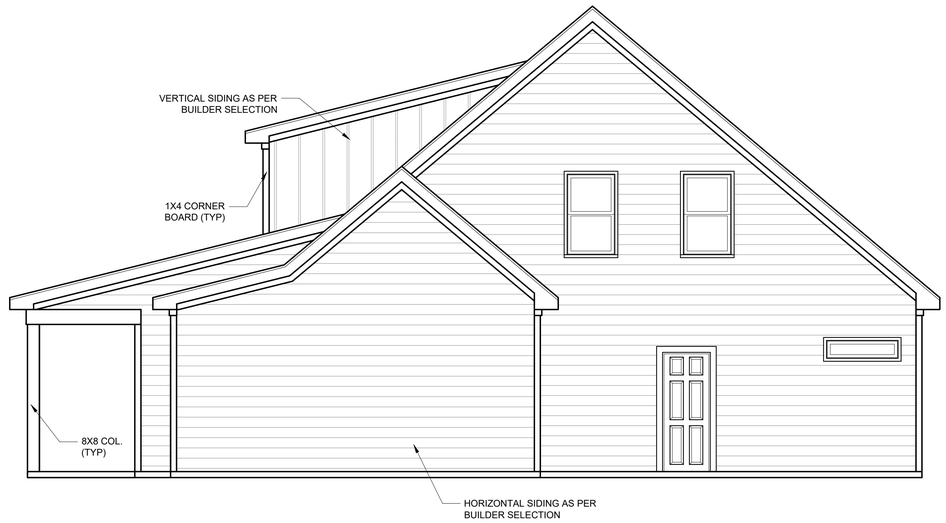
THE MORGAN

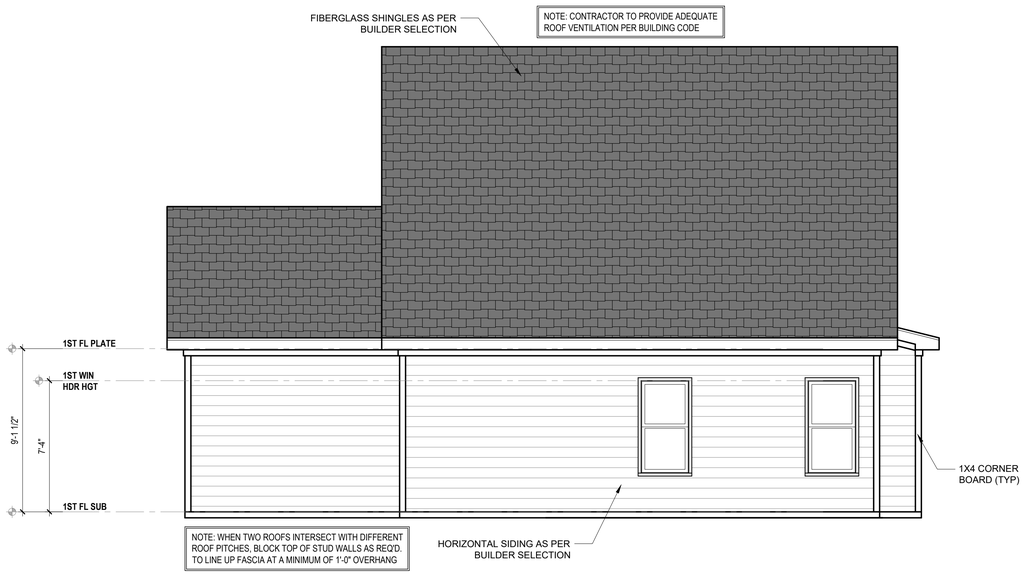
FRONT ELEVATION

1/4" = 1'-0"



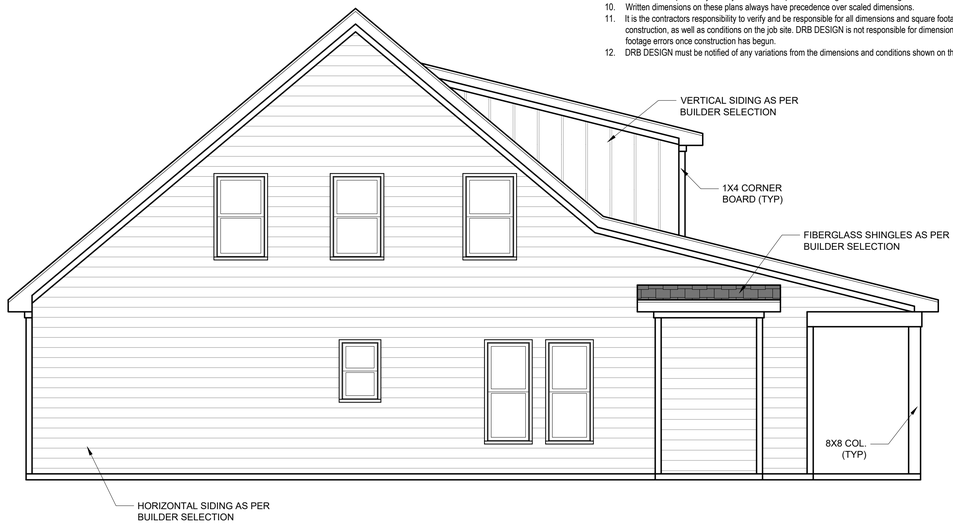
RIGHT ELEVATION

1/4" = 1'-0"



REAR ELEVATION

1/4" = 1'-0"



LEFT ELEVATION

1/4" = 1'-0"

1. DRB DESIGN assumes no liability for any home constructed from this plan.
2. All construction shall conform to the latest requirements of "North Carolina State 2018 residential building code", in addition to all local codes and regulations.
3. Should these plans require structural calculations for permitting the contractor shall be required to obtain the services of a structural engineer after notifying DRB DESIGN that such services are required.
4. Release of these plans requires further cooperation among the owner, his/her contractor, and DRB DESIGN.
5. Design and construction are complex and, although the designer performed his services with due care and diligence, perfection is not a guarantee.
6. Communication is imperfect and every contingency cannot be anticipated.
7. Any ambiguity or discrepancy discovered by the use of these plans shall be reported immediately to DRB DESIGN. Failure to notify the DRB DESIGN compounds misunderstandings and increases construction costs.
8. A failure to cooperate by a simple notice to DRB DESIGN shall relieve the designer from any and all responsibilities for all consequences.
9. Changes made to these plans without the consent of the designer are unauthorized and shall relieve DRB DESIGN of responsibility for any and all consequences arriving out of such changes.
10. Written dimensions on these plans always have precedence over scaled dimensions.
11. It is the contractors responsibility to verify and be responsible for all dimensions and square footage prior to construction, as well as conditions on the job site. DRB DESIGN is not responsible for dimension and square footage errors once construction has begun.
12. DRB DESIGN must be notified of any variations from the dimensions and conditions shown on these drawings.

PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

WEBSITE
drbhomedesign.com

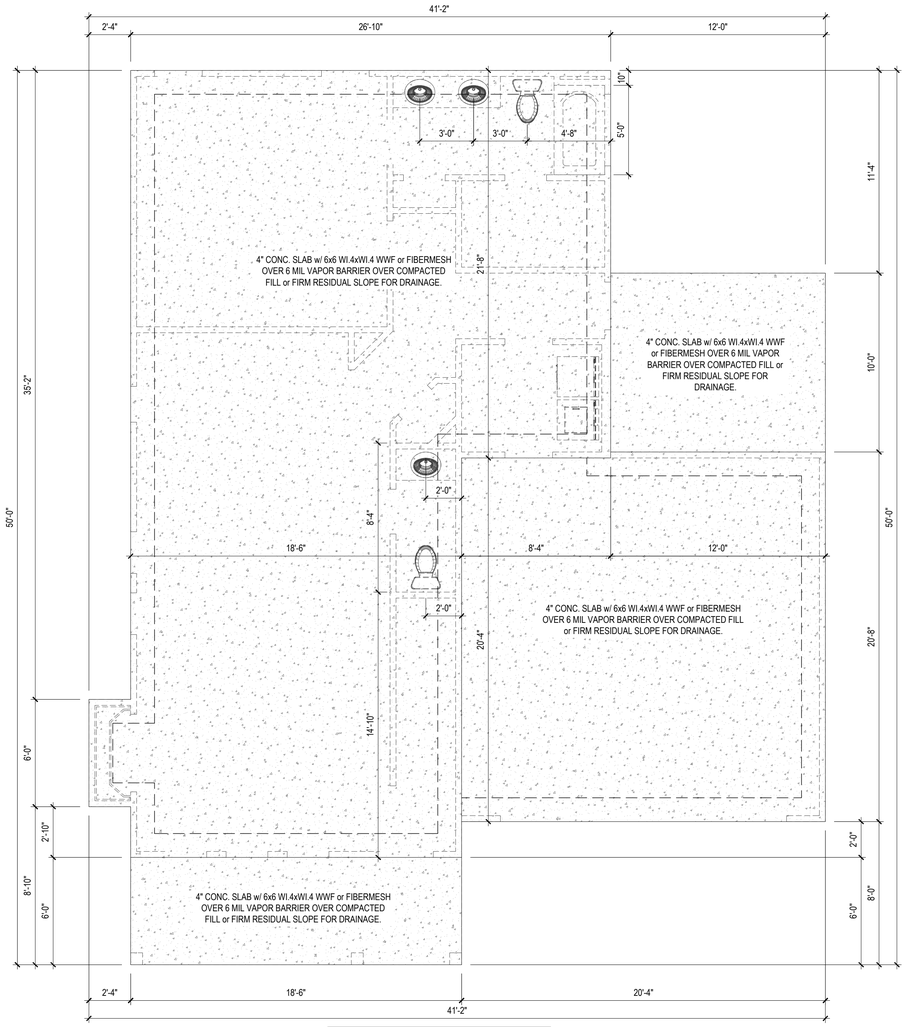
PROJECT NAME
THE MORGAN

DRB DESIGN
drbdesign@drbhomedesign.com 919.631.5979
250 Shipwash Dr Suite 105 Garner, NC 27529

CLIENT NAME
Pleasant Builders of NC
2201 Sheriff Johnston Rd,
Lillington, NC 27546
pleasantbuildersnc@gmail.com
(919) 878-7685

SHEET NAME
ELEVATIONS

SHEET #
1 of 6



NOTE: SEE STRUCTURAL PLANS FOR ENGINEERING INFORMATION

FOUNDATION PLAN

1/4" = 1'-0" **MONOLITHIC SLAB**

1. DRB DESIGN assumes no liability for any home constructed from this plan.
2. All construction shall conform to the latest requirements of "North Carolina State 2018 residential building code", in addition to all local codes and regulations.
3. Should these plans require structural calculations for permitting the contractor shall be required to obtain the services of a structural engineer after notifying DRB DESIGN that such services are required.
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PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

WEBSITE
drbhomedesign.com

PROJECT NAME
THE MORGAN

DRB DESIGN
drbdesign@drbhomedesign.com 919.631.5979
250 Shipwash Dr Suite 105 Garner, NC 27529

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2201 Sheriff Johnston Rd,
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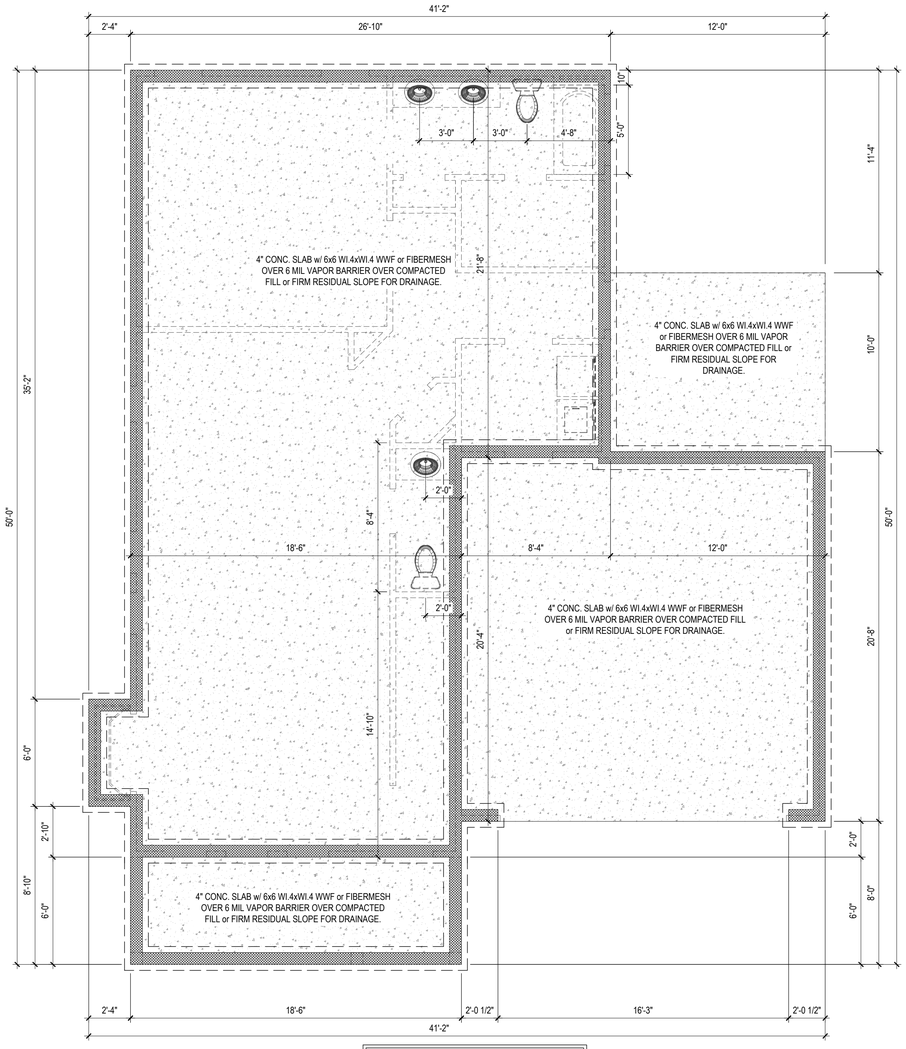
(919) 878-7685

SHEET NAME
MONO. SLAB

SHEET #
2 of 6



NOTE: SEE STRUCTURAL PLANS FOR ENGINEERING INFORMATION

FOUNDATION PLAN

1/4" = 1'-0" **STEM WALL**

1. DRB DESIGN assumes no liability for any home constructed from this plan.
2. All construction shall conform to the latest requirements of "North Carolina State 2018 residential building code", in addition to all local codes and regulations.
3. Should these plans require structural calculations for permitting the contractor shall be required to obtain the services of a structural engineer after notifying DRB DESIGN that such services are required.
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PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

WEBSITE
drbhomedesign.com

PROJECT NAME
THE MORGAN

DRB DESIGN
drbdesign@drbhomedesign.com 919.631.5979
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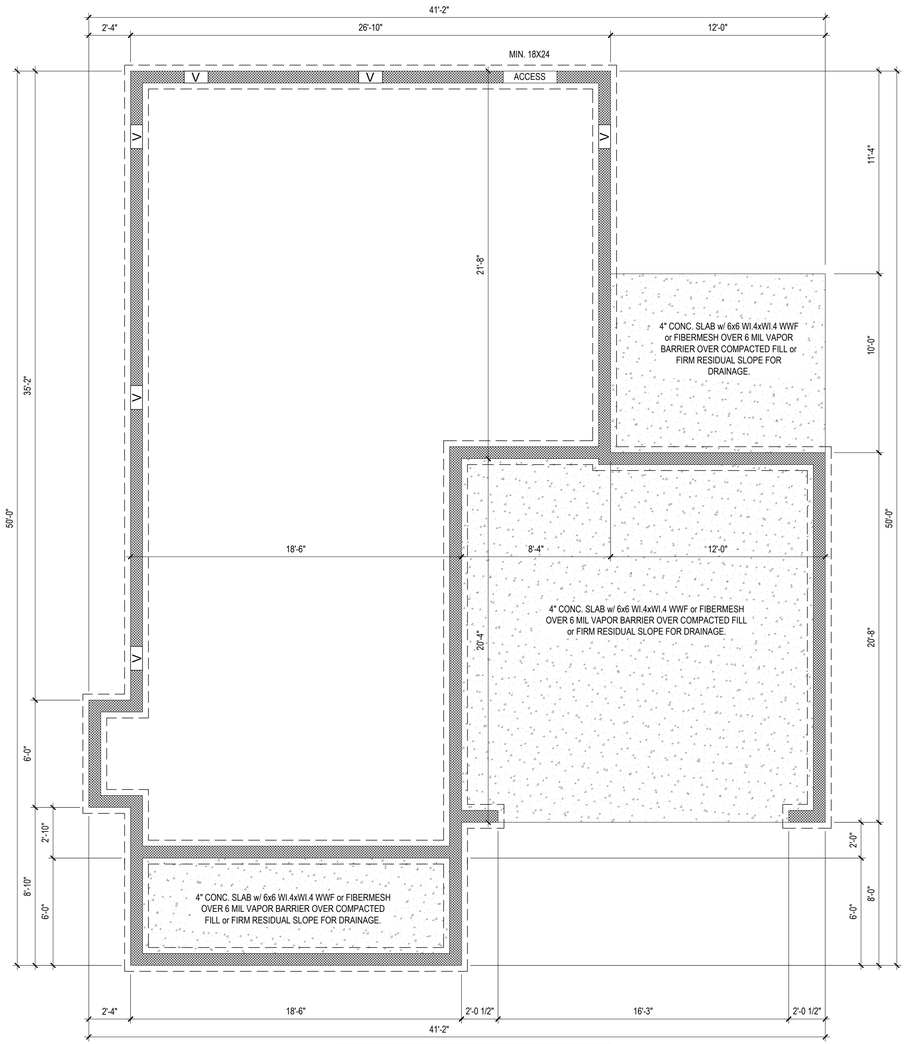
(919) 878-7685

SHEET NAME
STEM WALL

SHEET #
3 of 6



NOTE: SEE STRUCTURAL PLANS FOR ENGINEERING INFORMATION AND CRAWLSPACE VENTILATION CALCULATIONS

FOUNDATION PLAN

1/4" = 1'-0" **CRAWL SPACE**

1. DRB DESIGN assumes no liability for any home constructed from this plan.
2. All construction shall conform to the latest requirements of "North Carolina State 2018 residential building code", in addition to all local codes and regulations.
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PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

PROJECT NAME
THE MORGAN

WEBSITE
drbhomedesign.com

DRB DESIGN
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250 Shipwash Dr Suite 105 Garner, NC 27529

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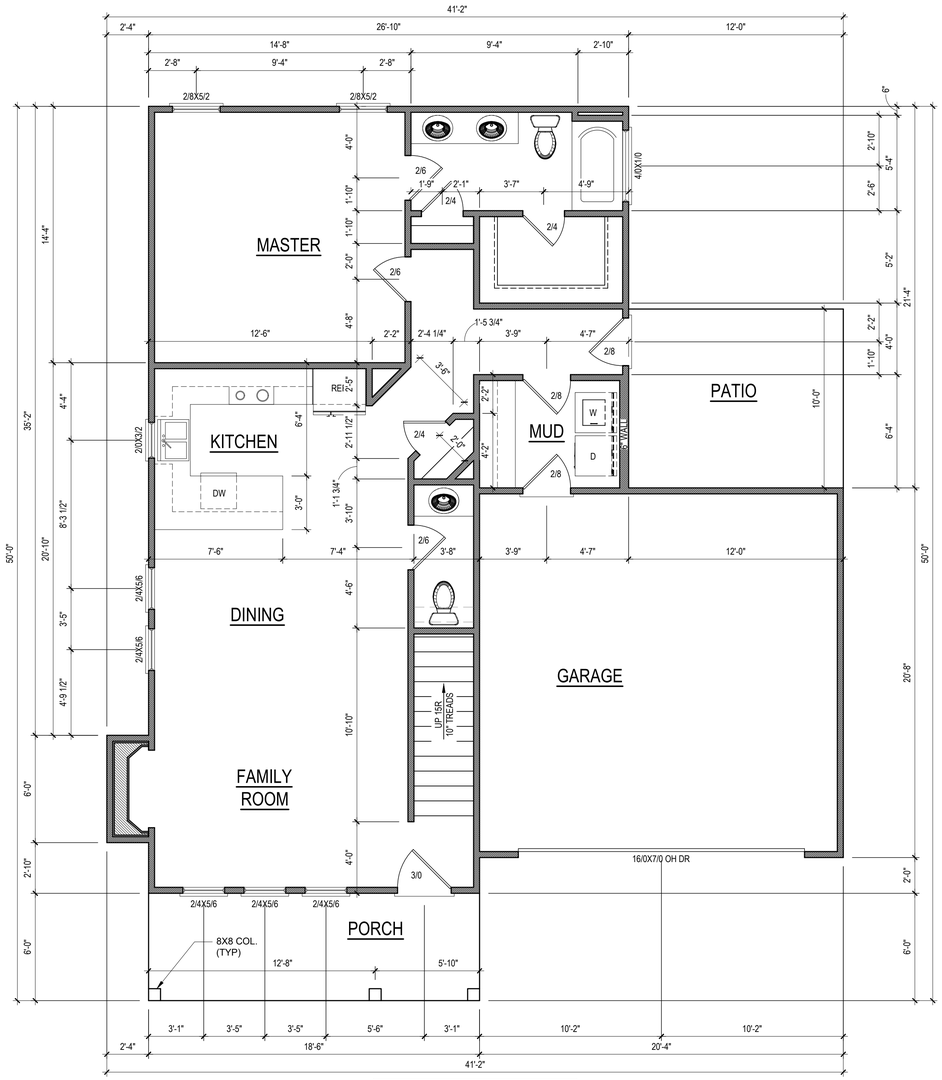
(919) 878-7685

SHEET NAME
CRAWL SPACE

SHEET #
4 of 6



HEATED SQUARE FOOTAGE	
First Floor	1009
Second Floor	445
TOTAL HEATED	1454
UNHTD SQUARE FOOTAGE	
Garage	417
Front Porch	111
Patio	120
Unfinished Storage	152
TOTAL UNHEATED	800
TOTAL SQ FT	2254

NOTE:
SEE ELEVATIONS FOR WINDOW HDR HGTS

NOTE:
ALL DOORS ARE 6'-8" TALL UNO

NOTE:
ALL EXTERIOR WALLS ARE NOMINAL 4" UNO

NOTE:
ALL INTERIOR WALLS ARE NOMINAL 4" UNO

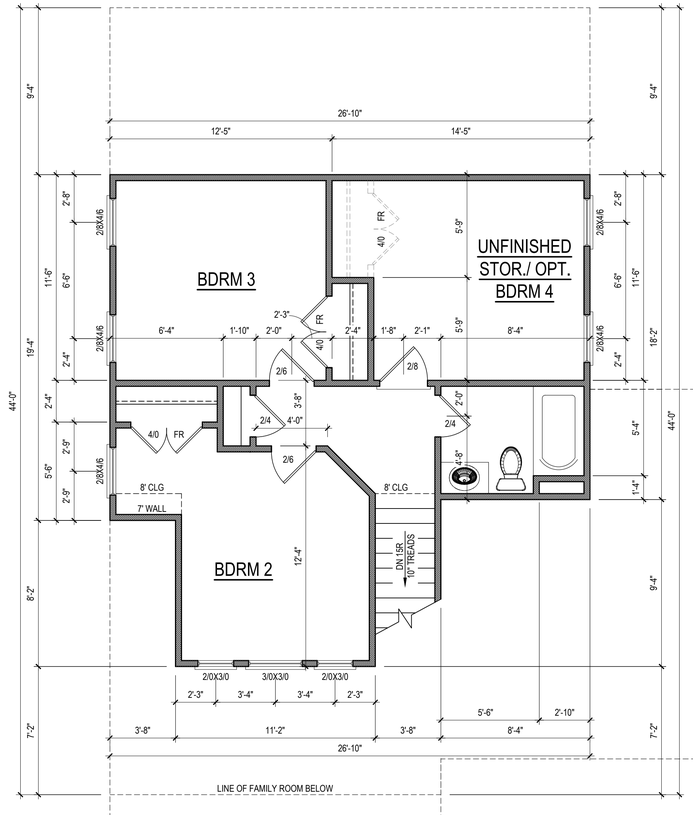
NOTE:
ALL ANGLED WALLS ARE 45° UNO

NOTE:
ALL DIMENSIONS ARE FRAME TO FRAME

NOTE: VERIFY WINDOW SILL HEIGHT CLEARANCE ABOVE TUBS AND COUNTERTOPS TO ALLOW FOR TRIM AND/OR BACKSPLASH

FIRST FLOOR PLAN

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



NOTE:
ALL DOORS ARE 6'-8" TALL UNO

NOTE:
ALL EXTERIOR WALLS ARE NOMINAL 4" UNO

NOTE:
ALL INTERIOR WALLS ARE NOMINAL 4" UNO

NOTE:
ALL ANGLED WALLS ARE 45° UNO

NOTE:
ALL DIMENSIONS ARE FRAME TO FRAME

NOTE: VERIFY WINDOW SILL HEIGHT CLEARANCE ABOVE TUBS AND COUNTERTOPS TO ALLOW FOR TRIM AND/OR BACKSPLASH

SECOND FLOOR PLAN

1/4" = 1'-0" **CEILING HGT. = 8'-0"**

1. DRB DESIGN assumes no liability for any home constructed from this plan.
2. All construction shall conform to the latest requirements of "North Carolina State 2018 residential building code", in addition to all local codes and regulations.
3. Should these plans require structural calculations for permitting the contractor shall be required to obtain the services of a structural engineer after notifying DRB DESIGN that such services are required.
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PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

WEBSITE
drbhomedesign.com

PROJECT NAME
THE MORGAN

DRB DESIGN
drbdesign@drbhomedesign.com 919.631.5979
250 Shipwash Dr Suite 105 Garner, NC 27529

CLIENT NAME
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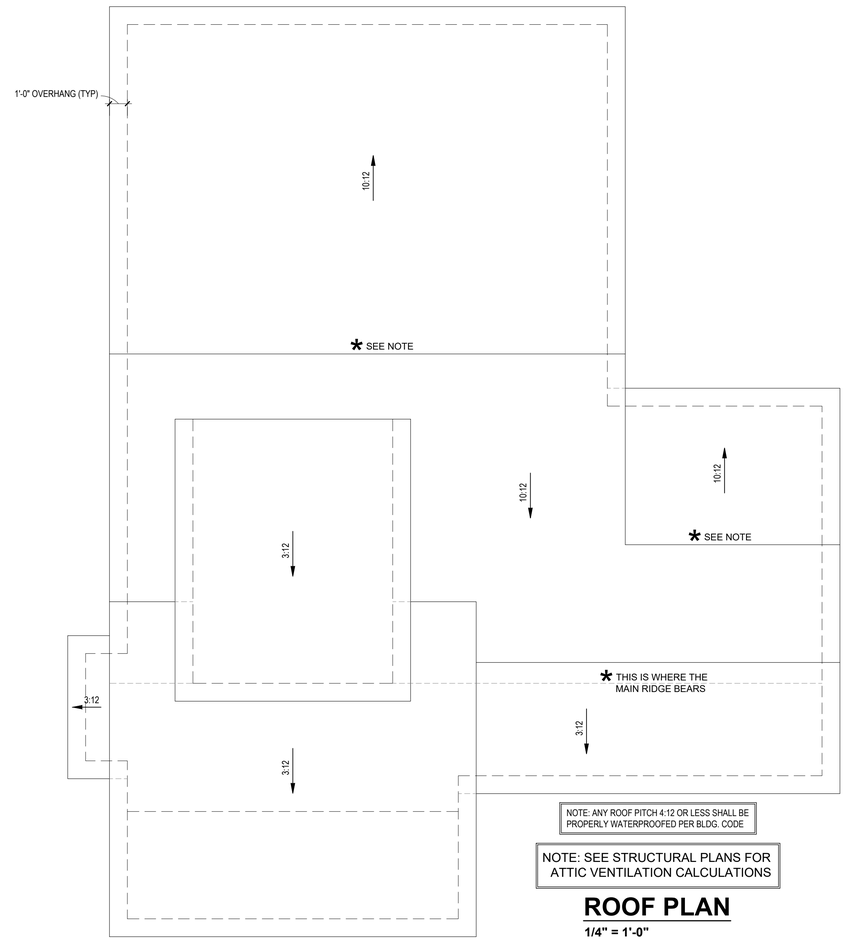
2201 Sheriff Johnston Rd,
Lillington, NC 27546
pleasantbuildersnc@gmail.com
(919) 878-7685

SHEET NAME
FLOOR PLANS

SHEET #
5 of 6



NOTE: ANY ROOF PITCH 4:12 OR LESS SHALL BE PROPERLY WATERPROOFED PER BLDG. CODE

NOTE: SEE STRUCTURAL PLANS FOR ATTIC VENTILATION CALCULATIONS

ROOF PLAN

1/4" = 1'-0"

1. DRB DESIGN assumes no liability for any home constructed from this plan.
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PROJECT #
DRB2301-0126Z
DATE
03/31/2023
DRAWN/DESIGNED BY
MMB
CHECKED BY
DRB
SCALE
1/4" = 1'-0"

WEBSITE
drbhomedesign.com

PROJECT NAME
THE MORGAN

DRB DESIGN
drbdesign@drbhomedesign.com 919.631.5979
250 Shipwash Dr Suite 105 Garner, NC 27529

CLIENT NAME
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Lillington, NC 27546
pleasantbuildersnc@gmail.com
(919) 878-7685

SHEET NAME
ROOF

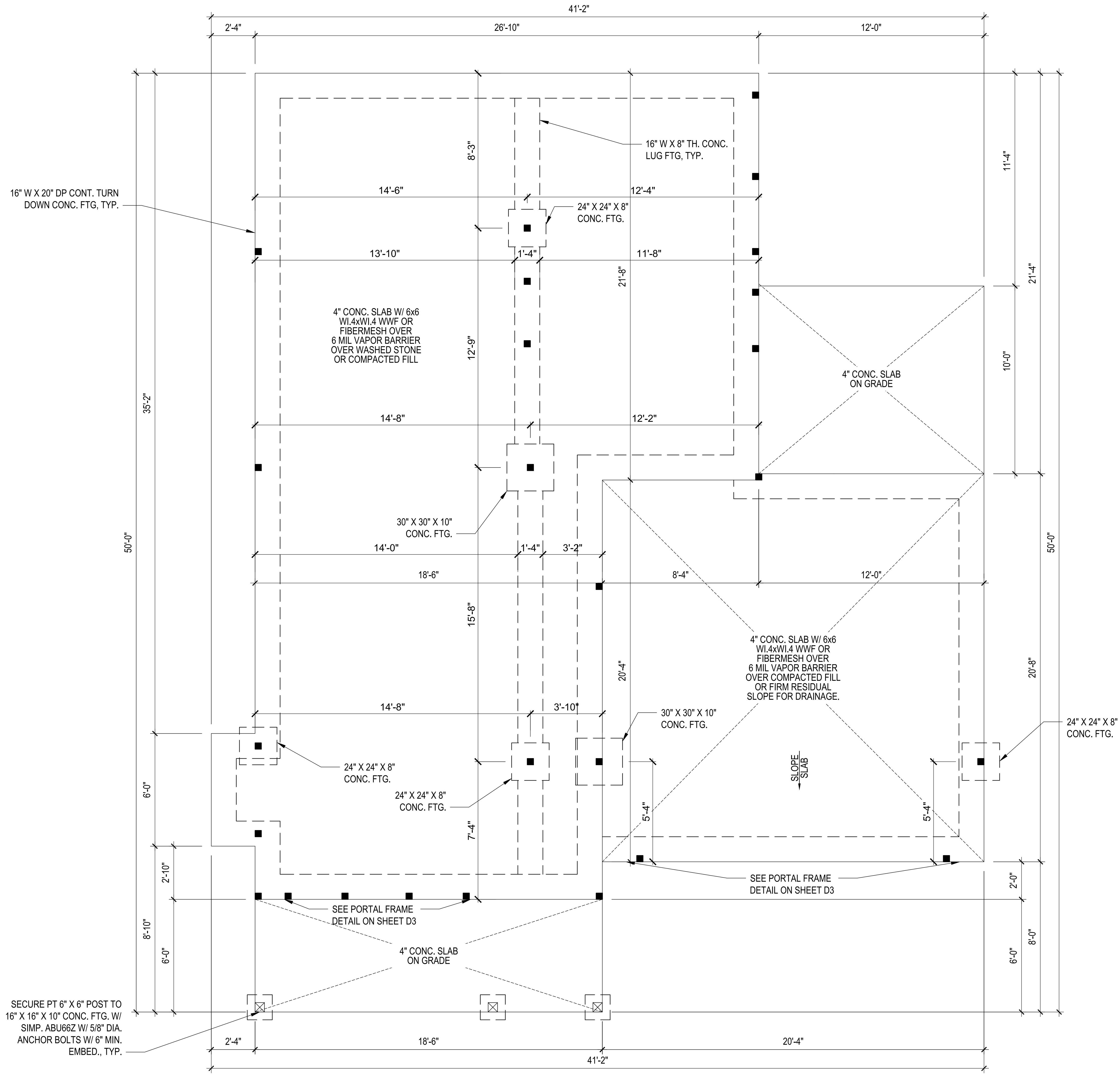
SHEET #
6 of 6

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 A, B & C			

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) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSIONS AND SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
3) ALL LUMBER SHALL BE SYP #2 (UNO)
ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI
(I.E. iLEVEL MICROLAM)
ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
4) 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) 10d NAILS @ 8" O.C., PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 6'-8", MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-6". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
5) 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)
6) REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10'-0" IN HEIGHT.
7) ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50
Fy = 50 KSI MIN. (UNO)
8) ALL EXTERIOR LUMBER TO BE #2 SYP PT
9) ALL CONCRETE, fc = 3000 PSI MIN.
10) PRESUMPTIVE BEARING CAPACITY = 2000 PSF
11) 1/2"Ø 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.
12) PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
13) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
14) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NCRC.
15) MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
17) METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.



FOUNDATION PLAN

1/4" = 1'-0" MONOLITHIC SLAB

*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
*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.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036819 ALAN W. LEWIS

TYNDALL ENGINEERING & DESIGN P.A.

Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

FOUNDATION PLAN MONOSLAB OPT.

Project #: DRB2301-0126Z
Date: 4/20/2023
Engineered By: EJM
DWG. Checked By: AWL
Scale: SEE PLAN

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

Sheet Number

S1A

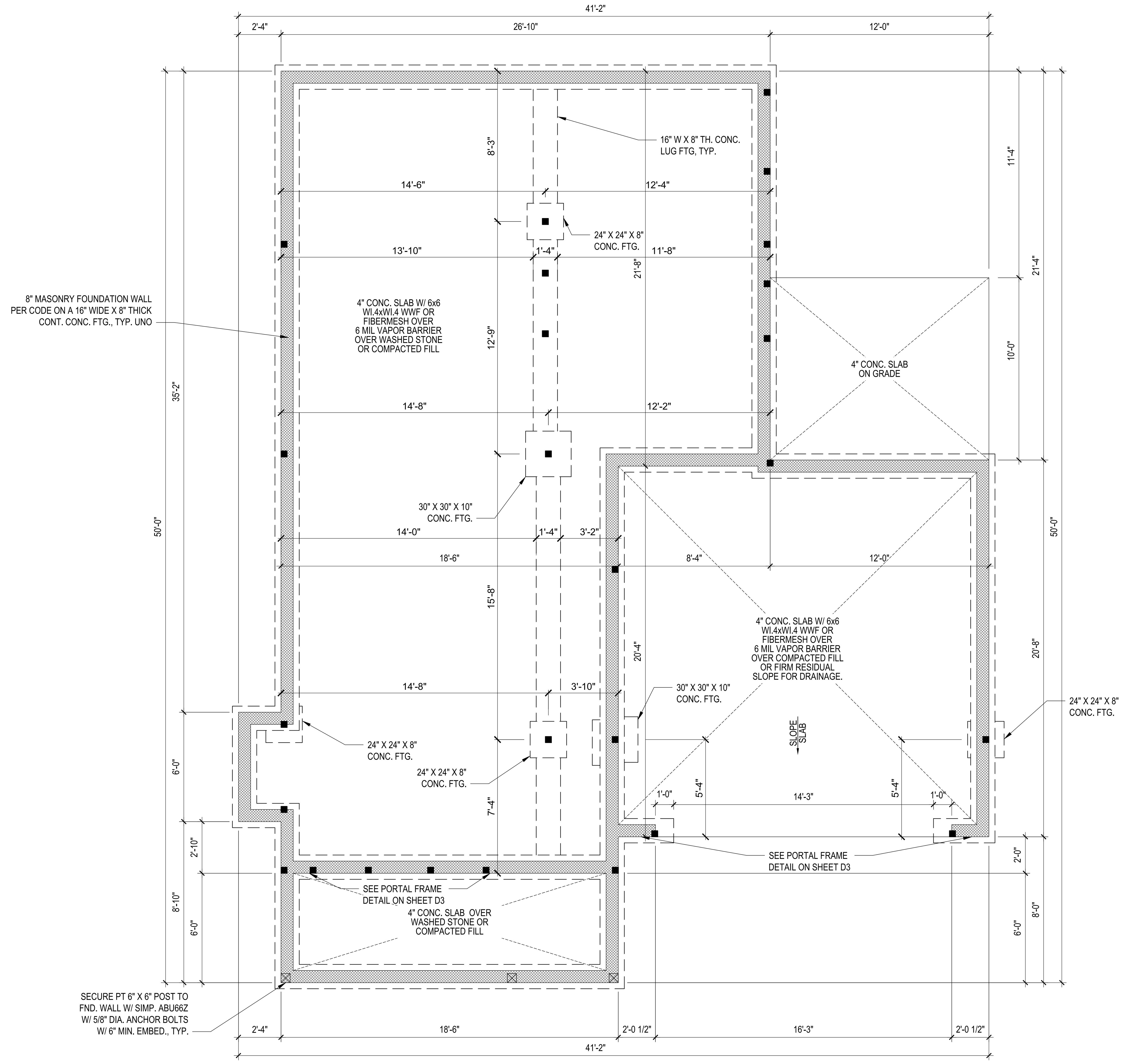
1 of 9

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 A, B & C			

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) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSIONS AND SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.
3) ALL LUMBER SHALL BE SYP #2 (UNO)
ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI
(I.E. iLEVEL MICROLAM)
ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
4) 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) 10d NAILS @ 8" O.C., PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 6'-8", MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-6". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
5) 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)
6) REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10'-0" IN HEIGHT.
7) ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50
Fy = 50 KSI MIN. (UNO)
8) ALL EXTERIOR LUMBER TO BE #2 SYP PT
9) ALL CONCRETE, fc = 3000 PSI MIN.
10) PRESUMPTIVE BEARING CAPACITY = 2000 PSF
11) 1/2"Ø 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.
12) PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
13) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
14) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NCRC.
15) MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
17) METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.



FOUNDATION PLAN

1/4" = 1'-0" STEM WALL

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NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER ALAN W. LEWIS 04-20-2023

TYNDALL ENGINEERING & DESIGN, P.A.
T 919 773-1200 ▪ F 919 773-9658
250 Shipwash Drive ▪ Garner ▪ North Carolina ▪ 27529
www.tyndallengineering.com

Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

BASEMENT HEADER STEMWALL OPT.

Project #: DRB2301-0126Z

Date: 4/20/2023

Engineered By: EJM

DWG. Checked By: AWL

Scale: SEE PLAN

REVISIONS

No.	Date:	Remarks
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Sheet Number

S1B

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FILENAME: Z:\RALEIGH OFFICE\DRB\DRB_2023\DRB2301-0126Z_PLEASANT_BUILDERS\DRB2301-0126Z_PLEASANT_BUILDERS\CAD_FILES\DRB2301-0126Z_E.DWG SAVED BY: ELISE MATHON LAST PLOT DATE:4/20/2023 2:06 PM

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 A, B & C			

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.
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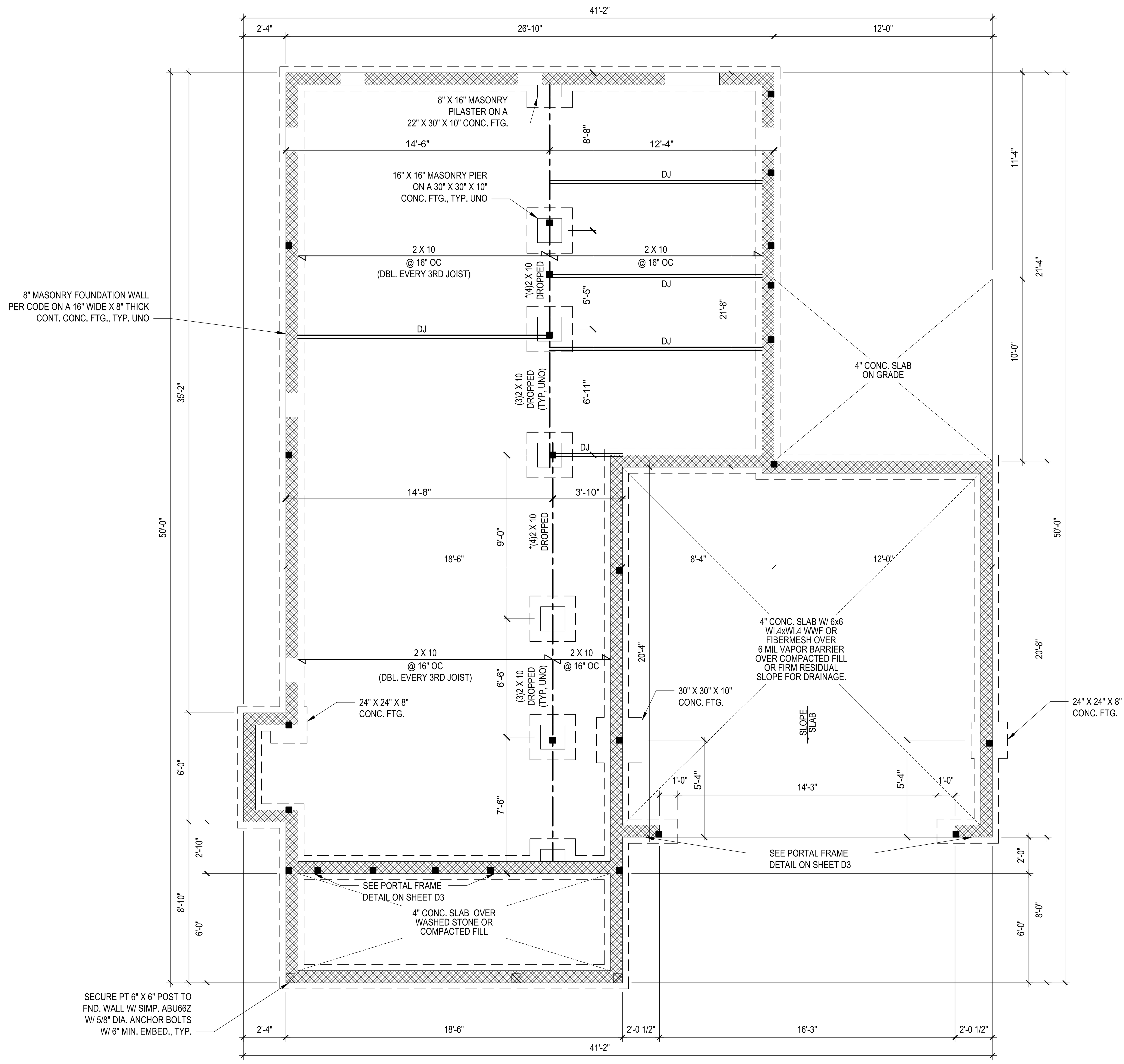
3) ALL LUMBER SHALL BE SYP #2 (UNO)
ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI
(I.E. iLEVEL MICROLAM)
ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
4) ALL LOAD BEARING EXTERIOR WINDOW HEADERS ARE TO BE (2) 2x10 w/ (1) 2x4 JACK STUD (U.N.O.) AND KING STUDS PER TABLE R602.7.5, AND TOGETHER w/ (2) 10d NAILS @ 8" O.C., PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 6'-8", MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-6". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
5) 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)
6) REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10'-0" IN HEIGHT.
7) ALL STRUCTURAL STEEL SHALL BE ASTM A992 GRADE 50
Fy = 50 KSI MIN. (UNO)
8) ALL EXTERIOR LUMBER TO BE #2 SYP PT
9) ALL CONCRETE, fc = 3000 PSI MIN.
10) PRESUMPTIVE BEARING CAPACITY = 2000 PSF
11) 1/2"Ø 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.
12) PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
13) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
14) PROVIDE CONTINUOUS SHEATHING PER SECTION 602.10.3 OF THE 2018 NCRC.
15) MAXIMUM MASONRY PIER HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.
16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
17) 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" CRAWL SPACE

920 SQ. FT. OF CRAWL SPACE / 150 = 6.13 SQ. FT. OF REQ'D VENTILATION WITHOUT CROSS VENTILATION
6.13 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 7 VENTS REQ'D (BASED ON 8" X 16" VENTS)[1]

-OR-

920 SQ. FT. OF CRAWL SPACE / 1500 = 0.63 SQ. FT. OF REQ'D VENTILATION WITH CROSS VENTILATION
0.63 SQ. FT. OF VENTILATION REQ'D / 0.88 SQ.FT. PER VENT = 1 VENTS REQ'D (BASED ON 8" X 16" VENTS)[2]

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 1/1500 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 OPERABLE LOUVERS SHALL NOT BE PROHIBITED. 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 UPHILL 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.

WALL VENTED CRAWL SPACES REQUIRE FULL COVERAGE GROUND VAPOR RETARDERS.

* CRAWL SPACE VENTILATION CALCULATION

NO SCALE

FILENAME: Z:\RALEIGH OFFICE\DRB\DRB_2023\DRB2301-0126Z_PLEASANT_BUILDERS\DRB2301-0126Z_PLEASANT_BUILDERS\CAD_FILES\DRB2301-0126Z_E.DWG SAVED BY: ELISE MATHON LAST PLOT DATE:4/20/2023 2:06 PM

*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
*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.

NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER ALAN W. LEWIS

TYNDALL ENGINEERING & DESIGN P.A.

Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

FOUNDATION PLAN CRAWLSPACE OPT.

Project #:	DRB2301-0126Z
Date:	4/20/2023
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DWG. Checked By:	AWL
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REVISIONS

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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
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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, B & C			

STRUCTURAL NOTES:

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3) ALL LUMBER SHALL BE SYP #2 (UNO)
ALL LVL LUMBER TO BE 1.75" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2600 PSI, E = 1.9M PSI
(I.E. iLEVEL MICROLAM)
ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
4) 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) 10d NAILS @ 8" O.C., PROVIDED THAT THE TOP OF THE WINDOW HEIGHT IS 6'-8", MINIMUM BOTTOM OF THE WINDOW HEIGHT IS 1'-6". OTHERWISE REFER TO TABLES R602.7(1) AND R602.7(2).
5) 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)
6) REFER TO 2018 NC BUILDING CODE SECTION R602 FOR CONSTRUCTION OF ALL WALLS OVER 10'-0" IN HEIGHT.
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Fy = 50 KSI MIN. (UNO)
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10) PRESUMPTIVE BEARING CAPACITY = 2000 PSF
11) 1/2"Ø 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.
12) PSL COLUMNS DESIGNED WITH MAX. HEIGHT OF 9'-0" (UNO)
13) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)
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16) UPLIFT LOADS GREATER THAN 500# SHALL BE CONTINUOUSLY ANCHORED TO THE FOUNDATION.
17) METAL HANGERS SHALL BE SIMPSON OR APPROVED EQUAL.

STRUCTURAL SHEATHING NOTES

1) DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS.
2) WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2018 NCRC.
3) 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.

1 REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCRC.

4) 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)

2 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 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

5) EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.3 (UNO)
6) 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.
7) 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

4 SHEATH INTERIOR & EXTERIOR

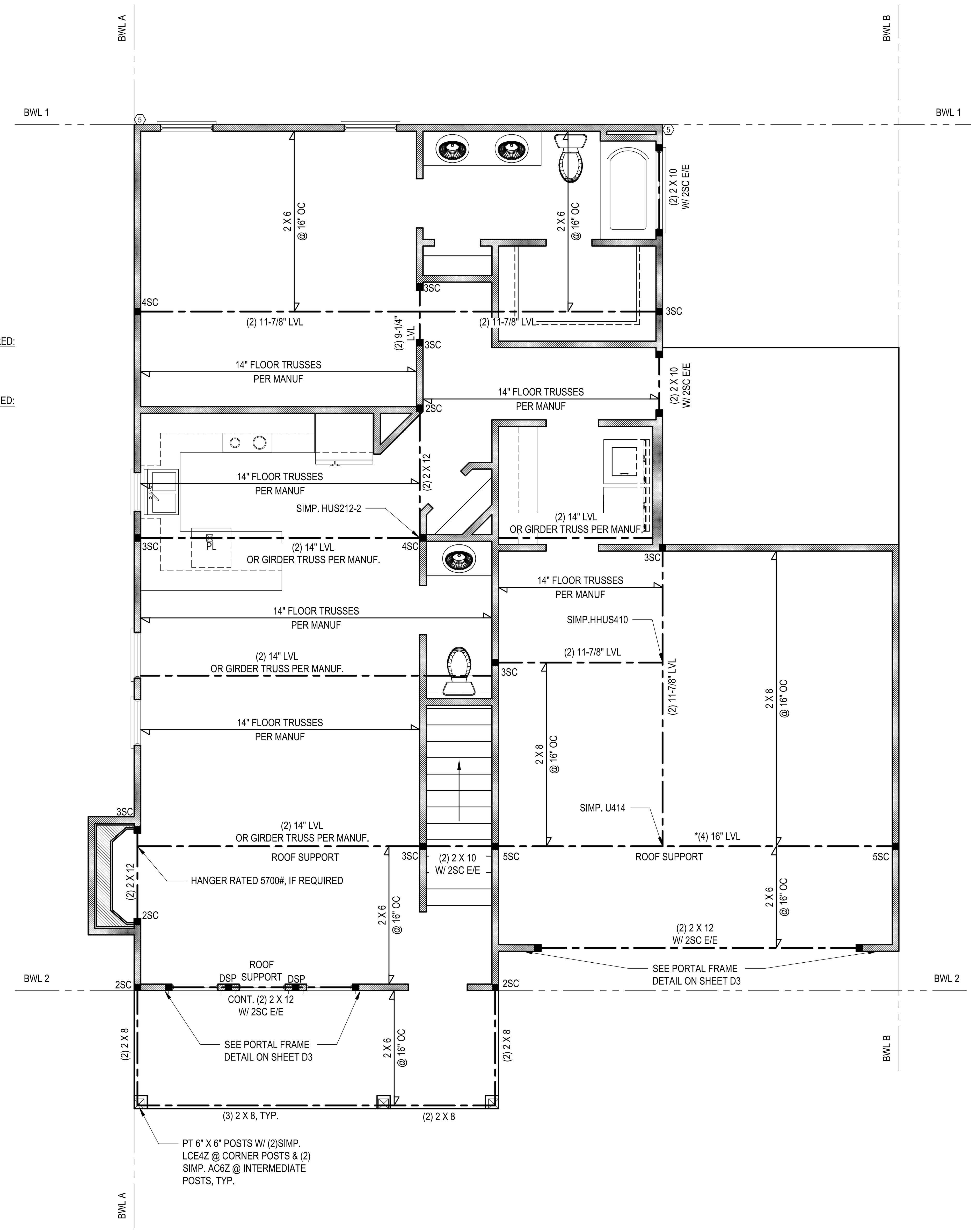
8) FOR CS-WSP METHOD, A MINIMUM 24" BRACED WALL PANEL CORNER RETURN SHALL BE PROVIDED AT BOTH ENDS OF A BRACED WALL LINE IN ACCORDANCE WITH FIGURE R602.10.3(4). IN LIEU OF A CORNER RETURN, EITHER A MIN. 48" BRACED WALL PANEL SHALL BE PROVIDED AT THE CORNER OR A HOLD-DOWN DEVICE WITH A MINIMUM UPLIFT 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.

5 MINIMUM 800# HOLD-DOWN DEVICE

BRACING PANEL LENGTHS REQUIRED:
BWL A = 12.0 FT
BWL B = 12.0 FT
BWL 1 = 13.2 FT
BWL 2 = 13.2 FT

BRACING PANEL LENGTHS PROVIDED:
BWL A = 36.2 FT CS-WSP
BWL B = 34.0 FT CS-WSP
BWL 1 = 20.2 FT CS-WSP
BWL 2 = 15.6 FT CS-WSP

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



FIRST FLOOR PLAN

1/4" = 1'-0" CEILING HGT. = 9'-0"

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250 Shipwash Drive ▪ Garner ▪ North Carolina ▪ 27529
www.tyndallengineering.com

Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

1ST FLOOR PLAN
2ND FLOOR HEADER

Project #:	DRB2301-0126Z
Date:	4/20/2023
Engineered By:	EJM
DWG. Checked By:	AWL
Scale:	SEE PLAN

REVISIONS

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Sheet Number

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DESIGN LOADS

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION LL	DEFLECTION 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
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WIND LOAD	BASED ON 120 MPH (EXPOSURE B)			
SEISMIC	BASED ON SEISMIC ZONES A, B & C			

STRUCTURAL NOTES:

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(I.E. iLEVEL MICROLAM)
ALL LSL LUMBER IS TO BE 1.55E (Fb = 2325 PSI)
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⟨1⟩ REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCRC.

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⟨3⟩ 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

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⟨4⟩ SHEATH INTERIOR & EXTERIOR

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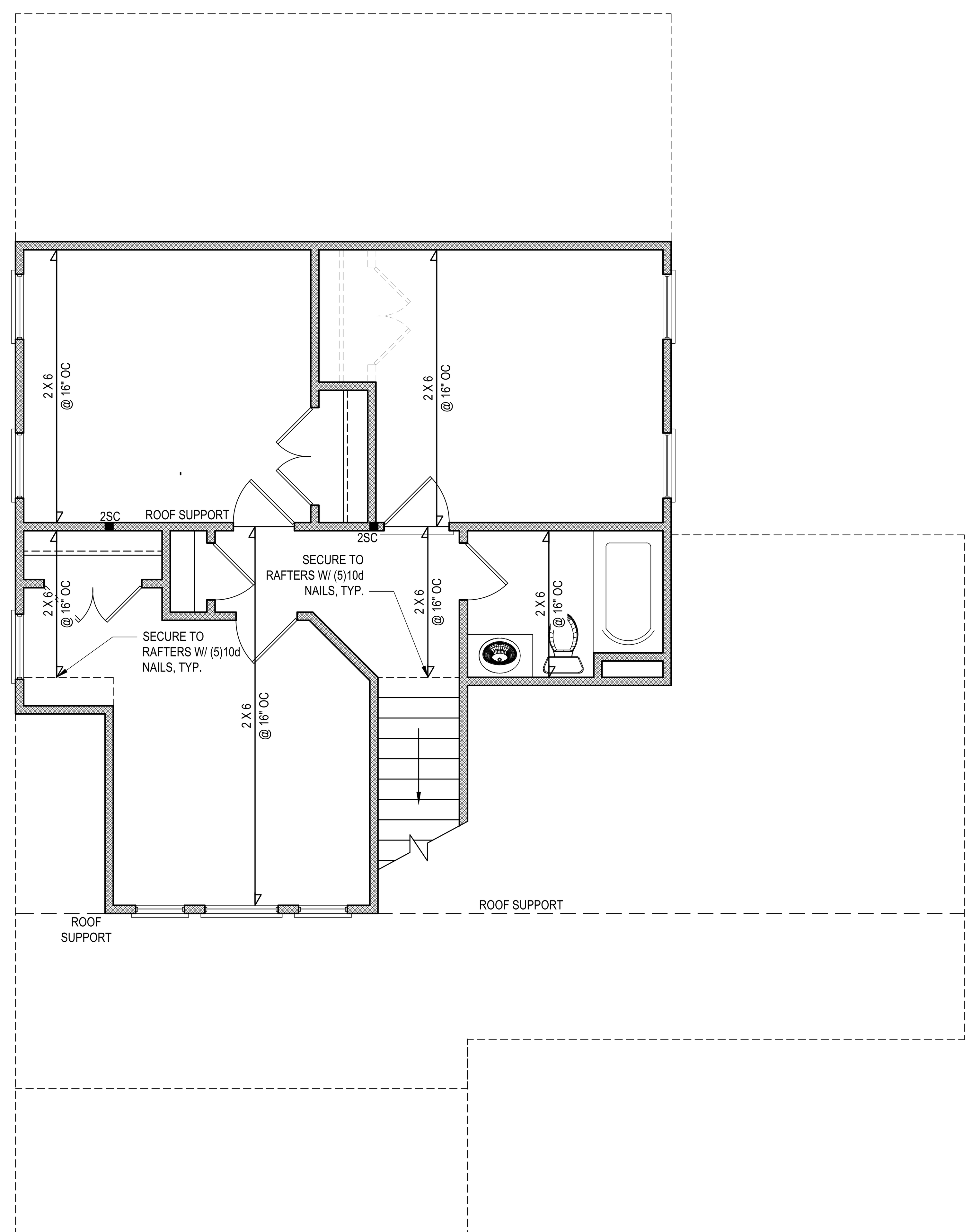
⟨5⟩ MINIMUM 800# HOLD-DOWN DEVICE



SECOND FLOOR PLAN

1/4" = 1'-0"   CEILING HGT. = 8'-0"

NORTH CAROLINA PROFESSIONAL SEAL 036819 04-20-2023 ENGINEER ALAN W. LEWIS

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Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

2ND FLOOR HEADER
2ND FLR. CLG. FRAMING

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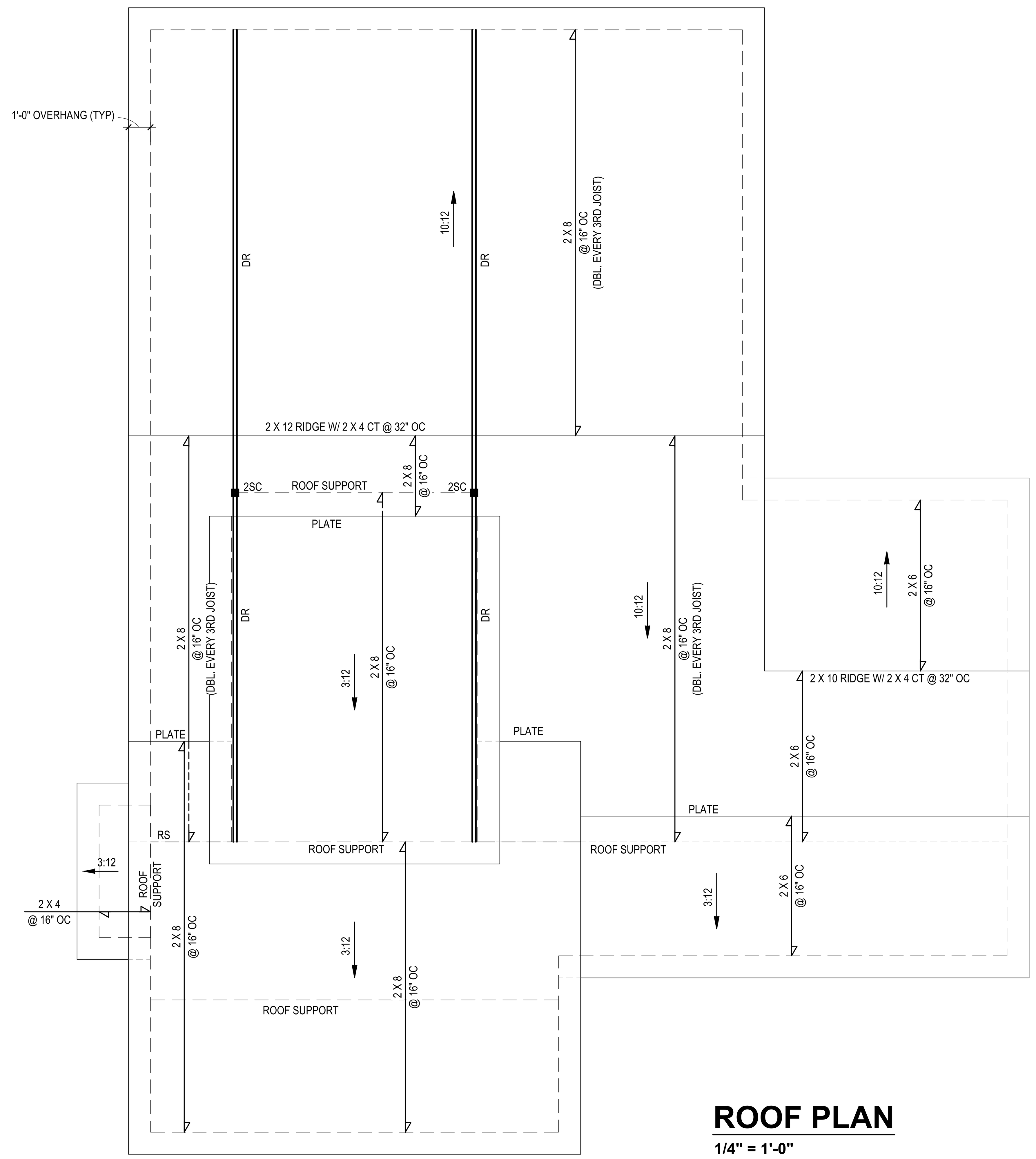
S3



ROOF PLAN

1/4" = 1'-0"

1530 SQ. FT. OF ATTIC / 300 = 6 SQ. FT. INLETS/OUTLETS REQUIRED

1) CALCULATION BASED ON VENTILATORS USED AT LEAST 3'-0" ABOVE THE CORNICE VENTS WITH THE BALANCE OF VENTILATION PROVIDED BY EAVE VENTS.

2) CATHEDRAL CEILINGS SHALL HAVE A 1" MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE ROOF DECK AND THE INSULATION.

* ATTIC VENTILATION CALCULATION

NO SCALE

*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
*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.
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NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER ALAN W. LEWIS 04-20-2023

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Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

ROOF PLAN

Project #:	DRB2301-0126Z
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STRUCTURAL NOTES

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2) DESIGN LOADS:

	LIVE LOAD (PSF)	DEAD LOAD (PSF)	DEFLECTION	
			LL	TL
ALL FLOORS	40	10	L/360	L/240
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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 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.O.)

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 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, 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 Fb = 2600 PSI, E = 1.9M PSI (U.N.O.)
ALL LSL LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2325 PSI, E = 1.6M PSI (U.N.O.)
ALL PSL LUMBER TO BE 3.5" WIDE NOMINAL EACH SINGLE MEMBER AND Fb = 2400 PSI, E = 1.8M PSI (U.N.O.)

7) 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.

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"Ø 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.

10) PROVIDE ANCHOR BOLT PLACEMENT PER SECTION 403.1.6: 1/2"Ø 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 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

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 NCRC.

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.O.)

19) PROVIDE A MINIMUM OF 500# UPLIFT & LATERAL CONNECTION AT TOP AND BOTTOM OF PORCH COLUMNS. (U.N.O.)

20) MAXIMUM MASONRY PEIR HEIGHT SHALL NOT EXCEED FOUR TIMES ITS LEAST HORIZONTAL DIMENSION.

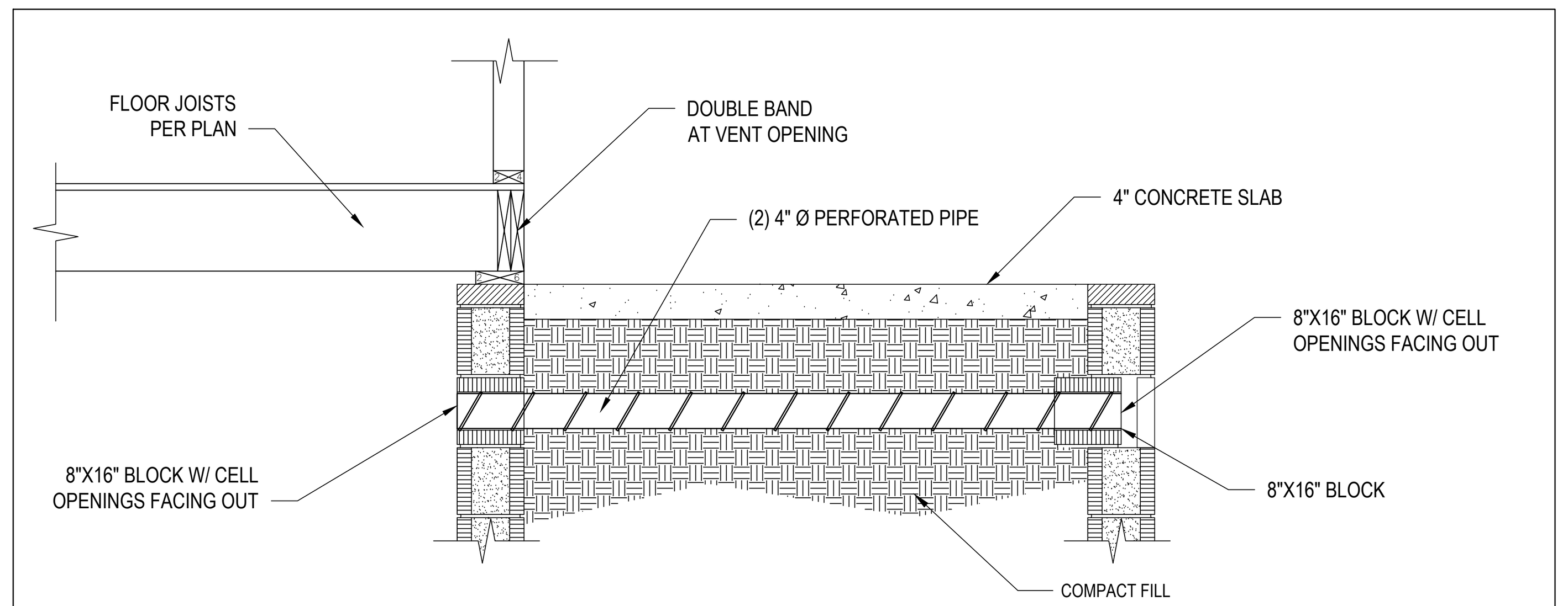
21) IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND SQUARE FOOTAGE PRIOR TO CONSTRUCTION. TYNDALL ENGINEERING & DESIGN, PA IS NOT RESPONSIBLE FOR DIMENSION OR SQUARE FOOTAGE ERRORS ONCE CONSTRUCTION BEGINS.

CLIMATE ZONES	FENESTRATION U-FACTOR [b,j]	SKYLIGHT U-FACTOR [b]	GLAZED FENESTRATION SHGC [b,k]	CEILING R-VALUE [m]	WOOD FRAMED WALL R-VALUE	MASS WALL R-VALUE [i]	FLOOR R-VALUE	BASEMENT WALL R-VALUE [c,o]	SLAB R-VALUE AND DEPTH [d]	CRAWL SPACE WALL R-VALUE [c]
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 [f]	0	5/13
4	0.35	0.55	0.30	38 or 30 cont [j]	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 [j]	[n] 19, or 13 + 5 [h] or 15 + 3 [h]	13/17 or 13/12.5 cont	30 [g]	10/15	10	10/19

* TABLE N1102.1 CLIMATE ZONES 3-5

NO SCALE

a. 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.
b. THE FENESTRATION U-FACTOR COLUMN EXCLUDED SKYLIGHTS. THE SOLAR HEAT GAIN COEFFICIENT (SHGC) COLUMN APPLIES TO ALL GLAZED FENESTRATION.
c. "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.
d. FOR MONOLITHIC SLABS, INSULATION SHALL BE APPLIED FROM THE INSPECTION GAP DOWNWARD TO THE BOTTOM OF THE FOOTING OR A MAXIMUM OF 24" BELOW GRADE WHICHEVER 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.
e. DELETED
f. BASEMENT WALL INSULATION IS NOT REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.7 AND TABLE N1101.7.
g. OR INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY. R-19 MINIMUM.
h. 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+3" MEANS R-15 CAVITY INSULATION. PLUS R-3 INSULATED SHEATHING. IF STRUCTURAL SHEATHING COVERS 25% 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.
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 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.
k. 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.
l. 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-38 INSULATION IS REQUIRED WHERE ADEQUATE CLEARANCE EXISTS OR INSULATION MUST EXTEND TO EITHER THE INSULATION BAFFLE OR WITHIN 1 INCH OF THE ATTIC ROOF DECK.
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. R -19 FIBERGLASS BATTS COMPRESSED AND INSTALLED IN A NOMINAL 2 × 6 FRAMING CAVITY IS DEEMED TO COMPLY. FIBERGLASS BATTS RATED R-19 OR HIGHER COMPRESSED AND INSTALLED IN A 2X4 WALL IS NOT DEEMED 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.



* FOUNDATION VENT DETAIL AT COMPACTED FILL

NO SCALE

DEFINITIONS FOR COMMON ABBREVIATIONS

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

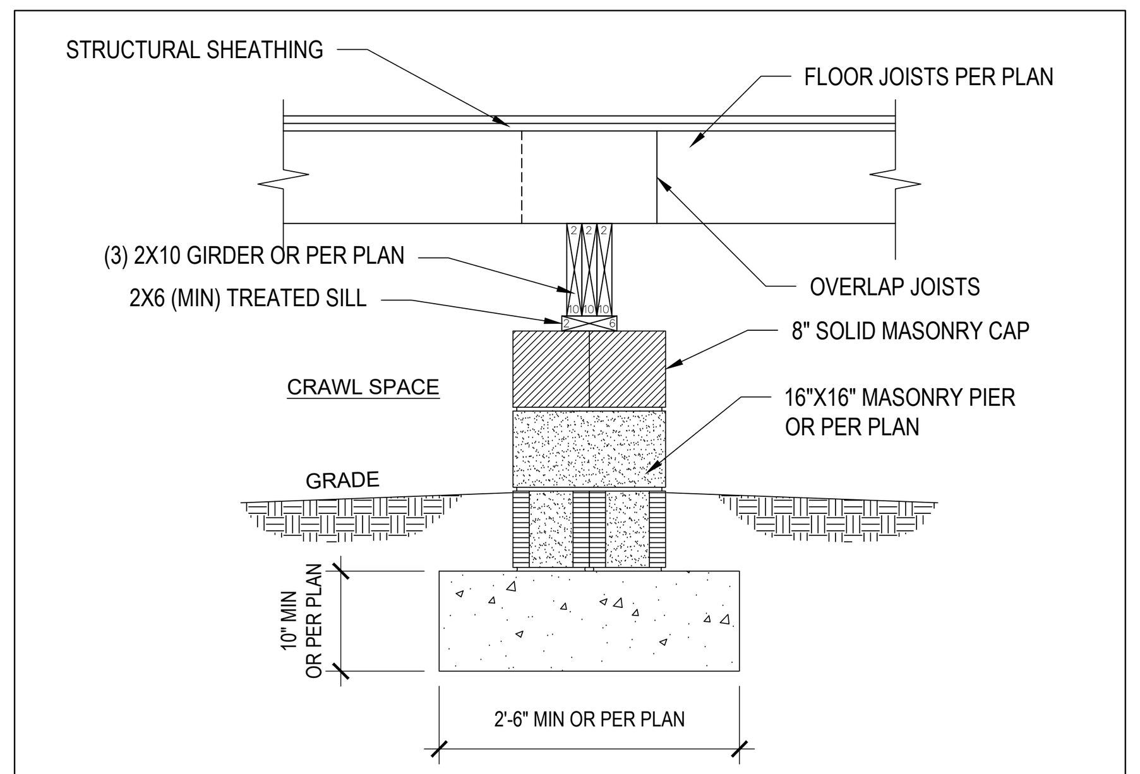
* THIS TABLE IS BASED ON NO. 2 TREATED SOUTHERN PINE POSTS. MAXIMUM TRIBUTARY AREA IS BASED ON 128 TOTAL SQUARE FEET WHICH MAY BE LOCATED AT DIFFERENT LEVELS.
** FROM TOP OF FOOTING TO BOTTOM OF GIRDER
*** DECKS WITH POST HEIGHTS OVER 20'-0" SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER OR 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"Ø 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:

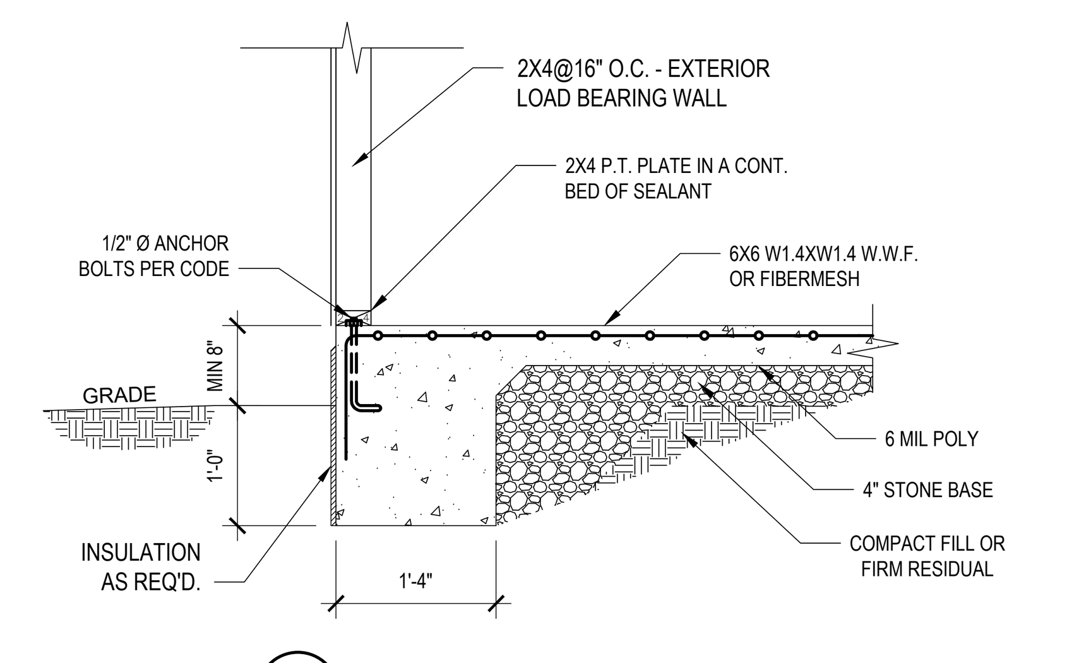
POST SIZE	MAX. TRIBUTARY AREA	MAX. POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4 x 4	48 SQ. FT.	4'-0"	2'-6"	1'-0"
6 x 6	120 SQ. FT.	6'-0"	3'-6"	1'-8"

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 6s SHALL BE ATTACHED TO THE POSTS WITH ONE 5/8"Ø HOT DIPPED GALVANIZED BOLT AT EACH END OF EACH BRACING MEMBER.
E. FOR EMBEDMENT OF PILES IN COASTAL REGIONS, SEE CHAPTER 46.



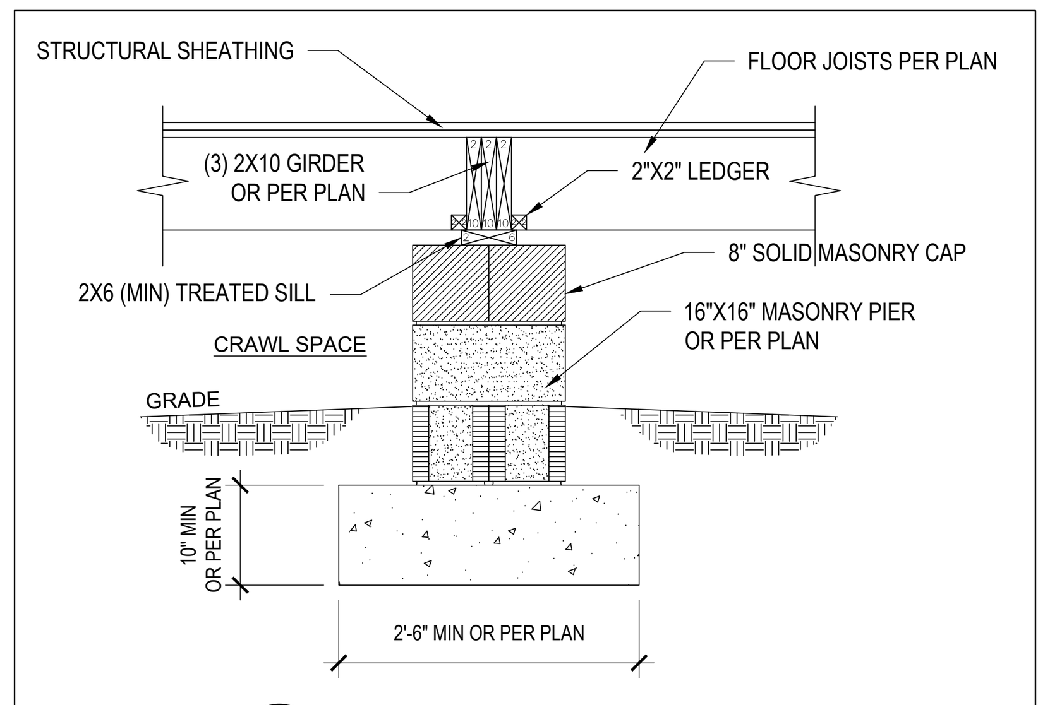
* DROPPED GIRDER DETAIL

NO SCALE



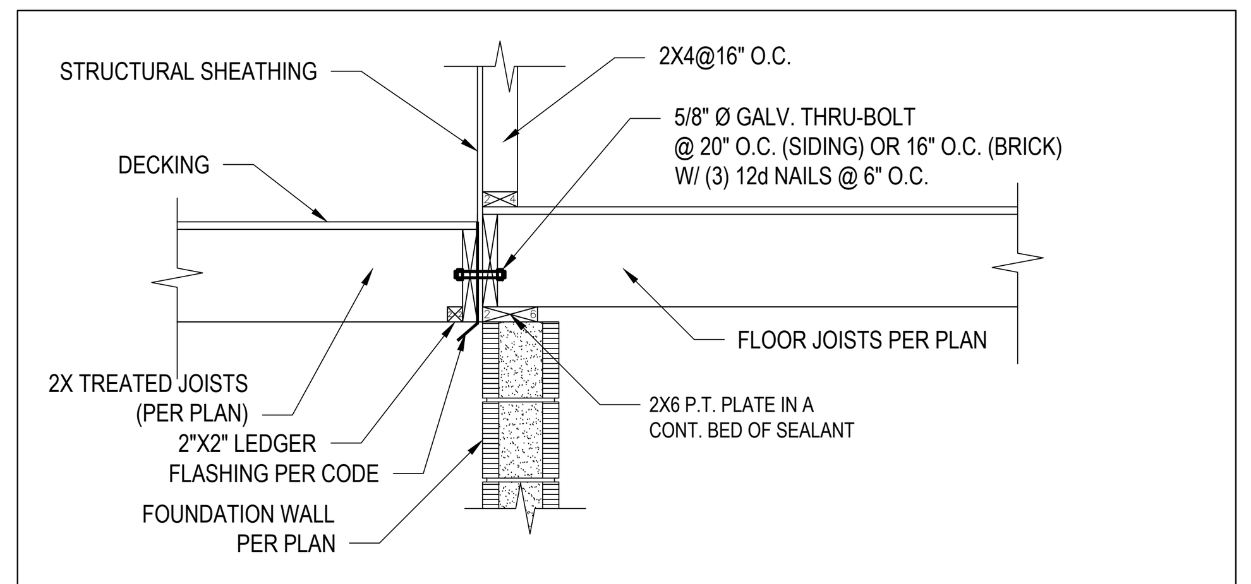
* TURN DOWN FOOTING DETAIL

NO SCALE



* FLUSH GIRDER DETAIL

NO SCALE



* DECK ATTACHMENT DETAIL

NO SCALE

NORTH CAROLINA PROFESSIONAL SEAL 036819 ENGINEER ALAN W. LEWIS 04-20-2023

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Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

STANDARD DETAILS

Project #:	DRB2301-0126Z
Date:	4/20/2023
Engineered By:	EJM
DWG. Checked By:	AWL
Scale:	SEE PLAN

REVISIONS

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3		
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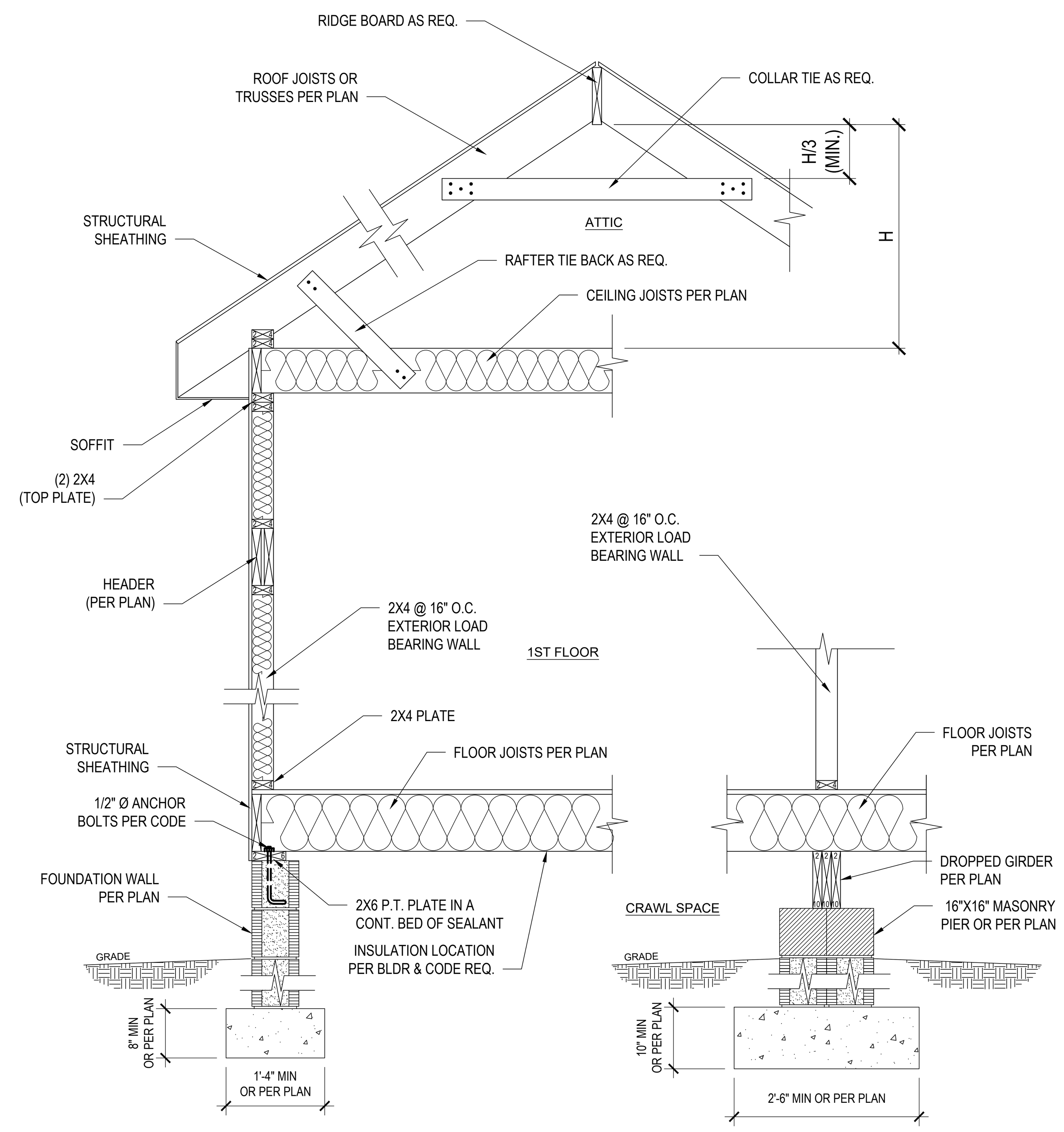
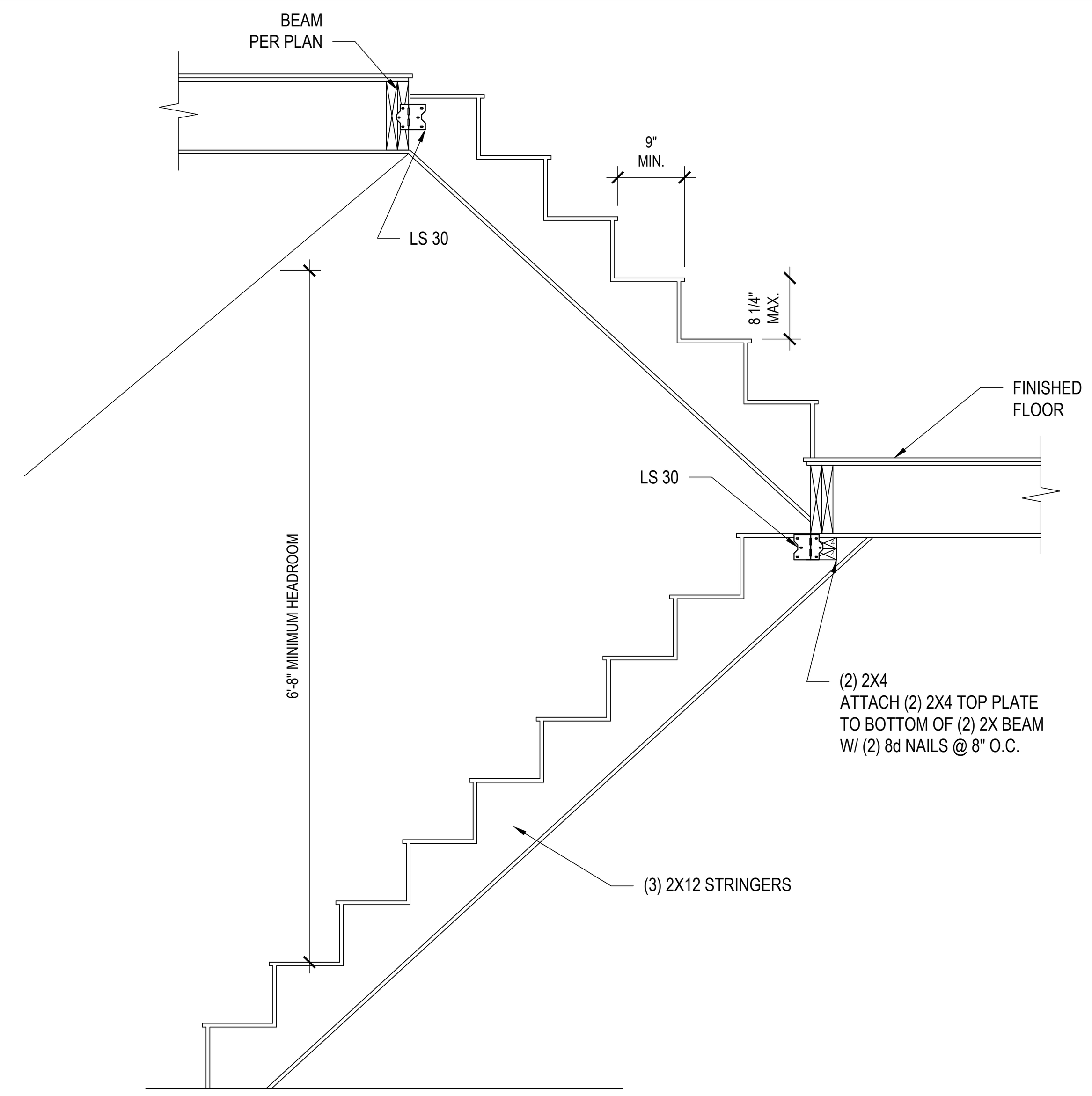
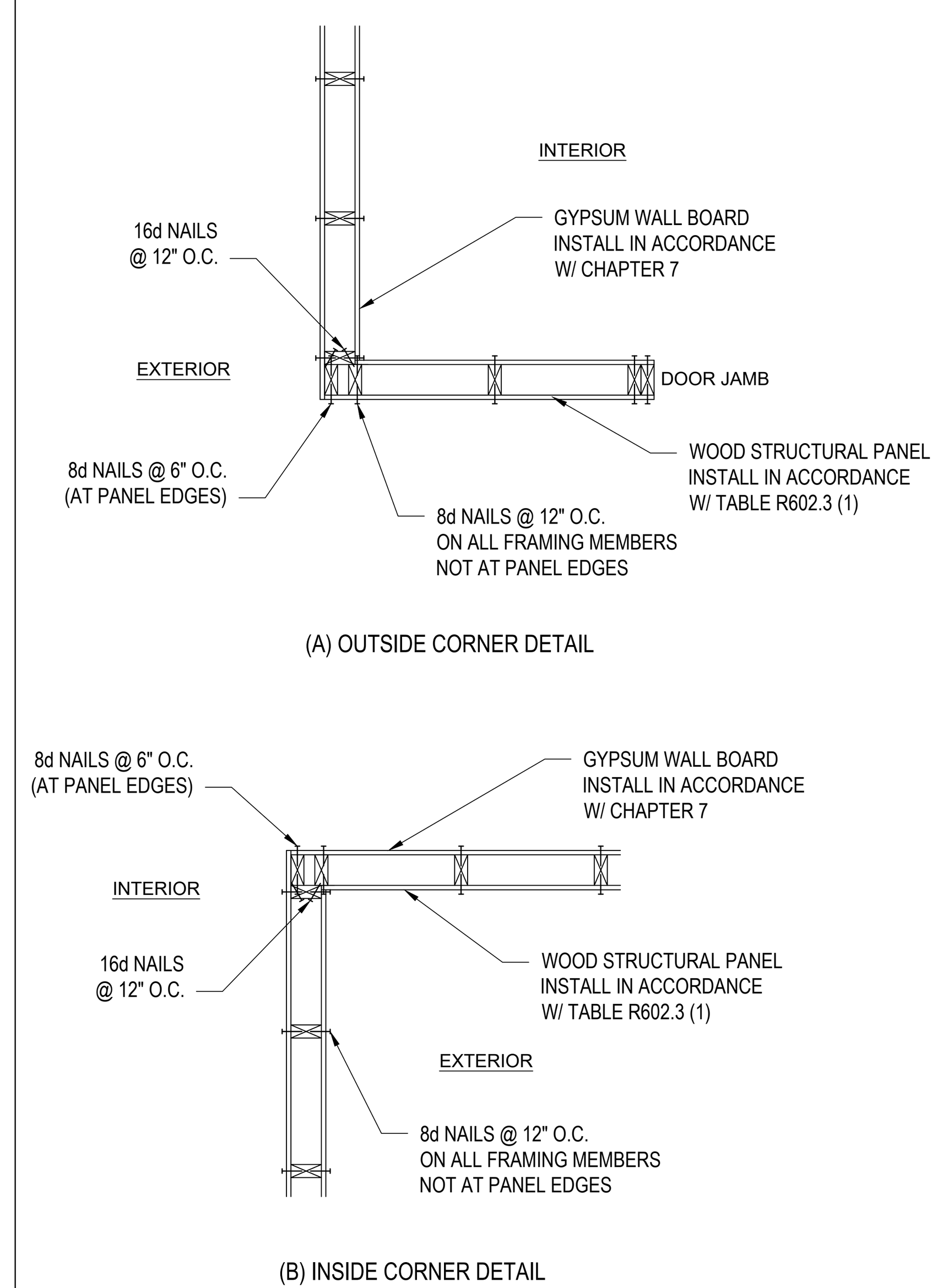


ONE-STORY ON CRAWL
NO SCALE — TYPICAL WALL DETAIL

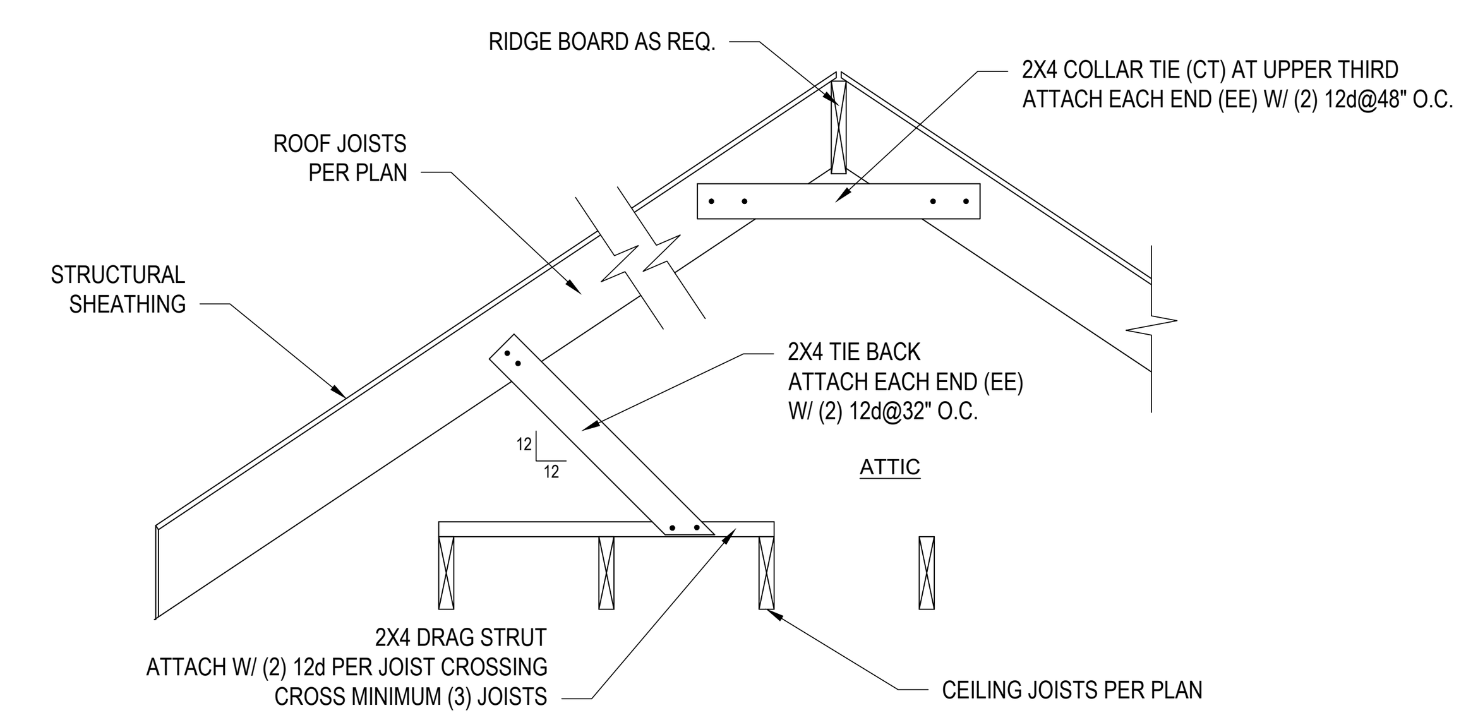


HANDRAILS SHALL BE PROVIDED ON AT LEAST ONE SIDE OF EACH CONTINUOUS RUN OF TREADS OR FLIGHT WITH FOUR OR MORE RISERS. HANDRAIL HEIGHT MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL NOT BE LESS THAN 34 INCHES AND NOT MORE THAN 38 INCHES.

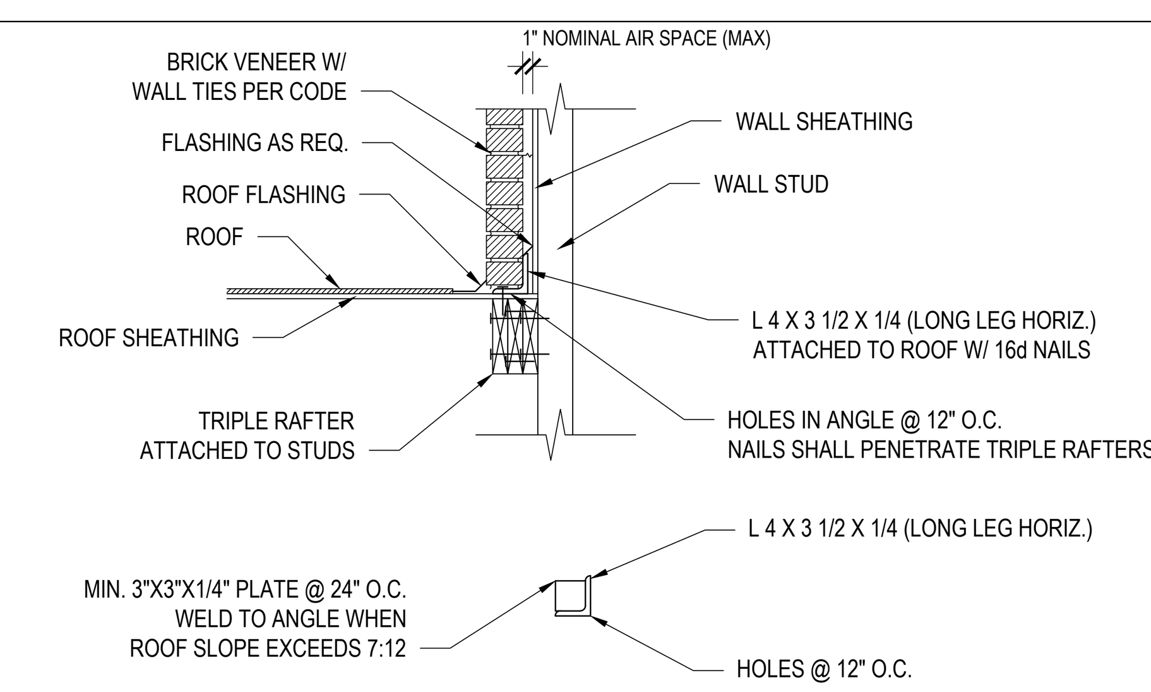
TYPICAL STAIRWAY DETAIL
NO SCALE — REFER TO SECTION R312 OF THE 2018 NCRC



WALL BRACING DETAIL 602.10.3(4)b
NO SCALE



RAFTER TIE BACK DETAIL
NO SCALE — CJ PERPENDICULAR TO RAFTERS

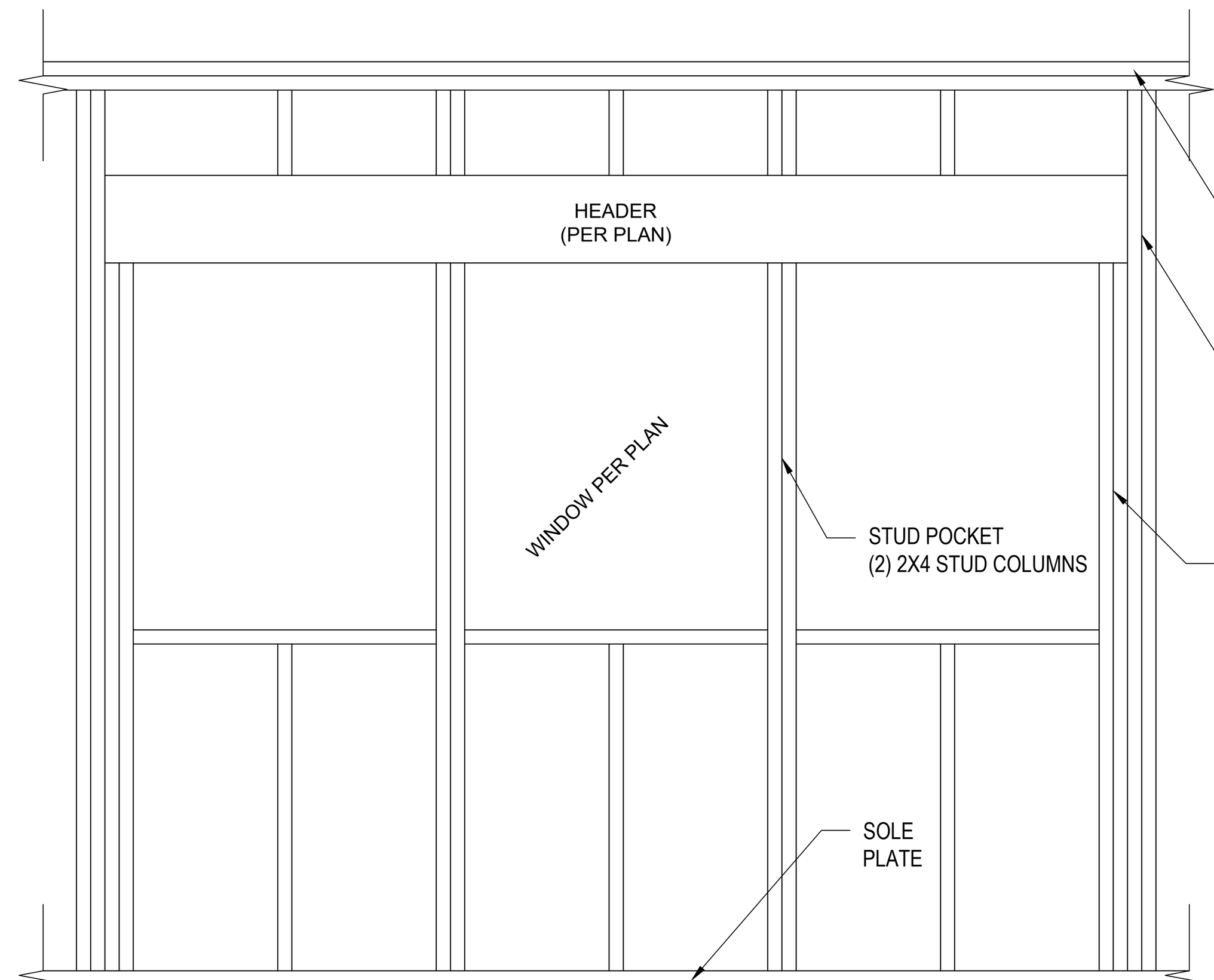


ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER

SIZE OF ANGLE (1,3)	NO STORY ABOVE (5)	1 STORY ABOVE (5)	2 STORIES ABOVE (5)	# OF ½" (OR EQUIV.) REINFORCING BARS IN REINFORCED LINTEL (2,4,5)
L 3 x 3 x ¼	6'-0"	4'-6"	3'-0"	1
L 4 x 3 x ¼	8'-0"	6'-0"	4'-6"	1
L 5 x 3½ x 5/16	10'-0"	8'-0"	6'-0"	2
L 6 x 3½ x 5/16	14'-0"	9'-6"	7'-0"	2
2L 5 x 3½ x 5/16	20'-0"	12'-0"	9'-6"	4

1. LONG LEG OF THE ANGLE SHALL BE PLACED IN A VERTICAL POSITION.
2. 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
3. STEEL MEMBERS INDICATED ARE ADEQUATE TYPICAL EXAMPLES; OTHER STEEL MEMBERS MEETING STRUCTURAL DESIGN REQUIREMENTS SHALL BE PERMITTED TO BE USED.
4. EITHER STEEL ANGLE OR REINFORCED LINTEL SHALL SPAN OPENING.
5. SPANS OVER 4'-0" SHALL BE SHORED UP UNTIL CURED.

MASONRY VENEER SUPPORT FIG 703.8.3.1
NO SCALE



TYPICAL WINDOW STUD POCKET DETAIL
NO SCALE

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*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
*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.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 036819 ALAN W. LEWIS

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Client: PLEASANT BUILDERS OF NC
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STANDARD DETAILS

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REVISIONS

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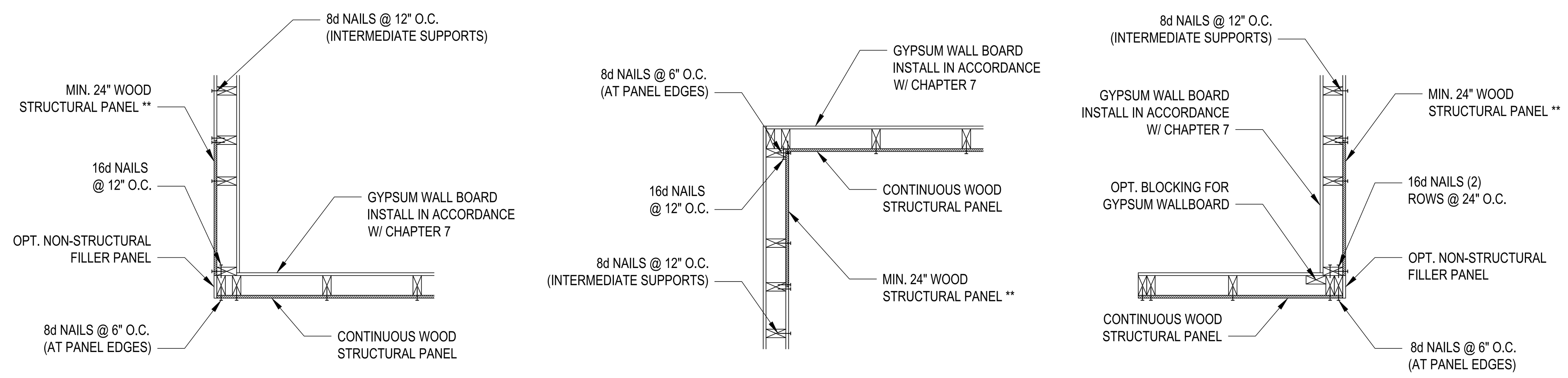


a) OUTSIDE CORNER DETAIL

b) INSIDE CORNER DETAIL

c) GARAGE DOOR CORNER

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

B1: TYPICAL EXTERIOR CORNER FRAMING FOR CONTINUOUS SHEATHING

NO SCALE

STRUCTURAL SHEATHING NOTES

1. DESIGNED FOR SEISMIC ZONE A-C AND WIND SPEEDS OF 120 MPH OR LESS.
2. WALLS SHALL BE BRACED IN ACCORDANCE WITH SECTION R602.10 OF THE 2018 NCRC
3. 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.

⟨1⟩ REFERENCE FIGURE R602.10.4.3 OF THE 2018 NCRC.

4. 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)

⟨2⟩ 1/2" GYPSUM BOARD (GB) MINIMUM LENGTH OF 8'-0" (ISOLATED PANELS) OR 4'-0" (CONTINUOUS SHEATHING)

⟨3⟩ 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

5. EXTERIOR BRACED WALL PANELS (BWP) SHALL BE CONSTRUCTED IN ACCORDANCE WITH CS-WSP METHOD AS PRESCRIBED IN SECTION R602.10.3 (UNO)
6. 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.
7. 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

⟨4⟩ SHEATH INTERIOR AND EXTERIOR

8. 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 MINIMUM 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

⟨5⟩ MINIMUM 800# HOLD-DOWN DEVICE

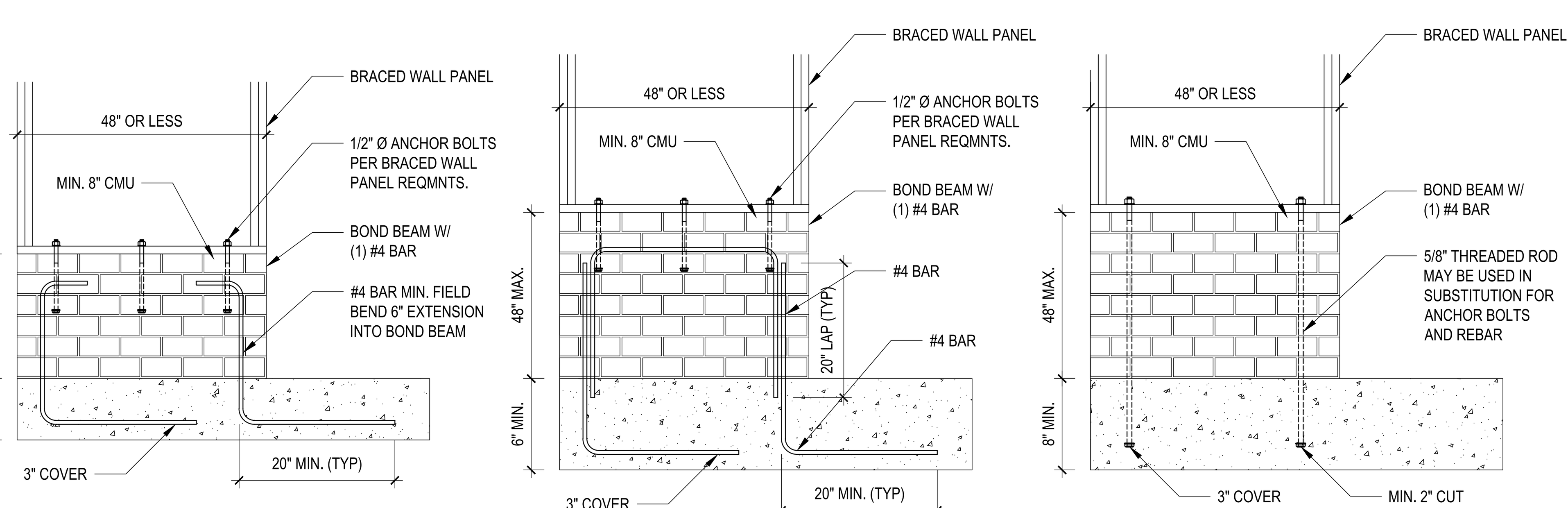
REQUIRED BRACED WALL PANEL CONNECTIONS

METHOD	MATERIAL	MIN. THICKNESS	REQUIRED CONNECTION @ PANEL EDGES	REQUIRED CONNECTION @ 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

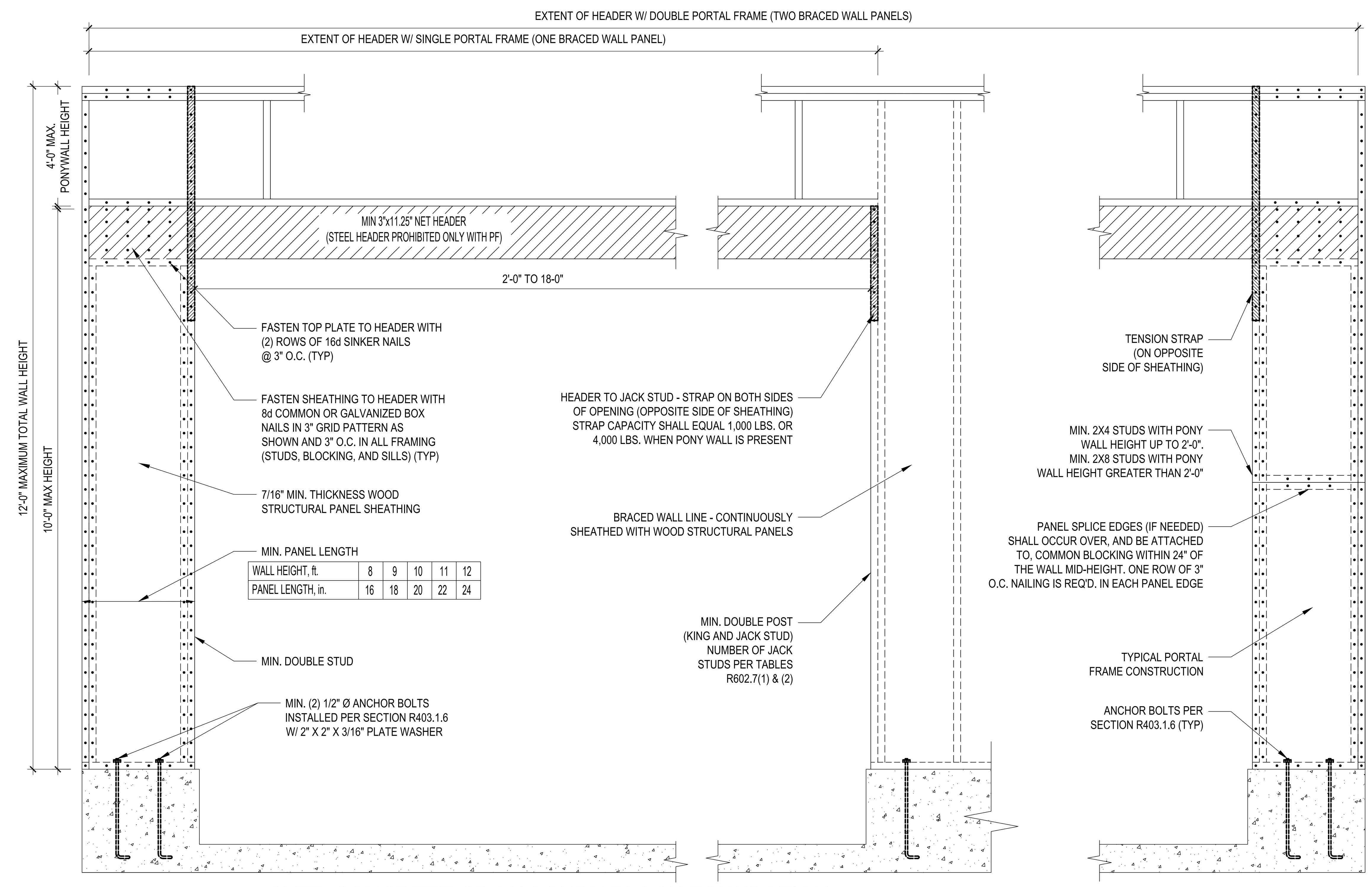
B3: BRACE WALL PANEL CONNECTIONS

NO SCALE

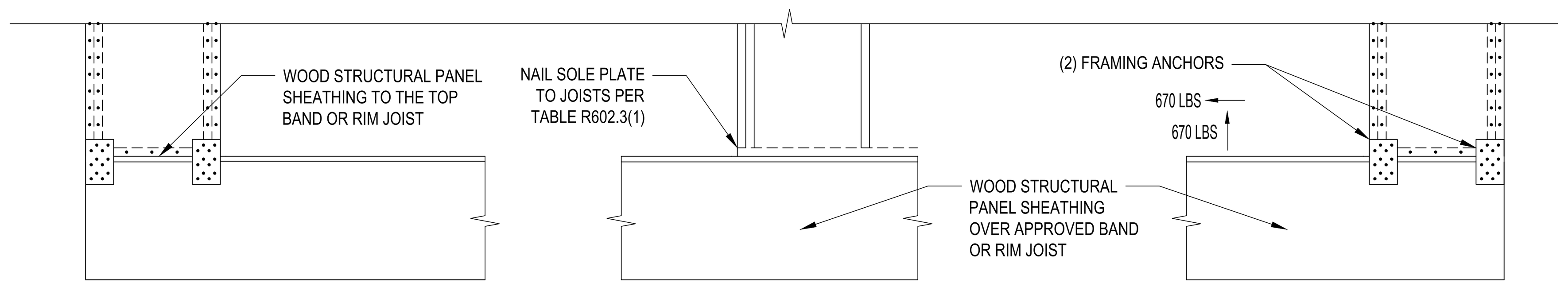


B4: MASONRY STEM WALL SUPPORTING BRACED WALL PANELS

FIGURE R602.10.4.3 OF THE 2018 NCRC
NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS

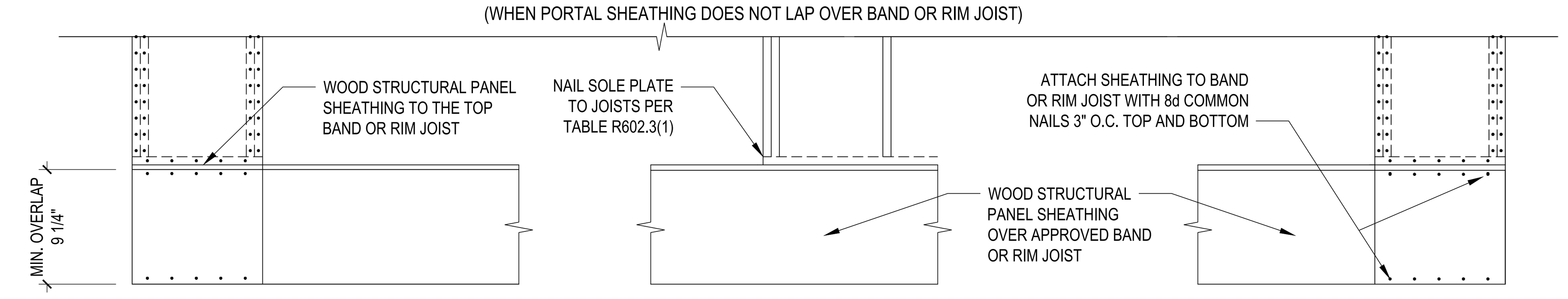


OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISED WOOD FLOOR - FRAMING ANCHOR OPTION

(WHEN PORTAL SHEATHING DOES NOT LAP OVER BAND OR RIM JOIST)



OVER RAISED WOOD FLOOR - OVERLAP OPTION

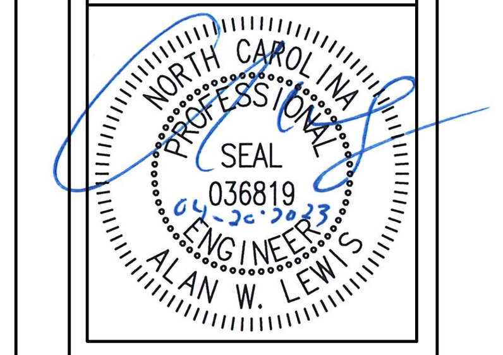
(WHEN PORTAL SHEATHING LAPS OVER BAND OR RIM JOIST)

B2: METHOD PF: PORTAL FRAME CONSTRUCTION

FIGURE R602.10.1

FILENAME: Z:\RALEIGH OFFICE\DRB\DRB_2023\DRB2301-0126Z_PLEASANT_BUILDERS\CAD_FILES\DRB2301-0126Z_E.DWG SAVED BY: ELISE MATHON LAST PLOT DATE: 4/20/2023 2:06 PM

*Engineers seal does not include construction means, methods, techniques, sequences, procedures or safety precaution.
*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.

Client: PLEASANT BUILDERS OF NC

Plan: THE MORGAN

SHEATHING DETAILS

Project #:	DRB2301-0126Z
Date:	4/20/2023
Engineered By:	EJM
DWG. Checked By:	AWL
Scale:	SEE PLAN

REVISIONS

No.	Date:	Remarks
1		
2		
3		
4		

Sheet Number

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