

**GENERAL STRUCTURAL NOTES**

STRUCTURAL GENERAL NOTES ARE PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH ARCHITECTURAL , MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENT FROM THESE DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.

**CODE REQUIREMENT:**

CONFORM THE 2012 INTERNATIONAL BUILDING CODE (IBC)

**TEMPORARY CONDITIONS:**

THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

**EXISTING CONDITIONS:**

ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SIGNIFICANT DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

**DESIGN CRITERIA:**

DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE O55C. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWABLES WERE USED FOR DESIGN, WITH LIVE LOADS REDUCED PER O55C:

FLOOR	40 PSF
CORRIDOR	100 PSF
ROOF	25 PSF L.L. (SNOW)
WIND	115 MPH (3 SECOND GUST) - EXPOSURE B

**SEISMIC CRITERIA:**

BASIC SEISMIC LOAD RESISTING SYSTEM WOOD SHEAR WALLS OCCUPANCY CATEGORY II

IMPORTANCE FACTOR : 1.0

S<sub>0.5</sub> = 0.73; S<sub>D1</sub> = 0.396; S<sub>5</sub> = 0.99; S<sub>1</sub> = 0.349

**STRUCTURAL OBSERVATION:**

THE STRUCTURAL ENGINEER OF RECORD (SER) WILL PERFORM STRUCTURAL OBSERVATION BASED ON THE REQUIREMENTS OF THE O55C AT THE STAGES OF CONSTRUCTION LISTED BELOW. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SER TO PERFORM THESE OBSERVATIONS.

**STRUCTURAL OBSERVATION PROGRAM**

ITEM	OBSERVED BY (2)		COMMENTS
	AOR	SER	
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES		X	REF. NOTES 1,3,4

**PROGRAM FOOTNOTES:**

- CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SER ADVANCE.
- SER - STRUCTURAL ENGINEER OF RECORD  
AOR - ARCHITECT OF RECORD
- A FIELD REPORT WILL BE SUBMITTED TO THE BUILDING DEPARTMENT FOLLOWING EACH SITE VISIT.
- STRUCTURAL OBSERVATION IS FOR THE GENERAL CONFORMANCE OF THE STRUCTURAL DRAWING. SPECIAL INSPECTION IS STILL REQUIRED.
- AFTER REINFORCING STEEL HAS BEEN INSTALLED.

**SPECIAL INSPECTION:**

SPECIAL INSPECTION WILL BE PROVIDED BY THE OWNER BASED ON THE REQUIREMENTS OF THE IBC 2009 AS SUMMARIZED IN THE TABLE. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

**SPECIAL INSPECTION PROGRAM  
ESTABLISHED PER SECTION 1704 IBC 2009**

ITEM	CONTINUOUS	PERIODIC	COMMENTS
<b>CONCRETE</b>			
EPOXY ANCHOR PLACEMENT	X		
EXPANSION ANCHOR PLACEMENT	X		

**PROGRAM FOOTNOTES:**

- THE ITEMS CHECKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH O55C CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO THE PROJECT SPECIFICATIONS AND THE SPECIFIC GENERAL NOTES SECTIONS. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY MATERIALS WHICH FAIL TO MEET THE PROJECT SPECIFICATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
- SPECIAL INSPECTION IS NOT REQUIRED FOR WORK PERFORMED BY AN APPROVED FABRICATOR PER IBC 2009 SECTION 1704.2.1
- CONTINUOUS SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION (IBC SECTION 1702). PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON SITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WOK REQUIRING SPECIAL INSPECTION IS IN COMPLIANCE.
- ALL ELEMENTS OF THE WOOD FRAME LATERAL LOAD RESISTING SYSTEM LISTED SHALL BE VISUALLY INSPECTED.

**SUBMITTALS:**

SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO THE FABRICATION AND CONSTRUCTION REGARDING ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING:

- CONCRETE ANCHORAGES
- MEP CONCRETE ANCHORAGE & BRACING

IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER.

**SAWN LUMBER:**

SAWN LUMBER SHALL CONFORM TO WEST COAST LUMBER INSPECTION BUREAU OR WESTERN WOOD PRODUCTS ASSOCIATION GRADING RULES. LUMBER SHALL BE KILN DRIED AND BE THE SPECIES AND GRADE NOTED BELOW:

USE	SPECIES/GRADE	Fb (PSI) (BASE VALUE)
DIM. LUMBER 2" TO 4" THICK	DOUGLAS FIR-LARCH NO. 2	900
BEAMS 5" X 5" AND GREATER	DOUGLAS FIR-LARCH NO. 1	1350
POSTS	DOUGLAS FIR-LARCH NO. 1	1200
T & G DECKING	DOUGLAS FIR-LARCH COMMERCIAL DEX	1450

(Note to Engineer: Modify stud grade at exterior walls, as required for wind load. Use select DEX for tongue-and-groove decking where exposed to view, kiln dried lumber should be used for all buildings over 2 stories.)

ALL LUMBER IN CONTACT WITH CONCRETE OR CMU SHALL BE PRESSURE TREATED, UNLESS AN APPROVED MOISTURE BARRIER IS PROVIDED.

FRAMING ACCESSORIES AND STRUCTURAL FASTENERS SHALL BE MANUFACTURED BY SIMPSON STRONG TIE (OR APPROVED EQUAL) AND OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS. ALL NAIL HOLES SHALL BE FILLED WITH STRUCTURAL FASTENERS, UNLESS NOTED OTHERWISE ON THE DRAWINGS AND FASTENERS SHALL BE INSTALLED FOLLOWING ALL MANUFACTURER'S REQUIREMENTS. IF A SUBSTITUTION IS MADE, A DOCUMENT SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL OUTLINING THE FRAMING ACCESSORIES BEING REPLACED AND THE SUBSTITUTED FRAMING ACCESSORIES. ALLOWABLE LOADS FOR THE SIMPSON ACCESSORIES SHALL BE TABULATED ALONG WITH ALLOWABLE LOADS FOR THE SUBSTITUTED ACCESSORIES, WHICH CLEARLY INDICATE THE SUBSTITUTED ACCESSORIES HAVING AN EQUAL OR GREATER CAPACITY. HANGERS NOT SHOWN SHALL BE SIMPSON U-TYPE OR B-TYPE OF SIZE RECOMMENDED FOR THE MEMBER.

ALL FRAMING NAILS SHALL BE OF THE SIZE AND NUMBER INDICATED ON THE DRAWINGS AND CONFORM TO ASTM F 1667, "STANDARD SPECIFICATION OF DRIVEN FASTENERS: NAILS, SPIKES, AND STAPLES AND NER-272 "POWER-DRIVEN STAPLES AND NAILS FOR USE IN ALL TYPES OF BUILDING CONSTRUCTION". NAILS SHALL BE IDENTIFIED BY LABELS (ATTACHED TO THEIR CONTAINERS) THAT SHOW THE MANUFACTURER'S NAME AND NES REPORT NUMBER, NAIL SHANK DIAMETER, AND LENGTH AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FRAMING, NAILING NOT SHOWN SHALL BE AS INDICATED ON IBC 2009 TABLE 2304.9.1 OR NER-272. THE FOLLOWING NAIL SIZES SHALL BE USED:

NAIL TYPE	SHANK DIAMETER (IN.)	Fb (PSI) (BASE VALUE)
6d	0.113	1.25
8d	0.131	1.5
10d	0.148	1.625
12d	0.148	1.625
16d	0.148	1.625

BOLTS AND LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B 18.2.1-1981. ALL BOLTS AND LAG SCREWS SHALL BE INSTALLED WITH STANDARD CUT WASHERS. ALL A307 BOLTS SHALL HAVE CUT THREADS.

CUTTING AND NOTCHING OF JOISTS AND STUDS SHALL CONFORM TO IBC 2009 SECTIONS 2308.8.2, 2308.9.10 AND 2308.10.4.2

SALVAGED LUMBER SHALL BE GRADED BY AN APPROVED GRADING AGENCY PRIOR TO USE AND SHALL MEET THE MINIMUM BENDING STRESSES SHOWN ABOVE.

**WOOD STRUCTURAL PANELS:**

WOOD STRUCTURAL PANELS SHALL CONFORM TO THE REQUIREMENTS OF " U.S. PRODUCT STANDARD P5 1 FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD", "U.S. PRODUCT STANDARD P5 2 PERFORMANCE STANDARD FOR WOOD-BASED STRUCTURAL-USE PANELS", OR "APA PRP-108 PERFORMANCE STANDARDS". UNLESS NOTED, PANELS SHALL BE APA RATED SHEATHING, EXPOSURE 1, OF THE THICKNESS AND SPAN RATING SHOWN ON THE DRAWINGS.

WOOD STRUCTURAL PANEL INSTALLATION SHALL BE IN CONFORMANCE WITH APA RECOMMENDATIONS. ALLOW 1/8" SPACING AT PANEL ENDS AND EDGES, UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER.

ALL ROOF SHEATHING AND SUB-FLOORING SHALL BE INSTALLED WITH FACE GRAIN PERPENDICULAR TO SUPPORTS, EXCEPT AS INDICATED ON THE DRAWINGS. ROOF SHEATHING SHALL EITHER BE BLOCKED, TONGUE AND GROOVE, OR HAVE EDGES SUPPORTED BY PLYCLIPS. WHEN ROOF SHEATHING IS NAILED DIRECTLY TO BLOCKING, THE BLOCKING SHALL BE NAILED TO SUPPORT MEMBERS WITH MINIMUM OF 1 1/2" NAILS AT 4' O.C. SUB-FLOORING SHEATHING SHALL BE UNBLOCKED, EXCEPT AS INDICATED ON DRAWINGS. SUB-FLOOR PANELS SHALL BE FIELD GLUED TO THE FRAMING USING ADHESIVES MEETING APA SPECIFICATION AFG-01 OR ASTM D3498. TONGUE AND GROOVE PANELS SHALL ALSO BE GLUED AT THE T&G JOINT. SHEAR WALL SHEATHING SHALL BE INSTALLED EITHER HORIZONTALLY OR VERTICALLY AND BE BLOCKED WITH 2X FRAMING AT ALL PANEL EDGES. NAILING NOT SHOWN SHALL BE AS INDICATED ON O55C TABLE 2304.9.1. ALL NAILS SHALL BE COMMON NAILS EXCEPT USE RING SHANK FOR ROOF SHEATHING.

**DRAWINGS INDEX**

**S0.0**

**GENERAL NOTES**

**S0.1**

**FLOOR PLANS**

**S0.2**

**ROOF PLAN**

**S6.1**

**FRAMING DETAILS**

**S6.2**

**FRAMING DETAILS**

**S6.3**

**FRAMING DETAILS**

**S6.4**

**FRAMING DETAILS**

Portland State  
PSU Capital Projects  
& Construction  
**EAST HALL**  
Mech. Ventilation &  
Interior Refinishing  
1st - 3rd Floor  
INTERIOR REMODEL  
(Block 192)  
432 SW Holl Ave.  
Portland, Oregon 97201



21617 SW Susan Lane  
Beaverton, OR 97006  
Ph: 971.222.4378



NO: DATE:

KEY PLAN:

ISSUANCE:

PROJECT NO:

DATE:  
04.25.2014

SCALE:

DRAWING TITLE:  
**STRUCTURAL  
GENERAL NOTES**

SHEET NO:

**S0.0**



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Beaverton, OR 97006  
Ph: 971.222.4378



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ISSUANCE:

PROJECT NO:

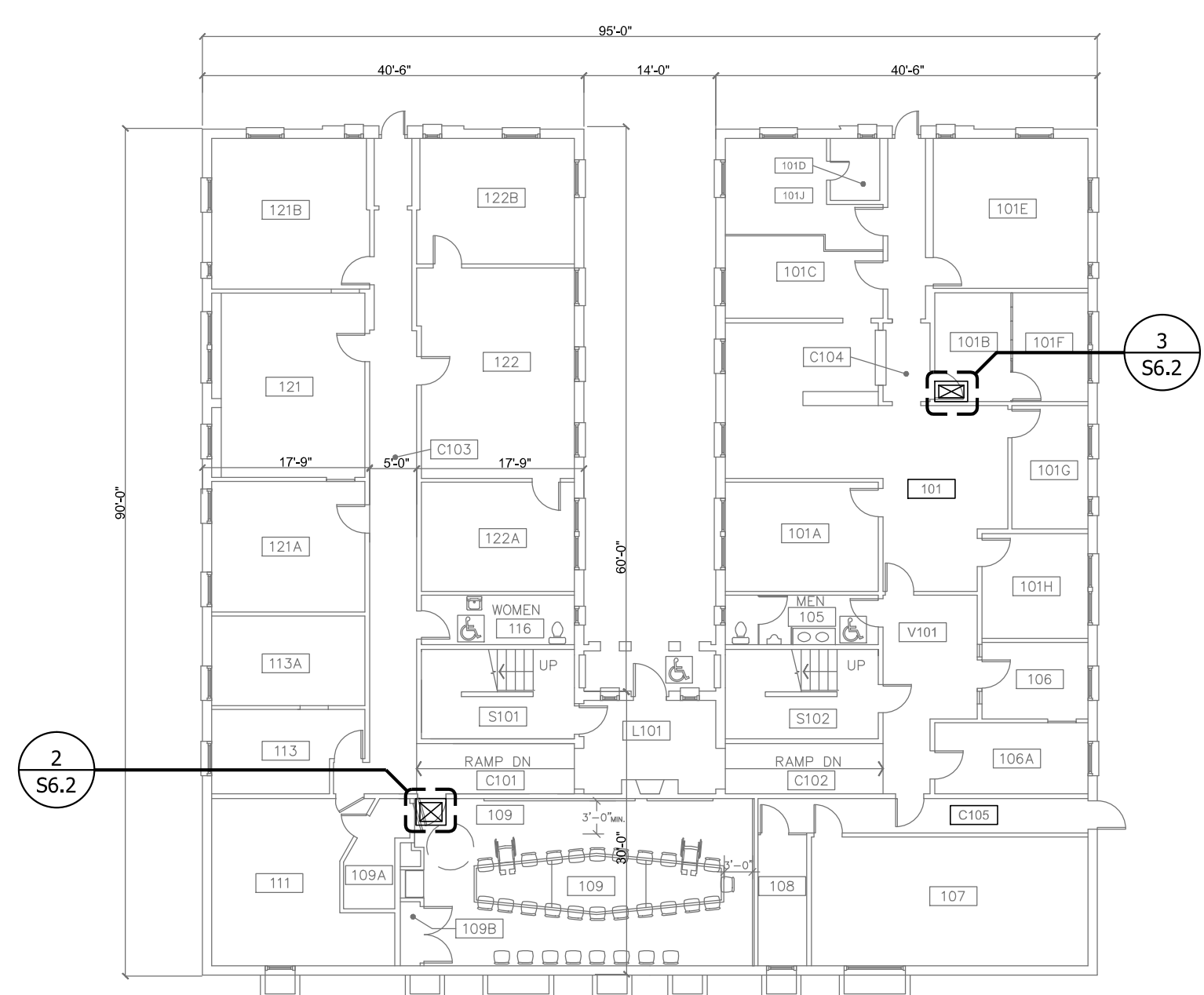
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04.25.2014

SCALE:

DRAWING TITLE:  
FLOOR PLANS

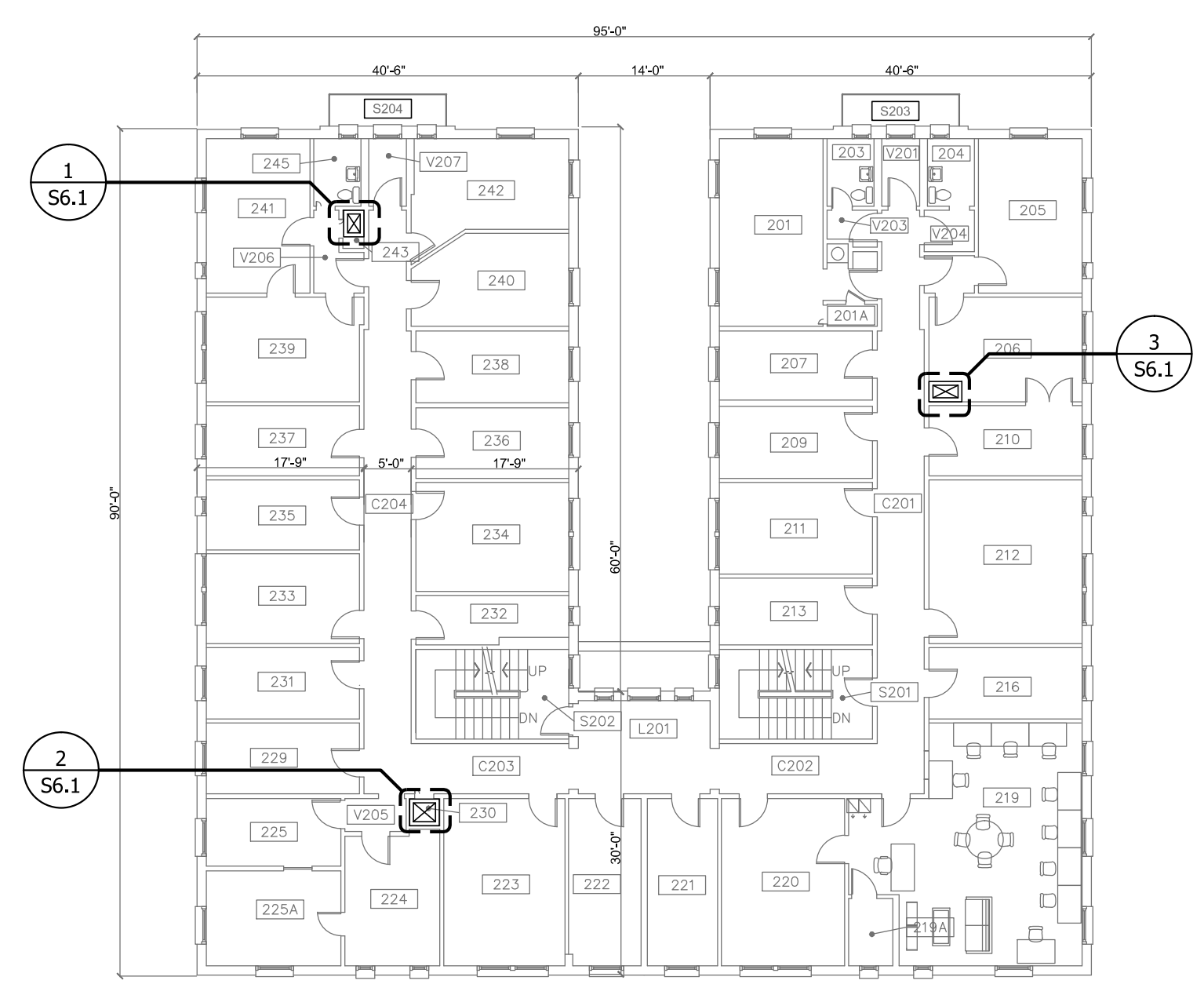
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**S0.1**



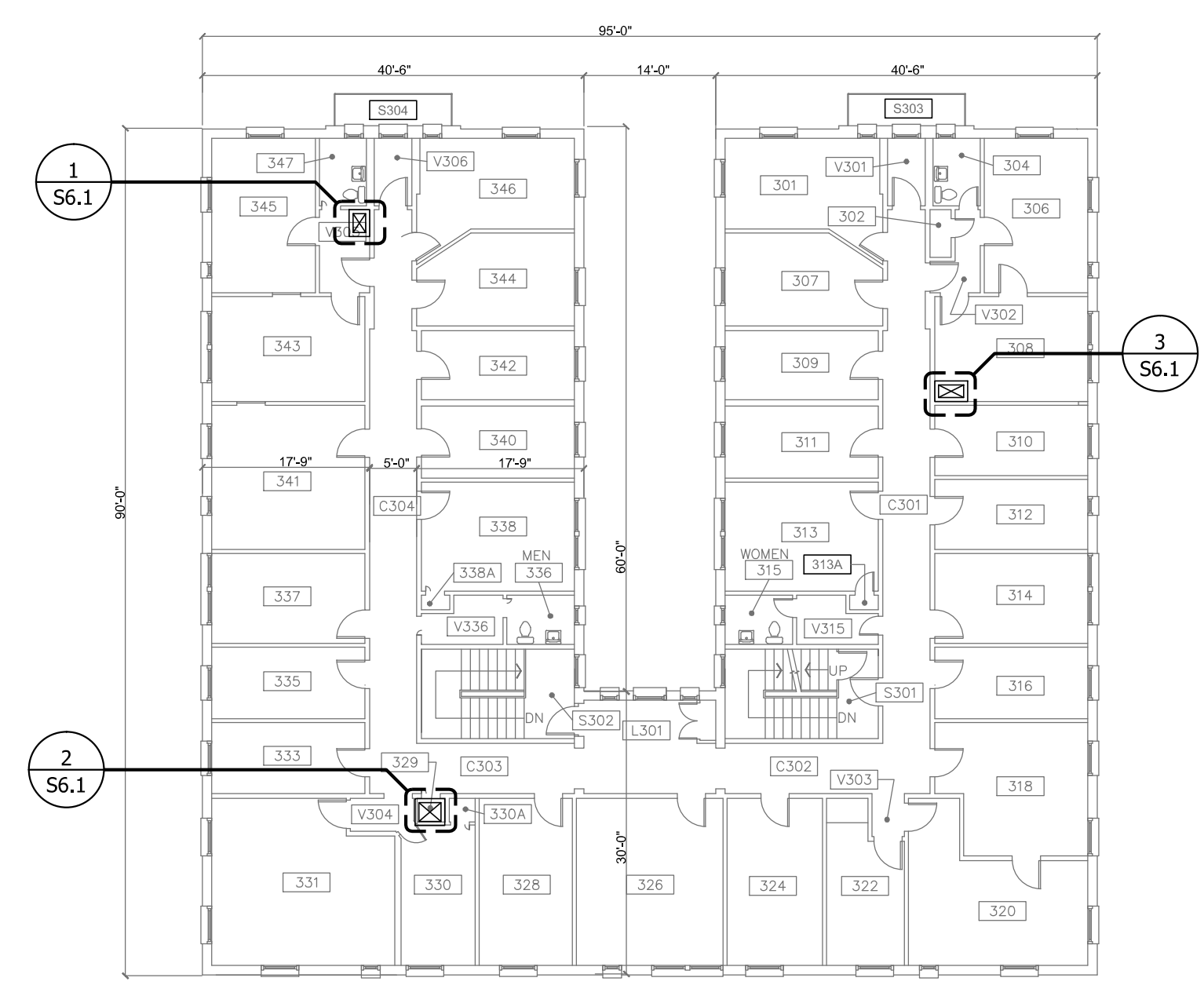
NOTE:  
1. CONTRACTOR TO VERIFY SLAB ON GRADE THICKNESS  
2. CONTRACTOR TO COORDINATE SHAFT SIZES & LOCATION WITH MECHANICAL & ARCHITECTURAL DRAWINGS

**1 1ST FLOOR SHAFTS FRAMING**  
Scale: 1/16" = 1'-0"



NOTE:  
1. CONTRACTOR TO VERIFY (E) JOISTS SIZE & SPACING  
2. CONTRACTOR TO COORDINATE SHAFT SIZES & LOCATION WITH MECHANICAL & ARCHITECTURAL DRAWINGS

**2 2ND FLOOR SHAFTS FRAMING**  
Scale: 1/16" = 1'-0"



NOTE:  
1. CONTRACTOR TO VERIFY (E) JOISTS SIZE & SPACING  
2. CONTRACTOR TO COORDINATE SHAFT SIZES & LOCATION WITH MECHANICAL & ARCHITECTURAL DRAWINGS

**3 3RD FLOOR SHAFTS FRAMING**  
Scale: 1/16" = 1'-0"



21617 SW Susan Lane  
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NO: DATE:

KEY PLAN:

ISSUANCE:

PROJECT NO:

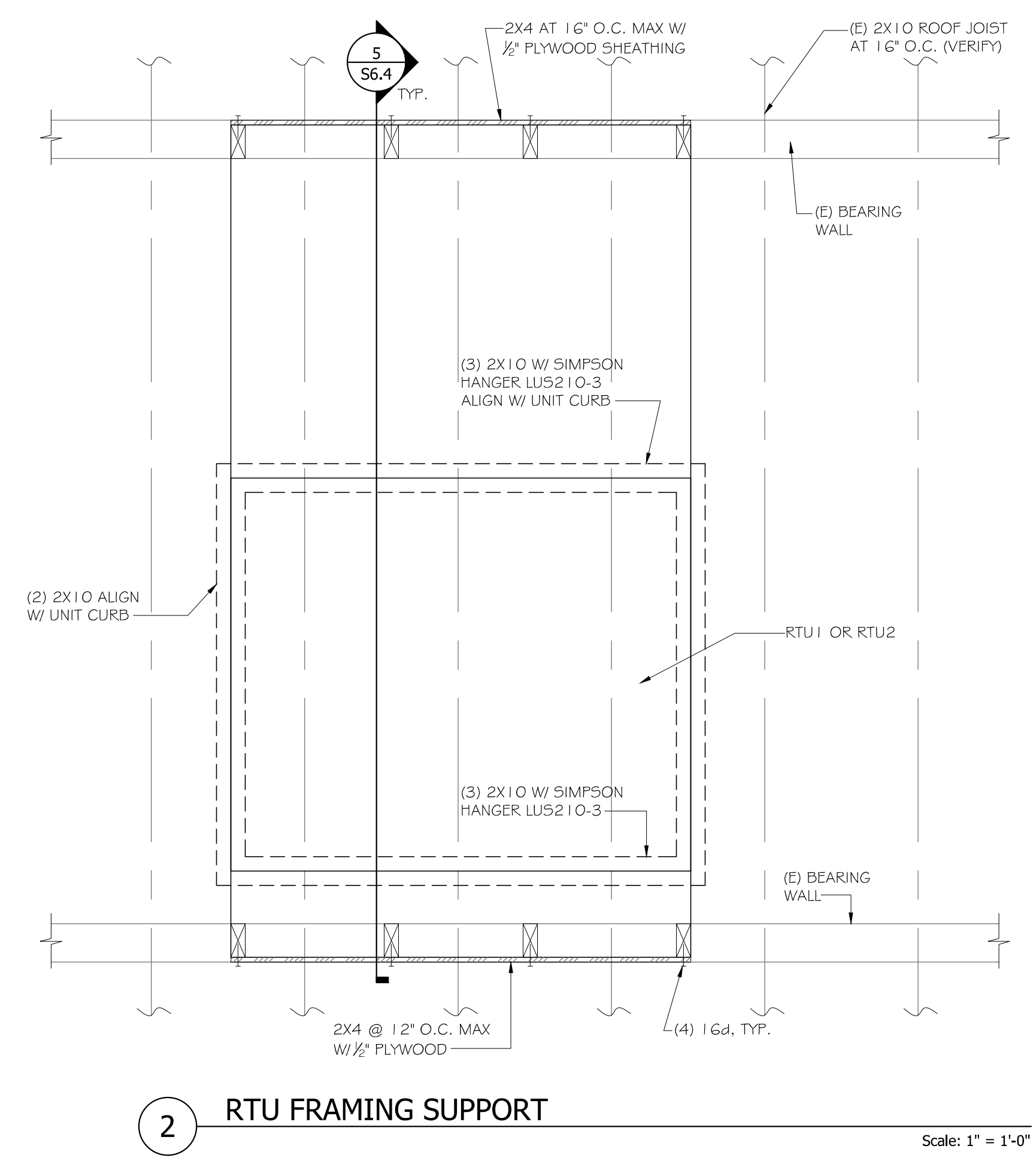
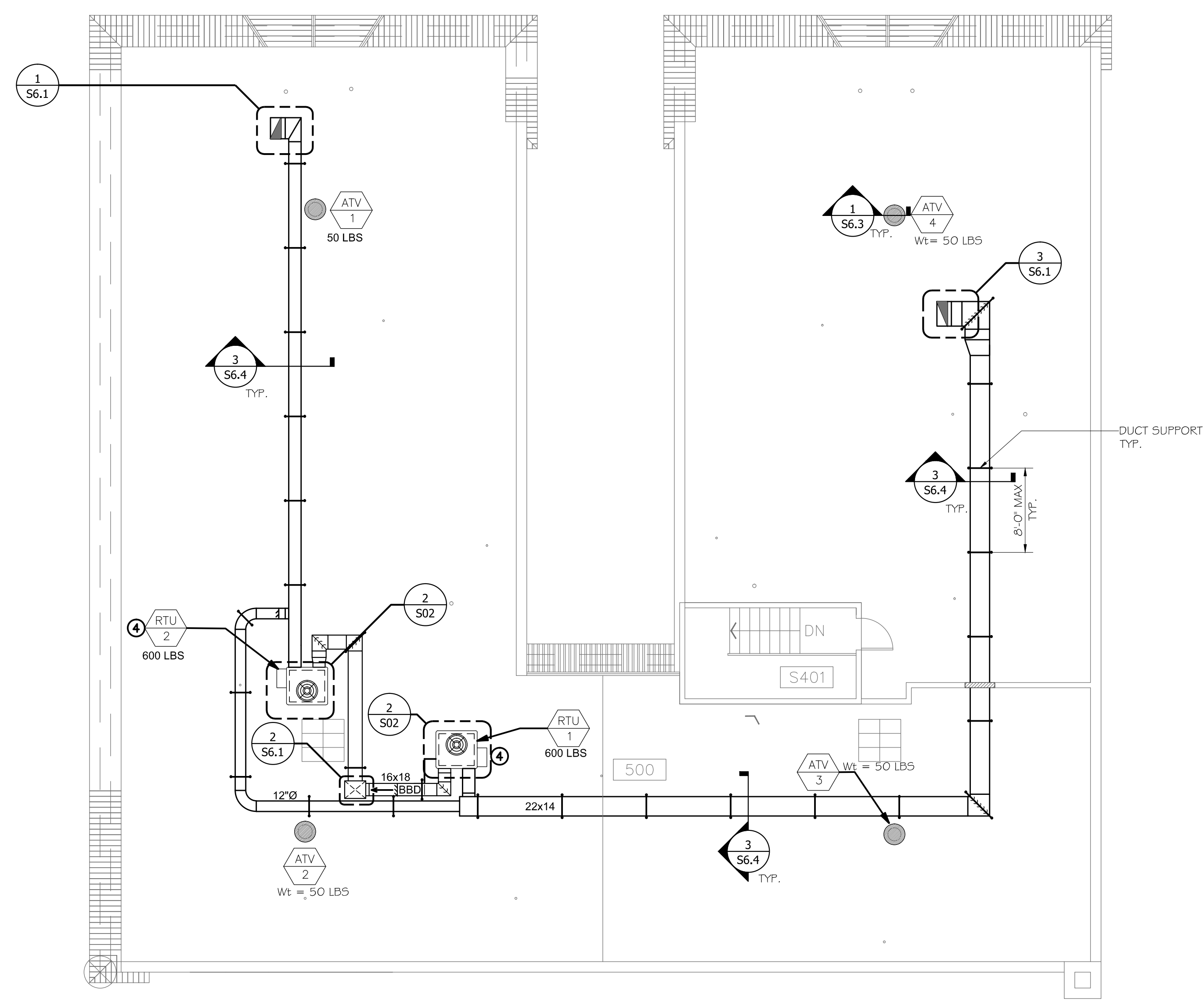
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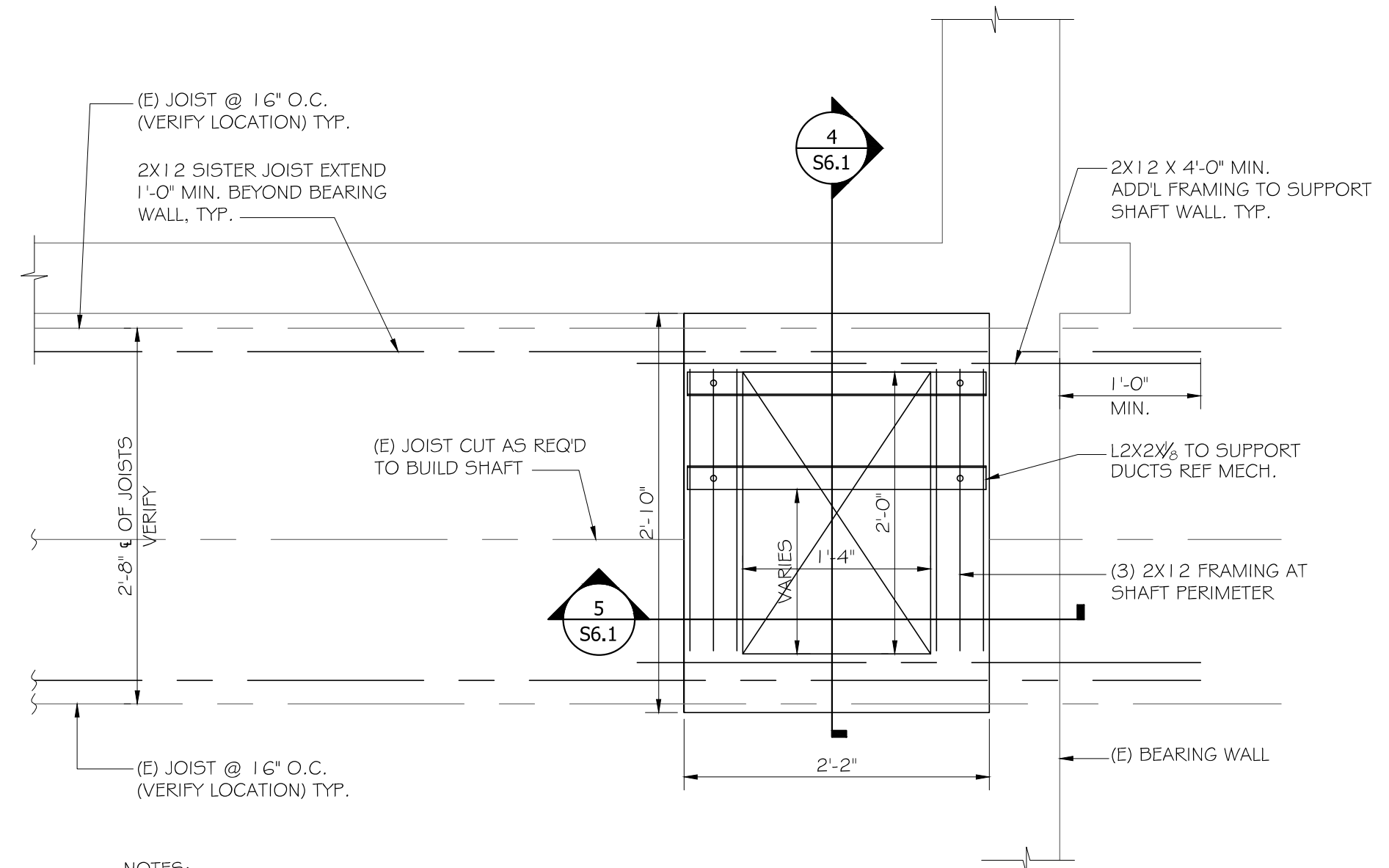
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ROOF PLAN

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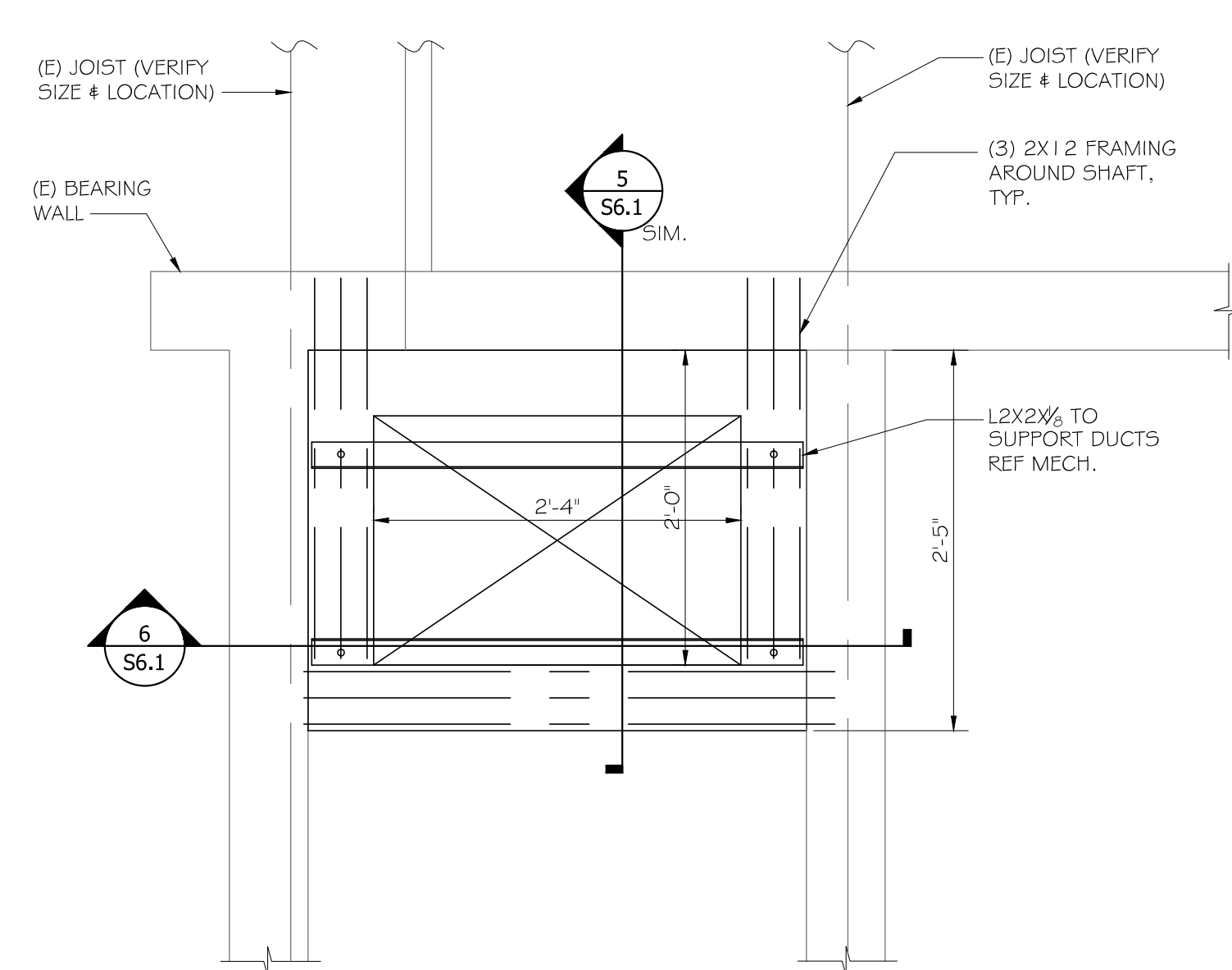
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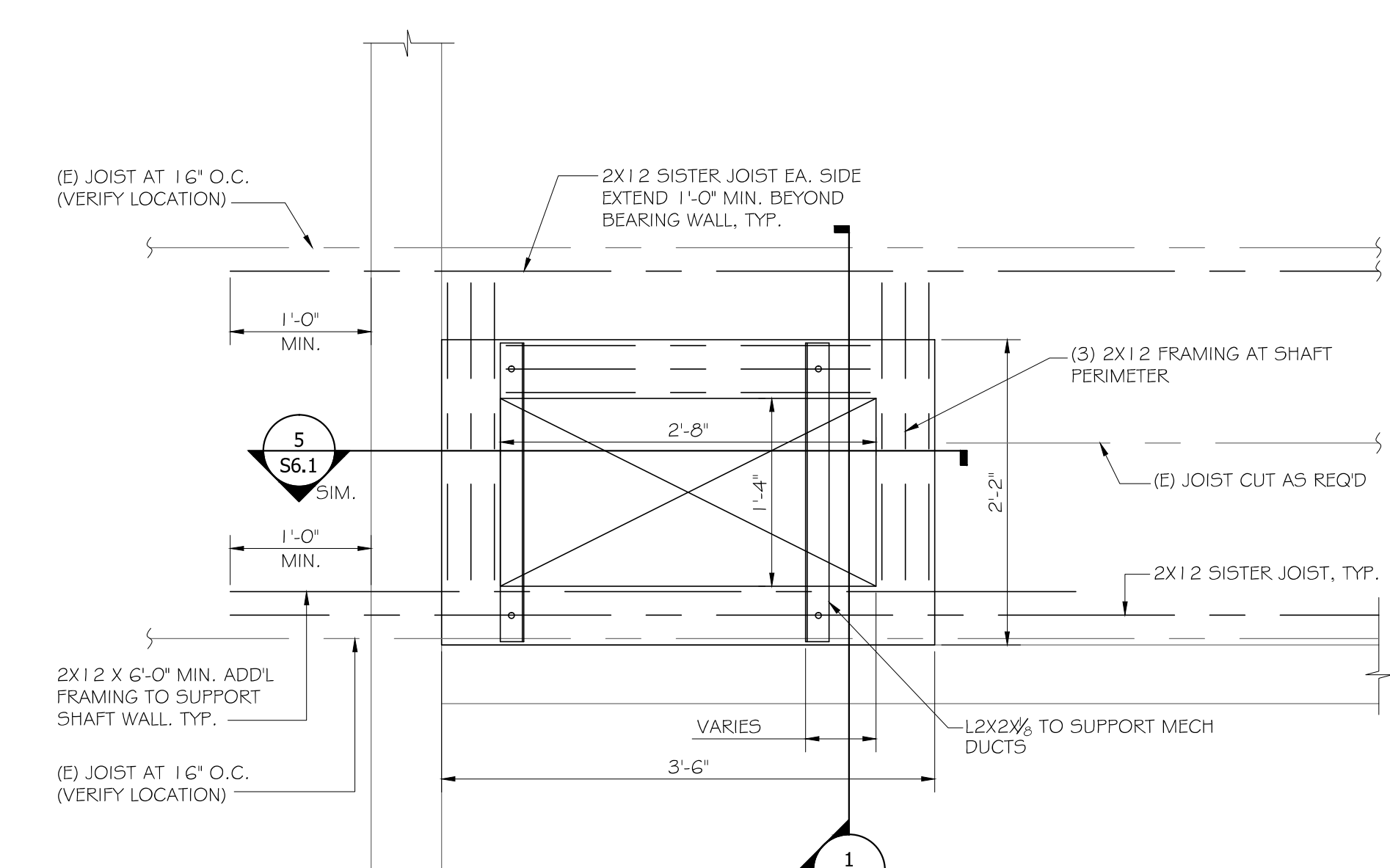
- NOTES:  
1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES, REF MECHANICAL DRAWINGS  
2. REF 5/56.2 FOR FRAMING AROUND SHAFT OPENING  
3. AT SHAFT FRAMING SISTER JOIST NOT REQUIRED IF EXISTING JOISTS ARE 3X12.  
4. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

**1** TYPICAL SHAFT "A" FRAMING  
Scale: 1" = 1'-0"



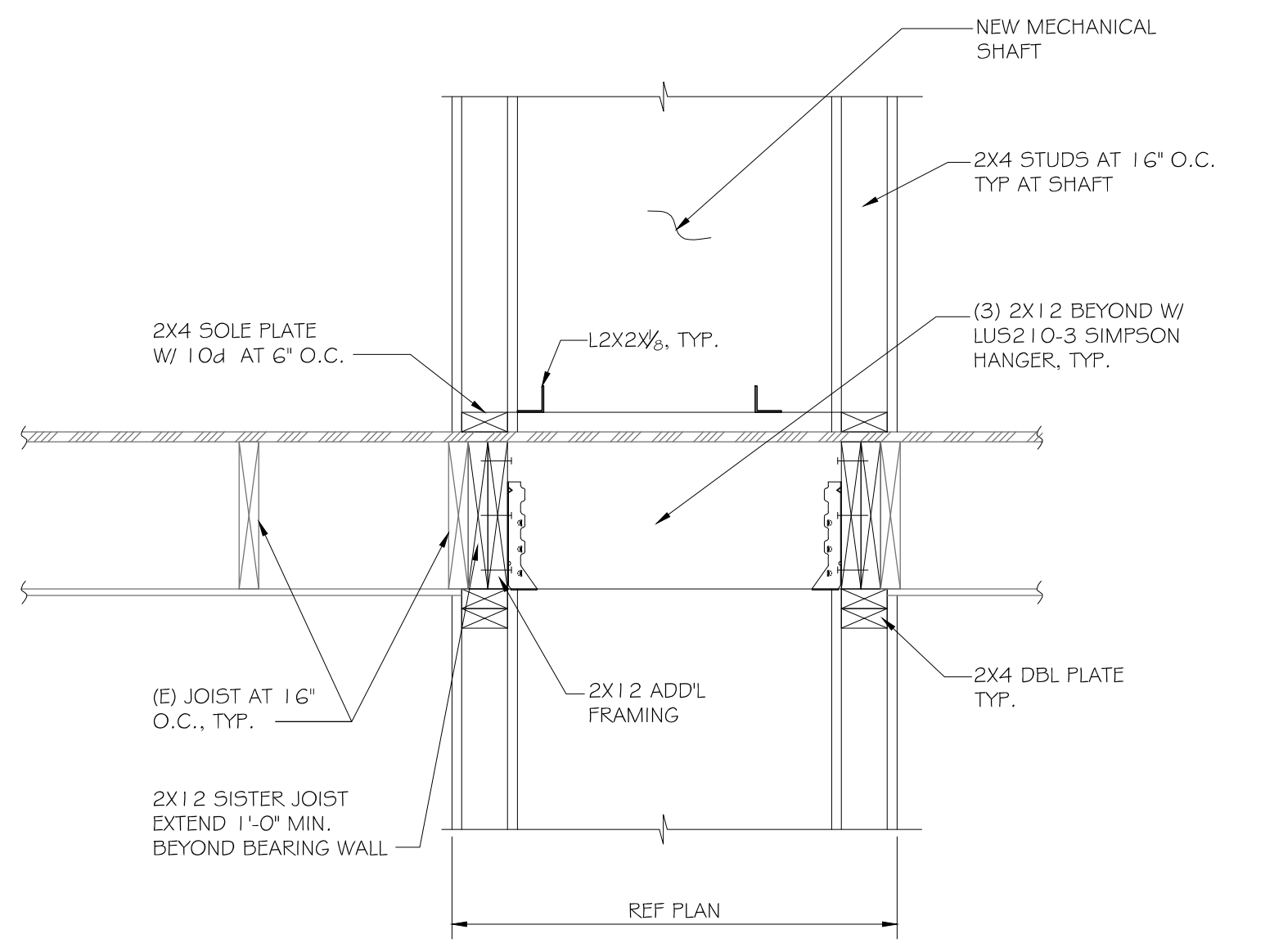
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**2** TYPICAL SHAFT "B" FRAMING  
Scale: 1" = 1'-0"



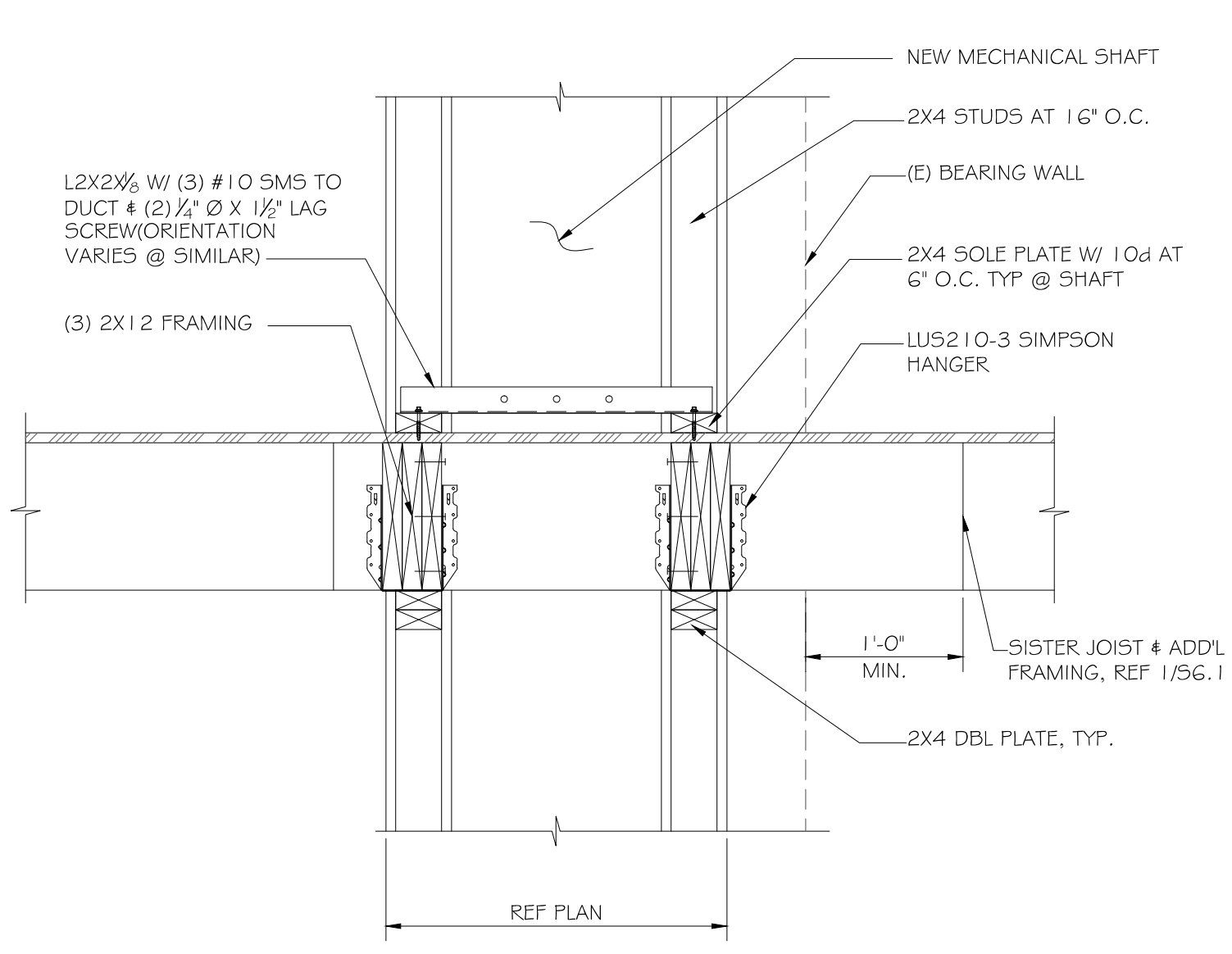
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**3** TYPICAL SHAFT "C" FRAMING  
Scale: 1" = 1'-0"



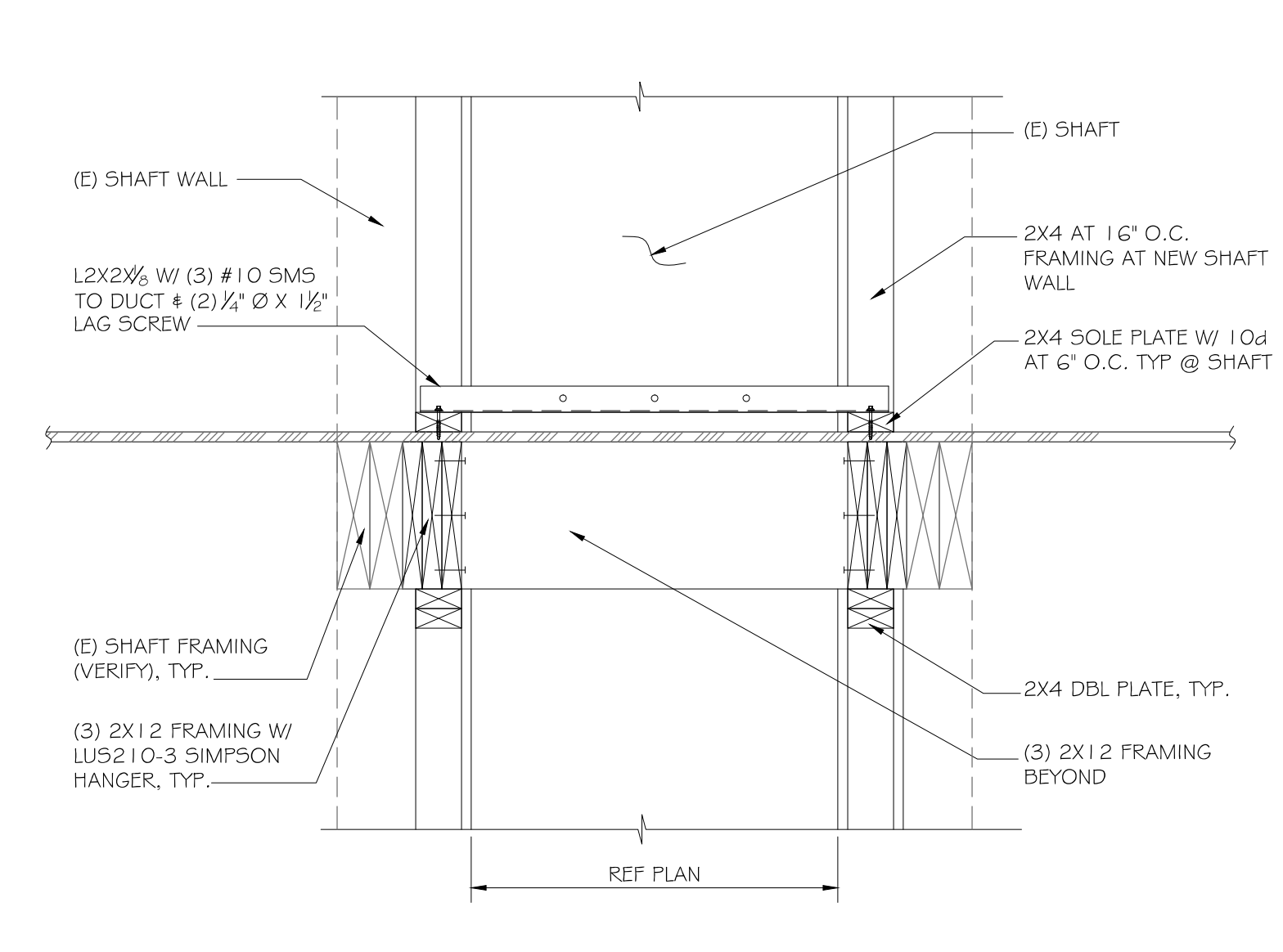
- NOTES:  
1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES, REF MECHANICAL DRAWINGS  
2. USE HUC 212-3 SIMPSON HANGER AS NEEDED TO FIT FRAMING  
3. AT SHAFT FRAMING SISTER JOIST NOT REQUIRED IF EXISTING JOISTS ARE 3X12.  
4. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

**4** SHAFT "A" SECTION DETAIL  
Scale: 1" = 1'-0"



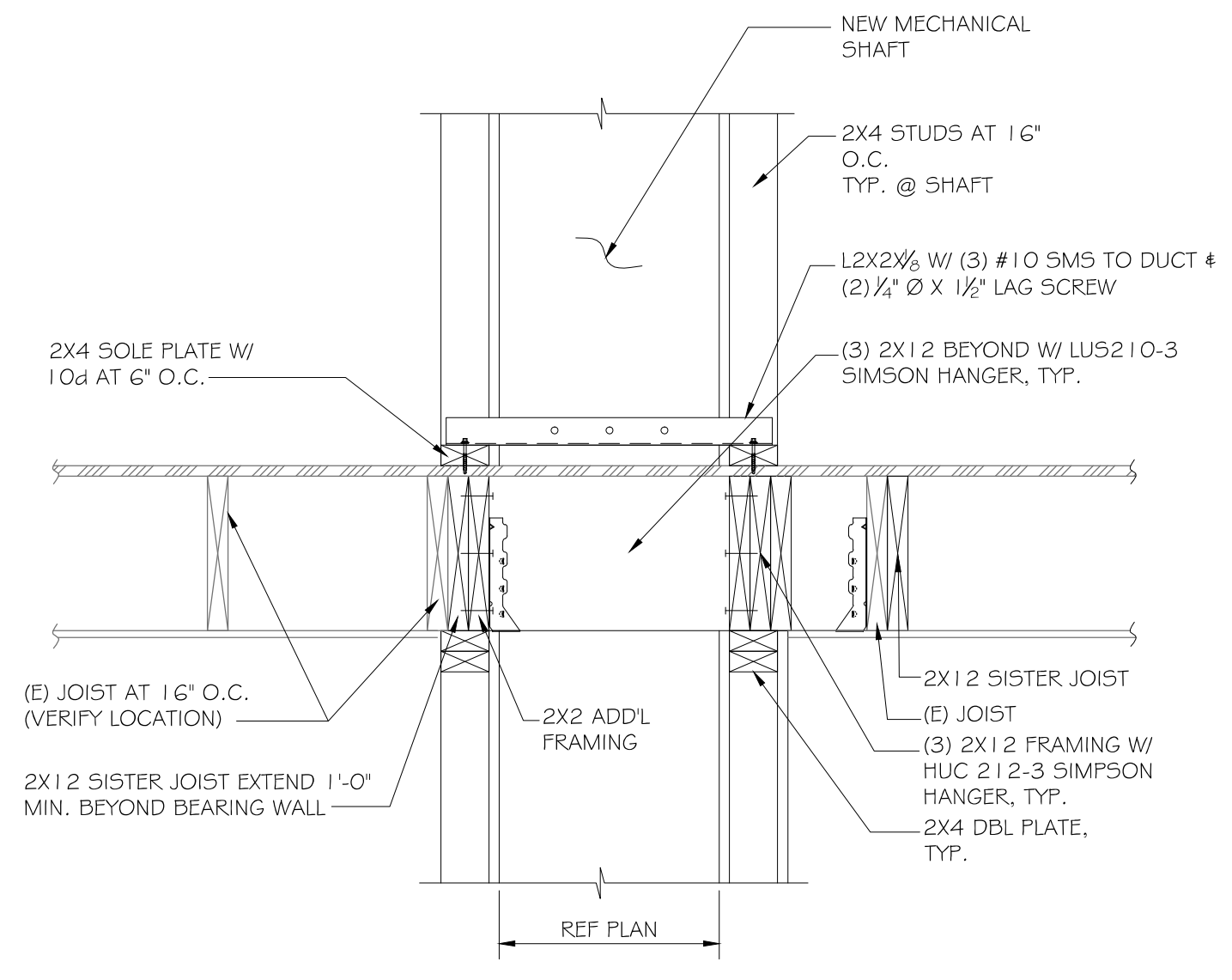
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**5** SHAFT "A" SECTION DETAIL  
Scale: 1" = 1'-0"



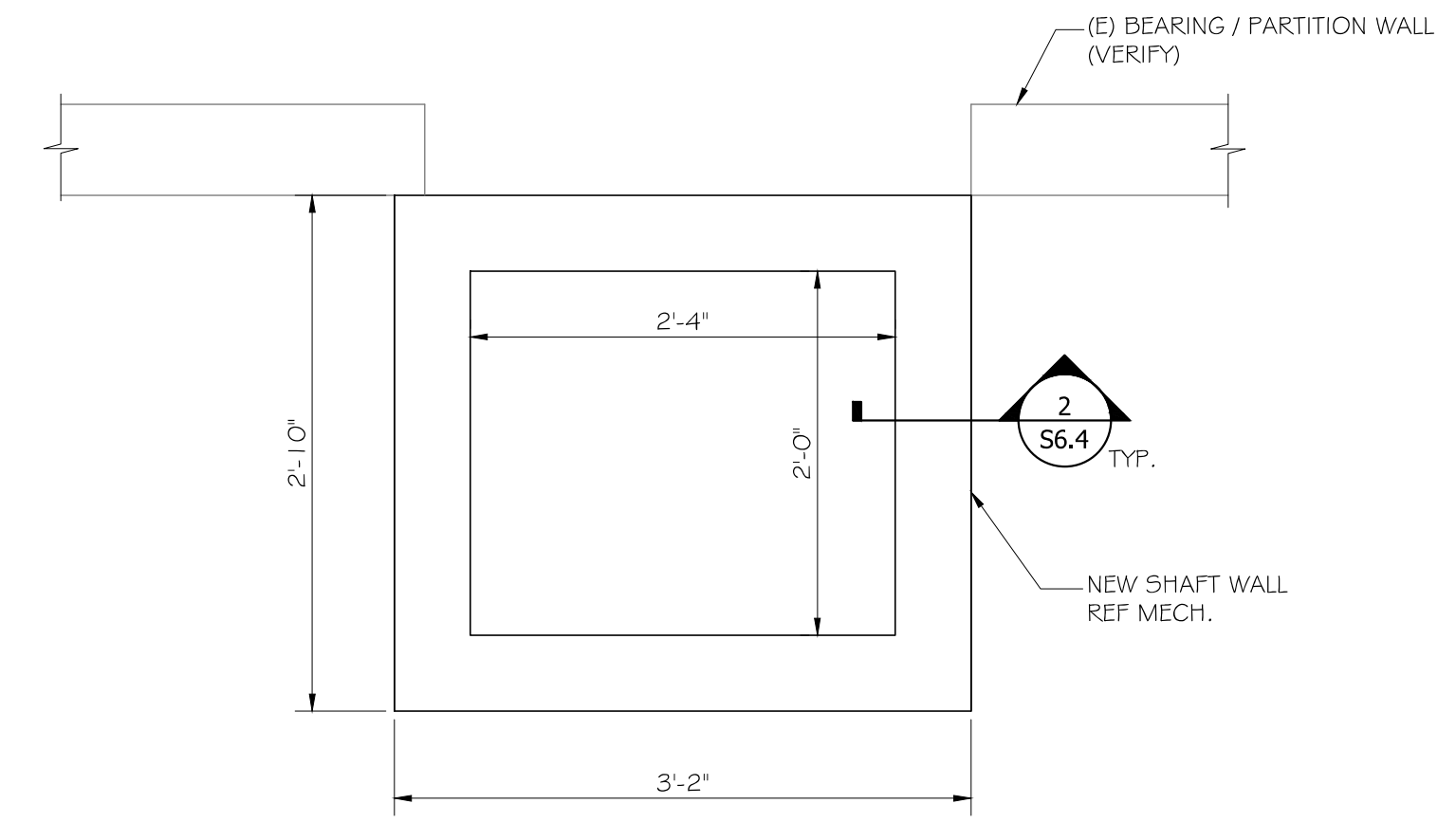
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**6** SHAFT "B" SECTION DETAIL  
Scale: 1" = 1'-0"



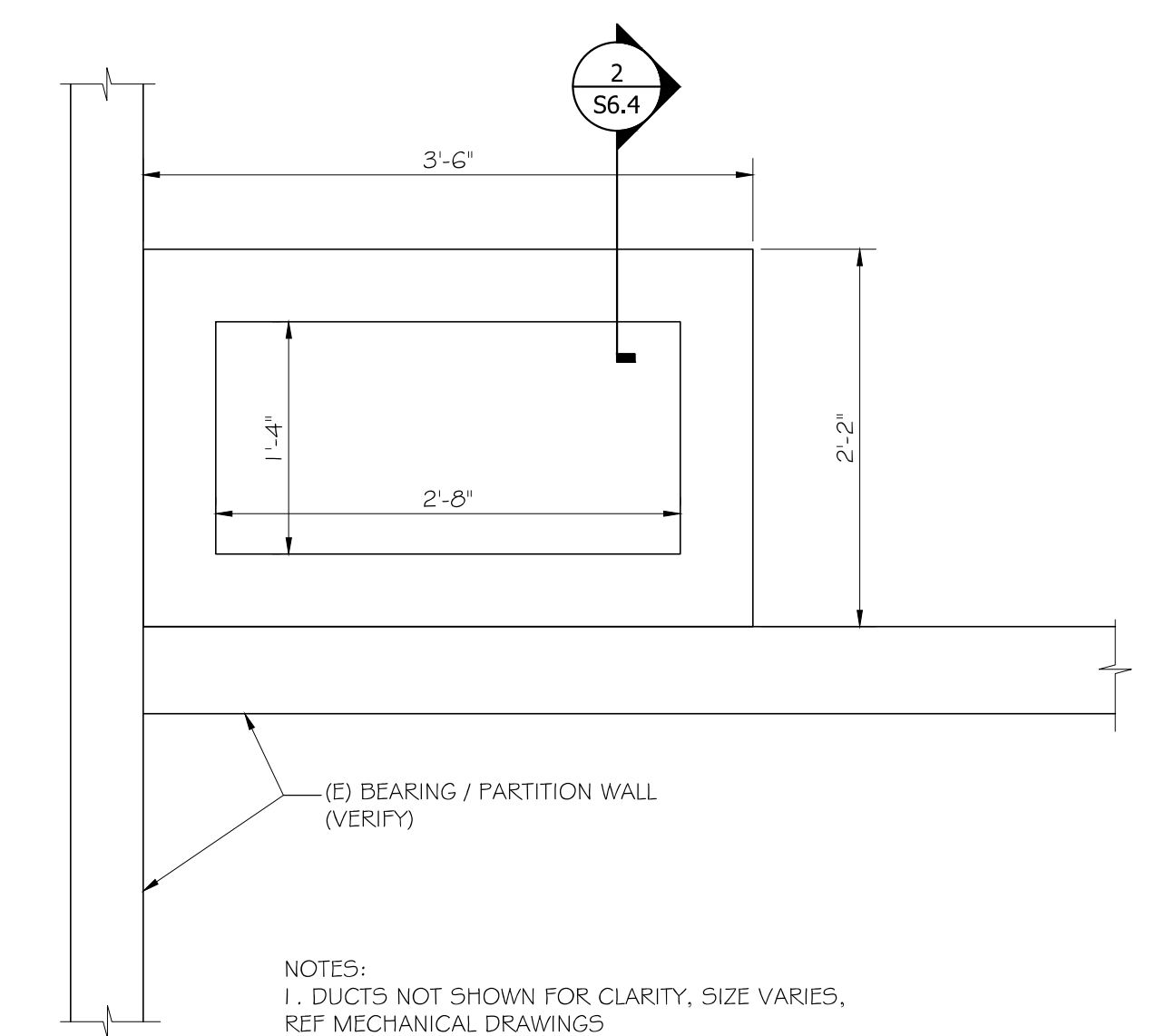
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1 SHAFT "C" SECTION DETAIL Scale: 1" = 1'-0"



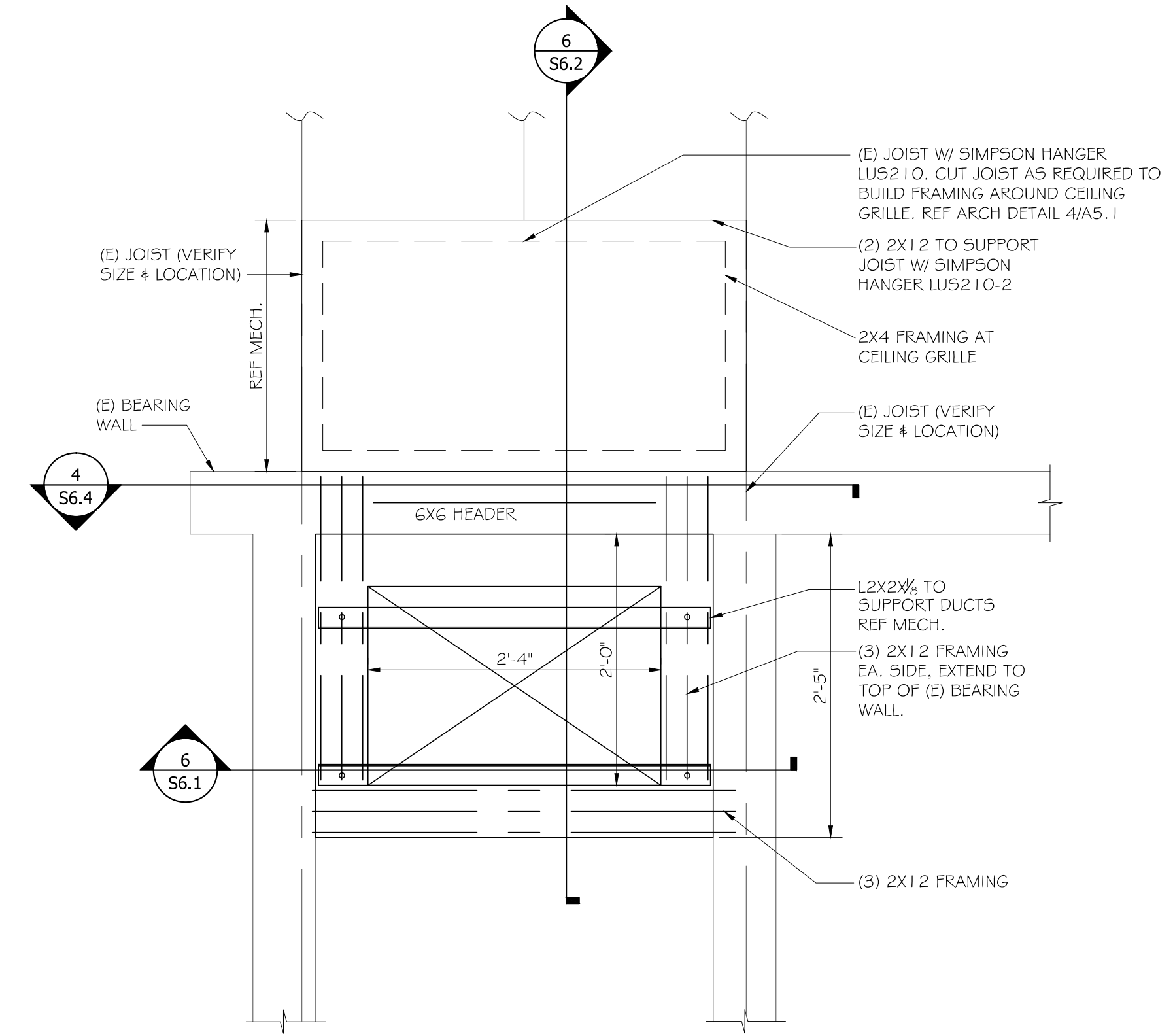
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1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES, REF MECHANICAL DRAWINGS  
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4. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

2 TYPICAL SHAFT "B" FRAMING AT 1ST FLOOR Scale: 1" = 1'-0"



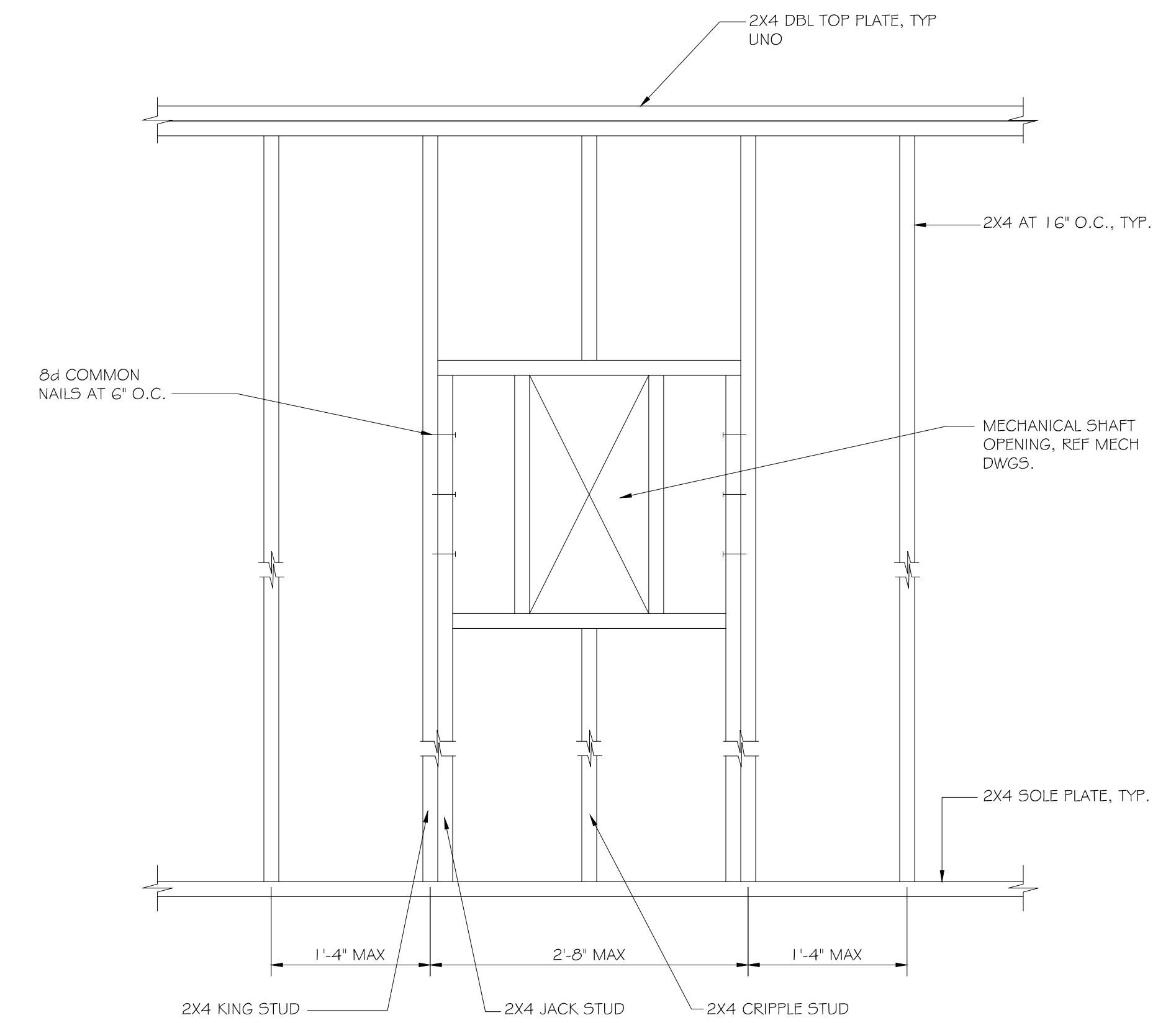
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3 SHAFT "C" AT 1ST FLOOR Scale: 1" = 1'-0"

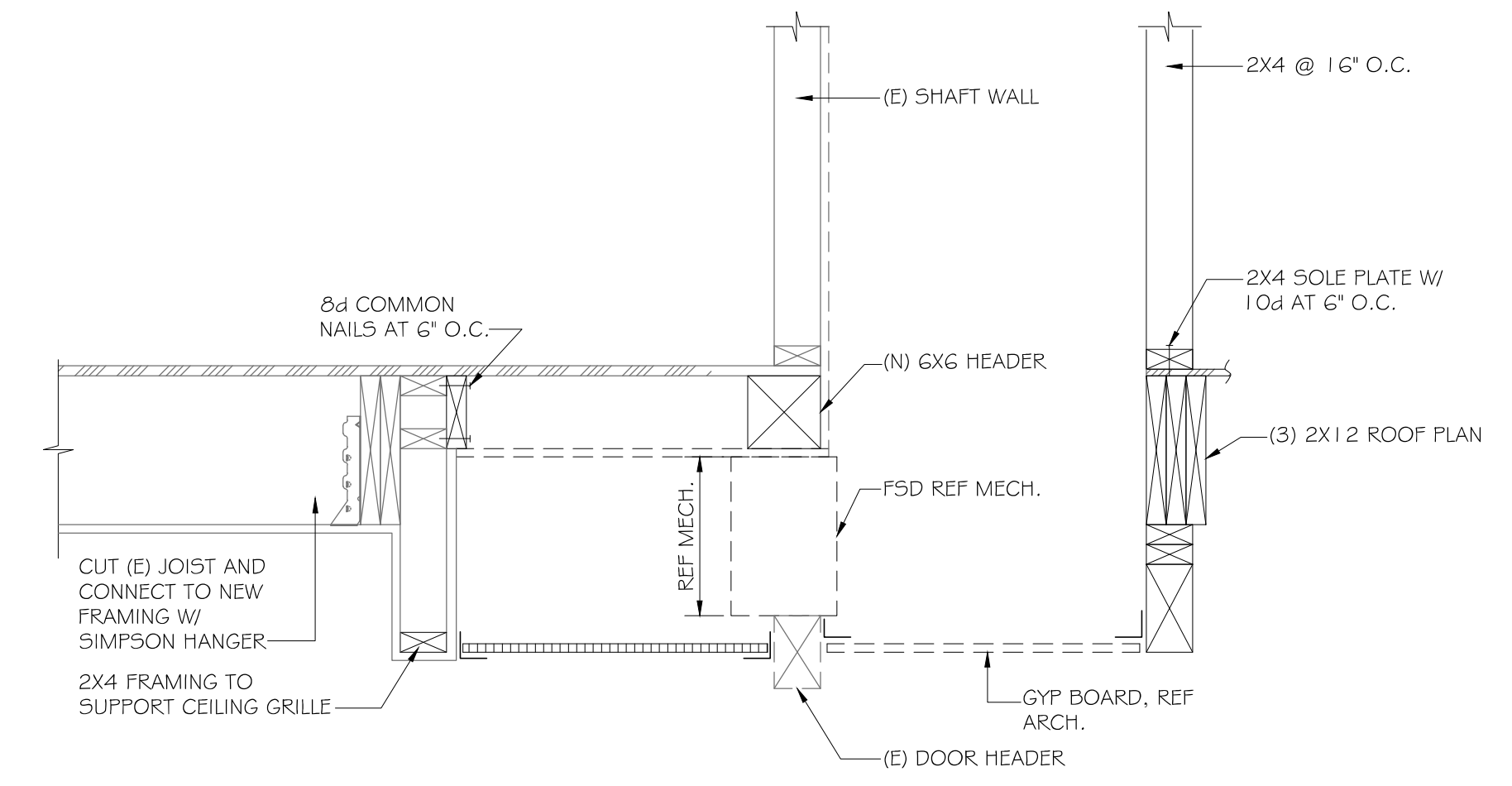


- NOTES:  
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4 SHAFT "B" FRAMING AT 1ST FLOOR CEILING Scale: 1" = 1'-0"

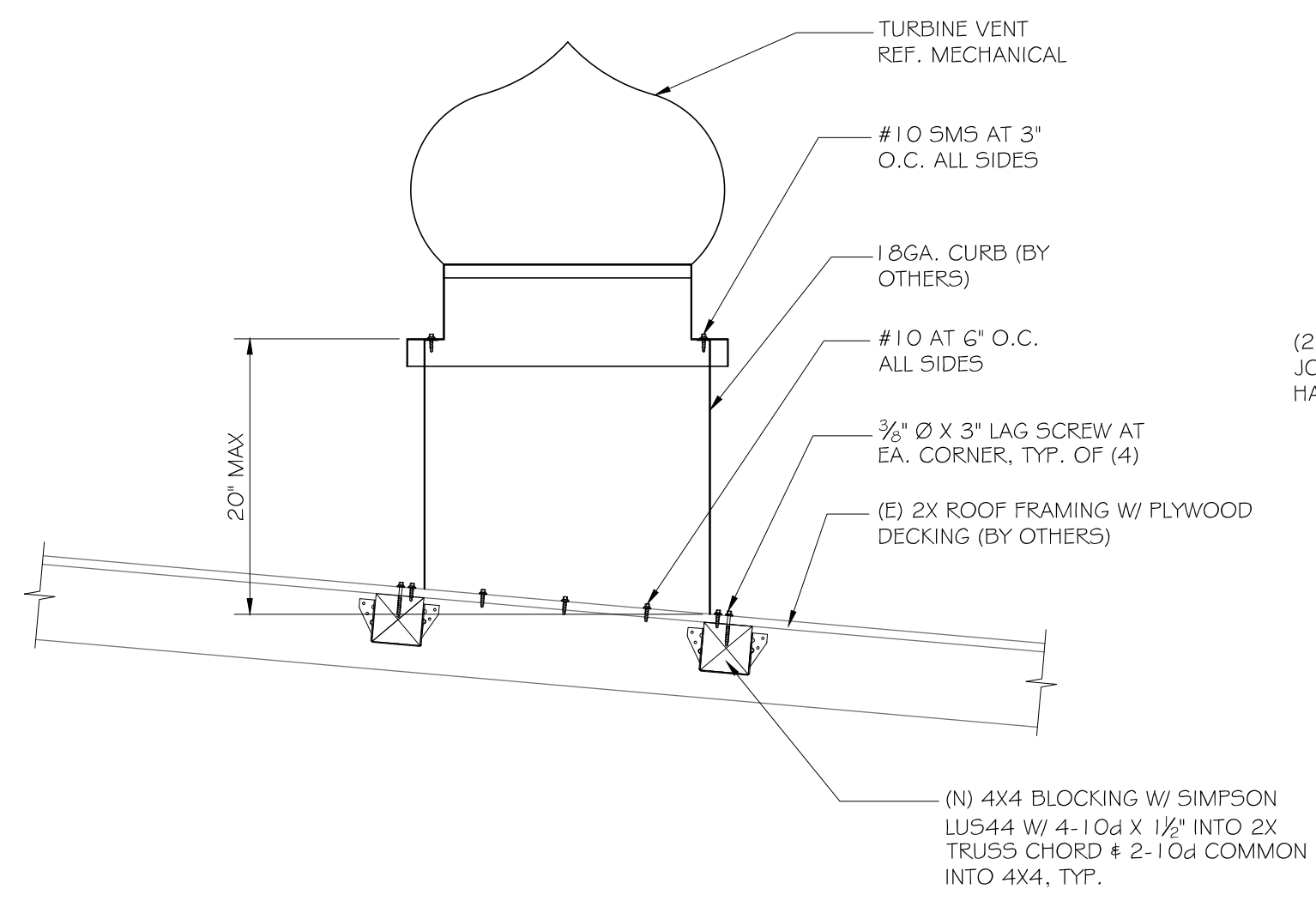


5 TYPICAL FRAMING AROUND MECHANICAL SHAFT OPENING Scale: 1" = 1'-0"

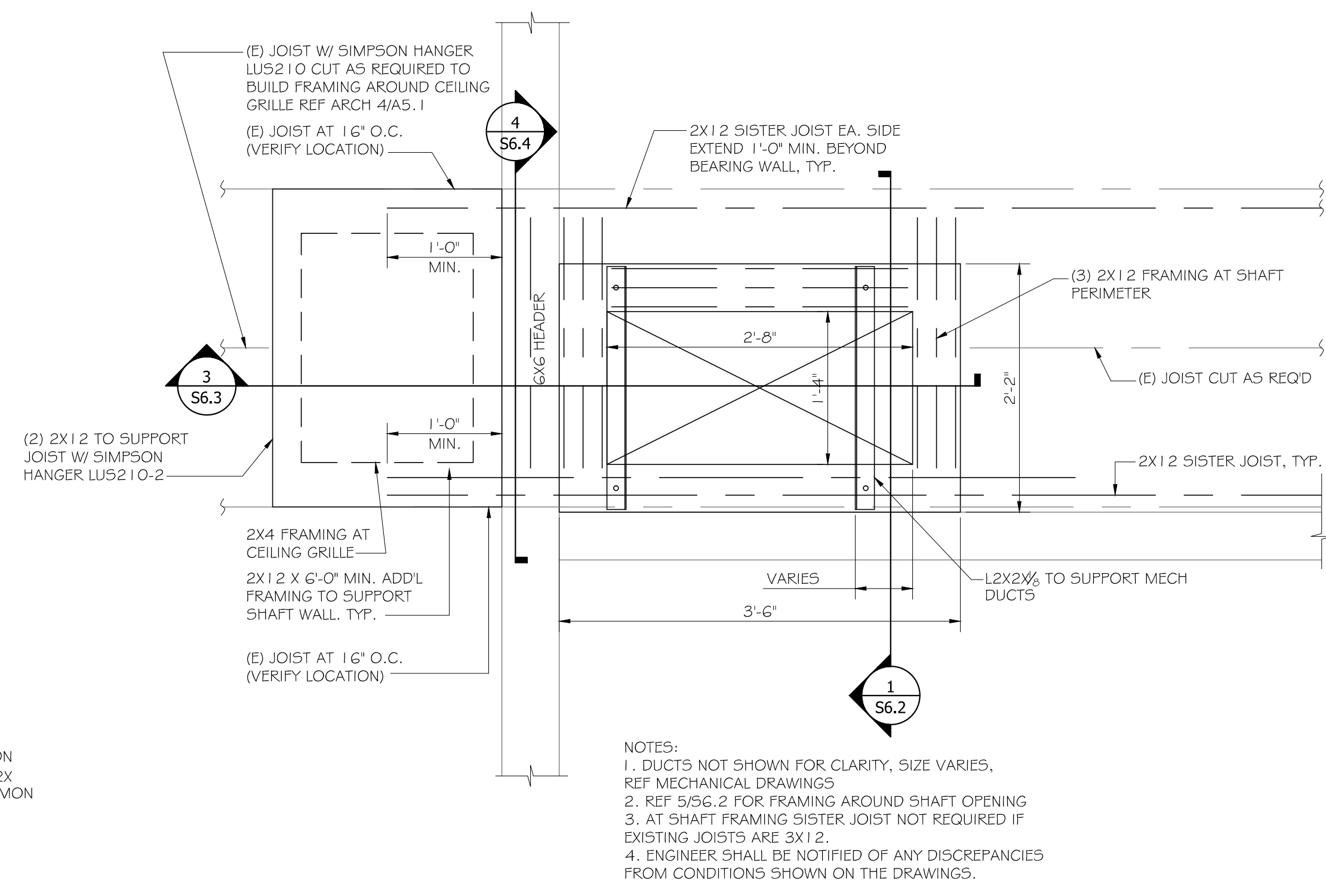


- NOTES:  
1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES, REF MECHANICAL DRAWINGS  
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3. AT SHAFT FRAMING SISTER JOIST NOT REQUIRED IF EXISTING JOISTS ARE 3X12.  
4. ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.

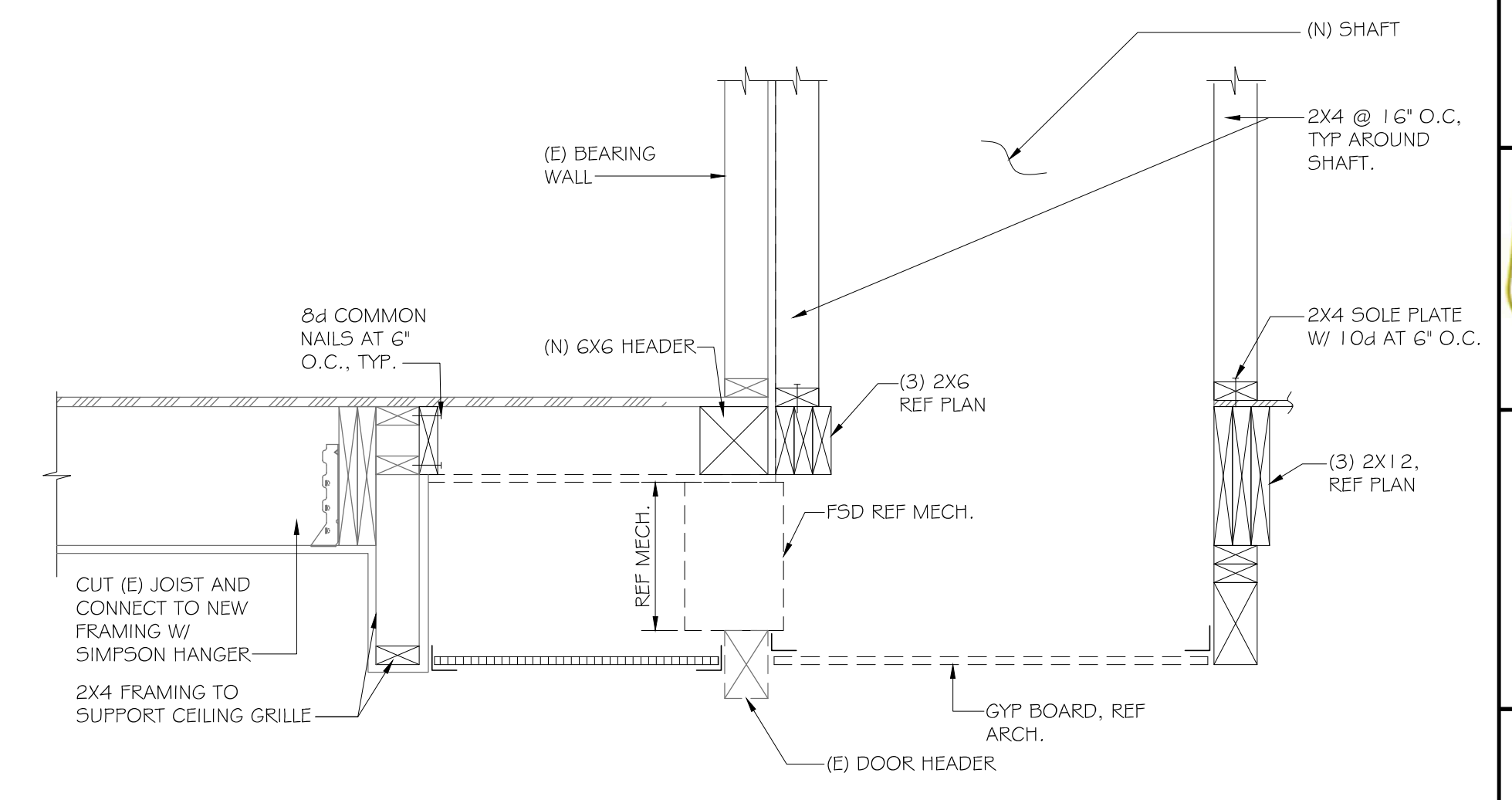
6 SECTION AT 1ST FLOOR CEILING SHAFT "B" Scale: 1" = 1'-0"



**1** ROOFTOP VENT SUPPORT  
Scale: 1" = 1'-0"

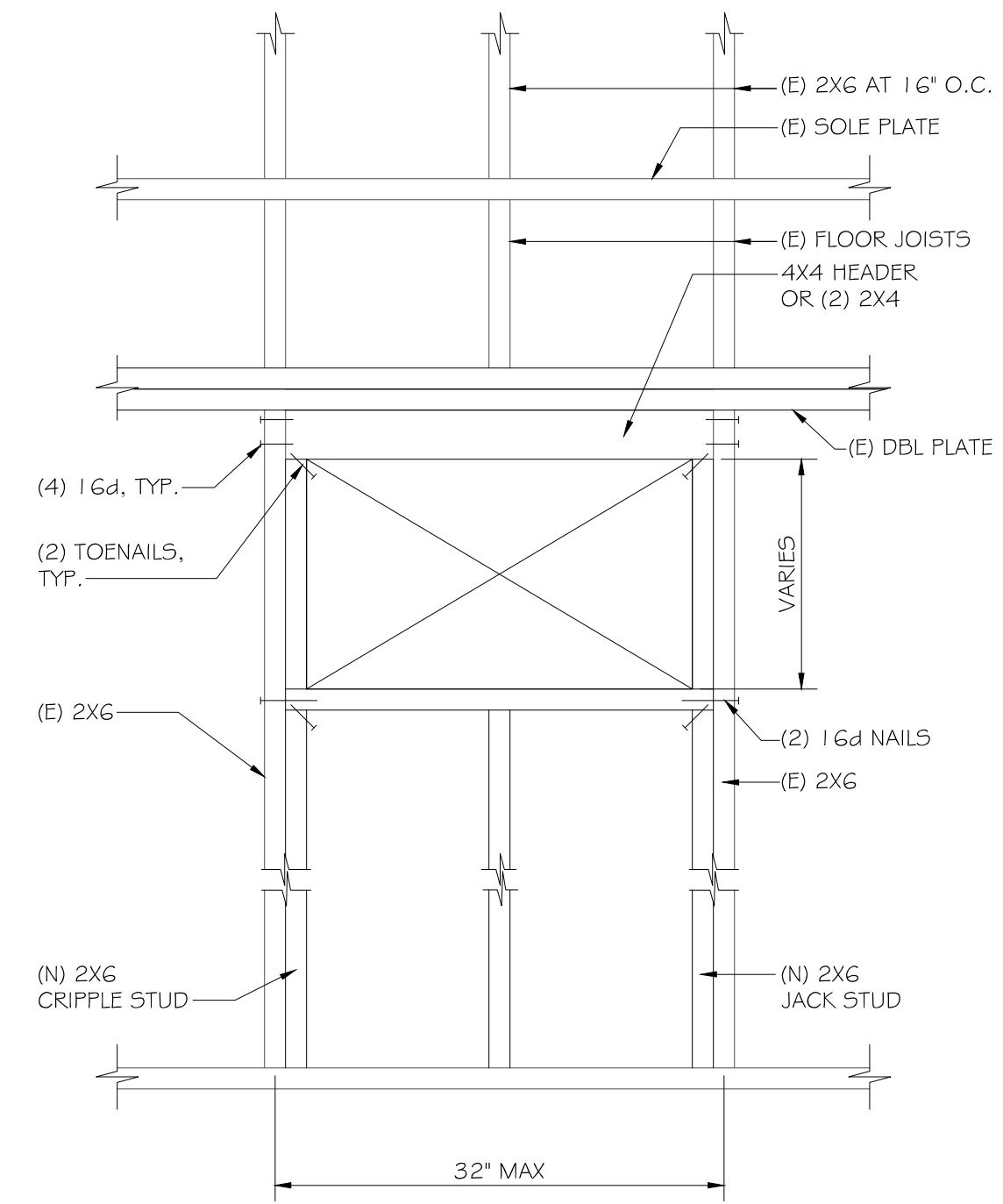


**2** SHAFT "C" FRAMING AT 1ST FLOOR CEILING  
Scale: 1" = 1'-0"

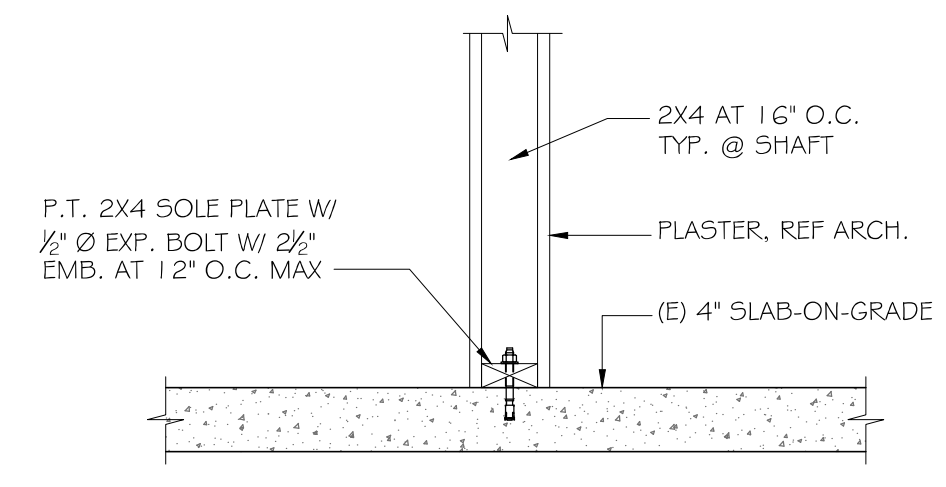


NOTES:  
1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES,  
REF MECHANICAL DRAWINGS  
2. USE HUC 212-3 SIMPSON HANGER AS NEEDED TO FIT FRAMING  
3. AT SHAFT FRAMING SISTER JOIST NOT REQUIRED IF EXISTING JOISTS ARE 3X12.  
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SHOWN ON THE DRAWINGS.

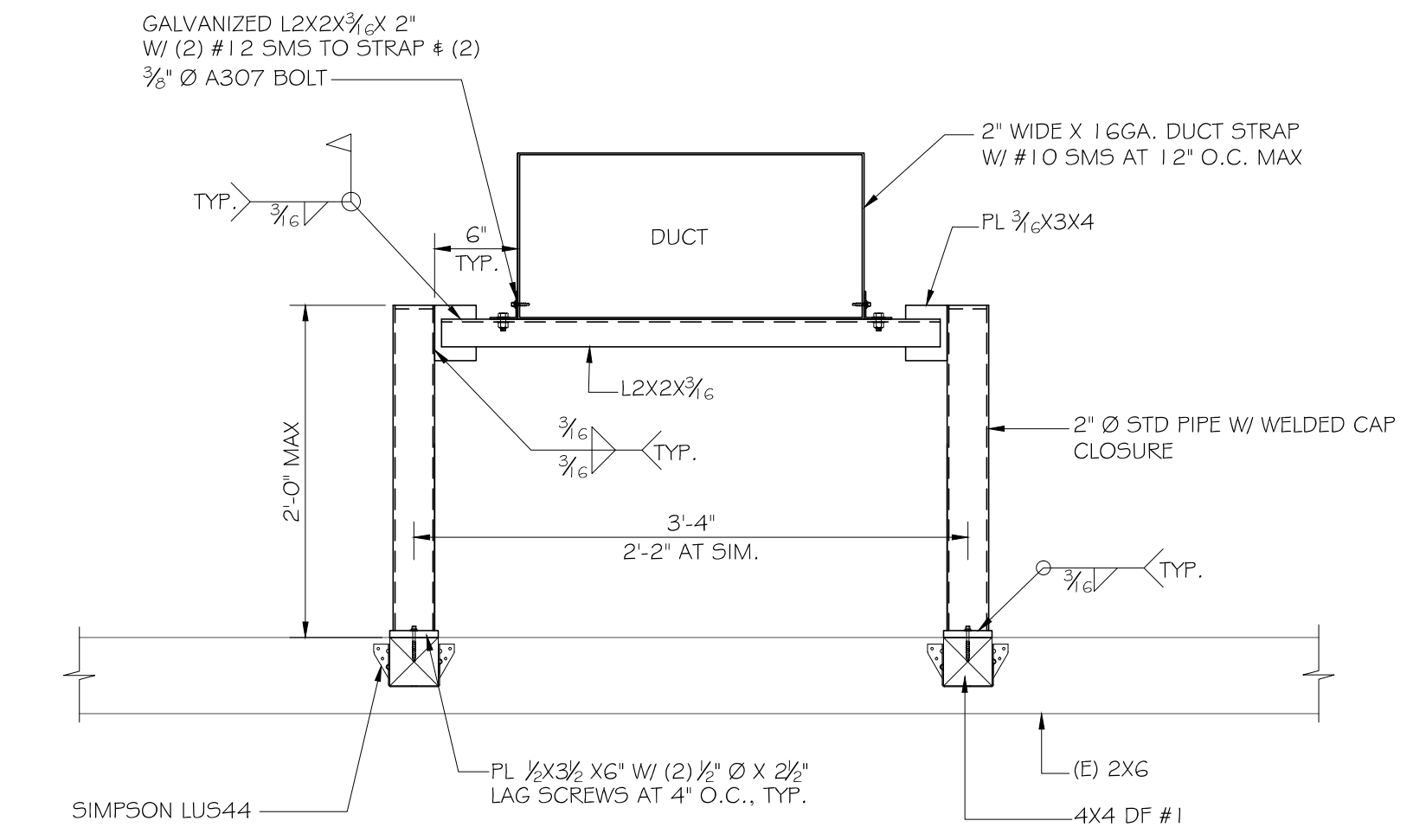
**3** SECTION AT 1ST FLOOR CEILING SHAFT "C"  
Scale: 1" = 1'-0"



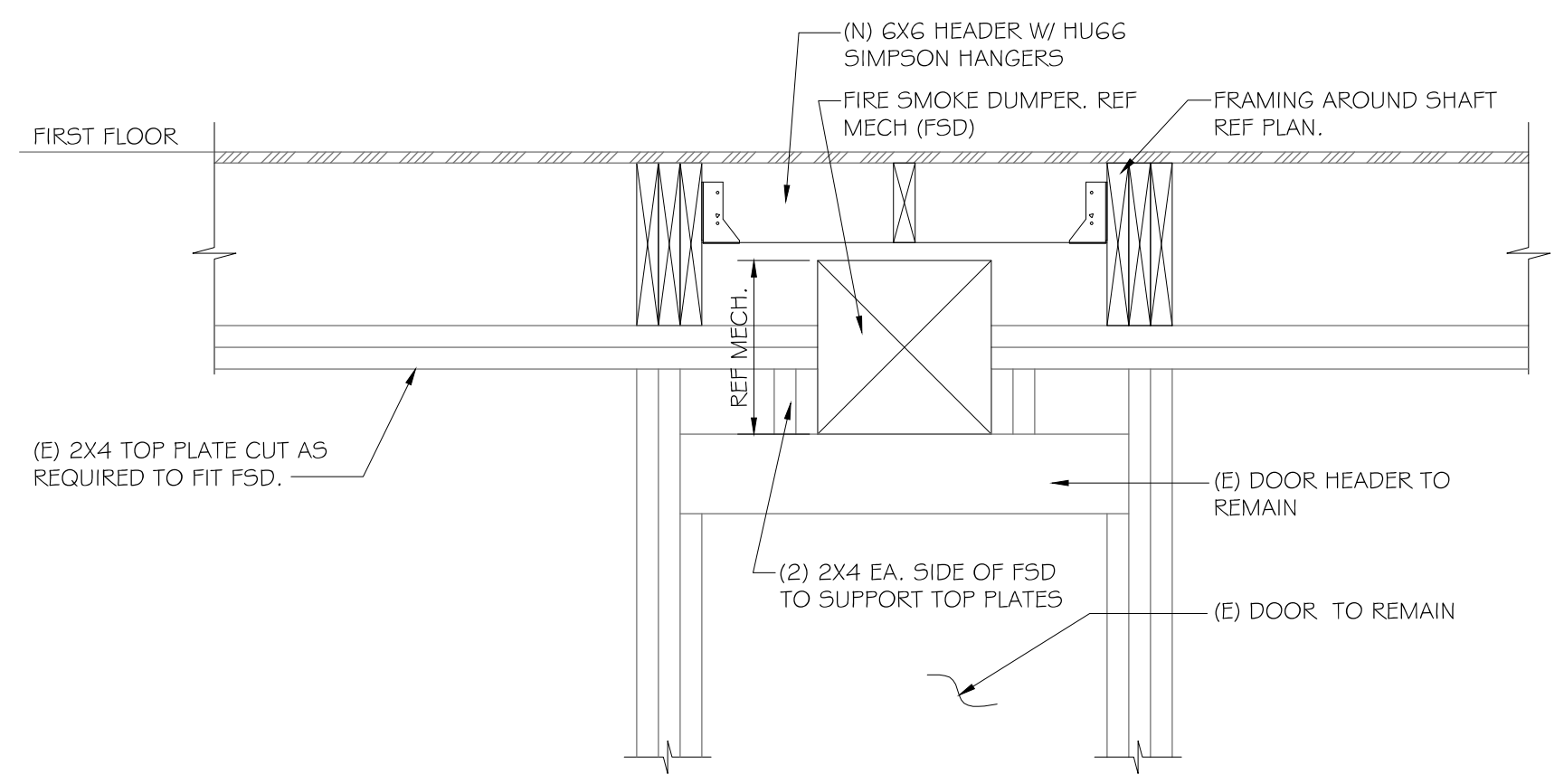
**1** FRAMING AT BEARING WALL FSD OPENING  
Scale: 1" = 1'-0"



**2** SHAFT / S.O.G. CONNECTION DETAIL  
Scale: 1" = 1'-0"

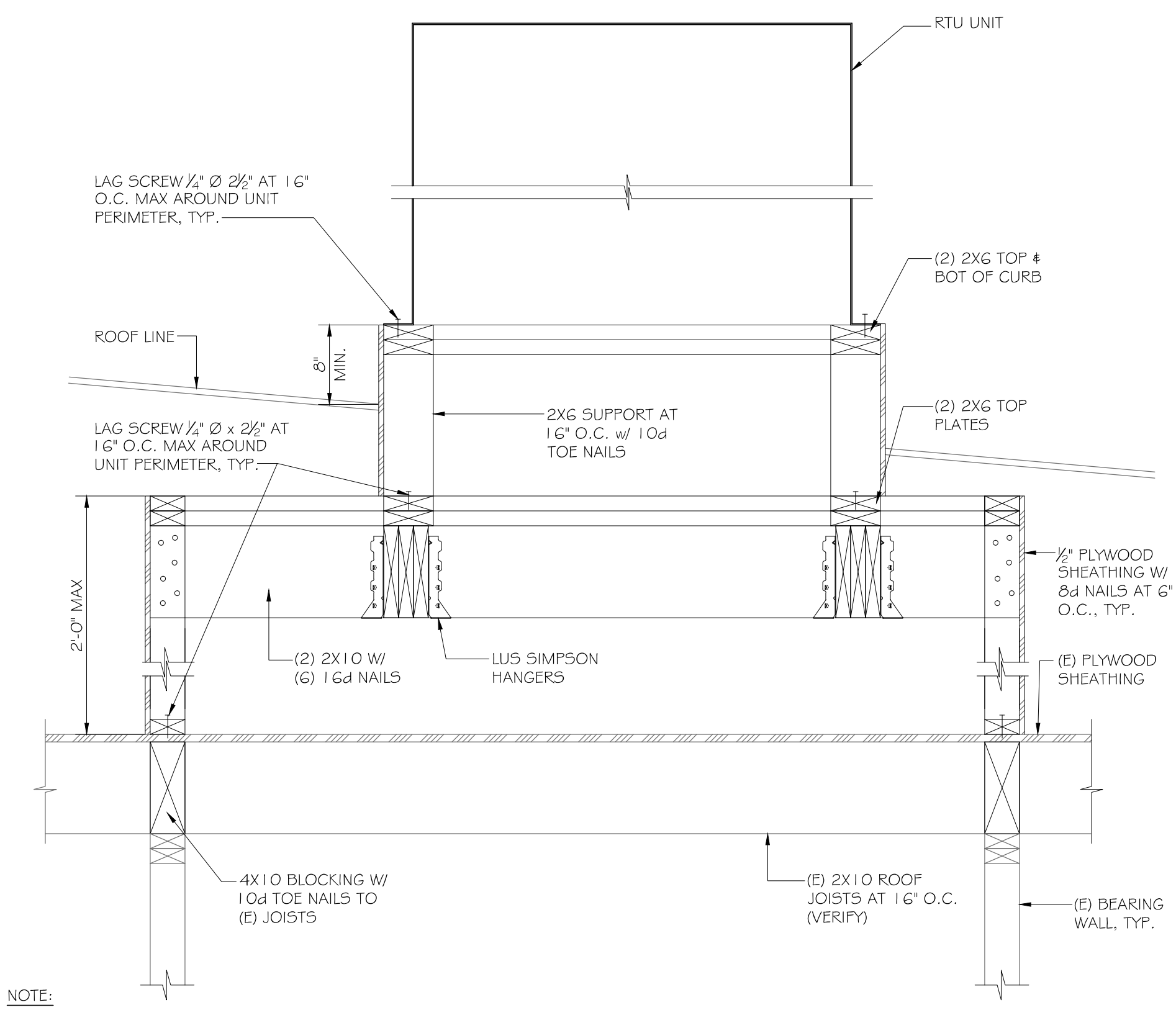


**3** DUCT SUPPORT DETAIL  
Scale: 1" = 1'-0"



NOTES:  
1. DUCTS NOT SHOWN FOR CLARITY, SIZE VARIES, REF MECHANICAL DRAWINGS  
2. USE HUC 212-3 SIMPSON HANGER AS NEEDED TO FIT FRAMING

**4** SECTION AT 1ST FLOOR CEILING SHAFT "B"  
Scale: 1" = 1'-0"



NOTE:  
- (E) OVERFRAMING NOT SHOWN FOR CLARITY.  
- COORDINATE W/ ARCHITECTURE FOR ROOFING AND FLASHING DETAILS.

**5** RTU FRAMING SUPPORT  
Scale: 1" = 1'-0"