

- I. GENERAL
- 1) DESIGN BUILDING CODE: 2018 NORTH CAROLINA RESIDENTIAL CODE.
- 2) THE CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AND ELEVATIONS SHOWN ON THESE DRAWINGS WITH THE ARCHITECTURAL AND OTHER TRADES DRAWINGS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGNER OF ANY DISCREPANCIES OR OMISSIONS PRIOR TO CONSTRUCTION.
- 3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AND SHORING, AS REQUIRED, TO INSURE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF DURING CONSTRUCTION. THE DESIGN PROCEDURES SHALL CONFORM TO ALL GOVERNING CODES AND SAFETY REQUIREMENTS. TEMPORARY BRACING AND SHORING SHALL BE IN CONFORMANCE WITH OSHA REGULATIONS.
- 4) ALL VERTICAL ELEMENTS (WALLS, COLUMNS) ARE DESIGNED AS Laterally Braced by the Floor and Roof Systems. CONTRACTOR SHALL ENSURE THAT WALLS ARE ADEQUATELY BRACED DURING CONSTRUCTION.
- 5) THE PURPOSE OF THIS ENGINEERING PROJECT IS TO MAKE CHANGES TO THE ORIGINAL STRUCTURAL PLANS. THE ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL ITEMS SPECIFICALLY ADDRESSED IN THIS PROJECT, AND STRUCTURAL SPECIFICATIONS PROVIDED ARE DESIGNED TO MEET THE INTENT OF THE NC RESIDENTIAL CODE, 2018 EDITION..
- 6) ANY SUBCONTRACTOR WHICH AGREES TO CONSTRUCT THE PROJECT PURSUANT TO THESE PLANS FULLY ASSUMES THE RISK OF ALL ERRORS AND OMISSIONS WHICH SHOULD HAVE BEEN DETECTED BY A CAREFUL REVIEW BY A KNOWLEDGEABLE LICENSED CONTRACTOR. THAT WHICH FOR ANY REASON WERE NOT RESOLVED DURING THE BIDDING OR NEGOTIATION PROCESS. FURTHER, THE CONTRACTOR SHALL CAREFULLY REVIEW THESE PLANS AS THE WORK PROGRESSES IN ORDER TO IDENTIFY ANY SIGNIFICANT ERRORS AND OMISSIONS AND TO ASCERTAIN ALL NECESSARY INFORMATION BEFORE PROCEEDING WITH THE AFFECTED WORK, AND ASSUMES THE RISK OF ANY AND ALL LOSS, INCLUDING DELAY, WHICH MAY BE CAUSED OR CONTRIBUTED TO BY THE FAILURE TO ASCERTAIN CORRECT OR NECESSARY INFORMATION IN A TIMELY MANNER.
- 7) THE PLANS SHALL BE REVIEWED FOR DIMENSIONAL & EXISTING SITE CONFORMANCE WITH THE PLANS BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE ARCHITECT & ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.
- 8) THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD, AND ALL QUESTIONS AS TO DIMENSIONS AND FIELD CONDITIONS SHALL BE RESOLVED BEFORE THE AFFECTED WORK PROCEEDS. NO DIMENSIONS SHALL BE OBTAINED BY SCALING THESE PLANS.
- 9) CONTRACTOR SHALL HIRE A PROFESSIONAL ENGINEER TO INSPECT CONSTRUCTION OF PROPOSED FLOOR FRAMING, FOUNDATION, WALL BRACING PANELS AND OTHER PROPOSED STRUCTURAL ELEMENTS TO ENSURE THE RECOMMENDATIONS MADE ON THESE PLANS ARE STRICTLY FOLLOWED.
- 10) CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR DIMENSIONS AND CONDITIONS OF THE JOB.

II. SITE VERIFICATION WORK

- 1) BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 1'-0" BELOW EXTERIOR GRADE, UNLESS NOTED OTHERWISE (UNO).
- 2) VERIFY EXISTING UTILITIES PRIOR TO START OF ANY EXCAVATION WORKS. COORDINATE WITH CIVIL DRAWINGS FOR WORKS RELATED TO UTILITIES. DO NOT PLACE UTILITY LINES THROUGH OR BELOW ANY FOUNDATIONS WITHOUT THE APPROVAL OF THE DESIGNER OF RECORD.
- 3) ALL FOOTINGS SHALL PROJECT AT LEAST 1 FT INTO UNDISTURBED NATURAL SOIL OR COMPACTED STRUCTURAL FILL. ALL BEARING STRATA SHALL BE ADEQUATELY DRAINED BEFORE FOUNDATION CONCRETE IS POURED. NO EXCAVATION SHALL BE CLOSER THAN AT A SLOPE OF 1.5:1 (ONE AND HALF HORIZONTAL TO ONE VERTICAL). FOOTINGS SHALL NOT BE FOUNDED ON EXISTING FILL, LOOSE OR WET SOIL. STEP FOOTINGS WITH A RATIO OF 2 HORIZONTAL TO 1 VERTICAL.

III. CAST-IN-PLACE CONCRETE (AS APPLICABLE)

- 1) ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI-301, ACI-318 AND ACI-302.
- 2) REINFORCING STEEL
- i. DEFORMED BILLET STEEL: ASTM A615 - GRADE 60
- ii. WELDED WIRE FABRIC (WWF): ASTM A185
- 3) ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH THE "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES (ACI-315)". DETAILS OF REINFORCEMENT SHALL CONFORM TO ACI-318, ACI-315 AND CRSI STANDARDS.
- 4) REINFORCEMENT SPLICES SHALL BE LAP SPLICES WITH A MINIMUM LAP OF 48 BAR DIAMETERS UNLESS NOTED OTHERWISE.
- 5) CAST-IN-PLACE CONCRETE SHALL BE READY-MIX PER ASTM-C94. THE MIX SHALL BE PROPORTIONED WITH:
- i. PORTLAND CEMENT: ASTM C150
- ii. AGGREGATES (3/4" IN MAXIMUM SIZE): ASTM C33
- iii. NO CALCIUM CHLORIDE SHALL BE PERMITTED
- iv. AIR ENTRAINMENT: ASTM C260
- v. WATER REDUCING ADMIXTURE: ASTM C494
- vi. FLY ASH CLASS F (20% MAXIMUM BY WEIGHT): ASTM C618
- vii. WATER: CLEAN AND POTABLE
- 6) RESTRICT THE ADDITION OF WATER AT THE JOB SITE. DO NOT ADD WATER WITHOUT THE APPROVAL OF CONCRETE MIX DESIGNER AND DO NOT EXCEED SLUMP LIMITATIONS. USE COLD WATER FROM THE TRUCK TANK AND REMIX TO ACHIEVE CONSISTENCY. THE REPORTS SHALL INDICATE HOW MUCH WATER WAS ADDED AT THE JOB SITE. CONCRETE SHALL BE PLACED WITHIN 90 MINUTES OF BATCH TIME.
- 7) PROVIDE CONTINUOUS MOISTURE TO CONCRETE IN ACCORDANCE WITH ACI-301 AND ACI-308. APPLY A 30% SOLIDS LIQUID MEMBRANE FORMING CHEMICAL CURING COMPOUND IN ACCORDANCE WITH ASTM C-309. LIQUID MEMBRANE MUST NOT ADVERSELY AFFECT SURFACE FOR BONDING OF FUTURE FINISHES.
- 8) CONCRETE COMPRESSIVE STRENGTH AT 28 DAY CURE SHALL BE 2500 PSI
- 9) SLUMP: 4" PLUS OR MINUS 1" AT THE POINT OF DISCHARGE INTO THE FORMS.
- 10) WATER CEMENT RATIO SHALL NOT EXCEED 0.45 FOR ALL AIR ENTRAINED CONCRETE
- 11) ALL CONCRETE EXPOSED TO WEATHER SHALL HAVE A MINIMUM AIR ENTRAINMENT OF 6% +/- 1% PER ACI-318 CLAUSE 4.4.1.
- 12) PROVIDE CORNER BARS 3'-0" x 3'-0" AT ALL WALL AND FOOTING INTERSECTIONS TO MATCH CONTINUOUS REINFORCING. ALL LAPS SHALL BE A MINIMUM OF 30 BAR DIAMETER.
- 13) PROVIDE PROPERLY TIED SPACERS, CHAIRS, BOLSTERS, ETC, AS REQUIRED AND NECESSARY TO ASSEMBLE. PLACE AND SUPPORT ALL REINFORCING IN PLACE. USE WIRE BAR TYPE SUPPORTS COMPLYING WITH CRSI RECOMMENDATIONS. USE PLASTIC TIP LEGS ON ALL EXPOSED SURFACES.
- 14) SEE STRUCTURAL DRAWINGS FOR REQUIRED CONCRETE FINISHES.

IV. WOOD

- 1) ALL LUMBER SHALL CONFORM TO NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION WITH 2015 SUPPLEMENT.
- 2) LUMBER SHALL BE SOUND, SEASONED, AND FREE FROM WARP.
- 3) ALL STUDS SHALL BE INSTALLED IN ACCORDANCE WITH AF & PA (AMERICAN FOREST & PAPER ASSOCIATION) REQUIREMENTS. MEMBERS ARE NOT TO BE DRILLED IN EXCESS OF NDS OR LOCAL CODE REQUIREMENTS, WHICHEVER IS MORE STRINGENT. ALL POSTS AND STUDS SHALL STACK CONTINUOUSLY TO SOLID BEARING ON FOUNDATION WALLS OR BEAMS. PROVIDE SOLID BLOCKING AND/OR CRIPPLES AS REQUIRED BETWEEN FLOORS.
- 4) STUD BEARING WALLS AND EXTERIOR STUD WALLS SHALL BE CONTINUOUSLY BRIDGED WITH WOOD BLOCKING AT MID-SPAN VERTICAL SPACING BETWEEN FLOOR (AND ROOF) LEVELS. STUDS AND POSTS SHALL BE ONE-PIECE-CONTINUOUS BETWEEN FLOOR LEVELS AND BETWEEN FLOOR LEVEL AND ROOF DIAPHRAGMS. ALL DOUBLE STUDS SHALL BE NAILED TO EACH OTHER AT 8" MAXIMUM SPACING FULL- HEIGHT.
- 5) MINIMUM GRADES, FOR DIMENSIONED LUMBER, SHALL BE SPF #1/#2 GRADE AS DEFINED BY THE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION, NFPA. ALL WOOD MEMBERS SHALL BE MANUFACTURED TO COMPLY WITH PS20 OF "AMERICAN SOFTWOOD LUMBER STANDARDS".
- i. MOISTURE CONTENT SHALL BE 19% MAXIMUM.
- ii. LUMBER ON SITE SHALL BE PROTECTED FROM WEATHER AND STORED ABOVE GROUND WITH SUPPORTS. DRY-IN EACH BUILDING FRAME IMMEDIATELY ONCE FRAMING IS COMPLETE. AND COMMENCE BRICK INSTALLATION.
- 6) ALL MULTIPLE MEMBERS ARE TO BE FASTENED TOGETHER WITH 16d NAILS AT 12" ON CENTER (2) ROWS FOR BEAMS 9" - 12" DEEP. (3) ROWS FOR BEAMS 14" - 18" DEEP (STAGGERED).
- 7) PLYWOOD SHALL BE IDENTIFIED WITH THE DFPA GRADE-TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- 8) WALL SHEATHING: SEE WALL SHEATHING SCHEDULE.
- 9) WOOD POSTS SHALL BE FRAMED TO TRUE END BEARINGS, AND SHALL BE POSITIVELY ANCHORED TO FOUNDATION WITH

APPROVED POST BASES, SUPPORT POST SECURELY IN POSITION AND PROTECT BASE FROM DETERIORATION. POSTS OF TREATED WOOD MAY BE PLACED DIRECTLY ON CONCRETE OR MASONRY. USE TREATED WOOD FOR ALL FLOOR JOISTS AND BEAMS, WHICH ARE EXPOSED, OR WITHIN 18" OF THE GROUND, OR IN PERMANENT CONTACT WITH EARTH.

- 10) PROVIDE COMPATIBLE METAL FASTENERS AND METAL CONNECTORS FOR ACQ, CBA OR SBX TREATED WOOD MEMBERS. THE FOLLOWING FASTENER OR CONNECTOR PRODUCTS ARE RECOMMENDED:
- i. STAINLESS STEEL FASTENERS
- ii. Zmax (G185 HDG PER ASTM 653)
- iii. BATCH/POST HOT-DIPPED GALVANIZED (CONNECTORS PER ASTM A123 AND FASTENERS PER ASTM A153).
- CONTRACTOR SHALL COORDINATE WITH TREATED LUMBER MANUFACTURER AND FASTENER / CONNECTOR MANUFACTURER FOR COMPATIBILITY OF PRODUCT USED.
- 11) BEAR BEAMS AND GIRDERS AT LEAST 4" ON MASONRY OR CONCRETE. FLOOR JOISTS, CEILING JOISTS AND ROOF RAFTERS SHALL HAVE 4" MINIMUM BEARING ON WOOD OR WOOD PLATES ON METAL OR MASONRY.
- 12) PROVIDE 2" NOMINAL THICKNESS FULL DEPTH SOLID BLOCKING FOR JOISTS AND RAFTERS AT ENDS AND AT SUPPORTS. OMIT SOLID BLOCKING WHEN JOISTS ARE NAILED TO A CONTINUOUS HEADER. LAP JOISTS FRAMING FROM OPPOSITE SIDES OF A BEAM, GIRDER OR PARTITION AT LEAST 6". SECURE JOISTS FRAMED END TO END WITH METAL STRAPS. USE APPROVED FRAMING ANCHORS TO SUPPORT JOISTS FRAMING INTO THE SIDES OF WOOD OR STEEL BEAMS.
- 13) PROVIDE DOUBLED (OR EQUIVALENT CROSS- SECTION) TRIMMER AND HEADER JOISTS AROUND OPENINGS UNLESS NOTED OTHERWISE. SUPPORT HEADER JOISTS FROM FRAMING ANCHORS OR JOIST HANGERS UNLESS BEARING ON A BEAM, PARTITION OR A WALL.
- 14) JOISTS CARRYING PARTITIONS PERPENDICULAR TO JOISTS SHALL NOT BE OFFSET FROM SUPPORTING GIRDERS, WALLS OR PARTITIONS MORE THAN THE JOIST DEPTH. JOISTS CARRYING PARTITIONS PARALLEL TO JOISTS SHALL BE DOUBLED.
- 15) FLOOR DECKING SHALL BE APA RATED FLOOR SHEATHING, GLUED AND NAILED PER APA RECOMMENDATIONS FOR THE STURDI-FLOOR SYSTEM.

V. REINFORCED MASONRY (CMU)

1. ALL MASONRY SHALL BE REINFORCED CONCRETE MASONRY UNIT IN ACCORDANCE WITH THE LATEST EDITION OF ACI 530/ASCE 5/TMS 402.
2. MINIMUM MASONRY BLOCK (ASTM C90) STRENGTH SHALL (FM) BE 2000 PSI.
3. TYPE "S" MORTAR (ASTM C270) SHALL BE USED USING 3/8" FULL BEDDING REINFORCED W/ 9 GAGE GALVANIZED LADDER WIRE EVERY 2ND ROW.
4. FILLED CELLS SHALL BE REINFORCED WITH #4 REBARS @ 48" O.C. (UNLESS OTHERWISE IS SPECIFIED ON THE PLANS).
5. GROUT SHALL BE PEA ROCK PUMP MIX (ASTM C476) WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI (28 DAY) (ASTM C1019). TARGETED SLUMP SHALL BE 8"-11".

WARNING: THE STRUCTURAL INTEGRITY OF THE BUILDING SHOWN IN THESE PLANS DEPENDS ON COMPLETION ACCORDING TO THE PLANS AND SPECIFICATIONS. STRUCTURAL MEMBERS ARE NOT SELF-BRACING UNTIL PERMANENTLY AFFIXED TO THE STRUCTURE. THE DESIGNER ASSUME NO LIABILITY FOR THE STRUCTURE DURING CONSTRUCTION.

VI. STRUCTURAL STEEL

- 1) STRUCTURAL STEEL SHALL CONFORM TO AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION, EXCEPT CHAPTER 4.2.1, CODE OF STANDARD PRACTICE.
- 2) ALL STRUCTURAL STEEL SHALL BE
- i. W SHAPES: ASTM 992 (WHERE AVAILABLE) OR ASTM A572 (GRADE 50)
- ii. PLATES, CHANNELS AND ANGLES: ASTM A572 (GRADE 50) OR A36
- iii. STRUCTURAL TUBES (HSS): ASTM A500 (GRADE B)
- iv. PIPE SECTIONS: ASTM A53 (STANDARD PIPE, UNO)
- v. BOLTS: ASTM A325 OR A490 BOLTS.
- vi. ANCHOR BOLTS: ASTM F1554 GRADE 55
- 3) NON-SHRINK GROUT SHALL BE NONMETALLIC SHRINKAGE-RESISTANT GROUT, PREMIXED, NONMETALLIC, NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING SELECTED SILICA SANDS, PORTLAND CEMENT, SHRINKAGE COMPENSATING AGENTS, PLASTICIZING AND WATER-REDUCING AGENTS, COMPLYING WITH CE-CRD-0621.
- 4) WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE OF THE AMERICAN WELDING SOCIETY, AWS D1.1. ALL WELDING SHALL BE PERFORMED USING E70XX, LOW HYDROGEN ELECTRODES, UNLESS NOTED OTHERWISE. ELECTRODES ARE TO BE PROTECTED FROM MOISTURE.
- 5) BOLTS AND BOLTED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS" AS APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS. USE BEARING TYPE BOLTS WITH THREAD ALLOWED ACROSS THE SHEAR PLANE. SIZE AND USE OF HOLES: SEE AISC TABLE J3.1 UNO.
- 6) ALL MISCELLANEOUS STEEL CONNECTIONS SHALL BE WELDED ALL AROUND WITH 3/16" FILLET WELD UNLESS OTHERWISE NOTED, EXCEPT FOR SLOTTED CONNECTIONS.
- 7) ALL STEEL MEMBERS EXPOSED TO WEATHER OR LOCATED WITHIN 4" OF THE OUTSIDE FACE OF EXTERIOR WALL SHALL BE PAINTED WITH RUST INHIBITED PAINT IN THEIR ENTIRETY.

NO FIELD WELDING OF GALVANIZED MEMBERS IS PERMITTED.

FASTENERS:

NO.	DESCRIPTION OF BUILDING ELEMENT	NUMBER AND TYPE OF FASTNER	SPACING AND LOCATION
1	BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 8d COMMON (2 1/2"x0.131")	TOE NAIL
2	CEILING JOISTS TO PLATE	(3) 8d COMMON (2 1/2"x0.131")	PER JOIST, TOE NAIL
3	CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER. LAPS OVER PARTITIONS	4-10d BOX (3"x0.128")	FACE NAIL
4	CEILING JOISTS ATTACHED TO PARALLEL RAFTER (HEEL JOINT) [SEE SECTIONS R802.3.1 AND R802.3.2 AND TABLE R802.5.1(9)]	TABLE R802.5.1(9)	FACE NAIL
5	COLLAR TIE RAFTER, FACE NAIL OR 1 1/4" x 20 GAGE RIDGE STRAP TO RAFTER	(3) 10d COMMON (3"x0.148")	FACE NAIL EACH RAFTER
6	RAFTER OR ROOF TRUSS TO PLATE	(3) 10d COMMON NAILS (3 1/2"x0.148")	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
7	ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTER OR ROOF RAFTER TO MIN. 2" RIDGE BEAM	(3) 10d COMMON (3 1/2"x0.148") (2) 16d COMMON (3 1/2"x0.162")	TOE NAIL END NAIL
8	STUD TO STUD (NOT BRACED WALL PANEL)	10d BOX (3"x0.128")	16" OC FACE NAIL
9	STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANEL)	16d COMMON (3 1/2"x0.135")	12" OC FACE NAIL
10	BUILT-UP HEADER, (2" TO 2" HEADER W/ 1/2" SPACER)	16d COMMON (3 1/2"x0.152")	16" OC EACH EDGE FACE NAIL
11	CONTINUOUS HEADER TO STUD (TOE NAIL)	(4) 8d COMMON (2 1/2"x0.131")	TOE NAIL
12	TOP PLATE TO TOP PLATE	16d COMMON (3"x0.162")	16" OC FACE NAIL
13	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (NOT AT BRACED WALL PANEL)	16d COMMON (3 1/2"x0.162")	16" OC FACE NAIL
14	BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST OR BLOCKING (AT BRACED WALL PANEL)	2-16d COMMON (3 1/2"x0.162")	2 EACH 16" OC FACE NAIL
15	TOP OR BOTTOM PLATE TO STUD	(4) 8d BOX (2 1/2"x0.113") OR (3) 16d (3 1/2"x0.135") (2) 16d COMMON (3 1/2"x0.162")	TOE NAIL END NAIL
16	TOP PLATE, LAPS AT CORNERS AND INTERSECTIONS (FACE NAIL)	(3) 10d BOX (3"x0.128")	FACE NAIL
17	1" BRACE TO EACH STUD AND PLATE	(3) 8d BOX (2 1/2"x0.113") OR (2) STAPLES 1 3/4"	FACE NAIL
18	1" x 6" SHEATHING TO EACH BEARING	(2) 8d (2 1/2"x0.113") OR (2) STAPLES 1 3/4"	FACE NAIL
19	1" x 8" SHEATHING TO EACH BEARING	(3) 8d BOX (2 1/2"x0.113") OR (3) STAPLES, 1" CROWN, 16 GA, 1 3/4" LONG	FACE NAIL
20	WIDER THAN 1" x 8" SHEATHING TO EACH BEARING	(4) 8d BOX (2 1/2"x0.113") OR (3) STAPLES, 1" CROWN, 16 GA, 1 3/4" LONG	FACE NAIL
21	JOIST TO SILL OR GIRDER	(4) 8d BOX (2 1/2"x0.113")	TOE NAIL
22	RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATION ALSO)	8d COMMON (2 1/2"x0.131")	6" OC TOE NAIL
23	1" x 6" SUBFLOOR OR LESS TO EACH JOIST	(3) 8d BOX (2 1/2"x0.113") OR (2) STAPLES, 1" CROWN, 16 GA, 1 3/4" LONG	FACE NAIL
24	2" SUBFLOOR TO JOIST OR GIRDER	(3) 16d BOX (3 1/2"x0.135")	BLIND AND FACE NAIL
25	2" PLANKS (PLANK & BEAM - FLOOR & ROOF)	(3) 16d BOX (3 1/2"x0.135")	AT EACH BEARING, FACE NAIL
26	B AND OR RIM JOIST TO JOIST	(3) 16d COMMON (3 1/2"x0.162")	END NAIL
27	BUILT-UP GIRDERS & BEAMS, 2" LUMBER LAYERS	10d BOX (3"x0.128")	24" OC FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
28	LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	(4) 16d BOX (3 1/2"x0.135")	AT EACH JOIST OR RAFTER FACE NAIL
29	BRIDGING TO JOIST	(2) 10d (3 1/2"x0.128")	EACH END, TOE NAIL

DEFLECTION CRITERIA:

DESCRIPTION	TOTAL LOAD	LIVE LOAD
ROOF TRUSSES/RAFTERS/CEILING JOISTS	L/240	L/960 OR 1/2" MAX
FLOOR JOISTS/FLOOR TRUSSES	L/240	L/960 OR 1/4" MAX
MEMBERS SUPPORTING BRICK/HORIZONTAL MASONRY MEMBERS	L/600 OR 0.3" MAX	
JOISTS/TRUSSES SUPPORTING CERAMIC TILE	L/720	

DESIGN LOADS:

DESCRIPTION	DEAD LOAD	LIVE LOAD	SNOW LOAD (psf)
ROOF	17 PSF	20 PSF	10 PSF
FLOOR	15 PSF	40 PSF	-
ATTIC W/O STORAGE	10 PSF	10 PSF	-
ATTIC W/ LIMIT STORAGE	10 PSF	20 PSF	-
HABITABLE ATTICS & ATTICS W/ FIXED STAIR	10 PSF	30 PSF	-
SLEEPING ROOMS	15 PSF	30 PSF	-
BALCONIES & DECKS	10 PSF	40 PSF	-
STAIRS	10 PSF	40 PSF	-
GUARD RAILS & HAND RAILS	-	200 LBS (G)	-

WIND LOADS:

- WIND SPEED: 115 MPH
- WIND EXPOSURE CATEGORY: B

FOUNDATION DESIGN LOADS (q):

- SOIL BEARING CAPACITY: 1500 PSF
- LATERAL EARTH PRESSURE: 60 PSF/FT (AT REST)

EARTHQUAKE LOADS:

- SEISMIC DESIGN CATEGORY: B
- SITE CLASS: D (ASSUMED DEFAULT)

FASTENERS:

NO.	BUILDING MATERIALS	NUMBERS AND TYPE OF FASTNER	SPACING OF FASTNERS	
			EDGES	INTERMEDIATE SUPPORTS
WOOD STRUCTURAL PANELS, SUB-FLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING & PARTICLE BOARD WALL SHEATHING TO FRAMING				
30	3/8" - 1/2"	6d (2"x0.113") COMMON NAIL (SUBFLOOR, WALL) (J)	6"	12" (g)
		8d (2 1/2"x0.131") COMMON NAIL (ROOF)		
31	5/16" - 1/2"	6d (2"x0.113") COMMON NAIL (SUBFLOOR, WALL)	6"	12" (g)
		8d (2 1/2"x0.131") COMMON NAIL (ROOF)(F)		
32	19/32" - 1"	8d (2 1/2"x0.131") COMMON NAIL	6"	12" (g)
33	1 1/8" - 1 1/4"	10d (3"x0.148") COMMON NAIL OR 8d (2 1/2"x0.131") DEFORMED NAIL	6"	12"
OTHER WALL SHEATHING (H)				
34	1/2" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1/2" GALVANIZED ROOFING NAIL, 7/16" CROWN OR 16 GAGE STAPLE, 1" CROWN & 1 1/4" LONG	3"	6"
35	25/32" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 3/4" GALVANIZED ROOFING NAIL, 7/16" CROWN OR 16 GAGE STAPLE, 1" CROWN & 1 1/2" LONG	3"	6"
36	1/2" GYPSUM SHEATHING (d)	1 1/2" GALVANIZED ROOFING NAIL OR 1 1/2" LONG GALVANIZED STAPLES, OR 1 1/4" SCREWS TYPE W OR S	7"	7"
37	1/2" GYPSUM SHEATHING (d)	1 3/4" GALVANIZED ROOFING NAIL OR 1 5/8" LONG GALVANIZED STAPLES, OR 1 5/8" SCREWS TYPE W OR S	7"	7"
WOOD STRUCTURAL PANELS, COMBINATION OF SUB-FLOOR UNDERLAYMENT TO FRAMING				
38	3/4" OR LESS	8d (2 1/2"x0.131") COMMON NAIL OR 6d (2"x0.120") DEFORMED NAIL	6"	12"
39	7/8" - 1"	8d (2 1/2"x0.131") COMMON NAIL OR 8d (2"x0.120") DEFORMED NAIL	6"	12"
40	1 1/8" - 1 1/4"	10d (3"x0.148") COMMON NAIL OR 8d (2 1/2"x0.120") DEFORMED NAIL	6"	12"

FASTNER SCHEDULE PER INTERNATIONAL RESIDENTIAL CODE

WOOD SPECIES:

SPECIES		Fb	Ft (a)	Fv (a)	Fc II (a)	Fc I, b (a)	E	Emin
HEM FIR #2		850 psi	525 psi	150 psi	405 psi	1300 psi	1300000 psi	470000 psi
SPF #2		875 psi	450 psi	135 psi	425 psi	1150 psi	1400000 psi	510000 psi
2" TO 4"	THICKNESS	WIDTH	SOUTHERN PINE #2					
	2" TO 4"	1050 psi	650 psi	175 psi	565 psi	1100 psi	1400000 psi	510000 psi
	5" TO 6"	1250 psi	725 psi	175 psi	565 psi	1600 psi	1600000 psi	580000 psi
	8"	1200 psi	650 psi	175 psi	565 psi	1600 psi	1600000 psi	580000 psi
	10"	1050 psi	575 psi	175 psi	565 psi	1500 psi	1600000 psi	580000 psi
	12"	975 psi	550 psi	175 psi	565 psi	1450 psi	1600000 psi	580000 psi
MICROLAM LVL (ML)		2600 psi	1555 psi	285 psi	2510 psi	750 psi	1900000 psi	965710 psi
PARALLAM PSL 1.8E		2400 psi	1755 psi	190 psi	2500 psi	425 psi	1800000 psi	914880 psi
PARALLAM 2.0E		2900 psi	2025 psi	280 psi	2900 psi	750 psi	2000000 psi	1016535 psi
TIMERSTRAND LSL 1.3E		1900 psi	1075 psi	400 psi	1400 psi	680 psi	1300000 psi	660750 psi
TIMERSTRAND LSL 1.55E		2325 psi	1070 psi	310 psi	2050 psi	800 psi	1550000 psi	787815 psi

CONCRETE CLEAR COVERS:

DESCRIPTION	MIN. COVER (IN.)
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	#6 THROUGH #18 BARS 2" #5 BAR, W31 OR D31 WIRE AND SMALLER 1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	SLAB, WALLS, JOISTS 3/4" BEAMS, COLUMNS (PRIMARY REINF., TIES, STIRRUPS, SPIRALS) 1 1/2" SHELLS, FOLDED PLATES #6 BARS AND LARGER 3/4" #5 BAR W31 OR D31 WIRE AND SMALLER 1/2"

BUILDING INFORMATION:

DESCRIPTION	
LEVELS	CRAWL SPACE, FIRST FLOOR & ATTIC
FIRST FLOOR AREA	1,131 SQ. FT.
DECK AREA	521 SQ. FT.
BUILDING HEIGHT	19'-1" REAR (ABOVE GRADE) 17'-9" FRONT (ABOVE GRADE)

ABBREVIATIONS:

ARCH=	ARCHITECTURAL
B.E.W=	BOTTOM EACH WAY
BM=	BEAM
BRG=	BEARING
COL=	COLUMN
CONC=	CONCRETE
CONT=	CONTINUOUS
DBL=	DOUBLE
EA=	EACH
EE=	EACH END
EXP=	EXPANSION
EXT=	EXTERIOR
FDN=	FOUNDATION
FTG=	FOOTING
GT=	GIRDER TRUSS
GDR=	HEADER
INT=	INTERIOR
INFO=	INFORMATION
J=	JACK STUD
K=	KING STUD
MANUF=	MANUFACTURER
MIN=	MINIMUM
MAX=	MAXIMUM
NTS=	NOT TO SCALE
OC=	ON CENTER
PLYWD=	PLYWOOD
PT=	PRESSURE TREATED
PA=	POST FROM ABOVE
REQD=	REQUIRED
SPF=	SPRUCE-PINE-FIR
SP=	SOUTHERN PINE
STL=	STEEL
TP=	TYPICAL
W=	WITH
WD=	WOOD
WWF=	WELDED WIRE FABRIC
UNO=	UNLESS NOTED OTHERWISE

SET PRINT SIZE TO SCALE: 11x17 LANDSCAPE

CODES, NOTES

192 MELS MEADOWS DRIVE
FUQUAY VARINA, NC 27526



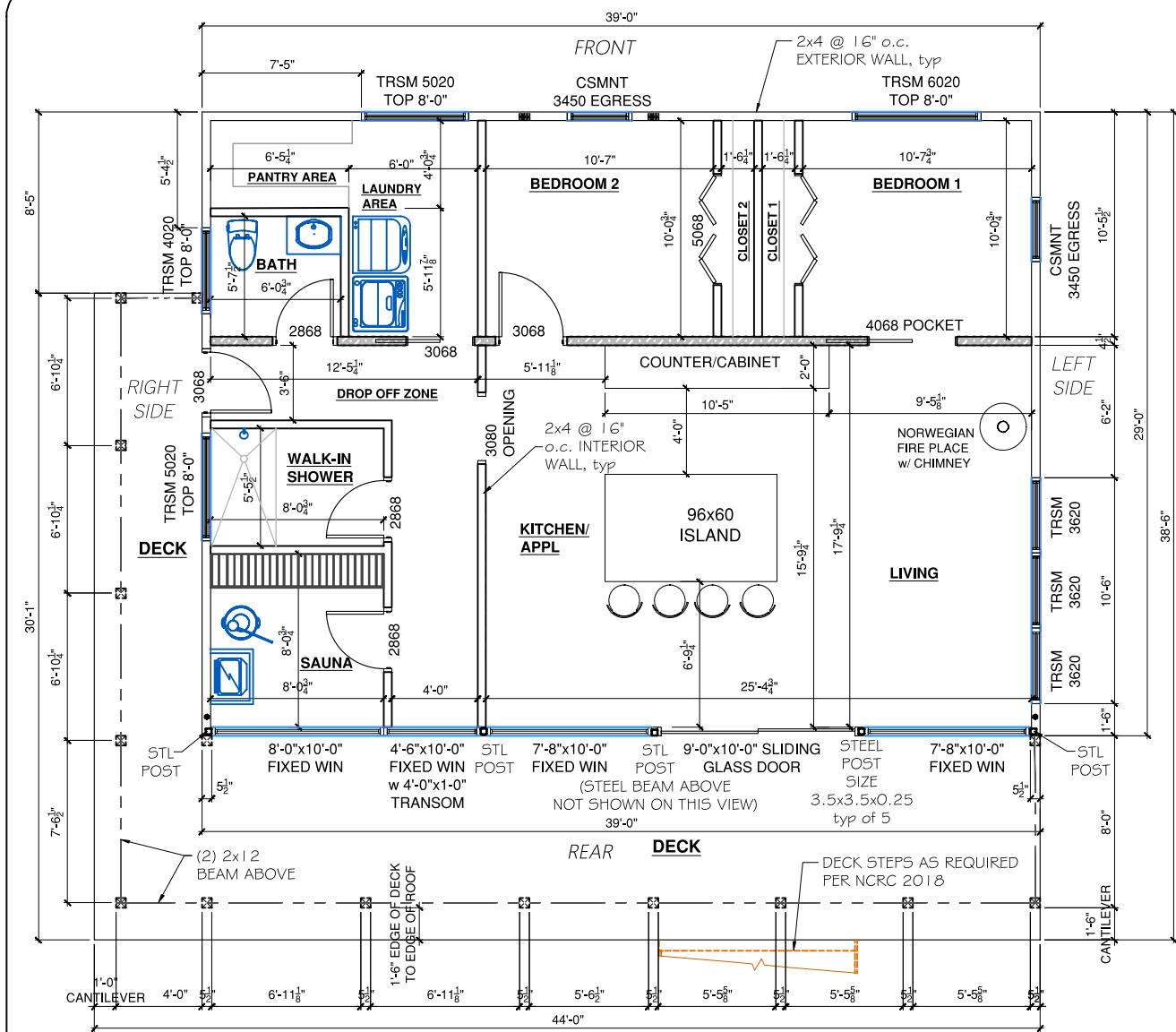
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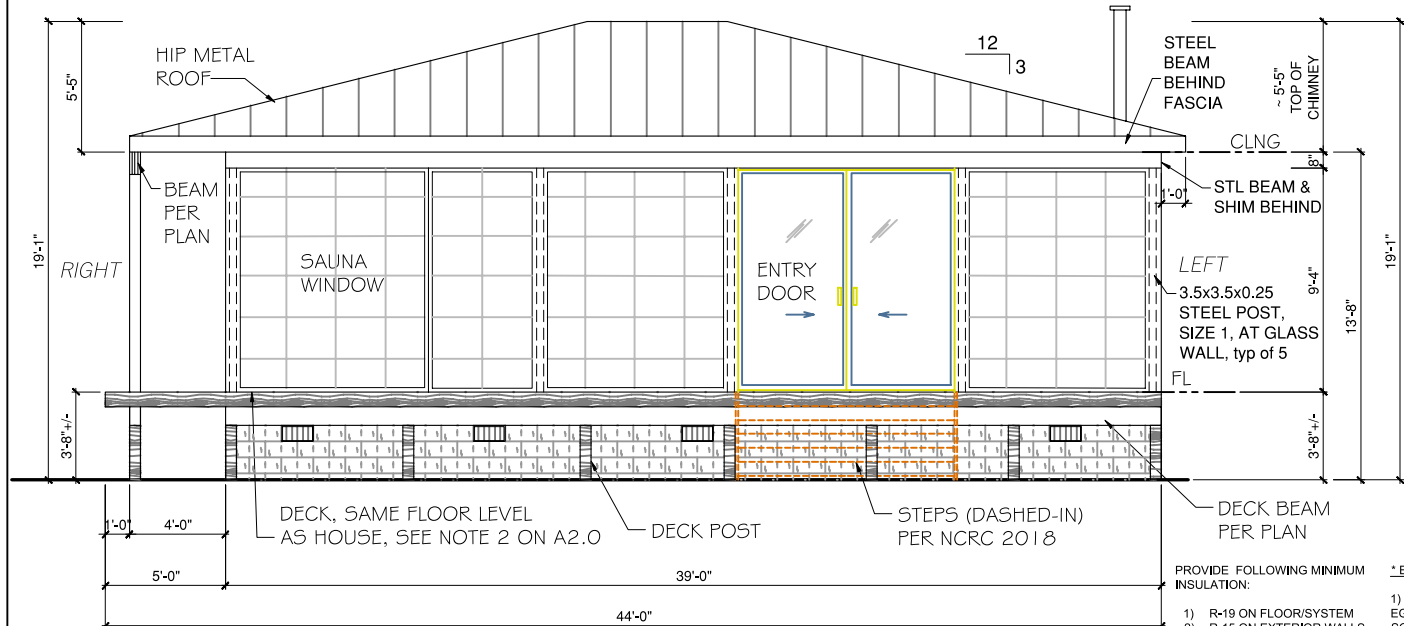
FIRM # P-1869
121 EDINBURGH SOUTH DRIVE, SUITE 103
CARY, NC 27511
PHONE: 919.267.3004
EMAIL: INFO@EQUAGEN.COM

DRAWN BY:	DG
CHECKED BY:	MKC
DATE:	05/25/21
SCALE:	AS SHOWN

T1.0



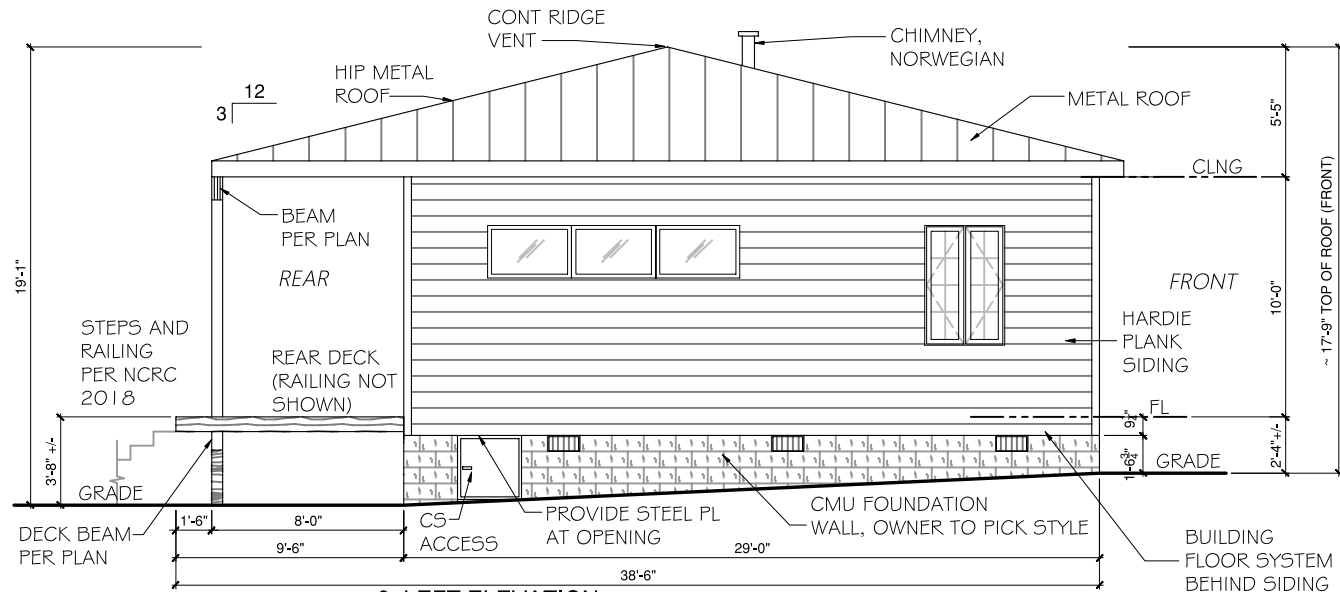
1. FLOOR PLAN
1/8"=1'-0"



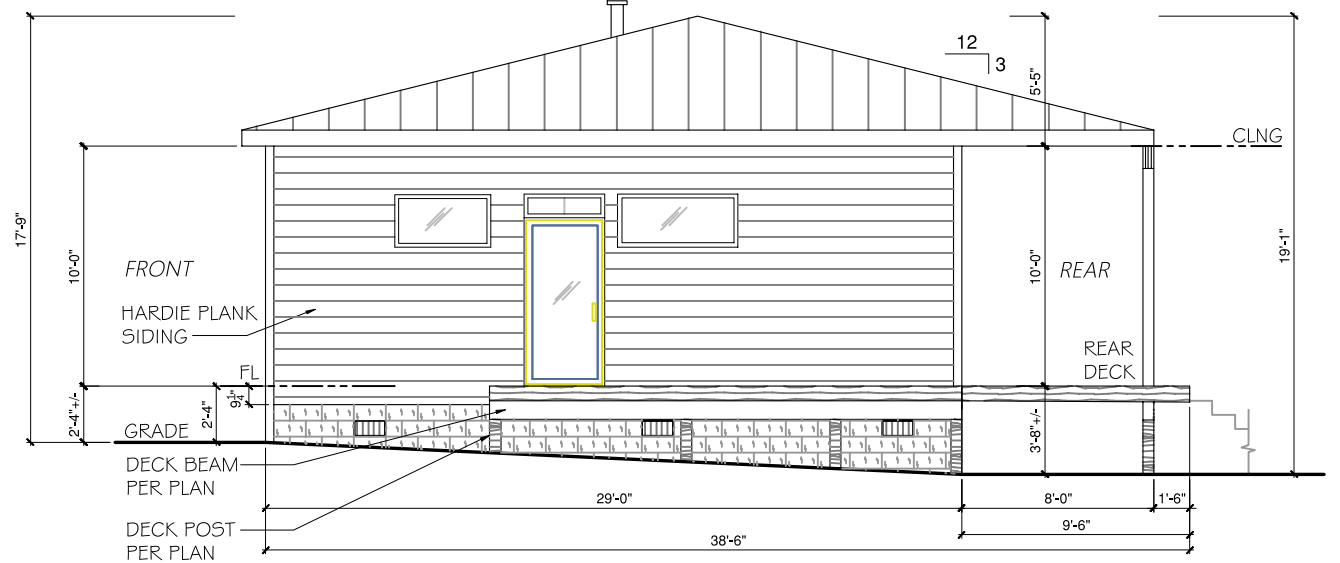
2. REAR ELEVATION
1/8"=1'-0"

WINDOWS NOTES:
1) PROVIDE AT LEAST 1 EGRESS WINDOW PER BED ROOM.
2) PROVIDE SAFETY GLAZING FOR REAR FULL WALL WINDOWS. REFER TO NCRC 2018 REQUIREMENTS FOR GLASS.

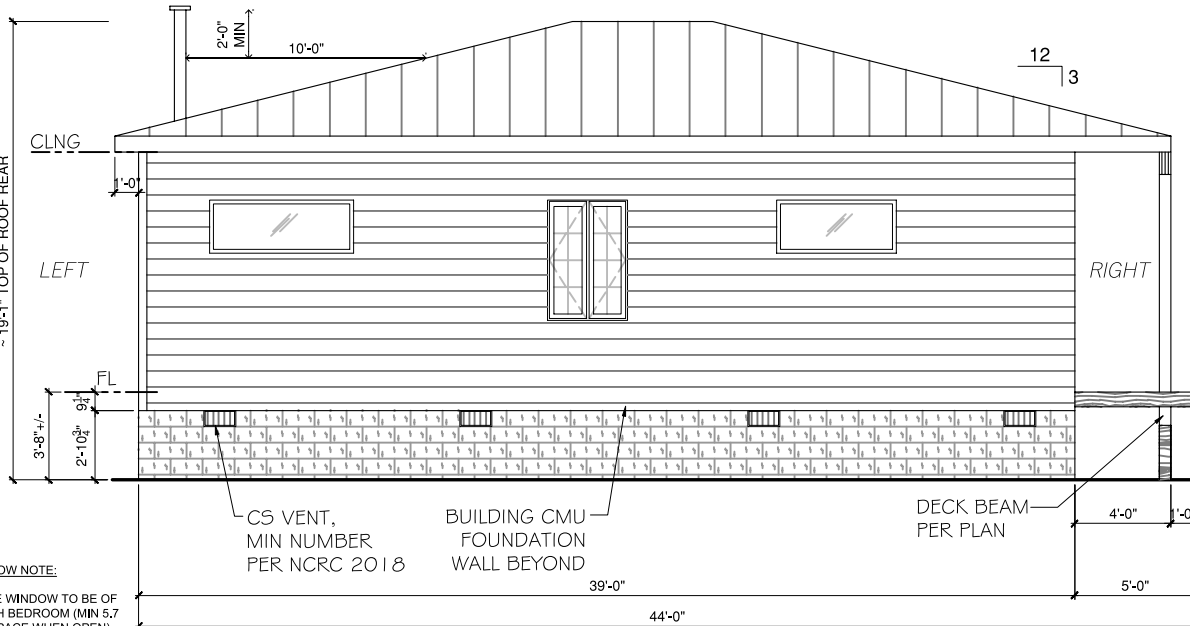
* EGRESS WINDOW NOTE:
1) AT LEAST ONE WINDOW TO BE OF EGRESS IN EACH BEDROOM (MIN 5.7 SQ. FT CLEAR SPACE WHEN OPEN).
2) PROVIDE SAFETY GLAZING FOR REAR FULL WALL WINDOWS. REFER TO NCRC 2018 REQUIREMENTS FOR GLASS.
3) R-19 ON FLOOR/SYSTEM
R-15 ON EXTERIOR WALLS
R-15 ON BASEMENT WALLS
R-38 AT ATTIC CEILING
DEPENDING UPON WINDOW TYPE, i.e. DOUBLE HUNG, CASEMENT AND MANUFACTURER, SHOWN WINDOW DIMENSIONS MAY VARY.



3. LEFT ELEVATION
1/8"=1'-0"



4. RIGHT ELEVATION
1/8"=1'-0"



5. FRONT ELEVATION
1/8"=1'-0"

REVISIONS			
NO.	DATE	DESCRIPTIONS	
0	05/25/21	PERMIT	

FLOOR PLAN, ELEVATIONS

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FUQUAY VARINA, NC 27526

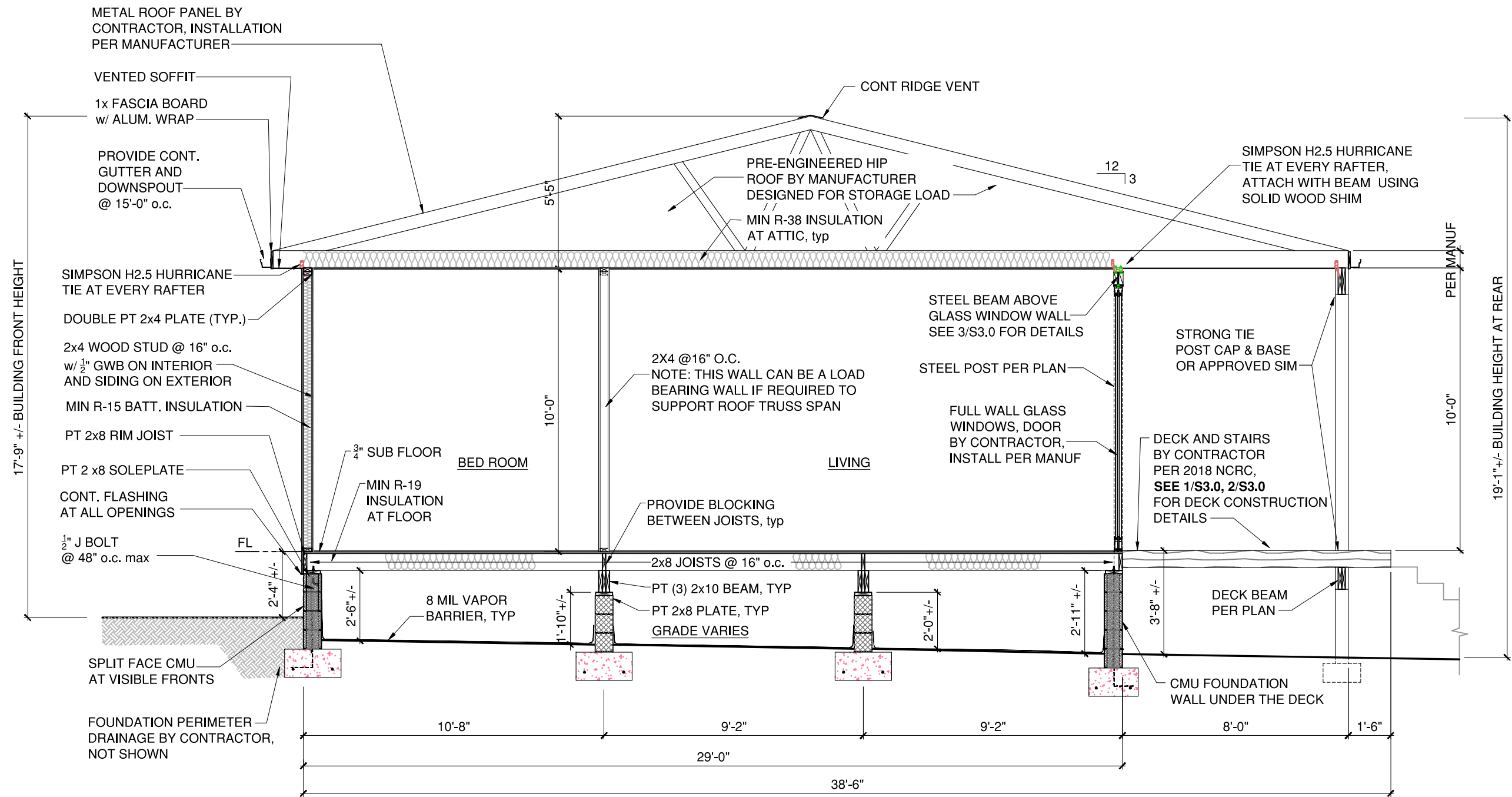


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1. BUILDING SECTION
1/4"=1'-0"

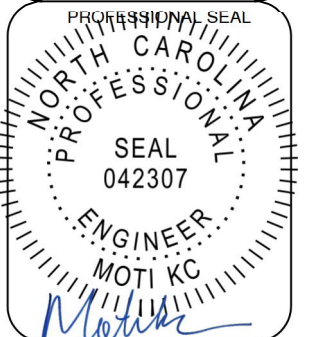
NOTES:

- 1) CONTRACTOR TO ENSURE CRAWL SPACE GRADE IS SLOPED AWAY FROM THE HOUSE
- 2) FINISHED DECK FLOOR CAN BE 2 1/2" +/- LOWER THAN BUILDING FINISHED FLOOR LEVEL FOR ADEQUATE ATTACHMENT OF DECK JOISTS WITH HOUSE RIM BOARD (BAND JOIST). CONTRACTOR TO VERIFY.

REVISIONS			
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0	05/25/21	PERMIT	

BUILDING SECTION

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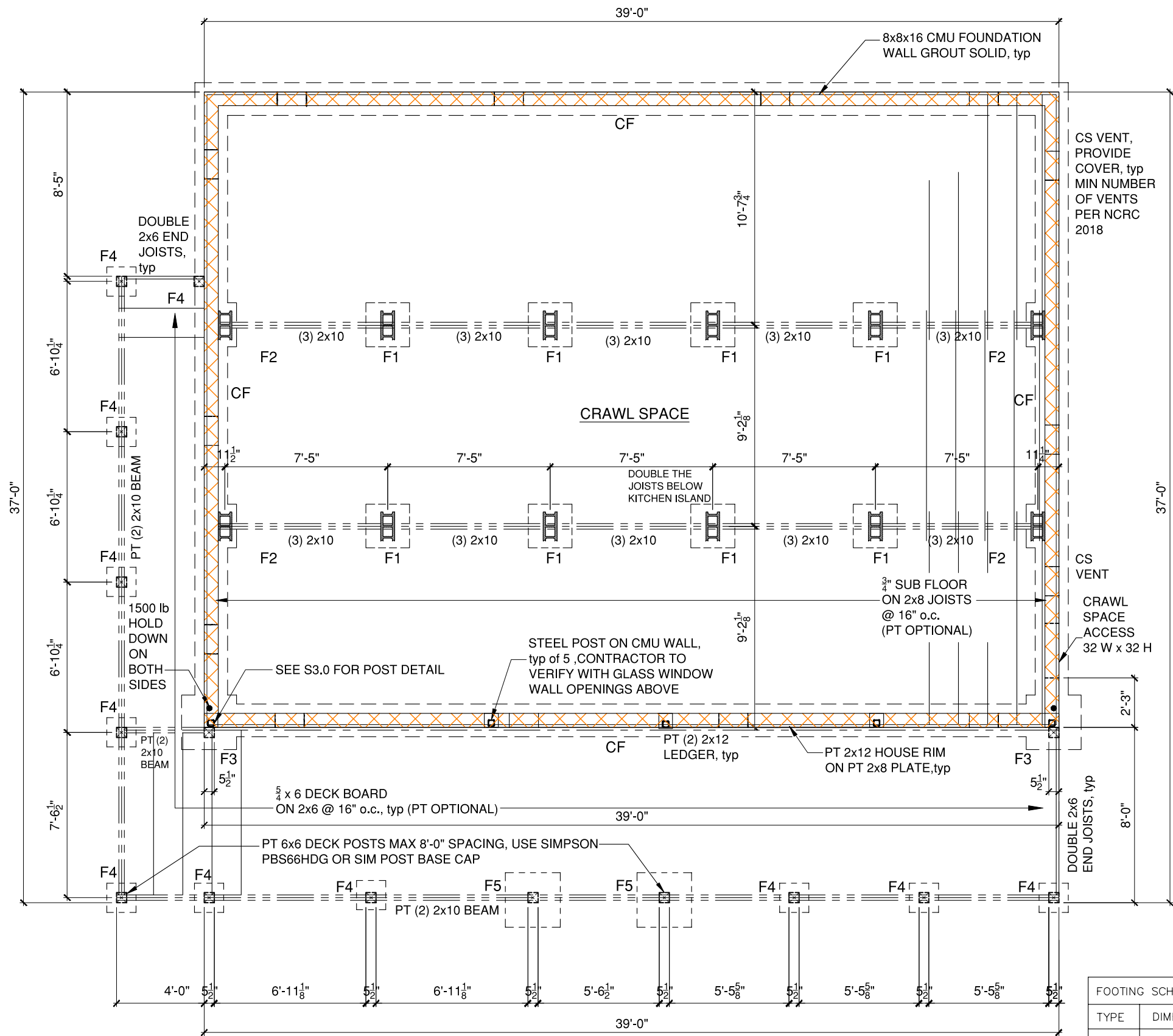
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1. FOUNDATION PLAN AND FRAMING PLAN
3/16"=1'-0"

- GENERAL FLOOR FRAMING PLAN NOTES:
- 1. LOCATE FLOOR JOISTS CLEAR OF PLUMBING AND MECHANICAL.
 - 2. KING STUDS SHALL BE NAILED TO EACH END OF HEADER WITH MIN OF (2) 16d NAILS. IF THE HEADER IS FLUSH, PROVIDE ONLY ONE KING STUD INSTEAD, AT EACH HEADER END. MATCH SIZE OF KING AND JACK STUDS WITH WALL, TYP
 - 3. ALL FACE MOUNT FLOOR JOISTS AND BEAM/HEADERS SHALL BE CONNECTED USING SIMPSON HANGER.
 - 4. STRUCTURAL FLOOR MEMBERS SHALL NOT BE DRILLED OR NOTCHED IN EXCESS OF THE LIMITATIONS SPECIFIED IN R502.8
 - 5. WOOD STRUCTURAL PANELS USED FOR SUBFLOOR SHALL MEET THE REQUIREMENTS OF TABLE R503.2.1(1).
 - 6. STUDS AND DOUBLE TOP PLATE SHALL NOT BE DRILLED OR NOTCHED IN EXCESS OF THE LIMITATIONS SPECIFIED IN R602.6
 - 7. STRUCTURAL SHEATHING SHALL BE ATTACHED TO WALL STUDS PER TABLE R602.10.1

PIER LEGENDS

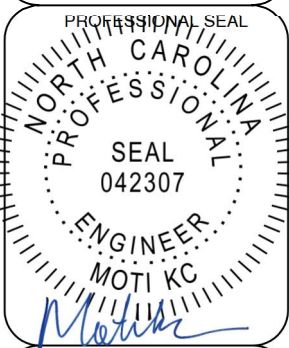
8x16 CMU PIER (GROUT SOLID)

FOOTING SCHEDULE			
TYPE	DIMENSION	DEPTH	REINF. (BOT) EW
F1	2'-0"X2'-0"	1'-0"	(2)#5 EW; BOT. OF FOOTING 12" BELOW GRADE
F2	2'-0"X2'-0"	1'-0"	(3)#5, 6" BUMPOUT OF CF FOR END PIER
F3	2'-6"X2'-0"	1'-0"	(3)#5 TRANS, 6" BUMPOUT OF CF EACH SIDE
F4	1'-4"X1'-4"	1'-0"	BOT. OF FOOTING MIN 12" BELOW GRADE
F5	2'-6"X2'-6"	1'-0"	BOT. OF FOOTING MIN. 12" BELOW GRADE
CF	1'-6" CONT	0'-10"	(2)#5, CONT., BOT OF FOOTING 2' BELOW GRADE

REVISIONS			
NO.	DATE	DESCRIPTIONS	
0	05/25/21	PERMIT	

FOUNDATION PLAN, SCHEDULE

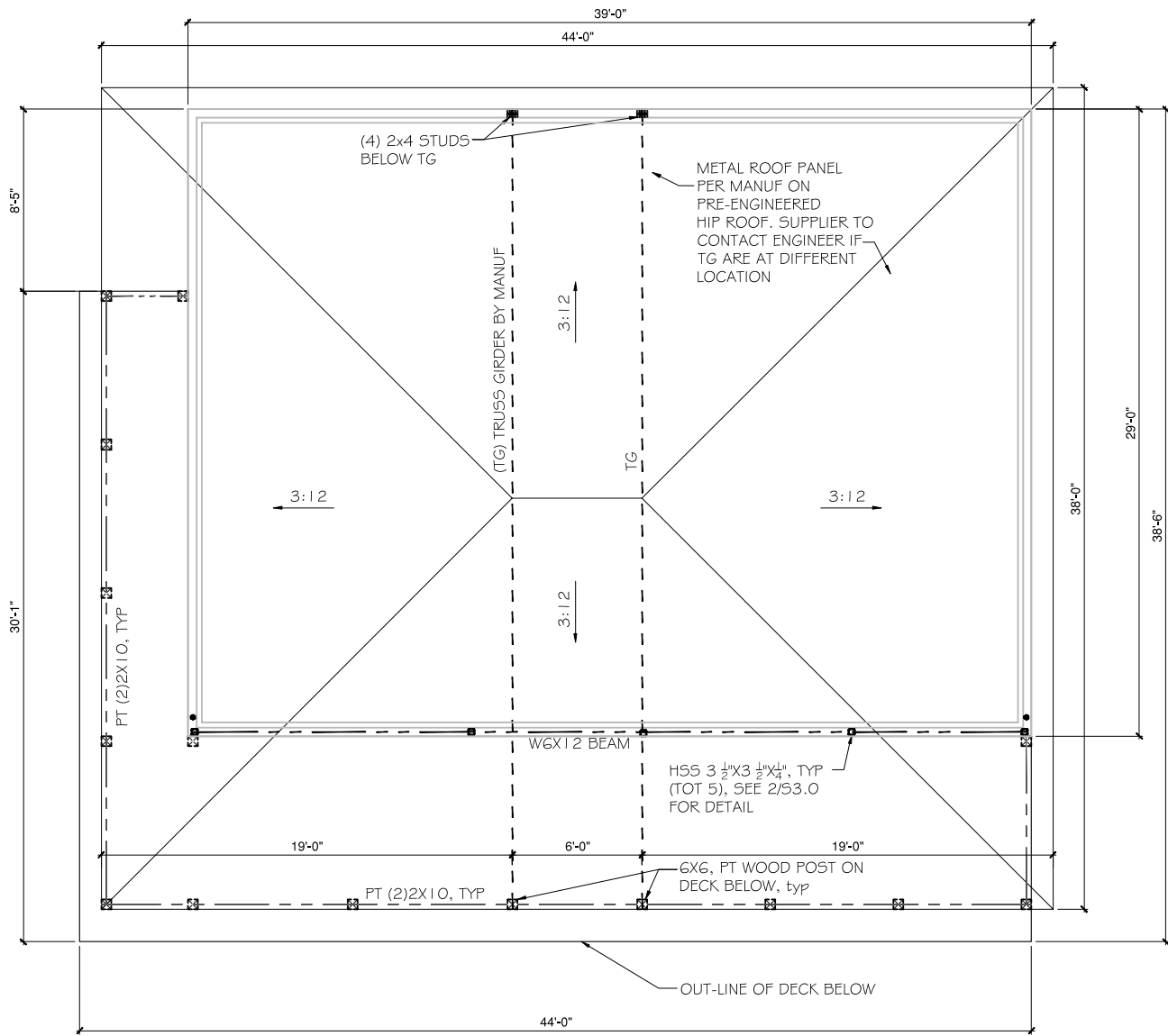
192 MELS MEADOWS DRIVE
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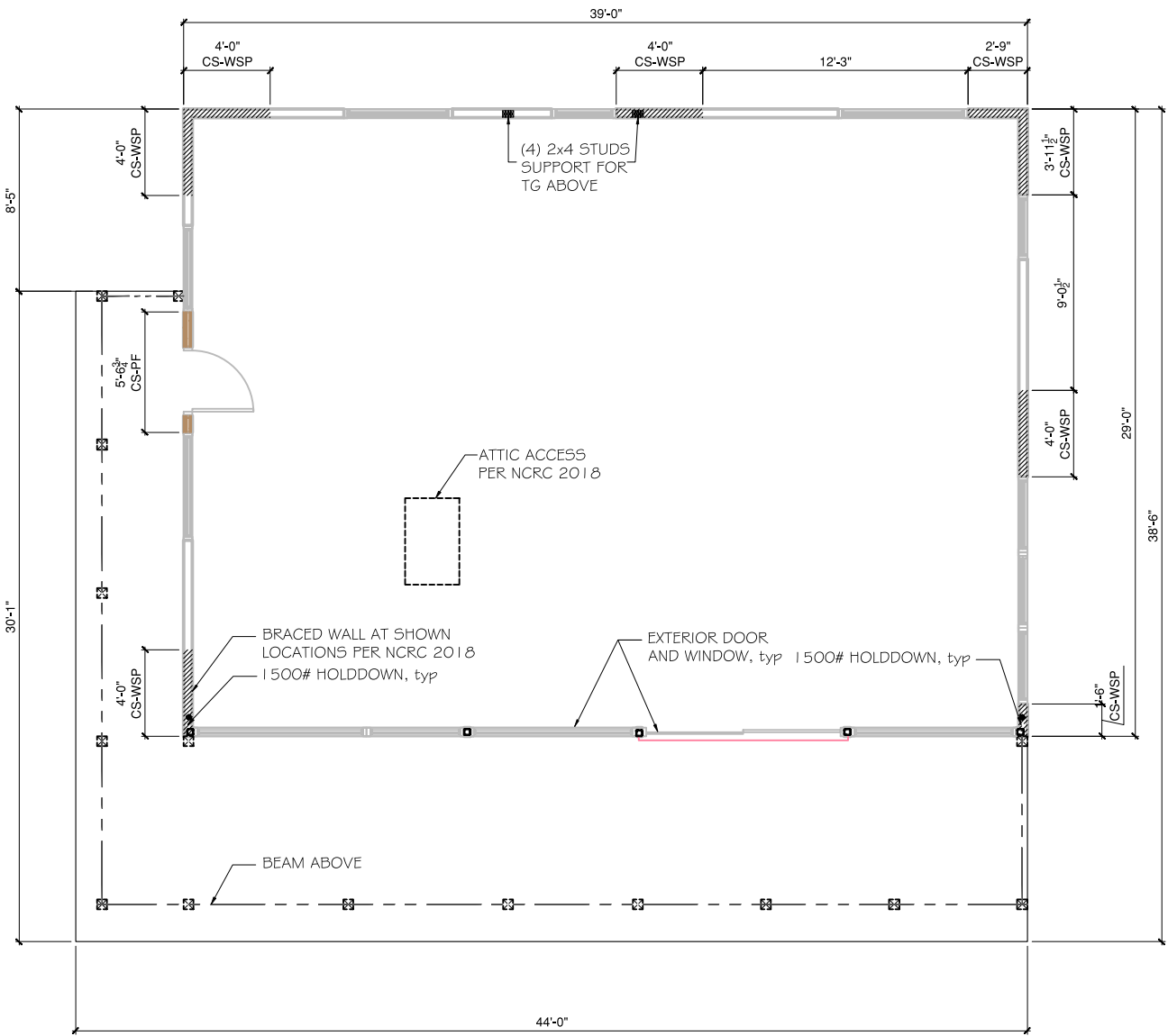
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1. ROOF PLAN
1/8"=1'-0"



2. SHEAR WALL PLAN
1/8"=1'-0"

WALL BRACING PLAN NOTES:

- ON PLAN DENOTES THE LOCATION OF BRACED WALL PANELS. STUD WALL AT BRACED WALL PANEL LOCATIONS SHALL BE A MIN. OF 2x4 SPF #1/#2 AT 16" OC MAXIMUM, UNO. REFER TO SHEETS S4.0 FOR MORE INFO.
- BRACED WALL PANELS SHALL BE CONNECTED TO FLOOR FRAMING PER SECTION R602.10.4.4 AND BRACED WALL PANELS SHALL BE CONNECTED TO ROOF FRAMING PER R602.10.4.5.

NO.	DATE	DESCRIPTIONS
0	05/25/21	PERMIT

ROOF PLAN, SHEAR WALL PLAN

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FUQUAY VARINA, NC 27526

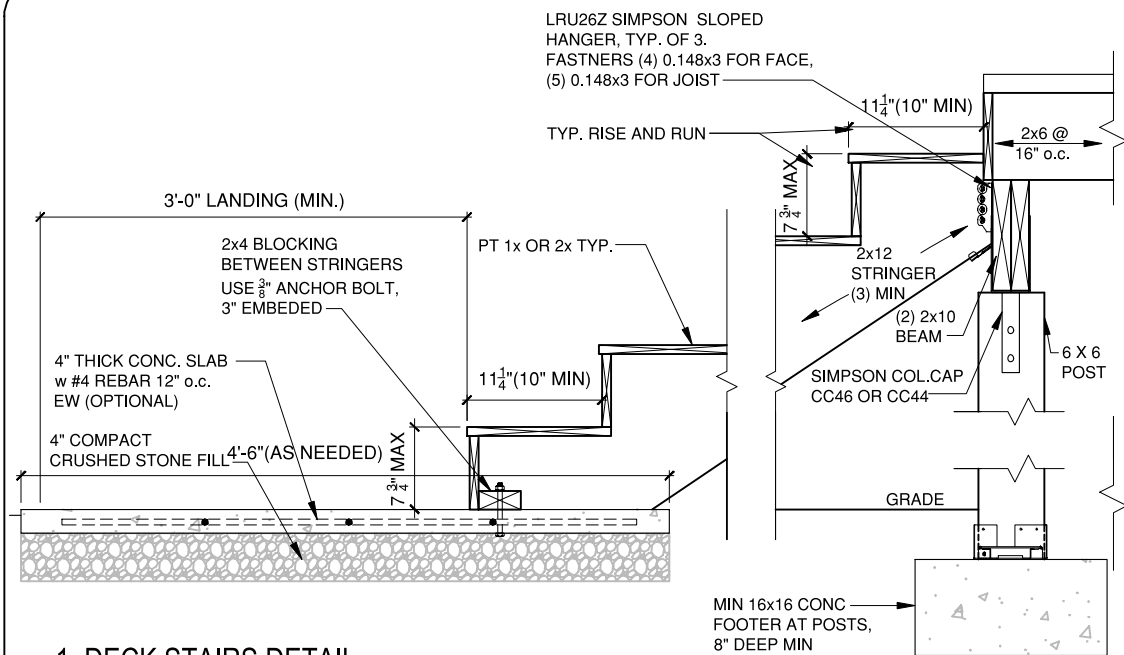


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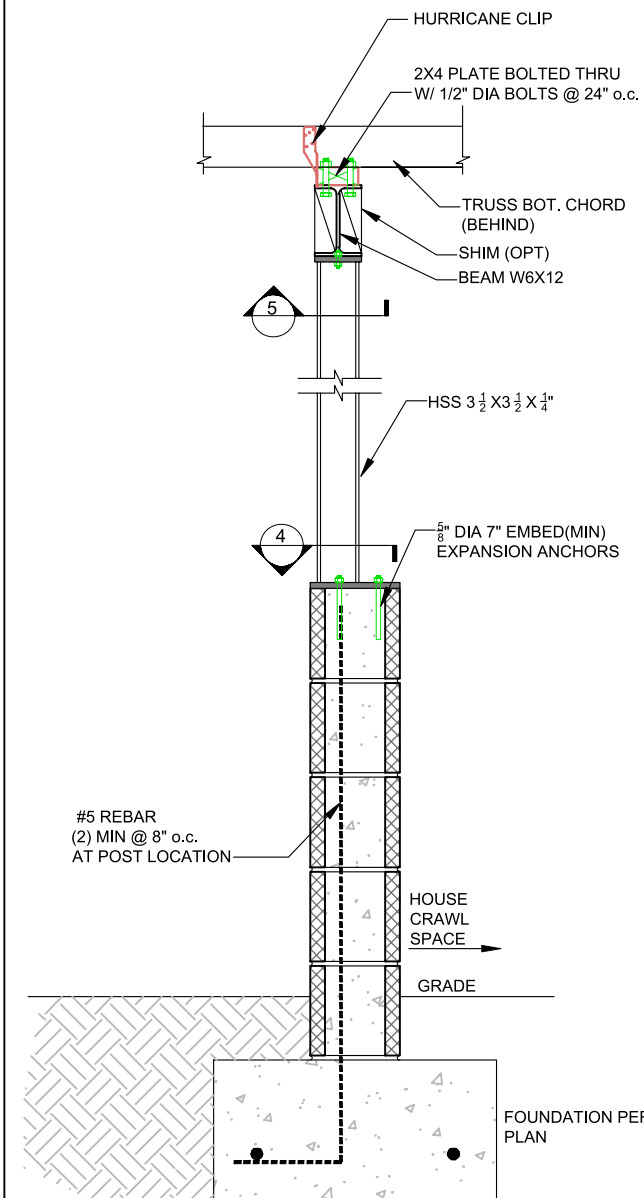
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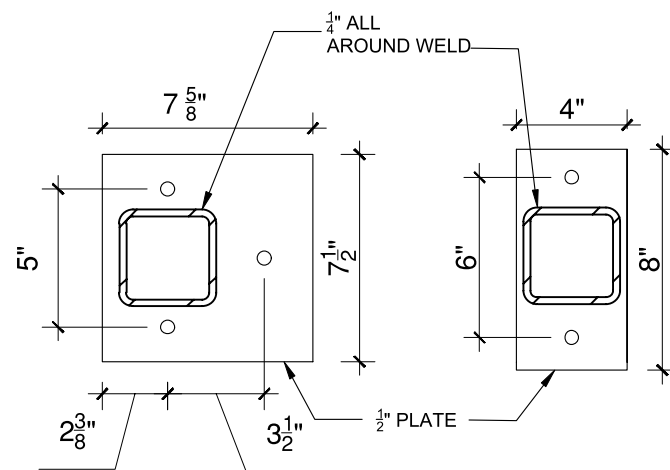
1. DECK STAIRS DETAIL

3/4"=1'-0"



3. TYP. METAL POST SECTION/DETAIL

NOT TO SCALE

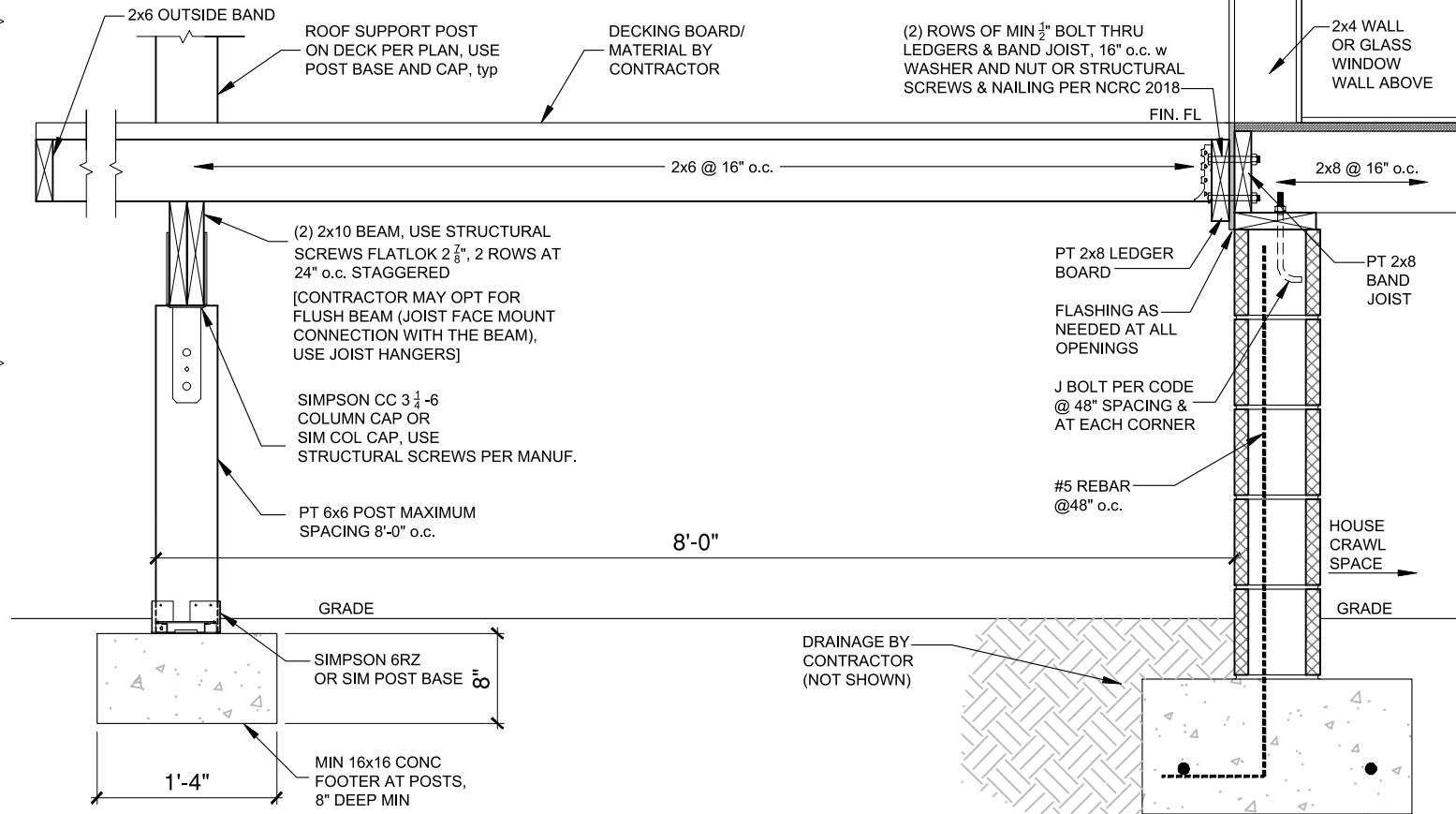


4 SECTION

NOT TO SCALE

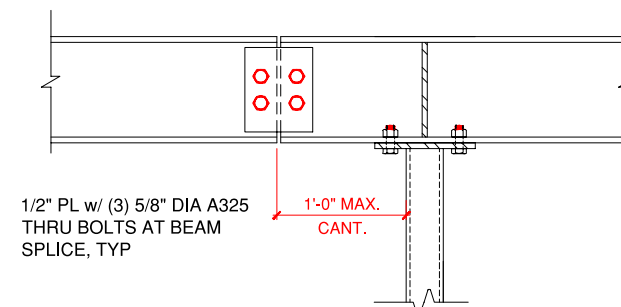
5. SECTION

NOT TO SCALE



2. DECK DETAILS

3/4"=1'-0"



6. BEAM SPLICE DETAILS

NTS

DECK STAIRS, DECK DETAILS



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NO. DATE DESCRIPTIONS

REVISIONS

WALL BRACING PER IRC 2015
PRESCRIPTIVE METHOD

WIND SPEED ≤115 MPH
SEISMIC DESIGN CATEGORY: B

BRACED WALL PANEL LEGEND:

WSP (XX)
LENGTH OF WALL PANEL IN INCHES
AT EXTERIOR FACE OF WALL:
WOOD STRUCTURAL PANEL: 7/16" OSB WALL SHEATHING w/ 8d COMMON NAILS (2 1/2"x0.131") AT 4" OC AT EDGES & 12" OC AT INTERMEDIATE SUPPORTS
AN ALTERNATIVE:
16 GAUGE x 1 3/4" STAPLES AT 3" OC AT EDGES & 6" OC AT INTERMEDIATE SUPPORTS
AT INTERIOR FACE OF WALL:
1/2" GYPSUM BOARD/SHEATHING WITH 5d COOLER NAILS AT 4" OC AT EDGES AND INTERMEDIATE SUPPORTS.

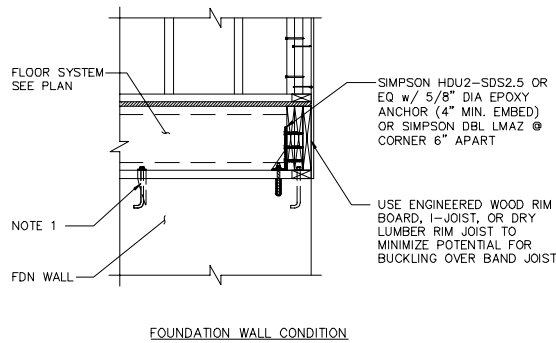
GB (XX)
LENGTH OF WALL PANEL IN INCHES
1/2" GYPSUM SHEATHING W/ 13 GAUGE, 1 3/8" LONG, 19/64" HEAD NAIL OR 0.098" DIA, 1 1/4" LONG, ANNULAR-RINGED NAIL OR 5d COOLER NAIL, 0.086" DIA, 1 5/8" LONG, 15/64" HEAD, OR GYPSUM BOARD NAIL W/ 0.086" DIA, 1 5/8" LONG, 9/32" HEAD @ 4" OC AT EDGES AND INTERMEDIATE SUPPORTS, OR 1 1/4" SCREWS TYPE W OR S, 12" OC W/ 4" AT EDGES AND INTERMEDIATE SUPPORTS W/ MIN 5/8" PENETRATION TO WOOD FRAMING.

NOTE:
WSP = WOOD STRUCTURAL PANEL | CS = CONTINUOUSLY SHEATHED
PF = PORTAL FRAME | GB = GYPSUM BOARD

FOR CONTINUOUS SHEATHING BRACED WALL METHOD, PROVIDE:

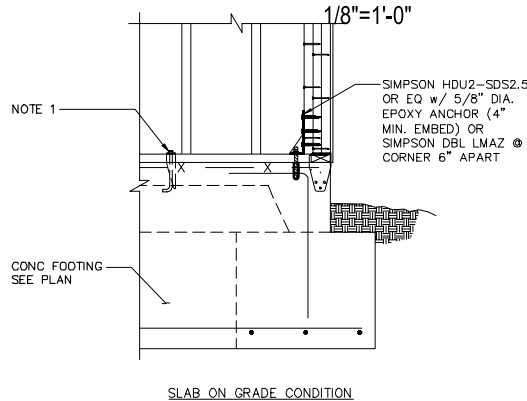
- AT EXTERIOR FACE OF WALL:
7/16" OSB WITH 8d NAILS AT 4" OC ON EDGES AND 12" OC ON FIELD.
- AT INTERIOR FACE OF WALL:
1/2" GYPSUM BOARD/SHEATHING WITH 5d COOLER NAILS AT 4" OC AT EDGES AND INTERMEDIATE SUPPORTS.

SHEATHING SHALL BE EXTENDED CONTINUOUS 12" ABOVE AND BELOW THE FLOOR SYSTEM.

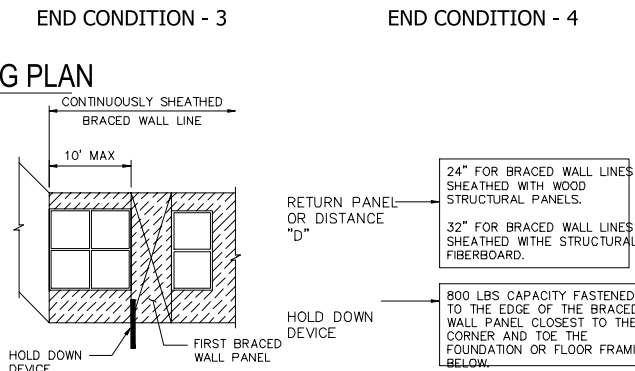
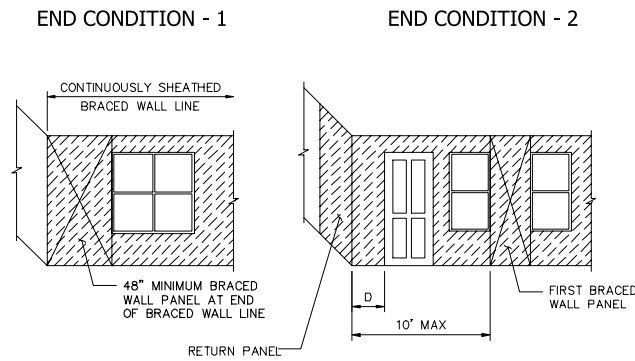
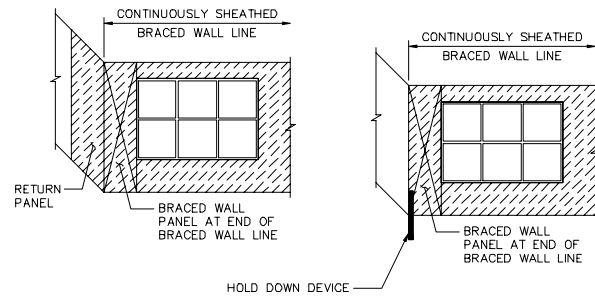
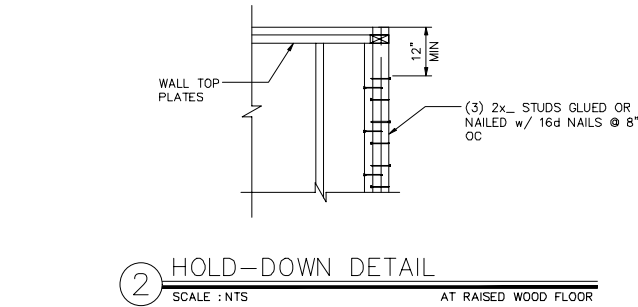


NOTE 1:
1/2" DIA ANCHOR BOLTS (7" MIN EMBED) w/ 2"x2"x3/16" WASHER PLATES @ 4'-0" OC MAX AT 12" MAX FROM EA END OF WALL.

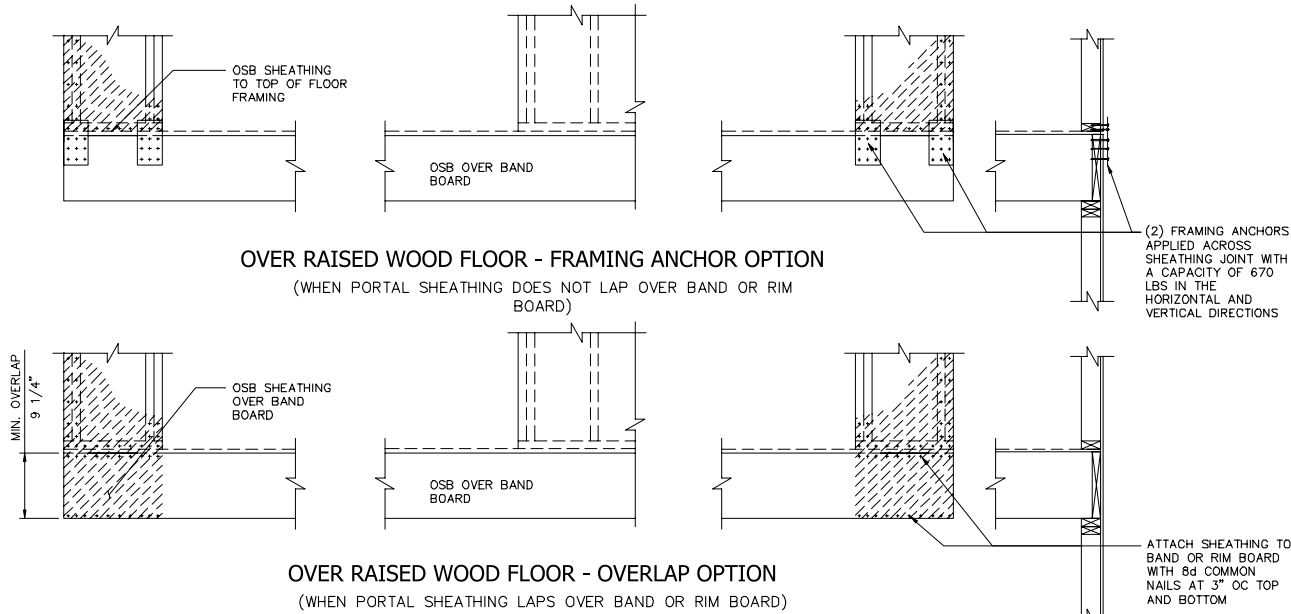
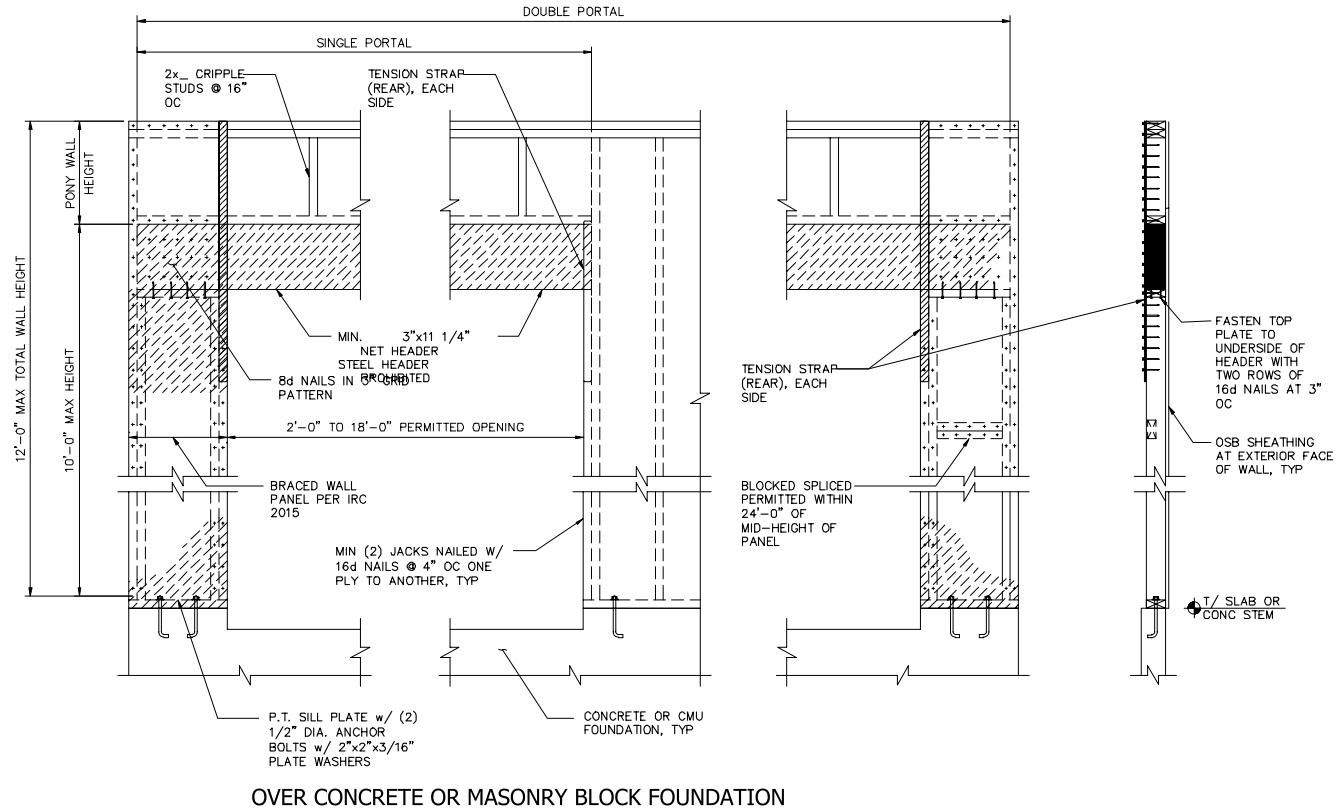
AN ALTERNATIVE: USE SIMPSON STRAPS LMA4/LMA6 @ 12" OC, TYP.



1 HOLD-DOWN DETAIL
SCALE : NTS
AT CONCRETE FOUNDATION



3 END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING METHOD
SCALE : NTS



FRONT ELEVATION

SECTION

4 CONTINUOUS SHEATHING PORTAL FRAME (CS-PF)
SCALE : NTS

REFERENCE: IRC 2015 FIG. R602.10.6.4

PORTAL FRAME REQUIREMENTS									
MIN. SIZE & GRADE OF WALL STUDS	MAX. PONY WALL HEIGHT (FEET)	MAX. TOTAL WALL HEIGHT (FEET)	MAX. OPENING WIDTH (FEET)	REQUIRED TENSION CAPACITY OF STRAP (LBS)	MIN. SIZE & GRADE OF WALL STUDS	MAX. PONY WALL HEIGHT (FEET)	MAX. TOTAL WALL HEIGHT (FEET)	MAX. OPENING WIDTH (FEET)	REQUIRED TENSION CAPACITY OF STRAP (LBS)
2x4 SPF #1/# 2 GRADE	0	10	18	1000	2x4 # 2 GRADE	2	12	18	3850
			9	1000				9	2350
			16	1000				16	DESIGN REQUIRED
			18	1200				9	1000
	1	10	9	1000		2	12	16	2050
			16	2025				18	2450
			18	2400				9	1500
			9	1200				16	3150
	2	12	16	3200		4	12	18	3675
			9	1200				16	3150
			16	3200				18	3675
			9	1200				16	3150

WALL BRACING
DETAILS

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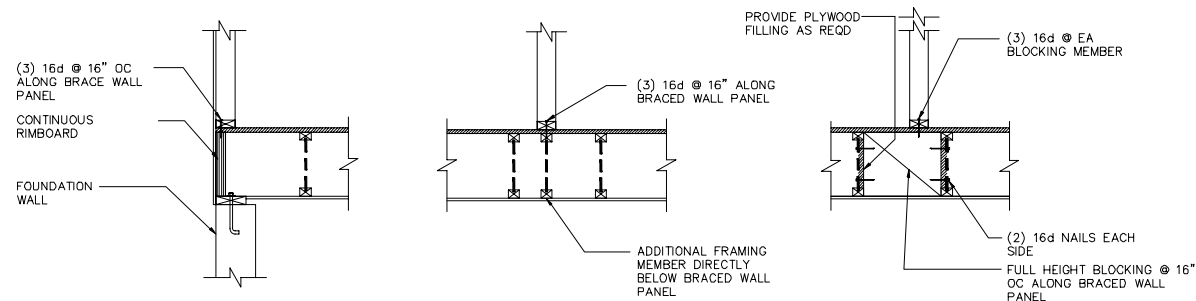
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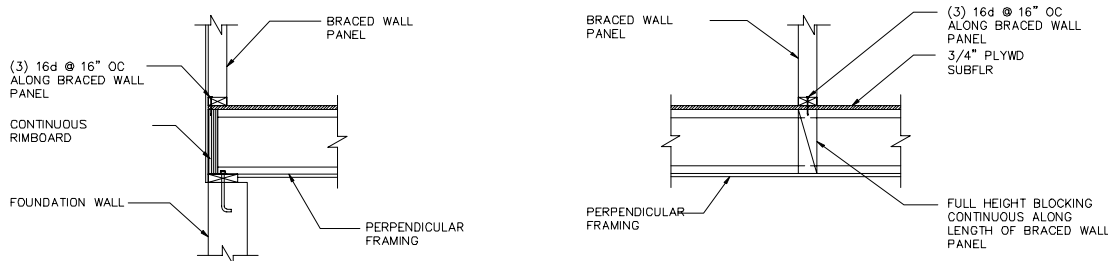
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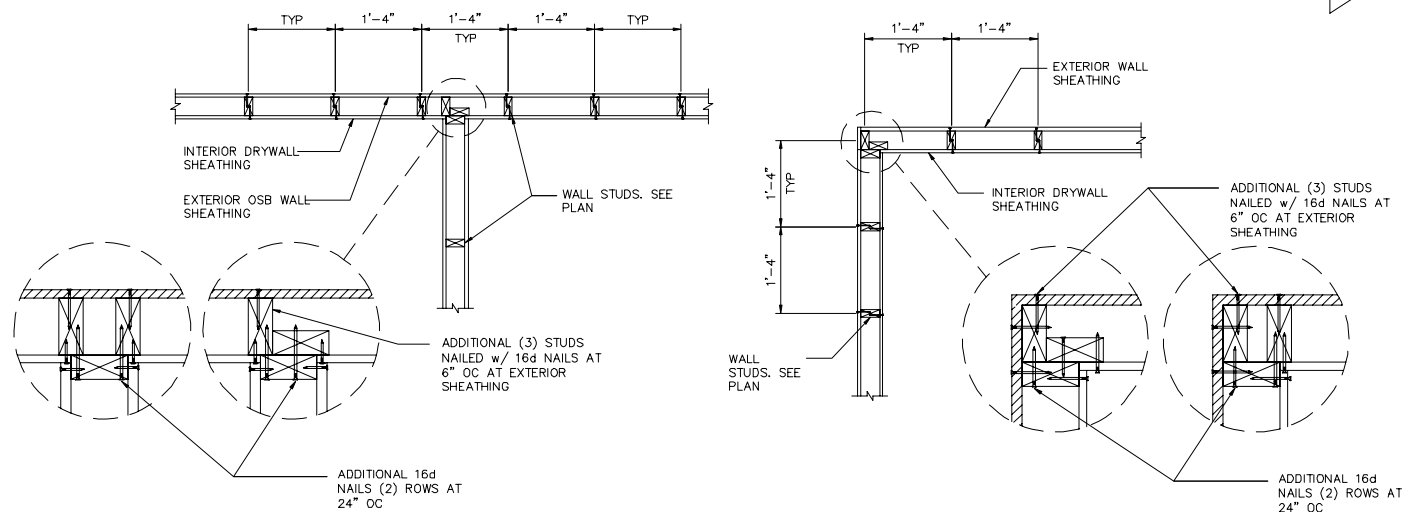
DESCRIPTIONS



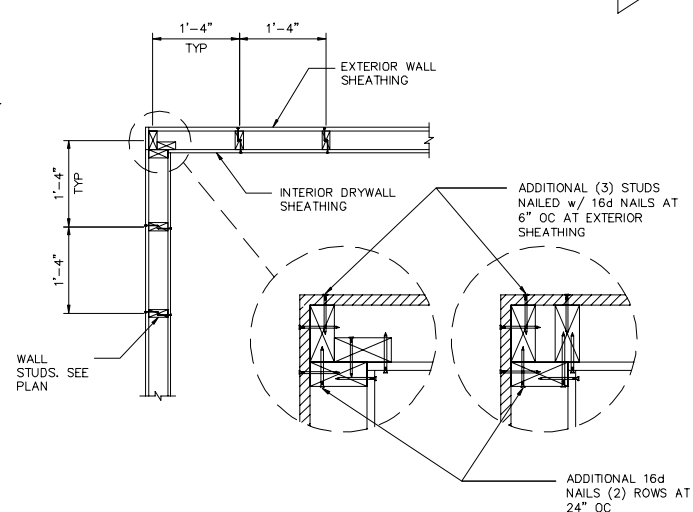
1 BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING
SCALE : NTS TYPICAL FLOOR/CEILING FRAMING CONNECTIONS



2 BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING
SCALE : NTS TYPICAL FLOOR/CEILING FRAMING CONNECTIONS



6 FRAMING DETAIL AT WALL INTERSECTIONS
SCALE : NTS

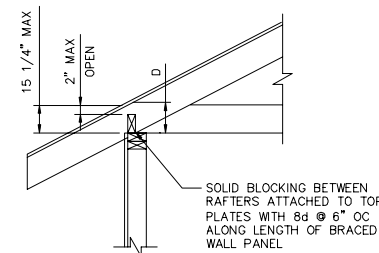


7 FRAMING DETAIL AT WALL CORNERS
SCALE : NTS

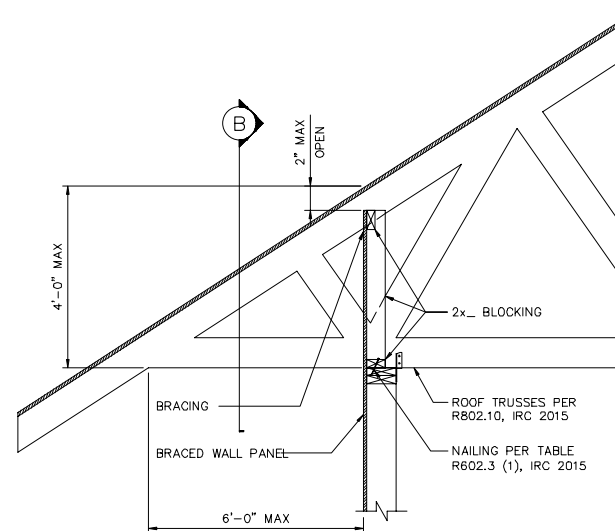
NOTE: USE WOOD TO METAL SCREWS @ 2" o.c. FOR CORNER HSS POST AND STUD WALL CONNECTION

ROOF FRAMING BLOCKING		
DISTANCE, D	REQUIREMENT	REF. DETAIL
0 - 9 1/4"	NO BLOCKING REQUIRED	NONE
9 1/4" - 11 1/4"	SOLID 2x... BLOCKING BETWEEN RAFTERS OR TRUSSES	DETAIL 3
11 1/4" - 48"	SOFFIT BLOCKING OR VERTICAL BLOCKING PANEL	DETAIL 4 OR DETAIL 5
OVER 48"	ENGINEERED DESIGN REQUIRED	NONE

NOTE:
D: DISTANCE FROM TOP OF BRACING UNIT TO TOP OF ROOF SHEATHING

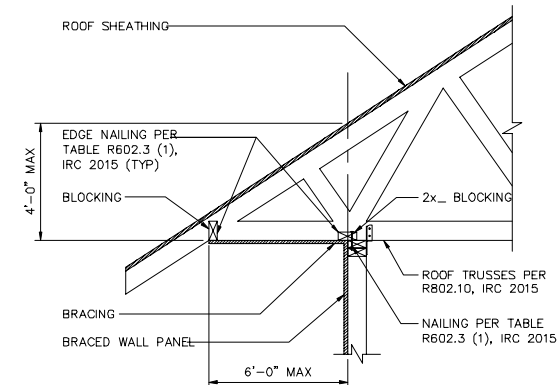


3 BLOCKING BETWEEN ROOF FRAMING MEMBERS
SCALE : NTS TYPICAL ROOF FRAMING CONNECTIONS

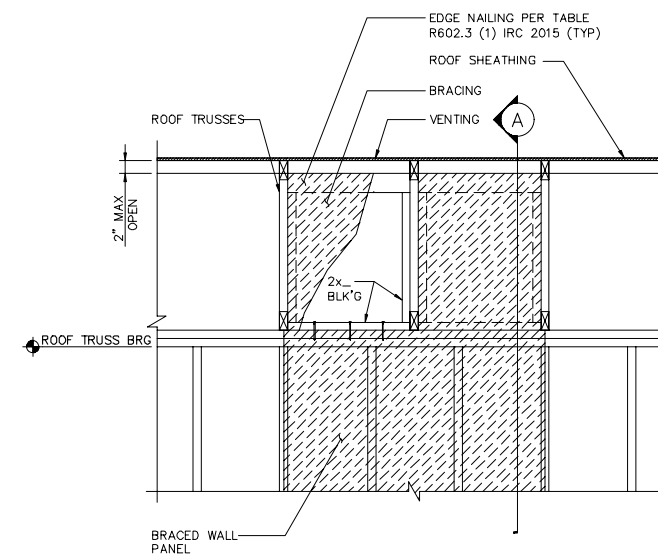


A SECTION
SCALE : NTS

5 VERTICAL BLOCKING PANEL
SCALE : NTS TYPICAL ROOF FRAMING CONNECTIONS



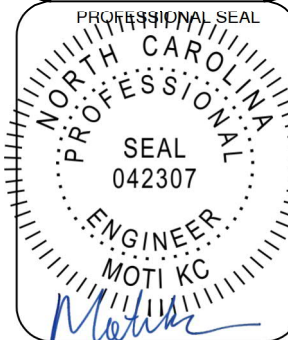
4 SOFFIT BLOCKING PANELS
SCALE : NTS TYPICAL ROOF FRAMING CONNECTIONS



B SECTION
SCALE : NTS

NO.	DATE	DESCRIPTIONS
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WALL, ROOF BRACING DETAILS
192 MELS MEADOWS DRIVE
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