

GENERAL CONDITIONS

- G. C. MUST BUILD EXACTLY WHAT IS SHOWN ON STRUCTURAL DRAWINGS. ANY PROPOSED DEPARTURES FROM WHAT IS INDICATED MUST BE REVIEWED WITH THE ENGINEER PRIOR TO CONSTRUCTION. ALL UNAUTHORIZED CHANGES TO THE APPROVED DRAWINGS MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CAREFULLY VERIFY ALL DIMENSIONS AND CONDITIONS SHOWN ON DRAWINGS PRIOR TO COMMENCEMENT OF THE WORK, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ENGINEERING AND ARCHITECTURAL DOCUMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS OF TEMPORARY SHORING, BRACING, OR OTHERWISE PROTECTING ANY PORTION OF THE STRUCTURE, SITE AND UTILITIES FROM DAMAGE DURING CONSTRUCTION. THE ENGINEER IS SPECIFYING THE FINISHED CONDITION ONLY, WITHOUT ASSUMING KNOWLEDGE NOR RESPONSIBILITY FOR HOW THE CONTRACTOR WILL ACHIEVE THIS RESULT.
- FOR RENOVATION WORK STRUCTURAL DRAWINGS PRODUCED WITH ASSUMPTIONS MADE REGARDING EXISTING CONDITIONS. IF CONTRACTOR FINDS EXISTING CONDITIONS NOT AS ASSUMED CONTACT ENGINEER IMMEDIATELY. REVISIONS TO THE STRUCTURAL FRAMING MAY BE REQUIRED.
- FOR EXACT LOCATIONS OF FLOOR AND ROOF OPENINGS, POSTS, ETC., SEE ARCHITECTURAL DRAWINGS.

FOUNDATIONS

- WHERE FOUNDATIONS ARE EXISTING, DESIGN HAS BEEN COMPLETED ASSUMING FOUNDATIONS AND UNDERLYING SOILS ARE SUITABLE TO SUPPORT PROPOSED RENOVATION AND/OR ADDITION. CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING, OR HIRING A THIRD PARTY TO VERIFY, THAT THE EXISTING FOUNDATION AND UNDERLYING SOILS CONFORMS TO BUILDING CODE REQUIREMENTS AND PERFORMANCE SPECS IN THESE PLANS. IF FOUNDATIONS ARE FOUND BY CONTRACTOR TO NOT BE SUITABLE, CONTRACTOR TO CONTACT DAVIDSON ENGINEERING ASSOCIATES IMMEDIATELY AS REDESIGN OF THESE PLANS WILL LIKELY BE REQUIRED.
- SOIL BEARING CAPACITY: FOOTINGS MUST BE PLACED ON SOIL WITH A MINIMUM BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT.
- EXISTING FOUNDATION WALLS MUST BE BEARING ON SOIL WITH A MINIMUM BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT.
- EXCAVATE TO LINES AND GRADES REQUIRED TO PROPERLY INSTALL THE FOUNDATIONS ON INORGANIC, UNDISTURBED SOIL OR CONTROLLED STRUCTURAL BACKFILL AS REQUIRED BY THE ARCHITECT. ALL EXCAVATIONS SHALL BE DRY BEFORE PLACING ANY CONCRETE.
- EXTERIOR FOOTINGS SHALL BE PLACED ON APPROVED SOIL AT A MINIMUM DEPTH OF 4 FEET, OR AS MODIFIED BY THE STRUCTURAL ENGINEER, BELOW THE LOWEST ADJACENT GROUND EXPOSED TO FREEZING. ANY ADJUSTMENT OF FOOTING ELEVATIONS DUE TO FIELD CONDITIONS MUST HAVE THE APPROVAL OF THE ARCHITECT.
- BACKFILL BELOW FOOTINGS AND SLABS SHALL BE MADE WITH APPROVED GRANULAR MATERIALS PLACED IN 6" LAYERS. LAYERS SHALL BE COMPACTED TO 96% DENSITY AT OPTIMUM MOISTURE CONTENT, AS DEFINED BY ASTM D1557.
- BACKFILLING AGAINST WALLS OR PIERS MAY ONLY BE DONE AFTER WALLS OR PIERS ARE BRACED TO PREVENT MOVEMENT. FOR WOOD FRAMED RESIDENTIAL CONSTRUCTION, NO BACKFILLING OF WALLS MAY TAKE PLACE UNTIL THE FIRST FLOOR DECK HAS BEEN FRAMED AND SHEATHED, UNLESS WRITTEN APPROVAL IS GIVEN BY THE ARCHITECT OR ENGINEER.
- PROVIDE FOUNDATION DRAINAGE, WATERPROOFING/DAMP-PROOFING, AND FOUNDATION WALL INSULATION AS INDICATED ON THE ARCHITECTURAL DRAWINGS.

CONCRETE

- ALL CONCRETE WORK SHALL BE PERFORMED IN CONFORMANCE WITH THE LATEST EDITION OF ACI-318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- CONCRETE SHALL ACHIEVE A MINIMUM 28 DAY DESIGN STRENGTH AS FOLLOWS: FOOTINGS, WALLS, INTERIOR SLABS-ON-GRADE, AND OTHER CONCRETE NOT OTHERWISE SPECIFIED - 3000 PSI. EXTERIOR SLABS EXPOSED TO WEATHER - 4000 PSI.
- SLUMP AT THE POINT OF DISCHARGE FROM THE READY-MIX TRUCK SHALL BE 3-5".
- REINFORCING STEEL: TYPICAL - ASTM A615, GRADE 60. FIELD BENT - ASTM A615, GRADE 40 WELDED WIRE FABRIC - ASTM A185.

ROUGH CARPENTRY

- ALL ROUGH CARPENTRY WORK SHALL BE EXECUTED IN CONFORMANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS BUILDING CODE (MBC) AND THE INTERNATIONAL BUILDING CODE (IBC).
- REFER THE MBC AND IBC FOR FRAMING COMPONENTS NOT SPECIFIED IN PLANS AND SECTIONS. NOTIFY THE ENGINEER OF ANY COMPONENT NOT DEFINED IN EITHER THE MBC AND IBC OR IN THESE DRAWINGS.
- REFER TO IBC FASTENER SCHEDULE FOR STRUCTURAL MEMBERS TABLE 2304.9.1 FOR CONNECTION FASTENING NOT IDENTIFIED IN THESE PLANS OR DETAILS. ENGINEER MAKES NO CLAIMS TOWARDS EXISTING CONDITIONS.
- WHEN NOT OTHERWISE IDENTIFIED, ALL WOOD BEAMS, JOISTS, RAFTERS, HEADERS, STRINGERS, PLATES, AND SILLS SHALL BE SPRUCE PINE FIR #2 OR BETTER, WITH A MINIMUM Fb = 875 PSI (SINGLE USE) AND Fb = 1000 PSI (REPETITIVE USE), AND E SHALL BE 1,400,000 PSI OR BETTER.
- WOOD STUDS MAY BE EASTERN HEMLOCK, EASTERN SPRUCE, OR HEM-FIR, GRADED "STUD" GRADE, #2 OR BETTER.
- LVL BEAMS, AS NOTED ON PLANS, SHALL HAVE A MINIMUM Fb = 3100 PSI, E = 2,000,000 PSI, AND Fv = 285 PSI. LVL BEAMS SHALL BE "VERSALAM" BY BOISE CASCADE. NO SUBSTITUTIONS WILL BE ACCEPTED, UNLESS THE ENGINEER SPECIFICALLY APPROVES ANOTHER PRODUCT SUBMITTED BY THE CONTRACTOR.
- WOOD "I" BEAMS SHALL BE BY BOISE CASCADE. NO SUBSTITUTIONS WILL BE ACCEPTED, UNLESS THE ENGINEER SPECIFICALLY APPROVES ANOTHER PRODUCT SUBMITTED BY THE CONTRACTOR. MANUFACTURER'S RECOMMENDATIONS FOR BEARING, REINFORCING, CUTS, CANTILEVERS, FASTENING, ETC., SHALL BE STRICTLY ADHERED TO.
- ENGINEERED WOOD POSTS (VERSA COLUMNS), AS NOTED ON PLANS, SHALL BE VERSA-LAM 1.7 2650.
- PLYWOOD WALL SHEATHING, ROOF SHEATHING, AND SUBFLOORING SHALL BE APA GRADE, TRADEMARKED C-D INTERIOR WITH EXTERIOR GLUE. SUBFLOORING SHALL BE 3/4" THICK TONGUE AND GROOVE, AND SHALL BE GLUED TO FLOOR JOISTS WITH AN APPROVED ADHESIVE PRIOR TO NAILING. ROOF SHEATHING SHALL BE 1/2" THICK AND WALL SHEATHING SHALL BE 1/2" THICK.
- ALL WOOD HAVING DIRECT CONTACT WITH CONCRETE OR MASONRY, AND WHEREVER WOOD IS WITHIN 8" OF FINISHED GRADE OR PART OF OPEN DECK CONSTRUCTION, SHALL BE PRESSURE TREATED.
- ALL METAL CONNECTORS INCLUDING JOIST AND BEAM HANGERS AND COLUMN CAP AND BASES SHALL BE BY SIMPSON STRONG-TIE CORP. THE CONTRACTOR SHALL STRICTLY ADHERE TO MANUFACTURER'S FASTENING REQUIREMENTS. CONTRACTOR TO VERIFY ALL CONNECTOR SIZES TO FRAMING ELEMENTS BEFORE ORDERING.
- UNLESS DETAILED OR SPECIFIED OTHERWISE ON THE PLANS, HEADERS AND BEAMS SHALL BE SUPPORTED BY AT LEAST ONE JACK STUD AND ONE KING STUD.
- FOR WOOD JOIST SPANS UP TO 14 FEET, PROVIDE A SINGLE ROW OF FULL DEPTH BLOCKING BETWEEN JOISTS AT MIDSPAN. FOR SPANS EXCEEDING 14 FEET, PROVIDE TWO ROWS OF FULL DEPTH BLOCKING BETWEEN JOISTS AT THIRD POINTS OF THE SPAN.
- GABLE-END WALL STUDS IN CATHEDRAL, PARTIAL CATHEDRAL, OR HIGH CEILING SPACES SHALL SPAN UNINTERRUPTED FROM THE FLOOR PLATE TO THE UNDERSIDE OF THE ROOF RAFTERS. THEY SHOULD NOT BE INTERRUPTED BY ANY HORIZONTAL PLATES OR BEAMS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- MEMBERS WITHIN BUILT-UP BEAMS, WHETHER MADE OF SAWN OR ENGINEERED LUMBER, SHALL ONLY BE SPLICED OVER SUPPORTS.
- PROVIDE SIMPSON H1 OR H2.5 HURRICANE TIES BETWEEN EACH RAFTER BOTTOM AND ITS BEARING POINT.
- CONTRACTOR SHALL CAREFULLY COORDINATE THE WORK OF ALL TRADES TO MINIMIZE THE NEED FOR CUT, BORED OR NOTCHED IN FRAMING LUMBER. STRUCTURAL FLOOR MEMBERS SHALL NOT BE CUT, BORED OR NOTCHED IN EXCESS OF THE LIMITATIONS SPECIFIED IN THE BUILDING CODE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
- AT WOOD POSTS LANDING ON FLOOR DECK, PROVIDE SOLID VERTICAL WOOD BLOCKING WITHIN DECK SANDWICH TO LINK UPPER POST WITH LOWER SUPPORT. BLOCKING TO MATCH UPPER POST SIZE.
- SET LVL BEAMS THAT FRAME FLUSH WITH DIMENSIONED LUMBER JOISTS 3/8" BELOW THE TOP OF JOISTS TO ALLOW FOR JOIST SHRINKAGE. WHERE BEARING WALLS OR POSTS LAND ON THESE BEAMS, INFILL GAP WITH 3/8" PLYWOOD FOR SOLID BEARING.
- BEAMS COMPRISED OF 3 LVLS OR MORE SHALL BE BOLTED TOGETHER WITH A MINIMUM OF 2-1/2" Ø BOLTS AT 16" ON CENTER OR 3-1/4" Ø DIAMETER SELF TAPPING LAG SCREWS AT 16" ON CENTER, ALTERNATING INSERTION SIDES, FOLLOW MANUF. SPECS, UNLESS NOTED OTHERWISE ON DRAWING.
- IN ADDITION TO THE FLOOR JOIST SHOWN IN THE PLANS, CONTRACTOR SHALL INSTALL DOUBLE JOISTS UNDER ALL PARTITIONS WALLS RUNNING PARALLEL TO THE DIRECTION OF FRAMING.
- MINIMUM BEAM BEARING TO BE 3 INCHES UNLESS NOTED OTHERWISE ON PLAN.
- BEARING WALL SCHEDULE**
-ALL EXTERIOR WALLS:
2x6@16"OC WITH 2 ROWS OF HORIZONTAL BLOCKING AT 1/3 POINTS
-1ST FLOOR INTERIOR BEARING WALLS:
2x4@16 OR 2x6@16"OC WITH 2 ROWS OF HORIZONTAL BLOCKING AT 1/3 POINTS
-2ND & 3RD FLOOR INTERIOR BEARING WALLS:
2x4@16 OR 2x6@16"OC WITH 1 ROW OF HORIZ. BLOCKING AT MID-HEIGHT OF WALL

DESIGN LOADS PER MASSACHUSETTS STATE BUILDING CODE

LIVE LOADS

GROUND SNOW LOAD:	40 PSF
UNINHABITABLE ATTICS WITHOUT STORAGE:	10 PSF
UNINHABITABLE ATTICS WITH LIMITED STORAGE:	20 PSF
HABITABLE ATTICS AND SLEEPING AREAS:	30 PSF
ALL OTHER AREAS	40 PSF

WIND LOADS

MASSACHUSETTS STATE BUILDING CODE 128 MPH, EXPOSURE B

DEAD LOAD

WEIGHTS OF MATERIALS AND CONSTRUCTION

LATERAL FRAMING NOTES:

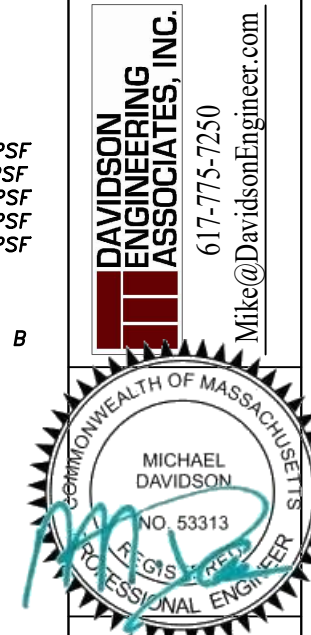
- THE STRUCTURAL DESIGN OF THIS RESIDENCE WAS PERFORMED IN COMPLIANCE WITH THE INTERNATIONAL RESIDENTIAL CODE FOR ONE AND TWO FAMILY DWELLINGS. THE PRESCRIPTIVE REQUIREMENTS OF THIS CODE DO NOT APPLY PER SECTIONS 301.1.1 ALTERNATIVE PROVISIONS AND 301.1.3 ENGINEERED DESIGN.
- FRAMING COMPONENTS AND FASTENERS AS IDENTIFIED IN THESE DRAWINGS AND NOTES ADEQUATELY RESIST THE LATERAL LOAD REQUIREMENTS AS DEFINED BY THE INTERNATIONAL RESIDENTIAL CODE FOR ONE AND TWO FAMILY DWELLINGS.

HANGER SELECTION TABLE			
MEMBER \ QT	1	2	3
2X8	LUS28	LUS28-2	LUS28-3
2X10	LUS210	LUS210-2	LUS210-3
2X12	LUS210	LUS210-2	LUS210-3
9/2"LVL	HU9	HHUS410	HHUS610
117/8"LVL	HU11	HHUS410	HHUS610
14"LVL	HU14	HHUS410	HHUS610
25/16"FLG I-JOIST	IUS 2.37		
21/2"FLG I-JOIST	IUS 2.56		
31/2"FLG I-JOIST	IUS 3.56		

- NOTE:
- USE HANGERS ABOVE FOR PROPOSED STRUCTURE UNLESS OTHERWISE NOTED ON FRAMING PLANS.
 - INSTALL ALL HANGERS WITH MAXIMUM NUMBER OF FASTENERS.

LEGEND

BW = BEARING WALL FVP = FLAT VALLEY PLATE (E) = EXISTING (N) = NEW TBR = TO BE REMOVED	DIM. LUMBER POST NUMBER OF STUDS P3-26 SIZE OF STUD TYPE OF POST: P-POST, J-JACK,
POST LOCATION POST UP (ABOVE LINE) POST DOWN (BELOW LINE)	ENGINEERED POST LC 31/2 SIZE TYPE OF POST: VC-VERSA COLUMN, LC-LALLY COLUMN, HSS-TUBE STEEL



RENOVATION / ADDITION
15 ROBERTS STREET
NEWTON, MA

Rev: _____ Date: _____

FOR CONST.

Date : JAN. 20, 2022

DRAWING SCALES SHOWN ARE BASED ON AN 11x17 SIZE DRAWING

NOTES AND SPECS

S0.0

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 617-775-7250
 Mike@DavidsonEngineer.com



**RENOVATION / ADDITION
15 ROBERTS STREET
NEWTON, MA**

Rev:	Date:

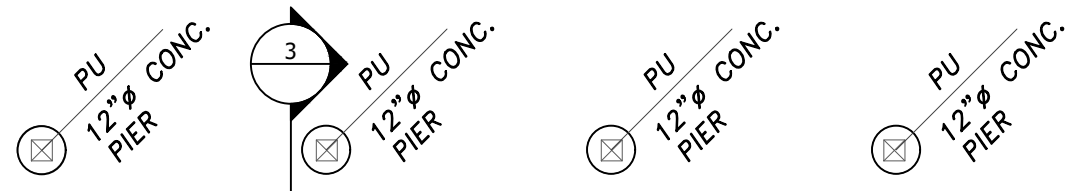
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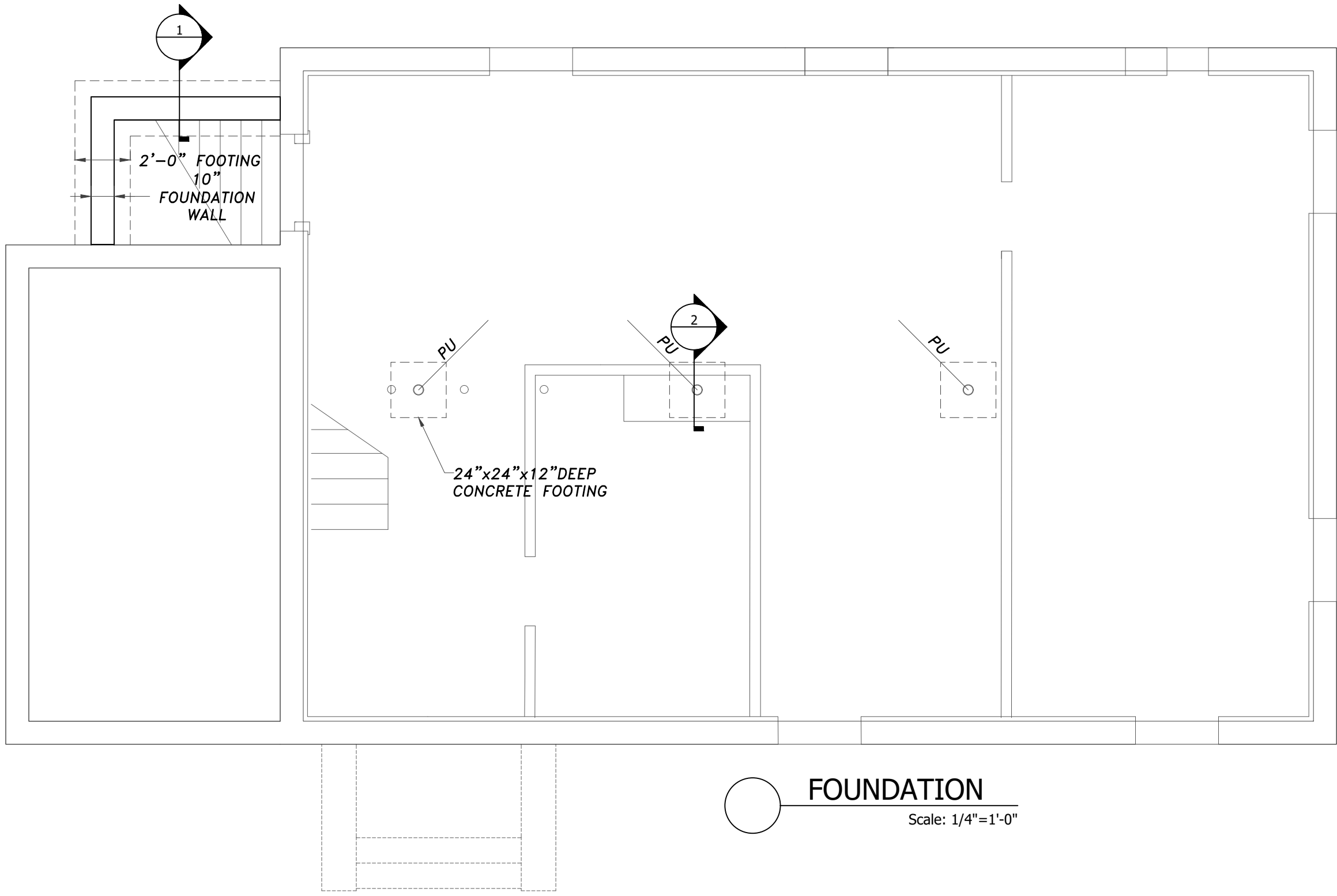
DRAWING SCALES
SHOWN ARE BASED ON
AN 11x17 SIZE DRAWING

FOUNDATION

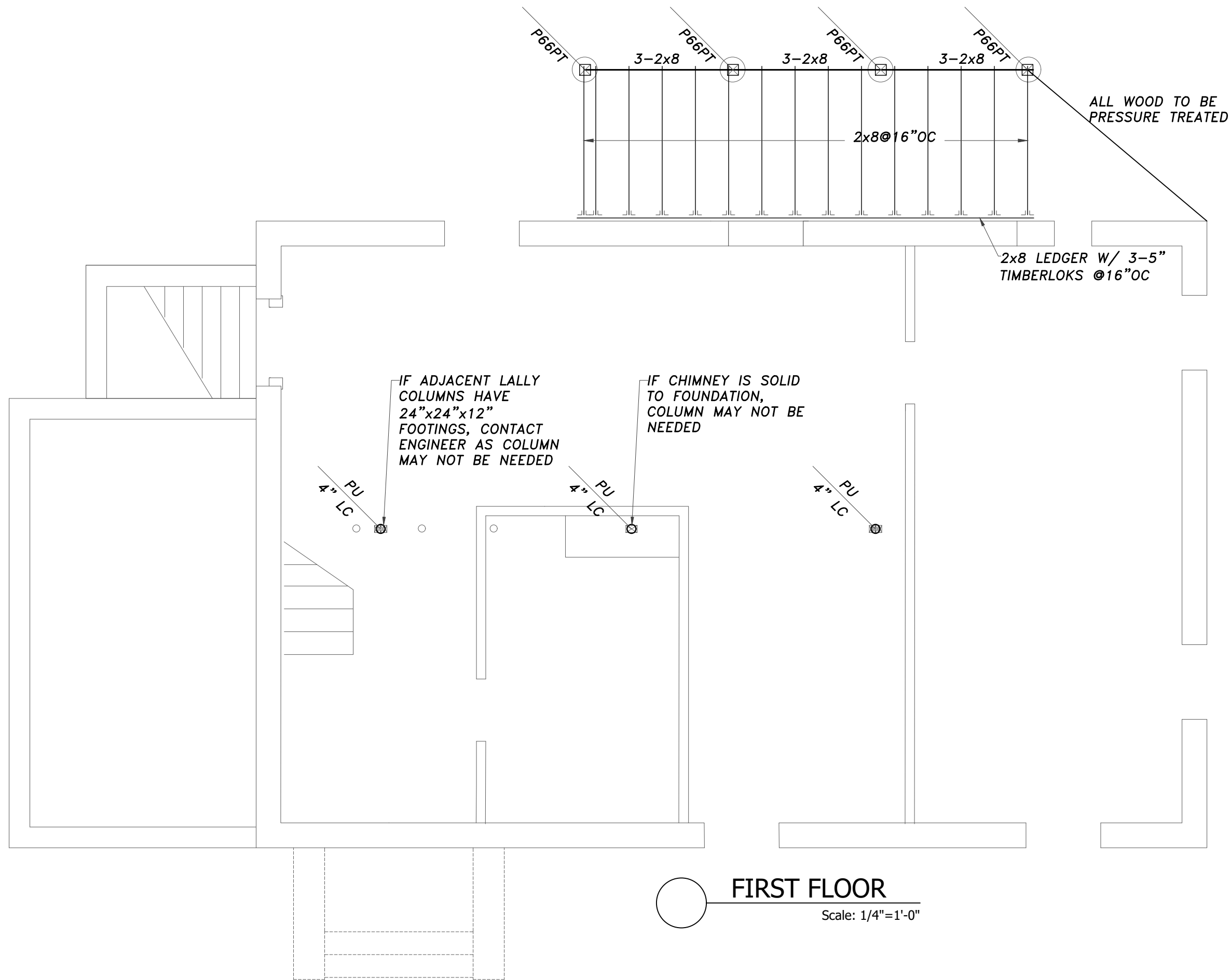
S1.0



ALL WOOD TO BE
PRESSURE TREATED



FOUNDATION
Scale: 1/4" = 1'-0"



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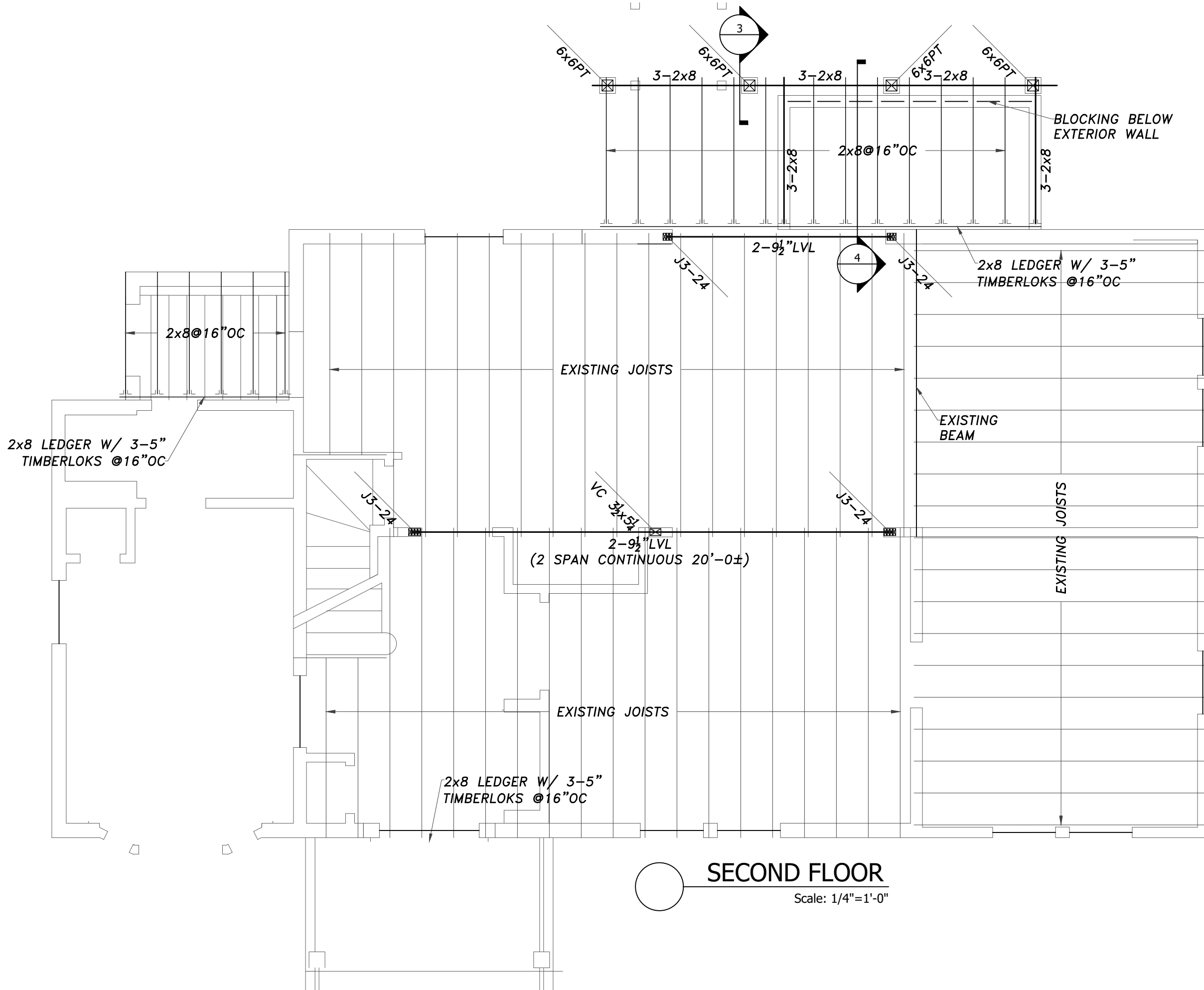
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FIRST FLOOR

S1.1



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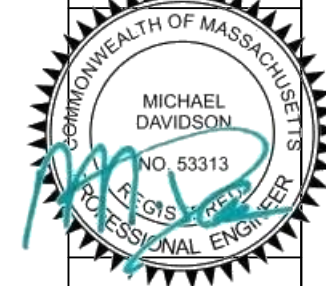
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DRAWING SCALES
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**SECOND
FLOOR**

S1.2

SECOND FLOOR
Scale: 1/4"=1'-0"



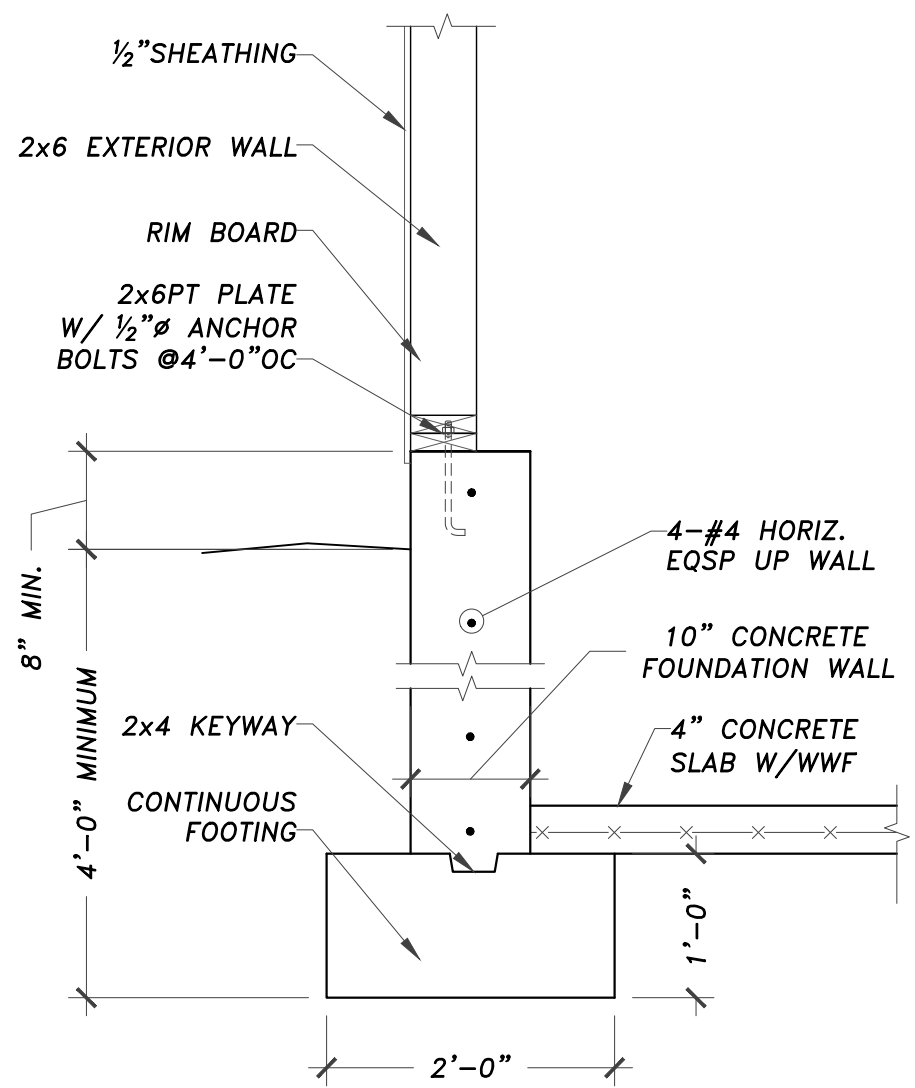
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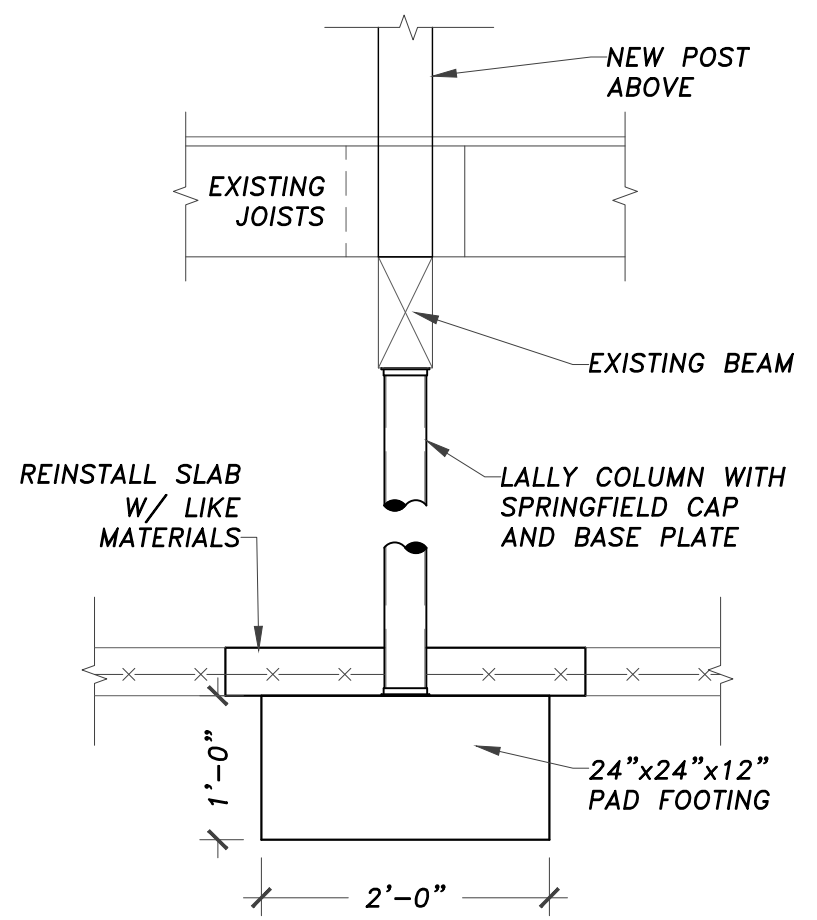
FOR CONST.
Date : JAN. 20, 2022
DRAWING SCALES
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SECTIONS

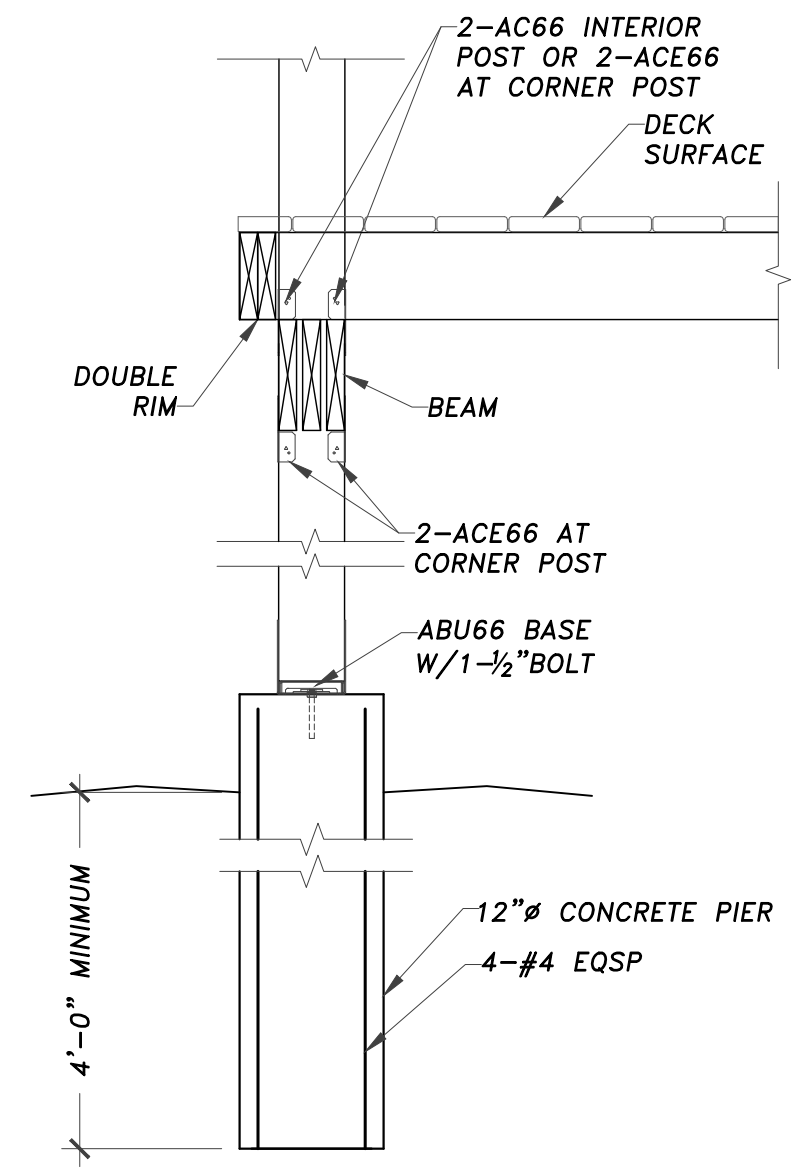
S2.0



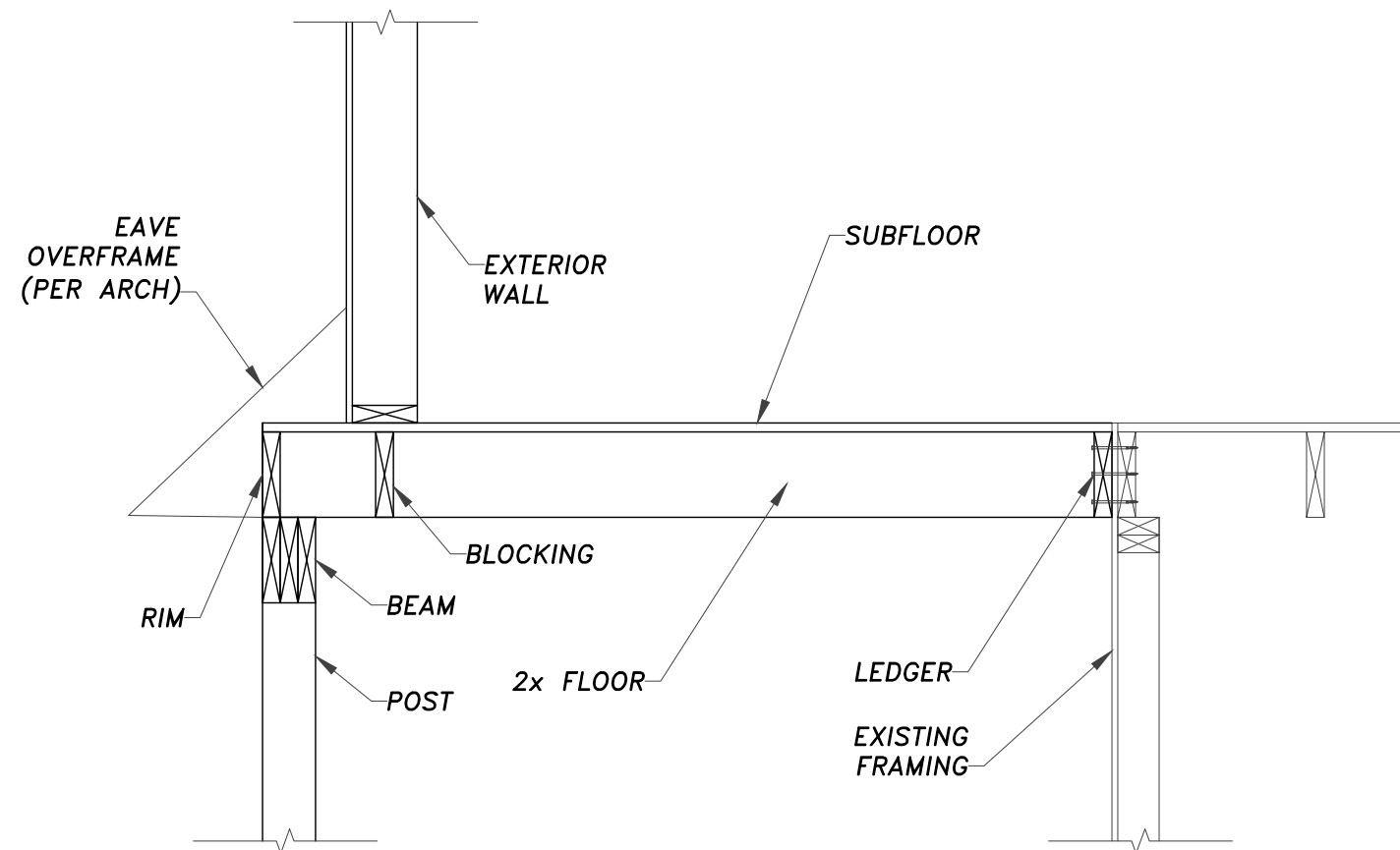
1 FOUNDATION DETAIL
Scale: 3/4" = 1'-0"



2 LALLY COLUMN
Scale: 3/4" = 1'-0"



3 PORCH DETAIL
Scale: 3/4" = 1'-0"



4 **FRAMING SECTION**
Scale: 3/4"=1'-0"

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S2.1