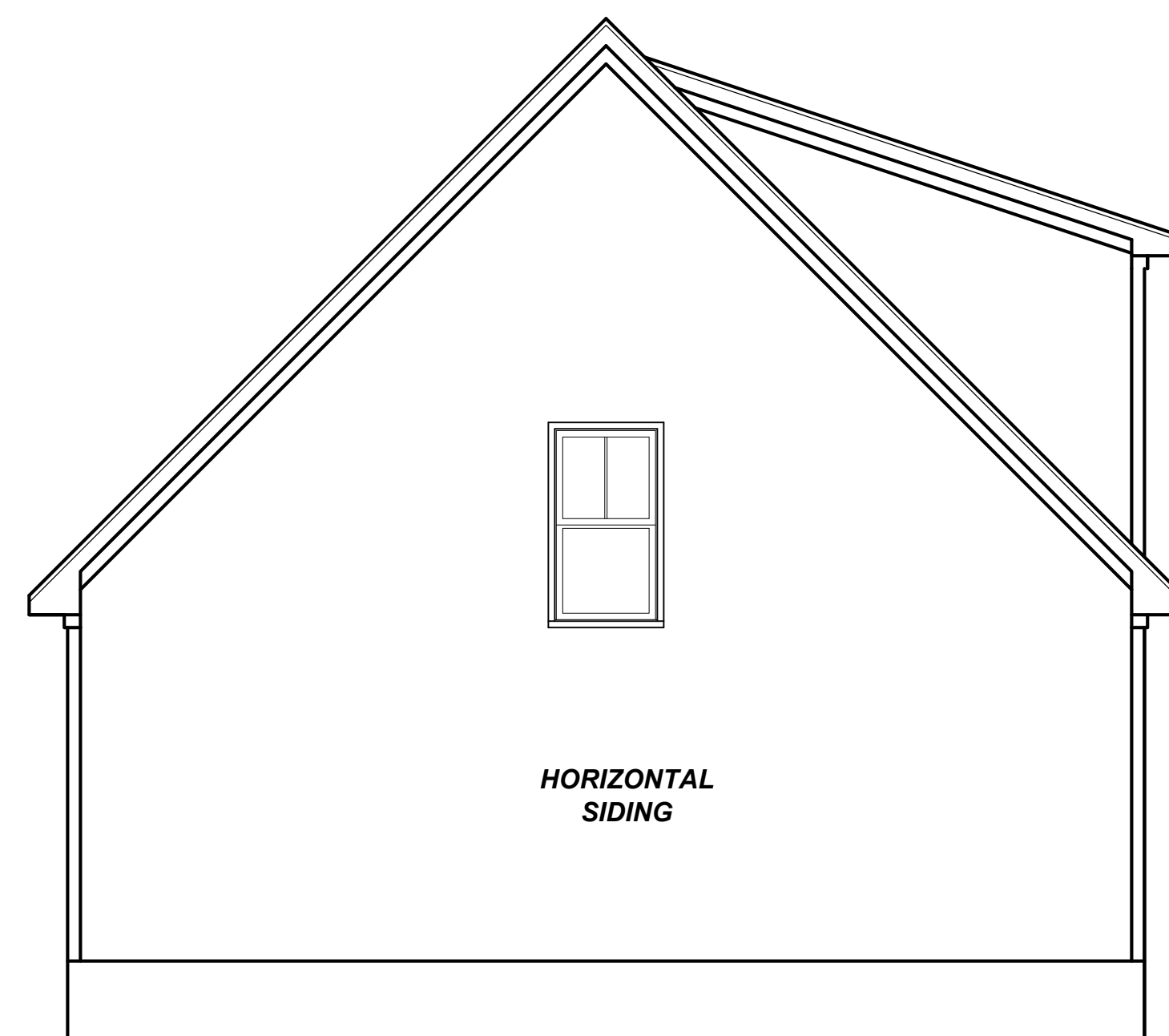
**FRONT ELEVATION**

1/4" = 1'-0"



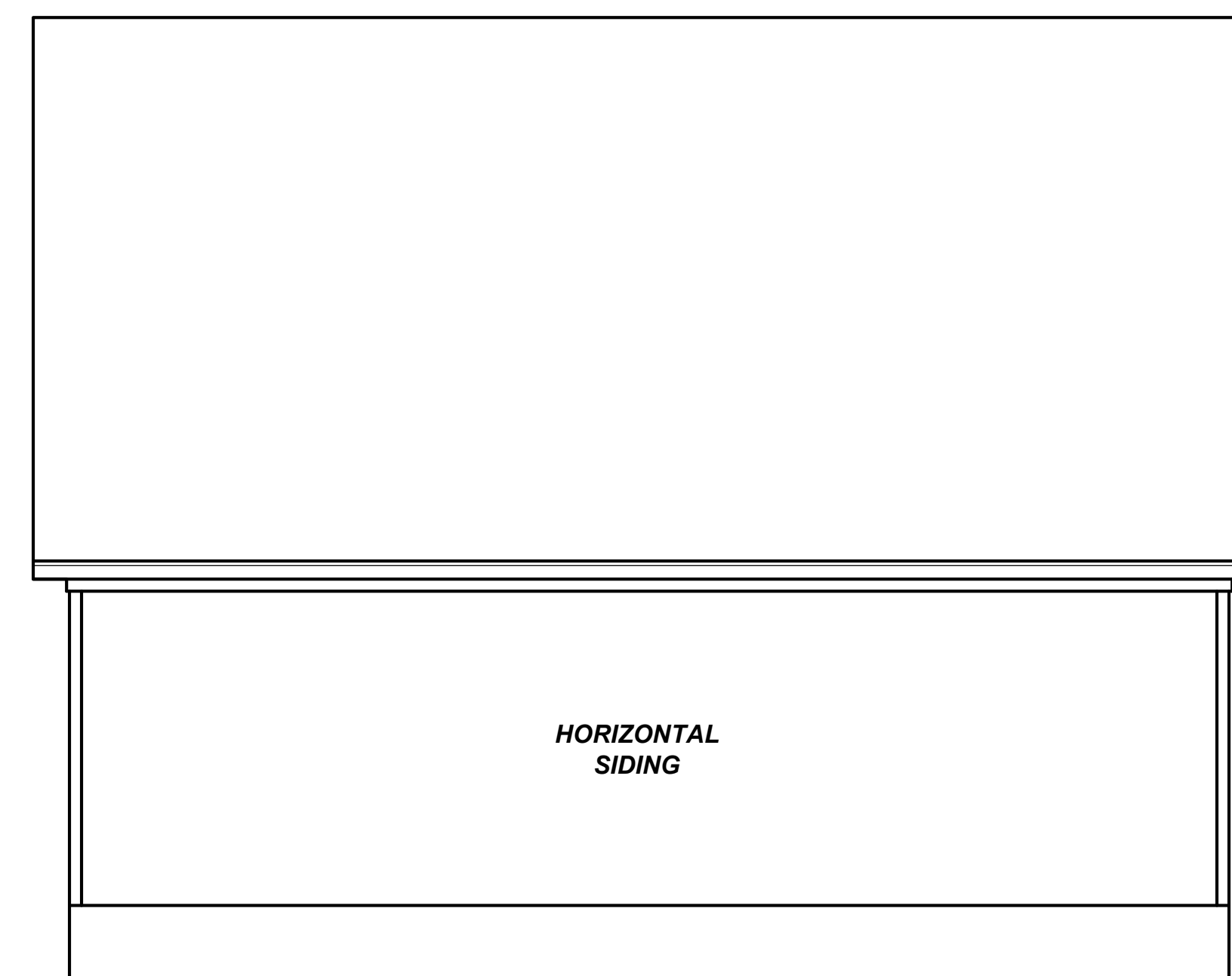
**LEFT ELEVATION**

1/4" = 1'-0"



**REAR ELEVATION**

1/4" = 1'-0"



**RIGHT ELEVATION**

1/4" = 1'-0"

Project #:	20-201
Date:	8-7-20
Drawn/Design By:	KBB
Scale:	1/4" = 1'-0"

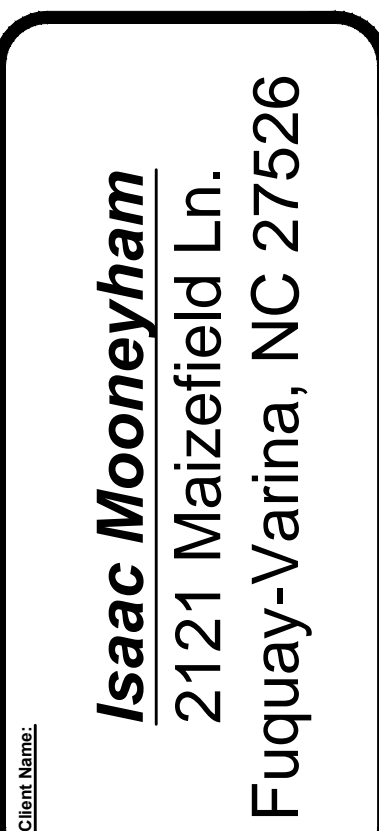
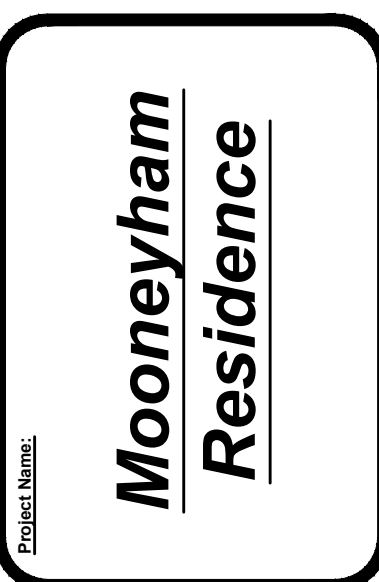
REVISIONS		
No.	Date	Remarks
1		
2		
3		
4		

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



Website: www.KandAHomeDesigns.com

Email: Kent@KandAHomeDesigns.com



ELEVATIONS

Sheet Number
1
of 2



### 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 (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)]		

3) MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF

4) CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE (UNO).

5) 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 RESIDENTIAL BUILDING CODE 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) UNO.

ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL.

7) ALL LOAD BEARING HEADERS SHALL BE (2)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.

8) 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.

9) 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 PROVIDING THE JOISTS ARE TOE NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.

10) 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

11) FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF 2018 NC RESIDENTIAL BUILDING CODE

12) WALL AND ROOF CLADDING VALUES:

WALL CLADDING 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/SQFT FOR ROOF PITCHES OF 0/12 TO 2/25/12

34.8 LBS/SQFT FOR ROOF PITCHES OF 2/25/12 TO 7/12

21.0 LBS/SQFT FOR ROOF PITCHES OF 7/12 TO 12/12

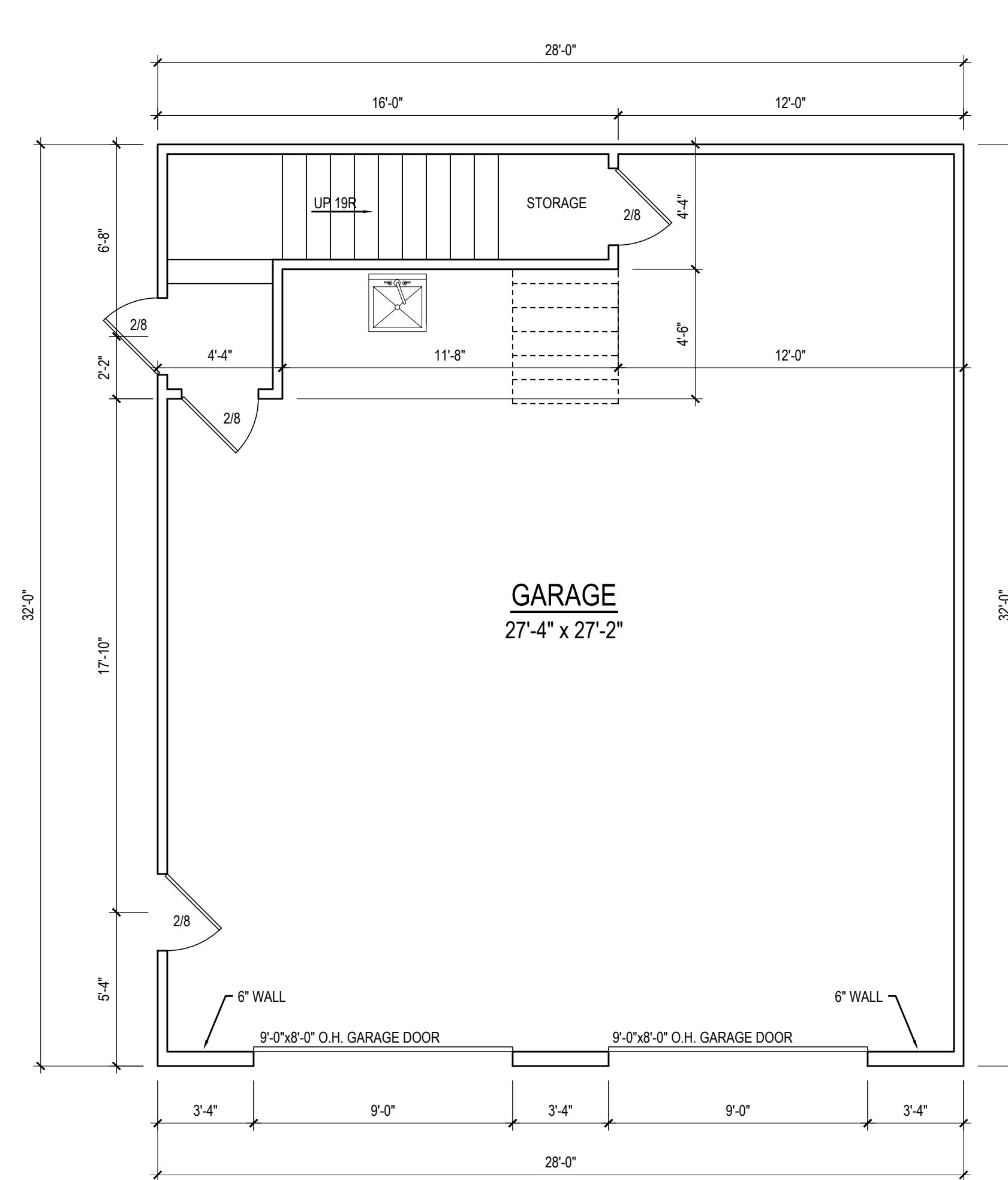
\*\* MEAN ROOF HEIGHT 30' OR LESS

13) FOR ROOF SLOPES FROM 2/12 THROUGH 4/12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER

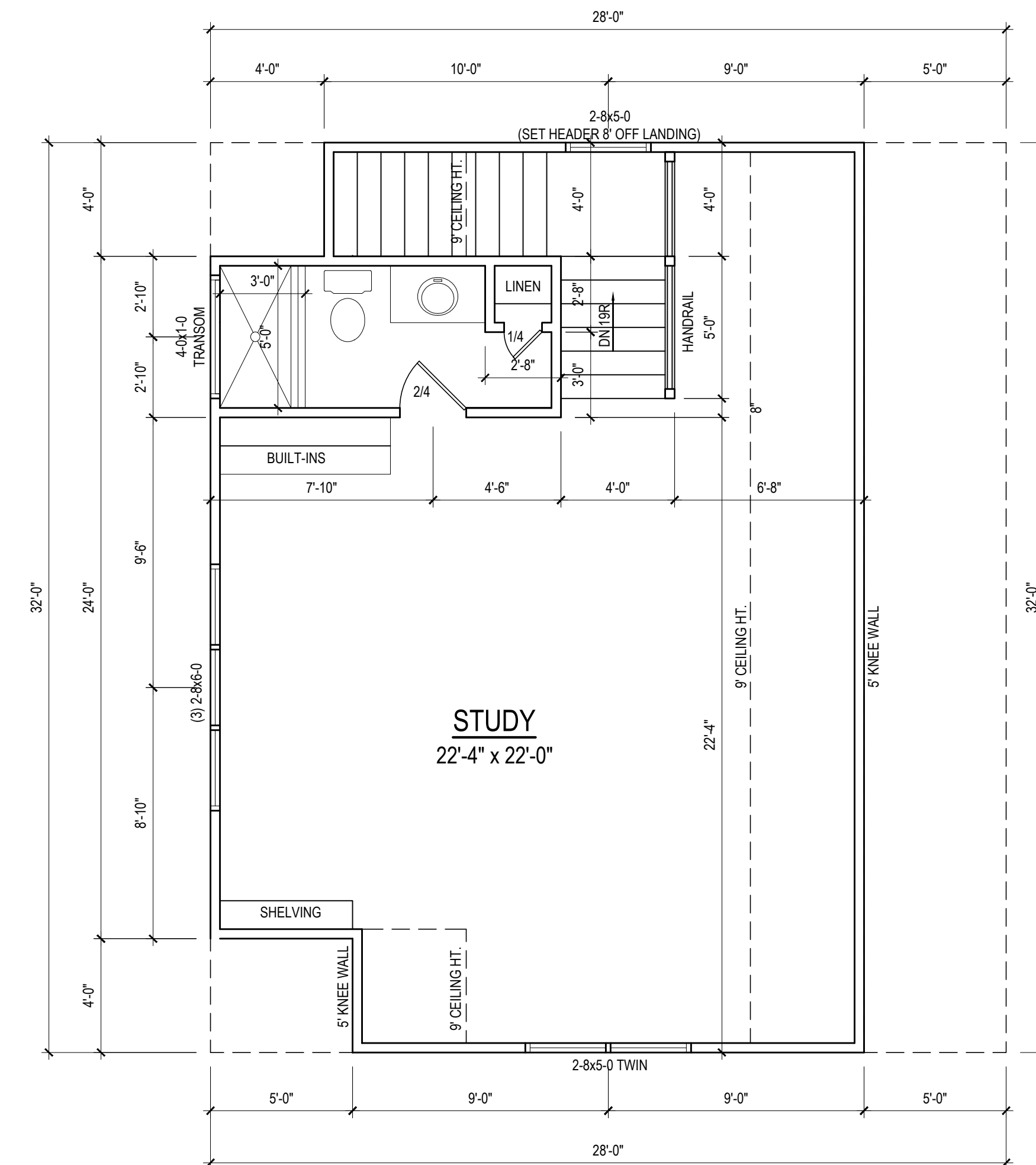
14) IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQ. FTG. ARE CORRECT PRIOR TO CONSTRUCTION. DESIGNER IS NOT RESPONSIBLE FOR DIMENSIONING OR SQ. FTG. ERRORS ONCE CONSTRUCTION BEGINS

### TABLE N1102.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	MAXIMUM GLAZING U-FACTOR	MINIMUM INSULATION R-VALUE					
		CEILINGS	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



**FIRST FLOOR PLAN**  
1/4" = 1'-0" CEILING HT. = 11'-0"

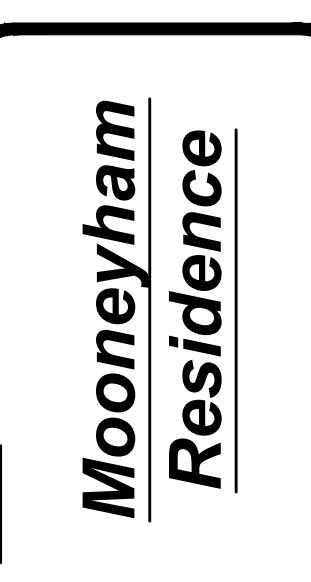


**SECOND FLOOR PLAN**  
1/4" = 1'-0" CEILING HT. = 8'-0"

Project #	20-201
Date	8-7-20
Drawn/Design By	KBB
Scale	1/4" = 1'-0"

REVISIONS		
No.	Date	Remarks
1		
2		
3		
4		

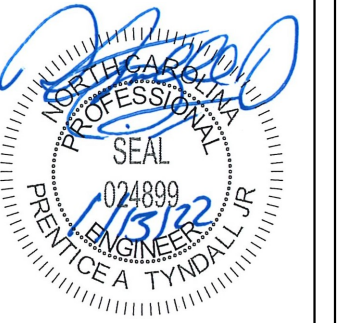
9101 Ten-Ten Rd.  
Raleigh, NC 27603  
Office: (919) 302-0693



Isaac Mooneyham  
2121 Maizefield Ln.  
Fuquay-Varina, NC 27526

FIRST & SECOND FLOOR

\*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
 Any deviations or discrepancies on plans are to be brought to the immediate attention of Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering & Design, P.A. liability.  
 \*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.  
 199 Blythewalk Drive • Garner • North Carolina • 27526  
 919.775.3500 • 919.775.4444  
 www.tyndallengineering.com

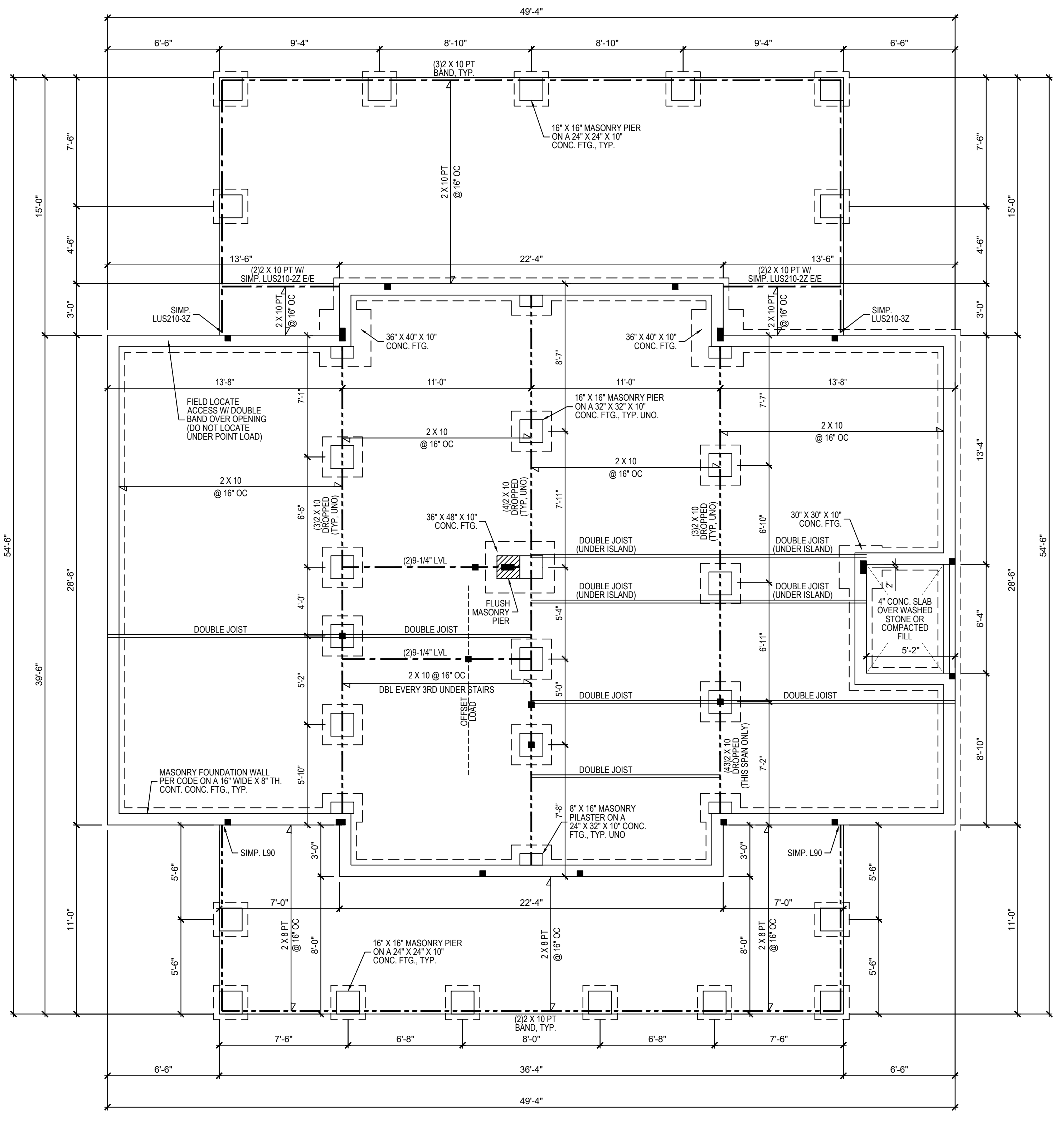
Client: ISAAC MOONEYHAM  
 2121 MAIZEFIELD LN.  
 FUQUAY-VARINA, NC 27526  
 Project: MOONEYHAM RESIDENCE &  
 DETACHED GARAGE

# FOUNDATION PLAN 1ST FLOOR FRAMING

Project #: 2001-010384C  
 Date: 01/13/22  
 Drawn/Design By: IJE  
 DWG. Checked By: PAT  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks

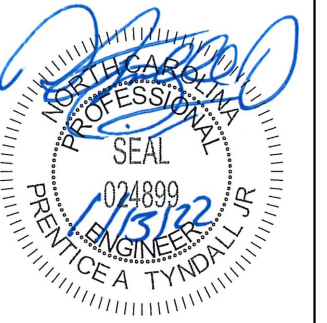
Sheet Number  
**S1**  
 1 of 8



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

FILENAME: Z:\RESIDENTIAL ENVS\2020 STRUCTURAL PROJECTS\2001-010384C\01-010384C.DWG SWID BY: PRENTICE TYNDALE LAST PLOT DATE: 1/13/2022 8:26 AM

\*Engineers seal does 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.



**TYNDALL**  
 ENGINEERING & DESIGN, P.A.  
 200 Blytheville Drive • Garner, North Carolina • 27526  
 919.775.5100 • 919.775.4444  
 www.tyndallengineering.com

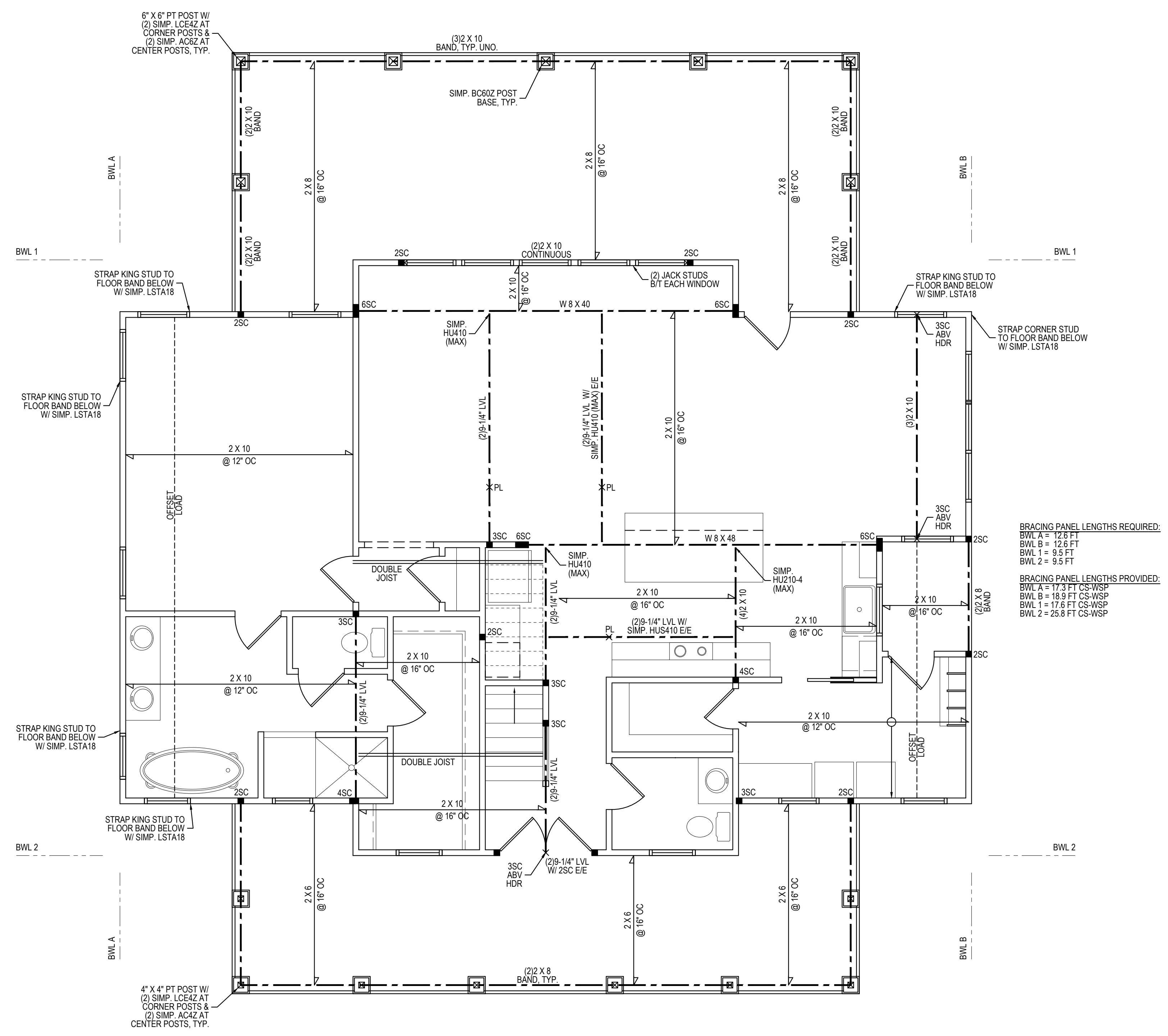
CLIENT: ISAAC MOONEYHAM  
 2121 MAIZEFIELD LN.  
 FUQUAY-VARINA, NC 27526  
 PROJECT: MOONEYHAM RESIDENCE & DETACHED GARAGE

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

Project #: 2001-010384C  
 Date: 01/13/22  
 Drawn/Design By: IJE  
 DWG. Checked By: PAT  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks

Sheet Number  
**S2**  
 2 of 8

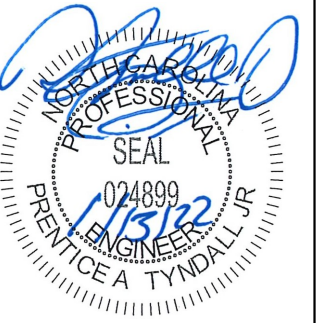


**FIRST FLOOR PLAN**  
 1/4" = 1'-0" CEILING HGT. = 9'-0" (U.N.O.)

FILENAME: Z:\RESIDENTIAL ENCL\2020 STRUCTURAL PROJECTS\2001-010384C\DWG FILES\2001-010384C-DETACHED GARAGE.rvt DATE: 1/13/2022 8:26 AM



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



**TYNDAL**  
 ENGINEERING & DESIGN P.A.  
 200 Blythebark Drive • Garner • North Carolina • 27526  
 Phone: 919.775.2500 • Fax: 919.775.4444  
 www.tynndalengineering.com

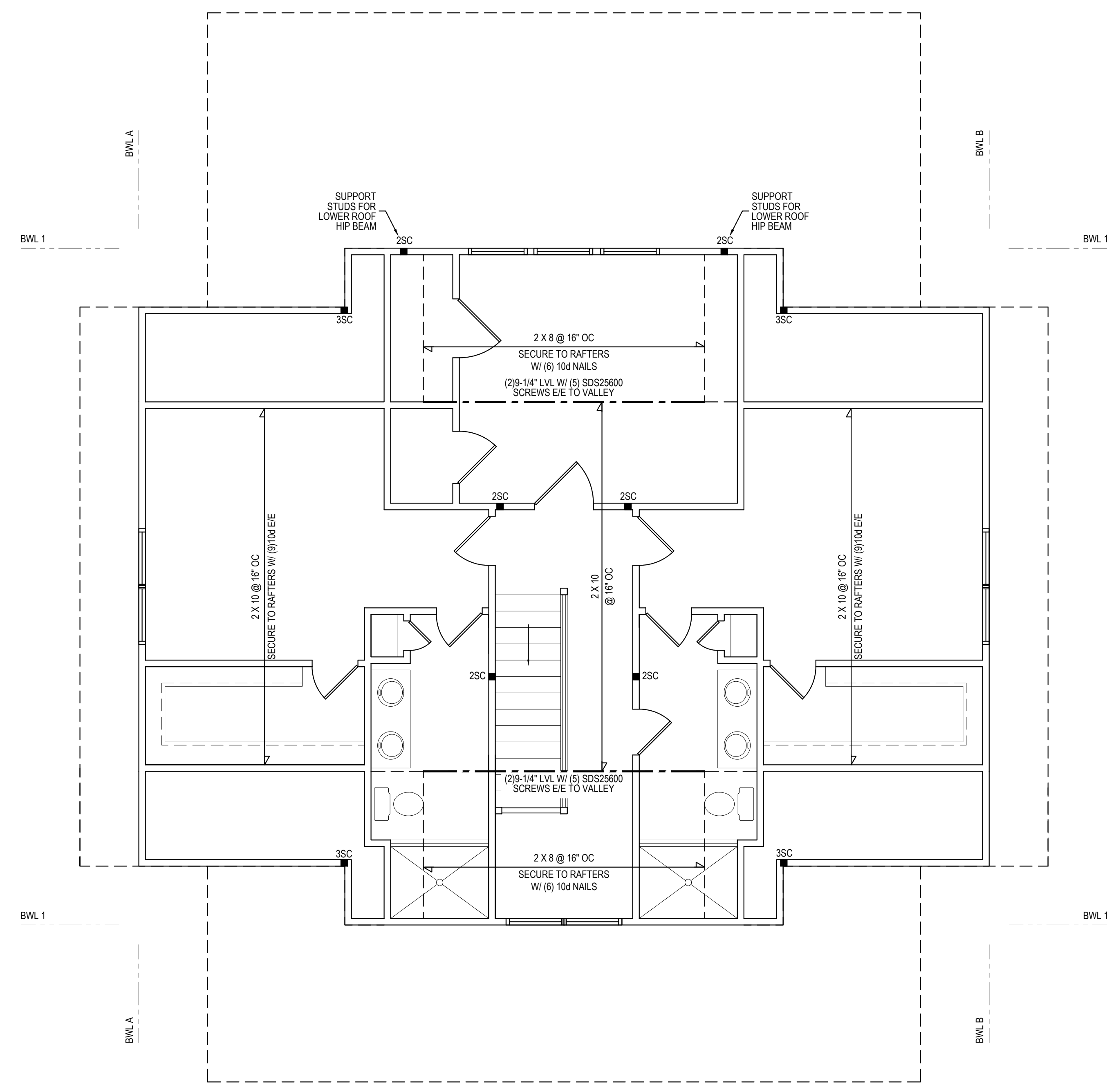
Client: ISAAC MOONEYHAM  
 2121 MAIZEFIELD LN.  
 FUQUAY-VARINA, NC 27526  
 Project: MOONEYHAM RESIDENCE & DETACHED GARAGE

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

Project #: 2001-010384C  
 Date: 01/13/22  
 Drawn/Design By: IJE  
 DWG. Checked By: PAT  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks
△		
△		
△		

Sheet Number  
**S3**  
 3 of 8



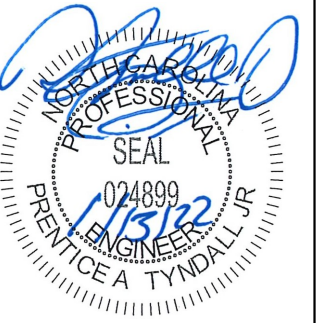
BRACING PANEL LENGTHS REQUIRED:  
 BWL A = 5.2 FT  
 BWL B = 5.2 FT  
 BWL 1 = 4.0 FT  
 BWL 2 = 4.0 FT  
 BRACING PANEL LENGTHS PROVIDED:  
 BWL A = 22.5 FT CS-WSP  
 BWL B = 22.5 FT CS-WSP  
 BWL 1 = 16.8 FT CS-WSP  
 BWL 2 = 16.8 FT CS-WSP

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

FILENAME: Z:\RESIDENTIAL ENCL\2001 STRUCTURAL PROJECTS\2001-010384C\CLG\_FRMING\_SWD.DWG - ISAC MOONEYHAM - DETACHED GARAGE\2001-010384C\CLG\_FRMING\_SWD.DWG  
 PROJECT: 2001-010384C  
 DATE: 01/13/2022 8:26 AM



\*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precautions.  
 Any deviations or discrepancies on plans are to be brought to the immediate attention of Tynndall Engineering & Design, P.A. Failure to do so will void Tynndall Engineering & Design, P.A. liability.  
 \*Please review these documents carefully. Tynndall 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.  
 299 Blythewood Drive • Garner • North Carolina • 27529  
 919.775.5200 • 919.775.4444  
 www.tynndallengineering.com

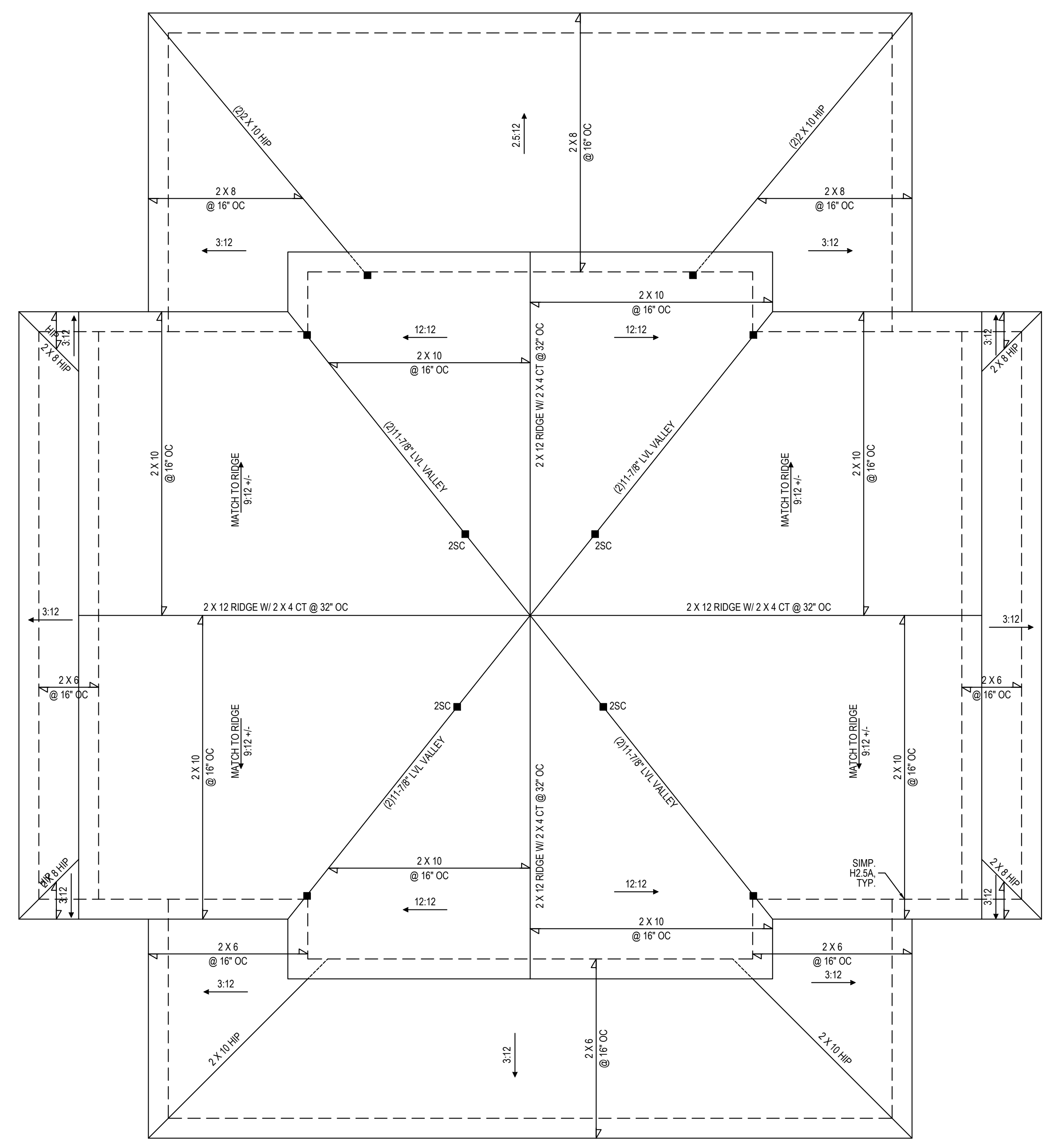
Client: ISAAC MOONEYHAM  
 2121 MAIZEFIELD LN.  
 FUQUAY-VARINA, NC 27526  
 Project: MOONEYHAM RESIDENCE & DETACHED GARAGE

# ROOF PLAN

Project #: 2001-010384C  
 Date: 01/13/22  
 Drawn/Design By: IJE  
 DWG. Checked By: PAT  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks
△		
△		
△		
△		

Sheet Number  
**S4**  
 4 of 8



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

FILENAME: Z:\RESIDENTIAL ENVS\2001 STRUCTURAL PROJECTS\2001-010384C\DWG FILES\2001-010384C.DWG SWID BY: PRENDICE TYNDALE LAST PLOT DATE: 1/13/2022 8:26 AM





**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	
			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	10	L/240	L/180
ROOF TRUSS	20	20	L/240	L/180
WIND LOAD	BASED ON 115 MPH (EXPOSURE B)			
SEISMIC	SEISMIC ZONES A, B & C			
- MINIMUM ALLOWABLE SOIL BEARING PRESSURE = 2000 PSF
- CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI AND A MAXIMUM SLUMP OF FIVE INCHES UNLESS NOTED OTHERWISE. (U.N.O.)
- 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 (F<sub>b</sub> = 800 PSI, BASED ON 2x10) UNO. ALL FRAMING LUMBER EXPOSED TO THE ELEMENTS SHALL BE TREATED MATERIAL. ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND F<sub>b</sub> = 2600 PSI, E = 1.9M PSI (U.N.O.) ALL LSL LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND F<sub>b</sub> = 2325 PSI, E = 1.8M PSI (U.N.O.) ALL PSL LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND F<sub>b</sub> = 2400 PSI, E = 1.8M PSI (U.N.O.)
- ALL LOAD BEARING EXTERIOR HEADERS SHALL BE AT (2) 2x10. (U.N.O.) 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.
- 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.
- 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 TOE NAILED TO THE SOLE PLATES, AND THE SOLE PLATES ARE NAILED OR BOLTED TO THE BEAM FLANGES @ 48" O.C.
- 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.
- FOUNDATION DRAINAGE-DAMP PROOFING OR WATERPROOFING PER SECTION 405 AND 406 OF NC BUILDING CODE.
- 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 VALUES BOTH POSITIVE AND NEGATIVE SHALL BE AS FOLLOWS:  
39.0 LBS/SQFT FOR ROOF PITCHES 0/12 TO 1.5/12  
36.0 LBS/SQFT FOR ROOF PITCHES 1.5/12 TO 6/12  
18.0 LBS/SQFT FOR ROOF PITCHES 6/12 TO 12/12  
\*MEAN ROOF HEIGHT 30'-0" OR LESS
- FOR ROOF SLOPES FROM 2/12 THROUGH 4/12, BUILDER TO INSTALL 2 LAYERS OF 15# FELT PAPER.
- REFER TO SECTION R602.3 FOR FRAMING OF ALL WALLS OVER 10'-0" IN HEIGHT.
- PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NRC.
- UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
- REFER TO TABLE N1102.1 FOR PRESCRIPTIVE BUILDING ENVELOPE THERMAL COMPONENT CRITERIA.
- PSL COLUMNS DESIGNED WITH MAXIMUM HEIGHT OF 9'-0" (U.N.O.)
- PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
- MAXIMUM MASONRY PEIR HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
- 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.

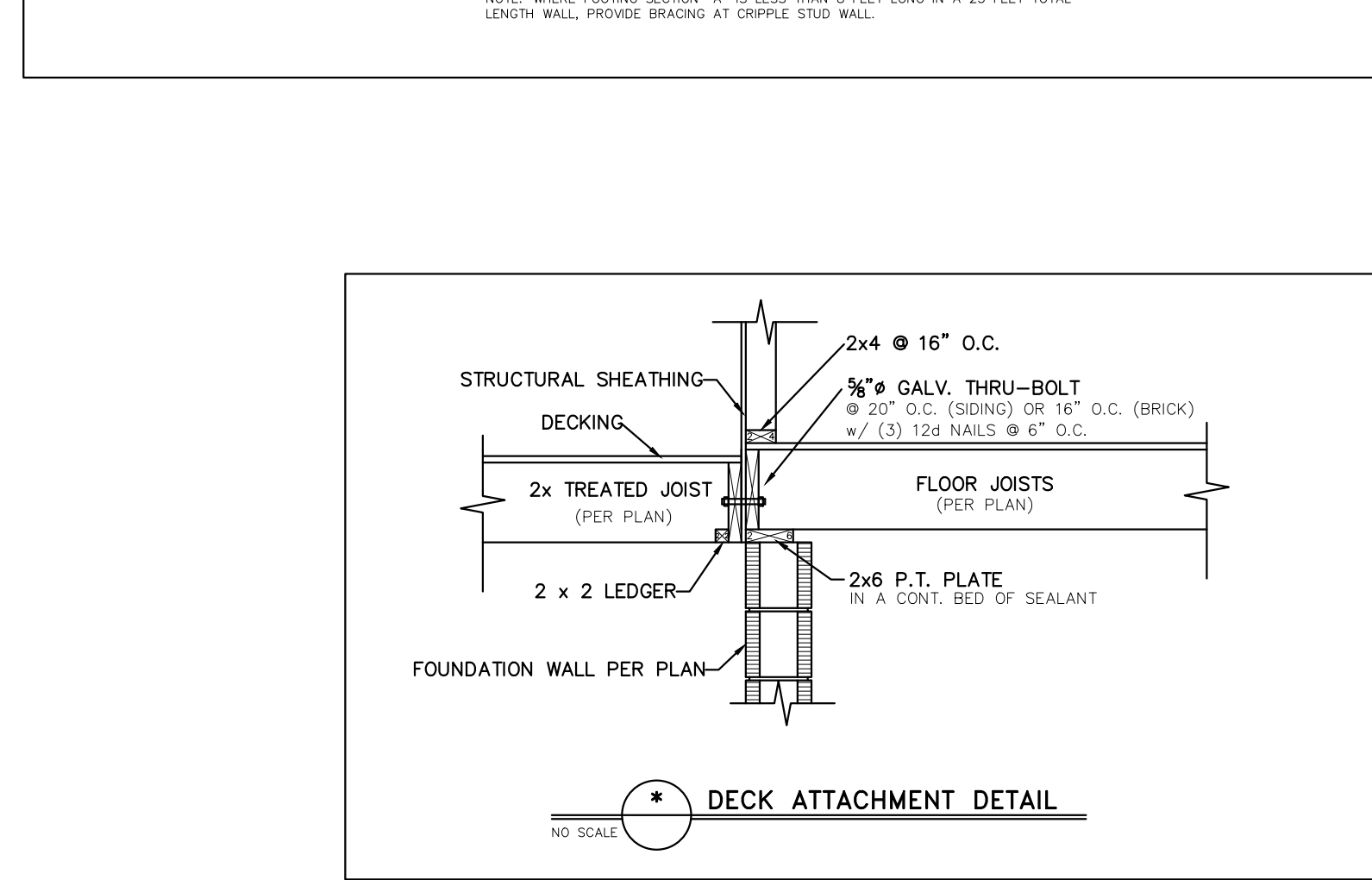
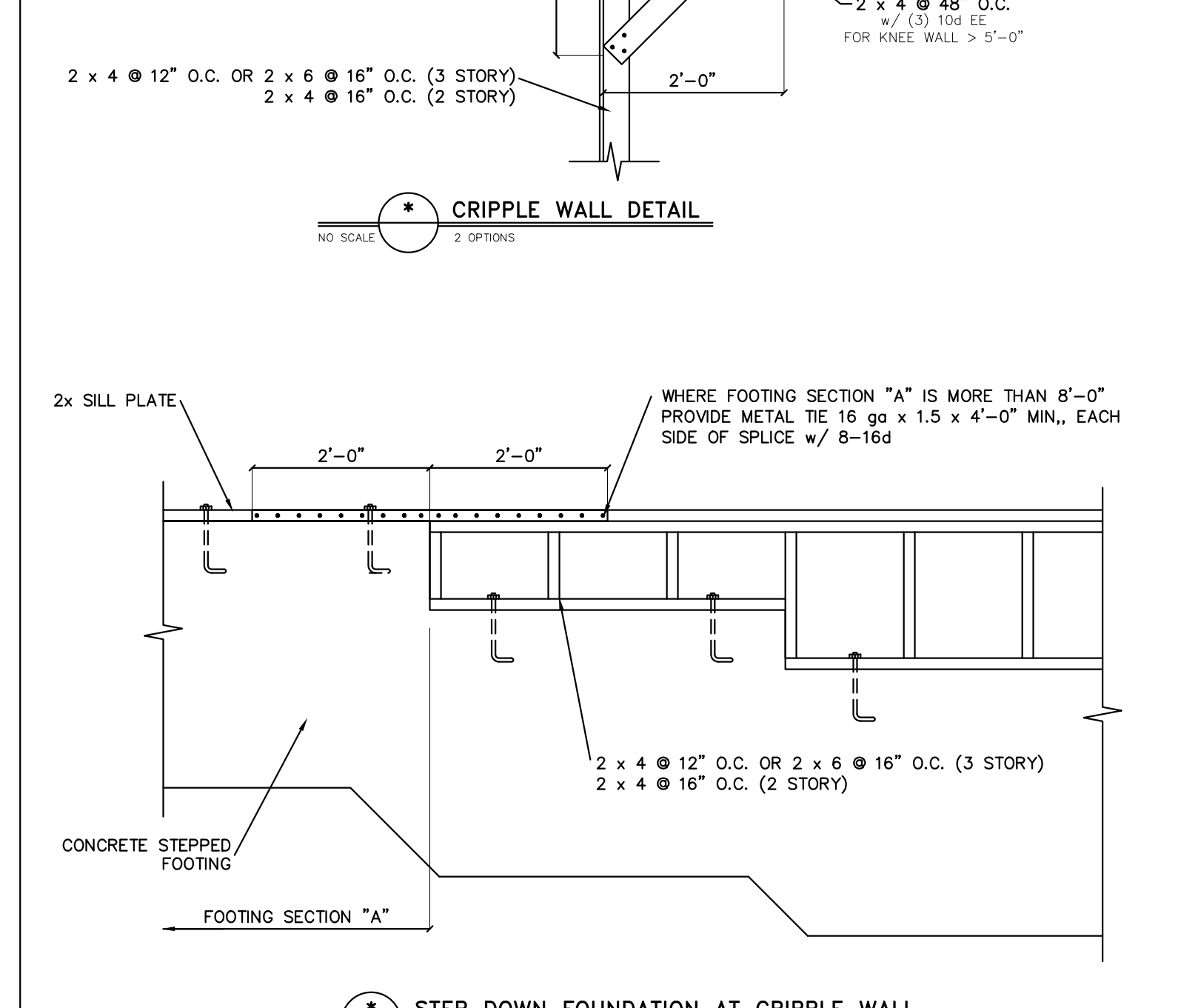
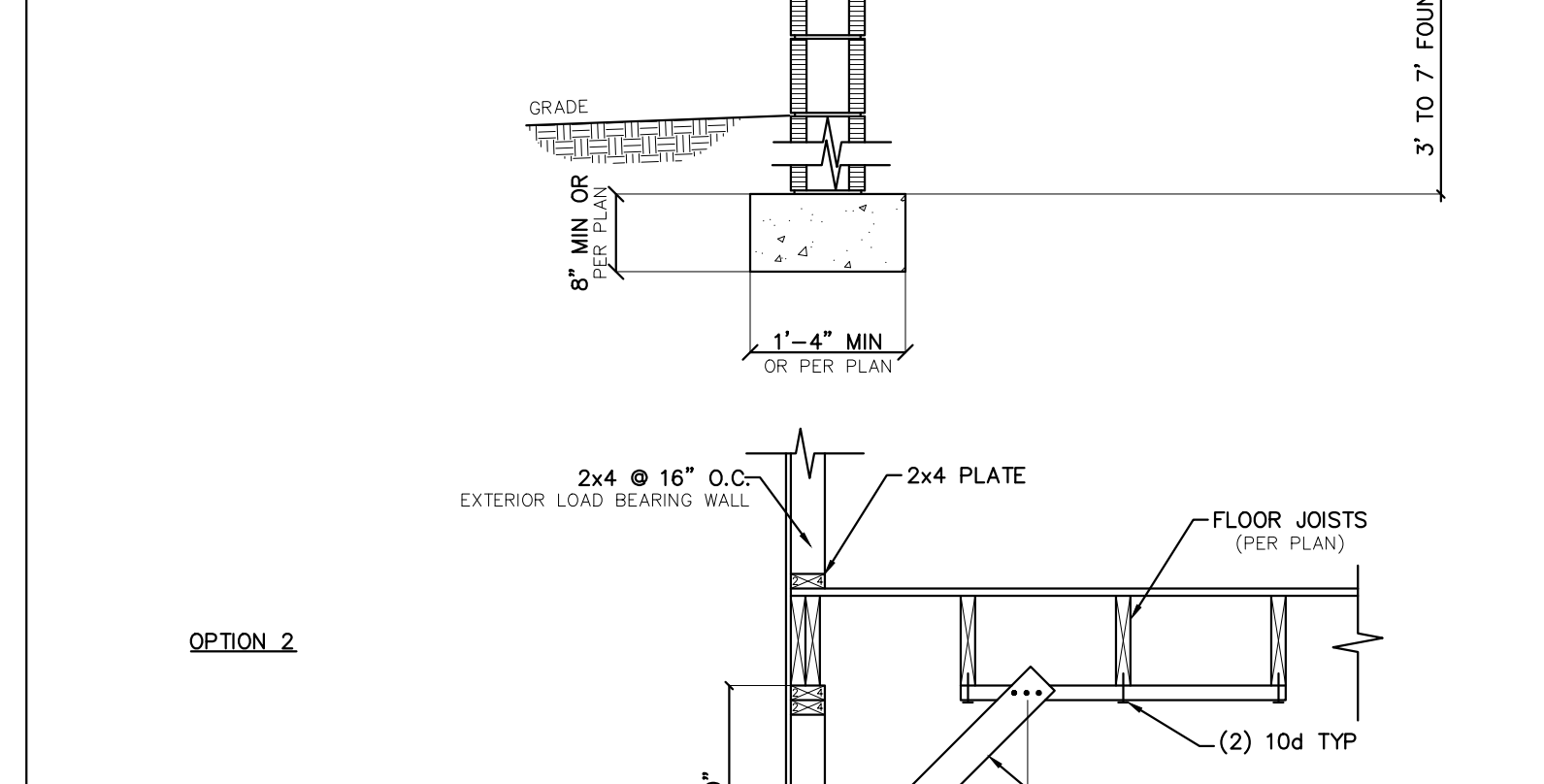
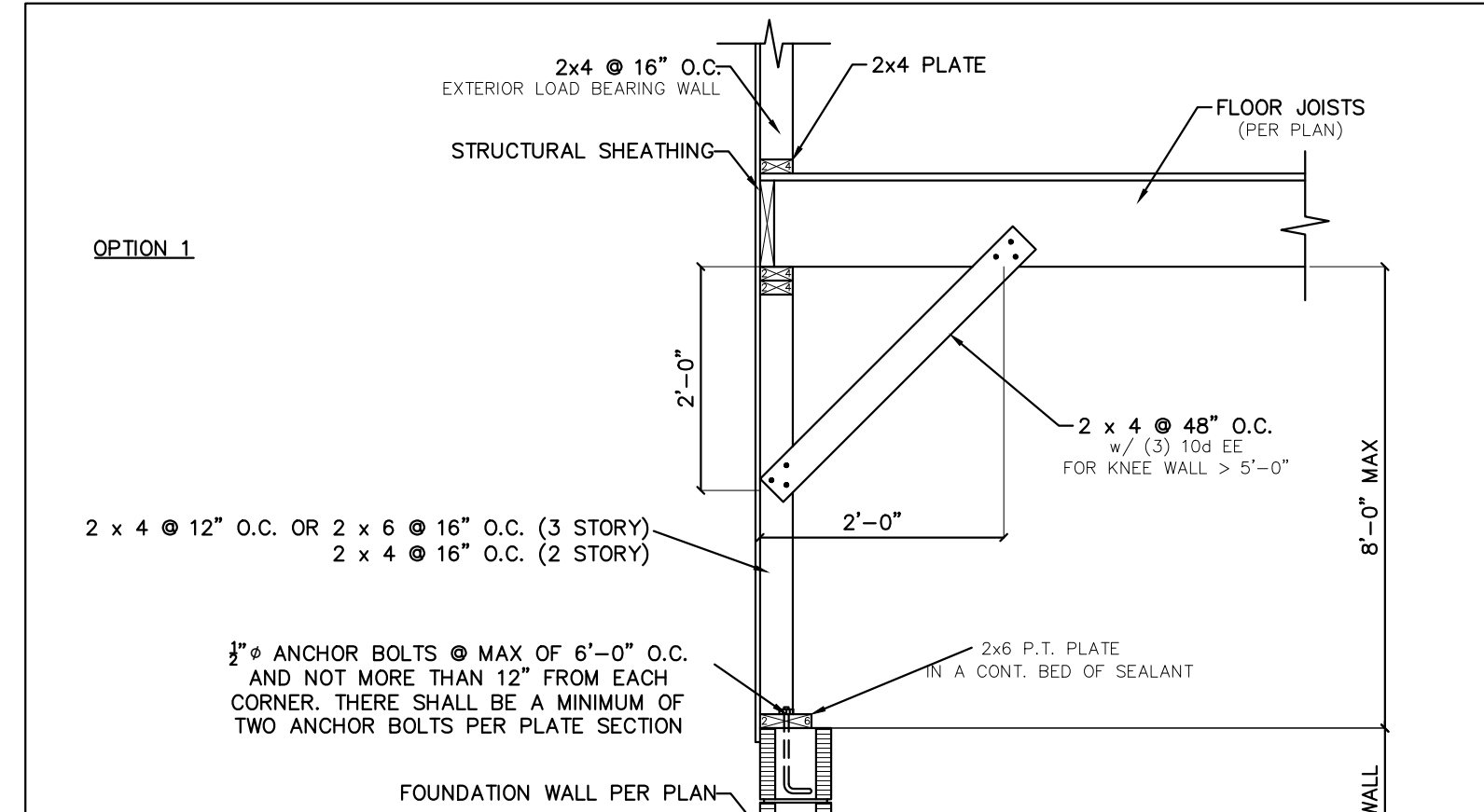
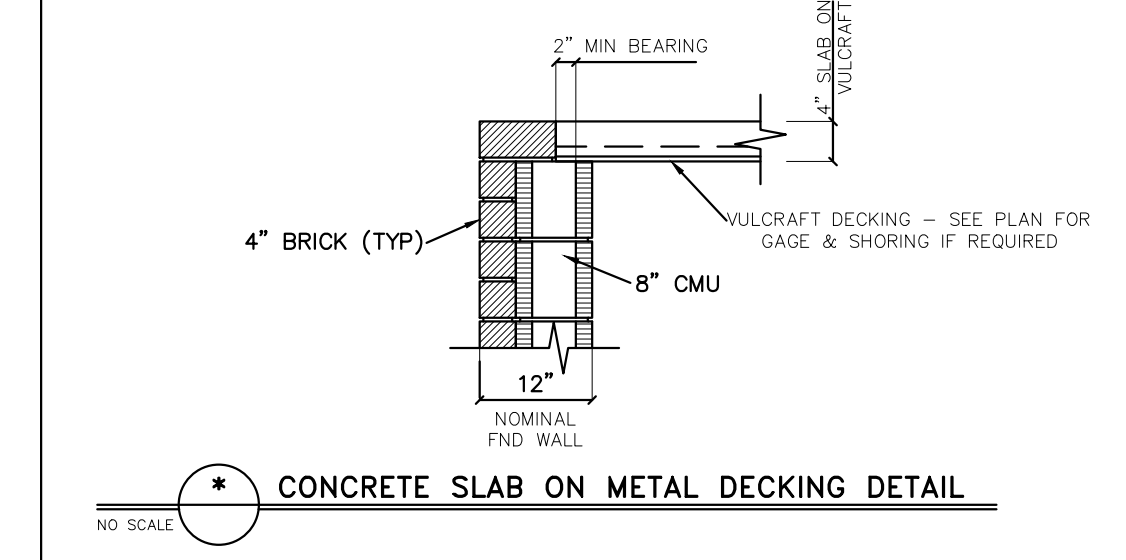
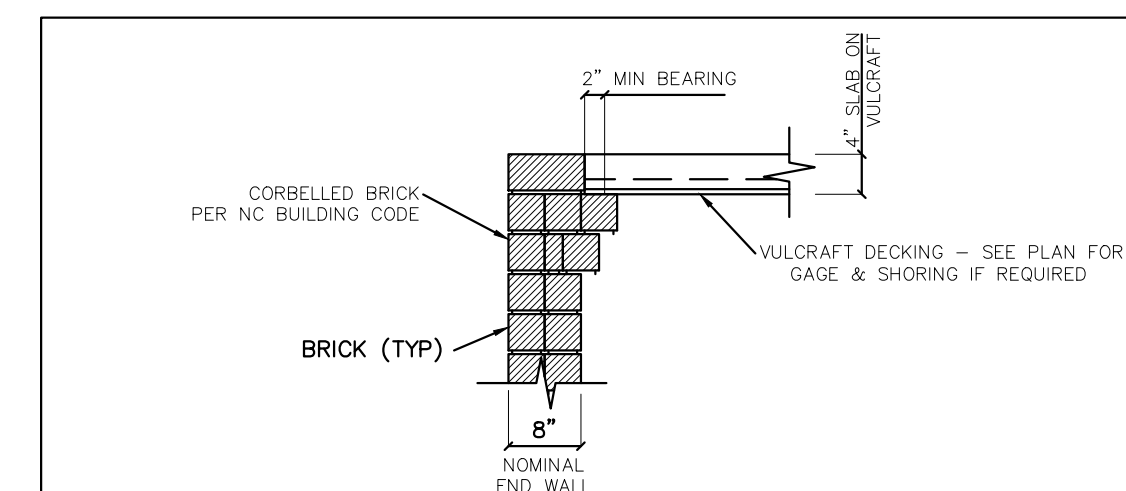
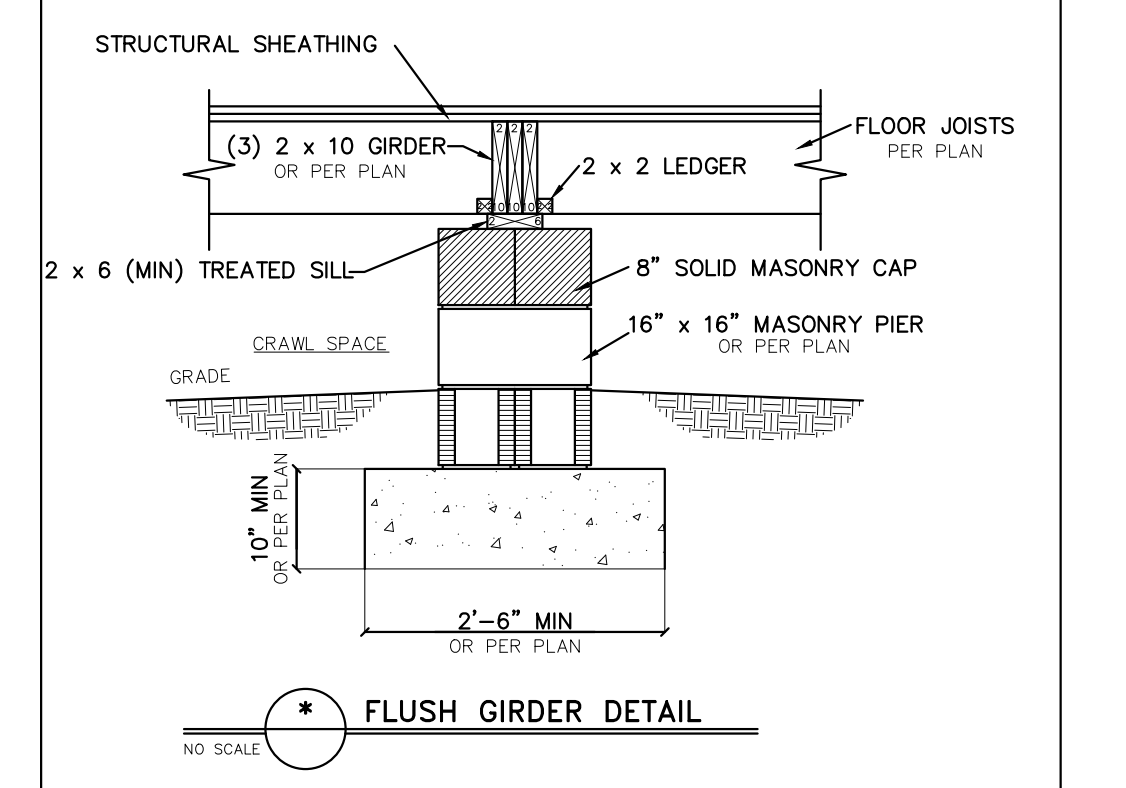
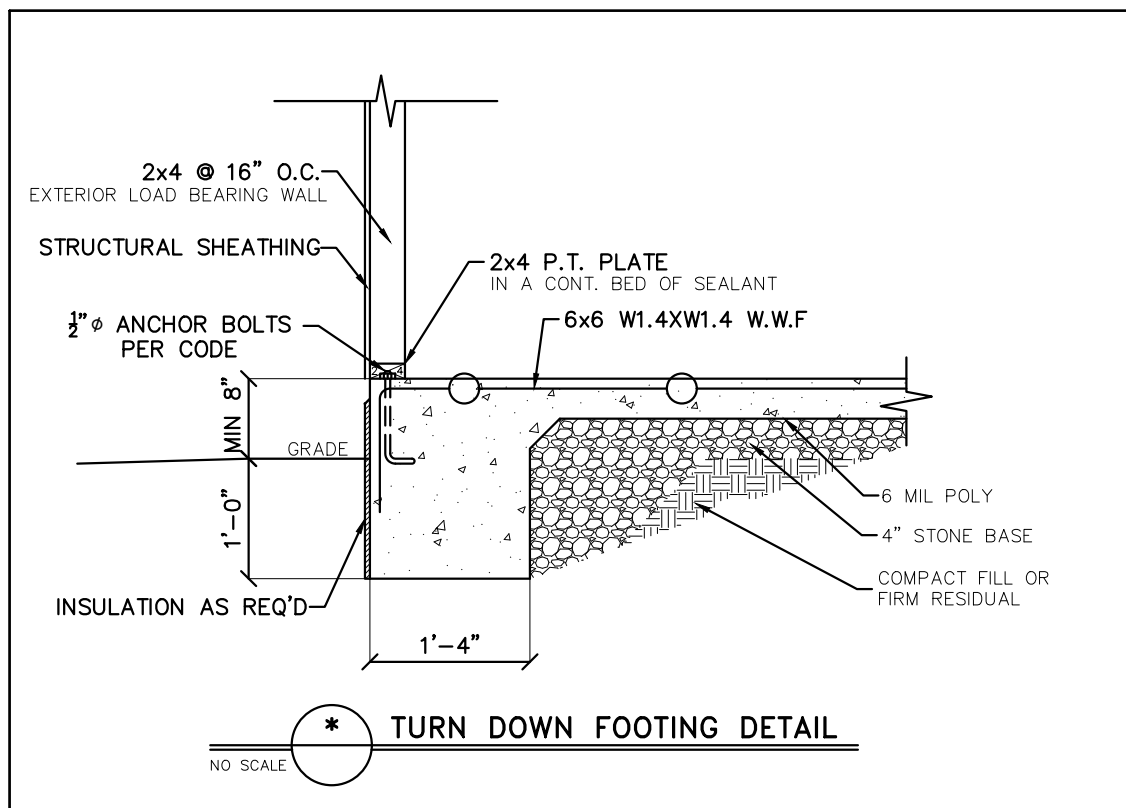
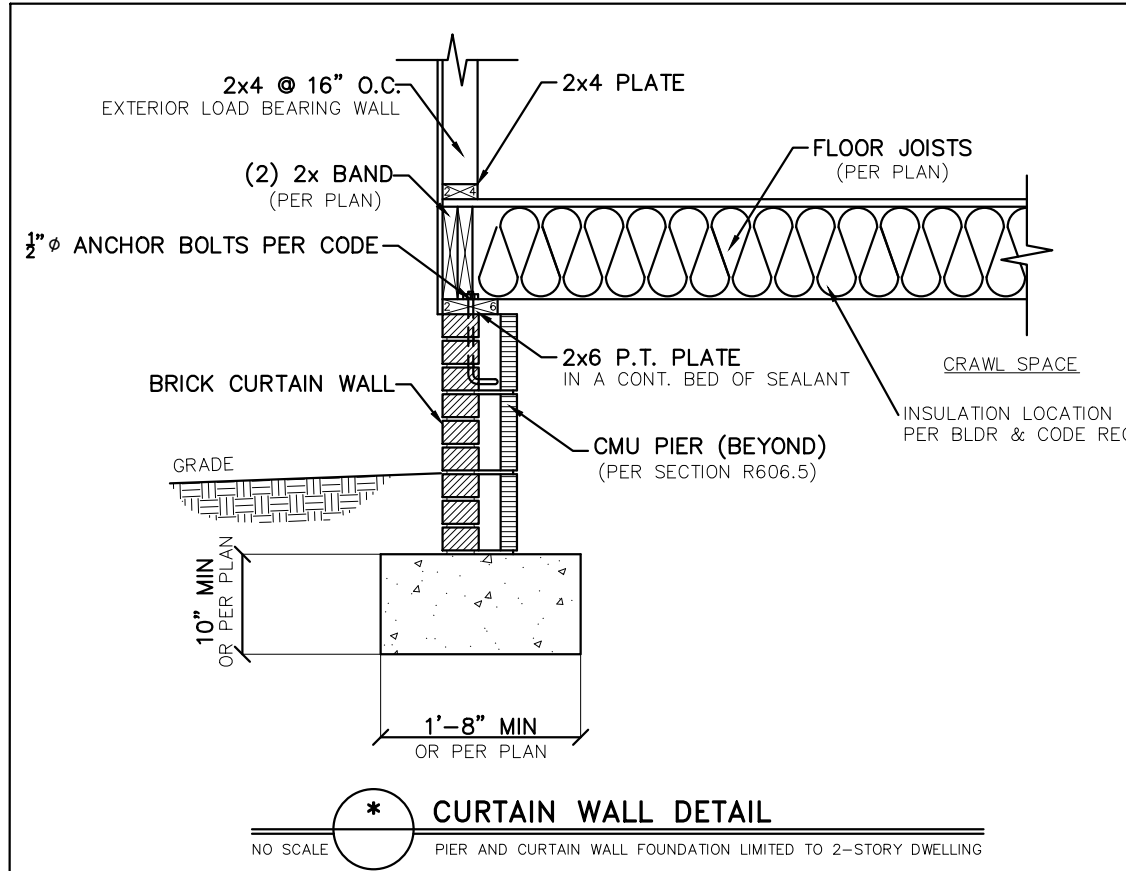
**DEFINITIONS FOR COMMON ABBREVIATIONS**

ALT = ALTERNATE	MAX = MAXIMUM
CANT = CANTILEVER	MIN = MINIMUM
CJ = CEILING JOIST	NOM = NOMINAL
CMU = CONCRETE MASONRY UNIT	O.C. = ON CENTER
COL = COLUMN	PL = PLATE
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	SPC = 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:
- 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.
  - 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.
  - 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"             |
- 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 6s SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8" HOT DIPPED GALVANIZED BOLT AT EACH END OF EACH BRACING MEMBER.
  - FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 46.



**TABLE N1102.1 CLIMATE ZONES 3-5**

CLIMATE ZONES	FENESTRATION U-FACTOR <sup>1</sup>	SKYLIGHT <sup>1</sup> U-FACTOR	GLAZED FENESTRATION SHGC <sup>1A</sup>	CEILING <sup>11</sup> R-VALUE	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT <sup>12</sup> WALL R-VALUE	SLAB <sup>13</sup> R-VALUE AND DEPTH	CRAWL SPACE <sup>14</sup> WALL R-VALUE
3	0.35	0.55	0.30	38 or 30 cont	15 or 13 + 2.5	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	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 or 15 + 3	13/17 or 13/12.5 cont	30*	10/15	10	10/15

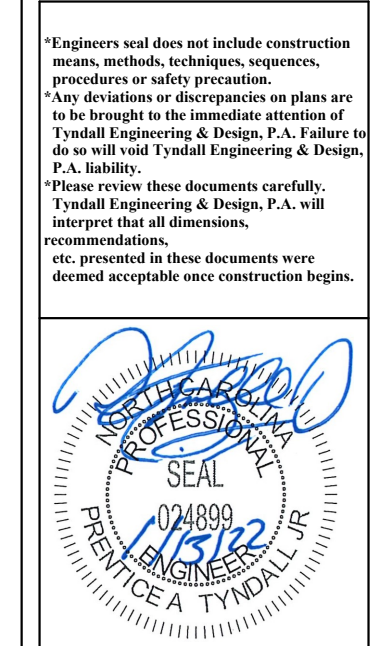
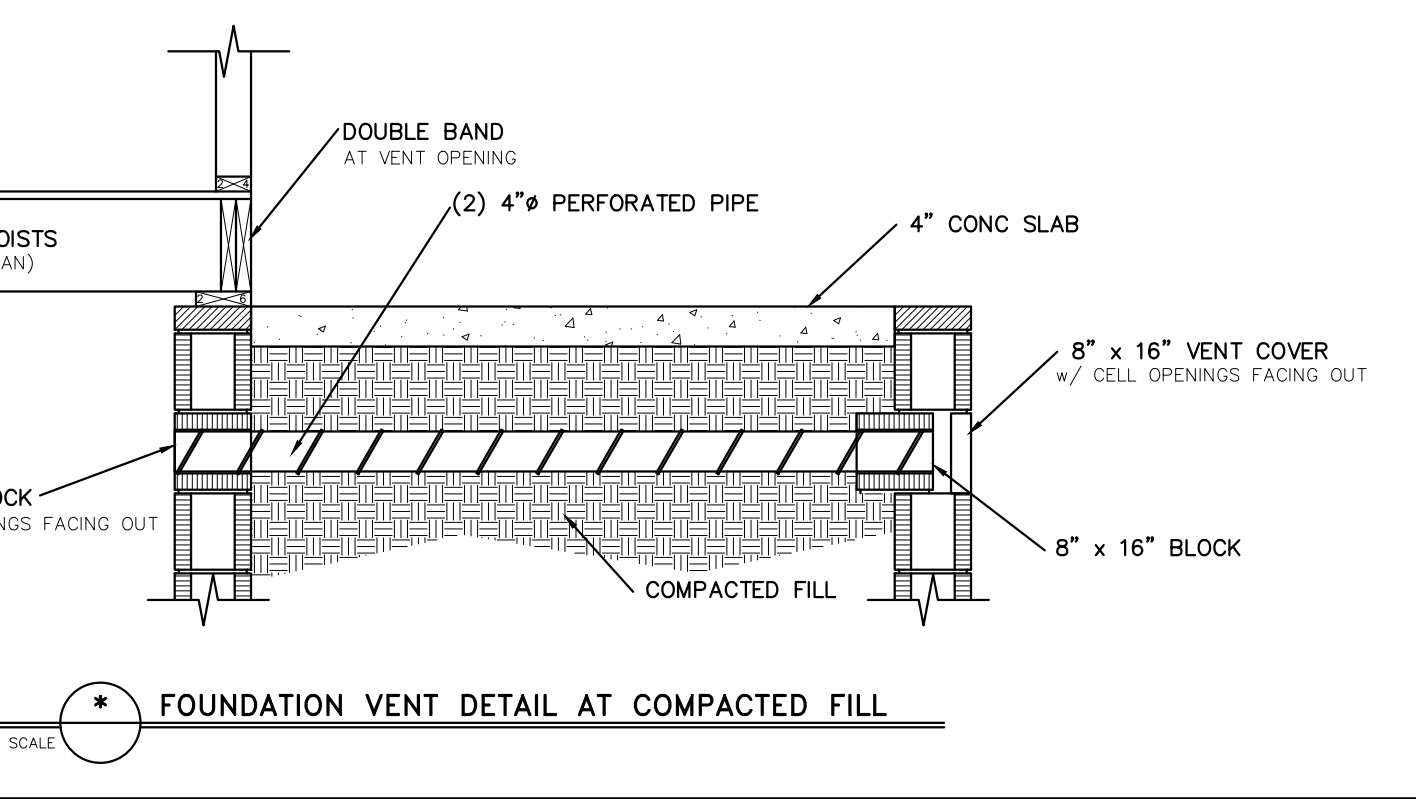
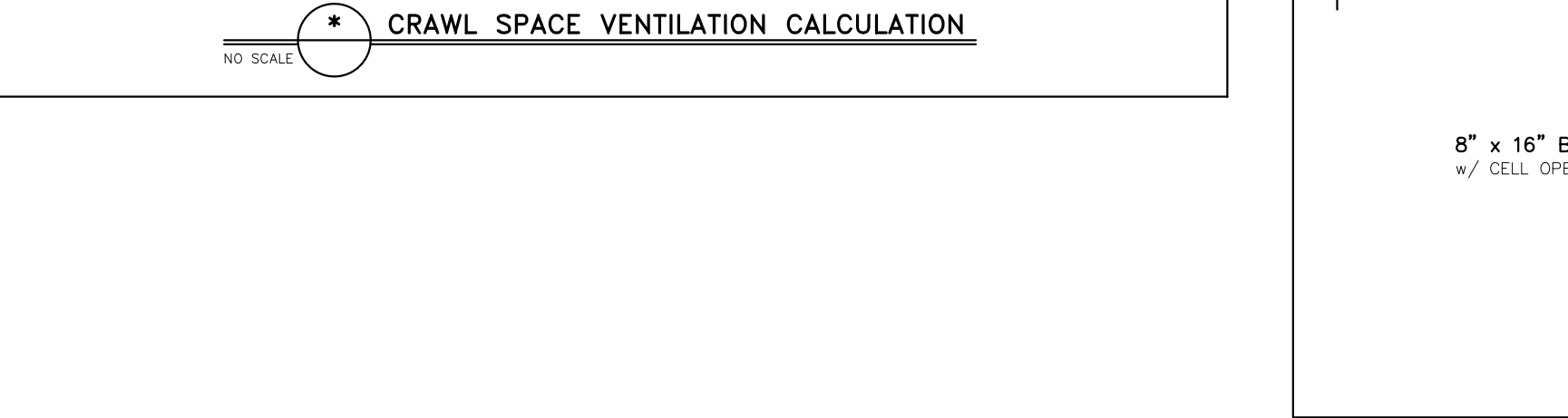
- NO SCALE
- R-VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
  - FENESTRATION U-FACTOR COLUMN EXCLUDES SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.
  - "10/15" MEANS R-10 CONTINUOUS INSULATED SHEATHING ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-15 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL OR CRAWL SPACE WALL.
  - FOR MONTHLY SLAB INSULATION SHALL BE APPLIED FROM THE INSPECTION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR A MINIMUM OF 24" BELOW GRADE. WHEREVER IS LESS FOR FLOATING SLABS, INSULATION SHALL EXTEND TO THE BOTTOM OF THE FOUNDATION WALL OR 24" WHICHEVER IS LESS. R-5 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR HEATED SLABS.
  - SELECTED
  - BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY EQUATION N1102.7 AND TABLE N1102.7.
  - OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY. R-19 MINIMUM.
  - THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION. SO "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 INSULATED SHEATHING. "15+5" MEANS R-15 CAVITY INSULATION PLUS R-5 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 20% OR LESS OF THE EXTERIOR INSULATING SHEATHING IS NOT REQUIRED. WHERE THE STRUCTURAL SHEATHING IS USED, IF STRUCTURAL SHEATHING COVERS MORE THAN 25 PERCENT OF THE EXTERIOR, SHALL BE SUPPLEMENTED WITH INSULATED SHEATHING OF AT LEAST R-2 "13 + 2.5" MEANS R-13 CAVITY INSULATION PLUS R-2.5 SHEATHING.
  - FOR MASS WALLS, THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR MASS WALL.
  - IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A U-FACTOR NO GREATER THAN 0.55 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
  - IN ADDITION TO THE EXEMPTION IN SECTION N1102.3.3, A MAXIMUM OF TWO GLAZED FENESTRATION PRODUCT ASSEMBLIES HAVING A SHGC NO GREATER THAN 0.70 SHALL BE PERMITTED TO BE SUBSTITUTED FOR MINIMUM CODE COMPLIANT FENESTRATION PRODUCT ASSEMBLIES WITHOUT PENALTY.
  - R-30 SHALL BE DEEMED TO SATISFY THE CEILING INSULATION REQUIREMENT WHEREVER THE FULL HEIGHT OF UNCOMPRESSED R-30 INSULATION EXTENDS OVER THE WALL TOP PLATE AT THE EAVES. OTHERWISE R-30 INSULATION IS REQUIRED. UNLESS OTHERWISE SPECIFIED, INSULATION MUST EXTEND TO FIT THE INSULATION BRIDGE OR WITHIN 1/8" OF THE ATTIC ROOF EDGE.
  - TABLE VALUE REQUIRED EXCEPT FOR ROOF EDGE WHERE THE PITCH OF THE ROOF, THE INSULATION MUST FILL THE SPACE UP TO THE AIR BATTLE.
  - R-19 FIBERGLASS BATTIS COMPRESSED AND INSTALLED IN A NOMINAL 2 x 6 FRAMING CAVITY IS DEEMED TO COMPLY. FIBERGLASS BATTIS RATED R-19 OR HIGHER COMPRESSED AND INSTALLED IN A 2x4 WALL IS NOT DEEMED TO COMPLY.
  - BASEMENT WALL MEETING THE MINIMUM MASS WALL SPECIFIC HEAT CONTENT REQUIREMENT MAY USE THE MASS WALL R-VALUE AS THE MINIMUM REQUIREMENT.

1390 SQ. FT. OF CRAWL SPACE / 150 = 9.3 SQ. FT. OF REQ'D VENTILATION WITHOUT CROSS VENTILATION  
9.3 SQ. FT. OF VENTILATION REQ'D / 0.45 SQ.FT. PER VENT = 21 VENTS REQ'D

-OR-

1390 SQ. FT. OF CRAWL SPACE / 150 = 9.3 SQ. FT. OF REQ'D VENTILATION WITH CROSS VENTILATION  
9.3 SQ. FT. OF VENTILATION REQ'D / 0.45 SQ.FT. PER VENT = 3 VENTS REQ'D

- 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.
- THE TOTAL AREA OF VENTILATION OPENINGS MAY BE REDUCED TO 1/500 OF THE CRAWL SPACE GROUND AREA WHERE THE REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS VENTILATION OF THE CRAWL SPACE. THE INSTALLATION OF OPENING LOWERS SHALL NOT BE PERMITTED. ONE FOUNDATION VENT SHALL BE WITHIN 3 FEET OF EACH CORNER OF THE BUILDING TO PREVENT RAINWATER ENTRY WHEN THE CRAWL SPACE IS BUILT ON A SLOPED SITE. THE UPRIGHT FOUNDATION WALLS MAY BE CONSTRUCTED WITHOUT WALL VENT OPENINGS. VENT DAMS SHALL BE PROVIDED WHEN THE BOTTOM OF THE FOUNDATION VENT OPENING IS LESS THAN 4 INCHES ABOVE THE FINISHED EXTERIOR GRADE.



**TYNDALL**  
ENGINEERING & DESIGN, P.A.  
180 Blinnham Drive • Garner, North Carolina • 27526  
919.775.9200 • 919.775.7444  
www.tyndallengineering.com

ISAAC MOONEYHAM  
2121 WAZEFIELD LN.  
FUQUAY-VARINA, NC 27526

MOONEYHAM RESIDENCE &  
DETACHED GARAGE

**STANDARD**  
**DETAILS**

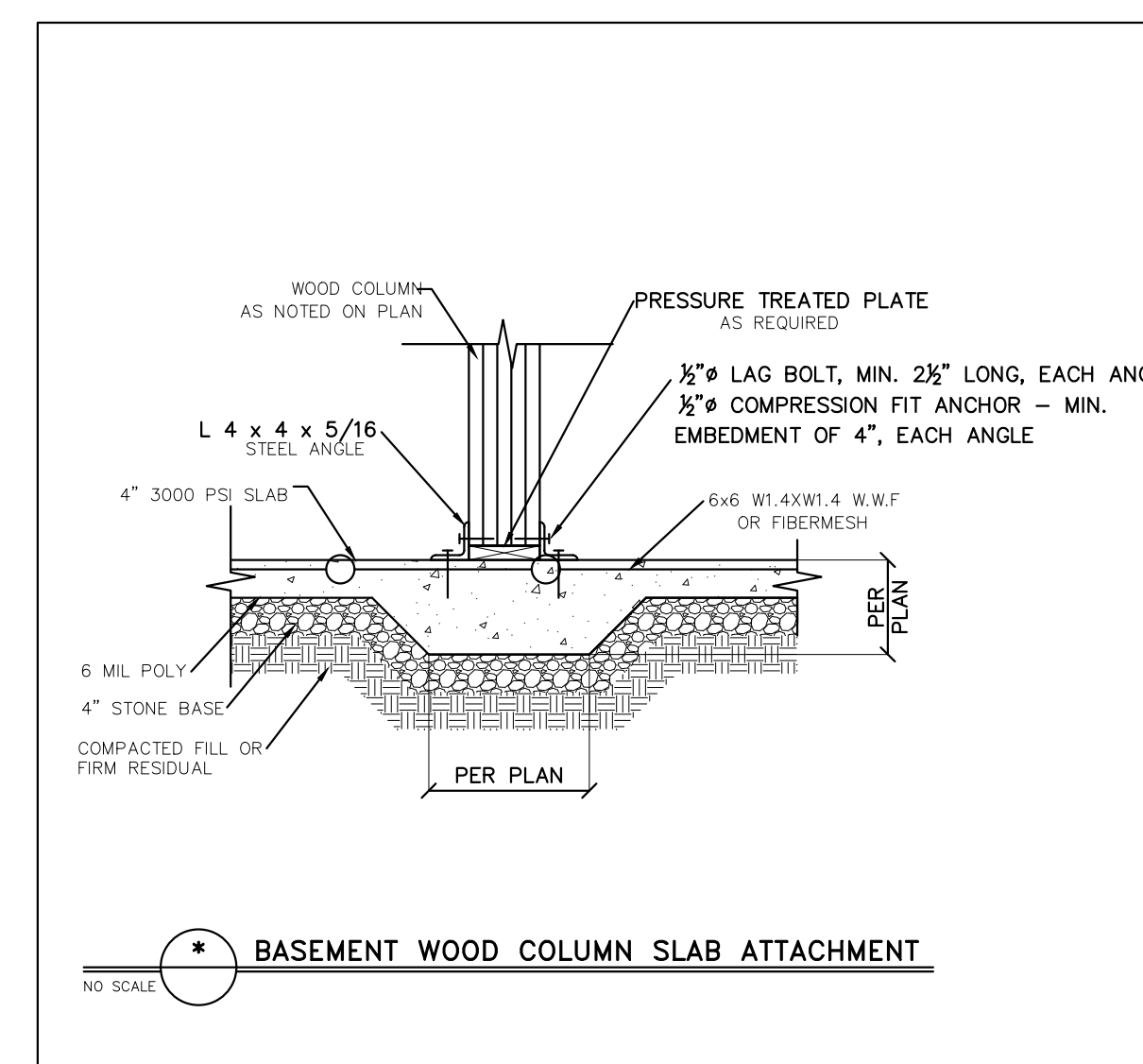
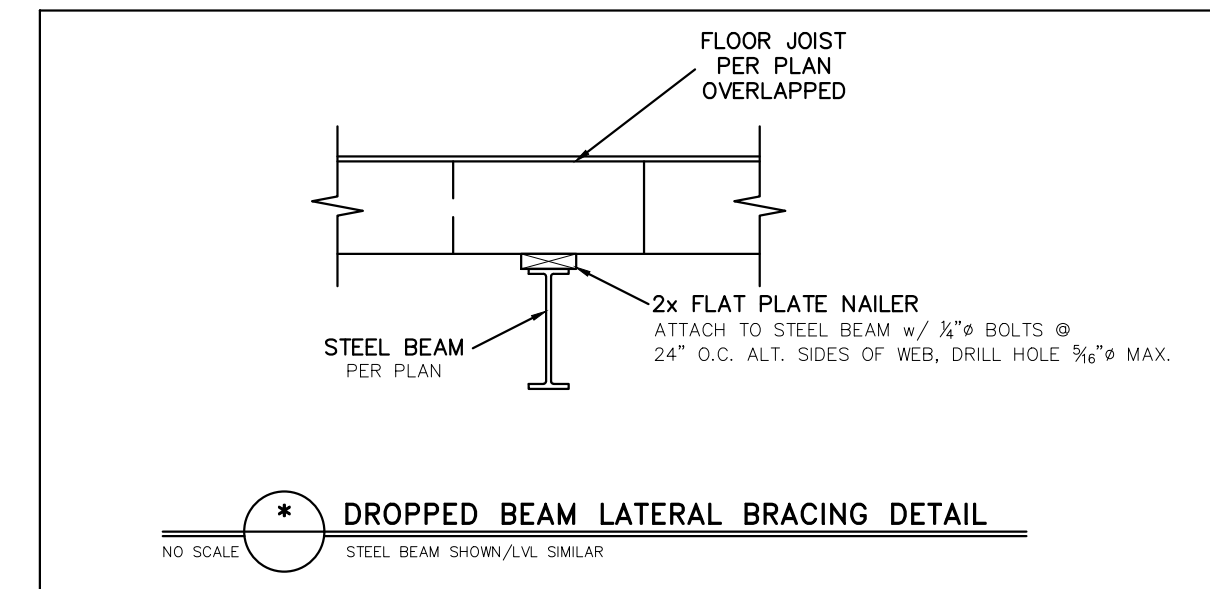
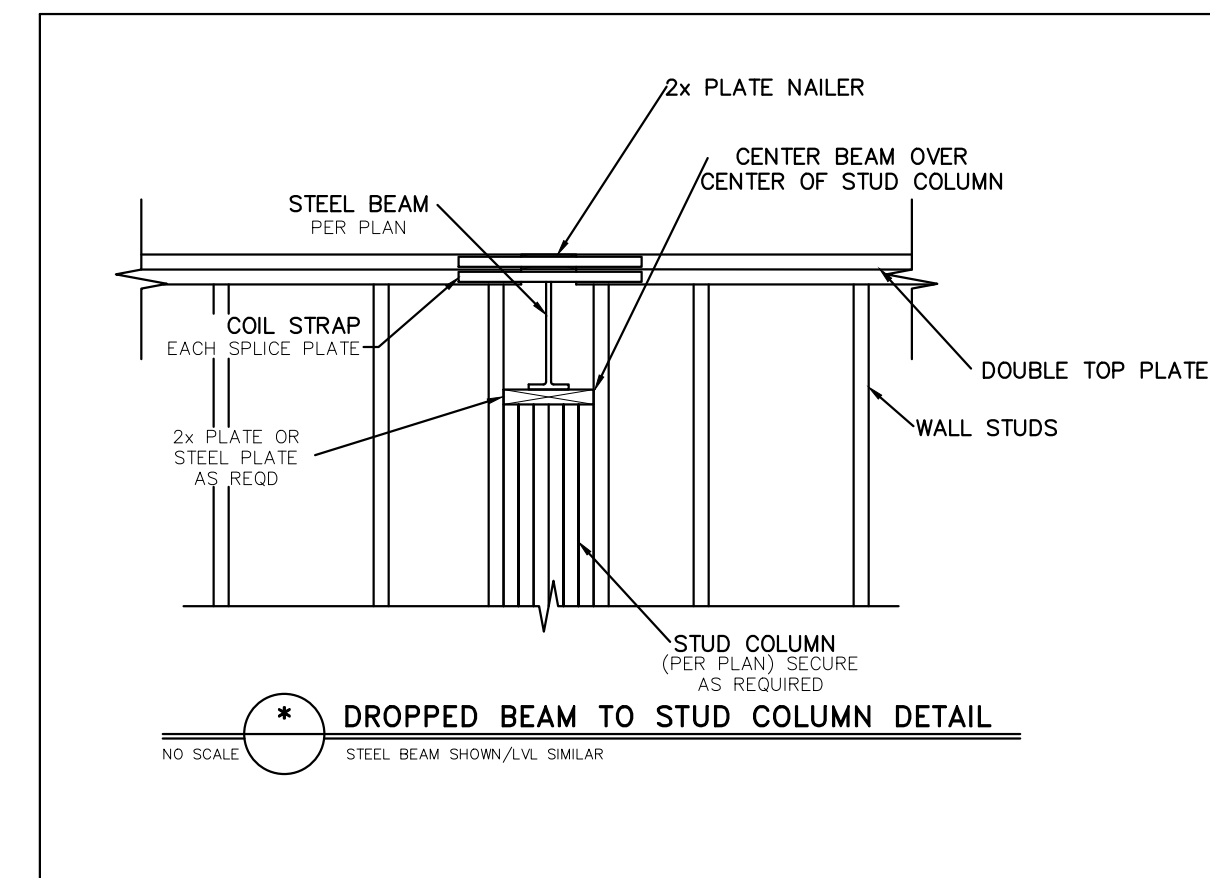
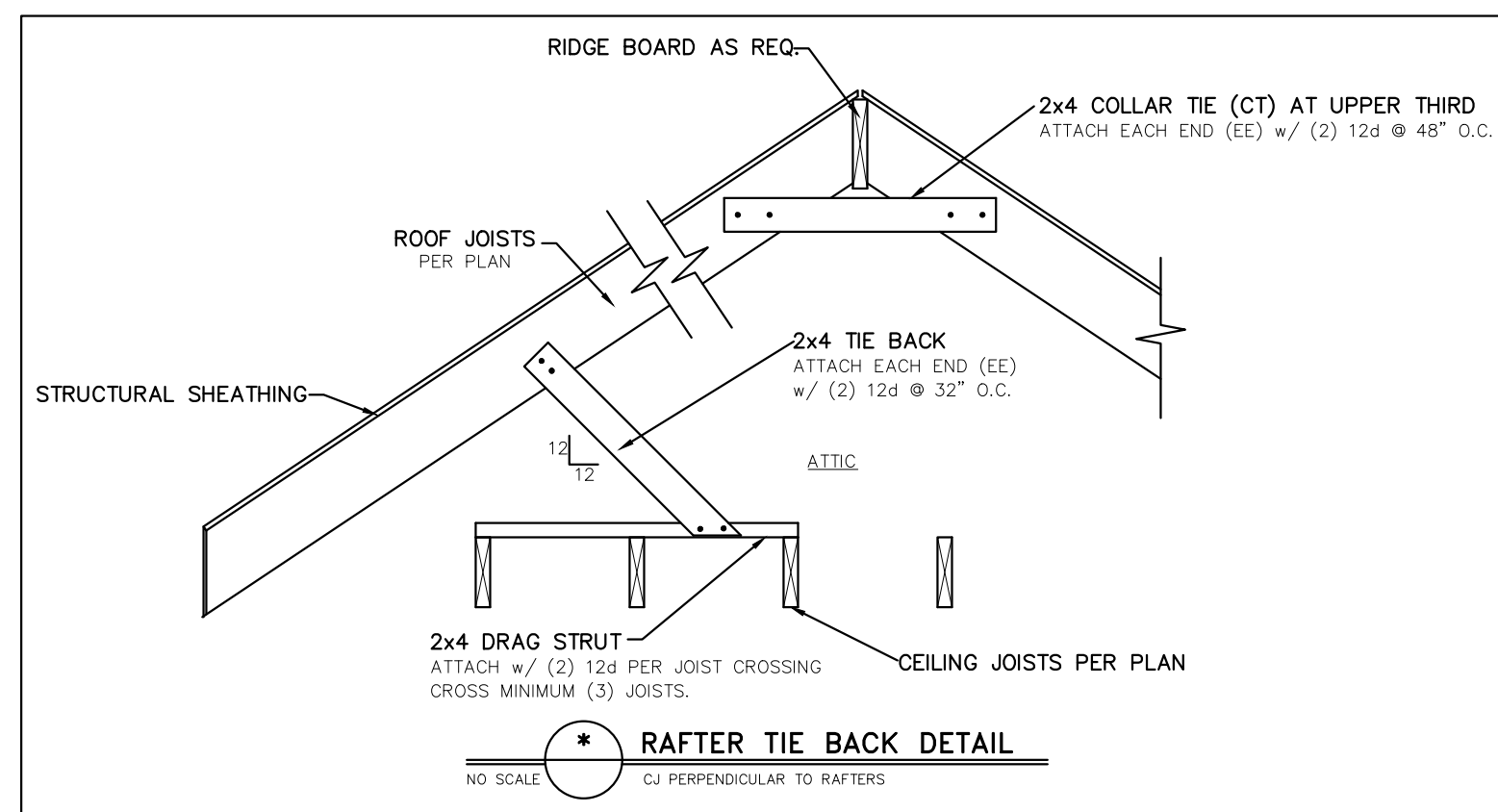
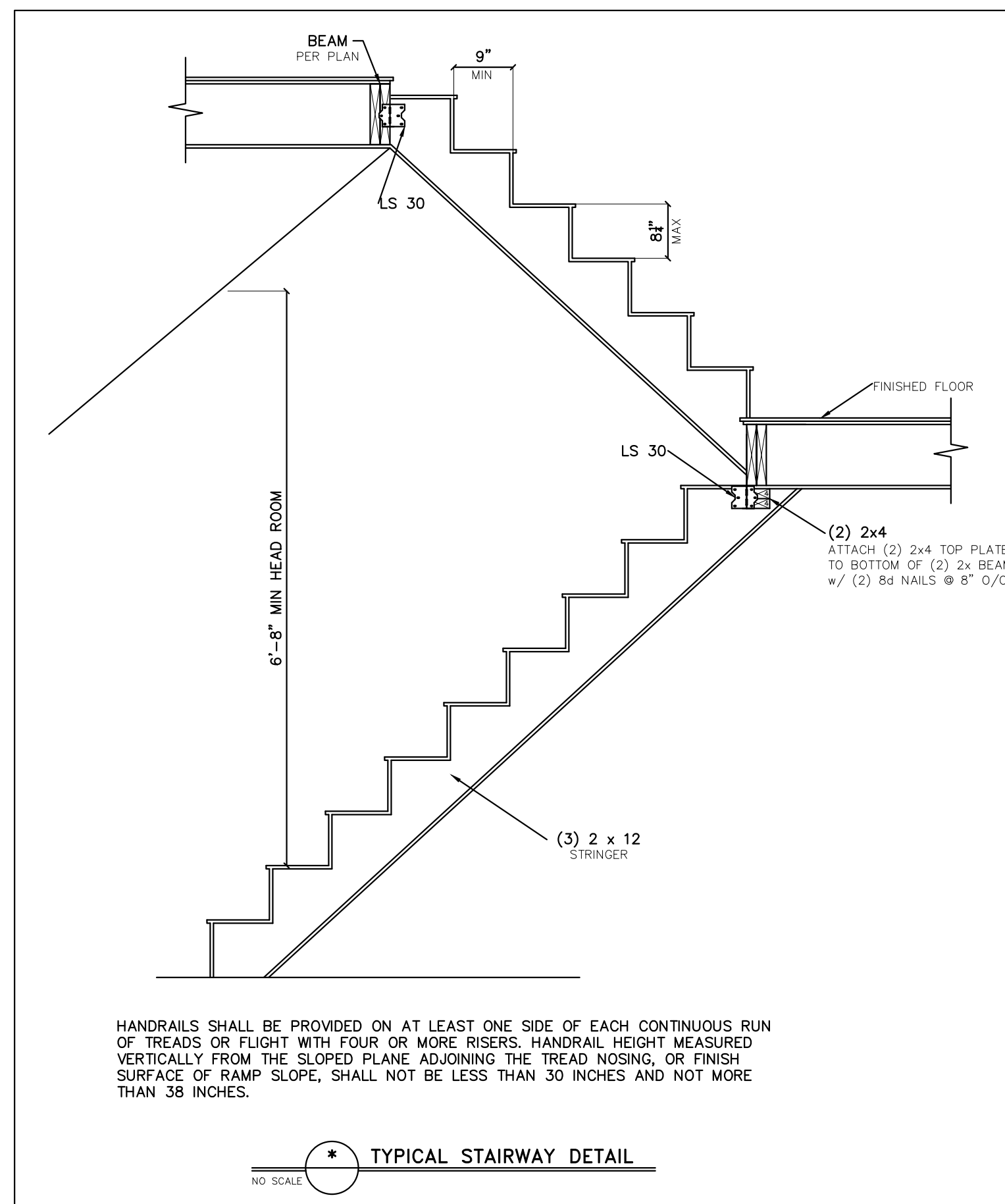
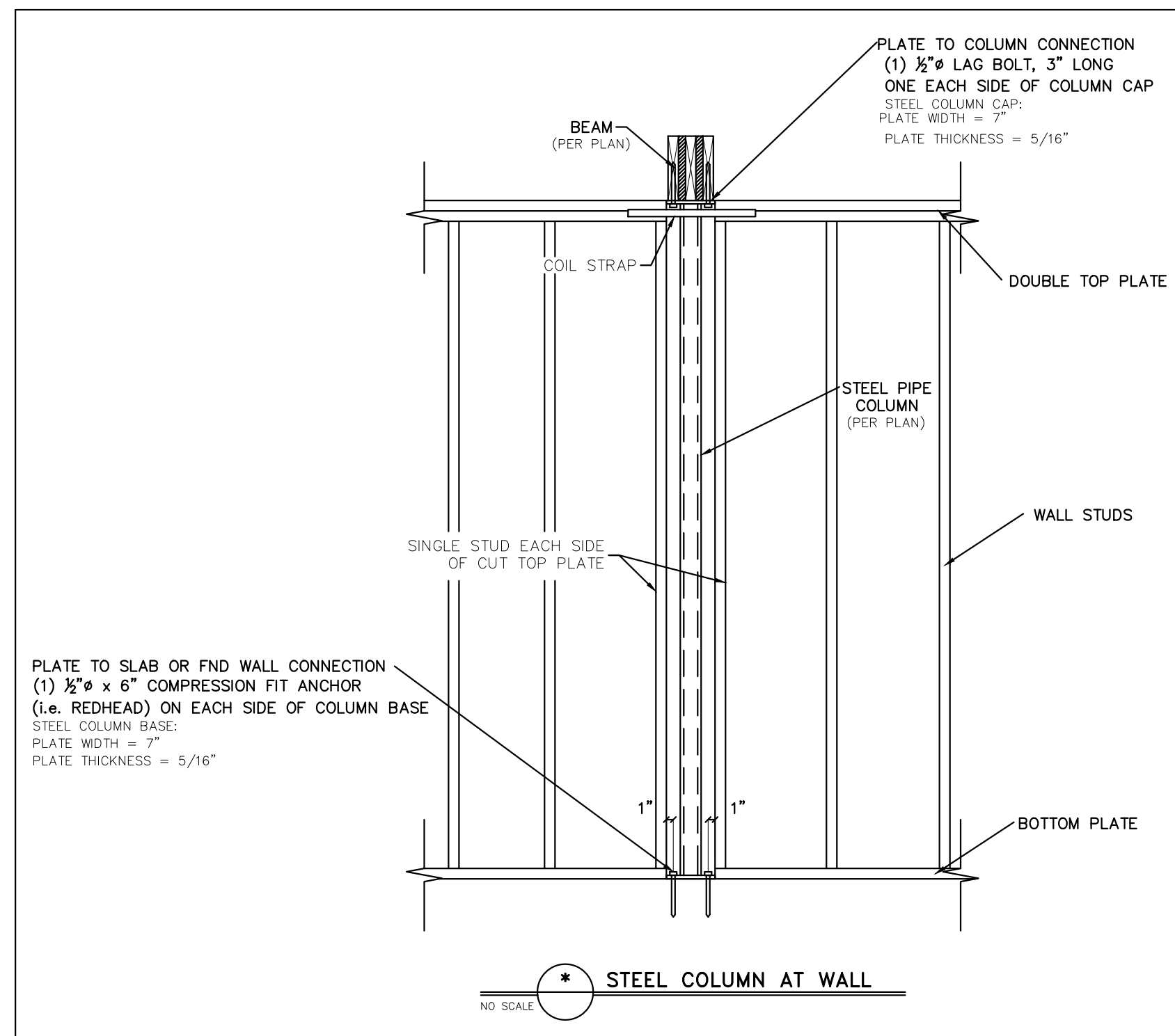
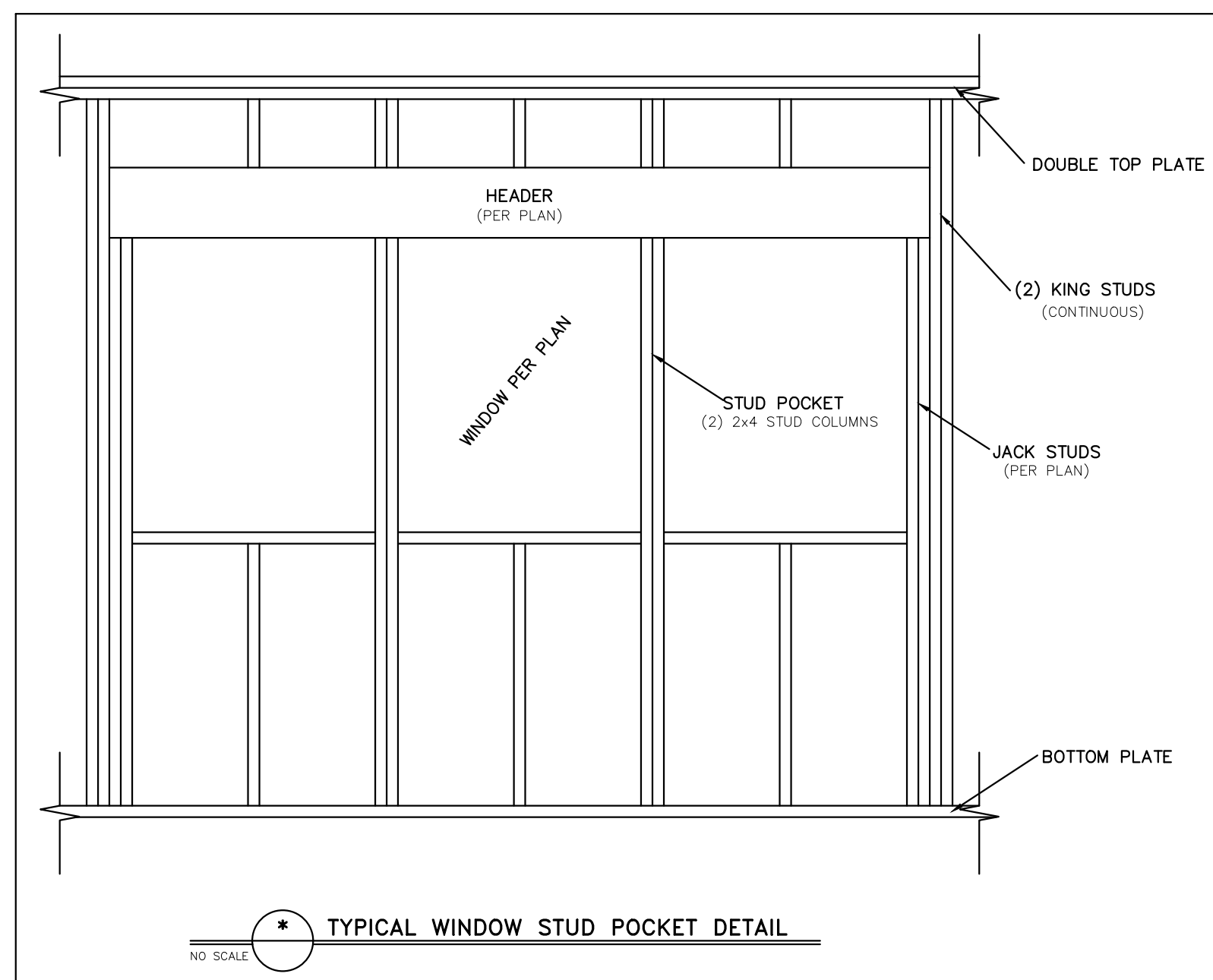
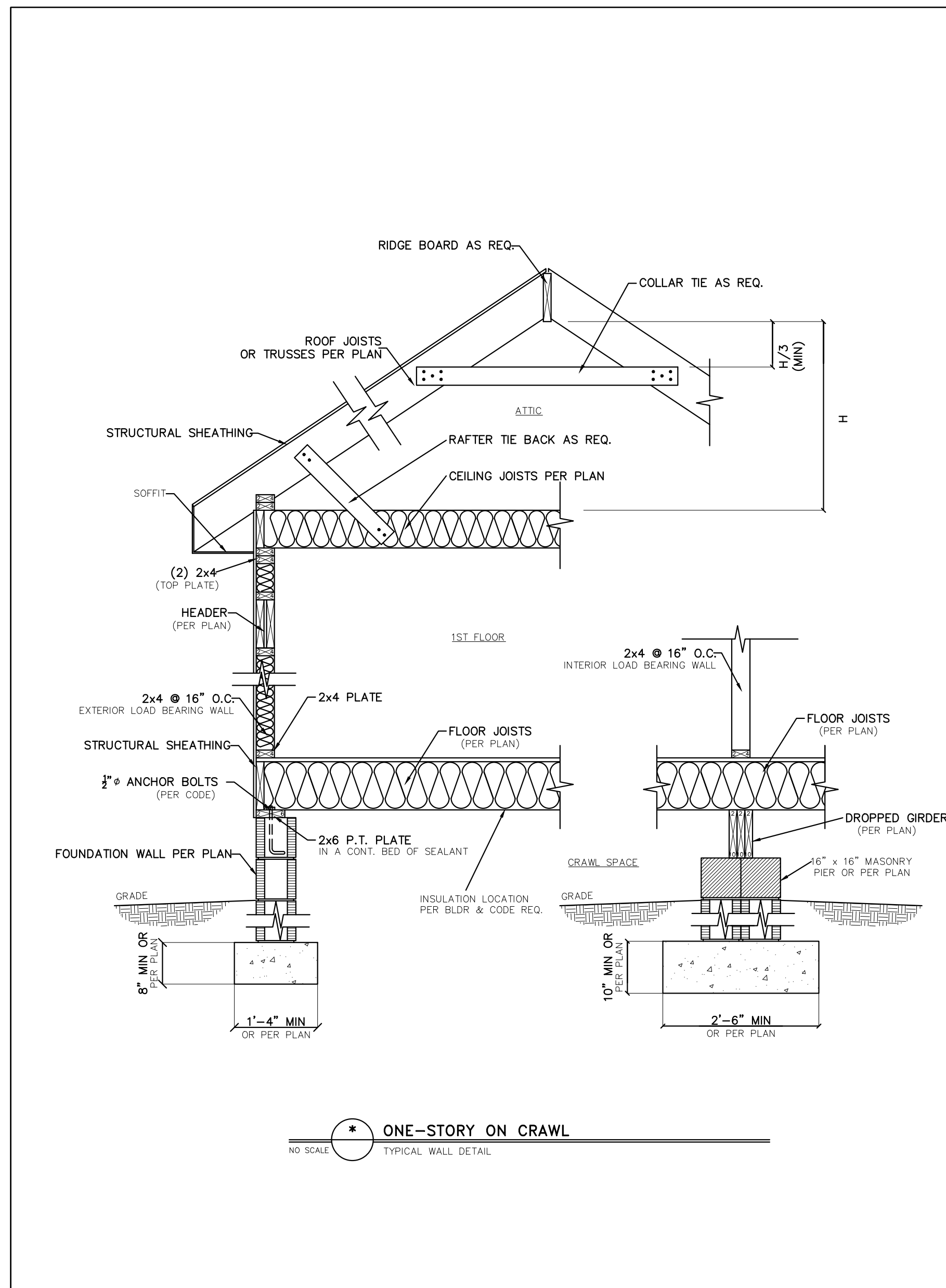
Project #: 2001-010384C  
Date: 01/13/22  
Drawn/Design By: IJE  
DWG. Checked By: PAT  
Scale: SEE PLAN

**REVISIONS**

No.	Date	Remarks

Sheet Number  
**D1**  
of 8





ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

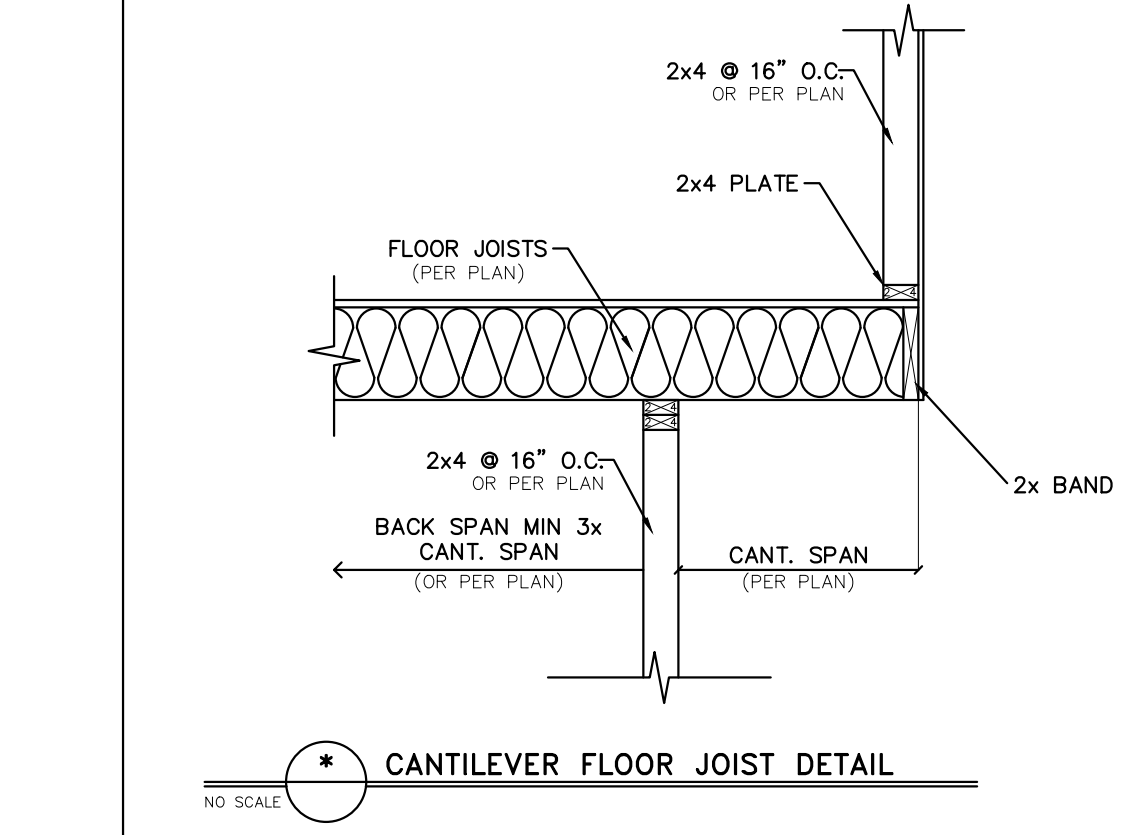
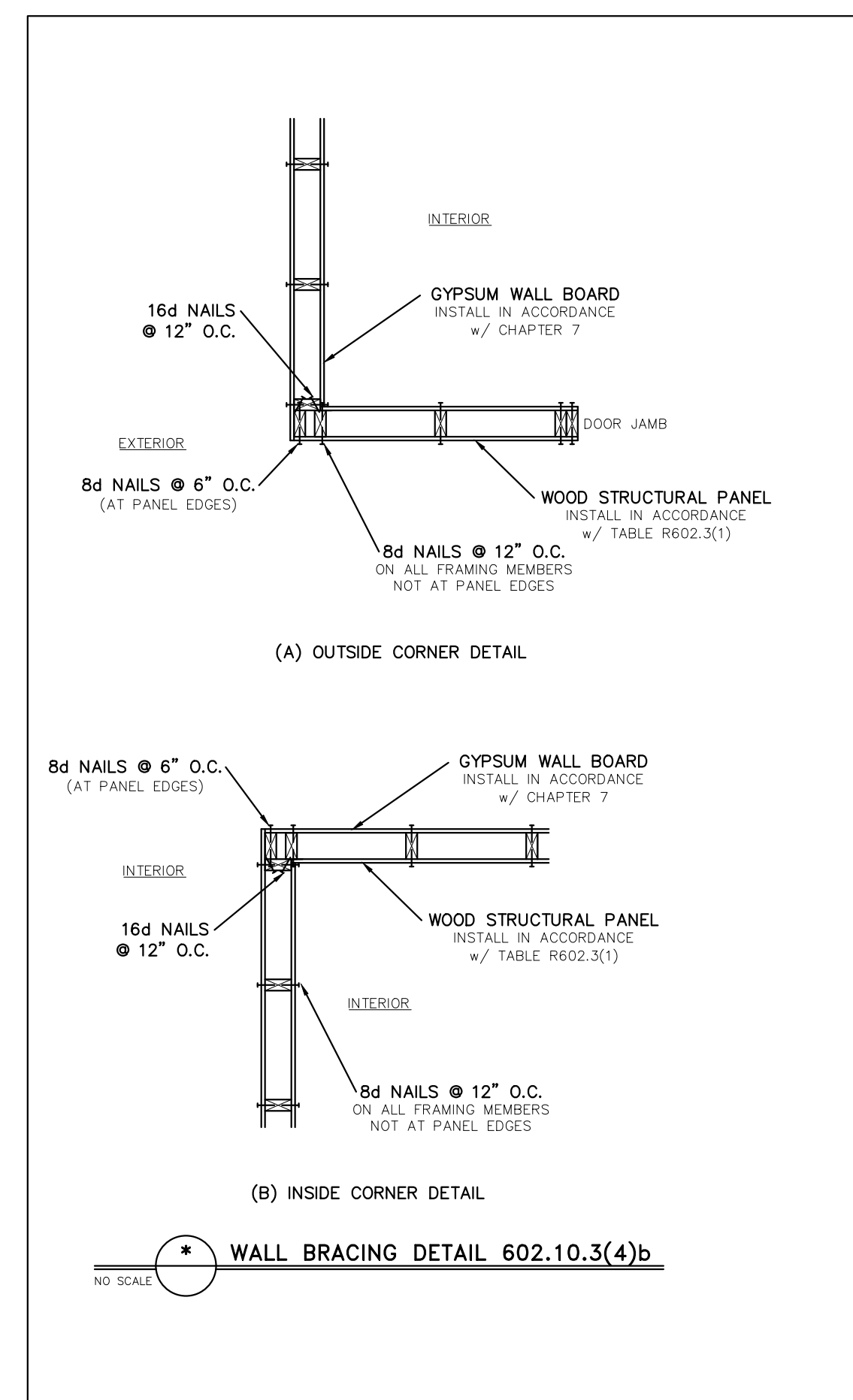
SIZE OF ANGLE <sup>(1,3)</sup>	NO STORY ABOVE <sup>(5)</sup>	1 STORY ABOVE <sup>(5)</sup>	2 STORIES ABOVE <sup>(5)</sup>	# OF 1/2" (OR EQUIV.) REINFORCING BARS IN REINFORCED LINTEL <sup>(2,4,5)</sup>
L 3 x 3 x 1/4	6'-0"	4'-6"	3'-0"	1
L 4 x 3 x 1/4	8'-0"	6'-0"	4'-6"	1
L 5 x 3 1/2 x 5/16	10'-0"	8'-0"	6'-0"	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  
NO SCALE

HARDWARE CROSS-REFERENCE CHART

SIMPSON STRONG-TIE PRODUCT NUMBER	USP STRUCTURAL CONNECTORS PRODUCT NUMBER
A35	MPA1
ABE	PAE
CBSQ	CBSQ
CCO	KCCO
CMSTC16	CMSTC16
CS	RS
H1	RT15
H2.5A	RT7A
H10	RT16
HDQ8-SDS3	UPHD8
HDU2-SDS2.5	PHD2
HDU5-SDS2.5	PHD5
HETA	HTA
HGAM10KTA	HGAM
HHDQ14-SDS2.5	UPHD14
HTS	HTW
HTT	HTT
HUS	HUS
LTA1	LPTA
LTHJA26	HJC26
LTP4	MP4F
LUS	JUS
MAS	FA3
MSTAM	MSTAM
PC	PCM
PHD-SDS3	PHD
SSP	RSPT6
STC	TR1
STHD	STAD



Engineers and drafters are not to be held responsible for any errors or omissions in these documents unless they are specifically noted as such. 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.

ISAAC MOONEYHAM  
2121 MAIZEFIELD LN.  
FUQUAY-VARINA, NC 27526

MOONEYHAM RESIDENCE & DETACHED GARAGE

Project #: 2001-010384C  
Date: 01/13/22  
Drawn/Design By: IJE  
DWG. Checked By: PAT  
Scale: SEE PLAN

REVISIONS

No.	Date	Remarks

Sheet Number  
D2  
of 8

FILENAME: Z:\RESIDENTIAL ENCL\2020 STRUCTURAL PROJECTS\2001-010384C\DWG FILES\2001-010384C-01-DRAWING SWED BY: PRENDICE TYN DALL LAST PLOT DATE: 1/13/2022 8:26 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 Tyndall Engineering & Design, P.A. Failure to do so will void Tyndall Engineering & Design, P.A. liability.  
 \*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.  
 1100 W. 10th Street, Suite 100  
 Raleigh, NC 27603  
 919.775.1400  
 www.tyndallengineering.com

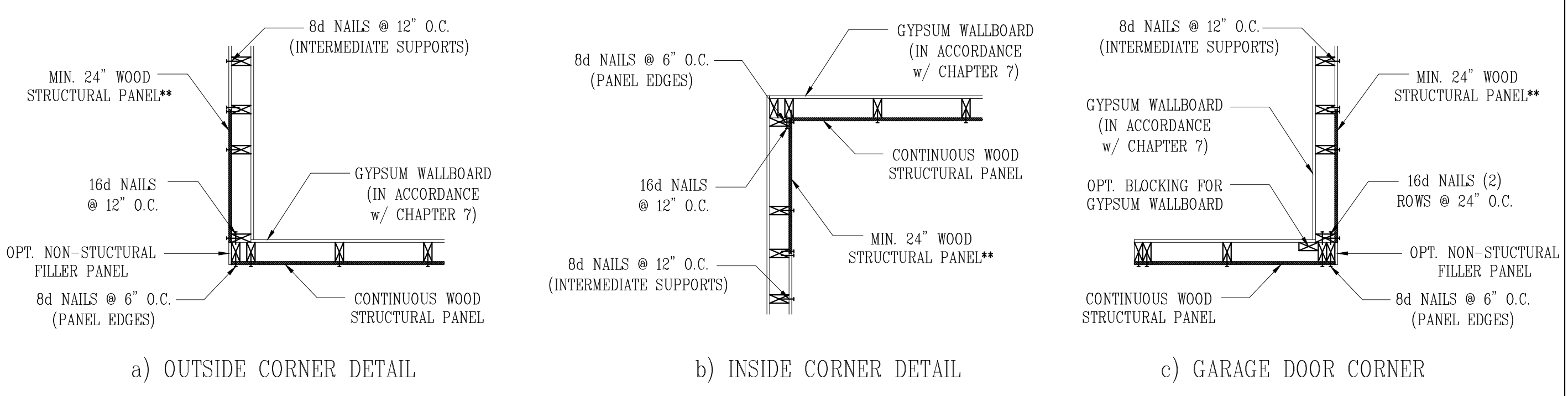
**ISAAC MOONEYHAM**  
 2121 WAZEFIELD LN.  
 FUQUAY-VARINA, NC 27526  
 MOONEYHAM RESIDENCE &  
 DETACHED GARAGE

**SHEATHING DETAILS**

Project #: 2001-010384C  
 Date: 01/13/22  
 Drawn/Design By: IJE  
 DWG. Checked By: PAT  
 Scale: SEE PLAN

REVISIONS		
No.	Date	Remarks

Sheet Number  
**D3**  
 of 8



\*\* IN LIEU OF THE 24" (MIN.) CORNER RETURN, A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT DESIGN VALUE OF 800# SHALL BE PASTENED TO THE CORNER STUD AND TO THE FOUNDATION OR FRAMING BELOW.

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

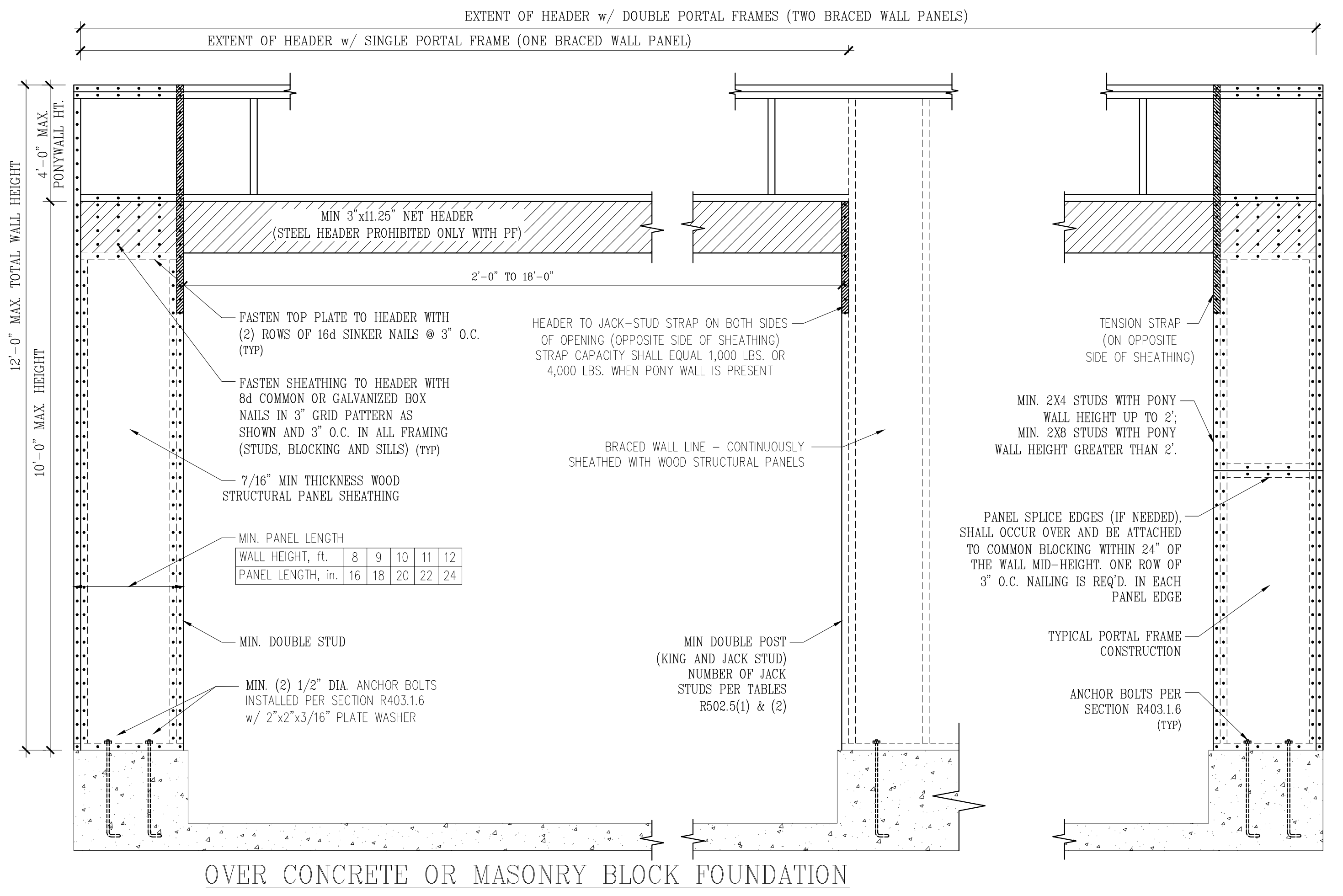
**STRUCTURAL SHEATHING NOTES**

- DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS.
- WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10.4 OF THE 2018 NRCR.
- 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 NRCR.
- 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)
  - 1/2" GYPSUM BOARD (GB) MINIMUM LENGTH OF 8'-0" (ISOLATED PANELS) OR 4'-0" (CONTINUOUS SHEATHING). SECURE w/ 5d 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
  - 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 GABLE 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 67% OF WALL HEIGHT
  - 30" ADJACENT TO OPENINGS GREATER THAN 67% 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 R602.10.3.14. 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

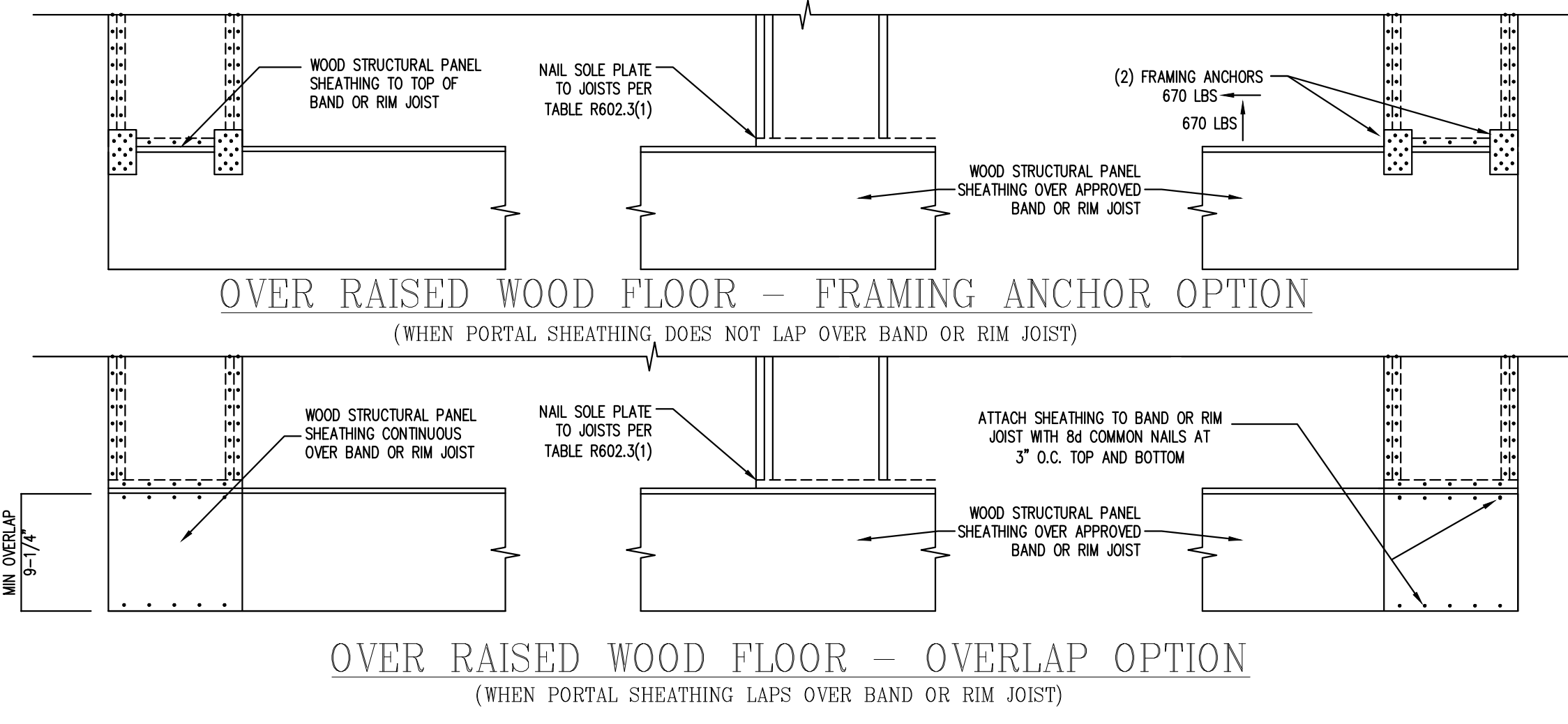
REQUIRED BRACED WALL PANEL CONNECTIONS				
METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION	
			@ PANEL EDGES @ 6" O.C.	@ INTERMEDIATE SUPPORTS @ 12" O.C.
CS-WSP	WOOD STRUCTURAL PANEL	3/8"	6d COMMON NAILS @ 6" O.C.	6d COMMON NAILS @ 12" O.C.
GB	GYPSUM BOARD	1/2"	5d COOLER NAIL** @ 7" O.C.	5d COOLER 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

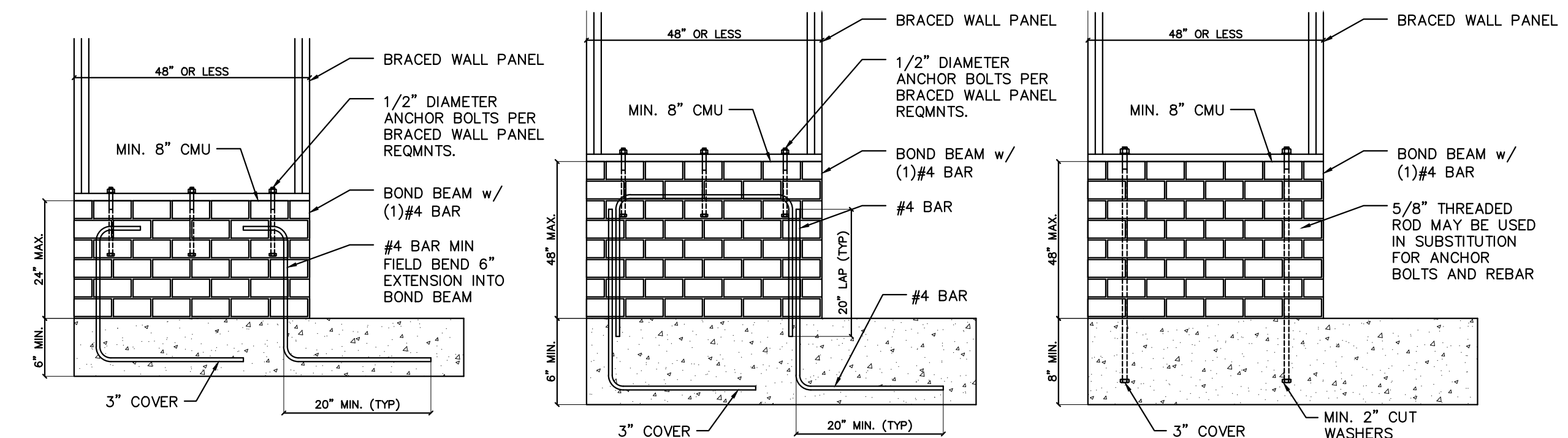
**B3: BRACE WALL PANEL CONNECTIONS**  
 NO SCALE



**B2: METHOD CS-PF: CONTINUOUSLY SHEATHED PORTAL FRAME**  
 FIGURE R602.10.1



**B3: BRACE WALL PANEL CONNECTIONS**  
 NO SCALE



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

FILENAME: Z:\RESIDENTIAL\_ENG\2020\_STRUCTURAL\_PROJECTS\2001-010384\_CAD\_FILES\2001-010384\_DRAWING\_SAVED BY: PRENICE\_TINDALL\_LAST PLOT DATE: 1/13/2022 8:26 AM