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	1.2

DEAD LOADS:

ROOF:	15 PSF SELF WEIGHT 5 PSF (FUTURE SOLAR PANELS)

LIVE LOADS:

ROOF:	20 PSF

FUTURE CONSTRUCTION: NONE

MATERIAL GRADES AND STRENGTHS:

CAST IN PLACE CONCRETE:	28DAY COMPRESSIVE STRENGTH
FOOTINGS	F'c=4000PSI

ALL CONCRETE EXPOSED TO FREEZE THAW CYCLES SHALL HAVE 5-7% AIR ENTRAINMENT ADDED

CONCRETE REINFORCING STEEL:	
TYPICAL BARS	ASTM A615 (GRADE 60)

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.

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.

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.

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.

PROTECTION
- PROTECT ROUGH CARPENTRY FROM WEATHER. IF ROUGH CARPENTRY BECOMES WET, APPLY EPA-REGISTERED BORATE TREATMENT COMPLYING WITH EPA REGISTERED LABEL.

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

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.
- IT IS UNDERSTOOD THAT THE OWNER CONSTRUCTED THIS STRUCTURE PREVIOUSLY WITH NO DIRECTION FROM AN ENGINEER. SUMMIT STRUCTURAL REVIEWED THE EXISTING STRUCTURE AND HAS ANALYSED THE STRUCTURAL ELEMENTS. THIS DRAWING SET REPRESENTS A NEW STRUCTURE WHICH AS BEEN REVIEWED BY SUMMIT STRUCTURAL.

Sheet List	
Sheet Number	Sheet Name
S1.0	PROJECT TITLE PAGE
S2.0	FOUNDATION & ROOF PLANS
S3.0	FRAMING DETAILS

REGISTERED PROFESSIONAL ENGINEER
REG. NO 13639
JOHNSTON
SOUTH DAKOTA
4/1/2025

BERG POLE BARN
874 MAIN ST. DEADWOOD SD
CLIENT: DALE BERG

PROJECT TITLE PAGE

Date: 4/1/2025
Sheet Size: 22" x 34"
Drawn / Checked By: NJ

805 N. 10TH STREET
SPEARFISH, SD 57783
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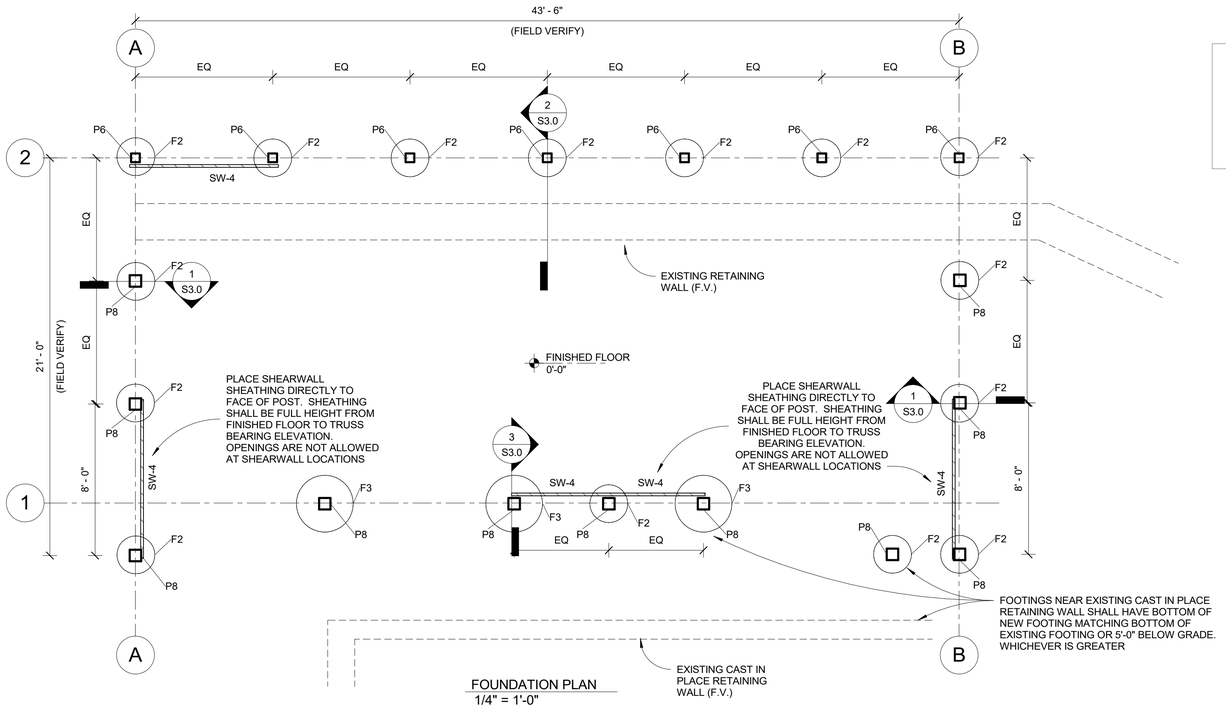
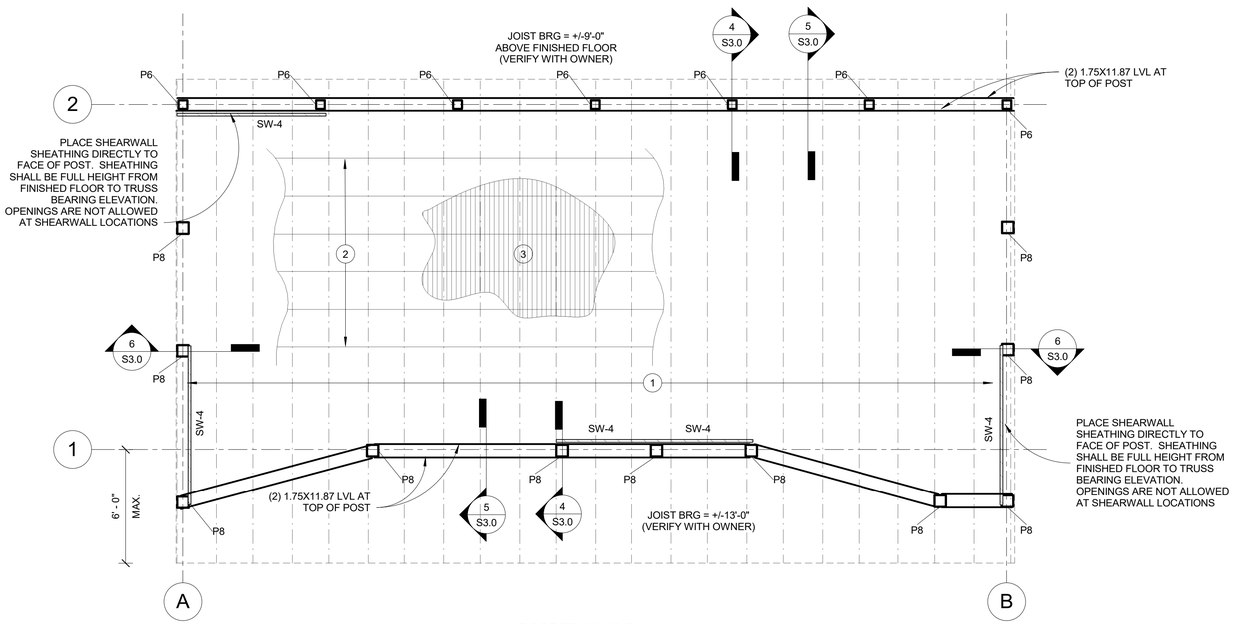
SUMMIT STRUCTURAL ENGINEERING

S1.0



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

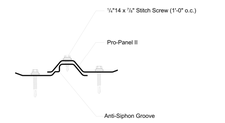


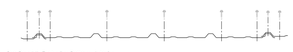
ROOF FRAMING PLAN
1/4" = 1'-0"

GENERAL NOTES:

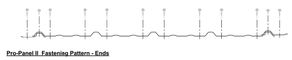
- COORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL/OWNER DRAWINGS BEFORE CONSTRUCTION.
- ALL DETAILS ARE TYPICAL UNLESS NOTED OTHERWISE
- NO OPENINGS MAY OCCUR AT SHEARWALL LOCATIONS

Drilled Footing Schedule		
Type Mark	Description	Type Comments
F2	2'-0" DIA.	(5) #4 VERTICAL BARS
F3	3'-0" DIA.	(8) #4 VERTICAL BARS.





Pro-Panel II Fastening Pattern - Interior



Pro-Panel II Fastening Pattern - Ends

FASTENER INFORMATION

Overdriven fasteners will cause panel distortions.

Fasteners should extend 1/2" or more past the inside face of the support material.

Thick panels (ex. 18 ga) or supports (ex. 1/2" steel) may require predrilling of holes for screws.

Panel Fastener:
Attaching to Wood:
#10-14 XL Wood Screw

Attaching to Steel:
#12-14 XL Self Drilling Screw

Side Lap Fastener:
1/4"-14 x 7/8" XL Stitch Screw

Trim Fastener:
1/4"-14 x 7/8" XL Stitch Screw

SHEARWALL SCHEDULE

MARK	SHEATHING	FASTENERS		BLOCKED PANEL EDGES
		EDGE	FIELD	
SW-4	7/16" (MIN) OSB (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 SPLICED AT POST LOCATIONS AND ATTACHED DIRECLTY TO FACE OF POSTS.

B. **BLOCKING SHALL BE 2X MEMBERS AT ALL PANEL EDGES AS REQUIRED IN TABLE ABOVE. BLOCKING SHALL BE PLACED BETWEEN POSTS AT PANEL EDGES.**

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

POST SCHEDULE

MARK	POST	MATERIAL - GRADE
P8	8X8	TREATED SYP - #2 OR BETTER
P6	6X6	TREATED SYP - #2 OR BETTER

POSTS WHICH ARE EMBEDDED INTO CONCRETE SHALL BE TREATED FOR GROUND CONTACT

MEMBER SCHEDULE.

LOCATION	DESCRIPTION	MATERIAL GRADE	REQUIRED FASTENERS
WALL GIRTS	2X6 @ 24" O.C.	SPF - SELECT STRUCTURAL	PROVIDE (4) 0.177" X 4.5" RING SHANK NAILS AT EACH POST
ROOF PURLIN	2X4 @ 24" O.C.	SPF - #1/#2 (OR EQUAL)	PROVIDE (2) 0.177" X 4.5" RING SHANK NAILS AT EACH ROOF JOIST

ROOF FRAMING PLAN NOTES:

1. 1-3/4" X 14" LVL ROOF JOISTS AT 2'-0" O.C.
2. ROOF PURLINS PER MEMBER SCHEDULE.
3. 26GA PRO-PROPANEL METAL ROOF SHEATHING. PROVIDE (5) #10-14 SCREWS TO EACH WALL GIRT AND (8) #10-14 SCREWS TO GIRTS AT ENDS OF PANELS. INSTALL 1/4"-14 x 7/8" SIDE LAP FASTENERS AT 12" O.C.

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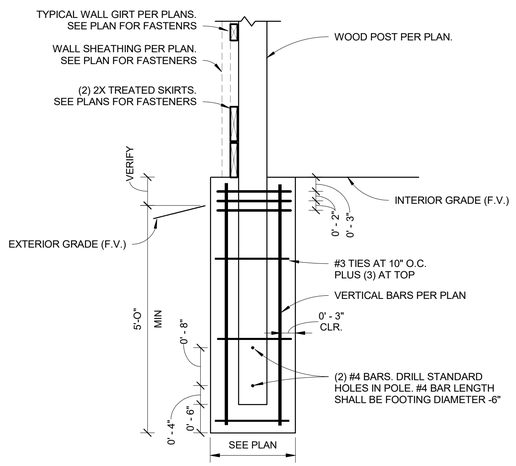
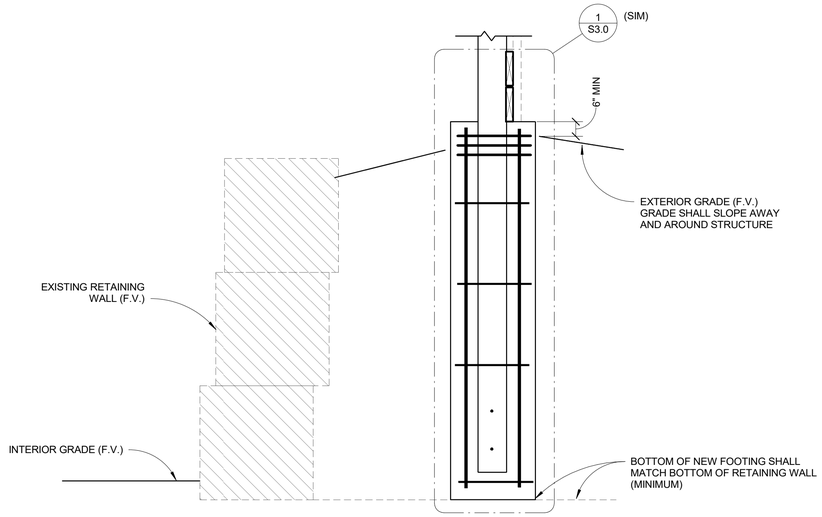
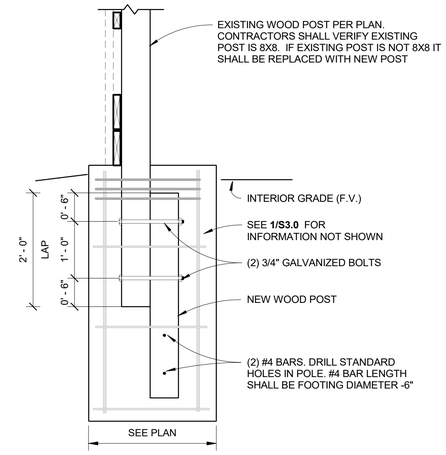


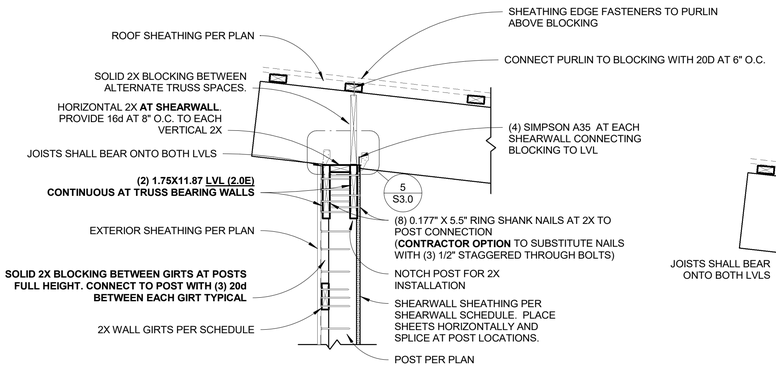
1 S3.0 NEW FOOTING
NOT TO SCALE



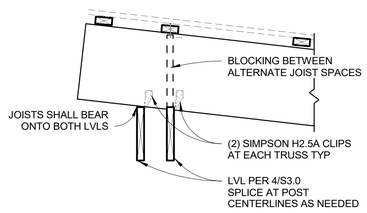
2 S3.0 NEW FOOTING AT EXISTING RETAINING WALL
NOT TO SCALE



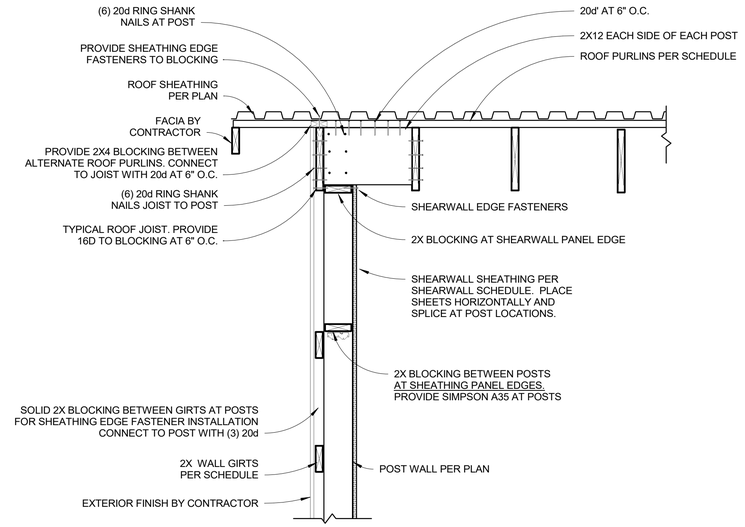
3 S3.0 NEW FOOTING AT EXISTING POST
NOT TO SCALE



4 S3.0 TOP OF POST
NOT TO SCALE



5 S3.0 JOIST BEARING
NOT TO SCALE



6 S3.0 GABLE END
NOT TO SCALE

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