GENERAL STRUCTURAL NOTES:

DESIGN BUILDING CODES:

1. INTERNATIONAL BUILDING CODE 2021

DESIGN LOADS

WIND LOADS:

ULTIMATE WIND SPEED (3 SEC. GUST)	115 MPH
WIND EXPOSURE	C
RISC CATEGORY	II
INTERNAL PRESSURE COEFFICIENT	+/- 0.18

SNOW LOADS:

GROUND SNOW	56 PSF (PLUS APPLICABLE DRIFT)
IMPORTANCE FACTOR	1.0
EXPOSURE FACTOR	1.0
THERMAL FACTORS:	
TYPICAL	1.1
CANOPIES / OVERHANGS	1.2

DEAD LOADS:

ROOF:	20PSF (INCLUDES ROOF STRUCTURE)
FLOOR:	20 PSF

LIVE LOADS:

ROOF:	20PSF
FLOOR:	40 PSF (UNO)

FUTURE CONSTRUCTION: NONE

DEFLECTION CRITERIA:

ROOF:	SPAN/240 (TOTAL)
	SPAN/360 (LIVE)
FLOOR:	SPAN/360 (TOTAL)
	SPAN/480 (LIVE)
WALLS:	SPAN/600 (MASONRY)
	SPAN/360 (TYPICAL OTHERWISE)

MATERIAL GRADES AND STRENGTHS:

STRUCTURAL STEEL:

WIDE FLANGE SHAPES	FY=50KSI (ASTM A992)
HOLLOW STRUCTURAL STEEL (HSS)	FY=46KSI (ASTM A500 GR. B)
PLATES AND OTHER SHAPES	FY=36KSI (ASTM A36) U.N.O.
HIGH STRENGTH BOLTS	A325
ANCHOR RODS	ASTM F1554 GR. 36 U.N.O.

CAST IN PLACE CONCRETE: 28DAY COMPRESSIVE STRENGTH

INTERIOR SLAB ON GRADE	F'c=4000PSI
FOUNDATION WALLS	F'c=4000PSI
FOOTINGS	F'c=3000PSI
CONCRETE OVER METAL DECK	F'c=4000PSI
GROUT	F'c=8000PSI

EXTERIOR CONCRETE NOT SPECIFICALLY SHOWN IN THIS DRAWING SET IS NOT BY SS
ALL CONCRETE EXPOSED TO FREEZE THAW CYCLES SHALL HAVE 5-7% AIR ENTRAINMENT ADDED

CONCRETE REINFORCING STEEL:

TYPICAL BARS	ASTM A615 (GRADE 60)
WELDABLE BARS	ASTM A706 (GRADE 60)

DIMENSIONAL LUMBER:	**GRADE:**
-SPRUCE PINE FIR (SPF)	#1/#2
-DOUGLAS FIR (DF)	#1/#2

ENGINEERED LUMBER:	**GRADE:**
-LAMINATED VENEER (LVL)	2.0E

GENERAL CONSTRUCTION NOTES:

- THE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT SHOW CONSTRUCTION METHODS UNLESS SO NOTED.
- FABRICATE AND CONSTRUCT ALL ITEMS ACCORDING TO THE DRAWINGS, SPECIFICATION AND BUILDING CODES. MAKE NO MODIFICATIONS WITHOUT THE ENGINEERS WRITTEN APPROVAL.
- DO NOT SCALE THE DRAWINGS FOR DIMENSIONS, SIZES, OR LOCATIONS.
- WHEN INSTALLING PROPRIETARY PRODUCTS, CONTRACTOR MUST READ AND FOLLOW MANUFACTURERS RECOMMENDATIONS FOR PREPARATION, INSTALLATION METHOD AND INSPECTION.
- THE CONTRACTOR SHALL COORDINATE THE DIMENSIONS, ELEVATIONS, AND CONDITIONS BETWEEN ALL PROJECT DOCUMENTS AND SHALL NOTIFY THE ENGINEER AND ARCHITECT OF RECORDS OF ANY DISCREPENCIES. IF A DISCREPANCY IS FOUND WITHIN THE CONTRACT DOCUMENTS, IMMEDIATELY SUBMIT THE MATTER IN WRITING TO THE ENGINEER WHO WILL MAKE A DETERMINATION AND WRITTEN CLARIFICATION
- THE CONTRACT DOCUMENTS REPRESENT THE COMPLETED STRUCTURE. MEANS AND METHODS OF CONSTRUCTION IS FULLY THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTORS SHALL PROTECT THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION AND INSTALLATION.
- TEMPORARY BRACING OR SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR. BRACING OR SHORING SHALL BE INSTALLED UNTIL DIAPHRAGMS AND LATERAL RESISTING ELEMENTS HAVE BEEN INSTALLED.
- THESE DRAWINGS SHALL NOT BE SCALED. REFER TO ARCHITECTUAL DRAWINGS FOR GEOMETRY NOT SPECIFICLLAY SHOWN ON THIS DRAWING SET.
- ALL TRUSS TEMPORARY AND PERMINANT BRACING IS THE RESPONSIBILITY OF THE TRUSS SUPPLIER AND CONTRACTOR.
- TRUSS TO TRUSS CONNECTIONS ARE THE RESPONSIBILITY OF THE TRUSS SUPPLIER.
- ALL TEMPORARY AND PERMANENT TRUSS BRACING IS THE RESPONSIBILITY OF THE TRUSS SUPPLIER AND THE CONTRACTOR. TRUSSES ARE SHOWN CONCEPTUALLY ON THESE PLANS BUT FINAL DESIGN AND LAYOUTS IS BY THE TRUSS SUPPLIER.
- TRUSS SUPPLIER SHALL PROVIDE BEARING ENHANCERS AT TRUSS SUPPORT LOCATIONS AS NEEDED TO PREVENT LOCAL CRUSHING.

FOUNDATION AND BACKFILLING NOTES:

- FOOTINGS ARE DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF **2000**PSF. THE RESPONSIBILITY OF THE GC TO VERIFY ON SITE ALLOWABLE SOIL BEARING PRESSURE PRIOR TO CONSTRUCTION. IT IS RECOMMENDED THAT THE OWNER EMPLOY A GEOTECHNICAL ENGINEER TO VERIFY THE ASSUMED ALLWABLE SOIL BEARING PRESSURE AND TO PROVIDE ADDITIONAL SOIL PREPERATION RECOMMENDATIONS.
- ALL FOOTINGS SHALL BE PROTECTED FROM FREEZING AND NO CONCRETE SHALL BE PLACED ONTO FROZEN SOIL.
- FOOTINGS SHALL BE CENTERED UNDER THE STRUCTURE ABOVE UNLESS SPECIFICALLY DIMENSIONED OTHERWISE.
- FOOTING STEPS SHALL BE PLACED GENERALLY WHERE SHOWN ON PLANS. CONTRACTORS RESPONSIBILITY TO COORDINATE EXACT PLACEMENT WITH SITE OR GRADE CONDITIONS.
- BACKFILLING MATERIAL SHALL BE FREE DRAINING ENGINEERED GRANULAR SOIL OR AS NOTED ON THE FOLLOWING SHEETS. REFER TO THE GEOTECHNICAL REPORT FOR FURTHER SOIL RECOMENDATIONS.
- CONTRACTORS SHALL BACKFILL EVENLY BOTH SIDES OF FOOTINGS / FOUNDATIONS WALLS TO PREVENT OVERTURNING FORCES TO DEVELOP.
- BACKFILLING AGAINST BASEMENT WALLS IS NOT PERMITTED UNTIL THE FLOOR DIAPHRAGM IS IN PLACE.

CONCRETE NOTES:

- CONTRACTORS SHALL PROVIDE CONCRETE INSTALLATION IN ACCORDANCE WITH ACI 318 AND ACI 301. PROVIDE ADMIXTURES AND SPECIAL CONDITIONS AS REQUIRED IN CONTRACT DOCUMENTS.
- PROVIDE CONSTRUCTION AND CONTROL JOINTS AS NOTED ON THE PROJECT DRAWINGS.
- REFER TO CONTRACT DOCUMENTS FOR UNDER SLAB PIPING / HVAC, FLOOR DRAINS, AND SLAB ELEVATIONS BEFORE FORMING OR CONSTRUCTION BEGINS.
- SUPPLIER SHALL REFER TO CONCRETE REINFORCING STEEL INSTITUTE MANUAL OF STANDARD PRACTICE FOR THE DETAILING OF ALL REINFORCING STEEL.
- CAST IN PLACE CONCRETE SHALL HAVE THE FOLLOWING CLEARENCES MET.

1.	CAST AGAINST AND PERMENENTLY EXPOSED TO EARTH	3"
2.	FORMED AND EXPOSED TO EARTH	
	A. #6 AND LARGER	2"
	B. #5 AND SMALLER	1.5
3.	SLABS ON GRADE	MID DEPTH

- CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT OF REINFORCING STEEL DURING CONSTRUCTION TO ENSURE LIMITED MOVEMENT UNTIL CONCRETE IS CURED.
- SEE LAP LENGTH SCHEDULE ON THE FOLLOWING SHEETS FOR REINFORCING LAP REQUIREMENTS.

EXISTING CONDITIONS

- THE GENERAL CONTRACTOR SHALL VERIFY, BY FIELD CHECK, ALL SIZES, DIMENSIONS, ELEVATIONS, ETC. OF ELEMENTS OF THE EXISTING STRUCTURE ADJACENT TO THE PROPOSED CONSTRUCTION OR RELATED TO THE PROPOSED CONSTRUCTION.
- ALL DIMENSIONS INVOLVING NEW WORK TYING INTO OR GOVERNED BY EXISTING CONSTRUCTION SHALL BE FIELD CHECKED BY THE GENERAL CONTRACTOR AND FURNISHED TO THE SUBCONTRACTOR PRIOR TO FABRICATION OF ANY WORK. THE VERIFIED DIMENSION SHALL APPEAR AND BE NOTED AS SUCH ON THE FIRST SHOP DRAWING SUBMITTAL.
- THE GENERAL CONTRACTOR SHALL USE CAUTION AND TAKE ANY AND ALL NECESSARY MEASURES TO PROTECT THE EXISTING STRUCTURE DURING DEMOLITION AND NEW CONSTRUCTION WORK. THE CONTRACTOR MUST DETERMINE THAT THE EXISTING STRUCTURE IS SOUND.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF EXECUTING THE WORK.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT-ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN CONSTRUCTION DOCUMENTS AND ACTUAL FIELD CONDITIONS.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILING PRACTICES OUTLINED IN THE AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION LRFD/ASD, AISC 360-10 SPECIFICATION AND AISC 303-10 CODE OF STANDARD PRACTICE.
- STRUCTURAL STEEL FABRICATOR IS RESPONSIBLE FOR DESIGN OF MEMBER CONNECTIONS, EXCEPT FOR THOSE DETAILED ON PLANS.
- ALL BOLTED CONNECTIONS SHALL BE MADE WITH ASTM A325 BOLTS (UNLESS NOTED OTHERWISE ON PLANS), ACCORDING TO THE AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. MINIMUM BOLT DIAMETER SHALL BE 3/4". BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE. IN STANDARD OR SHORT SLOTTED HOLES. INSTALL ALL NUTS SNUG TIGHTENED.
- ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS IN ACCORDANCE WITH THE AISC SPECIFICATIONS AND A.W.S. CODES, LATEST EDITIONS. USE E70XX ELECTRODES.
- CONTRACTOR IS RESPONSIBLE FOR DESIGN AND INSTALLATION OF BRACING DURING ERECTION AND UNTIL CONSTRUCTION IS COMPLETE.
- CONTRACTOR SHALL PROVIDE FULLY GROUTED COLUMN BASE PLATE OR STEEL SHIMS BETWEEN COLUMN BASE AND FOOTING PRIOR TO ROOF ERECTION. LEVELING NUTS SHALL NOT CARRY DEAD LOAD OF STRUCTURE.
- FIELD CUTTING AND FIELD MODIFICATIONS OF THE STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT SPECIFIC PRIOR APPROVAL OF THE ENGINEER.
- THE DESIGN, DETAILING, AND ERECTION SHALL BE IN ACCORDANCE WITH AISC AND AWS.
- PROVIDE ASTM A233 (CLASS 70) ELECTRODES FOR FIELD OR SHOP WELDS.
- SPLICING OF MEMBERS IS NOT PERMITTED UNLESS GIVEN APPROVAL BY THE EOR.
- CONTRACTORS SHALL NOT CUT STEEL MEMBERS UNLESS GIVEN APPROVAL BY THE EOR.

STEEL DECK

- STEEL ROOF AND FLOOR DECK SHALL BE OF SIZE, THICKNESS AND FINISH AS SHOWN IN THE PLANS AND SPECIFICATIONS AND ANCHORED TO THE STRUCTURAL STEEL SUPPORTS IN ACCORDANCE WITH THE MANUFACTURER'S SUGGESTED SPECIFICATIONS AND THE RECOMMENDATIONS OF THE STEEL DECK INSTITUTE, UNLESS NOTED OTHERWISE.
- ALL COMPOSITE OR METAL FORM DECKING SHALL HAVE PAINTED FINISH.
- ROOF DECKING SHALL HAVE THE MANUFACTURES STANDARD PRIME-PAINTED FINISH TOP AND BOTTOM, UNLESS NOTED OTHERWISE.
- FOR OPENINGS IN ROOF DECK FROM 7" TO 12" SQUARE OR ROUND, REINFORCE DECK WITH 16GA. PLATE SCREWED TO ROOF DECK. SEE DETAIL FOR PLATE SIZE AND CONNECTION.
- FOR OPENINGS 13" TO 27" WIDE REINFORCE WITH STEEL FRAME. SEE DETAILS FOR FRAMING INFORMATION.
- AT OPENINGS LARGER THAN 27" WIDE, ALL OPENINGS BELOW LARGE ROOF TOP MECHANICAL UNITS, AND BELOW THE ROOF CURB OF LARGE MECHANICAL UNITS, PROVIDE L 4X4 FRAME.
- DECK ATTACHMENT SHALL MEET STEEL DECK INSTITUTE REQUIREMENTS A A MINIMUM, BUT NO CASE LESS THAN THE FOLLOWING:
  1. FASTEN EACH END LAP USING A 5/8" DIAMETER PUDDLE WELD AT EACH SHEET EDGE PLUS (2) INTERMEDIATE WELDS, (4) WELDS PER SHEET
  2. MAXIMUM SPACING OF WELDS AT INTERIOR SUPPORTS AND BEAMS SHALL BE 16" O.C.
  3. AT EXTERIOR SUPPORTS AND BEAMS WELDS SHALL BE INSTALLED AT EACH RIB FOR DECK PERPENDICULAR TO SUPPORT OR BEAM AND AT 12" O.C. MAXIMUM FOR DECK PARALLEL TO SUPPORT OR BEAM.
  4. MECHANICAL FASTENERS MAY BE USED IN LIEU OF WELDS ONLY AFTER SUBMISSION OF TEST DATA, DESIGN CALCULATIONS, OR DESIGN CHARTS AND APPROVAL BY ENGINEER OF RECORD.
  5. SIDELAP CONNECTIONS AT SPANS GREATER THAN 5'-0" SHALL CONSIST OF NO. 10 SIDELAP FASTENERS AT INTERVALS NOT EXCEEDING 36".
- COMPOSITE FLOOR DECKS ARE DESIGNED TO BE UNSHORED UNLESS NOTED OTHERWISE. DECK SHALL BE SHORED PER MANUFACTURERS SPECIFICATIONS.
- DECK SHALL EXTEND OVER (3) OR MORE SPANDS WITH MINIMUM 1-1/2" BEARING AT ENDS AND 4" BEARING AT INTERIOR SUPPORTS. STAGGER SPLICES WITH JOINTS OVER SUPPORTING MEMBERS ONLY.

COLD WEATHER CONCRETE NOTES:

THE FOLLOWING REQUIREMENTS SHALL GOVERN COLD WEATHER CONCRETE CONSTRUCTION:

- COLD WEATHER IS DEFINED AS A PERIOD WHEN FOR MORE THAN 3 SUCCESSIVE DAYS THE MEAN DAILY TEMPERATURE DROPS BELOW 40° F.
- THE SUBGRADE, AS WELL AS ALL CONCRETE BELOW THE NEW POUR, SHALL BE PROTECTED FROM FREEZING PRIOR TO CONCRETING.
- ALL FORMS AND REINFORCING SHALL BE KEPT FREE FROM FROST.
- THE MINIMUM TEMPERATURE OF FRESH CONCRETE WHEN DELIVERED AT THE SITE SHALL CONFORM TO THE FOLLOWING:

AIR TEMPERATURE (°F)	MINIMUM CONCRETE TEMPERATURE (°F)	
	FOR SECTIONS WITH LEAST DIMENSION LESS THAN 12"	FOR SECTIONS WITH LEAST DIMENSION 12" OR GREATER
30 TO 40	60	50
0 TO 30	65	55
BELOW 0	70	60

- IF WATER OR AGGREGATE IS HEATED ABOVE 100° F, COMBINE WATER WITH AGGREGATE IN MIXER BEFORE CEMENT IS ADDED. DO NOT MIX CEMENT WITH MIXTURES OF WATER AND AGGREGATE HAVING A TEMPERATURE GREATER THAN 100° F.
- THE MINIMUM TEMPERATURE OF FRESH CONCRETE, AS PLACED DURING BELOW NORMAL TEMPERATURES (BELOW 40° F) SHALL BE 50° F.
- WHEN MEAN DAILY OUTDOOR TEMPERATURE IS LESS THAN 40° F, ALL POURED CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION AT A TEMPERATURE NOT LESS THAN 50° F FOR AT LEAST SEVEN DAYS (THREE DAYS FOR HIGH EARLY STRENGTH CONCRETE USING TYPE III PORTLAND CEMENT). WHEN NECESSARY, ARRANGEMENTS FOR HEATING, COVERING, INSULATING, OR HOUSING THE CONCRETE WORK SHALL BE MADE IN ADVANCE OF PLACEMENT. THE ARRANGEMENTS SHALL BE ADEQUATE TO MAINTAIN THE REQUIRED TEMPERATURE WITHOUT INJURY DUE TO CONCENTRATION OF HEAT. COMBUSTION HEATERS SHALL NOT BE USED DURING THE FIRST 24 HOURS, UNLESS PRECAUTIONS ARE TAKEN TO PREVENT EXPOSURE OF CONCRETE TO EXHAUST GASES WHICH CONTAIN CARBON DIOXIDE.
- SUFFICIENT PROTECTION SHALL BE PROVIDED TO THE CONCRETE AFTER REMOVAL OF FORMS SUCH THAT CHANGES IN TEMPERATURE OF THE AIR IMMEDIATELY ADJACENT TO THE CONCRETE DURING AND IMMEDIATELY FOLLOWING THE CURING PERIOD ARE KEPT AS UNIFORM AS POSSIBLE. THE RATE OF TEMPERATURE CHANGE SHALL NOT EXCEED 5° F IN ANY ONE HOUR OR 40° F IN ANY 24 HOUR PERIOD.
- WHEN CONCRETE IS POURED DURING BELOW NORMAL TEMPERATURES (BELOW 40° F), AT LEAST ONE EXTRA TEST CYLINDER SHALL BE MADE AND KEPT ADJACENT TO THE RELATED STRUCTURE AND CURED AND PROTECTED BY THE SAME METHODS USED FOR THE CONCRETE IN THE STRUCTURE.
- CALCIUM CHLORIDE SHALL NOT BE USED AS AN ADDITIVE IN CONCRETE.

WOOD FRAMING NOTES

- UNLESS OTHERWISE SPECIFIED, EACH PIECE OF LUMBER TO BEAR A GRADE MARK, STAMP, OR OTHER IDENTIFYING MARKS INDICATING GRADES OF MATERIAL, AND RULES OR STANDARDS UNDER WHICH PRODUCED. IDENTIFYING MARKS IN ACCORDANCE WITH RULE OR STANDARD UNDER WHICH MATERIAL IS PRODUCED, INCLUDING REQUIREMENTS FOR QUALIFICATIONS AND AUTHORITY OF THE INSPECTION ORGANIZATION, USAGE OF AUTHORIZED IDENTIFICATION, AND INFORMATION INCLUDED IN THE IDENTIFICATION. INSPECTION AGENCY FOR LUMBER APPROVED BY THE BOARD OF REVIEW, AMERICAN LUMBER STANDARDS COMMITTEE, TO GRADE SPECIES USED.STRUCTURAL MEMBERS: SPECIES AND GRADE AS LISTED IN THE AF&PA, NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION HAVING DESIGN STRESSES AS SHOWN.

LUMBER OTHER THAN STRUCTURAL:
- UNLESS OTHERWISE SPECIFIED, SPECIES GRADED UNDER THE GRADING RULES OF AN INSPECTION AGENCY APPROVED BY BOARD OF REVIEW, AMERICAN LUMBER STANDARDS COMMITTEE. FRAMING LUMBER: MINIMUM EXTREME FIBER STRESS IN BENDING OF 1100. FURRING, BLOCKING, NAILERS AND SIMILAR ITEMS 100 MM (4 INCHES) AND NARROWER STANDARD GRADE; AND, MEMBERS 150 MM (6 INCHES) AND WIDER, NUMBER 2 GRADE.

SIZES:
- SIZE TO CONFORM TO PROD. STD. PS20. SIZE REFERENCES ARE NOMINAL SIZES, UNLESS OTHERWISE SPECIFIED, ACTUAL SIZES WITHIN MANUFACTURING TOLERANCES ALLOWED BY STANDARD UNDER WHICH PRODUCED.

MOISTURE CONTENT:
- AT TIME OF DELIVERY AND MAINTAINED AT THE SITE BOARDS AND LUMBER 2 INCHES AND LESS IN THICKNESS SHALL BE 19 PERCENT OR LESS. LUMBER OVER 2 INCHES THICK SHALL BE 25 PERCENT OR LESS.

PLYWOOD/SHEATHING
- PLYWOOD SHALL COMPLY WITH PROD. STD. PS 1 AND APA E30. PLYWOOD SHALL BEAR THE MARK OF A RECOGNIZED ASSOCIATION OR INDEPENDENT INSPECTION AGENCY THAT MAINTAINS CONTINUING CONTROL OVER QUALITY OF PLYWOOD WHICH IDENTIFIES COMPLIANCE BY VENEER GRADE, GROUP NUMBER, SPAN RATING WHERE APPLICABLE, AND GLUE TYPE. SHEATHING SHALL BE APA RATED EXPOSURE 1 OR EXTERIOR; PANEL GRADE CD OR BETTER.

INSTALLATION
- FRAMING AND MISCELLANEOUS WOOD MEMBERS SHALL CONFORM TO APPLICABLE REQUIREMENTS OF THE WITH APA STANDARDS FOR INSTALLATION OF PLYWOOD. TRUSSES SHALL BE BRACE IN ACCORDANCE WITH THE TRUSS MANUFACTURERS RECCOMENDATIONS. ALL TEMPORARY AND FINAL TRUSS BRACING IS THE RESPONSIBILITY OF THE CONTRACTOR.

CONCRETE CONSTRUCTION

PLACEMENT OF REINFORCING STEEL
- REINFORCING STEEL WHICH IS PLACED ADJACENT TO A CONCRETE SURFACE WHICH SHALL BE CAST AGAINST WOOD, METAL OR OTHER REMOVABLE FORM WORK SHALL BE SUPPORTED AWAY FROM THE FORM WORK WITH CHAIRS OR BOLSTERS. ALL COMPONENTS OF THE CHAIRS OR BOLSTERS WHICH ARE IN CONTACT WITH THE FORM SHALL BE NONCORRODING. COMPONENTS OF THE CHAIRS OR BOLSTERS WHICH ARE SUBJECT TO CORROSION SHALL NOT BE PLACED WITHIN ONE INCH OF THE FORMED SURFACE.
- BOLSTERS SHALL BE PROVIDED BETWEEN THE LAYERS OF REINFORCING STEEL WITHIN WALLS AND SLABS.
- THE SPACING OF BOLSTERS, CHAIRS AND OTHER REINFORCING STEEL SUPPORTS SHALL BE LIMITED SO AS TO PREVENT DISPLACEMENT OF THE REINFORCING DUE TO PLACEMENT OF THE CONCRETE. IN THE CASE OF SLABS ALL LAYERS OF REINFORCING STEEL SHALL BE SUPPORTED SO AS TO BE CAPABLE OF CARRYING THE LOADS OF THE WORKERS PLACING THE STEEL AND CONCRETE.

EMBEDEMENTS
- ALL ALUMINUM SURFACES TO BE PLACED IN CONTACT WITH CONCRETE SHALL BE COATED WITH BITUMASTIC PAINT.
- 2. A MINIMUM OF TWO (2) INCHES OF CLEAR COVER SHALL BE PROVIDED BETWEEN ALL EMBEDEMENTS AND REINFORCING STEEL AND WATER STOPS.

CONSTRUCTION AND SOILS NOTES
- COMPACTION OF BACK FILL SHALL BE OBTAINED BY MEANS OF TAMPING ROLLERS, SHEEPS FOOT ROLLERS, PNEUMATIC TIRE ROLLERS, VIBRATING ROLLERS OR OTHER MECHANICAL TAMPERS. TAMPING OR POUNDING WITH BACK HOE BUCKET IS NOT AN ACCEPTABLE FORM OF COMPACTION.
- MATERIAL TO BE COMPACTED SHALL BE PLACED IN LIFTS WHICH PRIOR TO COMPACTION SHALL NOT EXCEED 6"
- COMPACTION ADJACENT TO ALL FOUNDATIONS AND FOOTINGS SHALL BE PERFORMED BY THE USE OF HAND-DIRECTED MECHANICAL TAMPERS WITH LIFTS NOT EXCEEDING 6"
- IF DURING EXCAVATION THE SOILS DO NOT APPEAR CAPABLE OF SUPPORTING A **2000** PSF BEARING LOAD THE FOUNDATION ENGINEER SHALL BE CONTACTED IMMEDIATELY TO REVIEW THE FOOTING SIZES AND FOUNDATION DESIGN IN LIGHT OF THE DISCOVERED SOIL CONDITIONS.
- ALL FILL INSIDE FOUNDATION WALL SHALL BE GRANULAR FILL COMPACTED TO 100% OF STANDARD PROCTOR.
- GRANULAR FILL SHALL CONSIST OF A WELL GRADED MATERIAL FREE OF ORGANIC MATTER,BITUMINOUS MATERIAL, SALVAGED CONCRETE AND OTHER DELITERIOUS MATERIALS AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	PERCENT PASSING BY WEIGHT
1"	100
3 / 4 "	90-100
No. 4	45-80
No. 40	15-35
No. 200	0-15

- IN AREAS LIKELY TO HAVE EXPANSIVE, COMPRESSIBLE, SHIFTING OR OTHER UNKNOWN SOIL CHARACTERISTICS, THE BUILDING OFFICIAL / GENERAL CONTRACTOR SHALL DETERMINE WHEATER TO REQUIRE A SOIL TEST TO DETERMINE THE SOIL CHARACTERISTICS AT A PARTICULAR LOCATION. THIS TEST SHALL BE MADE BY AN APPROVED AGENCY USING AN APPROVED METHOD.
- AN "OPEN HOLE" INSPECTION SHALL BE COMPLETED PRIOR TO PLACEMENT OF OUNDATION FOOTINGS. REFER TO EARLIER NOTES FOR ASSUMED BEARING VALUES. THIS INSPECTION SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER.

LIMITS OF LIABILITY

- SUMMIT STRUCTURAL ENGEERING HAS BEEN CONTRACTED TO PROVIDE ENGINEERED CONSTRUCTION DRAWINGS FOR ONLY THE INFORMATION PROVIDED IN THIS DRAWING PACKAGE. ALL OTHER INFORMATION NOT SPECIFICALLY DETAILED IS THE RESPONSIBILITY OF OTHERS.
- BASIS OF DESIGN WAS TAKEN FROM PLANS IN ACTION DRAWINGS DATED 5-29-2024

Sheet List	
Sheet Number	Sheet Name
S1.0	SPEC SHEETS
S2.0	FOUNDATION & FRAMING PLANS
S3.0	FOUNDATION DETAILS
S4.0	FRAMING DETAILS
S4.1	FRAMING DETAILS

REGISTERED PROFESSIONAL ENGINEER
REG. NO 13639
SOUTH DAKOTA
6/17/2024

MCFARLAND RESIDENCE
37 LINCOLN AVE, DEADWOOD, SD
CLIENT: DANIKA MCFARLAND

SPEC SHEETS

Date: 6/17/2024
Sheet Size: 22" x 34"
Drawn / Checked By: NJ

805 N. 10TH STREET
SPEARFISH, SD 57783
PH (605) 639-1790
SummitStructuralEng.com

SUMMIT
STRUCTURAL ENGINEERING

S1.0

FOUNDATION PLAN NOTES:

1. 4" SLAB ON GRADE WITH #4 REINFORCING BARS @ 24" O.C. EACH WAY CENTERED IN SLAB AND SUPPORTED BY BOLSTERS.

WOOD FLOOR FRAMING PLAN NOTES:

A. 16" TJI 560 @ 12" O.C. FLOOR JOSITS BELOW EXISTING STRUCTURE.

B. 16" TJI 210 @ 19.2" O.C. FLOOR JOISTS AT NEW CONSTRUCTION.

C. FLOOR SHEATHING SHALL BE A MINIMUM 23/32" PLYWOOD. TYPICAL FLOOR SHEATHING SHALL BE ATTACHED WITH MIN 8d NAILS SPACED 6" O.C. AT PANEL EDGES AND 12" O.C. AT PANEL FIELD. MIN FASTENER PENETRATION INTO FRAMING MEMBER OR BLOCKING SHALL BE 1-3/8". PANELS SHALL BE ORIENTED PERPENDICULAR TO TRUSSES AND STAGGERED.

D. 1.5VL 20GA DECK WITH 4-1/2" NORMAL WEIGHT CONCRETE TOPPING (6" TOTAL THICKNESS). VULCRAFT RECOMMENDED REINFORCING IS 6X6-W2.1XW2.1. PROVIDE FASTENERS TO SUPPORTING ELEMENTS PER S1.0

E. PROVIDE POCKETS IN FOUNDATION WALL AS NEEDED FOR HOUSE MOVER BEAMS. AFTER SUPPORT BEAMS ARE REMOVED, INFILL POCKET WITH CONCRETE. DOWEL TYPICAL REINFORCEMENT 6" MINIMUM AT BEAM POCKET PERIMETER. CONTRACTOR MAY ELIMINATE NEW WOOD FLOOR JOIST BELOW EXISTING STRUCTURE AT HOUSE MOVER BEAM LOCATIONS IF NEEDED. PROVIDE DOUBLE JOISTS EACH SIDE OF FLOOR VOIDS. ASSUMED FLOOR VOID MAXIMUM WIDTH = 2'-0"

F. PROVIDE SIMPSON HDU4 SHEARWALL HOLDOWN TO FLOOR BEAM. SEE DETAIL 2 / S4.1

ROOF FRAMING PLAN NOTES:

a. MANUFACTURED ENGINEERED ROOF TRUSSES AT 24" O.C. TOP CHORD SLOPED AND BOTTOM CHORD FLAT. SEE ARCH FOR ALL GEOMETRY.

b. ROOF SHEATHING SHALL BE A MINIMUM 1/2" PLYWOOD OR OSB. TYPICAL ROOF SHEATHING SHALL BE ATTACHED WITH MIN 8d NAILS SPACED 6" O.C. AT PANEL EDGES AND 12" O.C. AT PANEL FIELD. MIN FASTENER PENETRATION INTO FRAMING MEMBER OR BLOCKING SHALL BE 1-3/8". PANELS SHALL BE ORIENTED PERPENDICULAR TO TRUSSES AND STAGGERED.

c. PROVIDE SHEARWALL HOLDOWN AT BASE OF WALL. SEE LOWER LEVEL PLAN FOR PLACEMENT AND TYPE.

Structural Column Schedule	
Type Mark	Shape
C4	HSS4X4X1/4

Structural Foundation Schedule		
Type Mark	Description	Reinforcing
F4	4'-0" SQ. X 1'-0" THICK	(5) #4 EACH WAY AT BOTTOM

WALL SCHEDULE

WALL MARK	DESCRIPTION	MATERIAL TYPE AND GRADE
W1	2X6 @ 16" O.C.	SPF #1/#2
W2	2X4 @ 16" O.C.	SPF #1/#2

- ALL EXTERIOR AND INTERIOR FLOOR JOSIT BEARING FRAMING SHALL BE WALL TYPE "W1" UNLESS SPECIFICALLY NOTED OTHERWISE. SEE PLANS FOR LOCATIONS.

BEAM SCHEDULE

PLAN MARK	DESCRIPTION	MATERIAL GRADE
BM1	(1) 1.75X16 (LVL)	MICROLAM LVL (2.0E)
BM2	(2) 1.75 X 16 LVL	MICROLAM LVL (2.0E)

HEADER SCHEDULE. SEE DETAIL 4 / S4.1

DESCRIPTION	HEADER	JAMB STUDS BEARING	JAMB STUDS FULL HEIGHT
H1	(2) 2X6	(1) 2X6	(2) 2X6
H2	(3) 2X8	(2) 2X6	(2) 2X6

GENERAL NOTES:

A. COORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS BEFORE CONSTRUCTION.

B. IT IS THE UNDERSTANDING OF SUMMIT STRUCTURAL THAT THE EXISTING STRUCTURE WILL BE MOVED OFF PROPERTY, NEW FOUNDATIONS AND MAIN FLOOR FRAMING WILL BE INSTALLED, AND THE EXISTING STRUCTURE WILL BE PLACED ON TOP OF NEW FLOOR FRAMING.

SHEARWALL SCHEDULE. SEE DETAIL 1 / S4.1

MARK	SHEATHING	FASTENERS EDGE	FASTENERS FIELD	BLOCKED PANEL EDGES
SW-6	7/16" (MIN) OSB (ONE SIDE)	6	12	YES
SW-4	7/16" (MIN) OSB (ONE SIDE)	4	12	YES
SW-2	1/2" (MIN) GYP. (ONE SIDE)	4	12	YES

SHEARWALL NOTES:

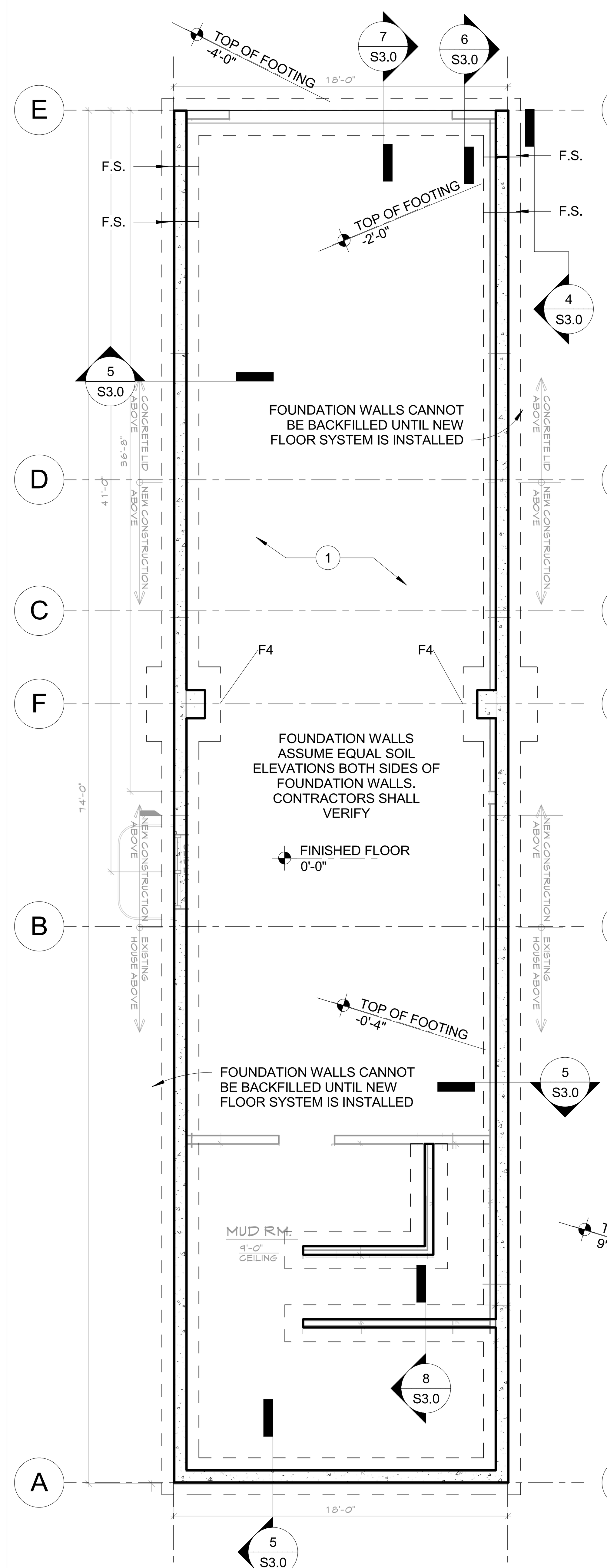
A. PANELS SHALL BE 4'X8' MIN WITH FASTENERS LOCATED MIN 3/8" FROM PANEL EDGES. PANELS SHALL BE LAID HORIZONTALLY AND STAGGERED

B. BLOCKING SHALL BE NOMINAL 2" OR GREATER AT ALL PANEL EDGES AS REQUIRED IN TABLE ABOVE.

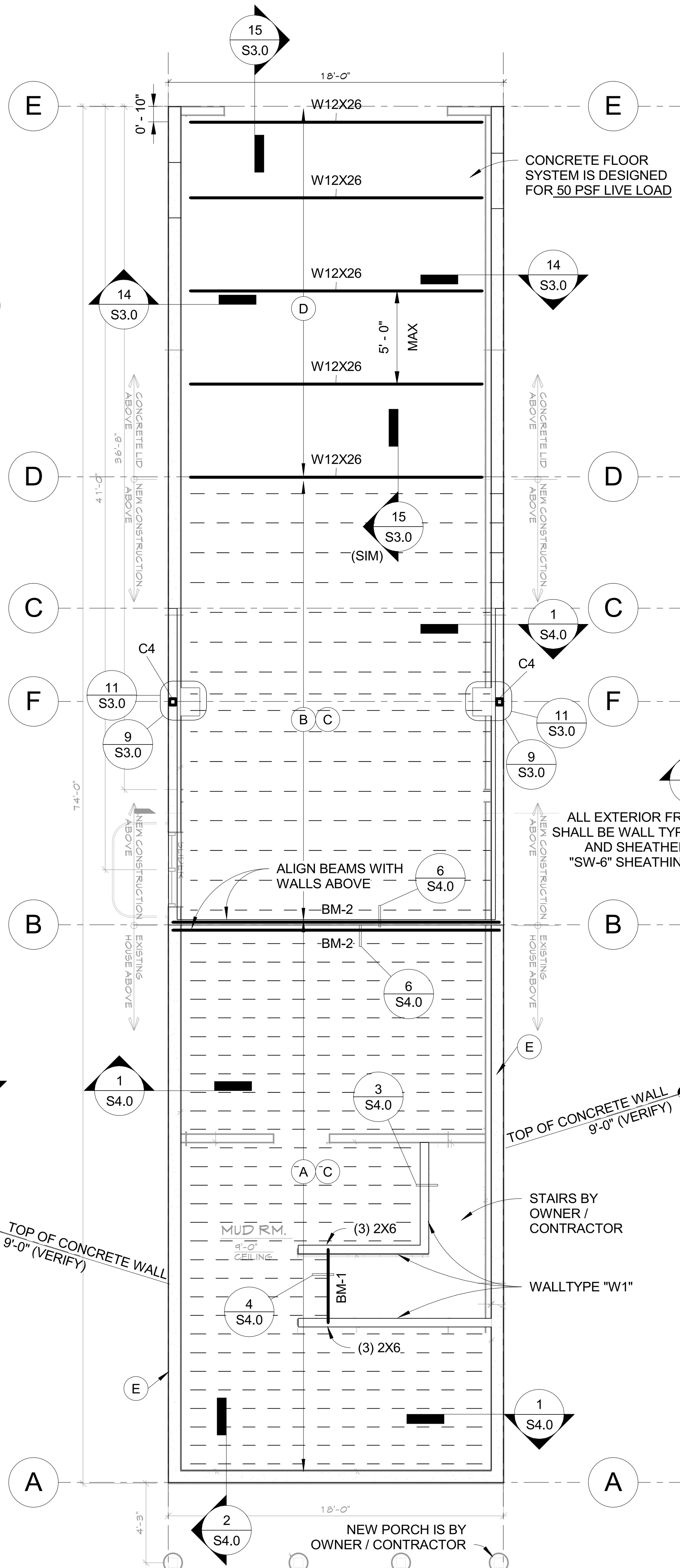
C. FASTENERS INTO WOOD STRUCTURAL PANELS SHALL BE MIN 8d' WITH MIN. 1 3/8" PENETRATION INTO FRAMING MEMBERS OR BLOCKING.

D. FASTENERS INTO GYPSUM SHEATHING SHALL BE MIN. #6 TYPE S OR W DRYWALL SCREWS WITH MIN. 3/4" PENETRATION INTO FRAMING MEMBER OR BLOCKING.

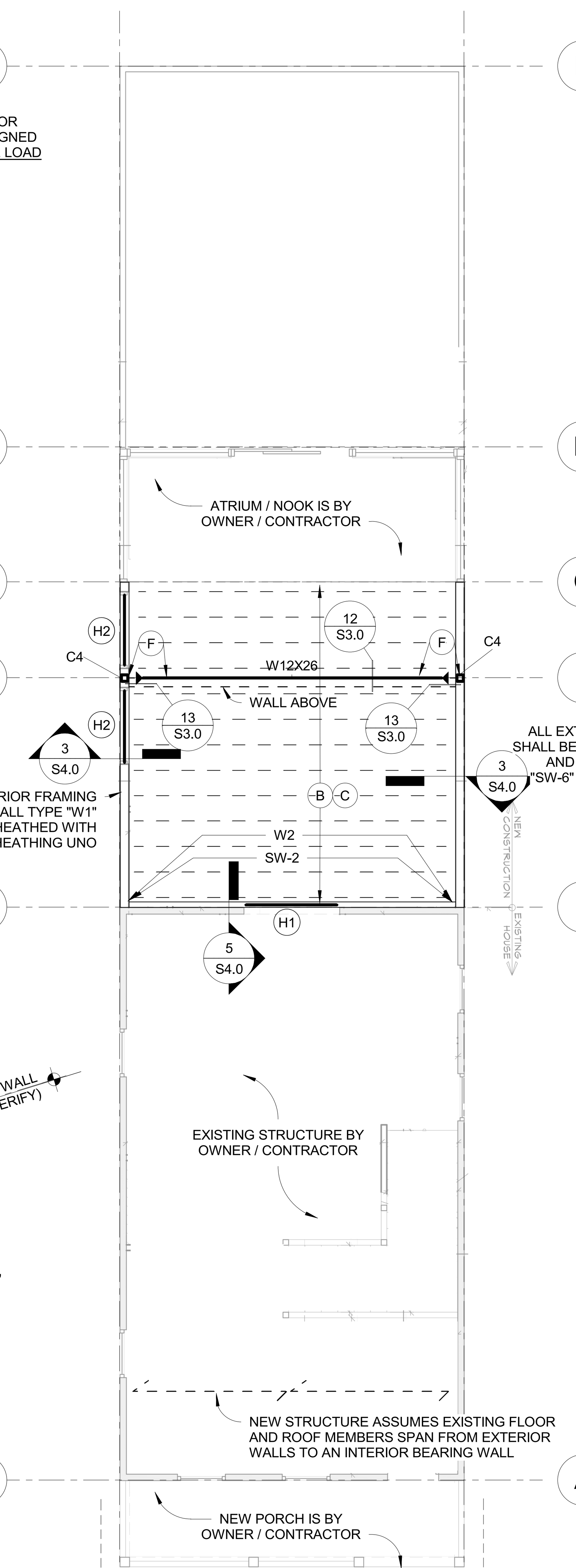
E. ALL INTERIOR GYP SHEATHING SHALL BE CONNECTED TO FRAMING WITH FASTENERS 6" O.C. AT PANEL EDGES AND 12" O.C. AT PANEL FIELD UNLESS NOTED OTHERWISE.



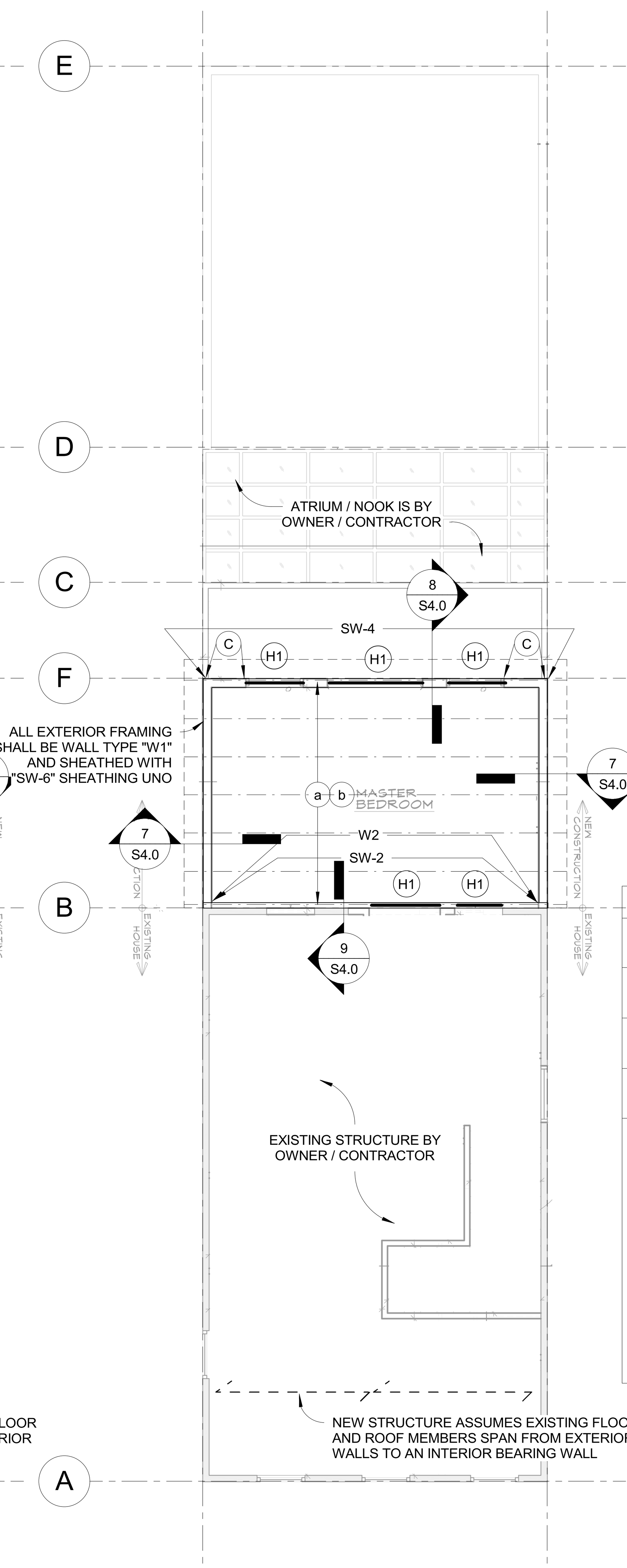
FOUNDATION PLAN
NO SCALE



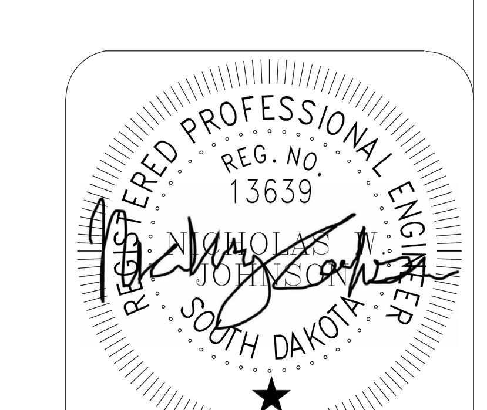
MAIN FLOOR FRAMING
NO SCALE



UPPER FLOOR FRAMING
NO SCALE



ROOF FRAMING PLAN
NO SCALE



6/17/2024

MCFARLAND RESIDENCE
37 LINCOLN AVE, DEADWOOD, SD
CLIENT: DANIKA MCFARLAND

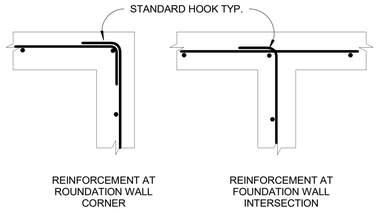
FOUNDATION & FRAMING PLANS

Drawn / Checked By: NJ
Sheet Size: 22" x 34"
Date: 6/17/2024

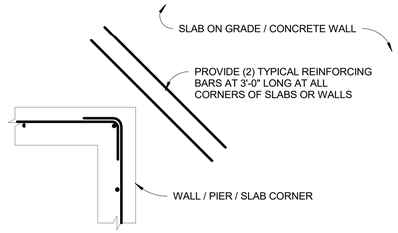
805 N. 10TH STREET
SPEARFISH, SD 57783
PH (605) 639-1790
SummitStructuralEng.com
SUMMIT STRUCTURAL ENGINEERING

S2.0

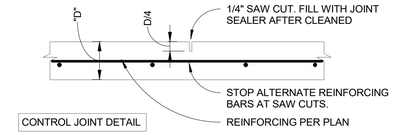
CONCRETE REINFORCING BAR DEVELOPMENT LAP SPLICE TABLE		
BAR SIZE	F'c > 3000 PSI	F'c > 4000 PSI
#3	22"	20"
#4	29"	25"
#5	36"	31"
#6	43"	38"



1 S3.0 REINFORCING PLACEMENT
NOT TO SCALE

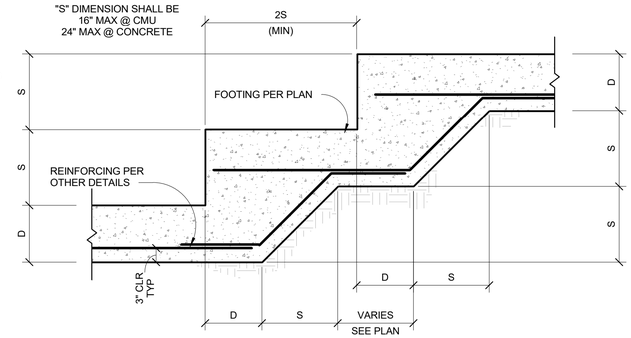


2 S3.0 ADDL REINF. AT CORNERS
NOT TO SCALE

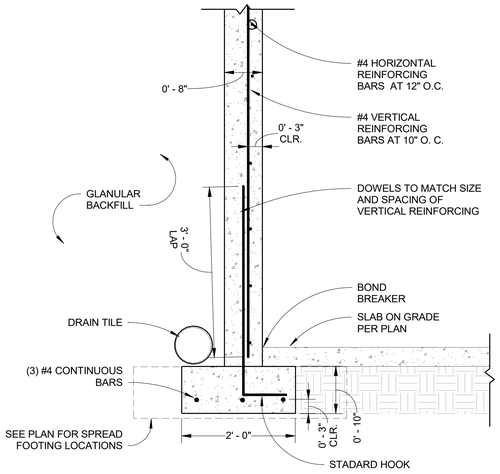


CONTROL JOINTS / CONSTRUCTION JOINTS SHALL NOT EXCEED 36 * SLAB THICKENSS OR 15FT MAX.
EXAMPLE: 4" SLAB THICKNESS * 36 = 144" (12 FT O.C.)

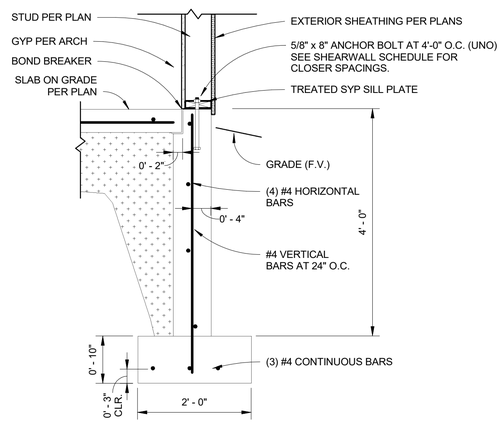
3 S3.0 SLAB ON GRADE
NOT TO SCALE



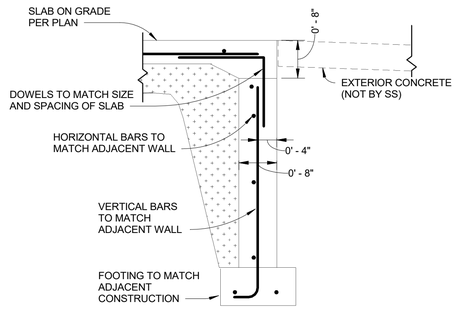
4 S3.0 FOOTING STEP
NOT TO SCALE



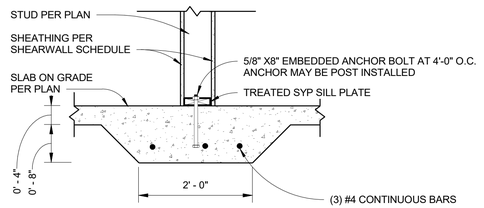
5 S3.0 TYPICAL WALL DETAIL
NOT TO SCALE



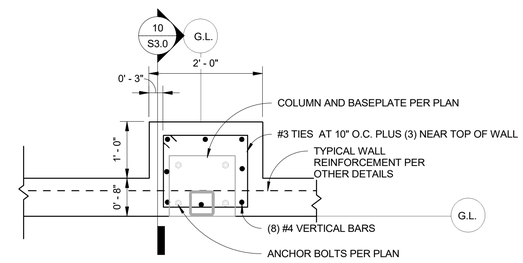
6 S3.0 EXT. FND AT WOOD
NOT TO SCALE



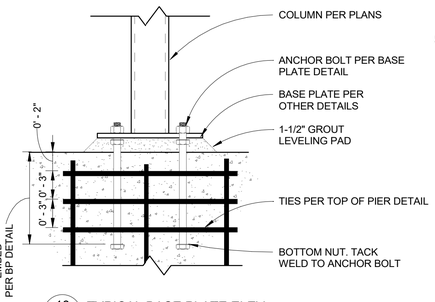
7 S3.0 OVHD DOOR
NOT TO SCALE



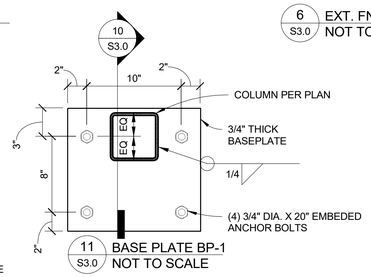
8 S3.0 INTERIOR FOOTING
NOT TO SCALE



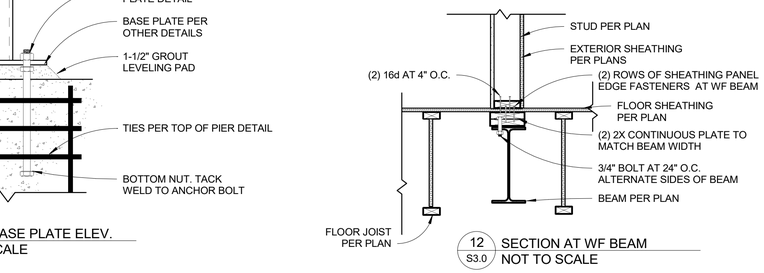
9 S3.0 PIER P1
NOT TO SCALE



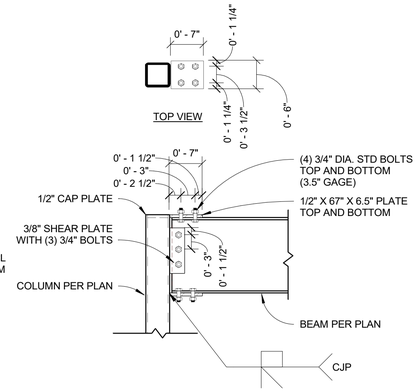
10 S3.0 TYPICAL BASE PLATE ELEV.
NOT TO SCALE



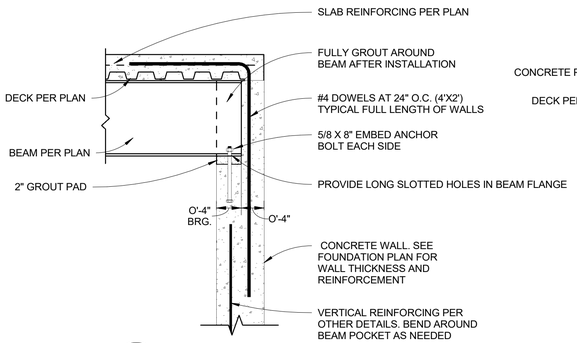
11 S3.0 BASE PLATE BP-1
NOT TO SCALE



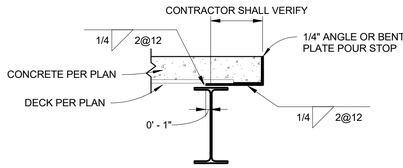
12 S3.0 SECTION AT WF BEAM
NOT TO SCALE



13 S3.0 MOMENT AT HSS
NOT TO SCALE



14 S3.0 H.C. W/ BRG BEAM
NOT TO SCALE



15 S3.0 SLAB EDGE
NOT TO SCALE

MCFARLAND RESIDENCE
37 LINCOLN AVE, DEADWOOD, SD
CLIENT: DANIKA MCFARLAND

FOUNDATION DETAILS

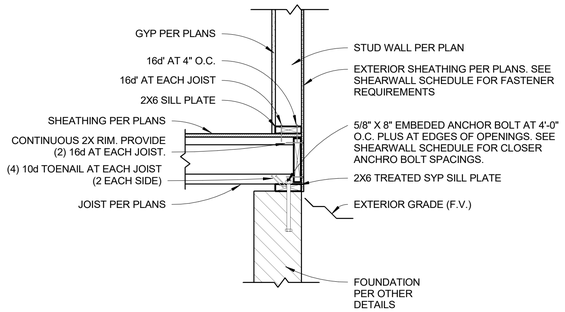
Drawn / Checked By: NJ | Sheet Size: 22" x 34" | Date: 6/17/2024

805 N. 10TH STREET
SPEARFISH, SD 57783
PH (605) 639-1790
SummitStructuralEng.com

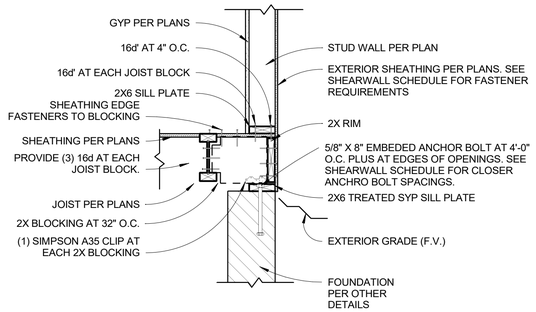
SUMMIT STRUCTURAL ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
REG. NO 13639
SOUTH DAKOTA
6/17/2024

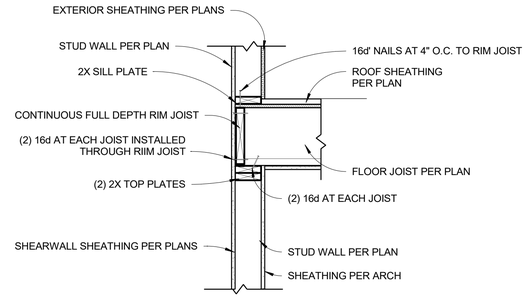
S3.0



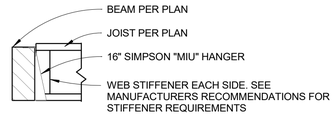
1 S4.0 JST BRG.
NOT TO SCALE



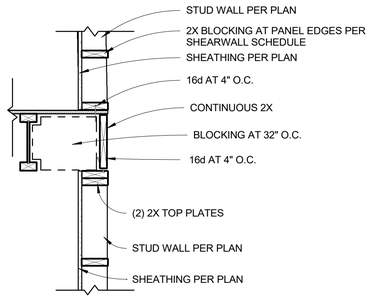
2 S4.0 JST NON BRG.
NOT TO SCALE



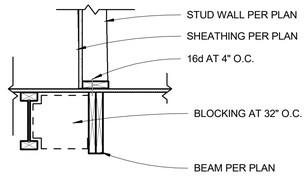
3 S4.0 FLR JST BRG
NOT TO SCALE



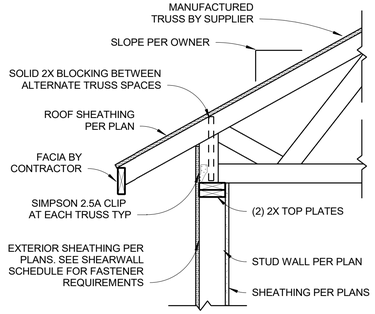
4 S4.0 JOIST TO BEAM
NOT TO SCALE



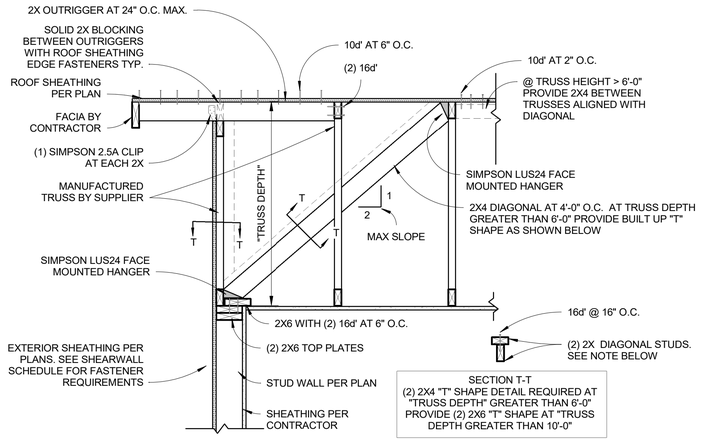
5 S4.0 SHEARWALL TRANSFER
NOT TO SCALE



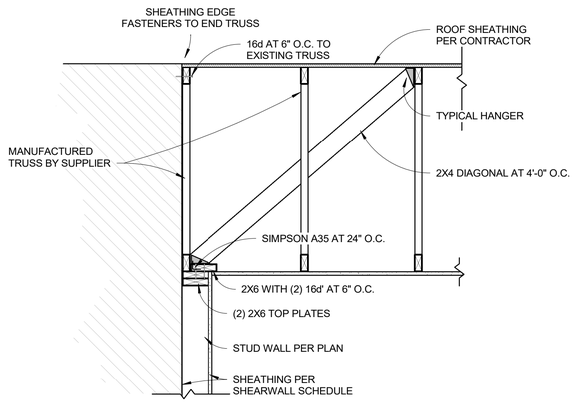
6 S4.0 SHEARWALL TRANSFER
NOT TO SCALE



7 S4.0 TYPICAL TRUSS BRG
NOT TO SCALE



8 S4.0 TYPICAL GABLE END
NOT TO SCALE



9 S4.0 TYPICAL GABLE END
NOT TO SCALE

MCFARLAND RESIDENCE
37 LINCOLN AVE, DEADWOOD, SD
CLIENT: DANIKA MCFARLAND

FRAMING DETAILS

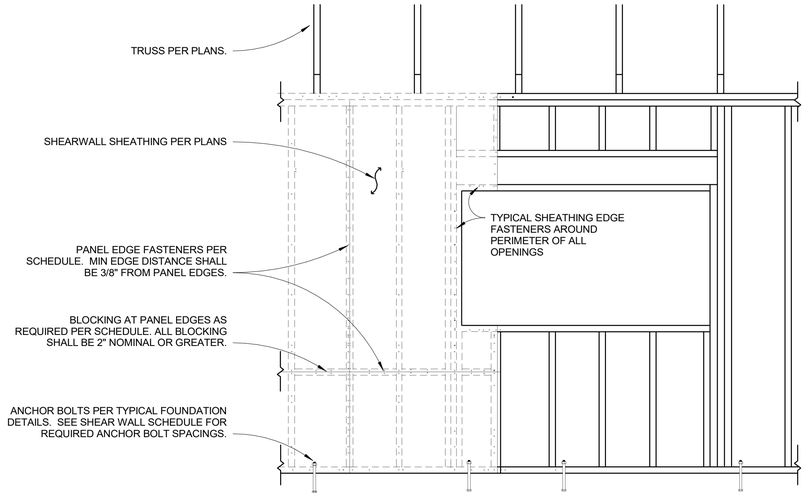
Date: 6/17/2024
Sheet Size: 22" x 34"
Drawn / Checked By: ... / NJ

805 N. 10TH STREET
SPEARFISH, SD 57783
PH (605) 639-1790
SummitStructuralEng.com

SUMMIT STRUCTURAL ENGINEERING

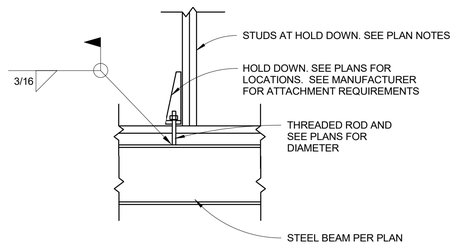
REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13639
NICHOLAS JOHN
SOUTH DAKOTA
6/17/2024

S4.0

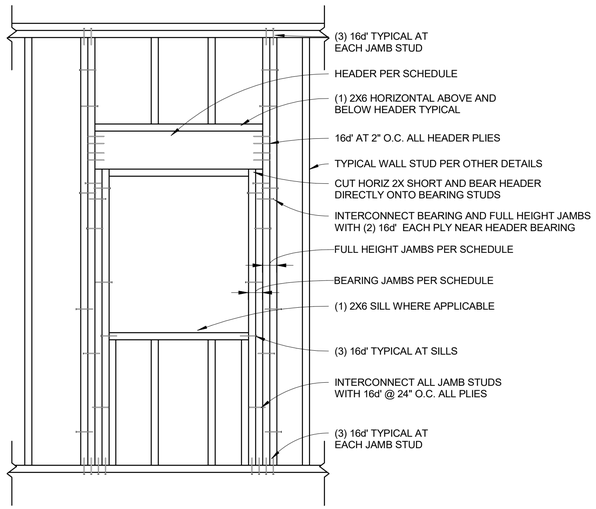


1 S4.1 SHEARWALL ELEVATION
NOT TO SCALE

HOLDOWN:	MINIMUM # OF STUDS.	ANCHOR REQUIREMENTS:
SIMPSON HDU4-SDS2.5	2	5/8" THREADED ROD WELDED TO BEAM BELOW



2 S4.1 HOLDOWN DETAIL
NOT TO SCALE



4 S4.1 TYPICAL OPENING
NOT TO SCALE

MCFARLAND RESIDENCE
37 LINCOLN AVE, DEADWOOD, SD
CLIENT: DANIKA MCFARLAND

FRAMING DETAILS

Drawn / Checked By: NJ | Sheet Size: 22" x 34" | Date: 6/17/2024

805 N. 10TH STREET
SPEARFISH, SD 57783
PH (605) 639-1790
SummitStructuralEng.com

SUMMIT STRUCTURAL ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13639
SOUTH DAKOTA
6/17/2024

S4.1