- 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 VERIEVALL 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 OTHE 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
- 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
- DEFORMED BILLET STEEL ASTM A615 - GRADE 60
- WELDED WIRE FABRIC (WWF)
- ASTM A185 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
- 5) CAST-IN-PLACE CONCRETE SHALL BE READY-MIX PER ASTM-C94. THE MIX SHALL BE PROPORTIONED WITH
- PORTLAND CEMENT
- ii. AGGREGATES (3/4 IN MAXIMUM SIZE) ASTM C33 iii. NO CALCIUM CHLORIDE SHALL BE PERMITTED
- iv. AIR ENTRAINMENT:
- v. WATER REDUCING ADMIXTURE ASTM C494
- vi. FLY ASH CLASS F (20% MAXIMUM BY WEIGHT): ASTM C618
- 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% ±1.5 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.
- 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 NOS 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".
- 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
- 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 MASONR
- 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

#### V. REINFORCED MASONRY (CMU)

- 1. ALL MASONRY SHALL BE REINFORCED CONCRETE MASONRY UNIT IN ACCORDANCE WITH THE LATEST EDDITION OF ACI 530/ASCE 5/TMS 402
- MINIMUM MASONRY BLOCK (ASTM C90) STRENGTH SHALL (FIM) BE 2000 PSI.
- TYP.E "S" MORTAR (ASTM C270) SHALL BE USED USING 3/8" FULL BEDDING REINFORCED W/ 9 GAGE GALVANIZED LADDER WIRE EVERY 2ND ROW.
- FILLED CELLS SHALL BE REINFORCED WITH #4 REBARS @ 48" O.C. (UNLESS OTHERWISE IS SPECIFIED ON THE PLANS).
- CROUT 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

- 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
  - ASTM 992 (WHERE AVAILABLE) OR ASTM A572 (GRADE 50)
- ASTM A572 (GRADE 50) OR A36 ii. PLATES, CHANNELS AND ANGLES:
- iii. STRUCTURAL TUBES (HSS): ASTM A500 (GRADE B)
- iv. PIPE SECTIONS ASTM A53 (STANDARD PIPE, UNO)
- 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-C621
- 4) WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE OF THE AMERICAN WELDING SOCIETY, AWS  ${\tt D1.1.~ALL~WELDING~SHALL~BE~PERFORMED~USING~E70XX,LOW~HYDROGEN~ELECTRODES,UNLESS~NOTED~OTHERWISE.}\\$ 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 U.N.O.
- 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

REFER TO IRC TABLE R301.5 FOR MORE INFORMATION.

POINT ALONG THE TOP.

STANDARDS/CODES.

LOADS SPECIFIED IN THESE NOTES.

GEOTECHNICAL ENGINEER, AS NECESSARY

SNOW LOAD SPECIFIED IS GROUND SNOW LOAD ONLY.

A SINGLE CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY

MECHANICAL EQUIPMENT LOADS IN EXCESS OF 200 LBS SHALL BE

NOTIFIED TO STRUCTURAL ENGINEER.

PRE-FABRICATED STRUCTURAL COMPONENT SHALL COMPLY WITH

WIND PRESSURE SPECIFIED IS FOR MAIN WIND FORCE RESISTING

COMPONENTS AND CLADDING SHALL BE DETERMINED BY RESPECTIVE REGISTERED DESIGN PROFESSIONAL PER APPLICABLE

SYSTEM ONLY, WIND PRESSURE & LOADS FOR STRUCTURAL

DESIGN LOADS FROM APPLICABLE CODES/STANDARDS IN ADDITION TO

BE PAINTED WITH RUST INHIBITED PAINT IN THEIR ENTIRETY NO FIELD WELDING OF GALVANIZED MEMBERS IS PERMITTED.

AST	ENERS:		
١٥.	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 RAFER
6	RAFTER OR ROOF TRUSS TO PLATE	(3) 10d COMMON NAİLS (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	(3) 10d COMMON (3 1/2"x0,148")	TOE NAIL
	BEAM	(2) 16d COMMON (3 1/2"x0.162")	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"x0.162")	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")	TOE NAIL
		(2) 16d COMMON (3 1/2"x0.162")	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 (21/2"x0.113") OR (2) STAPLES, 1" CROWN, 16 GA, 13/4" 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 WAIL 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
EFLE	ECTION CRITERIA:	CONC	RETE CLEAR COVERS:
		LOAD INCLOAD DECK	ODIDTION

EFLECTION CRITERIA.			
DESCRIPTION	TOTAL LOAD	LIVE LOAD	
ROOF TRUSSES/RAFTERS/CEILING JOISTS	L/240	L/360 OR 1/2" MAX	
FLOOR JOISTS/FLOOR TRUSSES	L/240	L/600 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

DEGIGIN LOADS.			
DESCRIPTION	DEAD LOAD	LIVE LOAD	SNOW LOAD (b)
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 (c)	-
WIND LOADS:			
WIND SPEED		115 MPH	

WIND EXPOSURE CATEGORY:

FOUNDATION DESIGN LOADS (g): SOIL BEARING CAPACITY: 1500 PSF LATERAL FARTH PRESSURE: 60 PSE/FT (AT REST)

THESE SOIL PROPERTIES SHALL BE FIELD VERIFIED BY A LICENSED SEISMIC DESIGN CATEGORY: B SITE CLASS: D (ASSUMED DEFAULT)

EARTHQUAKE LOADS:

CONCRETE CLEAR COVERS	i:		
DESCRIPTION		MIN. COVER (IN.)	
CONCRETE CAST AGAINST EARTH	AND PERM	ANENTLY EXPOSED TO	3*
	#6 THROU	2"	
CONCRETE EXPOSED TO EARTH OR WEATHER	#5 BAR, W3 SMALLER	31 OR D31 WIRE AND	1 1/2"
	SLAB, WAL	3/4"	
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	BEAMS, COLUMNS (PRIMARY REINF., TIES, STIRRUPS, SPIRALS		1 1/2"
	SHELLS.	#6 BARS AND LARGER	3/4"
	FOLDED PLATES	#5 BAR W31 OR D31 WIRE AND SMALLER	1/2*

BOLEBIAG IAI CICIARTICA.					
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)				
BOILDING TILIGHT	17"-9" FRONT (ABOVE GRADE)				

TIMERSTRAND LSL 1.55E 2325 psi 1070 psi 310 psi 2050 psi 800 psi 1550000 psi 787815 psi ABBREVIATIONS

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

TIMERSTRAND LSL 1.3E | 1900 psi | 1075 psi | 400 psi | 1400 psi | 680 psi | 1300000 psi | 660750 psi

CONC= CONT= CONCRETE CONTINUOUS DBL= EA= EE= EXP= EXT= FDN= FTG= GT= EACH END EXTERIOR FOUNDATION GIRDER TRUSS GDR= INT= INFO= HEADER INFORMATION JACK STUD MANUF MANUFACTURER MIN= MAX= MINIMUM NTS= NOT TO SCALE ON CENTER PLYWD= PRESSURE TREATED POST FROM ABOVE REQD= REQUIRED SPRUCE PINE FIR SOUTHERN PINE STL= TYPICAL

WELDED WIRE FABRIC UNLESS NOTED OTHERWISE

NOISIN

SPACING OF FASTNERS

EDGES INTERMEDIATE

SUPPORTS

12" (g)

12" (g)

12"

12"

BUILDING

5/16" - 1/2"

19/32" - 1

CELLULOSIC

FIBERBOARD

SHEATHING

CELLULOSIC

FIBERBOARD

SHEATHING

SHEATHING (d)

SHEATHING (d)

3/4" OR LESS

7/8" - 1"

1 1/8" - 1 1/4"

SPECIES

SPF #2

HEM FIR #2

THICKNESS | WIDTH

25/32" STRUCTURA

NUMBERS AND TYPE OF

WOOD STRUCTURAL PANELS, SUB-FLOOR, ROOF AND INTERIOR WALL SHEATHING TO

FRAMING & PARTICLE BOARD WALL SHEATHING TO FRAMING

WALL) (J)

6d (2"x0.113") COMMON NAIL (SUBFLOOR

8d (2 1/2"x0.131") COMMON NAIL (ROOF)

6d (2"x0.113") COMMON NAIL (SUBFLOOR,

8d (2 1/2"x0.131") COMMON NAIL (ROOF)(F)

8d (2 1/2"x0.131") COMMON NAIL

10/1 (3"v0 148") COMMON NAIL OF

8d (2 1/2"x0.131") DEFORMED NAIL

OTHER WALL SHEATHING (h

1/2" GALVANIZED ROOFING NAIL.

7/16" CROWN OR 16 GAGE STAPLE. 1" CROWN & 1 1/4" LONG

3/4" GALVANIZED ROOFING NAIL

1" CROWN & 1 1/2" LONG

/16" CROWN OR 16 GAGE STAPLE

1/2" GALVANIZED ROOFING NAIL OR

1 1/2" LONG GALVANIZED STAPLES,

1 3/4" GALVANIZED ROOFING NAIL OR

OR 1 1/4" SCREWS TYPE W OR S

1 5/8" LONG GALVANIZED STAPLES, OR 1 5/8" SCREWS TYPE W OR S

WOOD STRUCTURAL PANELS, COMBINATION OF SUB-FLOOR UNDERLAYMENT TO FRAMING

8d (2 1/2"x0.131") COMMON NAIL OR

8d (2 1/2"x0.131") COMMON NAIL OR

10d (3"x0.148") COMMON NAIL OR

FASTNER SCHEDULE PER INTERNATIONAL RESIDENTIAL CODE

Fb Ft(a) Fv(a) FcII(a) Fc⊥(b) E Emin

850 psi | 525 psi | 150 psi | 405 psi | 1300 psi | 1300000 psi | 470000 psi

875 psi 450 psi 135 psi 425 psi 1150 psi 1400000 psi 510000 psi

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

2900 psi | 2025 psi | 290 psi | 2900 psi | 750 psi | 2000000 psi | 1016535 psi

BOTTOM EACH WA

BEARING

6d (2"x0.120") DÉFORMED NAIL

DRIVE 27526 192 MELS MEADOWS FUQUAY VARINA, NC

CAROLLINAL SEAL PROFESSIONAL SEAL SFAL P . 0 042307 MOTI KC

06/14/2021

103 SUITE

QUAGEN

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FIRM # P-1869 H SOUTH DRIVE, S RRY, NC 27511 NE: 919.267.3004 FO@EQUAGEN.C PHONE: 91 EMAIL: INFO@E EDINBURGH (

121

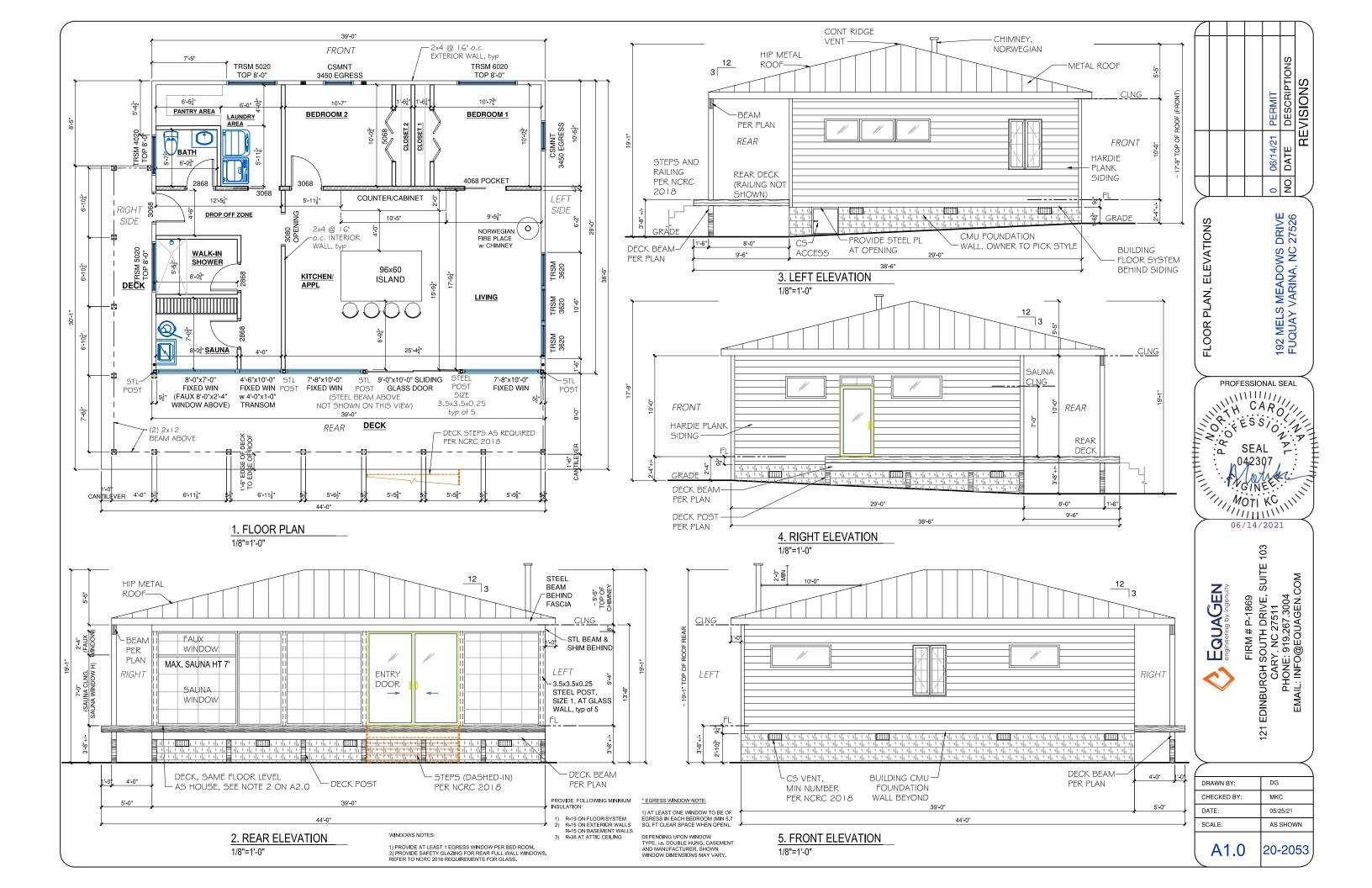
DRAWN BY CHECKED BY MKC DATE SCALE AS SHOWN

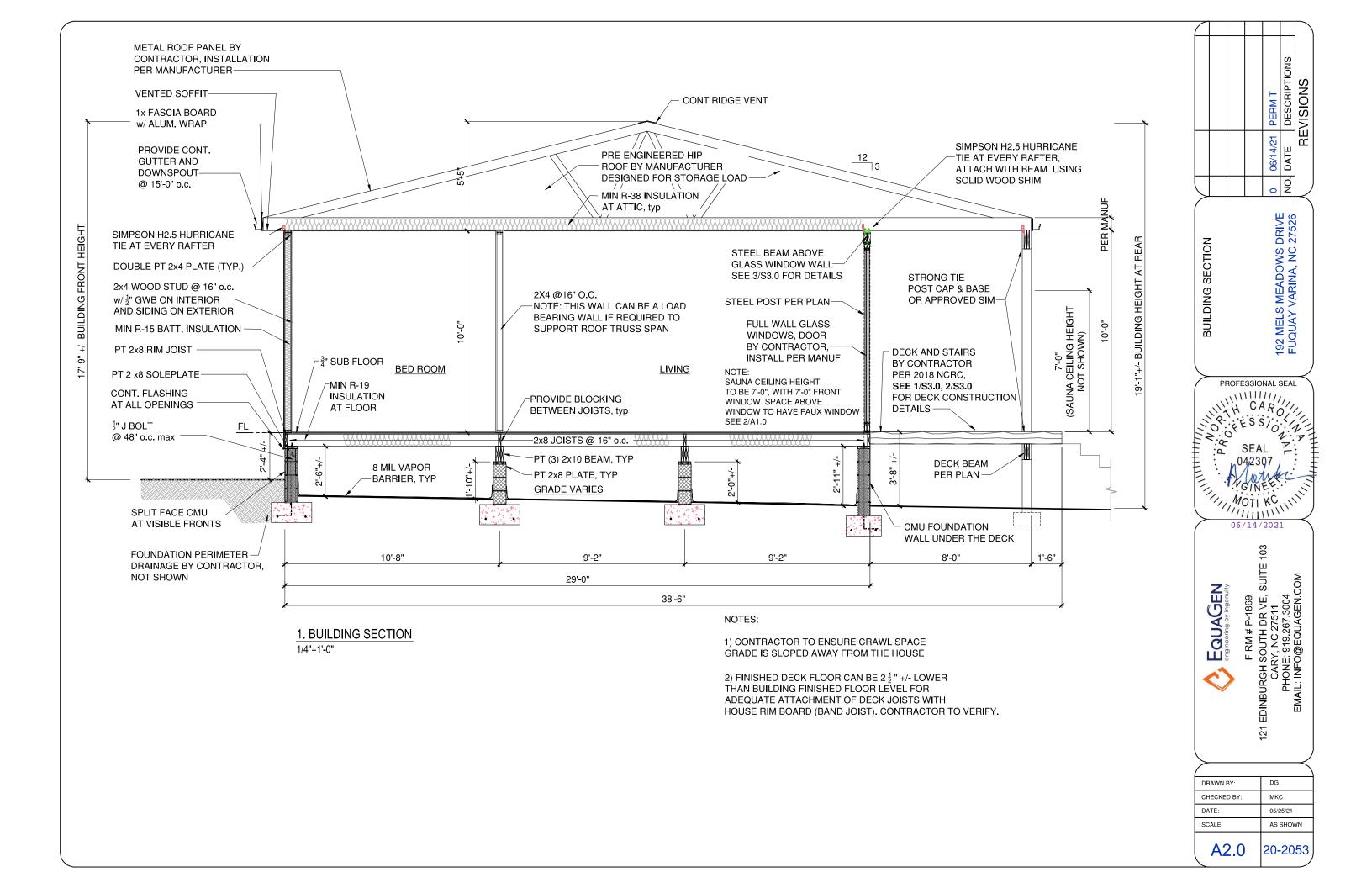
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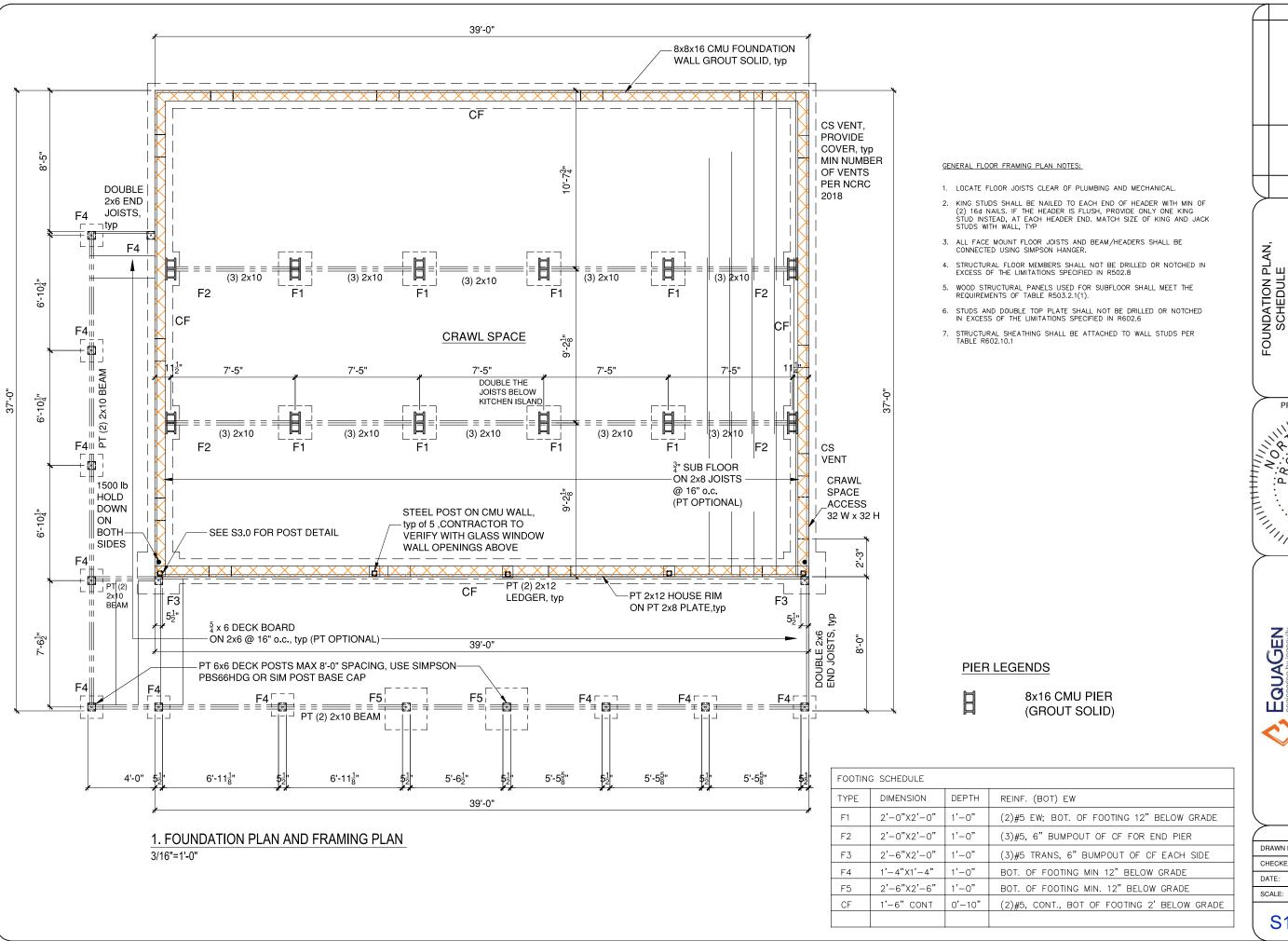
20-2053

SET PRINT SIZE TO SCALE: 11x17 LANDSCAPE

WD=







PROFESSIONAL SEAL 042307 042307 042307 06/14/2021

4/21 PERMIT
E DESCRIPTIONS
REVISIONS

192 MELS MEADOWS DRIVE FUQUAY VARINA, NC 27526

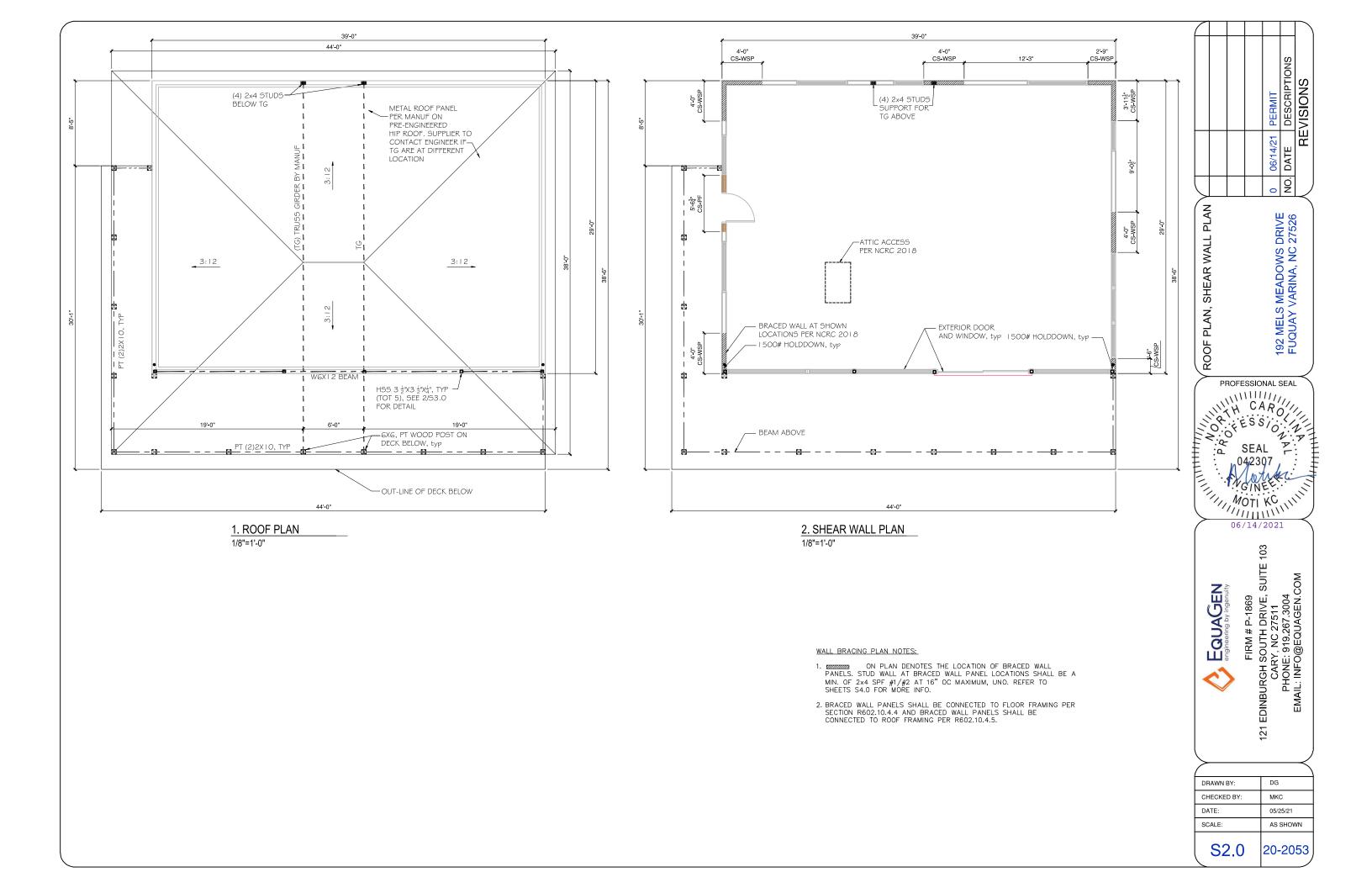
EQUAGEN

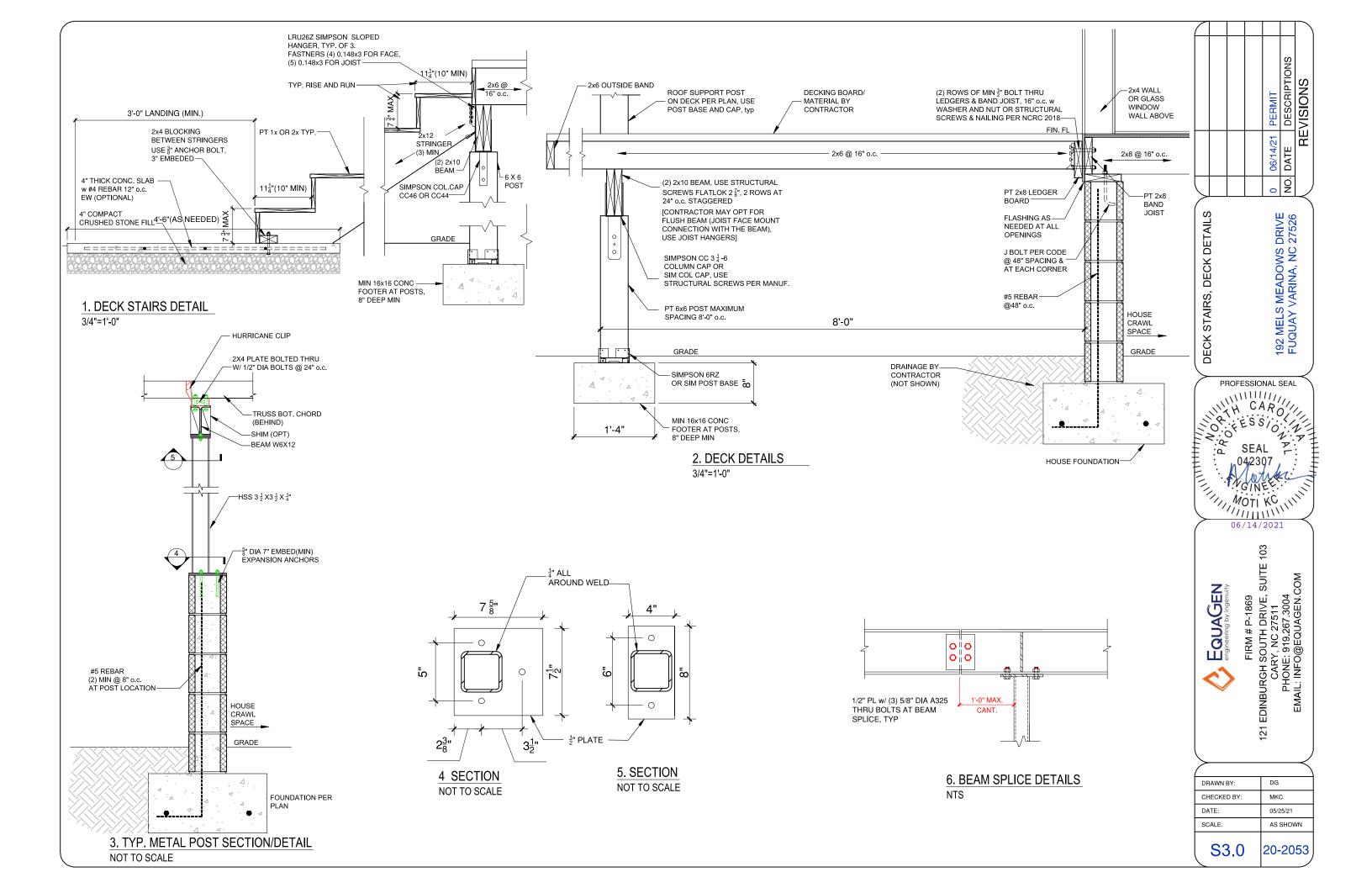
SUITE FIRM # P-1869 :1 EDINBURGH SOUTH DRIVE, SUITE CARY, NC 27511 PHONE: 919.267.3004 EMAIL: INFO@EQUAGEN.COM

121

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CHECKED BY:	мкс
DATE:	05/25/21
SCALE:	AS SHOWN
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3 I.U







WIND SPEED ≤115 MPH SEISMIC DESIGN CATEGORY: B

#### BRACED WALL PANEL LEGEND:

- 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:
G GAUGE X1 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.

L 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 WHOLD FEABURG

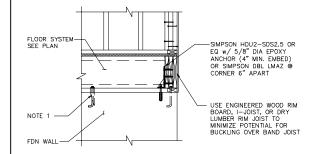
NUIE:
WSP = WOOD STRUCTURAL PANEL | CS = CONTINUOUSLY SHEATHED
PF = PORTAL FRAME | GB = GYPSUM BOARD

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.

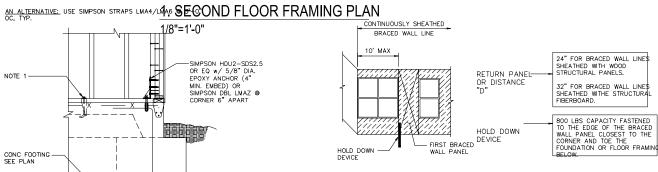
2. <u>AT INTERIOR FACE OF WALL:</u> 1/2" GYPSUM BOARD/SHEATHING WITH 5d COOLER NAILS AT 4" OC AT ÉDGES AND INTERMEDIATE SUPPORTS.

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

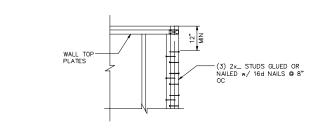


FOUNDATION WALL CONDITION

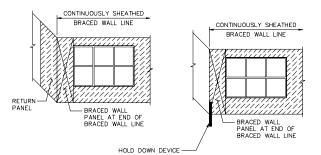
NOTE 1: 1/2" DIA ANCHOR BOLTS (7" MIN EMBED) w/ 2"x2"x3/16" WASHER PLATES @ 4"-0" OC MAX AT 12" MAX FROM EA END OF WALL.



SLAB ON GRADE CONDITION HOLD-DOWN DETAIL AT CONCRETE FOUNDATION

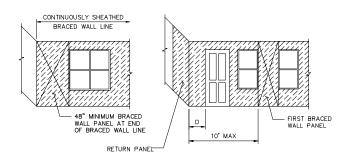


HOLD-DOWN DETAIL SCALE - NTS AT RAISED WOOD FLOOR



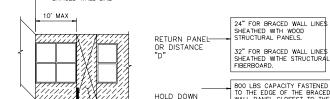
### END CONDITION - 1

**END CONDITION - 2** 



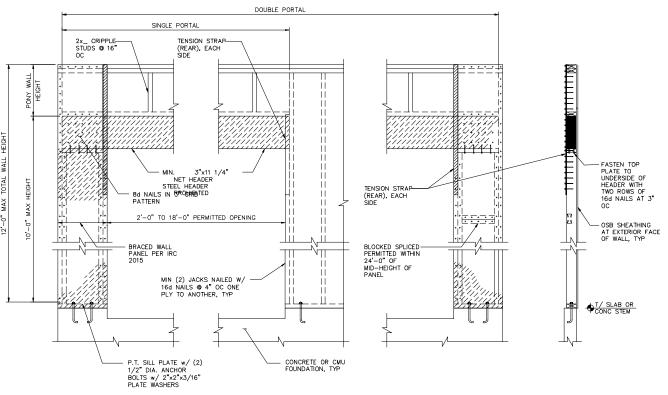
### END CONDITION - 3

**END CONDITION - 4** 

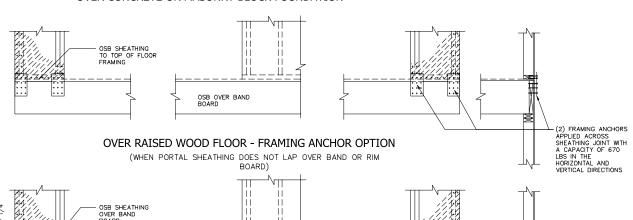


### **END CONDITION - 5**

END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING METHOD



### OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OSB OVER BAND BOARD OVER RAISED WOOD FLOOR - OVERLAP OPTION (WHEN PORTAL SHEATHING LAPS OVER BAND OR RIM BOARD)

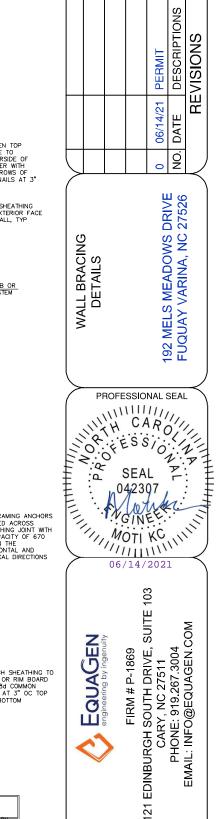
## FRONT ELEVATION

**SECTION** 

CONTINUOUS SHEATHING PORTAL FRAME (CS-PF)

EFERENCE:	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)		REQUIRED TENSION CAPACITY OF STRAP (LBS)	MIN. SIZE & GRADE OF WALL STUDS	MAX. PONY WALL HEIGHT (FEET)	MAX. TOTAL WALL HEIGHT (FEET)		REQUIRED TENSION CAPACITY OF STRAP (LBS)
	0	10	18	1000		2	12	18	3850
	1 10	10	9	1000	2x4 # 2 GRADE	4 12	9	2350	
			16	1000			12	16	DESIGN REQUIRED
2x4 SPF #1/# 2 GRADE		18	1200		_		9	1000	
ONADE	2	10	9	1000	2x6 STUD GRADE	2	12	16	2050
			16	2025				18	2450
			18	2400				9	1500
	2		9	1200		4 12	16	3150	
		12	16	3200				18	3675



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CHECKED BY:	мкс
DATE:	05/25/21
SCALE:	AS SHOWN
S4.0	20-2053

