STRUCTURAL NOTES

GENERAL

1. THESE STRUCTURAL DRAWINGS PERTAIN TO THE LATERAL FORCE RESISTING SYSTEM AND FRAMING ELEMENTS AS NOTED.
2. SEE ARCHITECTURAL PLANS FOR FRAMING AND FOUNDATION PLANS, DIMENSIONS AND MORE INFORMATION.
3. THE GOVERNING CODE IS THE 2022 OREGON STRUCTURAL SPECIALTY CODE.
4. ALL FRAMING AND OTHER WORK SHALL COMPLY WITH THE 2022 OREGON STRUCTURAL SPECIALTY CODE FOR "CONVENTIONAL CONSTRUCTION" UNLESS NOTED OTHERWISE AS MORE RESTRICTIVE.
5. SHOP DRAWINGS, STAMPED BY A REGISTERED STRUCTURAL ENGINEER LICENSED IN THE STATE OF OREGON, SHALL BE REQUIRED ON: PRE-FABRICATED JOISTS AND LIGHT METAL PLATE CONNECTED WOOD TRUSSES.
6. THIS STRUCTURE AND ALL OF ITS PARTS MUST BE ADEQUATELY BRACED AGAINST WIND, LATERAL EARTH AND SEISMIC FORCES UNTIL THE PERMANENT LATERAL-FORCE RESISTING SYSTEMS HAVE BEEN CONSTRUCTED AND ALL ATTACHMENTS AND CONNECTIONS NECESSARY FOR THE STABILITY OF THE STRUCTURE AND ITS PARTS HAVE BEEN MADE.

STRUCTURAL LOADINGS

1. DEAD LOAD.....10 PSF AT FLOOR, 15 PSF AT ROOF,
2. FLOOR LIVE LOAD.....125 PSF
3. ROOF SNOW LOAD.....25 PSF
4. WIND LOAD: IBC 3 SECOND GUST WIND SPEED.....98 MPH - EXPOSURE B
5. SEISMIC LOAD: IBC SEISMIC CATEGORY D.....S_s = 0.82, S_1=0.41

STRUCTURAL MATERIALS

1. FOUNDATION SOIL PROPERTIES:
   A. MAXIMUM VERTICAL BEARING PRESSURE FOR FOOTINGS FOUNDED 1'-6" MINIMUM BELOW ORIGINAL OR FINISH GRADE.....1500 PSF

2. CONCRETE:
   A. 28 DAY DESIGN STRENGTH f'_c.....3000 PSI
   B. MINIMUM CEMENT CONTENT.....5 1/2 SACKS PER CUBIC YARD
   C. MAXIMUM WATER/CEMENT RATIO.....6 GALLONS PER SACK OF CEMENT
   D. CONCRETE EXPOSED TO ELEMENTS SHALL HAVE 6% ± 1% ENTRAINED AIR, BY VOLUME PER ASTM C260
   E. CONSOLIDATE CONCRETE USING MECHANICAL VIBRATION.
   F. FOLLOW ACI RECOMMENDATION REGARDING HOT AND COLD WEATHER
   G. DO NOT PLACE CONCRETE ON LOOSE, MUDDY, OR FROZEN GROUND
   H. MILD STEEL REINFORCING BARS.....ASTM A615, GRADE 60

3. WOOD:
   A. SAWN LUMBER: ALL FRAMING LUMBER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON DRAWING
      A. STUDS.....DF-L OR HF STUD GRADE
      B. JOISTS AND PLANKS.....DF-L #2
      C. BEAMS, STRINGERS AND POSTS.....DF-L #2
      D. ALL MEMBERS 3X OR LESS SHALL BE 19% MOISTURE CONTENT MAXIMUM.
      E. PROVIDE SOLID BLOCKING AT ALL POINTS OF BEARING.
      F. ALL PLATES AND LEDGERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED IN ACCORDANCE WITH IRC FASTENING SCHEDULE TABLE R602.3 AND DRAWINGS.

   B. GLUE-LAMINATED MEMBERS
      A. BEAMS (TYPICAL).....AITC 117 COMBINATION 24F-V4 (DF/DF)
      B. ALL GLUE LAMINATED MEMBERS SHALL BE NOTCHED, SHAPED AND FINISHED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS, AND SHALL BE FABRICATED WITH WATERPROOF GLUES.
      C. ERECTION OF MEMBERS SHALL CONFORM TO A.L.T.C. SPECIFICATIONS.
      D. GLUE LAMINATED MEMBERS SHALL BE WESTERN SPECIES AND BEAR THE A.P.A.-E.W.S. MARK.

   C. TRUSJOIST OR BOISE CASCADE JOIST PRODUCTS:
      A. JOISTS SHALL NOT EXCEED A LIVE LOAD DEFLECTION OF L/600 AT FLOORS, OR THE WORKING STRESSES AS SHOWN IN THE IBC STANDARDS FOR THE APPROPRIATE LOADS.

   D. LIGHT-METAL PLATE-CONNECTED WOOD TRUSSES:
      A. TRUSSES SHALL COMPLY WITH ALL PROVISIONS OF THE DESIGN SPECIFICATIONS FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES OF THE TRUSS PLATE INSTITUTE, UNLESS NOTED OTHERWISE.
      B. CONNECT ALL TRUSSES TO SUPPORTING MEMBERS WITH ONE SIMPSON H2.5A ANCHOR WITH (5) 8D COMMON, UNO. PROVIDE (2) SIMPSON H2.5A WHERE TRUSSES ARE SUPPORTED BY INTERIOR BEARING WALL, UNO.
      C. CONNECT ALL GIRDER TRUSSES TO SUPPORTING MEMBERS WITH (2) SIMPSON H2.5A ANCHOR, UNO.

   E. PLYWOOD SHEATHING:
      A. ALL PLYWOOD SHEATHING SHALL BE C-D GRADE, UNLESS NOTED OTHERWISE (WITH EXTERIOR GLUE), SHALL CONFORM WITH IBC STANDARDS AND SHALL BEAR THE A.P.A. TRADEMARK
      B. ROOF SHEATHING.....1/2" INDEX 24/0
      C. FLOOR SHEATHING.....3/4" INDEX 48/24 T&G
      D. WALL SHEATHING.....15/32" INDEX 24/0
      E. NAIL EXTERIOR WALL SHEATHING WITH 8D AT 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER IN-THE-FIELD UNLESS NOTED OTHERWISE ON DRAWINGS.
      F. NAIL (OR SCREW) FLOOR SHEATHING WITH 10D AT 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER IN-THE-FIELD UNLESS NOTED OTHERWISE ON DRAWINGS. APPLY A 1/4" DIAMETER CONTINUOUS BEAD OF CONSTRUCTION ADHESIVE CONFORMING TO AFG-01 TO TOPS OF ALL JOISTS, BLOCKING AND PLATES IMMEDIATELY BEFORE PLACING SHEATHING.
      G. NAIL ROOF SHEATHING WITH 8D AT 6 INCHES ON CENTER AT PANEL EDGES AND 12 INCHES ON CENTER IN-THE-FIELD UNLESS NOTED OTHERWISE ON DRAWINGS.
      H. PLYWOOD SHEATHING SHALL BE LAID WITH END JOISTS STAGGERED.
      I. BLOCK ALL SHEAR WALL SHEATHING WITH 2X4 FLAT BLOCKING AT ALL EDGES.
      J. LAY OUT PLYWOOD TO ELIMINATE ANY WIDTH LESS THAN 1'-0", EXCEPT AT PLYWOOD FLOORS WHERE MINIMUM DIMENSION SHALL BE 2'-0", UNLESS ALL EDGES OF THE UNDERSIZED SHEETS ARE BLOCKED.
      K. ORIENTED STRAND BOARD CONFORMING WITH IBC STANDARDS, GRADE 2-M-W, MANUFACTURED WITH EXTERIOR GLUE, MAY BE SUBSTITUTED FOR PLYWOOD, PROVIDED IT HAS EQUAL LOAD/SPAN RATING INDEX AND BEARS THE A.P.A. TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION.
      L. CONTRACTOR IS TO PROTECT FLOOR AND ROOF SHEATHING FROM EXTREME WET CONDITIONS.

   F. WOOD CONNECTORS:
      A. ALL PLATES AND LEDGERS SHALL BE ANCHORED WITH A MINIMUM OF 3 ANCHORS PER PIECE.
      B. ALL FRAMING CONNECTORS SHALL BE SIMPSON OR APPROVED. FILL ALL NAIL HOLES WITH NAILS AS SPECIFIED BY THE HANGER MANUFACTURER, UNLESS NOTED OTHERWISE.
      C. BOLTS AND LAG BOLTS TO BE ASTM A307 UNLESS NOTED OTHERWISE.
      D. PROVIDE STANDARD PLATE WASHERS UNDER HEADS OR NUTS OF BOLTS BEARING ON WOOD UNLESS NOTED OTHERWISE.

SHEAR WALL SCHEDULE

MARK	SHEATHING	SIDES	NAIL SIZE	EDGE NAILING	FIELD NAILING	SW CLIP SPACING	SILL ANCHOR	SILL NAILING	ASD VALUE (PLF)
A	15/32"	ONE	8d (STAPLES)	6" OC (6" OC)	12" OC	48" OC	5/8" DIA AT 72" OC	16d AT 16" OC	140
B	15/32"	ONE	8d (STAPLES)	6" OC (4" OC)	12" OC	30" OC	5/8" DIA AT 48" OC	16d AT 12" OC	225
C	15/32"	ONE	8d (STAPLES)	6" OC (3" OC)	12" OC	24" OC	5/8" DIA AT 36" OC	16d AT 8" OC	310
D	15/32"	ONE	8d	3" OC	12" OC	16" OC	5/8" DIA AT 30" OC	16d AT 4" OC	490
E	15/32"	ONE	8d	2" OC	12" OC	12" OC	5/8" DIA AT 24" OC	16d AT 4" OC	640
F	15/32"	ONE	8d	2" OC	12" OC	8" OC	5/8" DIA AT 16" OC	(2) 16d AT 2" OC	895

NOTES:

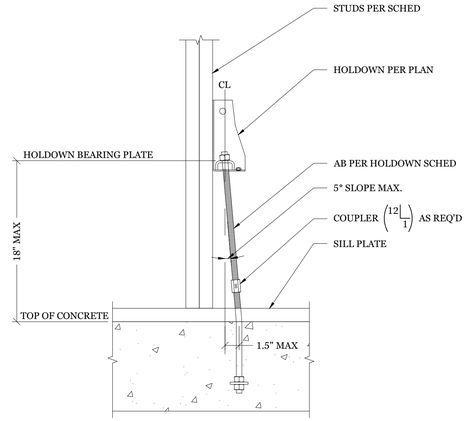
1. IF AB SPACING IS GREATER THAN SHEAR WALL LENGTH INSTALL (1) AB WITHIN 12" OF EACH END.
2. NAIL SIZES SHOWN ARE FOR COMMON NAILS OR GALVANIZED BOX. POWER DRIVEN NAILS SHALL COMPLY WITH ESR 1539 FOR RECOMMENDED SPACING AND INSTALLATION TO COMPLY WITH THE ABOVE SHEAR WALL SCHEDULE.
3. SILL PLATE ANCHORS SHALL INCLUDE A STEEL PLATE WASHER NOT LESS THAN 0.229"x3"x3" IN SIZE PER AF&PA SDPWS SECTION 4.3.6.4.3. THE HOLE IN THE PLATE WASHERS SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED W/ A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1 3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. THE PLATE WASHER SHALL EXTEND TO WITHIN 1/2" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE(S) WITH THE SHEATHING.
4. WHERE SHEAR CAPACITY EXCEEDS 350 PLF, FRAMING MEMBERS (WALL STUDS) RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL BE 3x MEMBERS OR NOT BE LESS THAN A SINGLE 3x NOMINAL MEMBER OR TWO 2x NOMINAL MEMBER NAILED TOGETHER WITH 2 ROWS OF 10d AT 8" OC. NAILS SHALL BE STAGGERED.
5. SHEAR WALL NAILING SHALL BE INSTALLED SUCH THAT THE NAIL HEAD OR CROWN IS FLUSH WITH THE SURFACE OF SHEATHING. OVERDRIVEN OR OVER PENETRATED NAILS WILL NOT BE ALLOWED OR COUNTED AS APPROPRIATE NAILING.
6. ALL PANEL EDGES SHALL BE BLOCKED AS NOTED. PROVIDE MINIMUM (2) STUDS AT EACH END OF SHEAR WALL UNO BY SHEAR WALL SCHEDULE. PROVIDE STUDS AS REQUIRED FOR PANEL EDGE NAILING.
7. FOR PANEL NAILING LESS THAN OR EQUAL TO 4" OC, STAGGER FASTENER 1/2".
8. PLYWOOD SHALL BE 4 PLY MINIMUM AND ALL PANEL EDGES SHALL BE BLOCKED. ORIENTED STRAND BOARD (OSB) MANUFACTURED WITH EXTERIOR GLUE, MAY BE SUBSTITUTED PROVIDED IT HAS EQUAL LOAD/SPAN RATING INDEX AND BEARS THE A.P.A. TRADEMARK.
9. PROVIDE PANEL EDGE NAILING AT ALL END STUDS, SILL PLATES AND TOP PLATES.
10. EXPANSION ANCHORS OF THE SAME DIAMETER AND SPACING WITH 4 INCHES OF EMBEDMENT MAY BE SUBSTITUTED AT INTERIOR WALLS.
11. SILL PLATE TO BE PRESSURE TREATED (HEM FIR OKAY).
12. STAPLES MAY BE SUBSTITUTED FOR NAILS WHERE NOTED ON SHEAR WALL SCHEDULE. STAPLES MUST BE 16" GAUGE, W/ A MIN CROWN WIDTH OF 7/16" O.D. AND A MIN. PENETRATION OF 1".
13. 7/16" PLYWOOD IS ACCEPTABLE WHEN PANELS ARE APPLIED WITH LONG DIMENSIONS ACROSS STUDS, OR WHEN STUDS ARE SPACED 16" ON CENTER.

HOLDOWN SCHEDULE

MARK	HOLDOWN	WOOD MEMBER	WOOD FASTENER	ANCHOR BOLT	ANCHOR BOLT EMBEDMENT, de	VALUE SIZE (LBS)
–	NONE REQ'D	-	-	-	-	-
1	(S) HTT4	-	(18) 0.162 x 2-1/2	SB5/8x24	18"	4,235

NOTES:

1. DOUBLE STUDS ARE REQUIRED AT HOLDOWNS UNLESS NOTED OTHERWISE. DOUBLE STUDS SHALL BE LAMINATED TOGETHER WITH 16d NAILS AT 6" OC FULL HEIGHT (TYPICAL). IF PLANS INDICATE LARGER MEMBER SIZE,USE PLAN MEMBER.
2. PROVIDE HOLDOWN NOTED WITHIN 6" FROM EACH END OF SHEAR WALL SHOWN ON PLANS, UNO.
3. INSTALL ANCHORS AND HOLDOWNS PER MANUFACTURERS RECOMMENDATIONS.
4. ANCHOR BOLT LENGTH TO BE DETERMINED BY CONTRACTOR
5. ADJUST FOOTING AND STEM WALL HEIGHT TO ACCOMMODATE ANCHOR BOLT EMBEDMENT REQUIREMENTS PER MANUFACTURERS RECOMMENDATIONS.
6. ALL HOLDOWN ANCHORS AND BOLTS SHALL BE INSTALLED IN THE CORRECT LOCATION IN THE TOP OF THE CONCRETE STEM WALL AND SECURED TO THE FORMS PRIOR TO CONCRETE INSTALLATION.



1/S1 TYPICAL HOLDOWN DETAIL
NTS

NOTES:
HOLDOWN AB TO BE CENTERED IN FDN WALL WIDTH AND LOCATED 6" FROM THE END OF THE WALL AND ANY OPENINGS IN THE WALL

2/S1 TYPICAL HOLDOWN DETAIL AT EXISTING FOUNDATION
NTS

IRONOAK ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
99341PE
OREGON
MAY 30, 2024
KYLE SEPPALA
EXPIRES: 06/30/26

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1880 LANA AVE NE
SALEM, OR 97301

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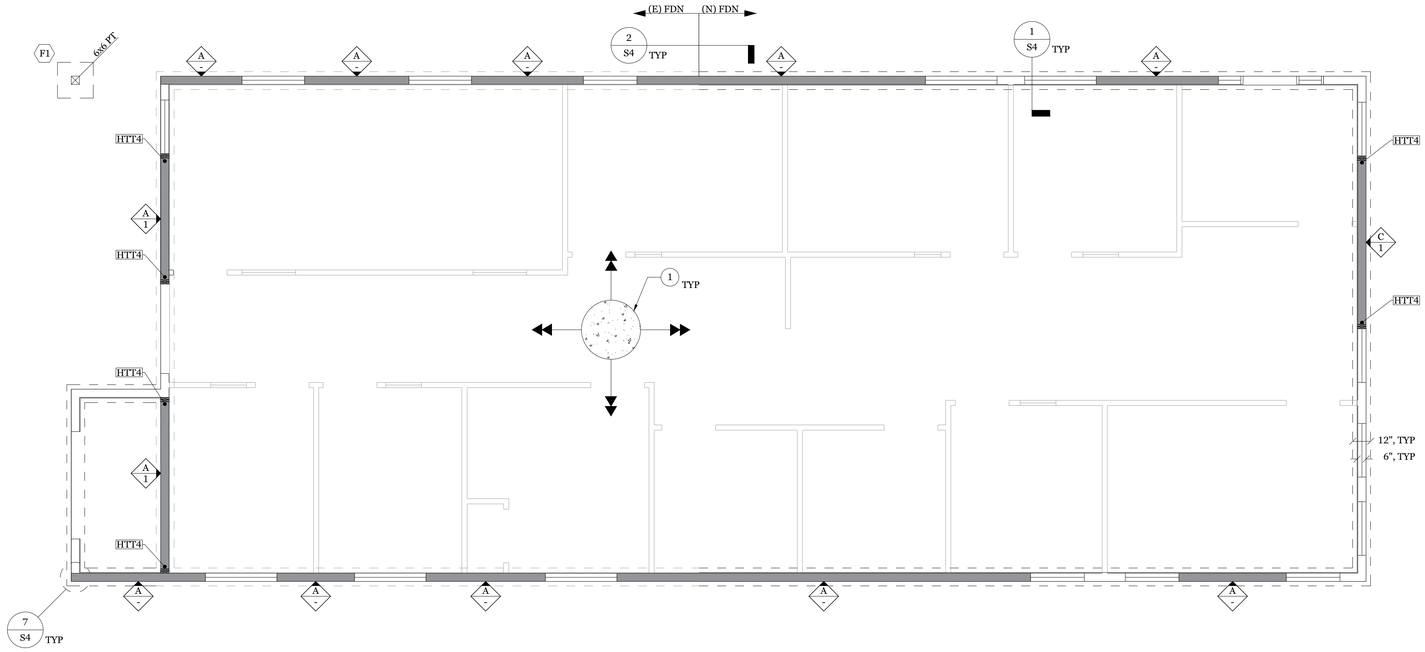
GSN AND SCHEDULES

S1



1 S2 FOUNDATION PLAN
SCALE 1/4"=1'-0"

PLAN NOTES:

1. SEE ARCHITECTURAL PLANS FOR DIMENSIONS AND ADDITIONAL INFORMATION. DO NOT SCALE DRAWINGS.
2. EXISTING CONDITIONS ARE SHOWN WITHOUT GUARANTEE OF ACCURACY. NOTIFY THE EOR IF THE CONDITIONS DISCOVERED IN THE FIELD ARE DIFFERENT THAN THOSE DEPICTED IN THE CONTRACT DOCUMENT
3. THE DRAWINGS CONTAIN REFERENCE TO EXISTING CONDITIONS MATERIALS, FURNISHINGS AND EQUIPMENT. THE INFORMATION IS DEVELOPED FROM EXISTING DRAWINGS AND IS PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. IT IS TO BE ASSUMED THE BUILDING IS NOT LEVEL, SQUARE, OR PLUMB
4. NOTIFY EOR IF DECAY, CORROSION OR OTHER DAMAGE TO THE EXISTING STRUCTURE IS DISCOVERED.
5. SHORING OF THE EXISTING STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. CONTRACTOR IS RESPONSIBLE FOR WATERPROOFING OF STRUCTURE.
7. EXTERIOR WALLS TO BE 2x6 AT 16" OC STUD WALL, UNO
8. FX — INDICATES SPREAD FOOTING TYPE. SEE SPREAD FOOTING SCHEDULE.
9. PROVIDE (S) ABU W/ (S) 5/8"x5" STRONG-BOLT 2 AT BASE.
10. XXX — INDICATES HOLDOWN TYPE. SEE HOLDOWN SCHEDULE ON SHEET S1 FOR ADDITIONAL INFORMATION.
11. X / X — INDICATES SHEAR WALL TYPE AND HOLDOWN TYPE. SEE SHEAR WALL SCHEDULE AND HOLDOWN SCHEDULE ON SHEET S1.

KEYED NOTES:

(1) INDICATES 4" CONC SLAB ON GRADE.

SPREAD FOOTING SCHEDULE

MARK	DIMENSIONS			REINFORCEMENT	
	LENGTH	WIDTH	THICKNESS	LONG DIR.	SHORT DIR.
F1	24"	24"	12"	-	-
F2	28"	28"	12"	-	-
F3	30"	30"	12"	#4 AT 12" OC	#4 AT 12" OC

NOTES:
1. CENTER ALL FOOTING ON COLUMN ABOVE, UNO

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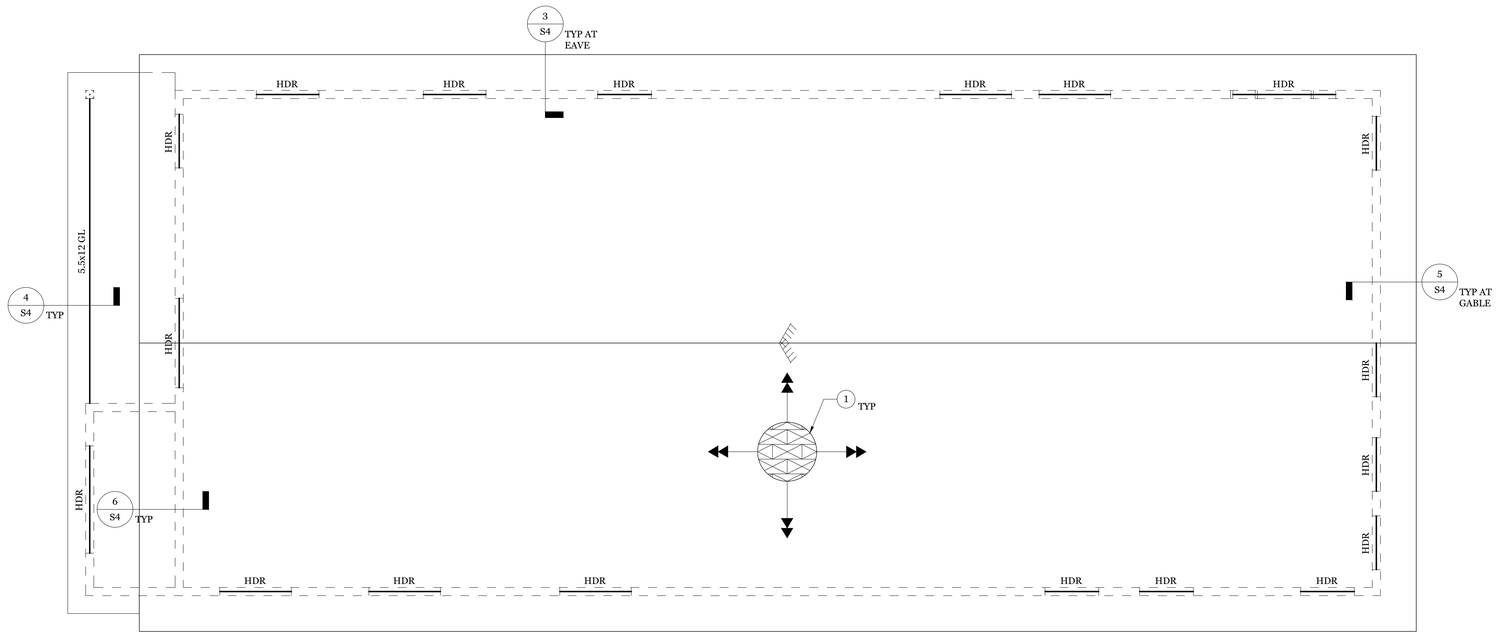
FOUNDATION AND SHEAR WALL PLANS

S2



1 / S3 ROOF PLAN
SCALE 1/4"=1'-0"

PLAN NOTES:

1. SEE ARCHITECTURAL PLANS FOR DIMENSIONS AND ADDITIONAL INFORMATION. DO NOT SCALE DRAWINGS.
2. EXISTING CONDITIONS ARE SHOWN WITHOUT GUARANTEE OF ACCURACY. NOTIFY THE EOR IF THE CONDITIONS DISCOVERED IN THE FIELD ARE DIFFERENT THAN THOSE DEPICTED IN THE CONTRACT DOCUMENT
3. THE DRAWINGS CONTAIN REFERENCE TO EXISTING CONDITIONS MATERIALS, FURNISHINGS AND EQUIPMENT. THE INFORMATION IS DEVELOPED FROM EXISTING DRAWINGS AND IS PROVIDED FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. IT IS TO BE ASSUMED THE BUILDING IS NOT LEVEL, SQUARE, OR PLUMB
4. NOTIFY EOR IF DECAY, CORROSION OR OTHER DAMAGE TO THE EXISTING STRUCTURE IS DISCOVERED.
5. SHORING OF THE EXISTING STRUCTURE IS THE RESPONSIBILITY OF THE CONTRACTOR.
6. CONTRACTOR IS RESPONSIBLE FOR WATERPROOFING OF STRUCTURE.
7. EXTERIOR WALLS TO BE 2X6 AT 16" OC STUD WALL, UNO
8. ROOF TRUSSES DESIGNED BY SUPPLIER. ROOF TRUSS SUPPLIER SHALL REVIEW THIS ENGINEERING TO VERIFY LAYOUT AND OTHER INFORMATION.
9. HEADERS SHALL BE 4x8 DF #2, UNO.
10. PROVIDE MIN (3) 2x STUDS AT BEAM/GIRDER TRUSS ENDS, UNO. CONTINUE STUD PACK TO FOUNDATION OR BEAM BEARING.
11. PROVIDE (S) LCE/ (S) AC AT POST TO BEAM CONNECTION, UNO.

KEYED NOTES:

(1) INDICATES 1/2" PLYWOOD SHEATHING W/ 8d AT 6" OC AT PE AND 12" OC FIELD

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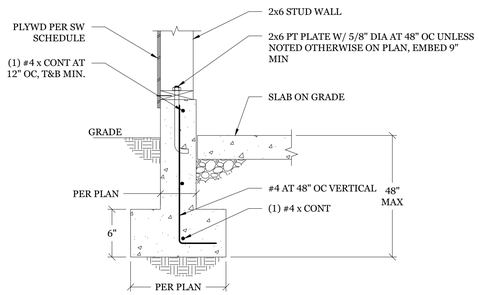
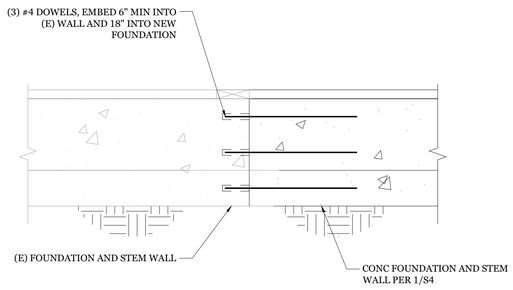
ROOF PLAN

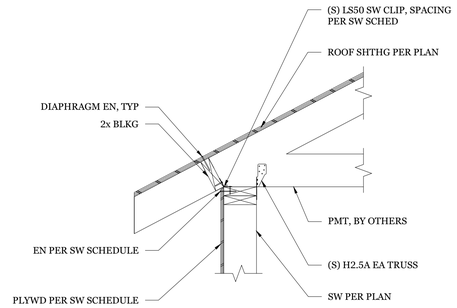
S3



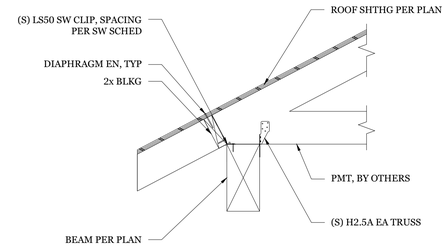
1 S4 FOUNDATION AT SLAB
SCALE 1"=1'-0"



2 S4 NEW TO EXISTING FOUNDATION
NTS



3 S4 ROOF FRAMING AT EXTERIOR WALL
SCALE 1"=1'-0"



4 S4 ROOF FRAMING AT BEAM
SCALE 1"=1'-0"

5 S4 ROOF FRAMING AT GABLE END
SCALE 1"=1'-0"

6 S4 LOW ROOF TO WALL CONNECTION
SCALE 1"=1'-0"

7 S4 CORNER DETAIL
SCALE 1"=1'-0"

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DETAILS

S4