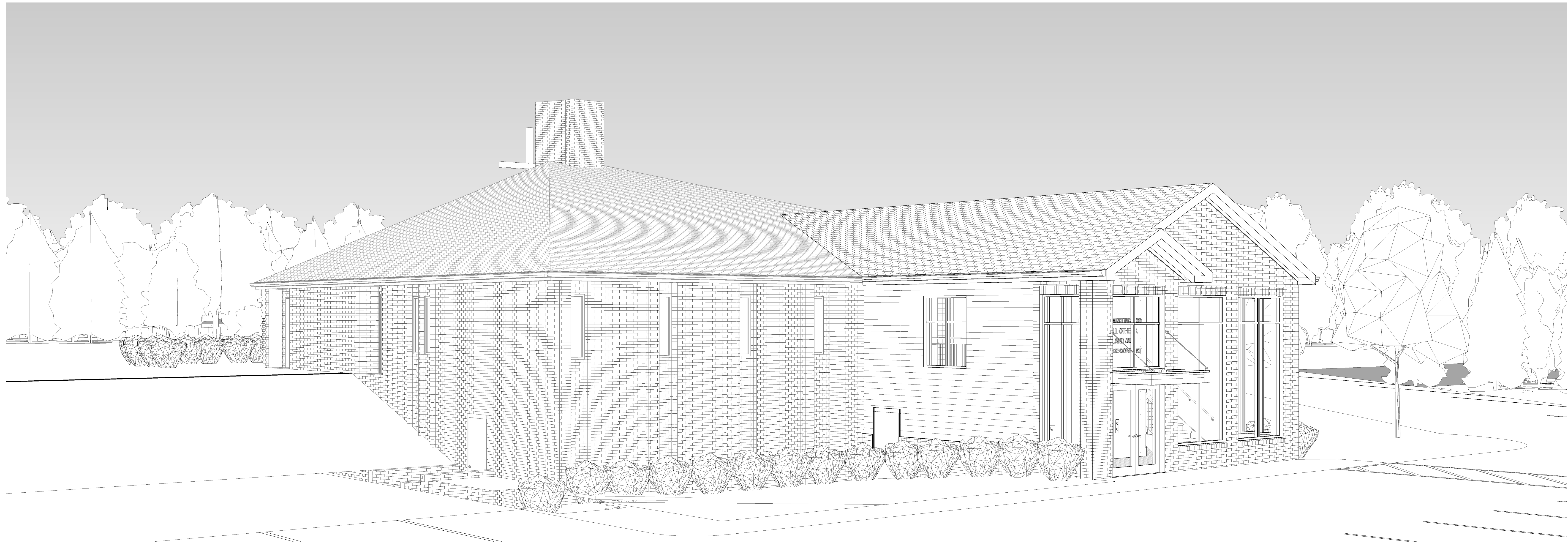


# CHRISTUS VICTOR LUTHERAN CHURCH

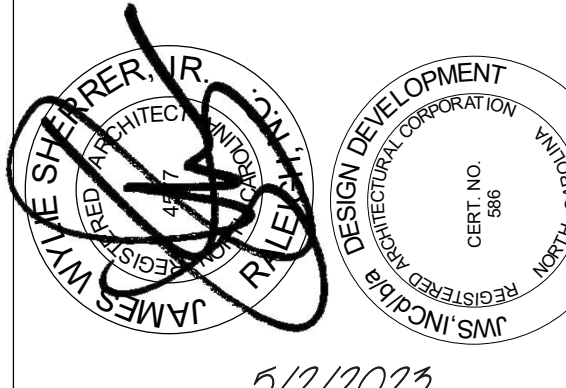
DURHAM, NORTH CAROLINA



designdevelopment  
ARCHITECTS

800 Salem Woods Drive, Suite 102  
Raleigh, NC 27615  
919.848.4474

...drawing out your vision



5/2/2023

## PROJECT TEAM

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FAX (919) 871-5620

## DRAWING LIST

NO.	DESCRIPTION	DATE
1	T1 COVER SHEET	
1	T2 BUILDING CODE SUMMARY	
1	T3 BUILDING CODE SUMMARY	
<b>CIVIL</b>		
2	C-1 COVER SHEET	
2	C-2 EXISTING CONDITIONS & DEMOLITION PLAN	
2	C-3 SITE PLAN	
2	C-4 GRADING PLAN	
<b>ARCHITECTURAL</b>		
3	A0.1 REFERENCE	
3	A0.2 GUIDELINES OR ACCESSIBILITY REQUIREMENTS	
3	A0.3 ARCHITECTURAL SPECS	
3	A0.4 ARCHITECTURAL SPECS	
3	A0.5 ARCHITECTURAL SPECS	
3	A1.1 FLOOR, REFLECTED CEILING AND ROOF PLANS	
3	A2.1 ELEVATIONS & SCHEDULES	
3	A3.1 BUILDING SECTIONS	
3	A4.1 WALL SECTIONS	
3	A4.2 WALL SECTION	
<b>STRUCTURAL</b>		
4	S1.1 FOUNDATION PLAN	
4	S2.1 BASEMENT FLOOR CEILING FRAMING PLAN	
4	S2.2 ROOF/FIRST FLOOR CEILING FRAMING PLAN	
<b>MECHANICAL</b>		
5	M1.1 MECHANICAL COVER SHEETS	
5	M1.2 MECHANICAL DEMOLITION	
5	M1.3 FIRST FLOOR PLAN - MECHANICAL DEMOLITION	
5	M1.4 GROUND FLOOR PLAN - MECHANICAL	
5	M1.5 FIRST FLOOR PLAN - MECHANICAL	
5	M1.6 ROOF FLOOR PLAN - MECHANICAL	
5	M2.1 MECHANICAL SPECIFICATIONS	
5	M2.2 MECHANICAL DETAILS	
<b>ELECTRICAL</b>		
6	E0.1 ELECTRICAL COVER SHEET	
6	E1.1 FLOOR PLANS - POWER DEMOLITION	
6	E1.2 FLOOR PLANS - POWER	
6	E1.3 FLOOR PLANS - EQUIPMENT CONNECTIONS	
6	E2.1 FLOOR PLANS - LIGHTING	
6	FA0.1 FIRE ALARM COVER SHEET	
6	FA1.1 FLOOR PLANS - FIRE ALARM	
6	FA2.1 FIRE ALARM DETAILS	
<b>PLUMBING</b>		
7	P0.1 PLUMBING COVER SHEET	
7	P1.2 PLUMBING DETAILS	
7	P1.1 BASEMENT FLOOR PLAN - PLUMBING DEMOLITION	
7	P1.2 FIRST FLOOR PLAN - PLUMBING DEMOLITION	
7	P1.3 BASEMENT FLOOR PLAN - WASTE & VENT	
7	P1.4 FIRST FLOOR PLAN - WASTE AND VENT	
7	P1.5 BASEMENT FLOOR PLAN - WATER	
7	P1.6 FIRST FLOOR PLAN - WATER	



VICINITY MAP

SITE PLAN

CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

No.	Description	Date
1	T1 COVER SHEET	

PROJECT #: 210029

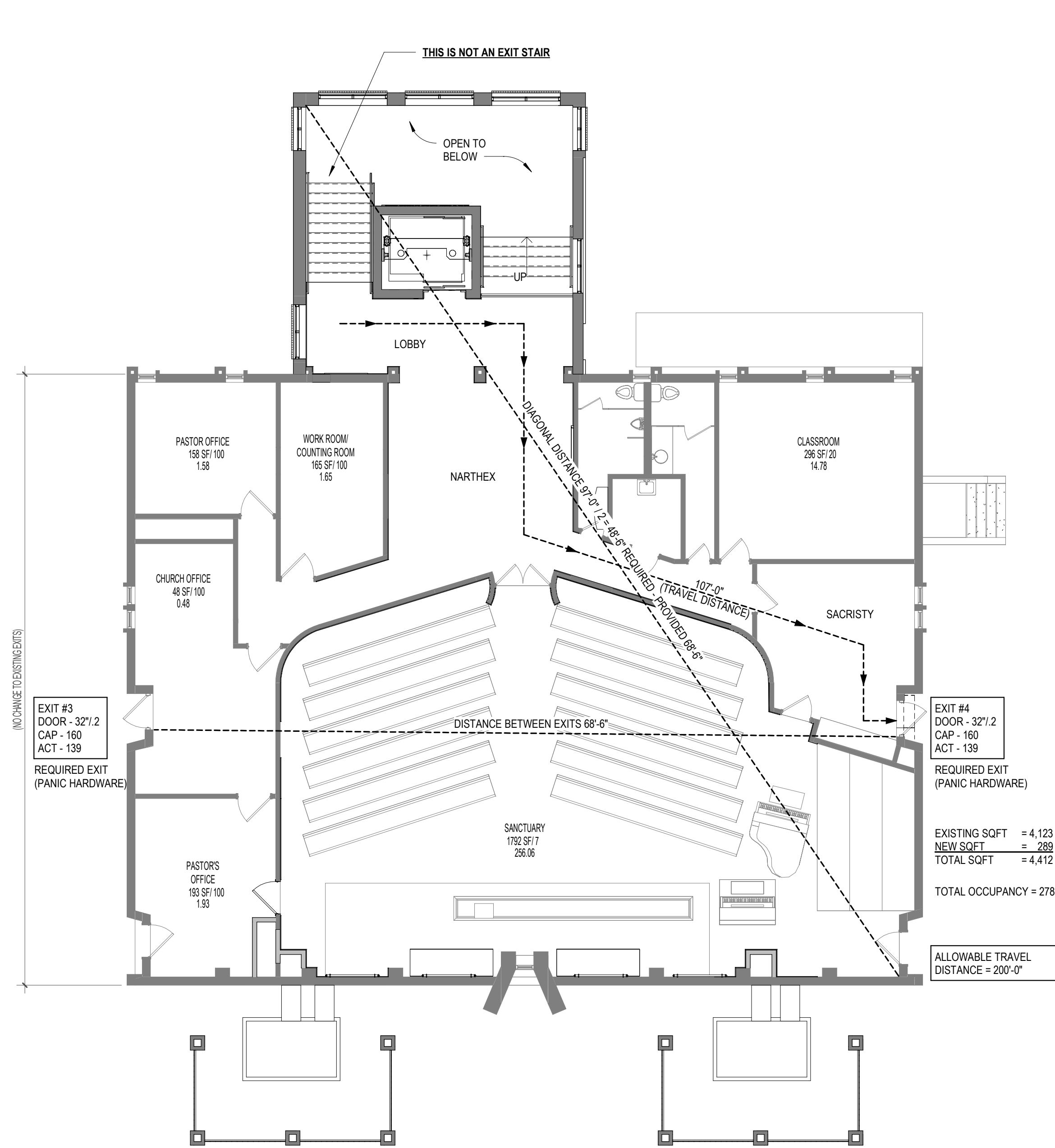
DATE: 5/2/2023

COVER SHEET

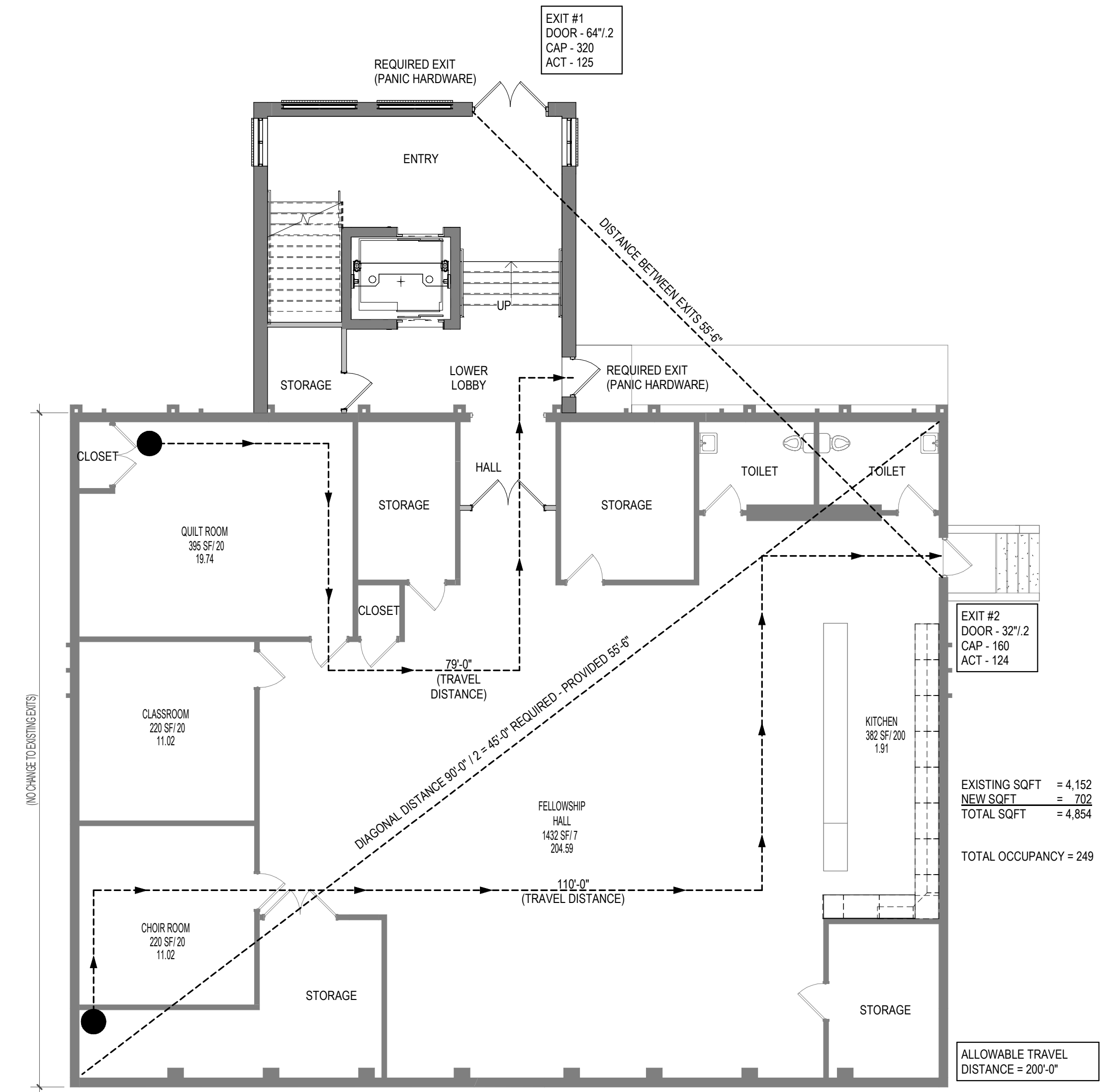
T1

DIGITAL PRINT DATE: 5/2/2023 1:10:09 PM





**3 Phase 1 - 1-Level EGRESS PLAN**  
1/8" = 1'-0"



**2 Phase 1 - 0-BASEMENT EGRESS PLAN**  
1/8" = 1'-0"

8/25/22, 3:31 PM BXUV-U905 - Fire-resistance Ratings - ANSI/UL 263 | UL Product IQ

**UL Product IQ®**

**BXUV-U905 - Fire-resistance Ratings - ANSI/UL 263**

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

Fire-resistance Ratings - ANSI/UL 263  
BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States  
BXUV7 - Fire Resistance Ratings - CANUL/C-S101 Certified for Canada

See General Information for Fire-resistance Ratings - ANSI/UL 263 Certified for United States  
Design Criteria and Allowable Variations  
See General Information for Fire Resistance Ratings - CANUL/C-S101 Certified for Canada  
Design Criteria and Allowable Variations

Design No. U905

June 6, 2022

Bearing Wall Rating — 2 HR  
Nonbearing Wall Rating — 2 HR

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

https://iq.ulprospector.com/en/profile?en=15133 1/3

8/25/22, 3:31 PM BXUV-U905 - Fire-resistance Ratings - ANSI/UL 263 | UL Product IQ

Horizontal Section

- Concrete Blocks** — Various designs. Classification D-2 (2 hr). See **Concrete Blocks** category for list of eligible manufacturers.
- Mortar** — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Portland Cement Stucco or Gypsum Plaster** — Add 1/2 hr to classification if used. Where combustible members are framed in wall, plaster or stucco must be applied on the face opposite framing to achieve a max. Classification of 1-1/2 hr. Attached to concrete blocks (Item 1).
- Loose Masonry Fill** — If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kiln Process), water repellent vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.
- Foamed Plastic** — (Optional - Not Shown) — 1-1/2 in. thick max. 4 ft wide sheathing attached to concrete blocks (Item 1). **ATLAS ROOFING CORP.** — "EnergyShield Pro Wall Insulation", "EnergyShield Pro 2 Wall Insulation", "EnergyShield CGF Pro and EnergyShield Ply Pro"

**DUPONT DE NEMOURS, INC.** — Types Therman Sheathing, Therman Light Duty Insulation, Therman Heavy Duty Insulation, Therman Metal Building Board, Therman White Finish Insulation, Therman ci Exterior Insulation, Therman XARMOR ci Exterior Insulation, Therman HI Insulation, Therman Plus Liner Panel, Therman Heavy Duty Plus (HDP), TUFF-RT™ ci Insulation, Therman Butler Styhal Wall Insulation Board and Therman Morton Heavy Duty Insulation Board.

**FIRESTONE BUILDING PRODUCTS CO. L.L.C.** — "Everge™ CI Foil Exterior Wall Insulation" and "Everge™ CI Glass Exterior Wall Insulation"

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** — Types "Xci-Class A", "Xci-Foil (Class A)", "Xci 286"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** — Types "TSX-8500", "ECOMAX® FR", "TSX-8510", "ECOMAX® FR White", "ECOMAX®", "ECOMAX® FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath", "Thermasheath-3", "Durasheath-3"

**JOHNS MANVILLE** — Type "AP Foil-Faced Foam Sheathing"

**SA Building Units** — As an alternate to Items 5, min. 1-in thick polyisocyanurate composite foamed plastic insulation boards, nom. 48 by 48 or 96 in.

**HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC** — "Xci-NB", "Xci Ply"

**RMAX, A BUSINESS UNIT OF SIKA CORPORATION** — "Thermasheath-SF", "ECOBASIG", "ThermaBas-CI", "ECOMAX® FR Ply", "ECOMAX® Ply"

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

Last Updated on 2022-06-06

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8/25/22, 3:31 PM BXUV-U905 - Fire-resistance Ratings - ANSI/UL 263 | UL Product IQ

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No.	Description	Date

PROJECT #: 210029  
DATE: 5/2/2023

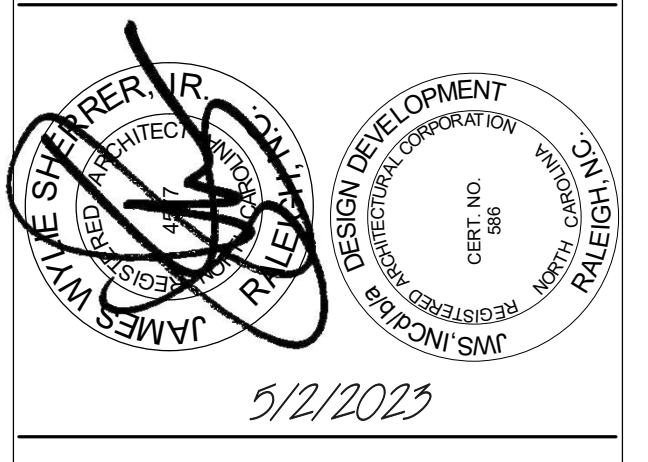
BUILDING CODE SUMMARY

**T3**

1/4" 1" 2"

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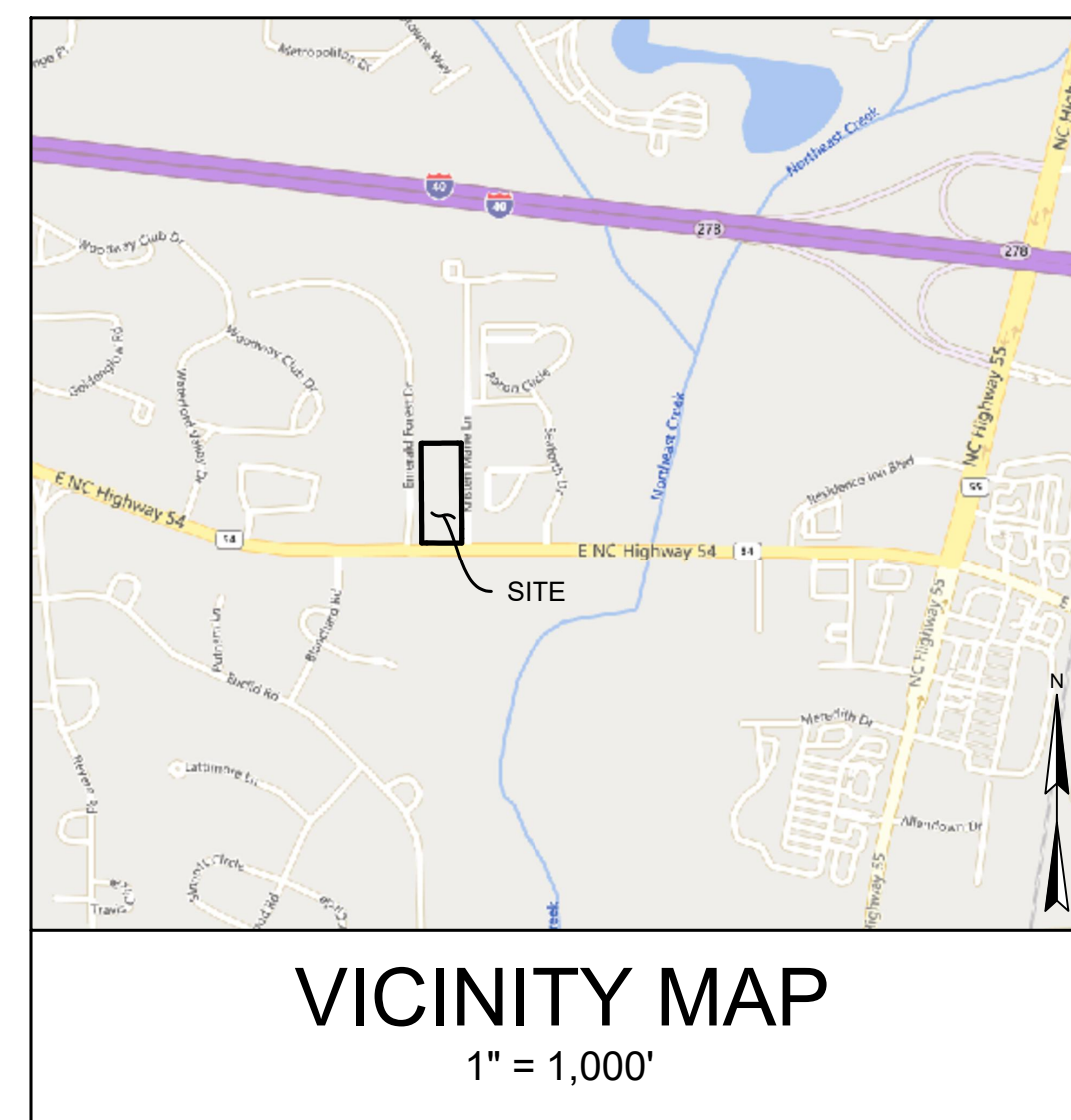
https://iq.ulprospector.com/en/profile?en=15133 3/3





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RALEIGH, NORTH CAROLINA 27675
PHONE: 919.610.1051
FIRM NC LICENSE NUMBER C-4222

Table with 2 columns: REVISION HISTORY (REV #, DESCRIPTION, DATE, BY) and SUMMARY INFORMATION (DEVELOPMENT NAME, STREET ADDRESS, PIN NUMBER, PARCEL AREA, JURISDICTION, etc.)



DURHAM GENERAL STANDARD NOTES

- 1. FLOODPLAIN NOTES: A CDMR SHALL BE OBTAINED FROM FEMA PRIOR TO CONSTRUCTION DRAWING APPROVAL...
2. NC DWR BUFFER AUTHORIZATION NOTE: BUFFER AUTHORIZATION BY THE NORTH CAROLINA DIVISION OF WATER RESOURCES...
3. FOR SITES CONTAINING WETLANDS: STATE AND FEDERAL PERMIT AUTHORIZATION MAY BE REQUIRED FROM THE NC DEP...
4. WETLAND BUFFER NOTE: 7 FOOT WIDE WETLAND BUFFER TO REMAIN IN NATURAL, UNDISTURBED VEGETATION...
5. PRIVATE STREET DESIGN NOTE FOR TOWNHOUSES AND CONDOMINIUMS IN THE CITY LIMITS...
6. LANDSCAPE MULCH: PINE STRAW SHALL NOT BE USED AS MULCH OR GROUND COVER WITHIN TEN FEET OF ANY STRUCTURES...
7. LANDSCAPE/SITE COMPLIANCE INSPECTION: ALL SITE IMPROVEMENTS, INCLUDING LANDSCAPING, MUST BE IN PLACE PRIOR TO THE ISSUANCE OF A CERTIFICATE OF COMPLIANCE...
8. STREET TREE NOTE FOR ALL SITE PLANS/PRELIMINARY PLATS AND FINAL PLATS WHERE TREES WILL BE PLANTED...
9. YARD TREE NOTE FOR ALL SITE PLANS/PRELIMINARY PLATS AND FINAL PLATS WHERE TREES WILL BE PLANTED...
10. CONSTRUCTION IN PRESERVED TREE COVERAGE AREAS (UDO SECTION 8.3):
A. PRESERVED TREE COVERAGE AREAS SHALL NOT BE USED FOR ACTIVE RECREATIONAL PURPOSES...
B. ALL BUILDINGS, UTILITIES, AND STORMWATER FACILITIES SHALL BE SET BACK AT LEAST 10 FEET FROM THE EDGE OF ANY PRESERVED TREE COVERAGE AREA...
11. TREE PROTECTION NOTE (UDO SECTION 8.3): TREE PROTECTION FENCE CONSTRUCTED OF A MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE...
12. ROOT PROTECTION ZONE (UDO SECTION 8.3): SHALL BE ESTABLISHED AROUND ALL TREES TO BE PRESERVED...
13. PROTECTION OF EXISTING VEGETATION (UDO SECTION 8.3): AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE...
14. UDO SITE LIGHTING NOTE (UDO SECTION 7.4):
A. THE MAXIMUM ILLUMINATION PERMITTED AT THE END OF A PROPERTY LINE SHALL BE AS SET FORTH BELOW...
15. SANITARY SEWER EASEMENTS:
UDO, SEE PUBLIC WORKS STANDARD NOTES, BELOW.
16. CITY STORM DRAINAGE EASEMENTS: SEE PUBLIC WORKS STANDARD NOTES, BELOW...
17. FOR RESIDENTIAL DEVELOPMENTS USING CURBSIDE COLLECTION: AN AUTOMATED SOLID WASTE COLLECTION VEHICLE HAS AN 18-FOOT WHEELBASE AND A TURNING RADIUS OF 45 FEET WALL-TO-WALL AND 43 FEET CURB-TO-CURB...
18. FIRE NOTES TO BE INCLUDED ON COVER SHEET: SAFEGUARDS DURING THE CONSTRUCTION, ALTERATION, OR DEMOLITION OF STRUCTURES SHOWN ON THIS SITE PLAN SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE 2018 NORTH CAROLINA FIRE CODE AND MFPA41 (2013 EDITION).

LEVEL 3 SITE PLANS FOR CHRISTUS VICTOR LUTHERAN CHURCH ADDITION

1615 NC-54 HWY E
DURHAM, NORTH CAROLINA
PIN: 0728-83-27-7895

DEVELOPER:

CHRISTUS VICTOR EVANGELICAL
LUTHERAN CHURCH
1615 NC HWY 54
DURHAM , NC 27713

ARCHITECT:

DESIGN DEVELOPMENT ARCHITECTS
800 SALEM WOODS DRIVE, SUITE 102
RALEIGH, NORTH CAROLINA 27615
919.848.4474

ENGINEER OF RECORD:

FLM ENGINEERING, INC
CONTACT: JON FRAZIER, PE
PO BOX 91727
RALEIGH, NC 27675
919.610.1051
JFRAZIER@FLMENGINEERING.COM

FLOOD PLAIN NOTES

THIS SITE IS NOT IN ANY SPECIAL FLOOD HAZARD AREAS OR FUTURE CONDITIONS FLOOD HAZARD AREAS, AS SHOWN ON: FIRM PANEL(S): 3720072800K, EFFECTIVE DATE(S): 10/19/2018.

PUBLIC WORKS STANDARD NOTES

- 1. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS OR NCLANCPA - AS REQUIRED) SHALL SUBMIT THREE (3) SETS OF CONSTRUCTION DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL...
2. THE DESIGNING PROFESSIONAL (A NCPE, NCPLS OR NCLANCPA - AS REQUIRED) SHALL SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS TO THE PUBLIC WORKS DEPARTMENT - DEVELOPMENT REVIEW FOR REVIEW AND APPROVAL... PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

Table with 2 columns: SHEET (C-1, C-2, C-3, C-4, A1.1, A2.1) and TITLE (COVER, EXISTING CONDITIONS & DEMOLITION PLAN, SITE PLAN, GRADING PLAN, FLOOR PLAN, BUILDING ELEVATIONS)

CASE NO. D2200154

Form for sheet information including DATE (04-28-2022), SCALE (AS SHOWN), DESIGNED BY (FLM), APPROVED BY (FLM), PROJECT NO. (22003), and COVER C-1 SHEET 1 OF 6.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SCALE ADJUSTMENT table with a scale bar showing 0 to 1 inch on the original drawing and instructions on how to adjust the scale.

LEVEL 3 SITE PLANS
CHRISTUS VICTOR LUTHERAN CHURCH ADDITION
1615 NC-54
DURHAM, NC 27713

REVISION HISTORY

REV #	DESCRIPTION	DATE	BY
1	DURHAM COMMENTS	9/9/2022	FLM
2	DURHAM COMMENTS	11/21/2022	FLM

ORIGINAL PLAN SIZE: 24" X 36"

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

20 10 0 20  
SCALE: 1 INCH = 20 FEET

SCALE ADJUSTMENT  
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING  
IF IT IS NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALE ACCORDINGLY

LEVEL 3 SITE PLANS  
CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

DATE:	04-28-2022
SCALE:	AS SHOWN
DESIGNED BY:	FLM
APPROVED BY:	FLM
PROJECT NO.:	22003

EXISTING CONDITIONS & DEMOLITION PLAN

**C-2**  
SHEET 2 OF 6

**COMPACTED SOIL REMEDIATION AREA NOTES**

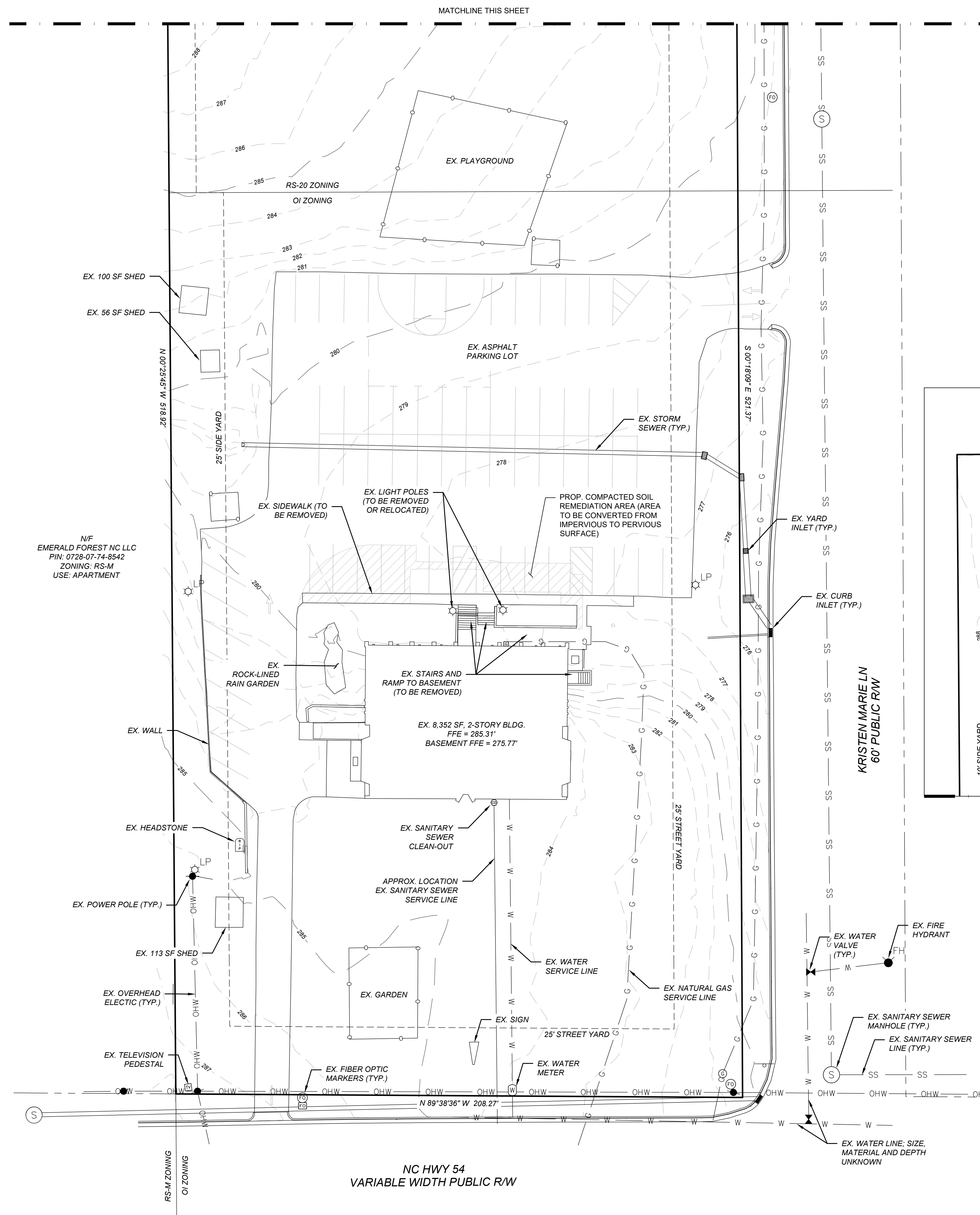
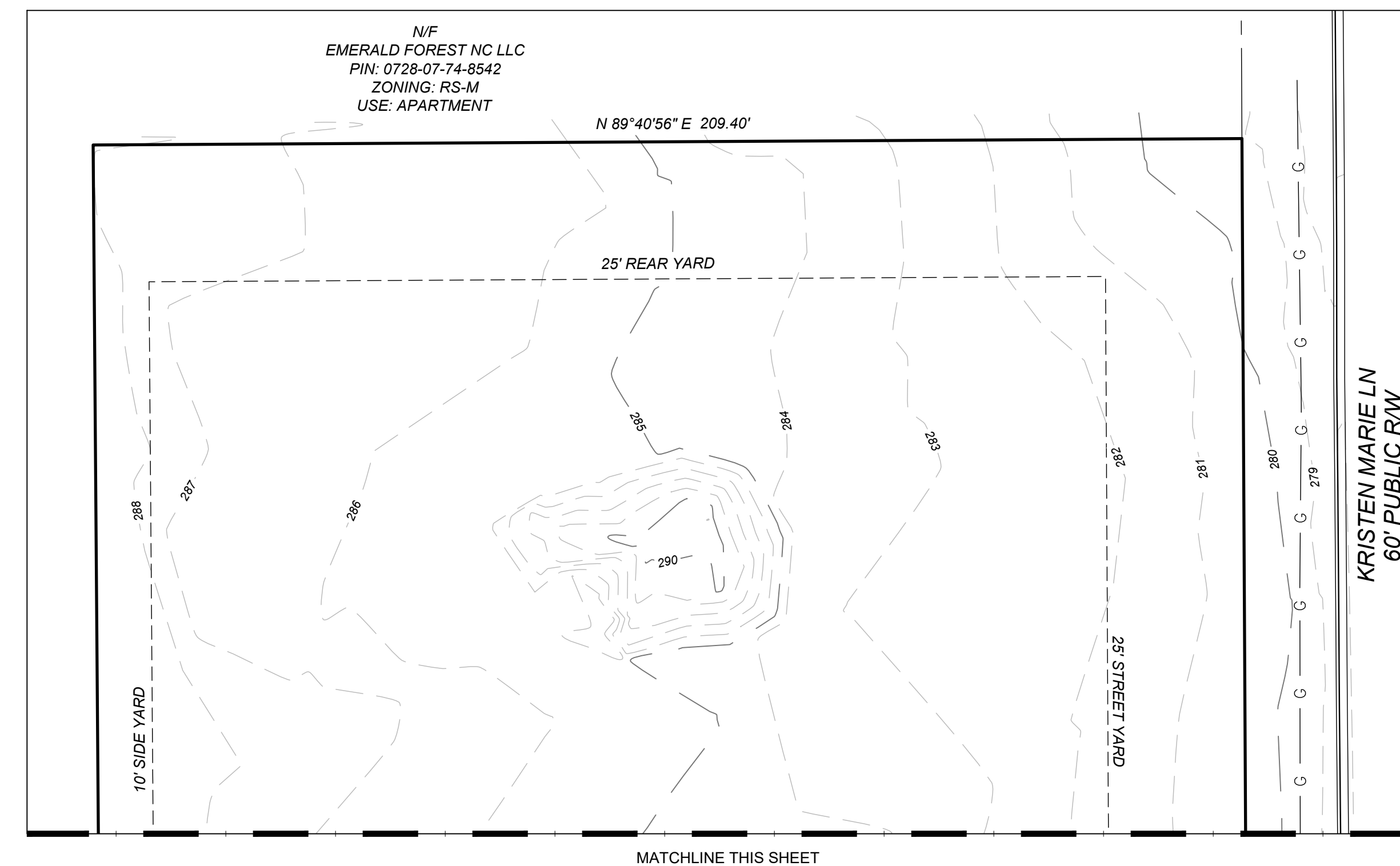
1. THE PROCEDURE FOR COMPACTED SOIL REMEDIATION IS AS FOLLOWS:
  - REMOVE ALL IMPERVIOUS SURFACES FROM THE SUBJECT AREA.
  - TILL THE AREA TO A DEPTH OF 12" BELOW THE TOP OF THE COMPACTED SUBGRADE.
  - SUITABLE RATES AND TYPES OF SOIL AMENDMENTS SHALL BE DETERMINED THROUGH SOIL TESTS. LIMESTONE AND FERTILIZER SHALL BE APPLIED UNIFORMLY DURING SEEDBED PREPARATION AND MIXED WELL WITH THE TOP 4 TO 6 INCHES OF SOIL.

**NOTES**

1. BOUNDARY AND TOPOGRAPHIC SURVEY DATA PROVIDED BY ANGLE RIGHT LAND SURVEYING, PLLC.
2. NO FLOOD HAZARD AREAS PRESENT PER FEMA FIRM PANEL NO. 3720072800K, EFFECTIVE 10/19/2018.
3. SITE IS WITHIN THE SUBURBAN DEVELOPMENT TIER.
4. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE AREPRESENTATION OF ALL UTILITIES WITHIN THE PROJECT EXTENT.

**LEGEND**

	EX. PROPERTY LINE
	EX. SETBACK LINE
	EX. RIGHT-OF-WAY
	EX. CHAIN LINK FENCE
	EX. GAS LINE
	EX. OVERHEAD ELECTRIC LINE
	EX. WATER LINE
	EX. SANITARY SEWER
	EX. MAJOR CONTOUR (5')
	EX. MINOR CONTOUR (1')
	PROP. COMPACTED SOIL REMEDIATION AREA



PLANT LIST						
KEY	LOCATION	SCIENTIFIC NAME	COMMON NAME	QUAN.	CAL.	HT.
<b>DECIDUOUS CANOPY TREES</b>						
ZS	STREET TREE AND PROJECT BOUNDARY BUFFER	ZELKOVA SERRATA	JAPANESE ZELKOVA	2	2"	10'
<b>DECIDUOUS UNDERSTORY TREES</b>						
CF	PROJECT BOUNDARY BUFFER	CORNUS FLORIDA	NATIVE DOGWOOD	3	1"	8'
<b>SHRUBS</b>						
IV	PROJECT BOUNDARY BUFFER	ILEX VOMITORIA	DWARF YAUPON HOLLY	19	-	15"

**NOTES**

- PROPOSED ADA STALLS AND AISLES SHALL HAVE SLOPES NO STEEPER THAN 1:48 (2%) IN ALL DIRECTIONS.
- PROPOSED ACCESSIBLE ROUTES SHALL HAVE RUNNING SLOPES NO STEEPER THAN 1:20 (5%) AND CROSS SLOPES NO STEEPER THAN 1:48 (2%).
- THE WORK TAKING PLACE RELATED TO THE CHANGES IN THIS SITE PLAN WILL BE FULLY COMPLIANT WITH THE NORTH CAROLINA ACCESSIBILITY CODES (ANSI 117.1 -2009 AND CHAPTER 11 OF THE NCBG) UNLESS AND EXCEPT IN AREAS WHERE AN APPROVED STATEMENT FROM A SITE ENGINEER, SURVEYOR OR ARCHITECT VERIFIES THAT SITE CONDITIONS EXIST WHERE THE TOPOGRAPHY OF THE SITE IS EXTREME AND ONLY ALTERNATE METHODS OF COMPLIANCE ARE POSSIBLE.

**LANDSCAPE CALCULATIONS**

**STREET TREES:**  
 REQUIRED: ONE STREET TREE FOR EVERY 40' OF STREET FRONTAGE (28' OF BUILDING ADDITION ALONG FRONTAGE)  
 PROVIDED: 2 STREET TREES

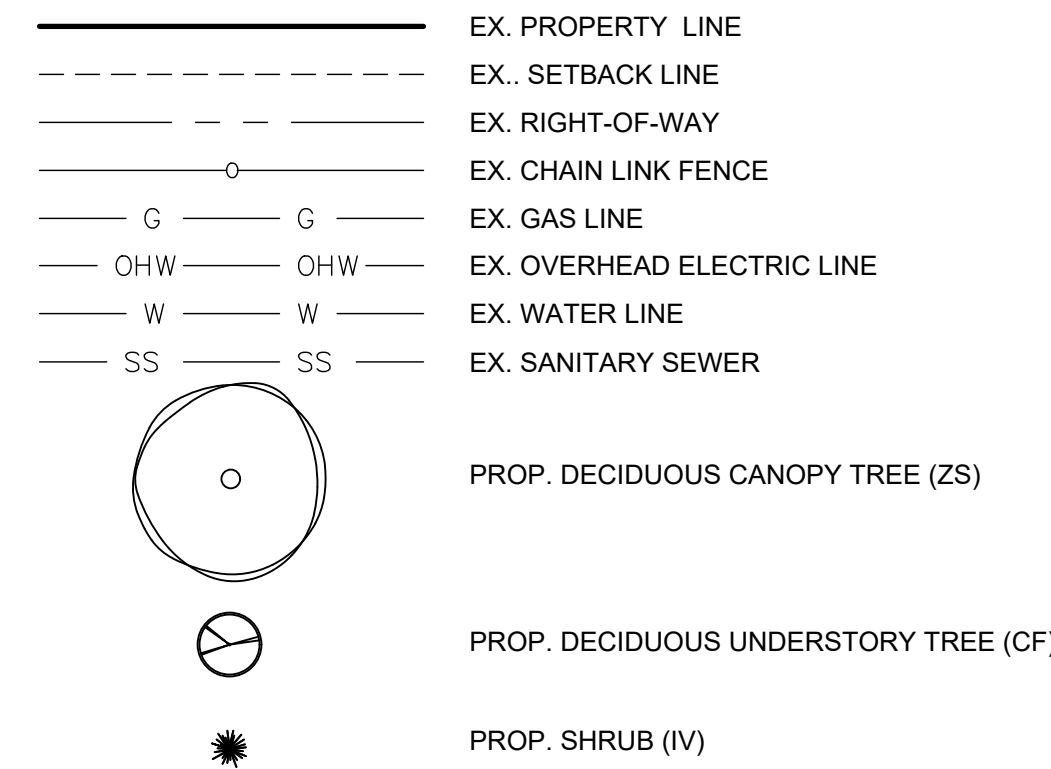
**PROJECT BOUNDARY BUFFERS:**  
 REQUIRED: 30', 0.6 OPACITY BUFFER ADJACENT TO PDR ZONING (28' OF BUILDING ADDITION ALONG PDR ZONING)  
 PROVIDED: 30', 0.6 OPACITY DECIDUOUS BUFFER (7 DECIDUOUS CANOPY TREES, 10 DECIDUOUS UNDERSTORY TREES, AND 67 SHRUBS PER 100')

REQUIRED DECIDUOUS CANOPY TREES: 0.28 X 7 = 2 TREES  
 PROVIDED DECIDUOUS CANOPY TREES: 2 TREES

REQUIRED DECIDUOUS UNDERSTORY TREES: 0.28 X 10 = 3 TREES  
 PROVIDED DECIDUOUS UNDERSTORY TREES: 3 TREES

REQUIRED SHRUBS: 0.28 X 67 = 19 SHRUBS  
 PROVIDED SHRUBS: 19 SHRUBS

**LEGEND**



**SUMMARY INFORMATION**

**DEVELOPMENT NAME:** CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
**STREET ADDRESS:** 1615 NC-54  
**PIN NUMBER:** 0728-83-27-7895  
**PARCEL AREA:** 2.49 AC

**JURISDICTION:** CITY OF DURHAM  
**CURRENT ZONING DISTRICT:** RS-20 AND OI  
**DEVELOPMENT TIER:** SUBURBAN  
**WATERSHED:** FALLS LAKE  
**WATERSHED PROTECTION OVERLAY:** F/J-B

**EXISTING USE:** CHURCH  
**PROPOSED USE:** CHURCH

**EXISTING BUILDING AREA:** 8,352 SF  
**PROPOSED ADDITION AREA:** 2,640 SF  
**TOTAL PROPOSED BUILDING AREA:** 10,992 SF

**EXISTING BUILDING STORIES:** 2  
**PROPOSED BUILDING STORIES:** 2

**OI MAX. BUILDING HEIGHT:** 55'  
**PROPOSED BUILDING HEIGHT:** 37'

**OI SETBACKS:**  
**STREET YARD:** 25'  
**SIDE YARD:** 20'  
**REAR YARD:** 25'

**PROPOSED SEATING AREA:** 1,264 SF

**REQUIRED PARKING:** 1 SPACE PER 28 SF OF SEATING AREA = 45 SPACES  
**PROPOSED PARKING:** 46 SPACES (2 ADA, 2 VAN ACCESSIBLE)  
**REQUIRED BICYCLE PARKING:** 5% OF REQUIRED PARKING = 1 SPACE  
**PROPOSED BICYCLE PARKING:** 2 SPACES (1 INVERTED 'U' RACK)

**PRE-DEVELOPMENT IMPERVIOUS AREA:** 29,580 SF  
**PRE-DEVELOPMENT IMPERVIOUS AREA PERCENTAGE:** 27.3%  
**POST-DEVELOPMENT IMPERVIOUS AREA:** 29,165 SF  
**POST-DEVELOPMENT IMPERVIOUS AREA PERCENTAGE:** 26.9%  
**NET CHANGE IN IMPERVIOUS SURFACE:** -415 SF

**PROPOSED DISTURBED AREA:** 7,200 SF



POST OFFICE BOX 91727  
 RALEIGH, NORTH CAROLINA 27675  
 PHONE: 919.610.1051  
 FIRM NC LICENSE NUMBER C-4222

**REVISION HISTORY**

REV #	DESCRIPTION	DATE	BY
1	DURHAM COMMENTS	9/9/2022	FLM
2	DURHAM COMMENTS	11/21/2022	FLM

ORIGINAL PLAN SIZE: 24" X 36"

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

20 10 0 20  
 SCALE: 1 INCH = 20 FEET

**SCALE ADJUSTMENT**  
 THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING  
 IF IT IS NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALE ACCORDINGLY

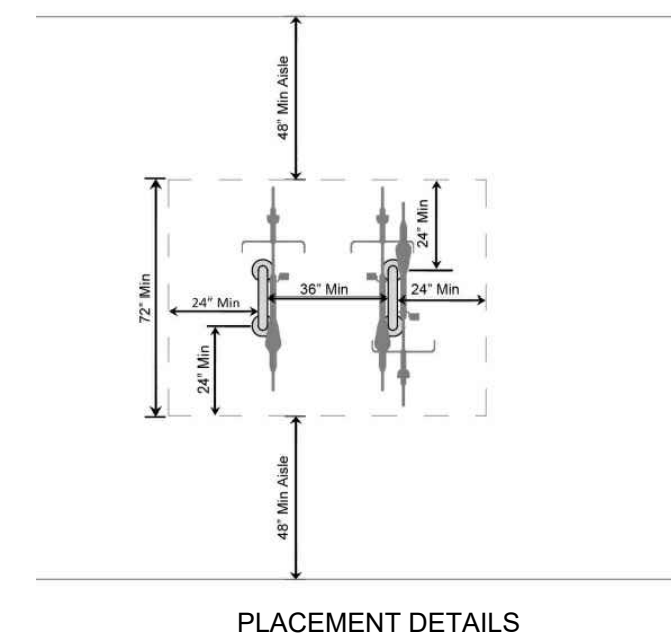
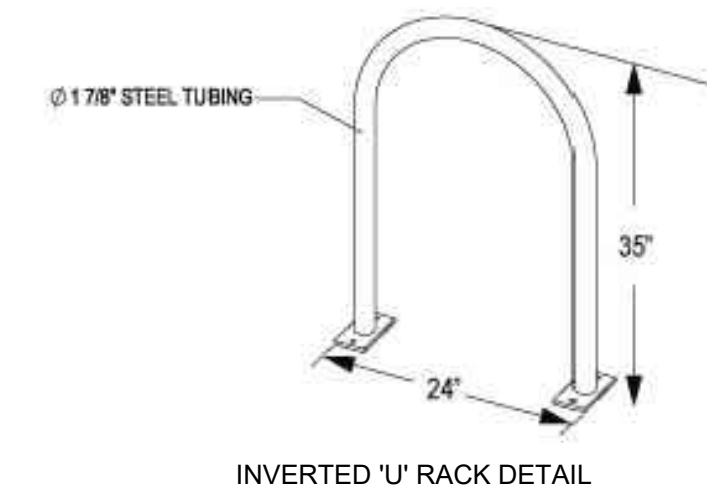
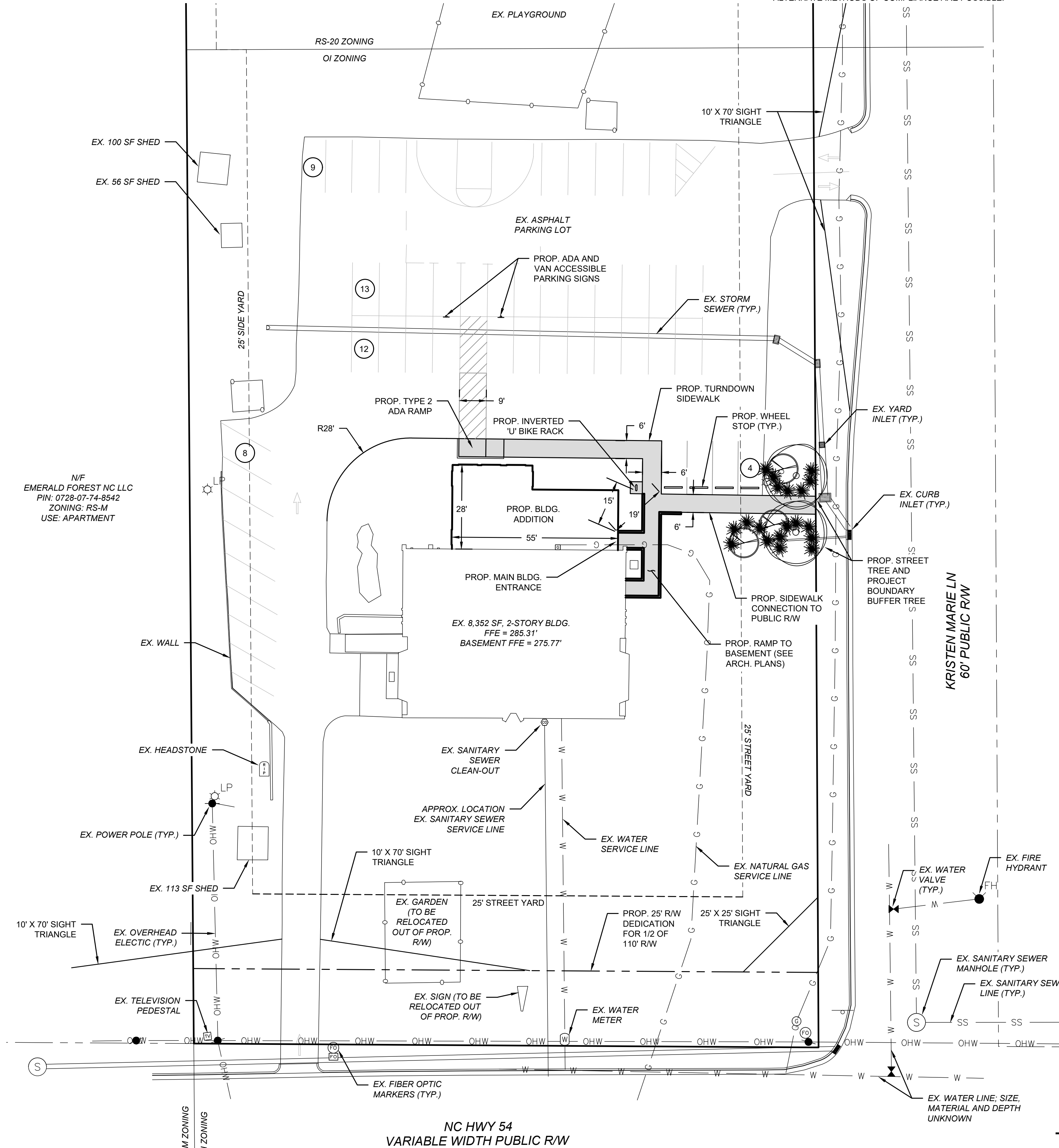
**LEVEL 3 SITE PLANS**

CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
 1615 NC-54  
 DURHAM, NC 27713

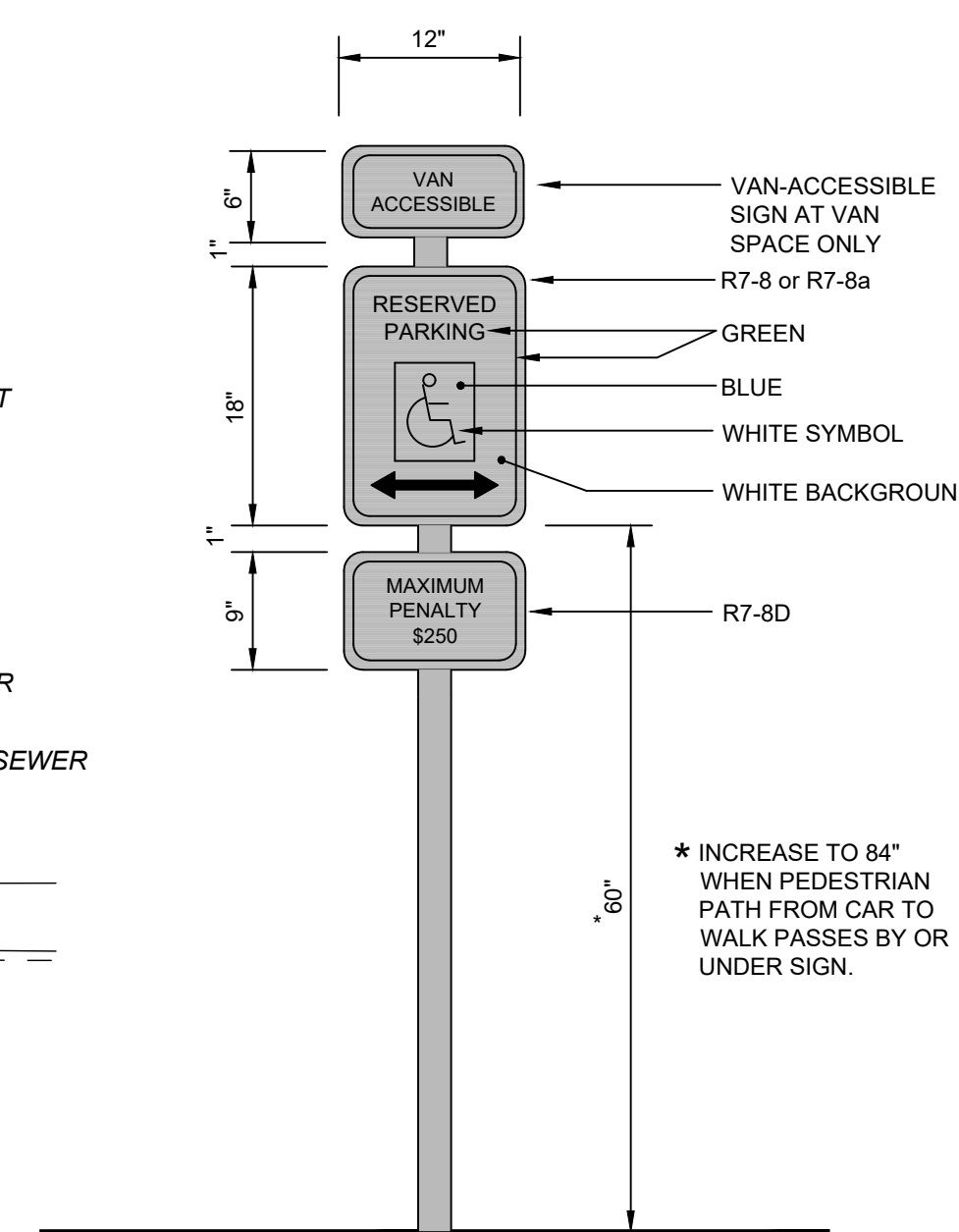
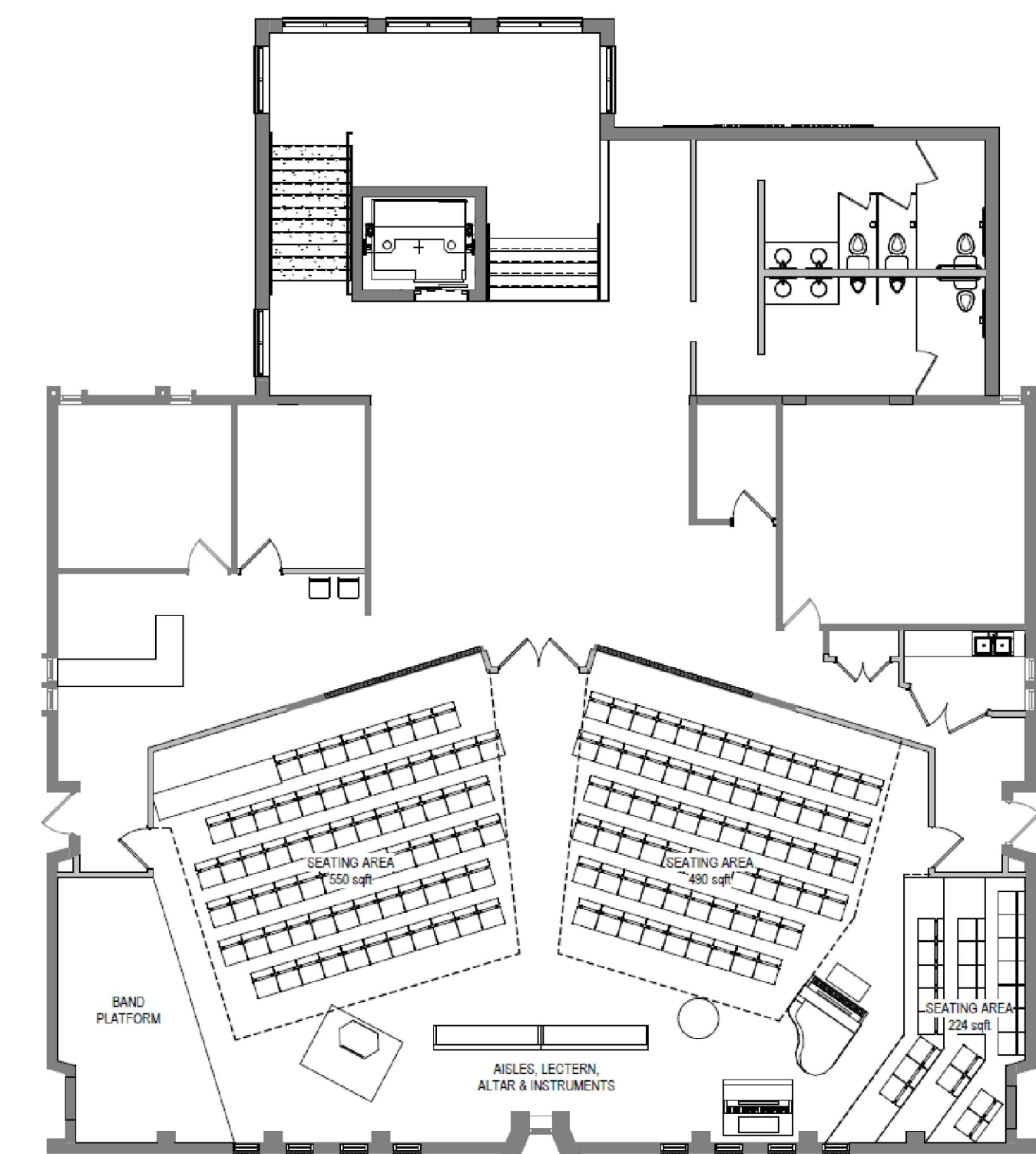
DATE:	04-28-2022
SCALE:	AS SHOWN
DESIGNED BY:	FLM
APPROVED BY:	FLM
PROJECT NO.:	22003

**SITE PLAN**

**C-3**  
 SHEET 3 OF 6



**BICYCLE RACK DETAILS**  
 NO SCALE



**NOTES**

1. PROPOSED ADA STALLS AND AISLES SHALL HAVE SLOPES NO STEEPER THAN 1:48 (2%) IN ALL DIRECTIONS.
2. PROPOSED ACCESSIBLE ROUTES SHALL HAVE RUNNING SLOPES NO STEEPER THAN 1:20 (5%) AND CROSS SLOPES NO STEEPER THAN 1:48 (2%).

**LEGEND**

---	EX. PROPERTY LINE
- - -	EX. RIGHT-OF-WAY
-o-	EX. CHAIN LINK FENCE
G - G	EX. GAS LINE
OHW - OHW	EX. OVERHEAD ELECTRIC LINE
W - W	EX. WATER LINE
SS - SS	EX. SANITARY SEWER
-280-	EX. MAJOR CONTOUR (5')
-279-	EX. MINOR CONTOUR (1')
-278-	PROP. MINOR CONTOUR (1')
LD - LD	PROP. LIMIT OF DISTURBANCE

REVISION HISTORY

REV #	DESCRIPTION	DATE	BY
1	DURHAM COMMENTS	9/9/2022	FLM
2	DURHAM COMMENTS	11/21/2022	FLM

ORIGINAL PLAN SIZE: 24" X 36"

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

20 10 0 20  
SCALE: 1 INCH = 20 FEET

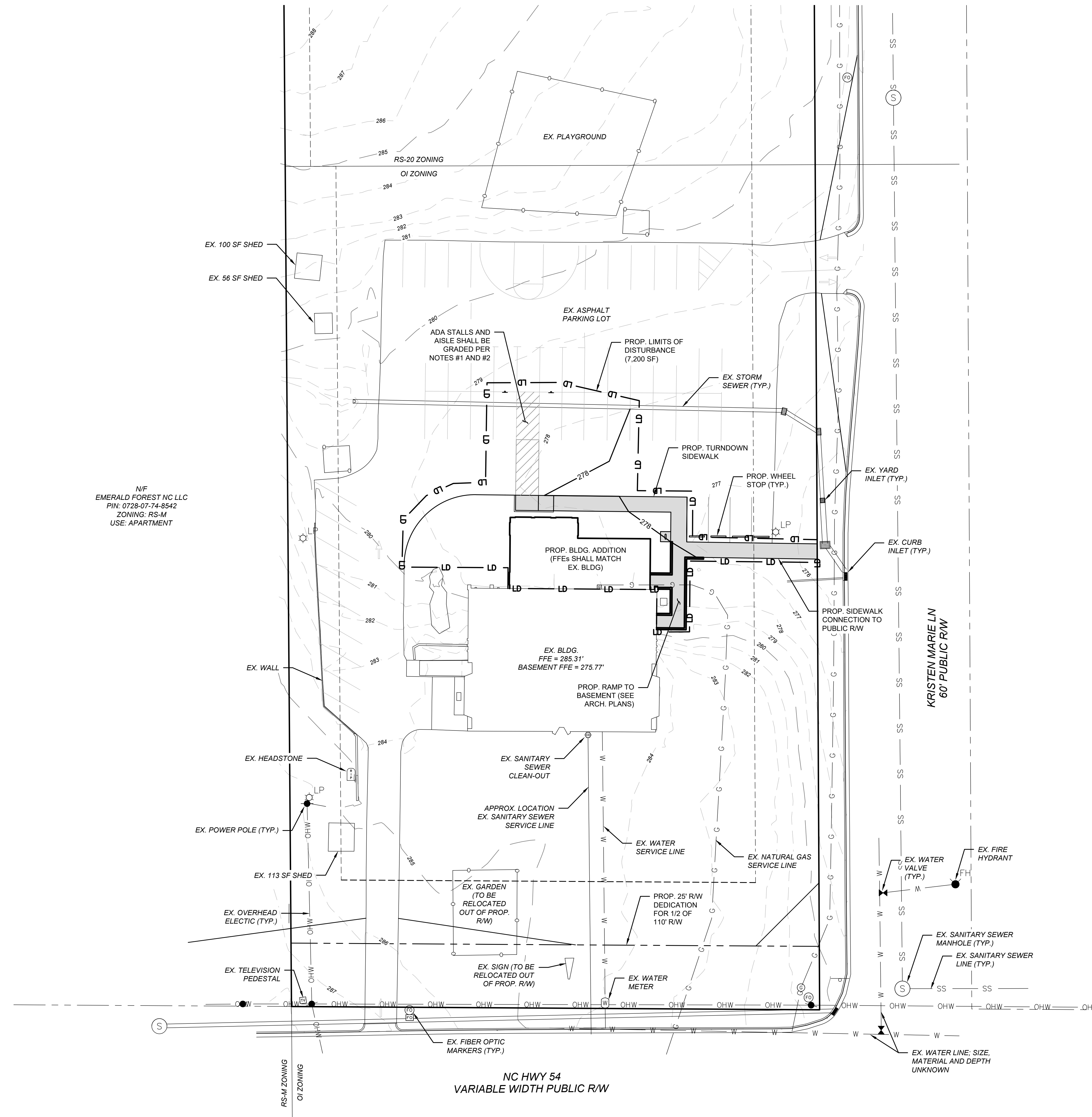
**SCALE ADJUSTMENT**  
THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING  
IF IT IS NOT 1 INCH ON THIS SHEET, ADJUST YOUR SCALE ACCORDINGLY

**LEVEL 3 SITE PLANS**  
CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

DATE:	04-28-2022
SCALE:	AS SHOWN
DESIGNED BY:	FLM
APPROVED BY:	FLM
PROJECT NO.:	22003

GRADING PLAN

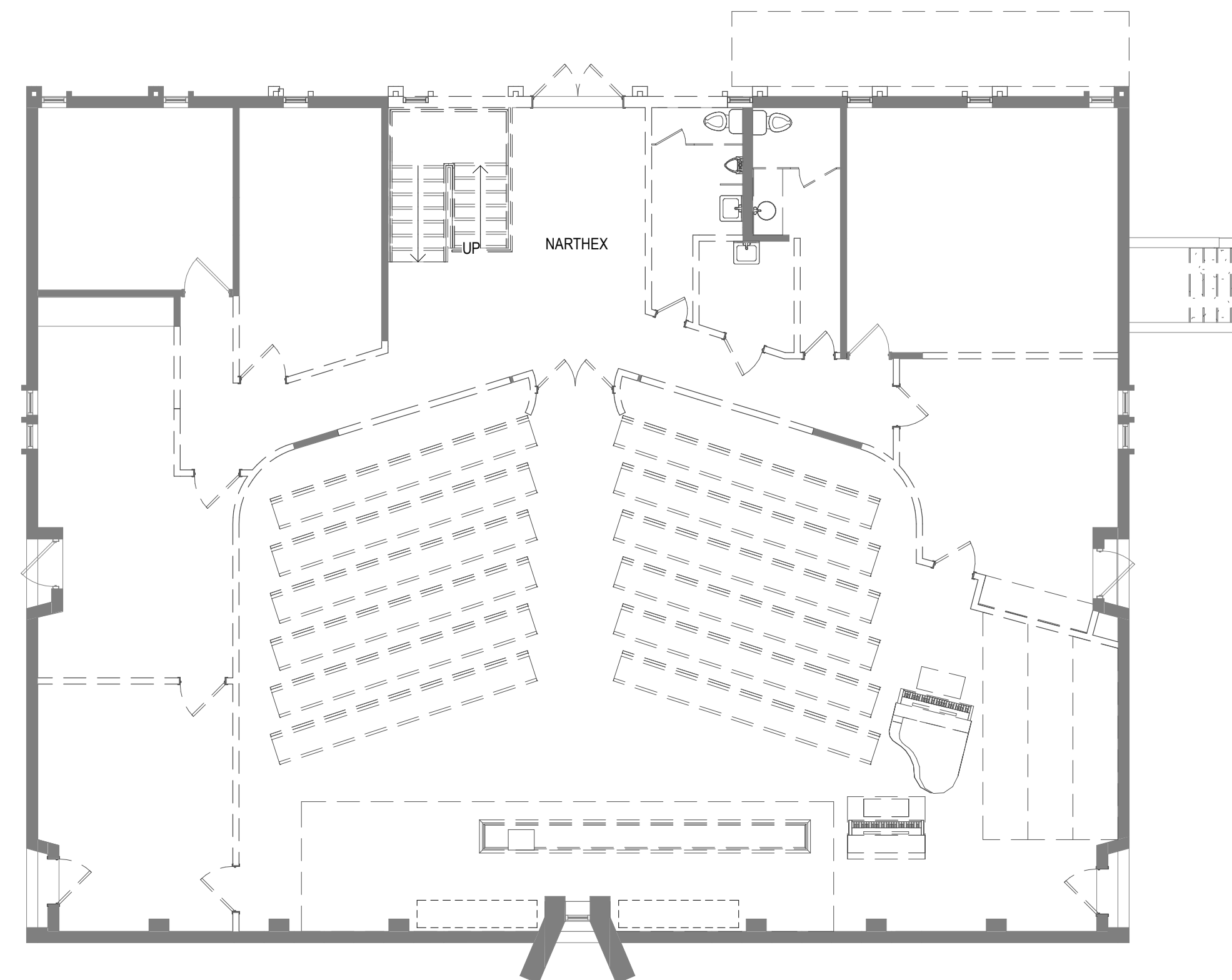
**C-4**  
SHEET 4 OF 6



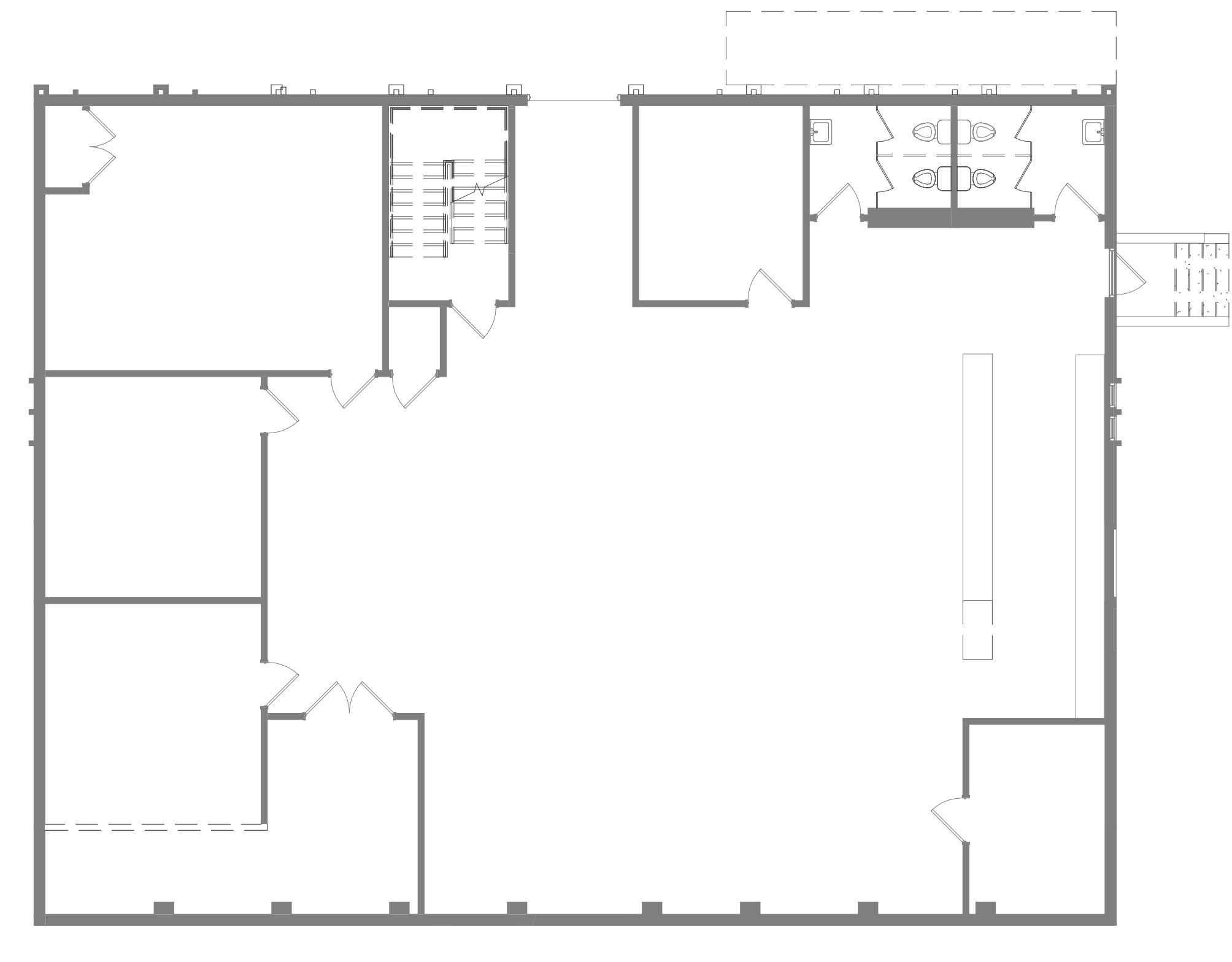
N/F  
EMERALD FOREST NC LLC  
PIN: 0728-07-74-8542  
ZONING: RS-M  
USE: APARTMENT

**INTERIOR WALL LEGEND** (NOTE: PROVIDE ACOUSTICAL SOUND INSULATION IN ALL WALLS)

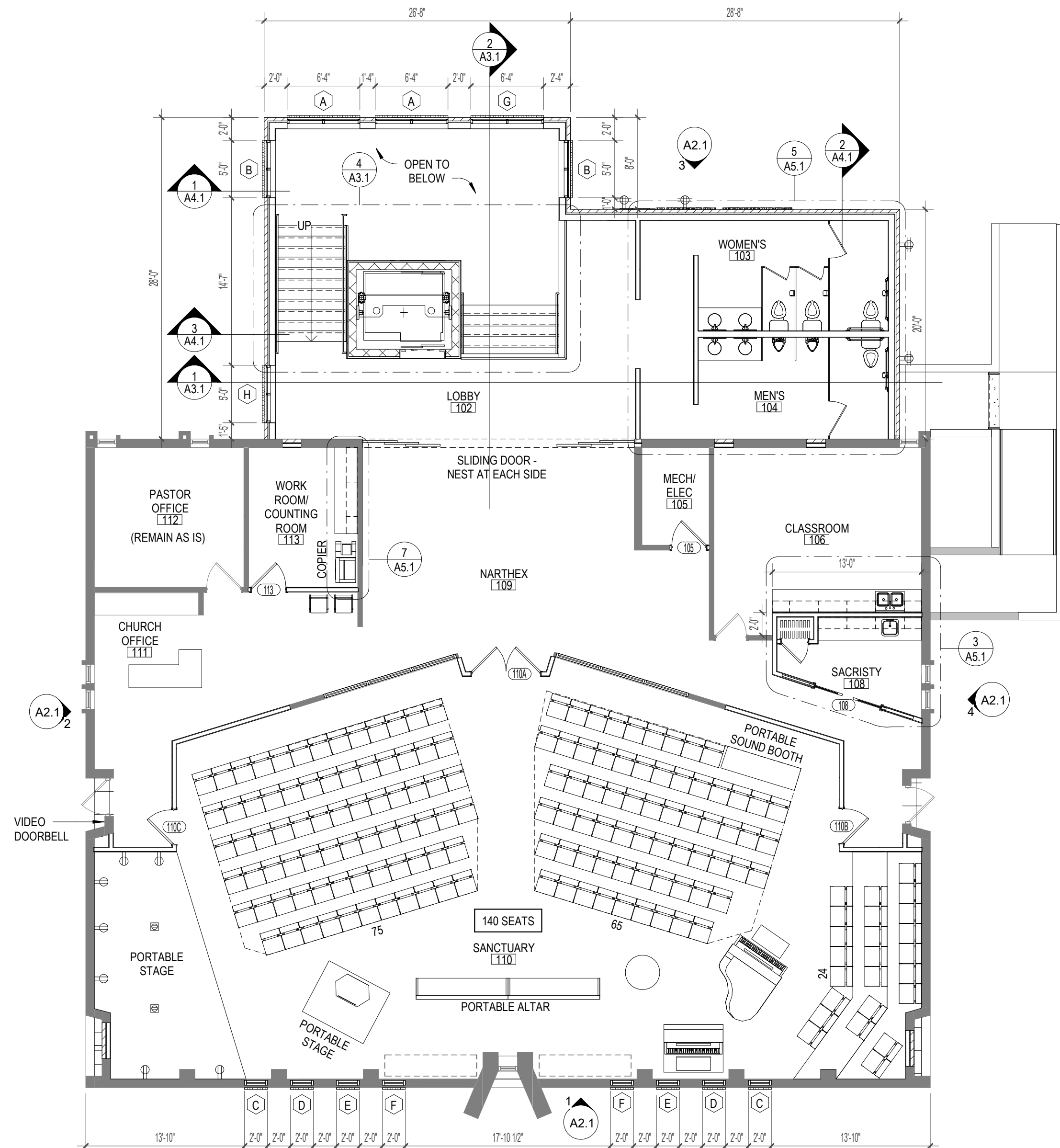
WALL CONSTRUCTION TYPE		
MTL STD @ 16" O.C. 1 LAYERS 5/8" GYP. BOARD EACH SIDE BASE, REFER TO FINISH SCHEDULE	MTL STD @ 16" O.C. 1 LAYERS 5/8" GYP. BOARD MTL STD BASE, REFER TO FINISH SCHEDULE	CMU
A	B	C
HEAD CONDITION		
BOTTOM OF STRUCTURE	3 5/8" METAL STUD DIAGONAL BRACING @ 48" O.C. FASTENED TO STRUCTURE ABOVE 6" MIN ABOVE HIGHEST ADJACENT CEILING OR BULKHEAD B / CEILING REFER TO RCP FINISH CEILING, REFER TO FINISH SCHEDULE	REFER TO FLOOR PLAN FOR HEIGHT FRT WOOD BLOCKING
1	2	3
MEMBER SIZES		HOURLY WALL RATING
	.0 .1 .2 .3 .4 .5 .6 .7 .8 .10 .12	-1 (1 HOUR RATING - SEE UL DETAILS)
Metal	7/8" 1 5/8" 2 1/2" 3 5/8" 4" 6" 7 1/2" 8" 10" 12"	-2 (2 HOUR RATING - SEE UL DETAILS)
Wood	3/4" 1 1/2" 3 1/2" 5 1/2" 7 1/2" 9 1/4" 11 1/4"	-3 (3 HOUR RATING - SEE UL DETAILS)
CMU	3 5/8" 7 5/8" 11 5/8"	-4 (4 HOUR RATING - SEE UL DETAILS)
Concrete		
WALL TAG		WALL RATING & HATCHES
		- EXISTING WALL
WALL CONSTRUCTION TYPE HEAD CONDITION TYPE MEMBER SIZE HOURLY WALL RATING		- NEW WALL WITH ACOUSTICAL SOUND INSULATION
		- INTERIOR WALLS TO DECK WITH ACOUSTICAL SOUND INSULATION
		- 1-HOUR RATED WALL
		- 2-HOUR RATED WALL



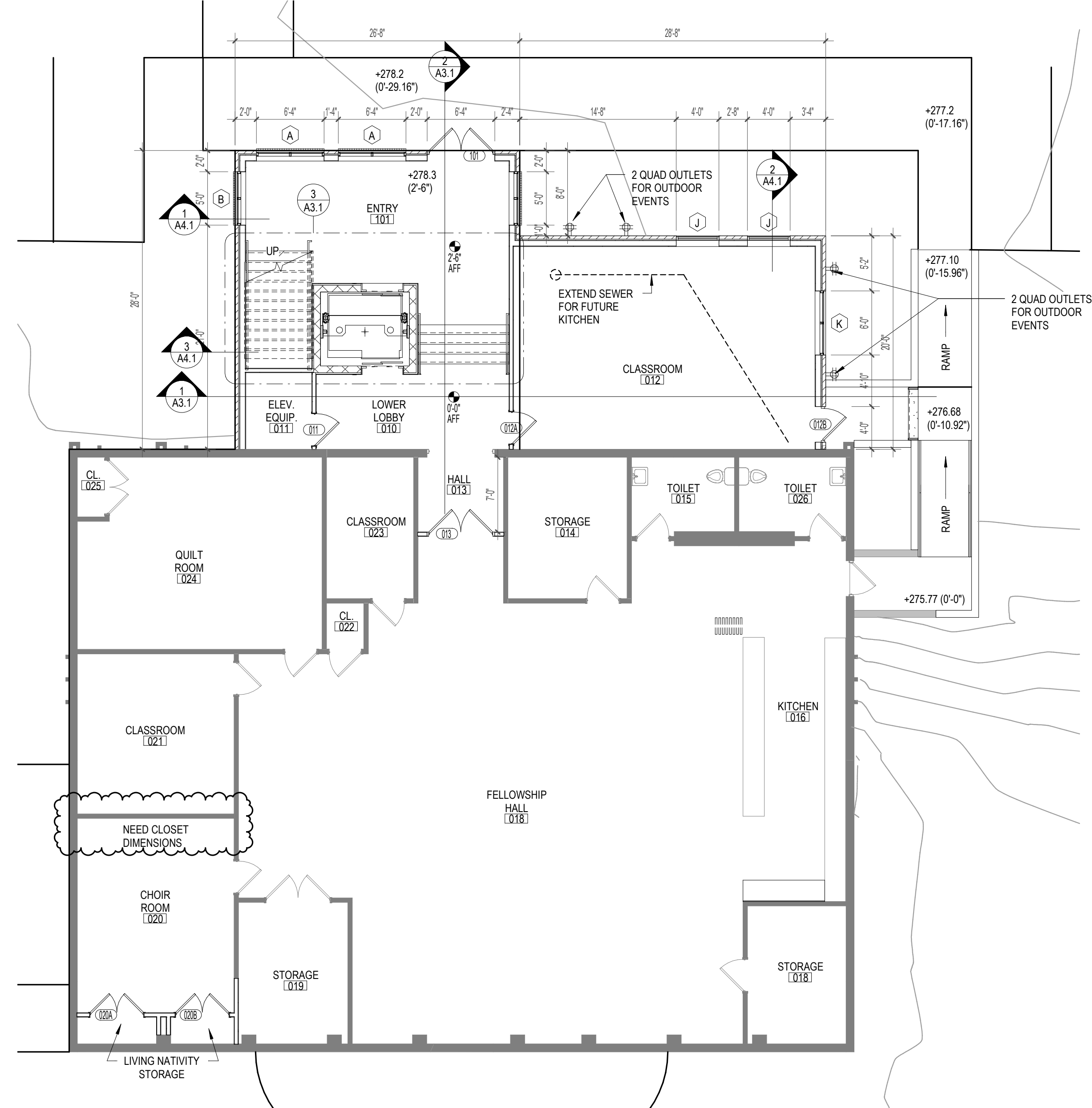
**1 Demo 1-Level - Phase 1**  
1/8" = 1'-0"



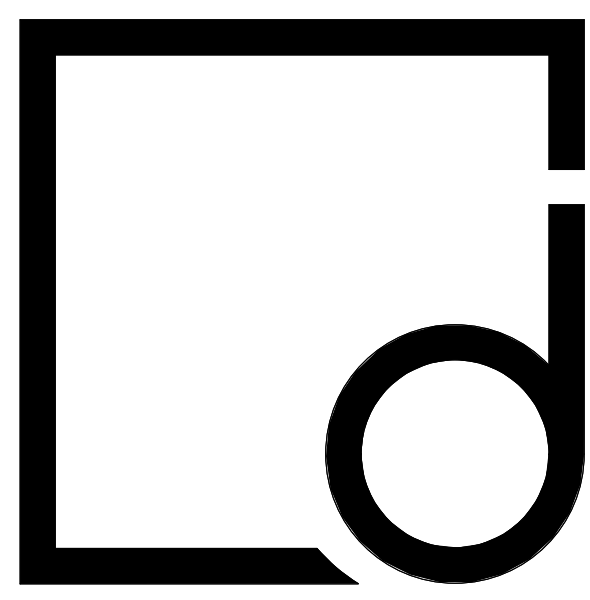
**3 Demo 0-BASEMENT - Phase 1**  
1/8" = 1'-0"



**2 Phase 1 - 1-Level**  
1/8" = 1'-0"



**4 Phase 1 - 0-BASEMENT**  
1/8" = 1'-0"



**REVIEW SET  
NOT FOR  
CONSTRUCTION**

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**designdevelopment**  
ARCHITECTS

800 Salem Woods Drive  
Suite 102  
Raleigh, NC 27615  
919.848.4474

**CHRISTUS VICTOR  
LUTHERAN  
CHURCH  
ADDITION**

1615 NC-54  
DURHAM, NC 27713

No.	Description	Date
1	Revision 1	Date 1

PROJECT #: 210029

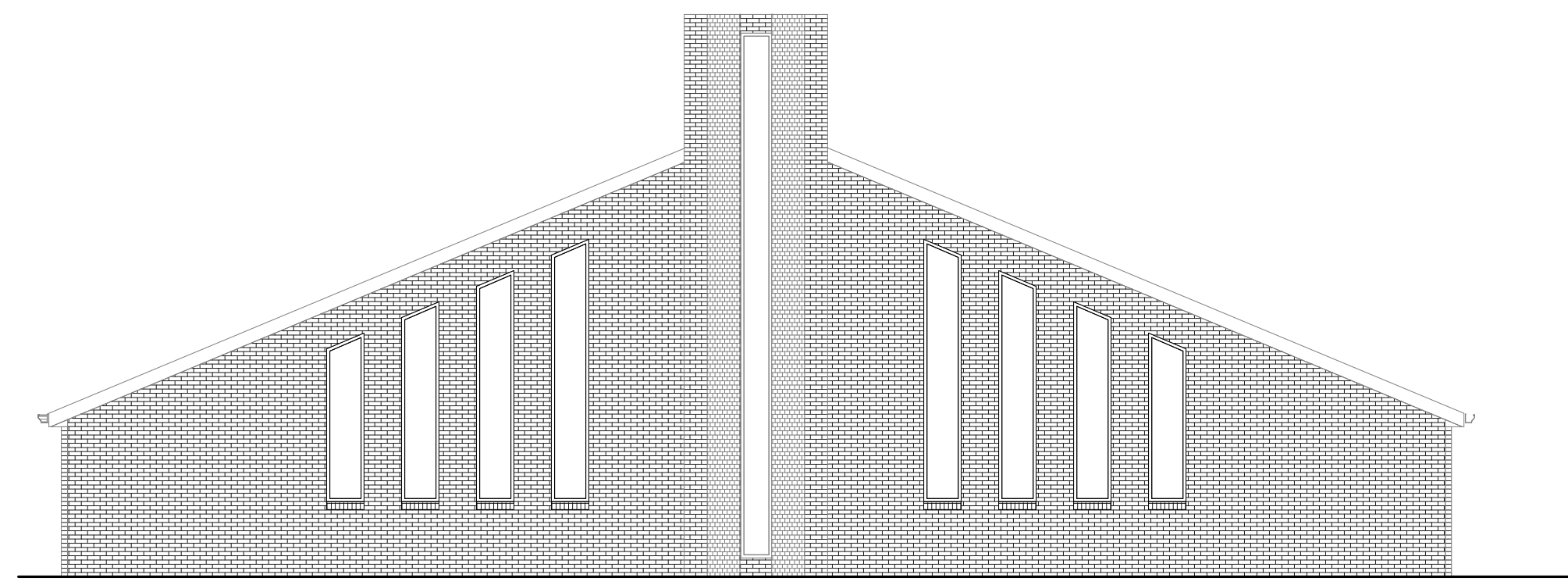
DATE: Issue Date

FLOOR PLAN

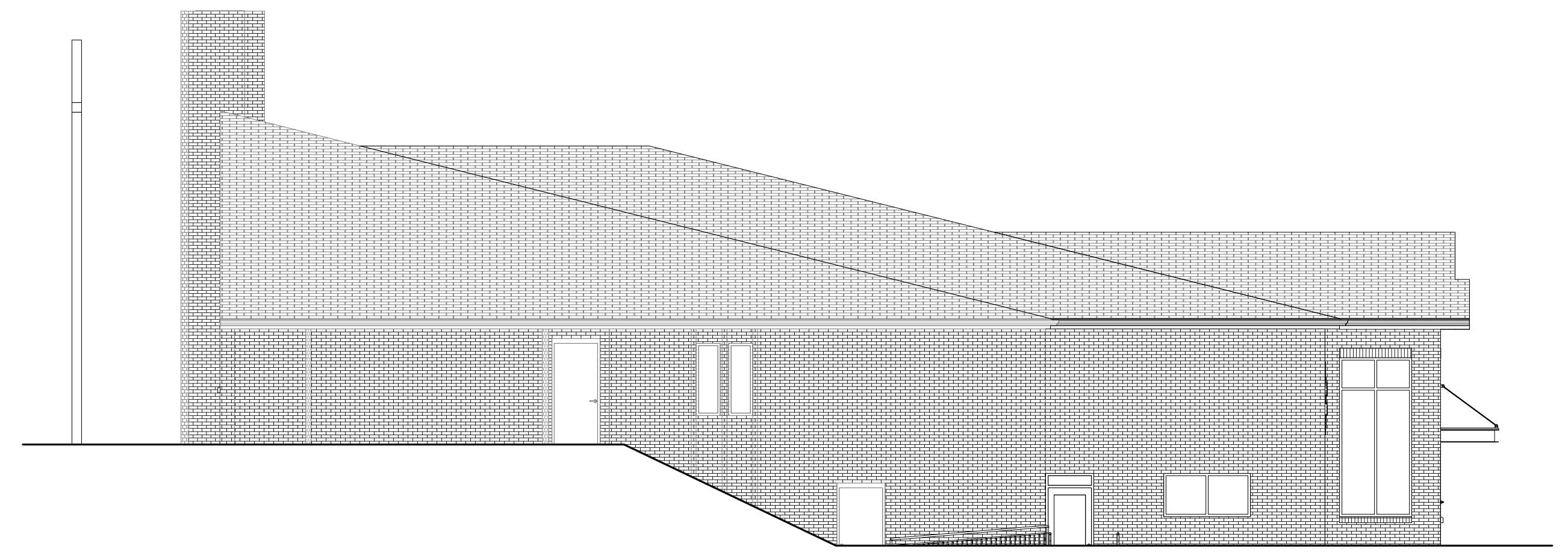
**A1.1**

DIGITAL PRINT DATE: 12/21/2021 10:11:19 AM





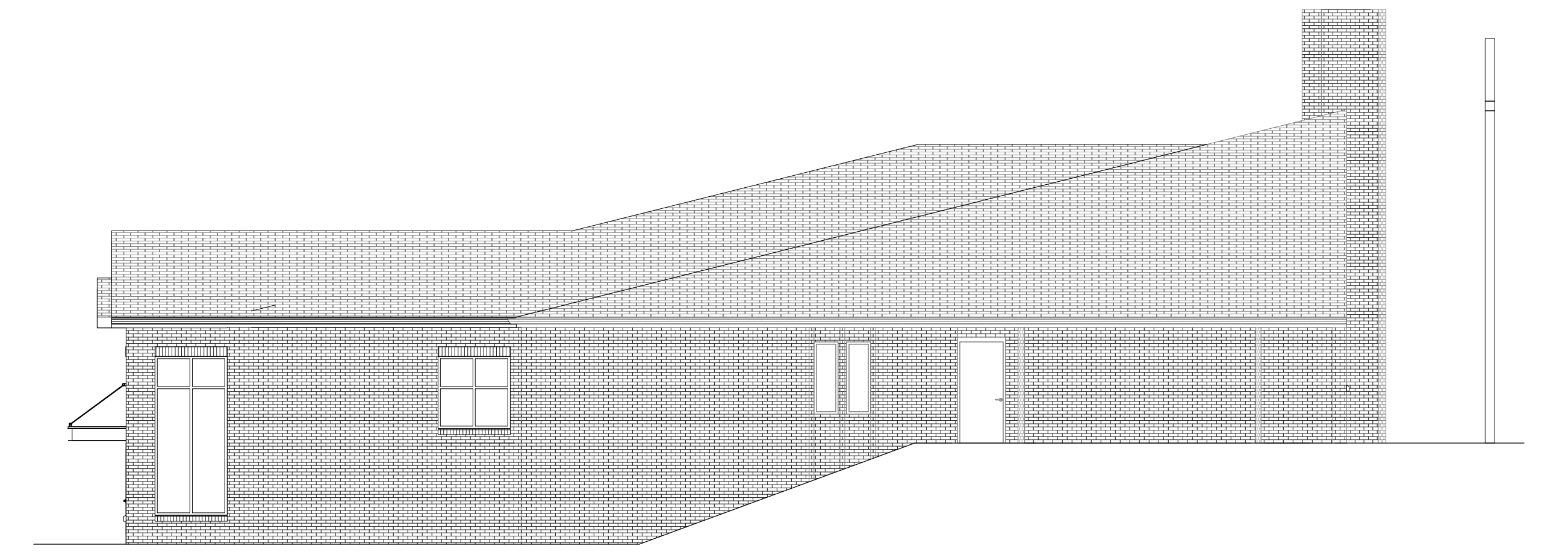
**1 PHASE 1 - FRONT ELEVATION**  
1/8" = 1'-0"



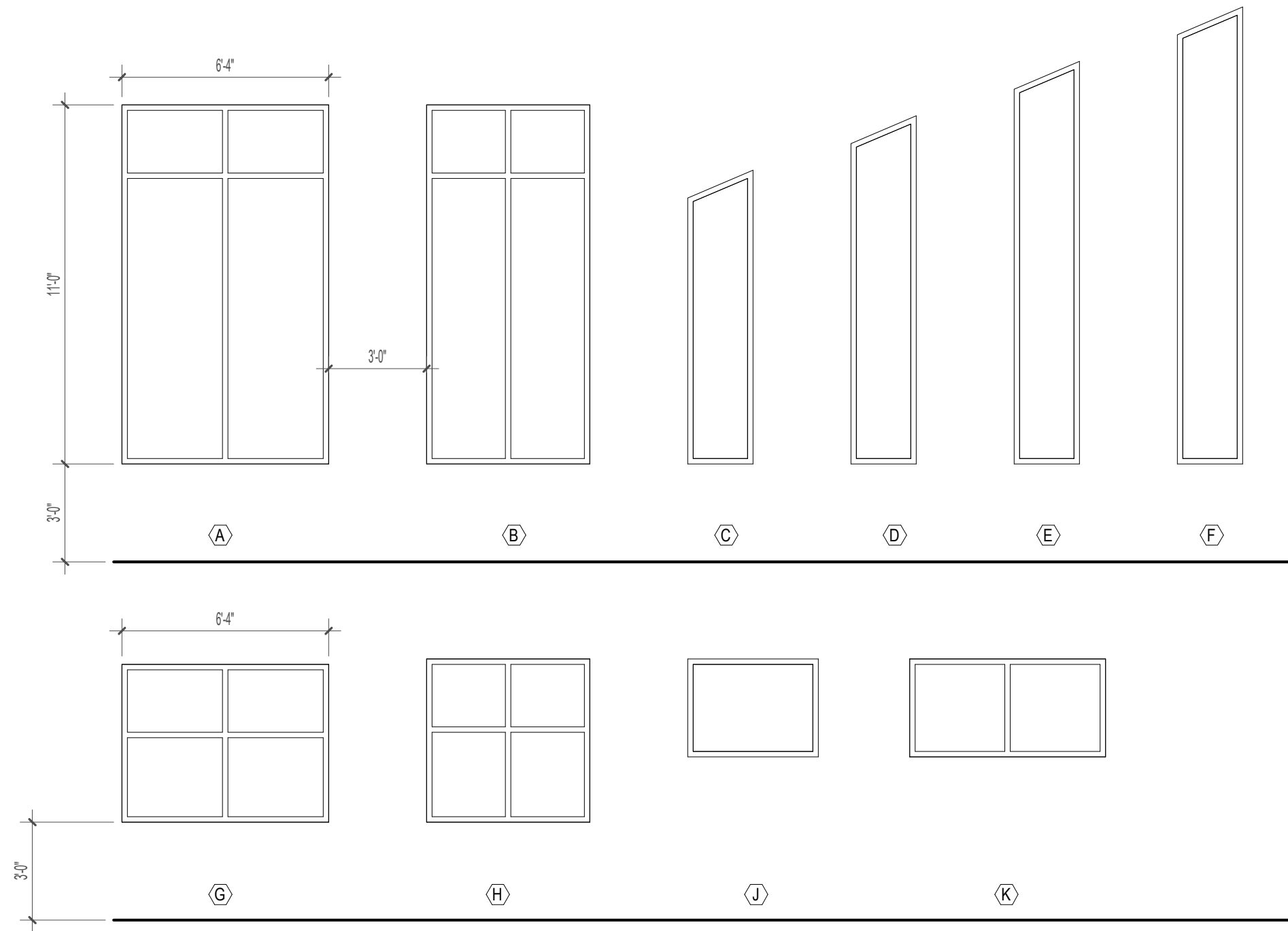
**4 PHASE 1 - RIGHT ELEVATION**  
1/8" = 1'-0"



**3 PHASE 1 - REAR ELEVATION**  
1/8" = 1'-0"



**2 PHASE 1 - LEFT ELEVATION**  
1/8" = 1'-0"



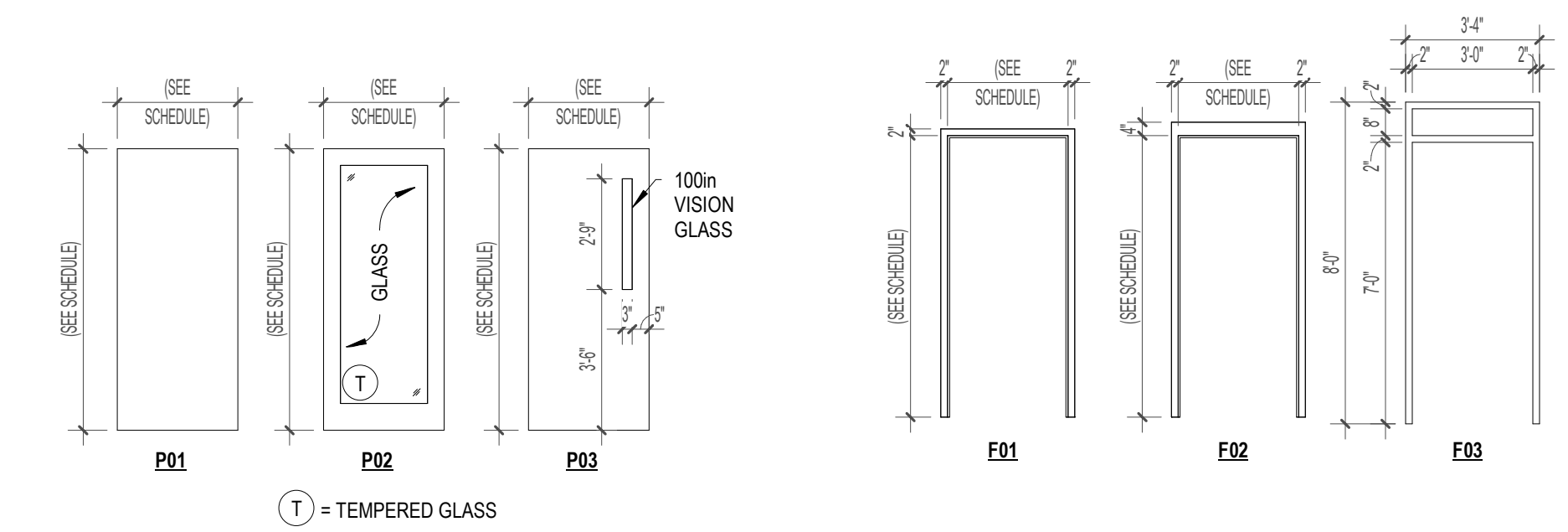
**ELEVATIONS - WINDOW**  
1/4" = 1'-0"

Door Schedule (PHASE 1)											
No.	Qty.	DOOR			FRAME		W. Ship	THRES	CLOSERS	NOTES	
		W	H	T	MATL	MATL					
011	1	3'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
012A	1	3'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.		YES	20 MN
012B	1	3'-0"	7'-0"	1-3/4"	P02	H.M.	F03	H.M.	Yes	Yes	
013	2	6'-0"	7'-0"	1-3/4"	P02	S.C.WD.	F01	H.M.			
020A	2	5'-0"	7'-0"	1-3/4"	P01	WOOD	F01	H.M.			
020B	2	5'-0"	7'-0"	1-3/4"	P01	WOOD	F01	H.M.			
101	2	6'-0"	7'-0"	1-3/4"	P02	H.M.	F02	H.M.		Yes	Yes
108	2	6'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	WOOD		Yes	Yes
109A	2	6'-0"	7'-0"	1-3/4"	P02	H.M.	F02	H.M.			
109B	2	6'-0"	7'-0"	1-3/4"	P02	H.M.	F02	H.M.			
109C	2	6'-0"	7'-0"	1-3/4"	P02	H.M.	F02	H.M.			
109D	1	4'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
109E	1	4'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
109F	1	2'-4"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
109G	1	2'-4"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
110A	2	6'-0"	7'-0"	1-3/4"	P02	S.C.WD.	F01	H.M.		YES	20 MN
110B	1	3'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.		YES	
110C	1	3'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.		YES	
113	1	3'-0"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.		YES	20 MN
128	1	2'-4"	7'-0"	1-3/4"	P01	S.C.WD.	F01	H.M.			
ELEV.	1	3'-0"	7'-6"	1-3/4"	-	-	-	-			ELEVATOR DOOR
ELEV.	1	3'-0"	7'-6"	1-3/4"	-	-	-	-			ELEVATOR DOOR

CHECK CORRIDOR

Window Schedule						
No.	Qty.	Description	Height	Width	Sill Height	Comments
A	2	ALUMINUM STOREFRONT	132"	76"	24"	
B	2	ALUMINUM STOREFRONT	132"	60"	60"	
C	2	ALUMINUM STOREFRONT	108"	24"	48"	
D	2	ALUMINUM STOREFRONT	128"	24"	48"	
E	2	ALUMINUM STOREFRONT	148"	24"	48"	
F	2	ALUMINUM STOREFRONT	168"	24"	48"	
G	1	ALUMINUM STOREFRONT	58"	76"	14"	
H	1	ALUMINUM STOREFRONT	60"	60"	12"	
J	6	ALUMINUM STOREFRONT	36"	48"	24"	
K	1	ALUMINUM STOREFRONT	36"	72"	60"	
L	2	ALUMINUM STOREFRONT	36"	48"	60"	

Room Finish Schedule (PHASE 1)						
No.	Name	Wall	Floor	Base	Ceiling	Remarks
010	LOWER LOBBY	PNTD GYP	LVT	VINYL	ACT	
011	ELEV. EQUIP.	PNTD GYP	CONC	VINYL	ACT	
012	CLASSROOM	PNTD GYP	LVT	VINYL	ACT	
013	HALL	PNTD GYP	LVT	VINYL	ACT	
014	STORAGE	PNTD GYP	VCT	VINYL	ACT	
015	TOILET	PNTD GYP	VCT	VINYL	ACT	
016	KITCHEN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
018	FELLOWSHIP HALL	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
018	STORAGE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
019	STORAGE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
020	CHOR ROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
021	CLASSROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
022	CL	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
023	CLASSROOM	PNTD CMU	LVT	VINYL	ACT	
024	QUILT ROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
025	CL	PNTD GYP	ACT	VINYL	ACT	
026	TOILET	PNTD CMU/GYP	VCT	VINYL	ACT	
101	ENTRY	PNTD GYP	LVT	VINYL	ACT	
102	LOBBY	PNTD GYP	LVT	VINYL	ACT	
103	WOMEN'S	PNTD GYP/TILE	TILE	TILE	ACT	
104	MEN'S	PNTD GYP/TILE	TILE	TILE	ACT	
105	MECH ELEC	PNTD GYP	CONC	VINYL	ACT	
106	CLASSROOM	PNTD GYP	LVT	VINYL	ACT	
108	SACRISTY	PNTD GYP	LVT	VINYL	ACT	
109	NARTHEX	PNTD GYP	LVT	VINYL	ACT	
110	SANCTUARY	EXISTING TO REMAIN	EXISTING TO REMAIN	VINYL	EXISTING TO REMAIN	
111	CHURCH OFFICE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
112	PASTOR OFFICE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
113	WORK ROOM	PNTD GYP	ACT	VINYL	ACT	



**ELEVATIONS - LEAF**  
1/4" = 1'-0"

**ELEVATIONS - FRAME**  
1/4" = 1'-0"

REVIEW SET  
NOT FOR  
CONSTRUCTION

No.	Description	Date

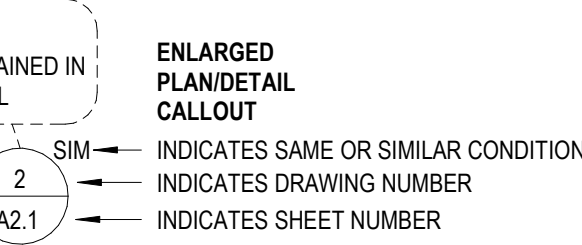
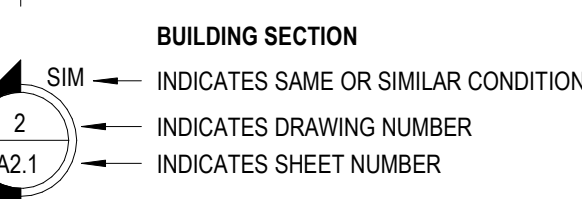
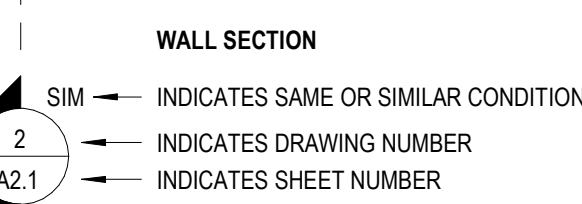
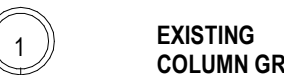
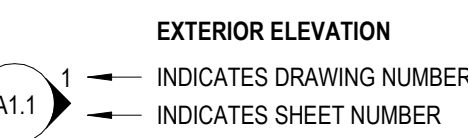
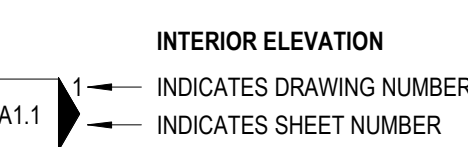
PROJECT #: 210029  
DATE: Issue Date  
ELEVATIONS

**SYMBOLS**

**ARCHITECTURAL COMPONENT TAGS**

Table with 2 columns: Tag Symbol and Description. Includes Room Tag (100), Door Tag (A), Window Tag (AX3.3), Wall Tag (R), Ceiling Tag (C), Revision Tag (1), Special Equipment Tag (10), Plumbing Tag (10), Keynote Tag (3), Joint (J), Control Joint (CJ), and Reveal (R).

**DRAWING SYMBOLS**

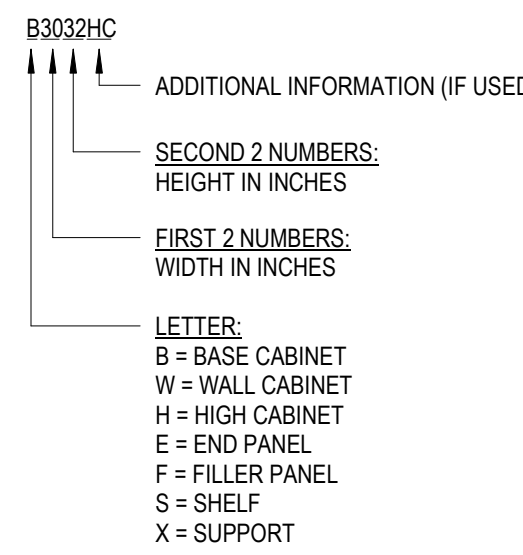


**MATERIAL & FINISH TAGS**

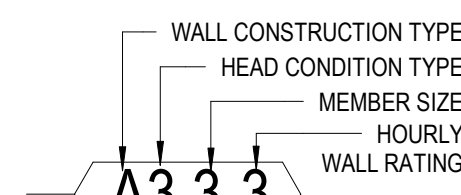
Table with 2 columns: Tag and Description. Includes Carpet (CPT-1), Luxury Vinyl Tile (LVT-1), Vinyl Composition Tile (VCT-1), Porcelain Tile (PT-1), Rubber Base (RB-1), Vinyl Base (VB-1), Wood Base (WB-1), Wood Trim (WT-1), Wall Panel (WP-1), Countertop (CT-1), and Paint (P-1).

NOTE: FOR MATERIALS & FINISHES THE NUMBER AFTER THE MATERIAL ('XXX-1') WOULD BE A COLOR/FINISH SELECTION

**CASEWORK TAGS**



**WALL TAGS**



**READING LEFT TO RIGHT:**

- 1. THE FIRST CHARACTER IN THE TAG INDICATES WHICH DETAIL TO REFERENCE FOR THE WALL CONSTRUCTION.
2. THE SECOND CHARACTER INDICATES THE HEAD CONDITION '1' (FULL HEIGHT TO UNDERSIDE OF STRUCTURE), '2' (TO THE DIMENSION ABOVE THE CEILING AS INDICATED IN THE DETAIL), OR '3' (TO THE DIMENSION ABOVE FINISH FLOOR INDICATED IN THE PLANS).
3. THE THIRD CHARACTER INDICATES THE STUD SIZE. REFERENCE THE DETAIL FOR THE STUD SIZE.
4. THE FOURTH CHARACTER INDICATES THE HOURLY WALL RATING. SEE UL SHEET FOR UL DETAIL.

**ABBREVIATIONS**

Table of abbreviations including AFF (Above Finish Floor), ALU (Air Handling Unit), AL (Aluminum), ALT (Alterate), BF (Barrier Free), BRG (Bearing), CJ (Control Joint), CLG (Ceiling), CMU (Concrete Masonry Unit), CO (Cleanout), CONC (Concrete), CONCT (Construction), CONT (Cont), DIA (Diameter), DN (Down), DSP (Downspout), EF (Exhaust Fan), EL (Elevation), EJ (Expansion Joint), EQ (Equal), EWC (Electric Water Cooler), FD (Floor Drain), FE (Fire Extinguisher), FEC (Fire Extinguisher & Cabinet), FRT (Fire Retardant Treated), FT (Foot/Feet), GA (Gauge), GALV (Galvanized), GC (General Contractor), HB (Hose Bibb), HP (High Point), HORIZ (Horizontal), HIAC (Heating Ventilating Air Conditioning), ID (Inside Diameter), IE (Invert Elevation), IN (Inches), INSUL (Insulation), LAV (Lavatory), LED (Light Emitting Diode), LH (Long Leg Horizontal), LLV (Long Leg Vertical), LP (Low Point), MFR (Manufacturer), MAX (Maximum), MEZZ (Mezzanine), MIN (Minimum), MO (Masonry Opening), MTD (Mounted), NA (Not Applicable), NC (Noise Criteria), NIC (Not in Contract Number), NR (Noise Reduction), NTS (Not to Scale), OC (On Center), OD (Outside Diameter), OH (Over Head), OPP (Opposite), ORD (Overflow Roof Drain), PERP (Perpendicular), PL (Plate), PPF (Pounds Per Square Foot), PSF (Pounds Per Square Inch), PVC (Polyvinyl Chloride), RAD (Radius), REQD (Required), RFD (Roof Drain), ROOF (Roof Opening), SCHED (Schedule), SF (Square Feet), SIM (Similar), SP (Space/Spacing), SQ (Square), SS (Stainless Steel), STD (Standard), TAN (Tangent), TOW (Top of Wall), TYP (Typical), UL (Underwriters Laboratory), UNO (Unless Noted Otherwise), VERT (Vertical), VTR (Vent Through Roof), WI (With), WC (Water Closet), WH (Water Heater), WO (Without), WP (Waterproof), WT (Weight).

**SUBMITTALS**

WHEN THE PROJECT DOCUMENTS CALL FOR SUBMITTALS, THE FOLLOWING SHALL APPLY:

- 1. SUBMITTAL SCHEDULE: CONTRACTOR TO PROVIDE ARCHITECT WITH SUBMITTAL SCHEDULE PRIOR TO FIRST PAY APPLICATION...
2. QUANTITY AND PROCEDURE: SHOP DRAWINGS, PRODUCT DATA AND LITERATURE...
3. CONTRACTOR REVIEW: REVIEW EACH SUBMITTAL AND CHECK FOR COORDINATION WITH OTHER WORK...
4. ARCHITECT / ENGINEER REVIEW: SHOP DRAWINGS AND SUBMITTALS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW...
5. TIMEFRAME: ALLOW ENOUGH TIME FOR SUBMITTAL REVIEW...
6. DEVIATIONS: HIGHLIGHT, ENIRCLE, OR OTHERWISE SPECIFICALLY IDENTIFY DEVIATIONS...
7. DESIGN CHANGES: SHOULD CHANGES MADE BY ARCHITECT...
8. OUT OF STOCK / OUT OF PRODUCTION: NOTIFY ARCHITECT IMMEDIATELY...
9. SUBSTITUTIONS: REQUEST FOR SUBSTITUTION OF MATERIALS OR COMPONENTS...

**REQUEST FOR INFORMATION (RFI)**

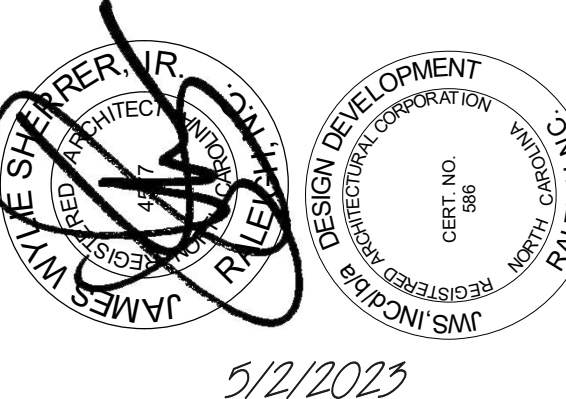
- 1. SUBMIT REQUESTS FOR INFORMATION BY EMAIL TO THE ARCHITECT.
2. EACH REQUEST SHALL BE INDIVIDUALLY NUMBERED.
3. ONLY ONE QUESTION PER RFI IS ALLOWED.
4. SUBMIT RFI ON ELECTRONIC FORM PROVIDED BY ARCHITECT.
5. FORM MUST BE FULLY COMPLETED TO BE ACCEPTED BY ARCHITECT.

**GENERAL PROJECT NOTES & REQUIREMENTS**

- 1. BUILDING CODES: ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH CURRENT APPLICABLE BUILDING CODES...
2. ADDITIONAL STANDARDS: ALL WORK RELATING TO THIS CONSTRUCTION SHALL COMPLY WITH U.S. DEPARTMENT OF LABOR...
3. THE PROJECT DOCUMENTS: DO NOT SCALE DRAWINGS IN THE DOCUMENTS.
4. DRAWINGS ARE IN PART DIAGRAMMATIC AND DO NOT NECESSARILY SHOW COMPLETE DETAILS...
5. DIMENSIONS: INTERIOR DIMENSIONS ARE FROM FACE OF GYP BOARD...
6. NECESSARY PARTS, PIECES, LABOR, & COMPONENTS: CONTRACTOR SHALL PROVIDE ALL NECESSARY PARTS...
7. KNOX BOX: PROVIDE APPROVED KNOX BOX FOR PROJECTS THAT REQUIRE IT...
8. RECORD DRAWINGS: THE CONTRACTOR SHALL PREPARE AND MAINTAIN A COMPLETE SET OF RECORD CONSTRUCTION DRAWINGS...
9. PERSPECTIVE RENDERINGS AND PRESENTATION RENDERINGS: ALL PERSPECTIVE RENDERINGS AND PRESENTATION RENDERINGS...
10. CONTRACTOR DESIGNED: CONSTRUCTION METHODS AND MATERIALS NOT EXPLICITLY INDICATED OR IMPLIED...
11. CONTRACTOR REVIEW AND COORDINATION: THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL CAREFULLY REVIEW...
12. CONTRACTOR WARRANTY: UNLESS OTHERWISE INDICATED, CONTRACTOR IS TO PROVIDE WRITTEN WARRANTY...
13. RATED PENETRATIONS: ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS...
14. PROJECT WORKMANSHIP: WORKMANSHIP SHALL BE FIRST-CLASS AND PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN...
15. MATERIAL INSTALLATION STANDARDS: ALL MATERIAL SHALL BE INSTALLED ACCORDING TO INDUSTRY STANDARDS...
16. CUTTING AND PATCHING: CONTRACTOR IS TO INCLUDE ALL CUTTING AND PATCHING FOR PENETRATIONS...
17. UNFORESEEN CONDITIONS: SHOULD UNFORESEEN CONDITIONS BE ENCOUNTERED...
18. DEFINED WORDS: IN THE PROJECT DOCUMENTS, THE TERM 'PROVIDE' SHALL MEAN 'TO FURNISH AND INSTALL'.
19. CHANGES TO THE DESIGN: ONLY THE ARCHITECT HAS THE AUTHORITY TO CHANGE THE DESIGN.

**MISCELLANEOUS PROJECT LABOR AND MATERIALS TO BE PROVIDED BY CONTRACTOR**

- 1. WOOD BLOCKING: CONTRACTOR SHALL PROVIDE WOOD BLOCKING AS NECESSARY TO ADEQUATELY SUPPORT MOUNTED FINISHES...
2. ACCESS PANELS: ACCESS PANELS (2'x2') SHALL BE PROVIDED IN ALL GYP BOARD PARTITIONS...
3. FIRE EXTINGUISHERS: PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY LOCAL CODE...
4. NECESSARY PARTS, PIECES, LABOR, & COMPONENTS: CONTRACTOR SHALL PROVIDE ALL NECESSARY PARTS...
5. KNOX BOX: PROVIDE APPROVED KNOX BOX FOR PROJECTS THAT REQUIRE IT...
6. TERMITES TREATMENT: PROVIDE SOIL TREATMENT FOR TERMITE CONTROL...
7. SUB-GRADE WATERPROOFING: PROVIDE ROLLER APPLIED WATERPROOFING SYSTEM...
8. BUILDING THERMAL INSULATION: WHETHER SPECIFICALLY DETAILED OR NOT, PROVIDE THERMAL INSULATION...
9. CONCRETE FLOOR SLAB PREPARATION: CONCRETE FLOOR SLABS SHALL BE INSTALLED AND FINISHED AS REQUIRED...
10. JOINT SEALERS: PROVIDE ALL JOINT SEALERS REQUIRED TO INSURE A WEATHERTIGHT BUILDING ENVELOPE...



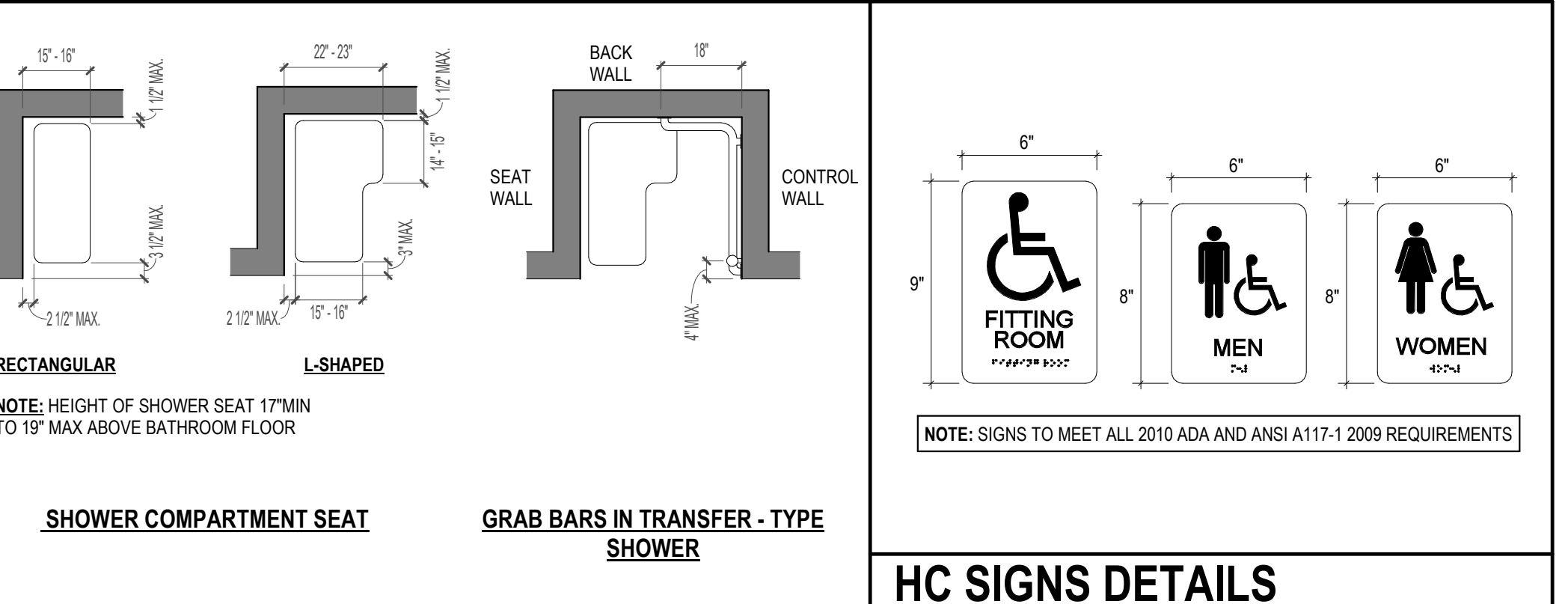
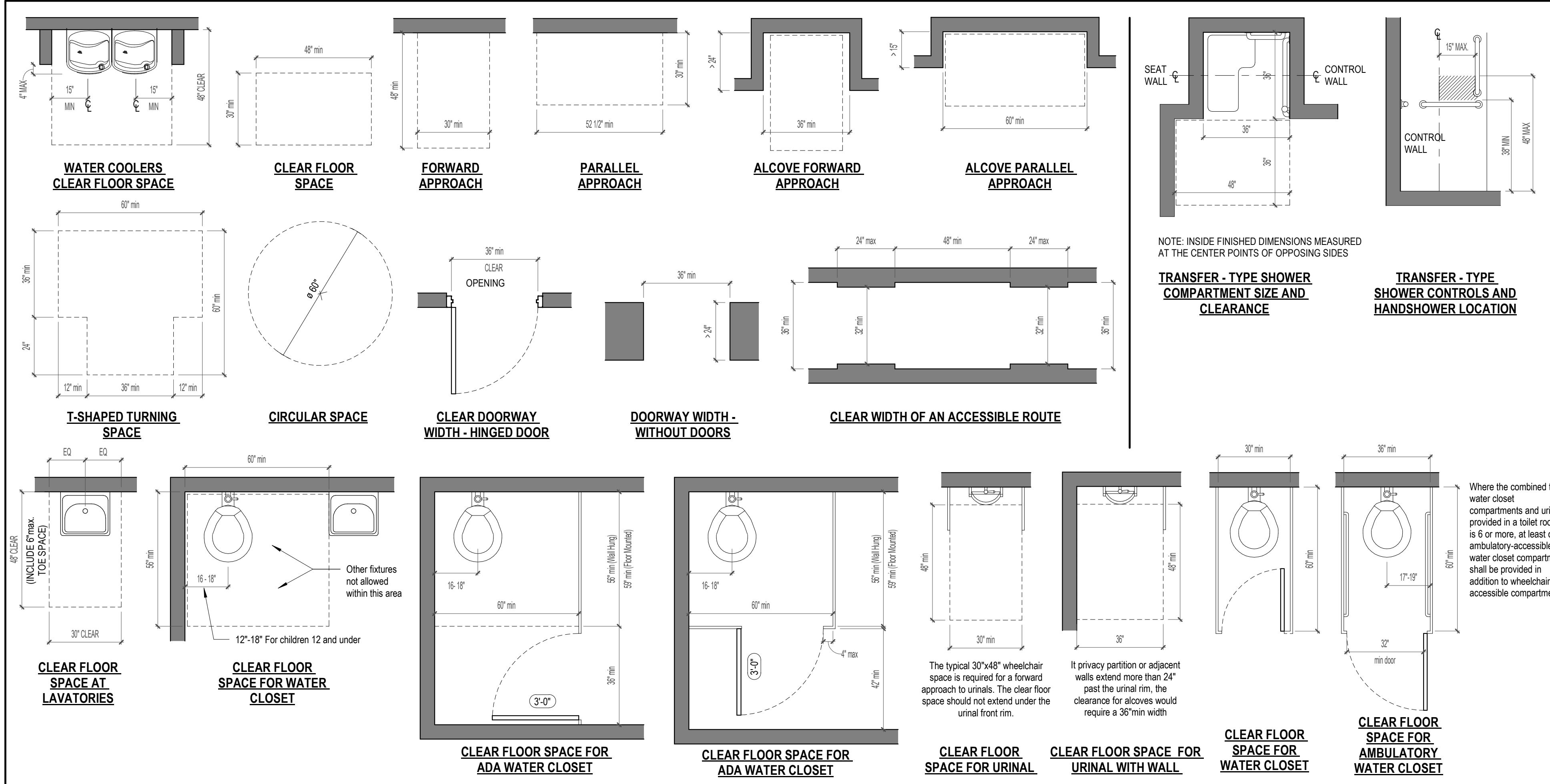
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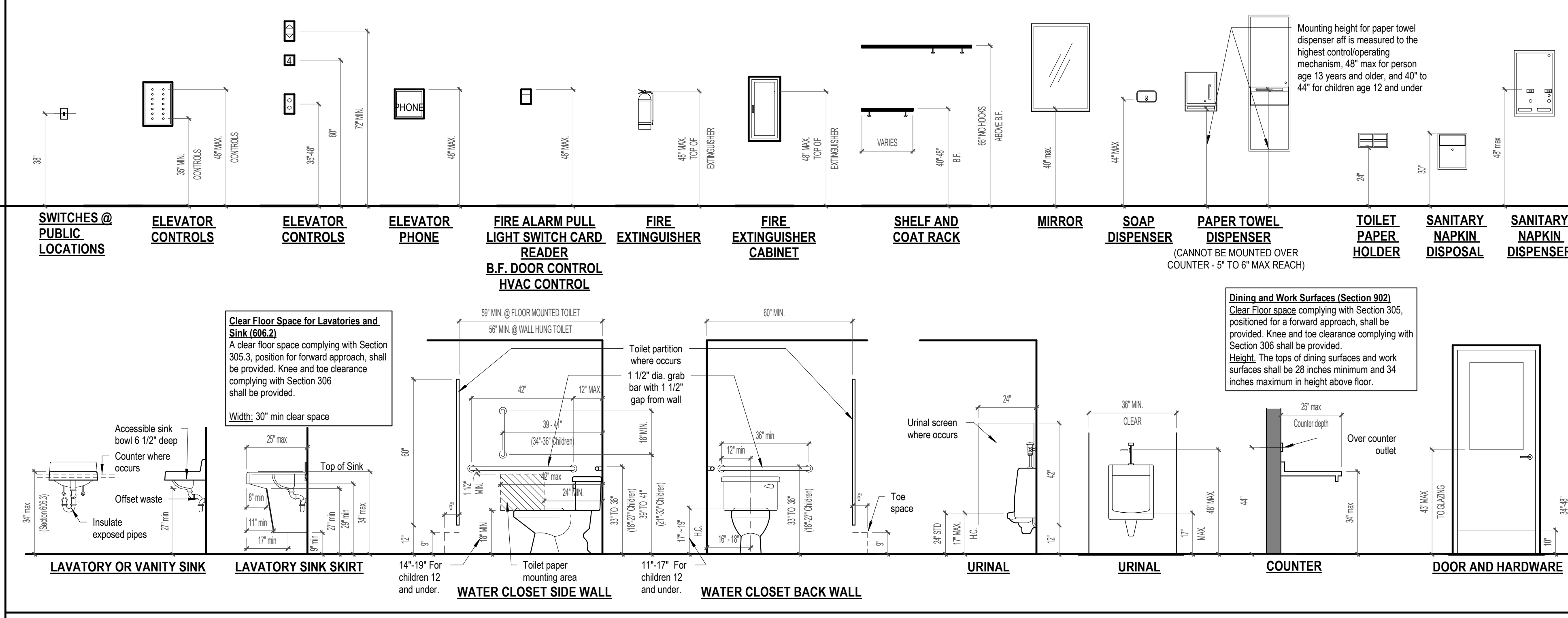
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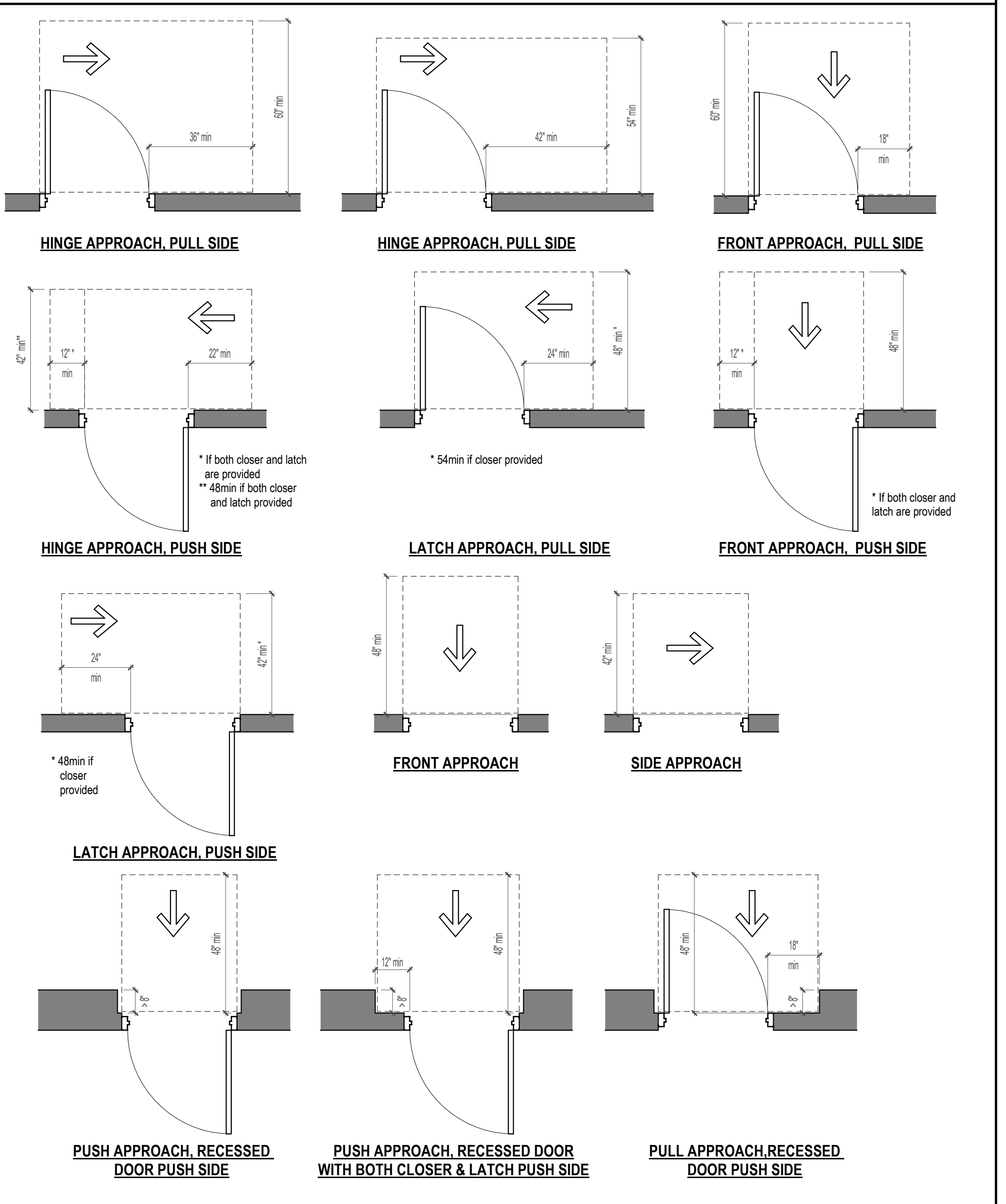
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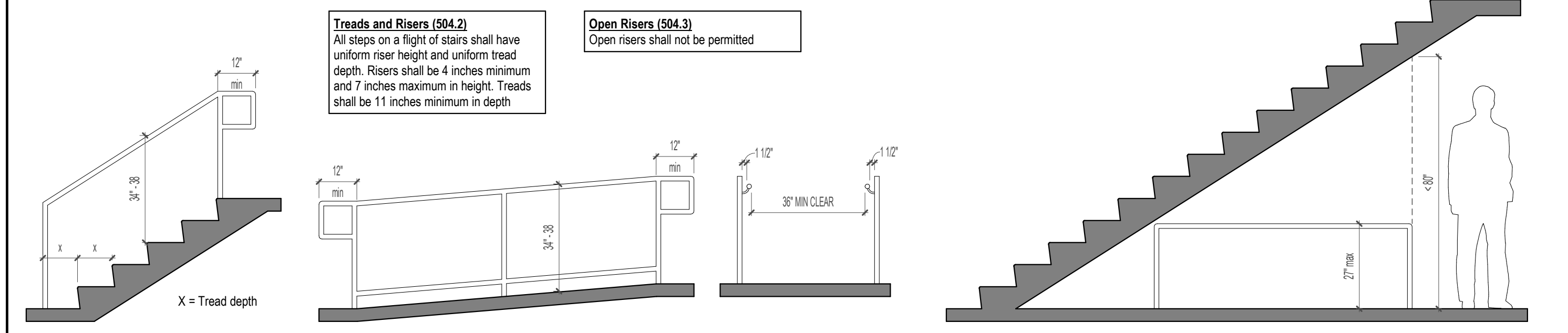
**FLOOR CLEARANCE**



**DOOR CLEARANCE**



**ACCESSIBLE HEIGHTS**



**LIMITS OF PROTRUDING OBJECTS**



**DOOR CLEARANCE**



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ARCHITECTURAL MATERIAL SPECIFICATIONS

CATEGORY	TYPE	SYMBOL	MATERIAL	MANUFACTURER	SPECIFICATION	SAMPLES, DATA, AND MOCK-UPS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING:	REQUIRED SHOP DRAWINGS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING:	REQUIRED PRE-INSTALLATION MEETINGS ON SITE WITH CONTRACTOR, SUBCONTRACTOR, AND ARCHITECT	GENERAL NOTES	
MASONRY	BRICK	BRICK-1	BRICK-1	TBD	<p><b>COLOR/STYLE:</b> FIELD VERIFY AND MATCH EXISTING BUILDING-A SANCTUARY BRICK FOR COLOR, SIZE, AND STYLE.</p> <p><b>UNIT SIZE:</b> MODULAR 7-5/8" LONG x 2-1/4" TALL x 3-5/8" WIDE</p> <p><b>COURSES:</b> RUNNING BOND (TYP)</p> <p><b>ACCESSORIES:</b> PROVIDE ALL ACCESSORIES, BRICK TIES, AND WEEPS AS REQUIRED FOR A COMPLETE INSTALLATION.</p> <p><b>MORTAR COLOR:</b> PROVIDE MORTAR TO MATCH EXISTING BUILDING-A SANCTUARY FOR COLOR AND TOOLING. MORTAR ASSUMED TO BE A STANDARD COLOR.</p> <p><b>EXPANSION JOINT SEALANT:</b> PROVIDE COLOR TO MATCH BRICK COLOR AND SHALL BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD RANGE. (CUSTOM COLOR NOT INTENDED).</p>	<p><b>SAMPLES:</b> PRIOR TO CONSTRUCTING MOCK-UP, SUBMIT MANF. SAMPLES OF THE FOLLOWING TO BE APPROVED:</p> <ol style="list-style-type: none"> <li>BRICK</li> <li>MORTAR SAMPLE (STANDARD RANGE)</li> <li>EXPANSION JOINT SEALANT COLOR CARD (STANDARD RANGE)</li> <li>STONE VENEER STONE-1, 2, AND 3</li> <li>PRECAST CONCRETE</li> </ol>	NO	NO	<p><b>GENERAL NOTES:</b></p> <p>(1) ONLY THE ARCHITECT HAS THE AUTHORITY TO CHANGE THE DESIGN.</p> <p>(2) ALL SUBSTITUTIONS TO BE SUBMITTED IN WRITING TO THE ARCHITECT FOR APPROVAL.</p> <p>(3) "PROVIDE" OR "PROVIDED" SHALL MEAN FURNISHED AND INSTALLED BY THE CONTRACTOR</p> <p>(4) STANDARD SHOP DRAWING REVIEW TIME IS 15-DAYS PER TRADE UNDER REVIEWED</p> <p>(5) NOTIFY ARCHITECT OF MATERIALS OUT OF PRODUCTION/OUT OF STOCK FOR ALTERNATE SPEC.</p> <p>(6) THE ITEMS LISTED AND SPECIFIED ON THIS PAGE AND IN THE DRAWINGS SHALL TAKE PRECEDENCE OVER CONFLICTING INFORMATION IN THE WRITTEN BOOK SPECIFICATIONS (TYP)</p> <p>(7) APPROVED EQUALS: FOR EVERY ITEM LISTED IN THIS TABLE, APPROVED EQUAL PRODUCTS AND MANUFACTURERS ARE ALSO ACCEPTABLE</p> <p>(8) FOLLOW ALL MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND REQUIREMENTS</p> <p>(9) THE MATERIALS LISTED IN THESE SPECIFICATION CHARTS DO NOT CONSTITUTE ALL OF THE PRODUCTS REQUIRED FOR THE PROJECT.</p>	
							<p><b>MOCK UP EXTERIOR WALL PANELS:</b></p> <p><b>SAMPLE PANEL-1 (BRICK):</b> INCLUDE: METAL STUDS EXTERIOR SHEATHING WEATHER BARRIER &amp; ALL ACCESSORIES AIR SPACE MASONRY WALL TIES BRICK MASONRY UNITS &amp; MORTAR MASONRY JOINTS AND JOINT SEALANT MASONRY ACCESSORIES</p> <p><b>NOTE:</b> ARCHITECT'S WRITTEN APPROVAL OF SAMPLE PANELS REQUIRED</p>			
ROOFING	SHINGLES	ROOF-1	FIBERGLASS	GAS CORNING OR EQUAL	<p><b>TYPE:</b> MATCH EXISTING</p> <p><b>COLOR:</b> MATCH EXISTING</p>	<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>30 YEAR WARRANTY</li> <li>FLASH PER MANUFACTURER'S INSTRUCTIONS</li> <li>PROVIDE COMPATIBLE SEALANT AS REQUIRED AT WHERE PRODUCT MEET OTHER BUILDING MATERIALS.</li> <li>INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY STANDARDS.</li> </ol>	YES, MANUFACTURER'S DATA AND WARRANTY	NO	NO	
WEATHER BARRIER	BUILDING WRAP	WEATHER BARRIER		DUPONT	<p><b>TYPE:</b> TYPYK COMMERCIAL WRAP-D</p> <p><b>ACCESSORIES:</b></p> <ol style="list-style-type: none"> <li>PROVIDE ALL TRIM AND FLASHING REQUIRED FOR A WATERTIGHT INSTALLATION.</li> <li>TYPYK TAPE TO BE INSTALLED AT ALL BUILDING WRAP SEAMS</li> <li>TYPYK WRAP CAPS TO SECURE BUILDING WRAP</li> </ol> <p><b>FLASHING SYSTEMS:</b></p> <ol style="list-style-type: none"> <li>"FLEXWRAP NF" TO BE INSTALLED AT SILLS, HEADS, AND PENETRATIONS</li> <li>"STRAIGHTFLASH" TO BE INSTALLED AT JAMBS AND HEADS</li> </ol>	<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>PROVIDE COMPATIBLE SEALANT AS REQUIRED AT WHERE PRODUCT MEET OTHER BUILDING MATERIALS.</li> <li>INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY STANDARDS.</li> </ol>	YES PRODUCT DATA, ON SYSTEM MATERIALS, PRODUCT CHARACTERISTICS, AND PERFORMANCE CRITERIA.	NO	NO	<p><b>MOCK UP:</b> INCORPORATE INTO SAMPLE PANELS DESCRIBED ABOVE.</p>
SHEATHING	EXTERIOR SHEATHING	SHEATHING	GYPSUM	GEORGIA PACIFIC	<p><b>TYPE:</b> DENSGLASS SHEATHING - COORDINATE EXACT MANF. PRODUCT SPECIFICATION WITH APPLICATION SHOWN IN DRAWINGS</p> <p><b>THICKNESS:</b> SEE STRUCTURAL PER STRUCTURAL DRAWINGS AND AS RECOMMENDED BY MANF. BASED ON PROPOSED USE</p> <p><b>ATTACHMENT:</b></p>		YES PRODUCT DATA, ON SYSTEM MATERIALS, PRODUCT CHARACTERISTICS, AND PERFORMANCE CRITERIA.	NO	NO	<p><b>MOCK UP:</b> INCORPORATE INTO SAMPLE PANELS DESCRIBED ABOVE.</p>
BUILDING INSULATION	ROOF INSULATION	RIGID INSULATION	CONTINUOUS RIGID INSULATION TAPERED	OWENS CORNING	<p><b>THICKNESS:</b> AS REQUIRED FOR SLOPE</p> <p><b>R-VALUE:</b> NO MIN. - NOT USED TO MEET ENERGY CODE</p> <p><b>ATTACHMENT:</b> MECHANICALLY FASTENED OR ADHERED</p>	<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>MINIMUM OF 6-INCH THICKNESS FOR ALL TAPERED INSULATION ABOVE HEATED SPACE (TYP)</li> <li>MINIMUM OF 1-INCH THICKNESS FOR ALL TAPERED INSULATION ON EXTERIOR CANOPIES OR ABOVE UNHEATED SPACE (TYP)</li> <li>MINIMUM ROOF SLOPE 1/4-INCH PER FOOT.</li> </ol>	NO	NO	NO	
	WALL INSULATION	BATT INSULATION	FIBERGLASS BATT INSULATION	OWENS CORNING	<p><b>EXTERIOR WALLS:</b></p> <p><b>THICKNESS:</b> 6-INCH</p> <p><b>R-VALUE:</b> R19</p> <p><b>FACING:</b> UNFACED</p> <p><b>INTERIOR WALLS:</b></p> <p><b>THICKNESS:</b> 3-5/8 INCH</p> <p><b>R-VALUE:</b> NONE REQUIRED</p> <p><b>FACING:</b> UNFACED</p> <p><b>PROPERTIES:</b> ACOUSTICAL INSULATION</p>	<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>ALL EXTERIOR METAL STUD WALL CAVITIES SHALL BE INSULATED FROM GROUND FLOOR SLAB CONTINUOUSLY UP TO ROOF DECK INSULATION (TYP)</li> </ol>	NO	NO	NO	
METAL TRIM	METAL COPING	METAL COPING		BY CEO	<p><b>COLOR:</b> TO BE SELECTED FROM MANUFACTURER'S "STANDARD COLORS" CHART AS SHOWN AND IMPLIED IN THE DRAWINGS</p> <p><b>SIZE:</b> AS RECOMMENDED BY SMACNA FOR THE INTENDED USE</p> <p><b>THICKNESS:</b> INCLUDE MANUFACTURER'S MITERS, TRANSITIONS, ENDCAPS, AND END WALL FLASHING</p> <p><b>ACCESSORIES:</b></p>					
	DOWNSPOUTS	DS1		BY CEO	<p><b>MATERIAL:</b> PREFINISHED ALUMINUM</p> <p><b>COLOR:</b> MATCH EXISTING</p> <p><b>SIZE:</b> MATCH EXISTING</p>		NO	NO	NO	

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PROJECT #: 210029  
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 ARCHITECTURAL SPECS

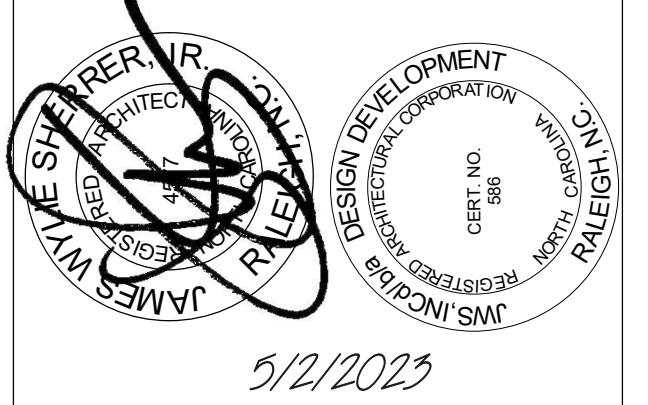
ARCHITECTURAL MATERIAL SPECIFICATIONS (CONT.)

	TYPE	SYMBOL	MATERIAL	MANUFACTURER	MODEL / STYLE	COLOR	SIZES / SPECS	NOTES	SAMPLES, DATA, AND MOCK-UPS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING	REQUIRED SHOP DRAWINGS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING	REQUIRED PRE-INSTALLATION MEETINGS ON SITE WITH CONTRACTOR, SUBCONTRACTOR, AND ARCHITECT	GENERAL NOTES
FLOORING	CARPET	CPT-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	NO. IF: APPROVED SAMPLE MATERIAL BOARD IS ON SITE FOR MEETING	NO	FLOORING MATERIALS MEETING: A JOB SITE MEETING SHALL BE SCHEDULED BY THE G.C. WITH THE ARCHITECT AND SUBCONTRACTOR TO REVIEW FLOORING SAMPLES, THRESHOLD AND TRANSITION CONDITIONS, AND FINAL COLOR SELECTIONS. G.C. SHALL FURNISH A SAMPLE OF EACH OF THE MATERIALS REQUESTED TO THE LEFT FOR THE MEETING.	
	CARPET	CPT-2										
	CARPET	CPT-3										
	CARPET	CPT-4										
FLOORING	RESILIENT TILE	LVT-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	NO. IF: APPROVED SAMPLE MATERIAL BOARD IS ON SITE FOR MEETING	NO	FLOORING MATERIALS MEETING: A JOB SITE MEETING SHALL BE SCHEDULED BY THE G.C. WITH THE ARCHITECT AND SUBCONTRACTOR TO REVIEW FLOORING SAMPLES, THRESHOLD AND TRANSITION CONDITIONS, AND FINAL COLOR SELECTIONS. G.C. SHALL FURNISH A SAMPLE OF EACH OF THE MATERIALS REQUESTED TO THE LEFT FOR THE MEETING.	
	RESILIENT TILE	LVT-2										
FLOORING	PORCELAIN TILE	PT-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	NO. IF: APPROVED SAMPLE MATERIAL BOARD IS ON SITE FOR MEETING	NO	FLOORING MATERIALS MEETING: A JOB SITE MEETING SHALL BE SCHEDULED BY THE G.C. WITH THE ARCHITECT AND SUBCONTRACTOR TO REVIEW FLOORING SAMPLES, THRESHOLD AND TRANSITION CONDITIONS, AND FINAL COLOR SELECTIONS. G.C. SHALL FURNISH A SAMPLE OF EACH OF THE MATERIALS REQUESTED TO THE LEFT FOR THE MEETING.	
	PORCELAIN TILE	PT-2										
TRIM & TRANSITIONS	RUBBER BASE	RB-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SAMPLE OF THE THRESHOLD PROFILE, AND (1) SAMPLE OF THE TRANSITION PROFILE TRIM IN COLOR SPECIFIED (MIN. 12" LONG)	NO	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	RUBBER BASE	RB-2										
	RUBBER STAIR TREAD & RISER	RT-1										
TRIM & TRANSITIONS	WOOD TRIM	WB-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SAMPLE OF THE PROFILE, STAINED (MIN. 12" LONG)	NO	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	WOOD TRIM	WB-2										
PAINTS AND WOOD STAINS	PAINT COLORS	P-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SAMPLE OF EACH SURFACE TO BE PAINTED/STAINED. (MIN. 12"x12")	NO	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	PAINT COLORS	P-2										
PAINTS AND WOOD STAINS	WOOD STAINS	WDST-1						<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SAMPLE OF EACH SURFACE TO BE PAINTED/STAINED. (MIN. 12"x12")	NO	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	WOOD STAINS	WDST-1										
DOORS & WINDOWS	WOOD DOORS	SCWD	SOLID CORE WOOD DOORS - (PREFINISHED)	GRAHAM WOOD DOORS	GRAHAM PREMIUM GRADE ARCHITECTURAL WOOD DOOR (COLOR AND STYLE INTENDED TO MATCH EXISTING WOOD DOORS AT THE CAMPUS)			<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SCWD DOOR PANEL, 12"x12" OR SIMILAR SIZED SAMPLE OF PREFINISHED SCWD IN THE MATERIAL AND FINISH SPECIFIED	YES CONTRACTOR SHALL SCHEDULE A "KEYING" COORDINATION MEETING WITH OWNER AND ARCHITECT PRIOR TO ORDERING	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	HOLLOW METAL DOORS AND HOLLOW METAL FRAMES	HM	HOLLOW METAL DOORS	CONTRACTOR RECOMMENDATION	DOORS: FACTORY PRIMED & FIELD PAINTED HOLLOW METAL DOOR FRAMES: FACTORY PRIMED & FIELD PAINTED HOLLOW METAL FRAME WELDED STYLE FRAME IN MASONRY WALLS "KNOCK-DOWN" FRAMES IN STUD WALLS							
	ALUMINUM DOORS, WINDOWS, STOREFRONT, & CURTAIN WALL	ALUM		YKK	AS INDICATED & IMPLIED ON THE DRAWINGS EXTERIOR CURTAIN WALL: YKK AP - YCW 750 OQ/SSG 1-INCH GLAZING (x2 PANES) EXTERIOR STOREFRONT: YKK AP - YES 45 TU WITH THERMAL SILL 1-INCH GLAZING (x2 PANES) INTERIOR STOREFRONT: YKK AP - YES 45 FS 1/4-INCH OR 3/8-INCH GLAZING (x1 PANE) WINDOW ACCESSORIES: IF NEEDED FOR THE PROJECT, PROVIDE ALL EXTENSION CLIPS AND ANCHORS NECESSARY TO POSITION THE STOREFRONT AND CURTAIN WALL PRODUCTS IN THE WALL ASSEMBLY, AND EXTENDED AWAY FROM THE WALL ASSEMBLY, AS INDICATED OR IMPLIED ON THE DRAWINGS.							
WINDOW SILLS	SOLID SURFACE	--	SOLID SURFACE	WILSONART SOLID SURFACE	TBD	STANDARD 1.5-IN THICKNESS		<b>TO BE SELECTED BY ARCHITECT &amp; INTERIOR DESIGNER</b>	YES SUBMIT (1) SAMPLE (MIN. 4"x4")	NO	(SEE GENERAL NOTES ON PREVIOUS PAGE)	
	STAINED, SOLID WOOD	--	STAINED, SOLID WOOD	TBD	TBD	STANDARD 1.5-IN THICKNESS						

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ARCHITECTURAL SPECS

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ARCHITECTURAL MATERIAL SPECIFICATIONS (CONT.)

TYPE	SYMBOL	MATERIAL	MANUFACTURER	MODEL / STYLE	COLOR	SIZES / SPECS	NOTES	SAMPLES, DATA, AND MOCK-UPS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING:	REQUIRED SHOP DRAWINGS ARCHITECT'S APPROVAL REQUIRED FOR THE FOLLOWING:	REQUIRED PRE-INSTALLATION MEETINGS ON SITE WITH CONTRACTOR, SUBCONTRACTOR, AND ARCHITECT	GENERAL NOTES
STAIRS AND RAILINGS	STEEL RAILINGS	STEEL		FABRICATED AS INDICATED ON THE DRAWINGS	TBD			NO	YES INDICATE PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS, AND ACCESSORIES	NO	
	STEEL STAIRS	STEEL & CONCRETE									
CEILINGS	GYPSUM				MUDDED & TAPED PER UL REQUIREMENTS		SEE DRAWINGS FOR ADDITIONAL DETAILS & OVERALL LAYOUT.	NO	NO	NO	
	ACOUSTICAL TILE CEILINGS (ACT)						SEE DRAWINGS FOR ADDITIONAL DETAILS & OVERALL LAYOUT.				
							SEE DRAWINGS FOR ADDITIONAL DETAILS & OVERALL LAYOUT.				
ELEVATOR	HYDRAULIC ELEVATOR	ELEVATOR	CONTRACTOR OPTION	MODEL: 330A HOLELESS HYDRAULIC ELEVATOR GENERAL PURPOSE, SINGLE JACK, FRONT OPENING, 2100LB CAPACITY (OR EQUAL) FIXTURES: JAMB MOUNTED (NOT WALL MOUNTED) HANDRAIL OPTION: #4 STAINLESS FLAT BARS ENTRANCES & TRIM: #4 STAINLESS FOR ALL COMPONENTS			CAB DOORS ALL SURFACES #4 STAINLESS STEEL CAB THRESHOLD & SILLS: ALUMINUM CAB FLOORING: VCT-1 AS SPECIFIED ABOVE MAIN EGRESS FLOOR: 1ST FLOOR CAB WALL PANELS: PLASTIC LAMINATE - TO BE SELECTED BY ARCHITECT	NO	YES STANDARD MANF. SHOP DRAWING PACKAGE	NO	
STAIRS AND RAILINGS	STEEL RAILINGS	(RS) STEEL		FABRICATED AS INDICATED ON THE DRAWINGS	PAINTED WITH "PAINT-3"		SEE DRAWINGS FOR ADDITIONAL DETAILS & OVERALL LAYOUT.	NO	YES INDICATE PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS, AND ACCESSORIES		
	STEEL STAIRS	STEEL & CONCRETE		AS DESCRIBED ON THE DRAWINGS ALL STAIRS TO BE OPEN RISER STYLE. BACK EDGE OF TREAD SHALL BE CONSTRUCTED AS TO PREVENT A 4" SPHERE FROM PASSING THRU OPEN RISERS (TYP)				NO	YES INDICATE PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS, AND ACCESSORIES	YES CONTRACTOR SHALL SCHEDULE A COORDINATION MEETING WITH ARCHITECT AND SUBCONTRACTOR PRIOR TO FABRICATION	

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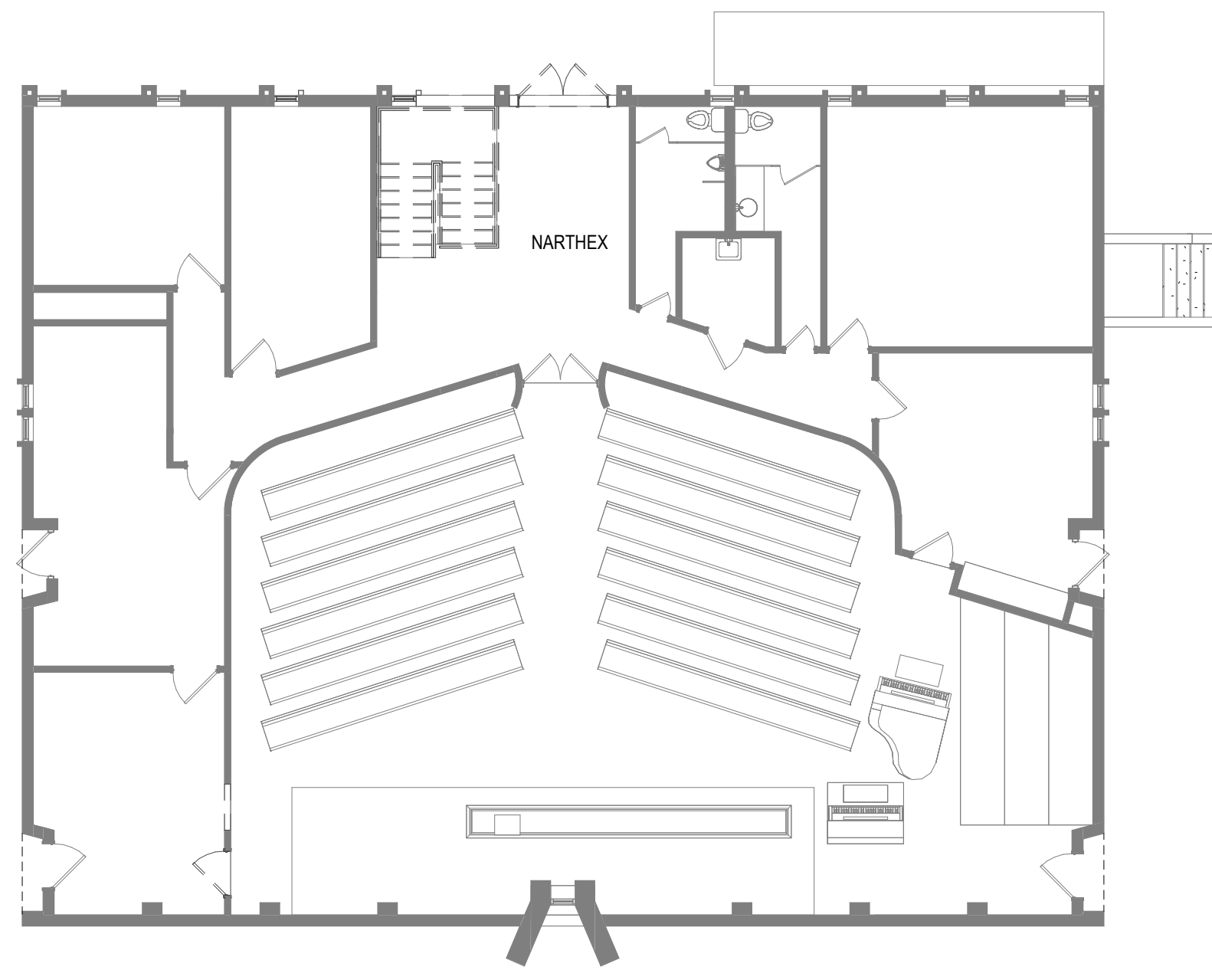
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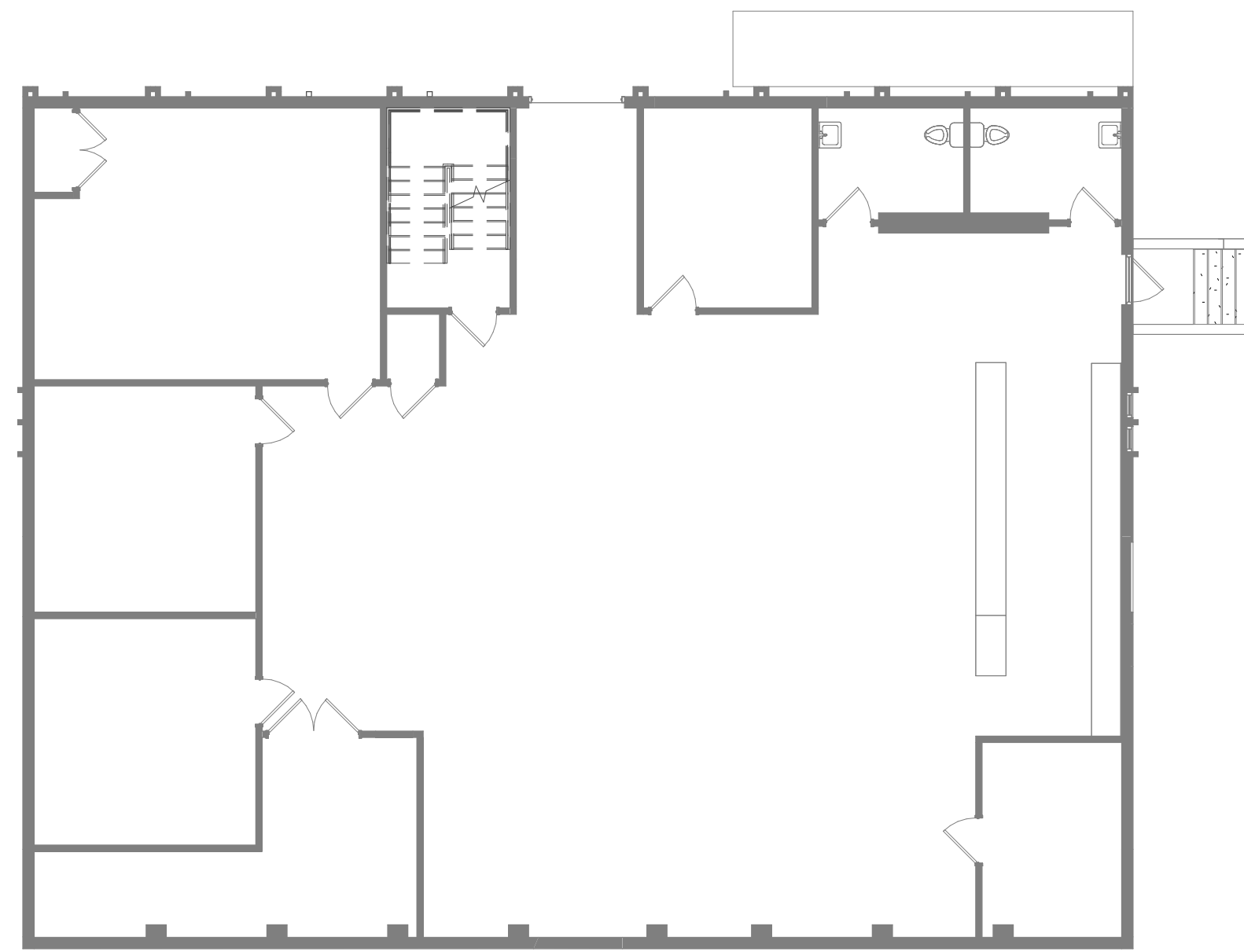
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 ARCHITECTURAL SPECS

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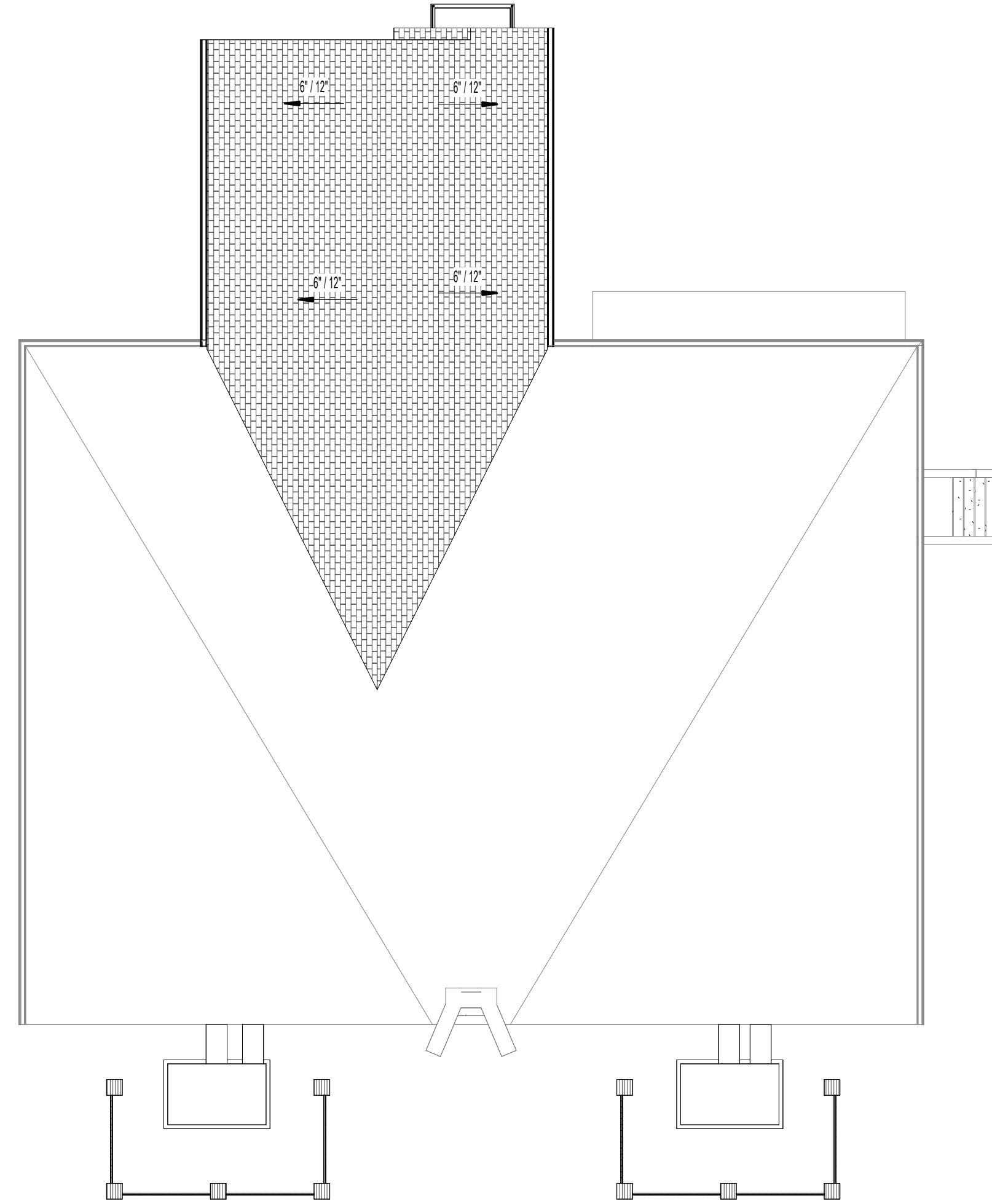
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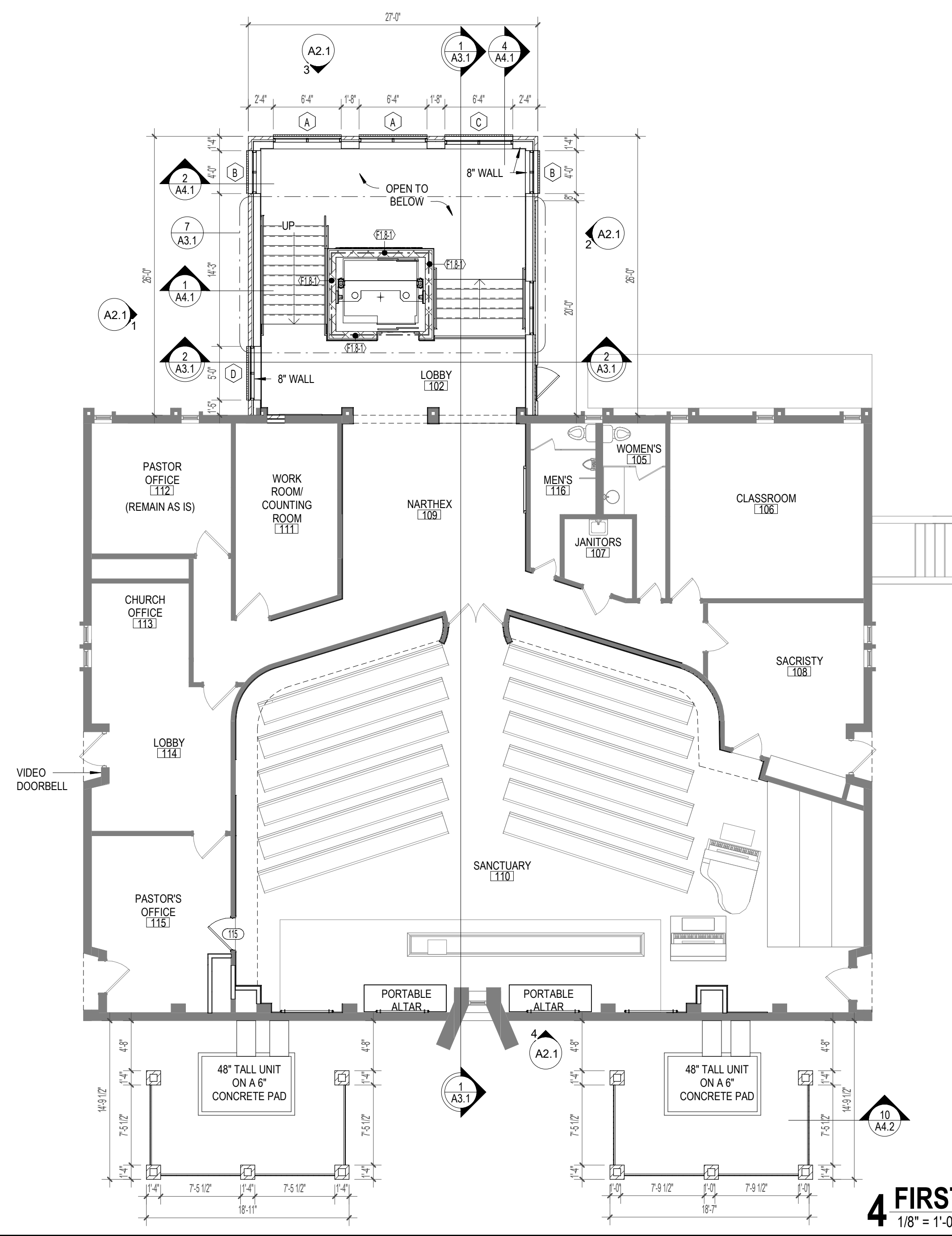
**7 Demo 1-Level - Phase 1**  
1" = 10'-0"



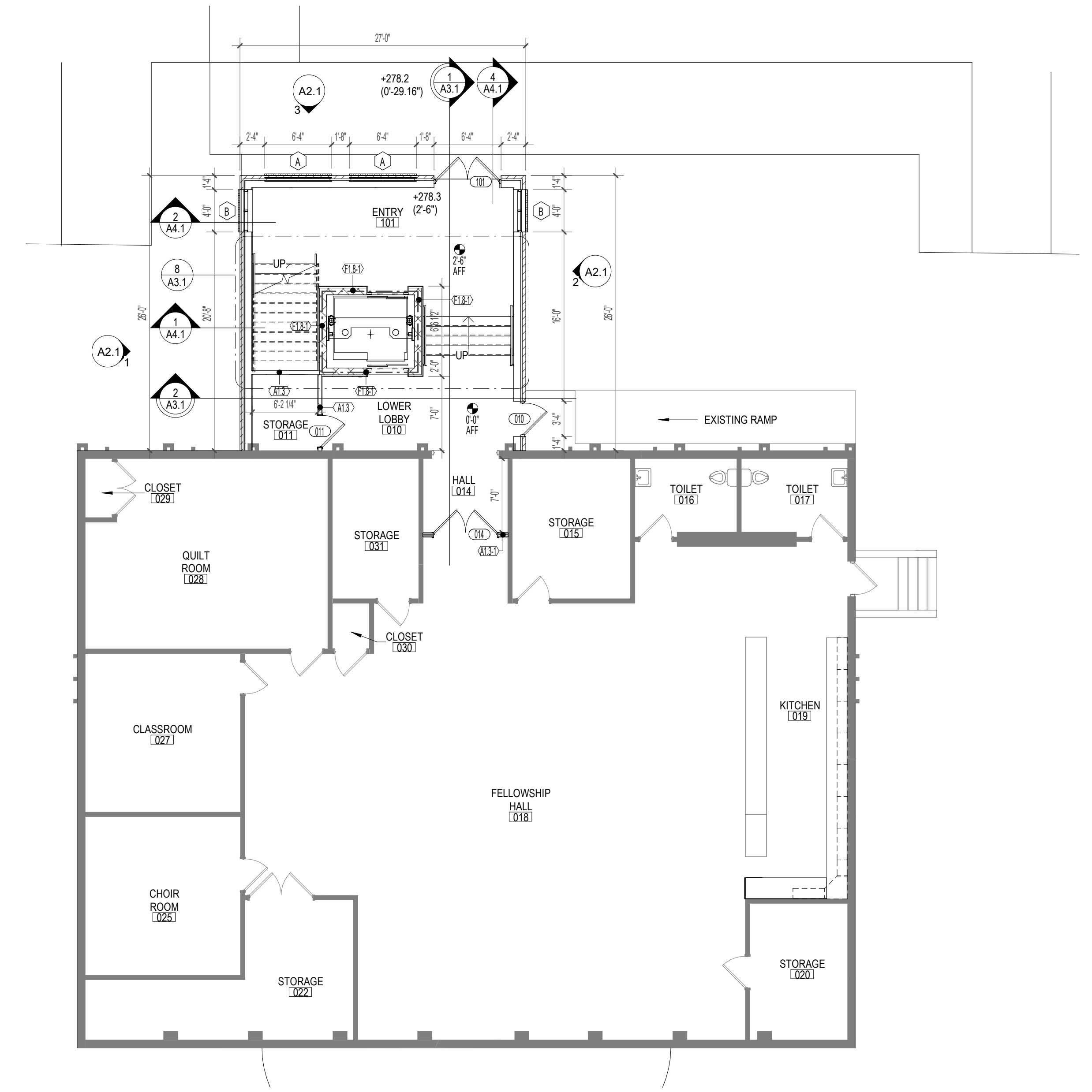
**6 Demo - 0 - BASEMENT - Phase 1**  
1" = 10'-0"



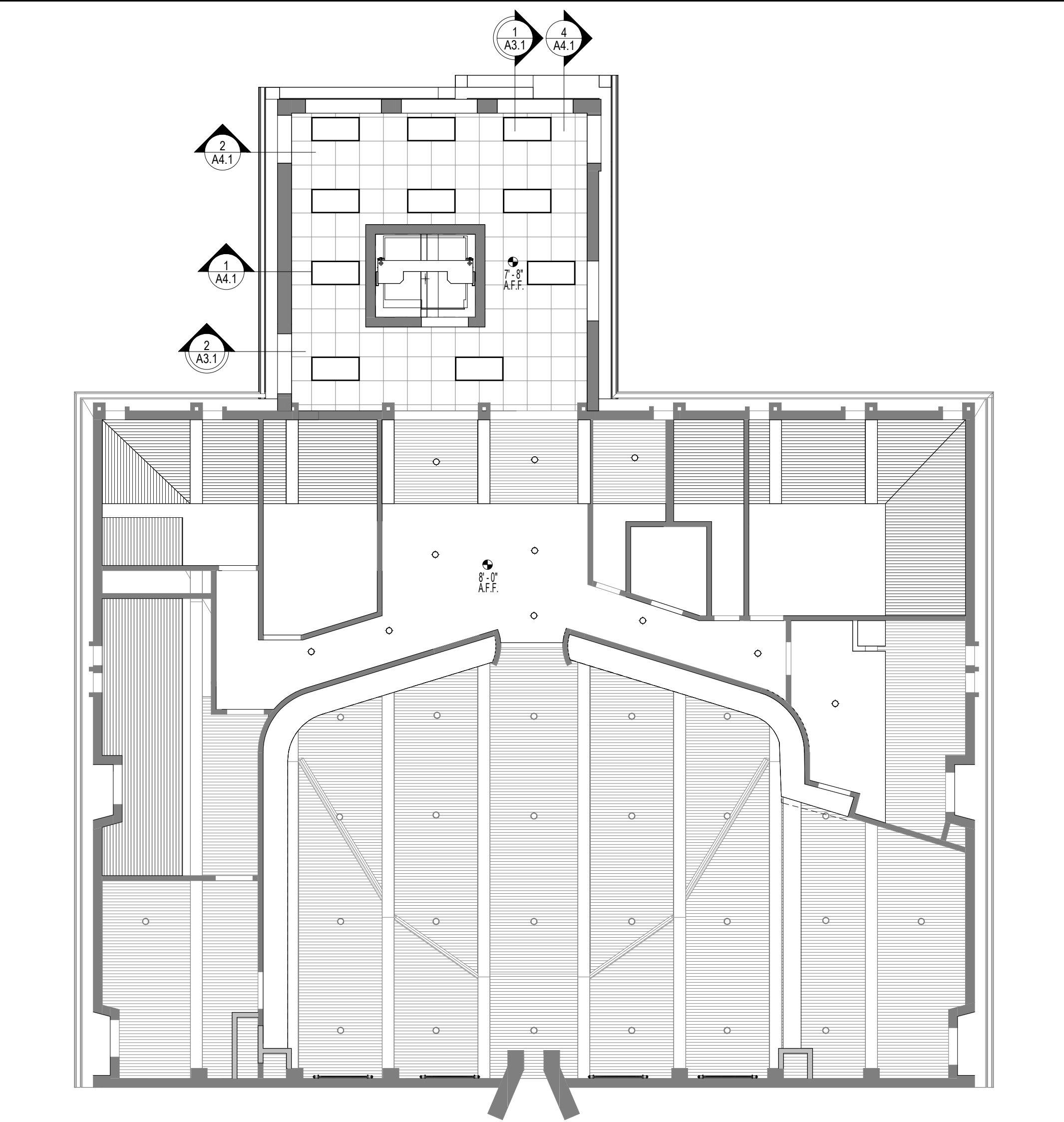
**5 Phase 1 - 2- Roof Plan**  
1" = 10'-0"



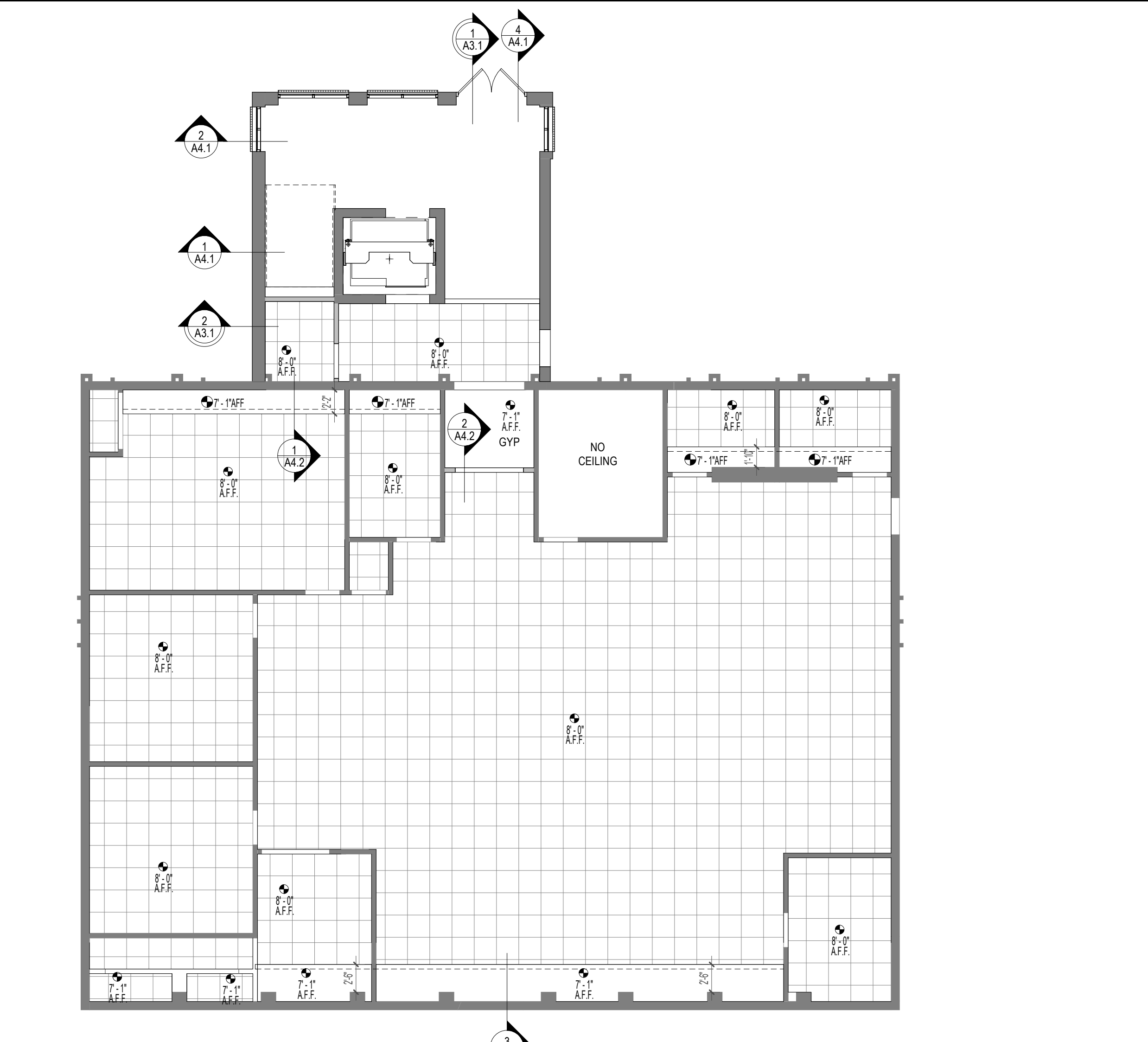
**4 FIRST FLOOR PLAN**  
1/8" = 1'-0"



**2 BASEMENT PLAN**  
1/8" = 1'-0"



**3 FIRST FLOOR RCP**  
1/8" = 1'-0"



**1 BASEMENT RCP**  
1/8" = 1'-0"

WALL CONSTRUCTION TYPE						HEAD CONDITION			MEMBER SIZES												HOURLY WALL RATING			
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>1</b>	<b>2</b>	<b>3</b>	0	1	2	3	4	5	6	7	8	10	12	-1	-2	-3	-4	
ACOUSTICAL INSULATION MTL STD 1 LAYERS 5/8" GYP BOARD EACH SIDE	ACOUSTICAL INSULATION MTL STD 1 LAYERS 5/8" GYP BOARD MTL STD	ACOUSTICAL INSULATION WOOD STD 1 LAYERS 5/8" GYP BOARD EACH SIDE	ACOUSTICAL INSULATION WOOD STD 1 LAYERS 5/8" GYP BOARD MTL STD	CMU	1 LAYERS 5/8" GYP BOARD MTL STD 1 1/2" FURRING STRIP CMU	BOTTOM OF STRUCTURE	EXTEND PARTITION ABOVE FINISH CEILING LINE LINE OF CEILING	HEIGHT AS DETAILED	Metal	7/8"	1 5/8"	1 1/2"	1 3/8"	1 1/2"	5 1/2"	7 1/2"	8"	10"	12"	(1 HOUR RATING - SEE UL DETAILS)	(2 HOUR RATING - SEE UL DETAILS)	(3 HOUR RATING - SEE UL DETAILS)	(4 HOUR RATING - SEE UL DETAILS)	

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5/2/2023

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
1615 NC-54  
DURHAM, NC 27713

No.	Description	Date

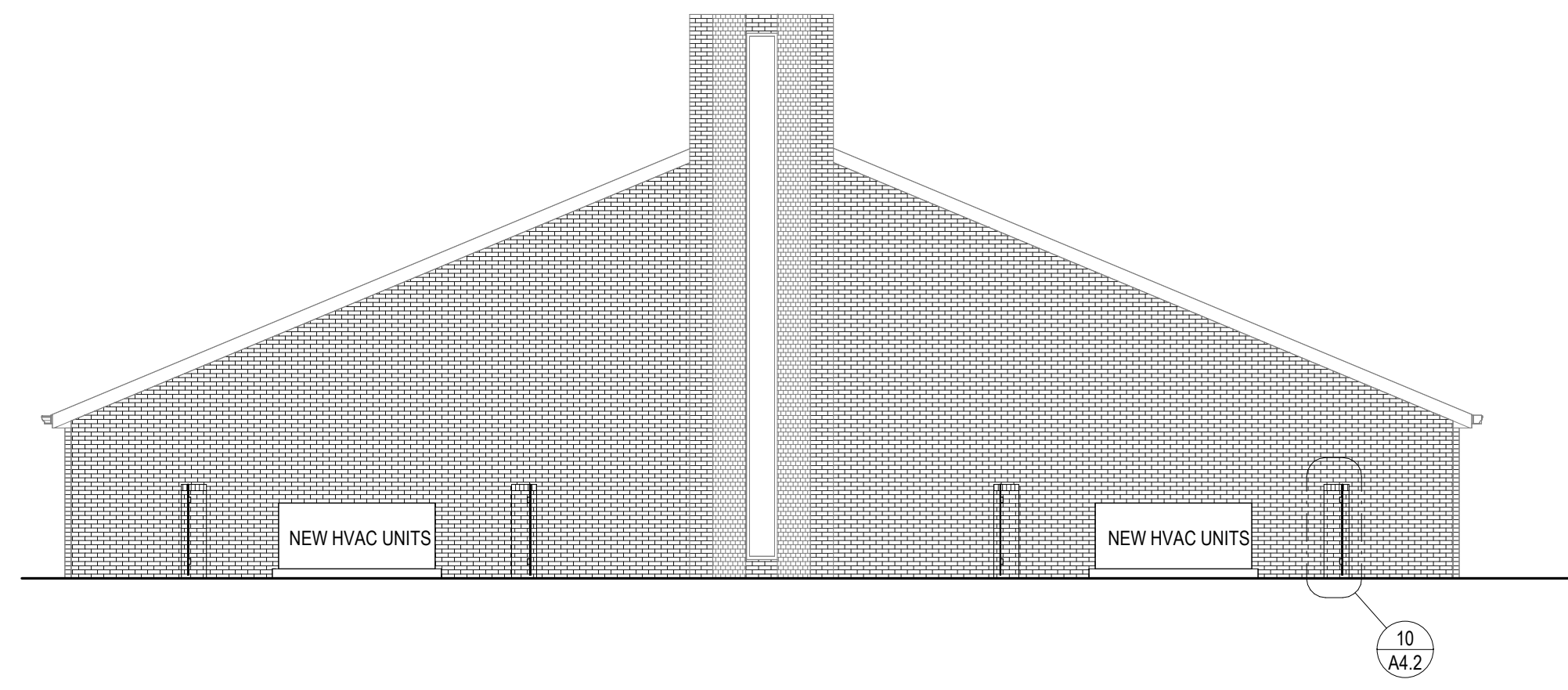
PROJECT #: 210029  
DATE: 5/2/2023

FLOOR, REFLECTED CEILING AND ROOF PLANS

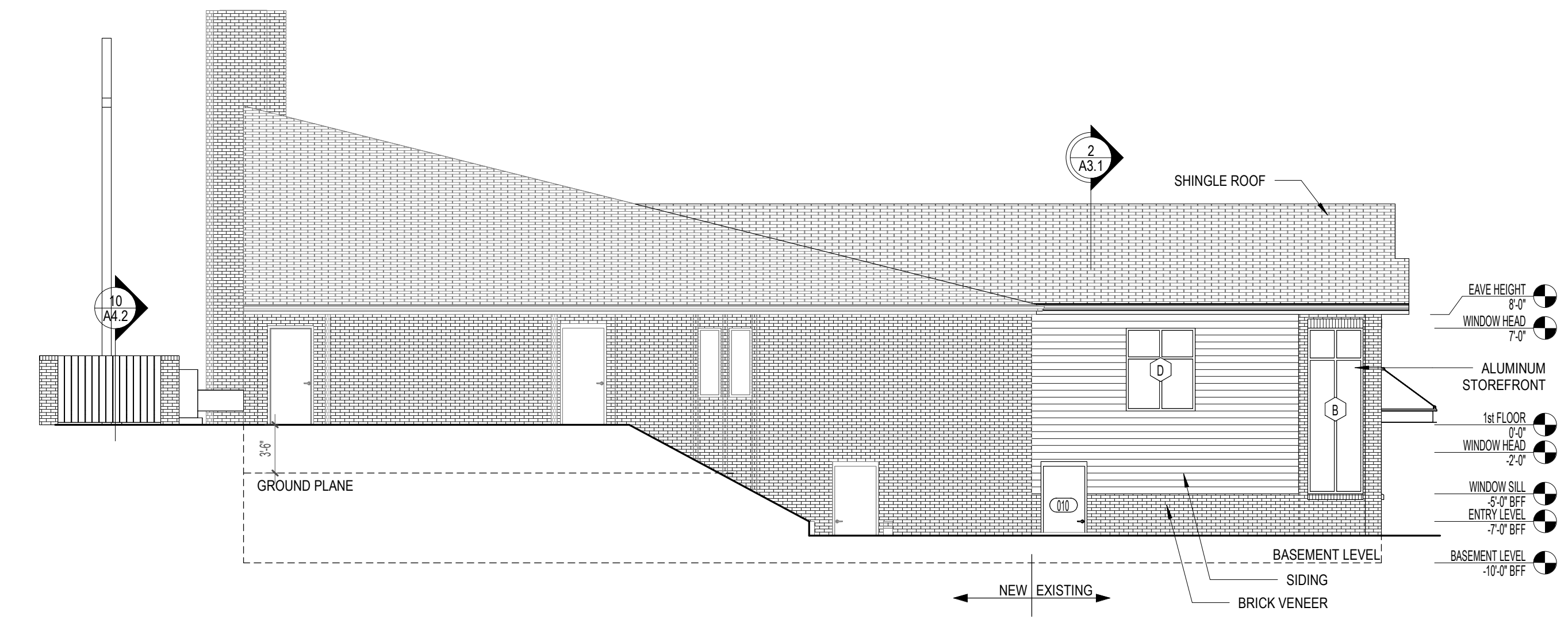
**A1.1**

1/4" = 1' = 1/2" = 2'

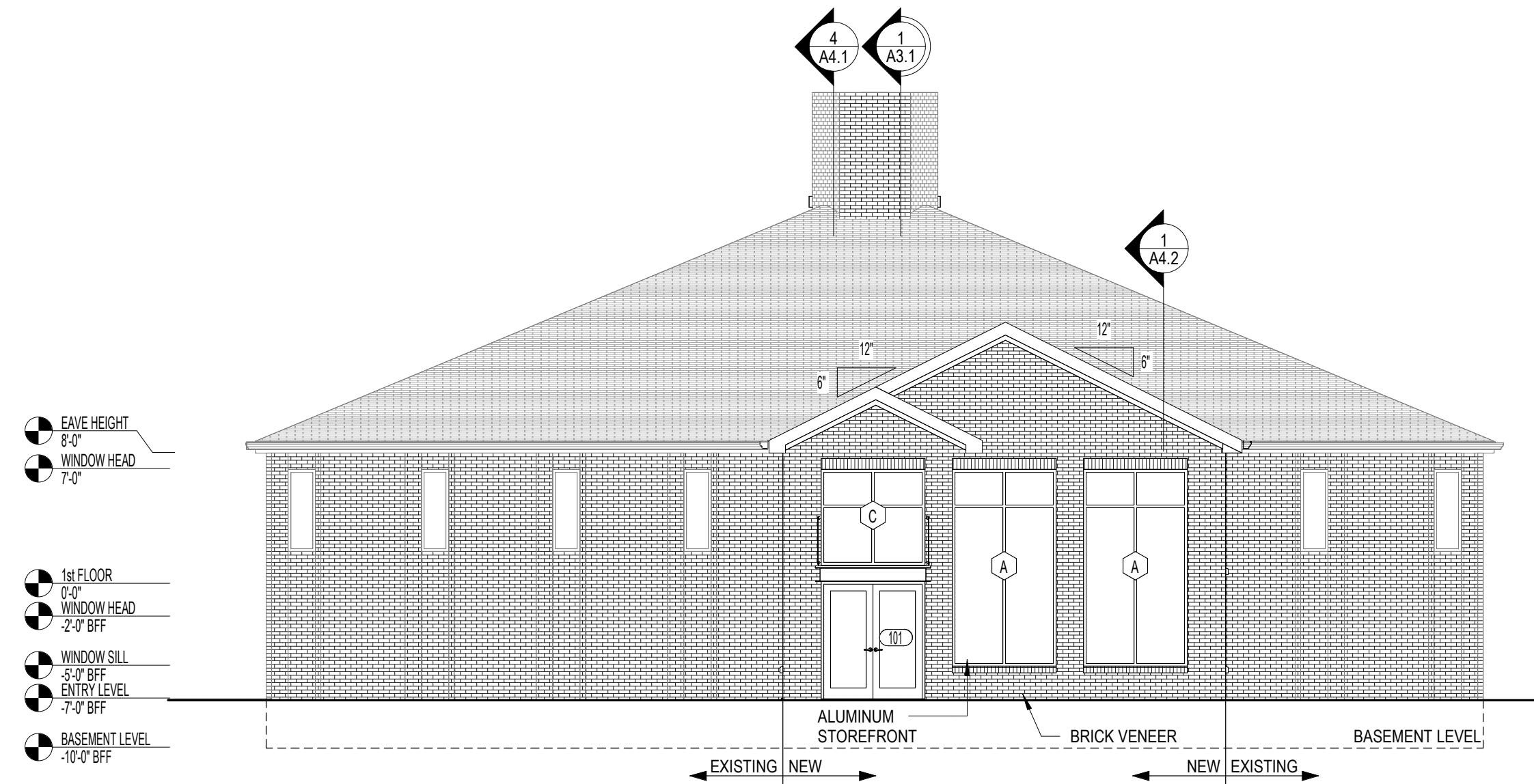
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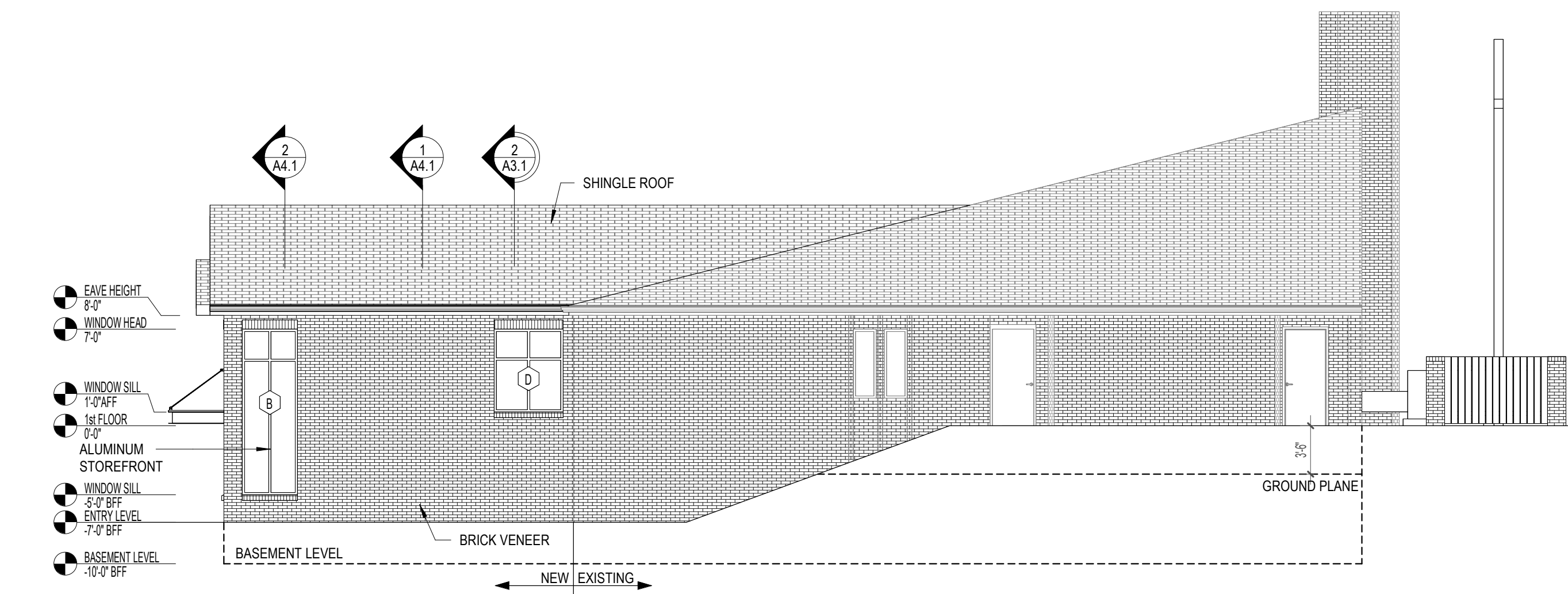
**4 PHASE 1 - FRONT ELEVATION**  
1/8" = 1'-0"



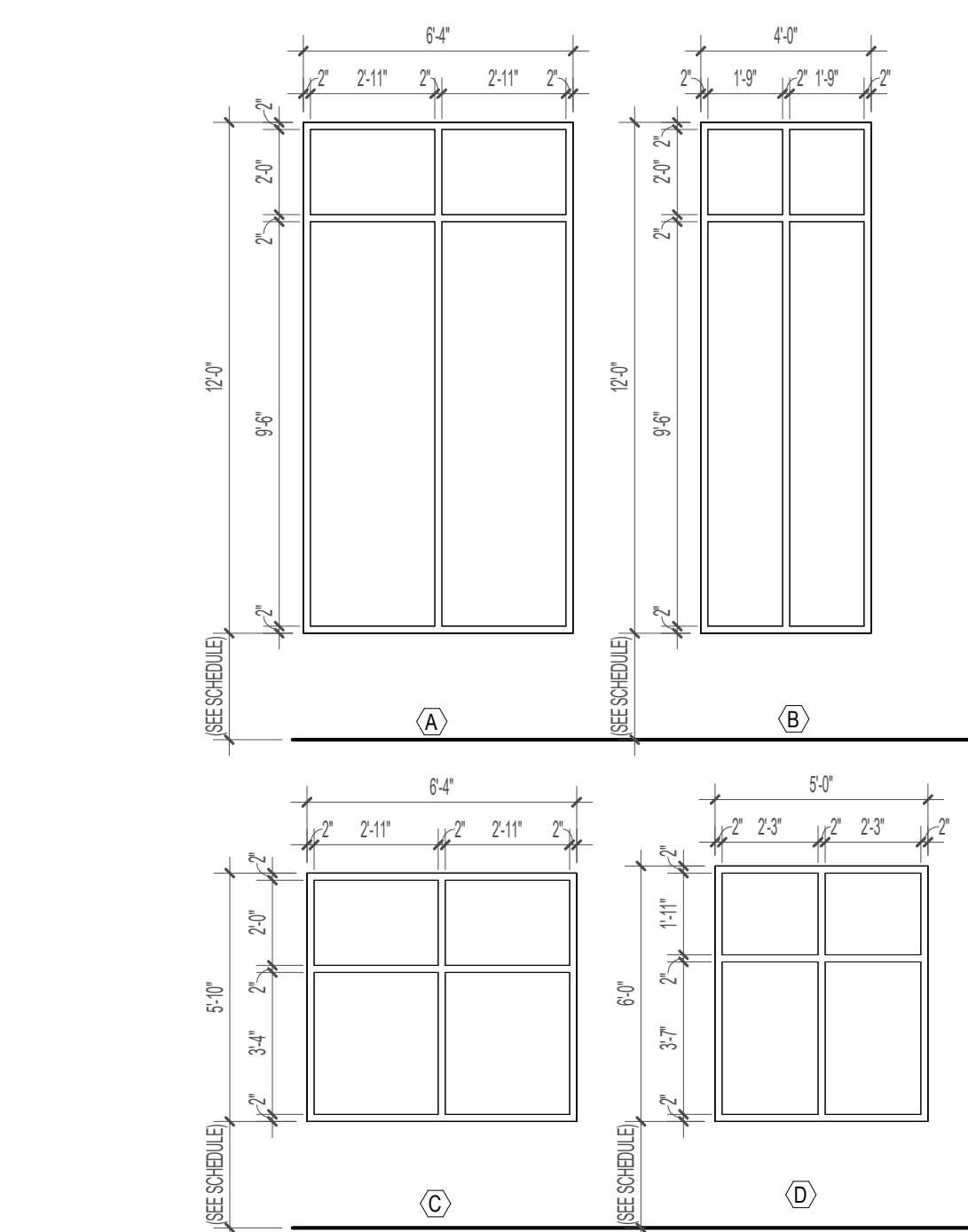
**2 PHASE 1 - RIGHT ELEVATION**  
1/8" = 1'-0"



**3 PHASE 1 - REAR ELEVATION**  
1/8" = 1'-0"



**1 PHASE 1 - LEFT ELEVATION**  
1/8" = 1'-0"

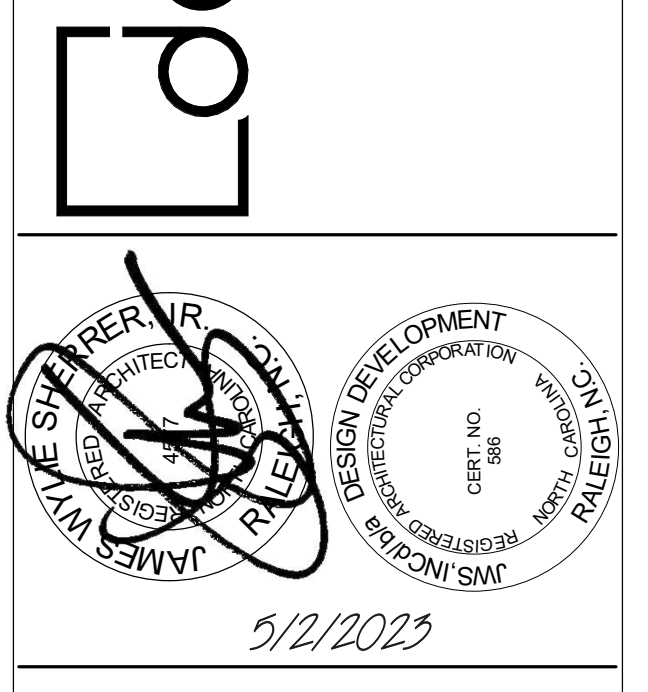


**ELEVATIONS - WINDOW**  
1/4" = 1'-0"

Door Schedule (PHASE 1)											
No.	Qty.	DOOR			TYPE	FRAME		W/Ship	THRES	CLOSERS	NOTES
		PANEL	W	H		T	MATL				
D10	1	3'-0"	7'-0"	1'-3/4"	H.M.	H.M.					
D11	1	3'-0"	7'-0"	1'-3/4"	P01	S.C.WD.	F01	H.M.			
D14	2	6'-0"	7'-0"	1'-3/4"	P03	S.C.WD.	F01	H.M.			
D17	2	6'-0"	7'-0"	1'-3/4"	P02	H.M.	F02	H.M.	Yes	Yes	20 MIN
D15	1	3'-0"	7'-0"	1'-3/4"	P01	S.C.WD.	F01	H.M.			ELEVATOR DOOR
ELEV.	1	3'-0"	7'-6"	1'-3/4"							ELEVATOR DOOR
ELEV.	1	3'-0"	7'-6"	1'-3/4"							ELEVATOR DOOR

Window Schedule						
No.	Qty.	Description	Height	Width	Sill Height	Comments
A	2	ALUMINUM STOREFRONT	144"	76"	24"	
B	2	ALUMINUM STOREFRONT	144"	48"	60"	
C	1	ALUMINUM STOREFRONT	70"	76"	14"	
D	2		72"	60"	12"	

Room Finish Schedule (PHASE 1)						
No.	Name	Wall	Floor	Base	Ceiling	Remarks
010	LOWER LOBBY	PNTD GYP	LVT	VINYL	ACT	
011	STORAGE	PNTD GYP	CONC	VINYL	ACT	
014	HALL	PNTD GYP	LVT	VINYL	ACT	
015	STORAGE	PNTD GYP	VCT	VINYL	ACT	
016	TOILET	PNTD GYP	VCT	VINYL	ACT	
017	TOILET	PNTD CMU/GYP	VCT	VINYL	ACT	
018	FELLOWSHIP HALL	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
019	KITCHEN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
020	STORAGE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
021	CLOSET	PNTD GYP	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
022	STORAGE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
023	CLOSET	PNTD GYP	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
024	CLOSET	PNTD GYP	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
025	CHOR ROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
026	CLOSET	PNTD GYP	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
027	CLASSROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
028	QUILT ROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
029	CLOSET	PNTD GYP	ACT	VINYL	ACT	
030	CLOSET	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
031	STORAGE	PNTD CMU	LVT	VINYL	ACT	
101	ENTRY	PNTD GYP	LVT	VINYL	ACT	
102	LOBBY	PNTD GYP	LVT	VINYL	ACT	
105	WOMEN'S	PNTD GYP	CONC	VINYL	ACT	
106	CLASSROOM	PNTD GYP	LVT	VINYL	ACT	
107	JANITORS	PNTD GYP	LVT	VINYL	ACT	
108	SACRISTY	PNTD GYP	LVT	VINYL	ACT	
109	NARTHEX	PNTD GYP	LVT	VINYL	ACT	
110	SANCTUARY	PNTD GYP	LVT	VINYL	EXISTING TO REMAIN	
111	WORK ROOM/ COUNTING ROOM	PNTD GYP	ACT	VINYL	ACT	
112	PASTOR OFFICE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
113	CHURCH OFFICE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
114	LOBBY	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
115	PASTOR'S OFFICE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	
116	MENS	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	

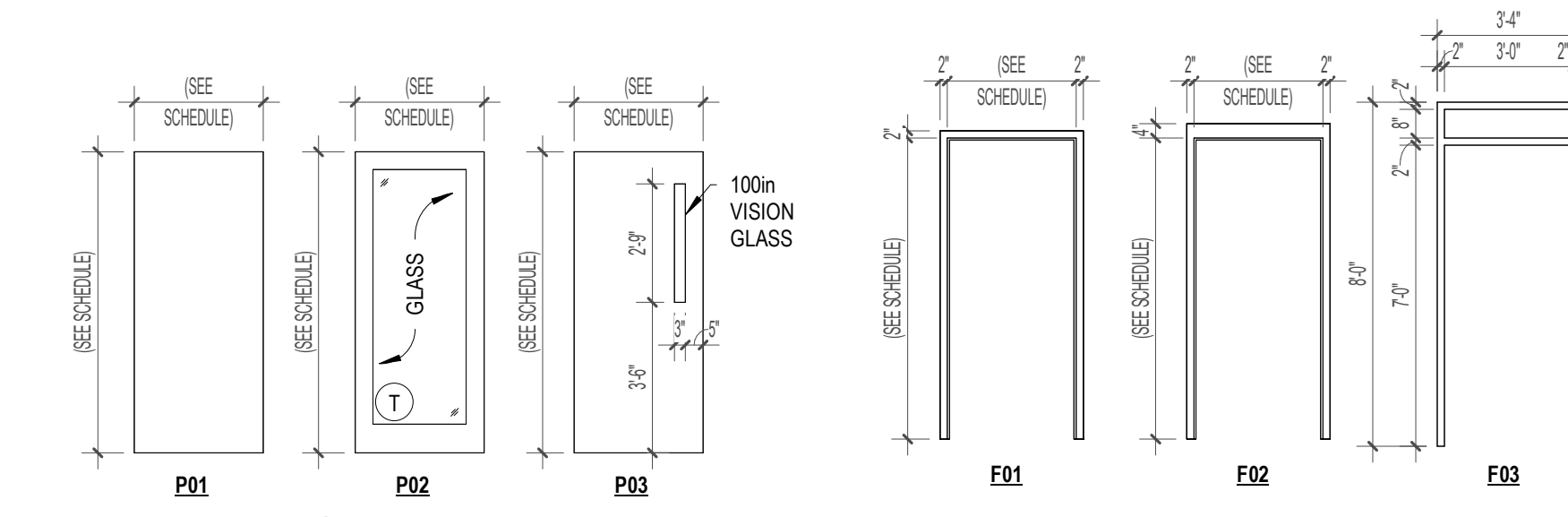


No.	Description	Date

PROJECT #: 210029  
DATE: 5/2/2023  
ELEVATIONS & SCHEDULES

**A2.1**

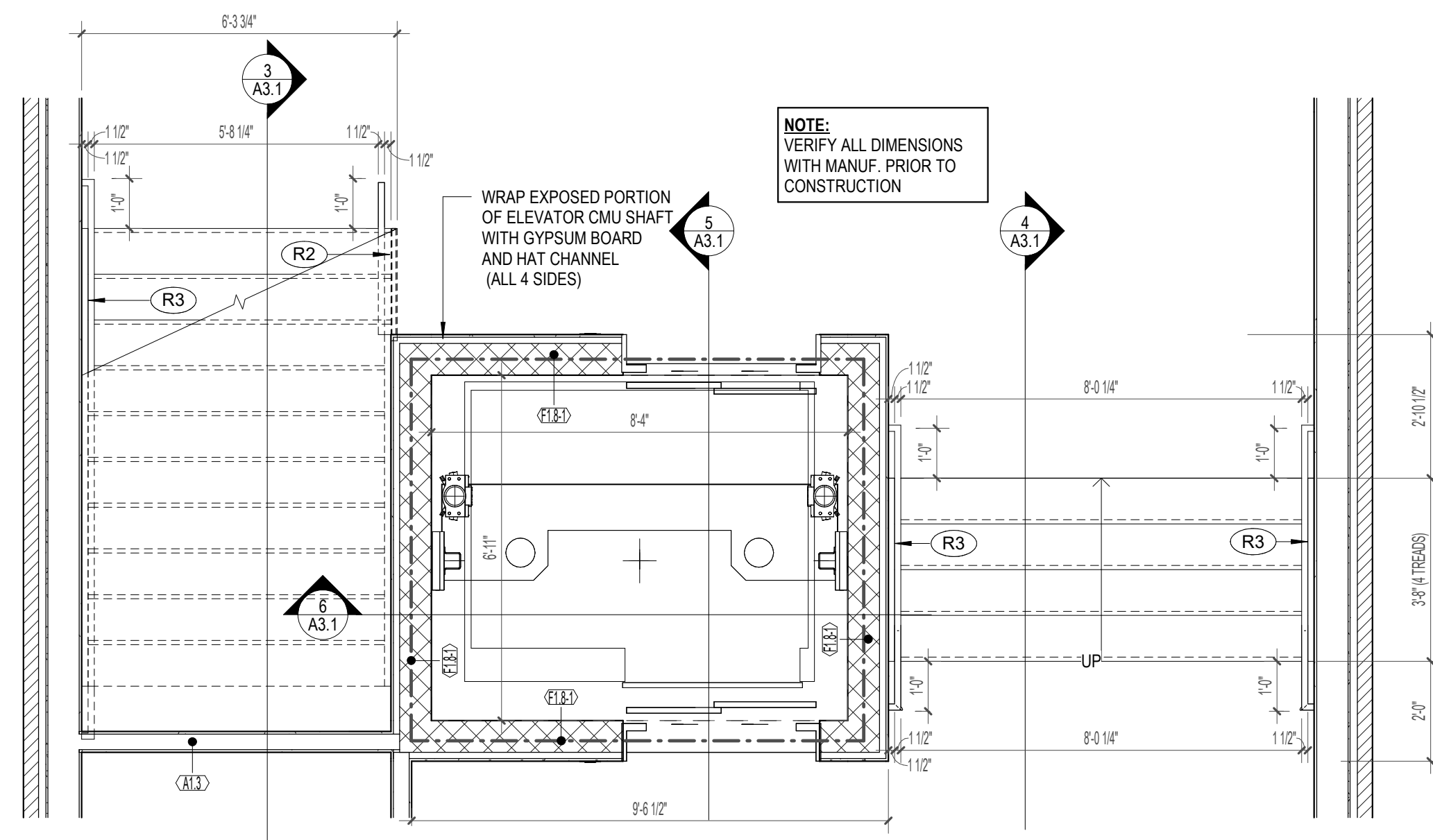
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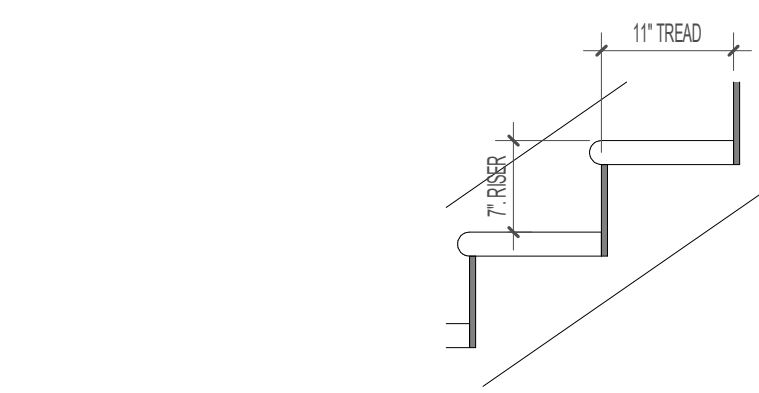
**ELEVATIONS - LEAF**  
1/4" = 1'-0"

**ELEVATIONS - FRAME**  
1/4" = 1'-0"

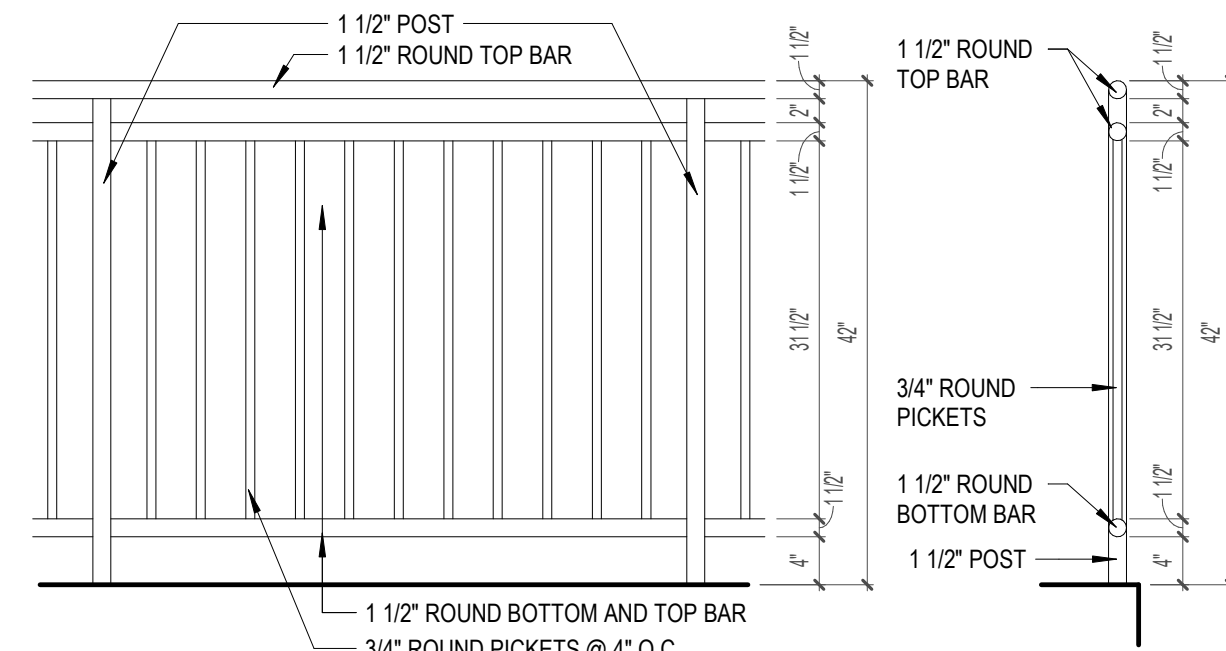




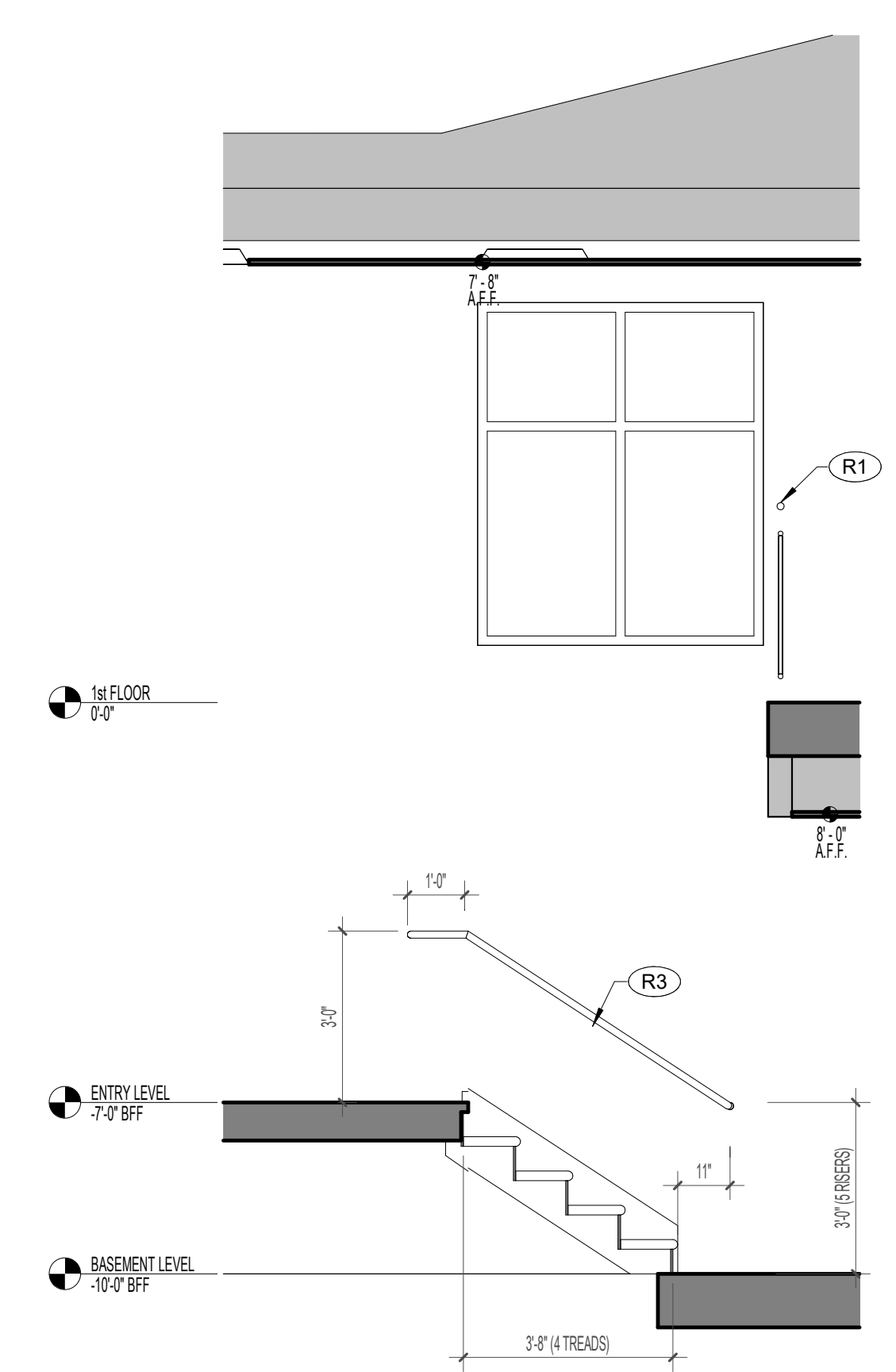
**8 BASEMENT STAIR / ELEVATOR PLAN**  
3/8" = 1'-0"



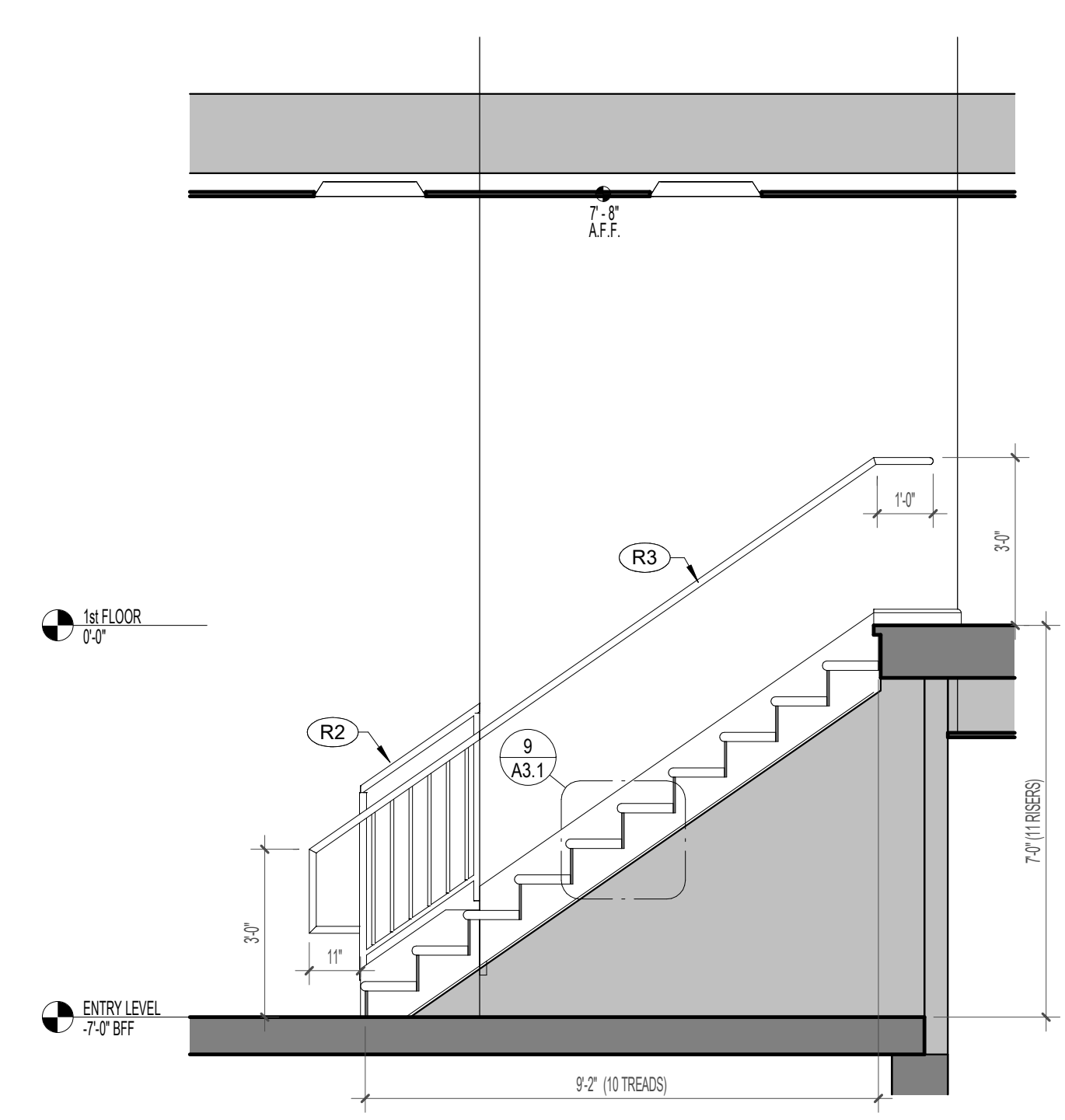
**9 STAIRS DETAIL**  
3/4" = 1'-0"



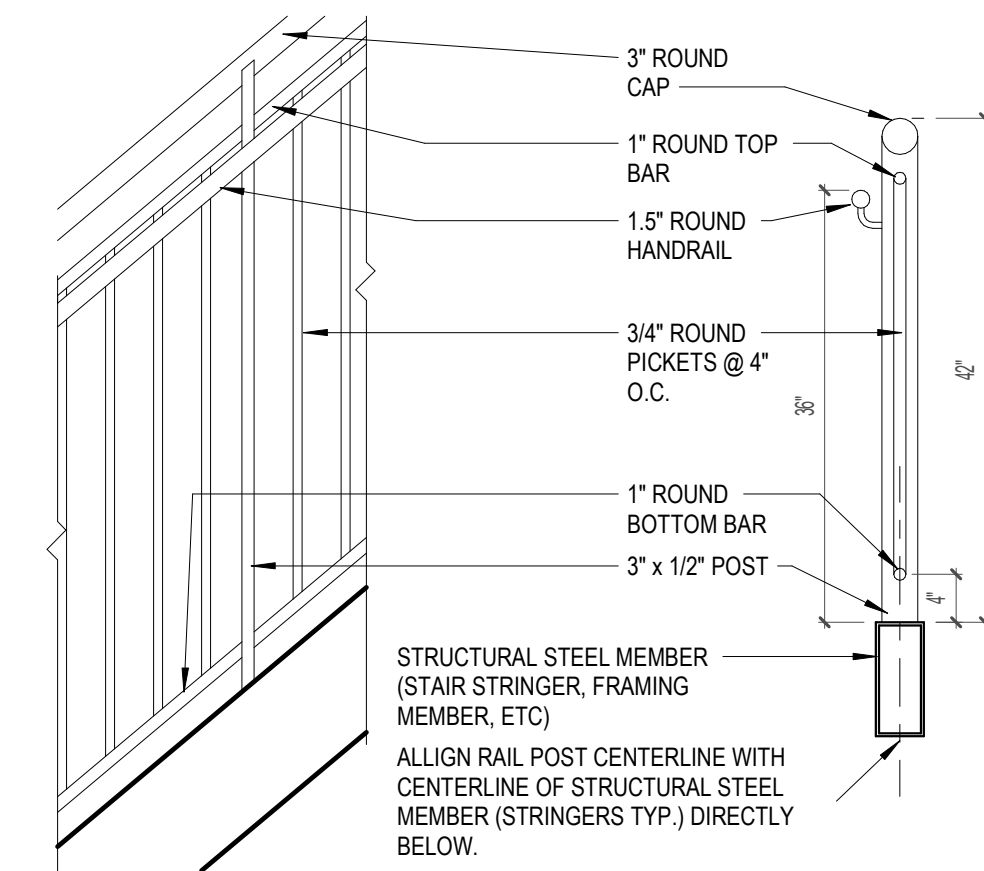
**R1 RAILING - 1**



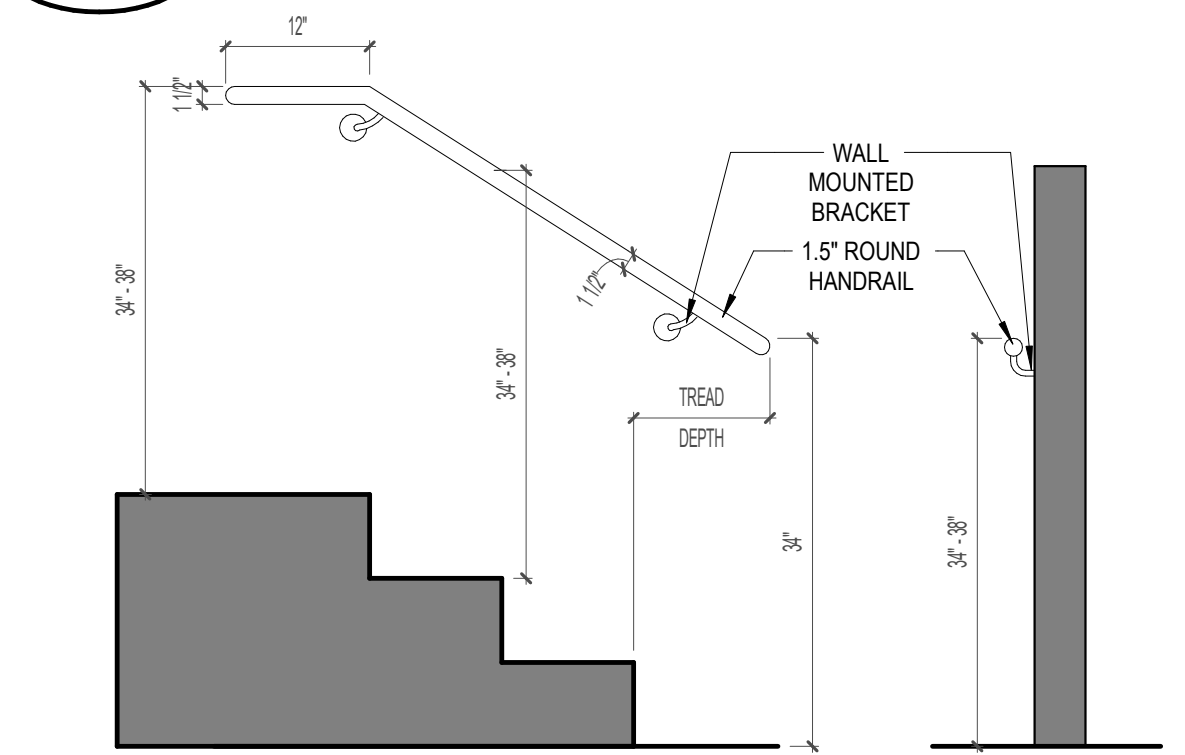
**4 STAIR SECTION 2**  
3/8" = 1'-0"



**3 STAIR SECTION 1**  
3/8" = 1'-0"

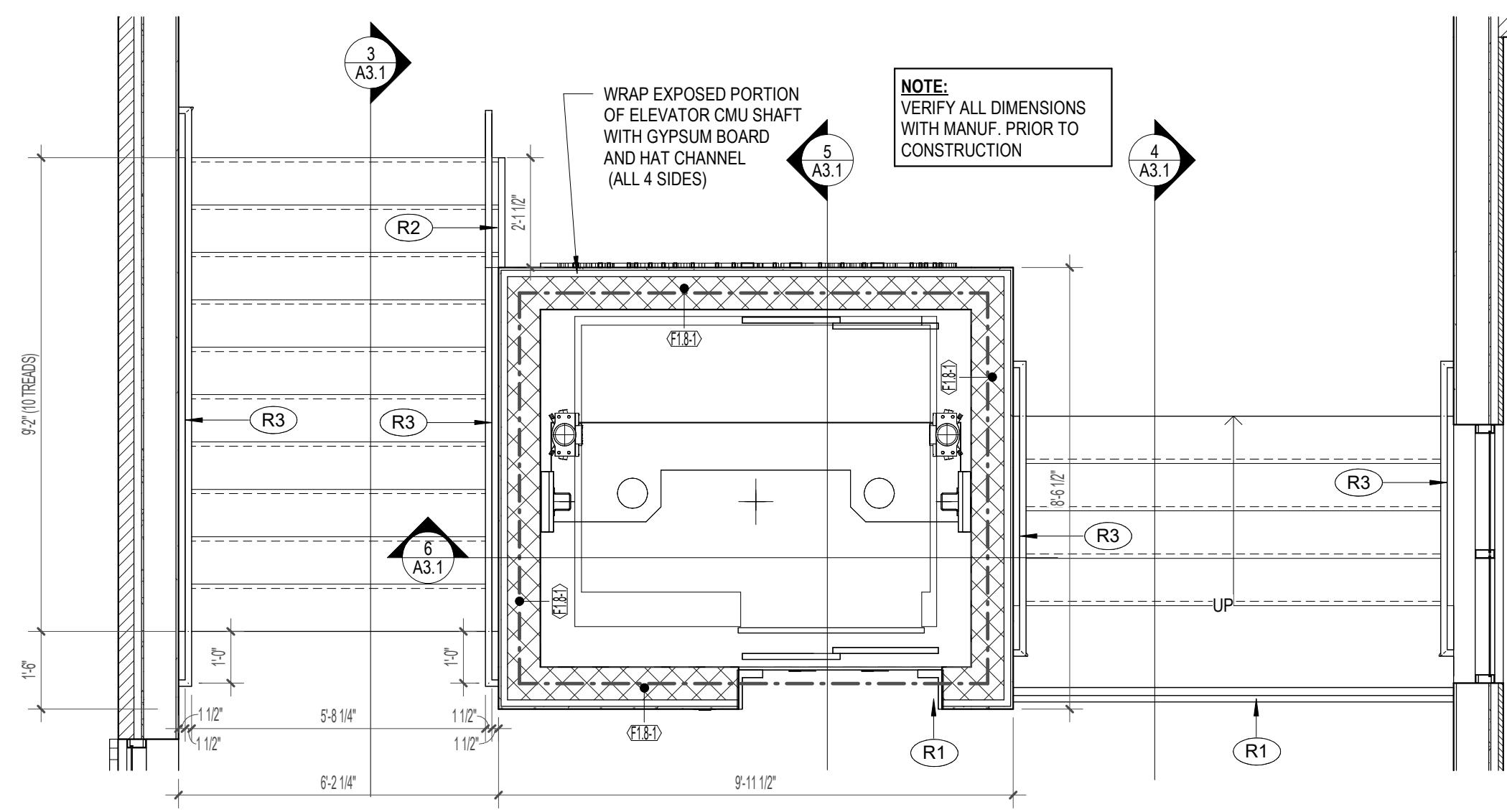


**R2 RAILING - 2**

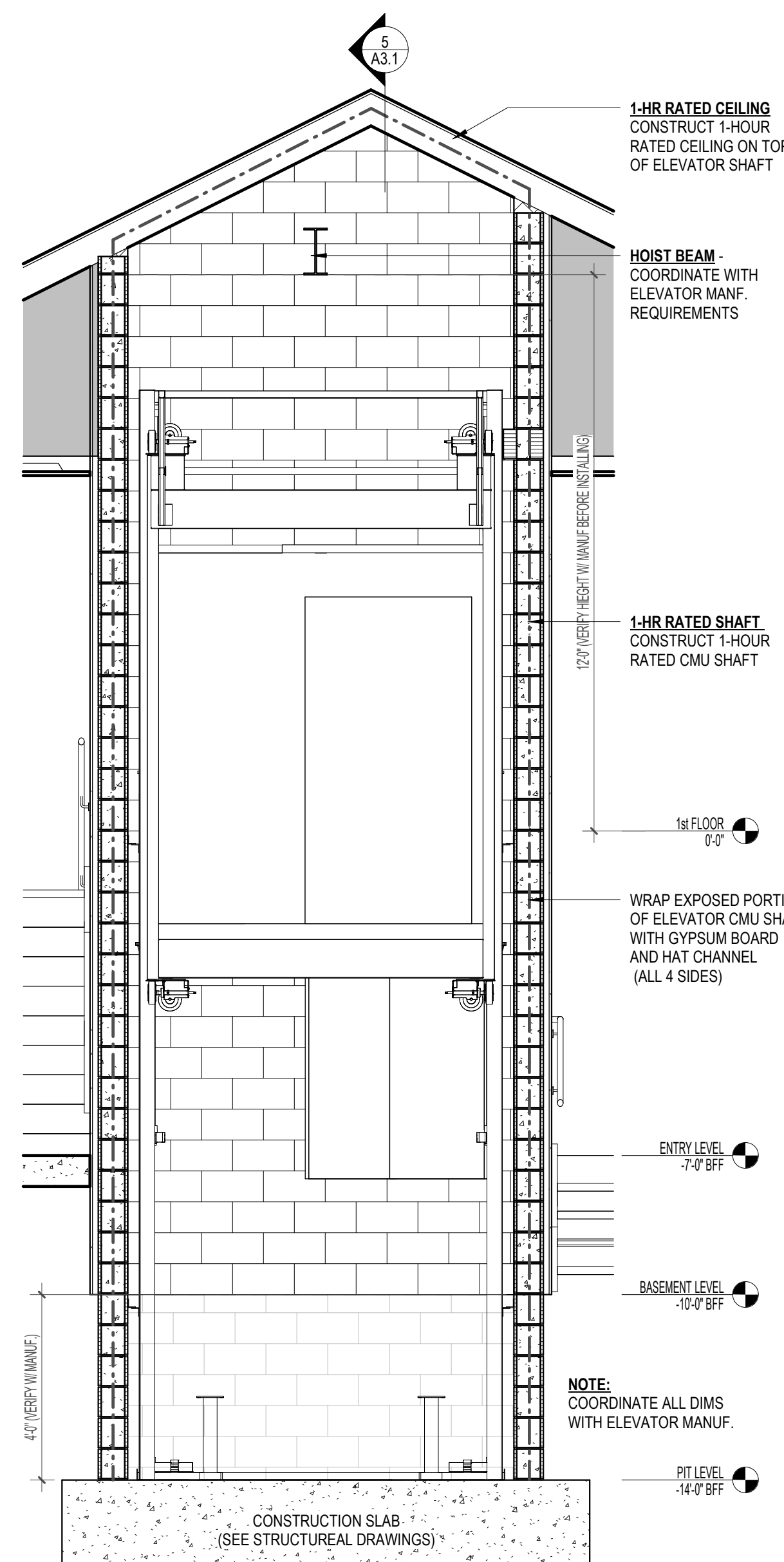


**R3 RAILING - 3**

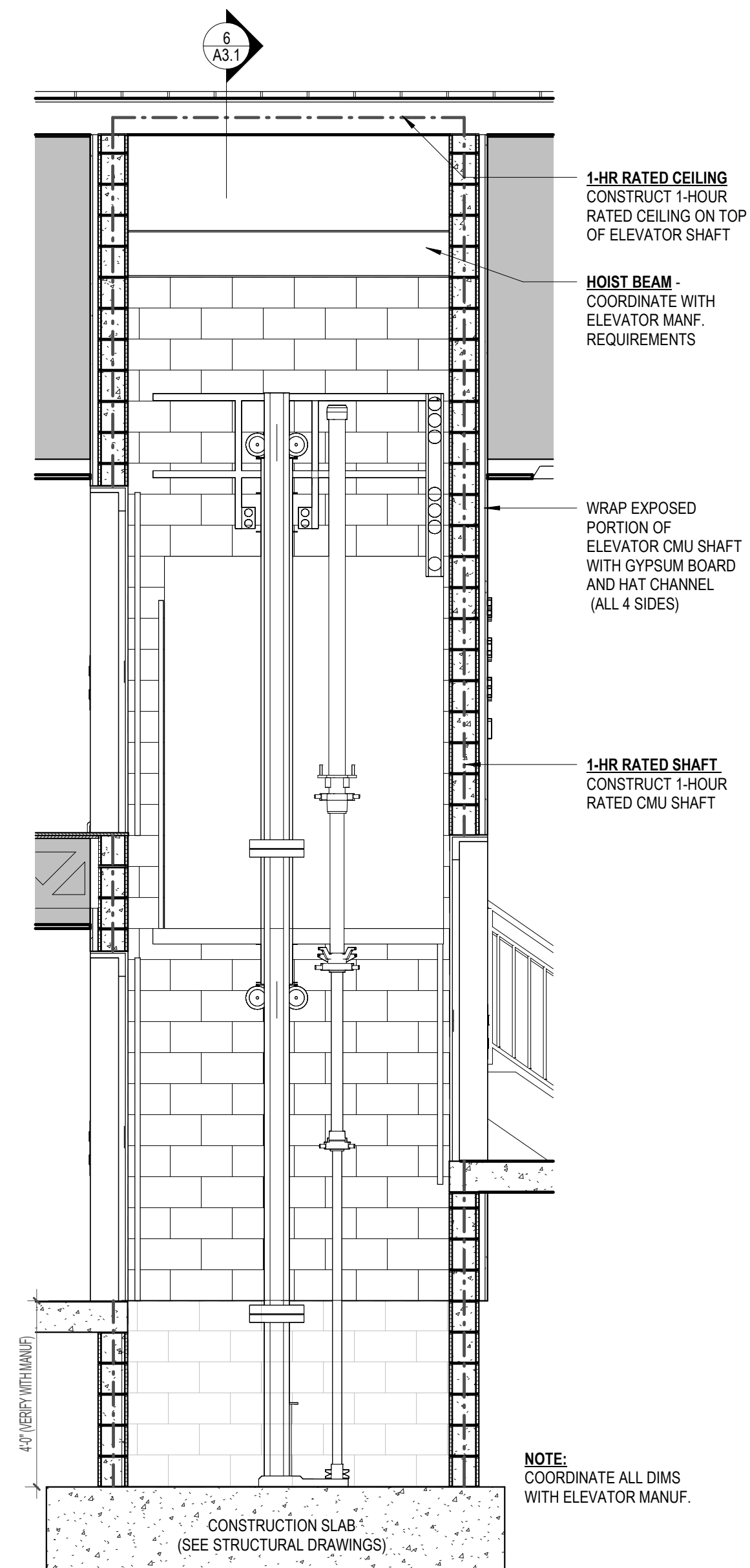
**RAILS ELEVATIONS AND SECTIONS**  
3/4" = 1'-0"



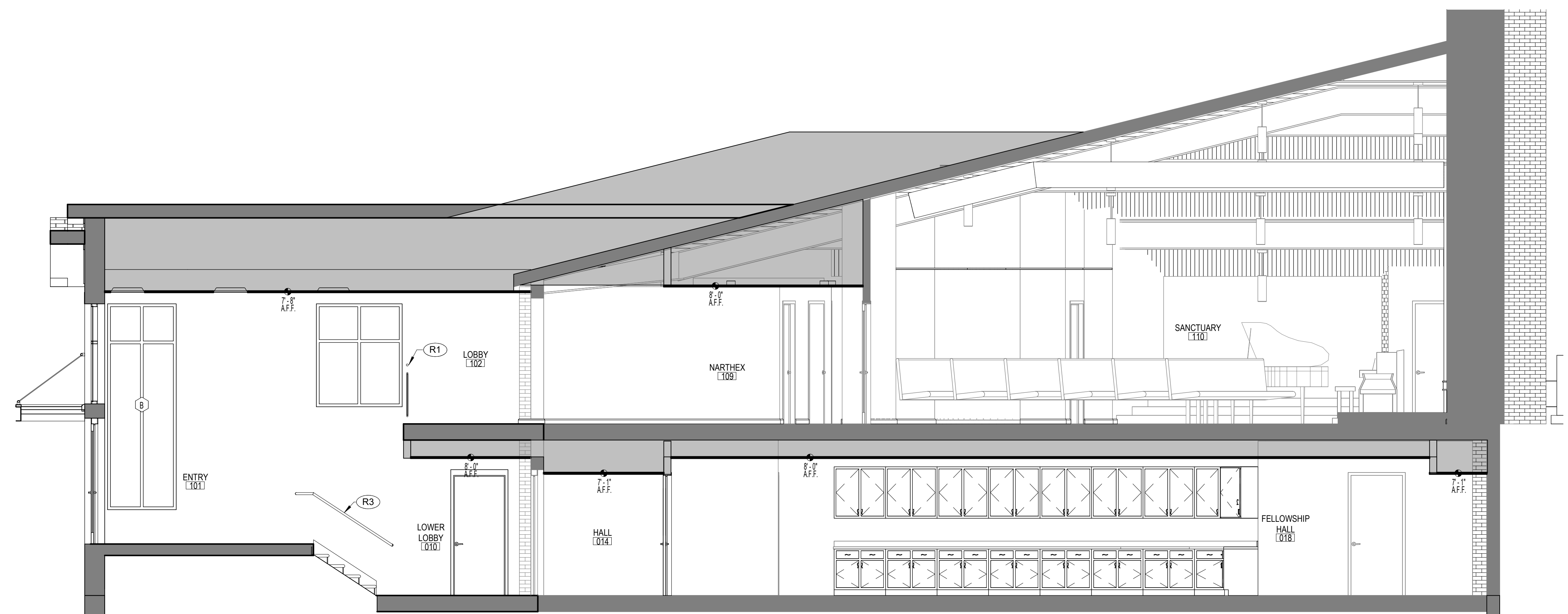
**7 FIRST FLOOR STAIR / ELEVATOR PLAN**  
3/8" = 1'-0"



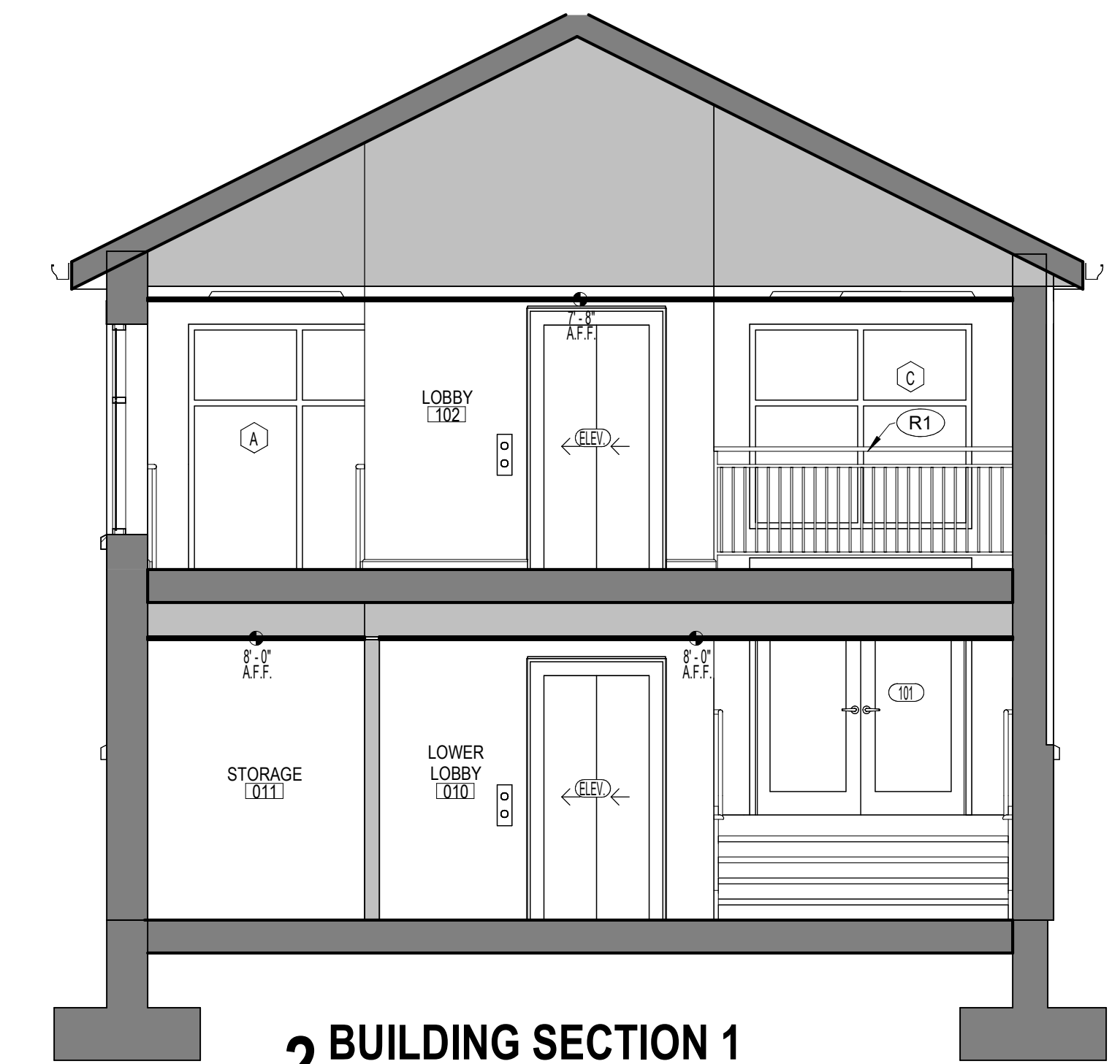
**6 ELEVATOR SECTION 1**  
3/8" = 1'-0"



**5 ELEVATOR SECTION 2**  
3/8" = 1'-0"



**1 BUILDING SECTION 2**  
1/4" = 1'-0"



**2 BUILDING SECTION 1**  
1/4" = 1'-0"

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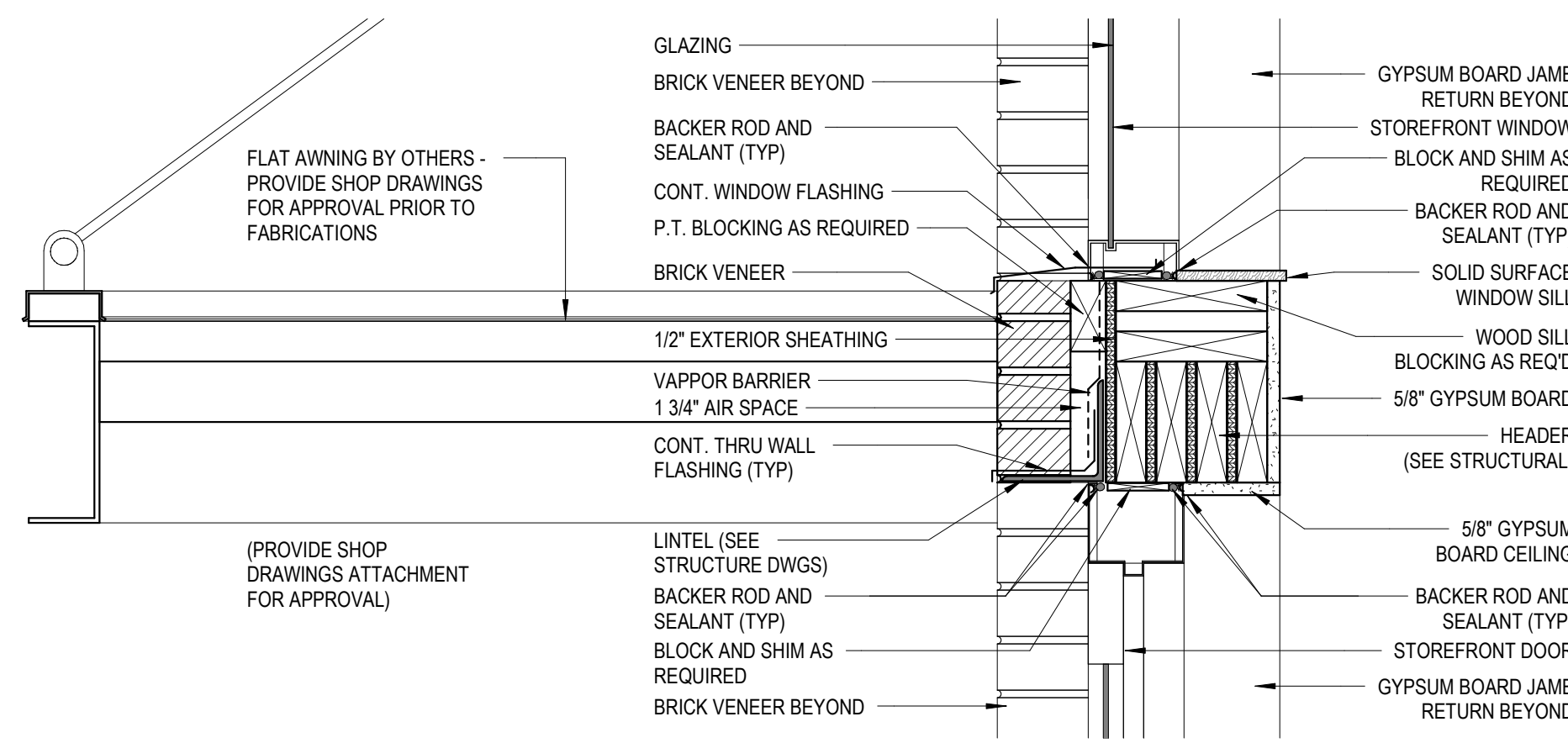
**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
1615 NC-94  
DURHAM, NC 27713

PROJECT #: 210029  
DATE: 5/2/2023  
BUILDING SECTIONS

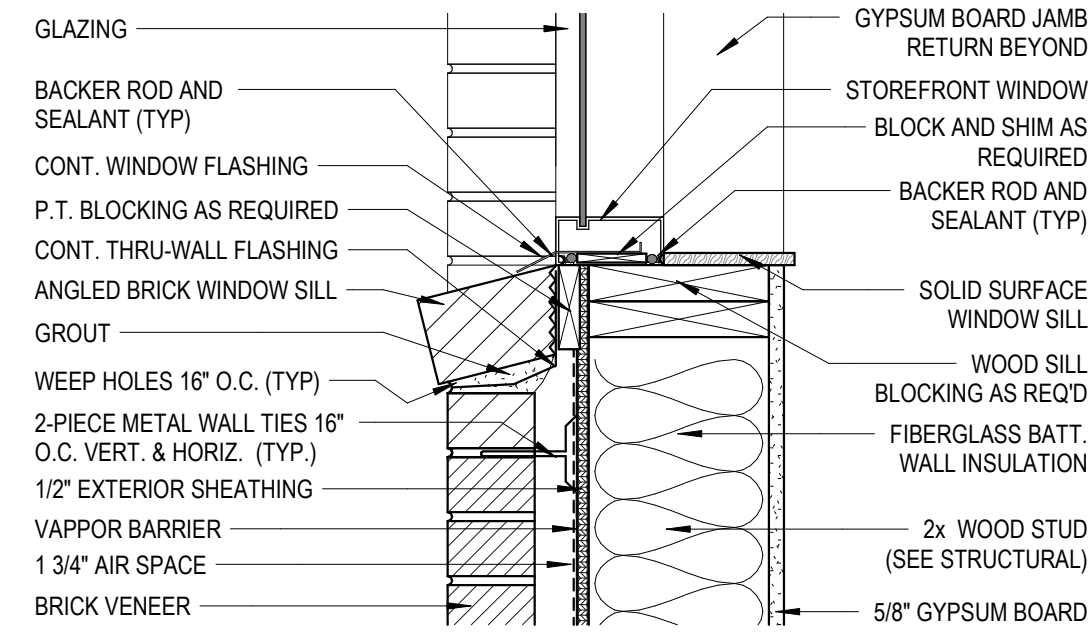
**A3.1**

DIGITAL PRINT DATE: 5/2/2023 1:10:07 PM

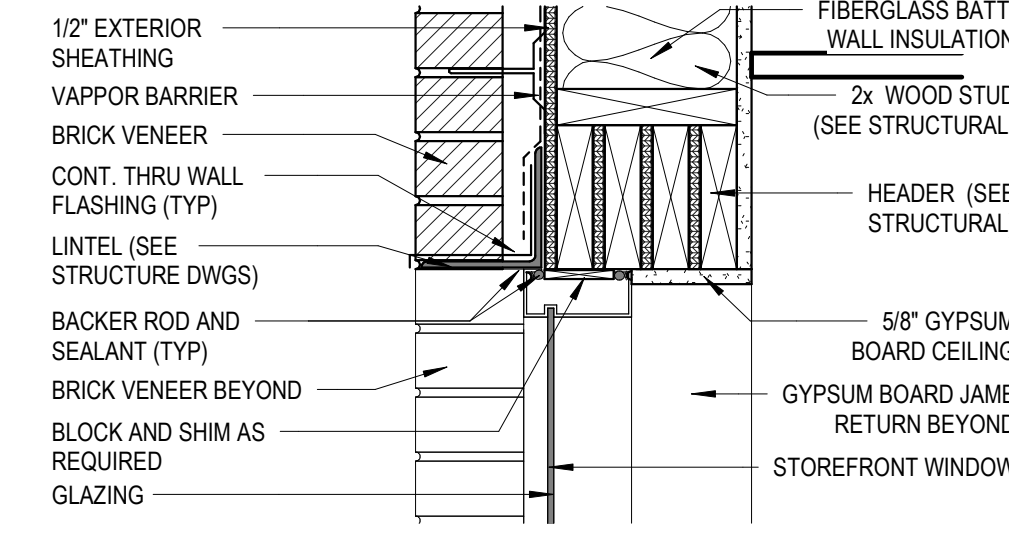
No.	Description	Date



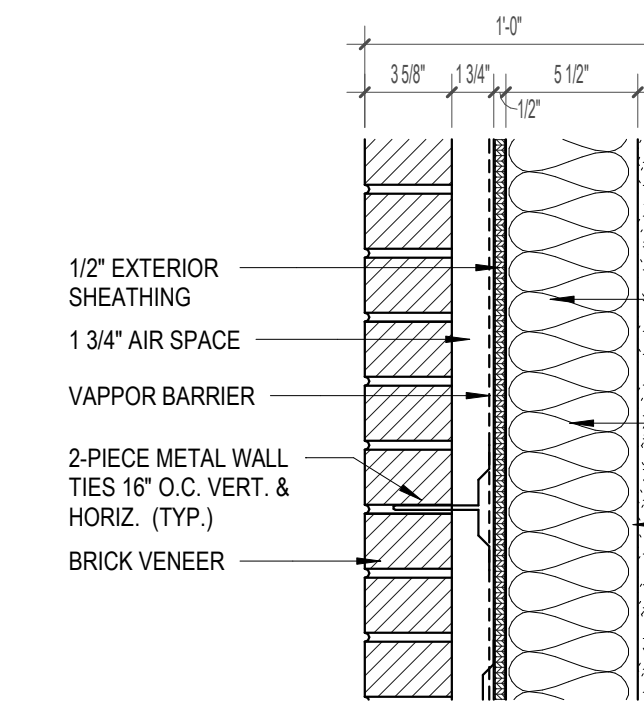
**10 DOOR / WINDOW HEAD / SILL**  
1 1/2" = 1'-0"



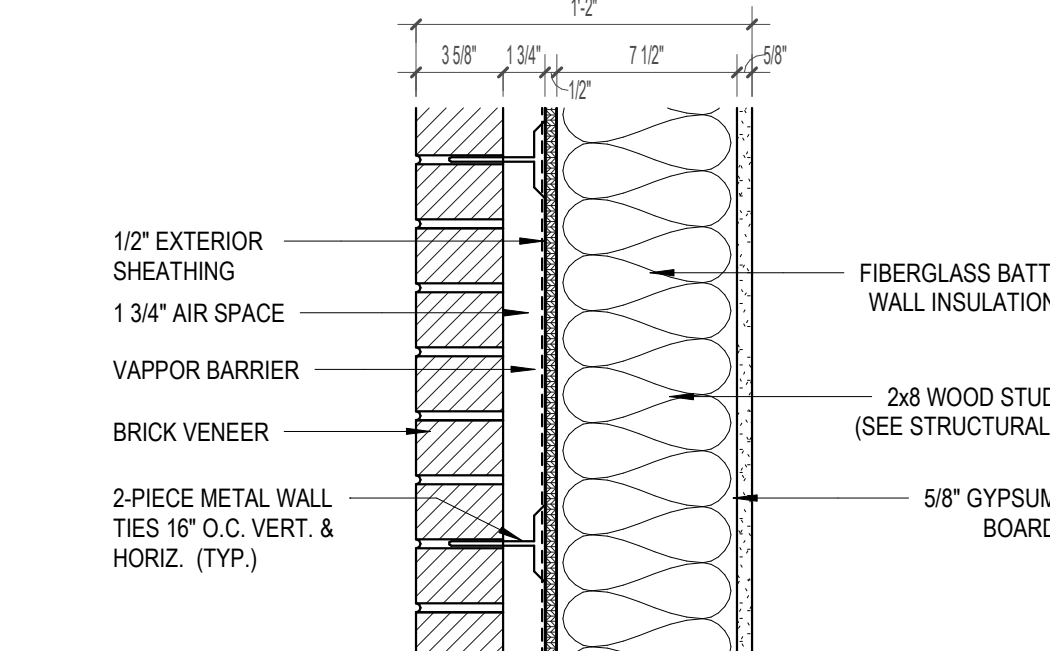
**9 WINDOW SILL DETAIL**  
1 1/2" = 1'-0"



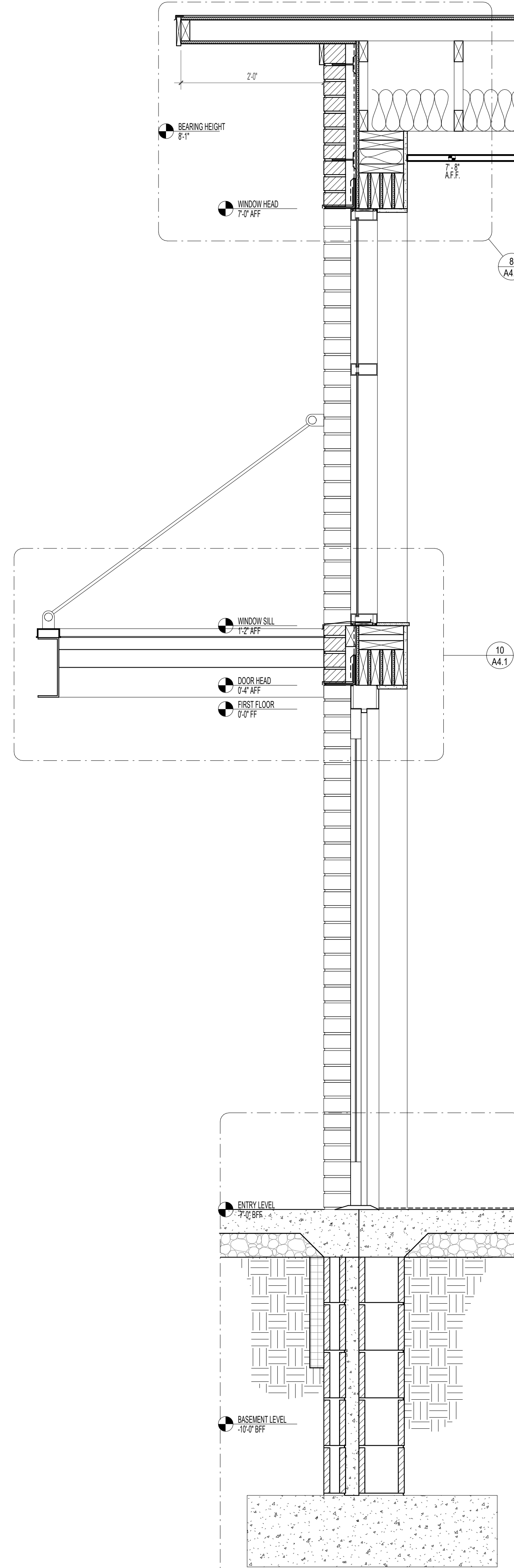
**8 WINDOW HEAD DETAIL**  
1 1/2" = 1'-0"



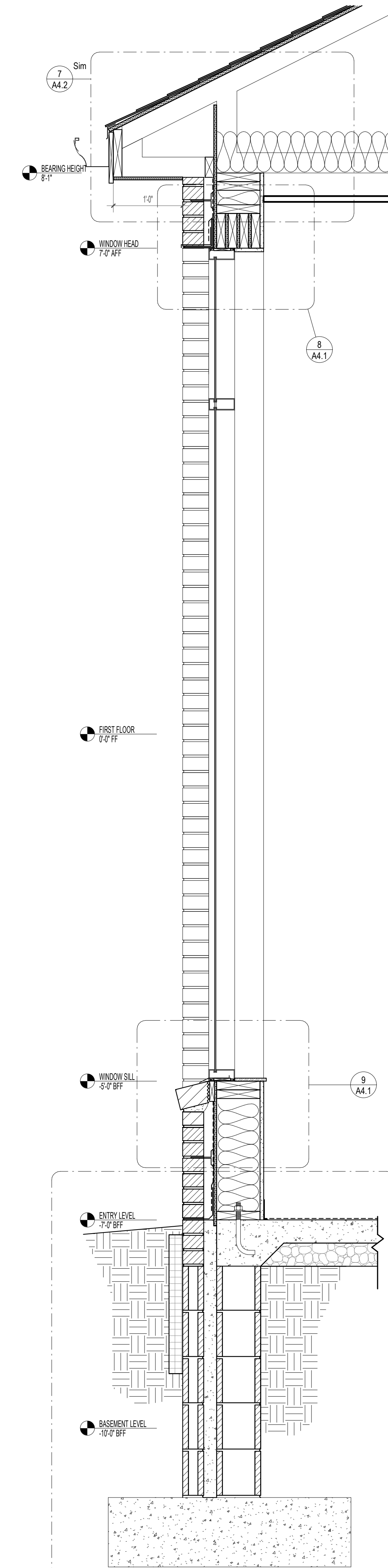
**7 WALL SANDWICH (2X6 STUD)**  
1 1/2" = 1'-0"



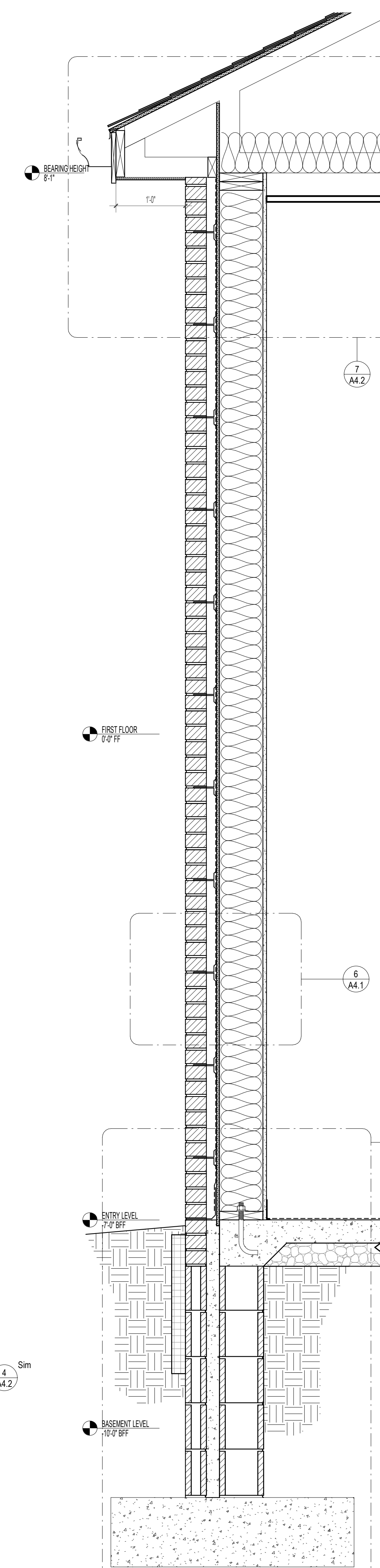
**6 WALL SANDWICH (2X8 STUD)**  
1 1/2" = 1'-0"



**4 WALL SECTION 4**  
1" = 1'-0"



**2 WALL SECTION 2**  
1" = 1'-0"



**1 WALL SECTION 1**  
1" = 1'-0"

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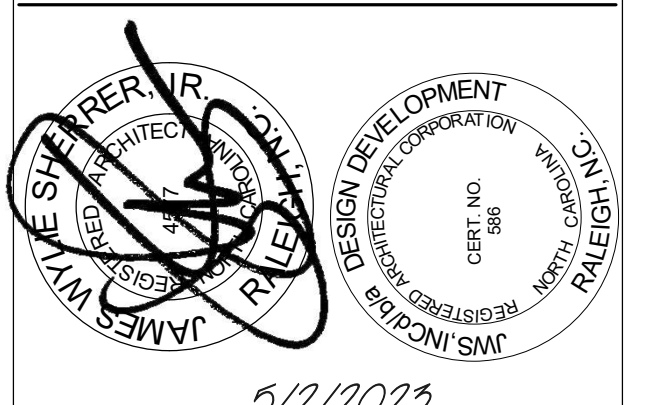
**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
1615 NC-54  
DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
DATE: 5/2/2023  
WALL SECTIONS

**A4.1**

DIGITAL PRINT DATE: 5/2/2023 1:10:07 PM

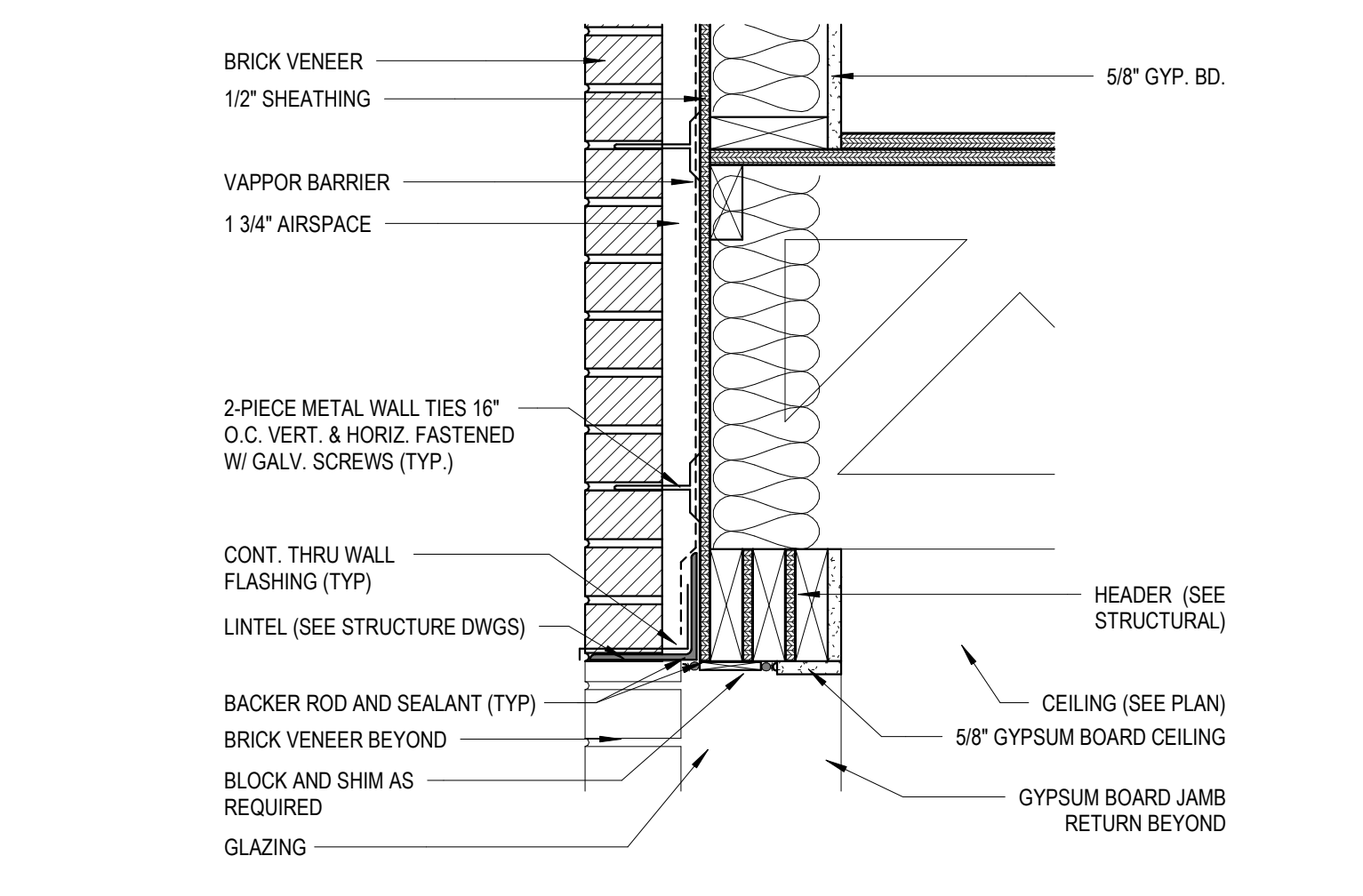


5/2/2023

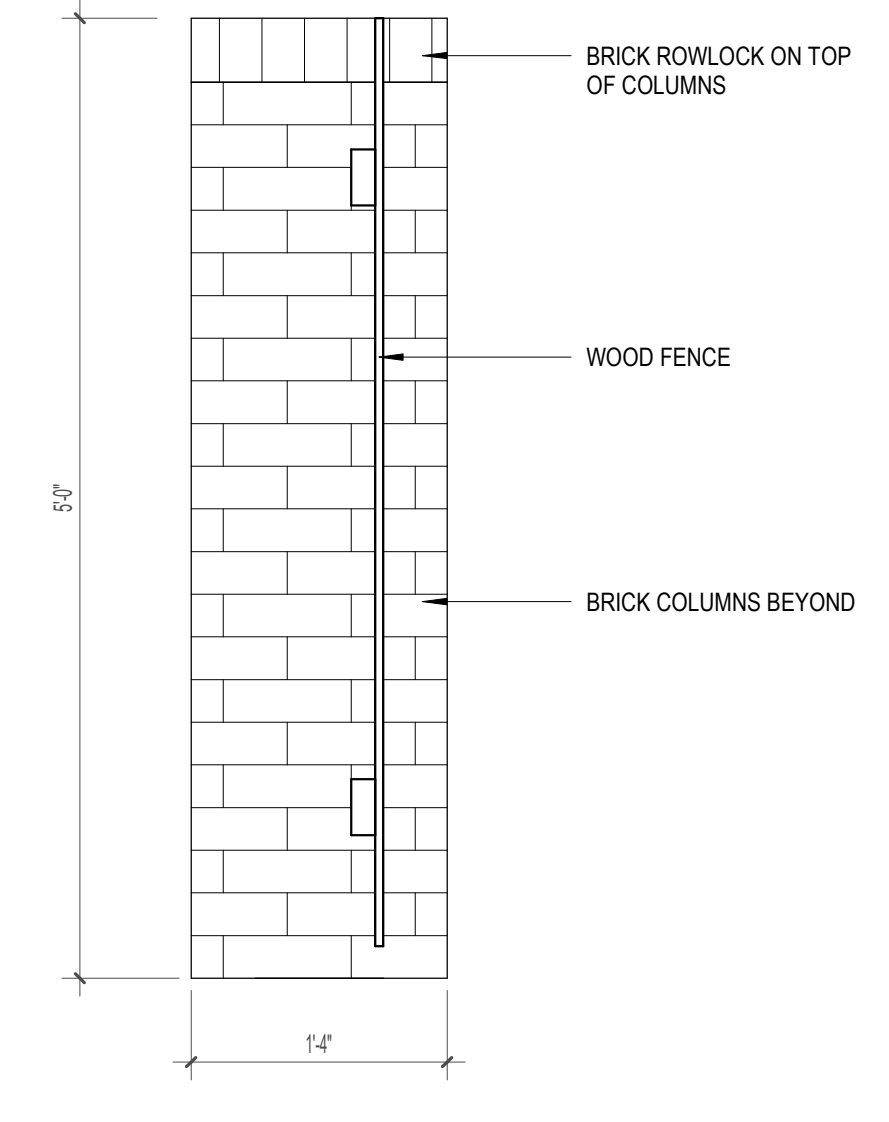
CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

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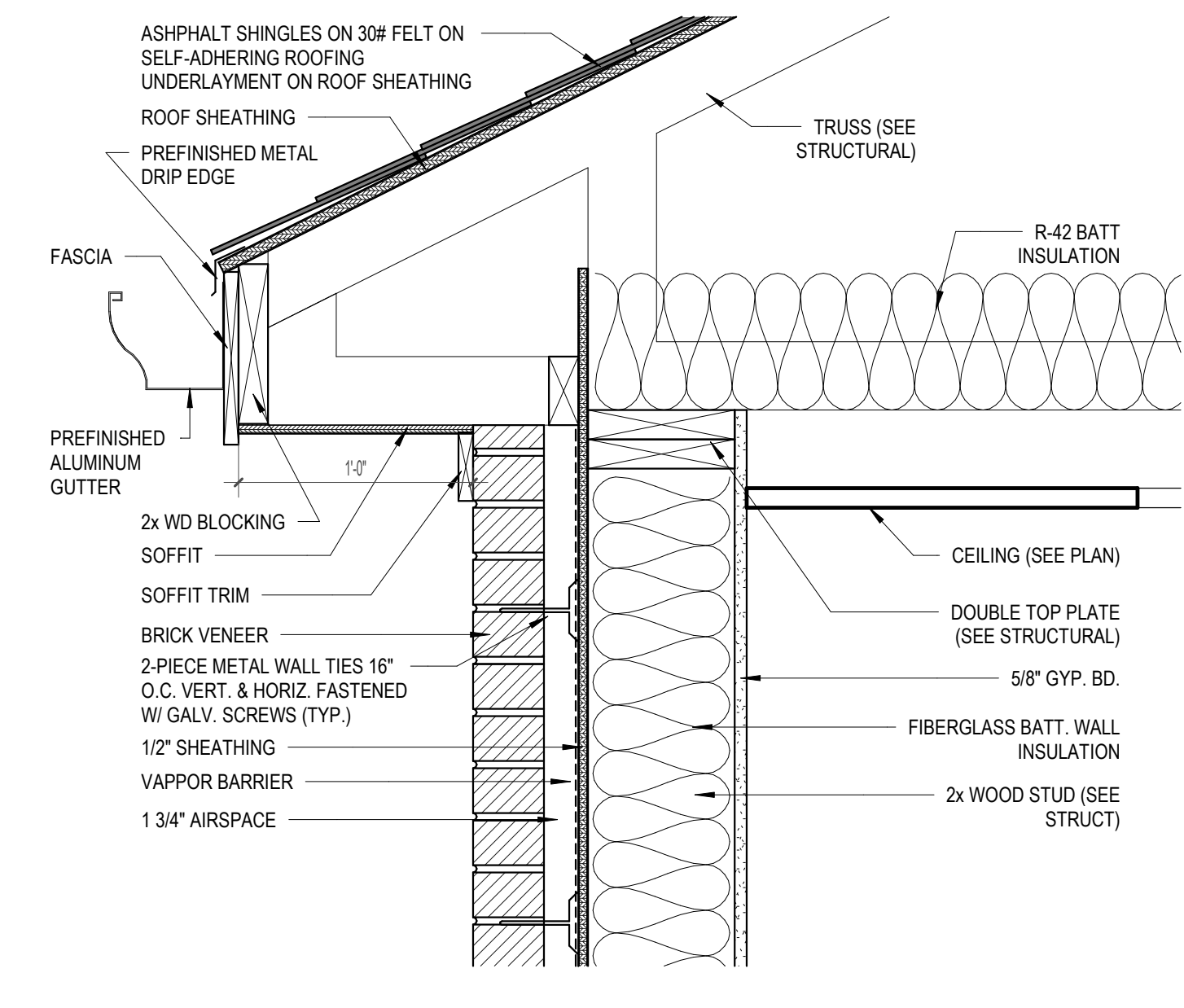
No.	Description	Date
PROJECT #:	210029	
DATE:	5/2/2023	
WALL SECTION		
<b>A4.2</b>		
DIGITAL PRINT DATE: 5/2/2023 1:10:08 PM		



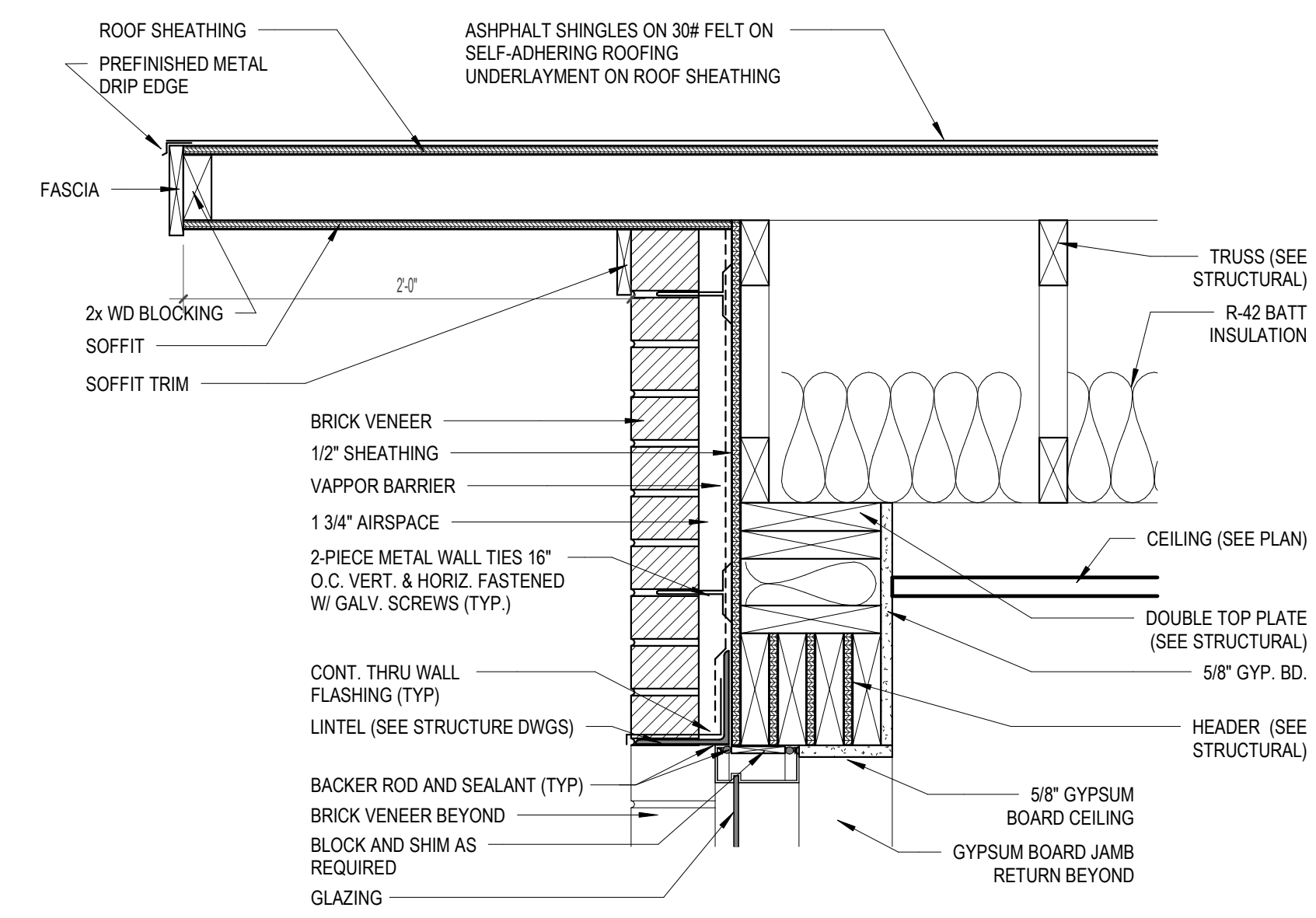
9 TRUSS DETAIL  
1 1/2" = 1'-0"



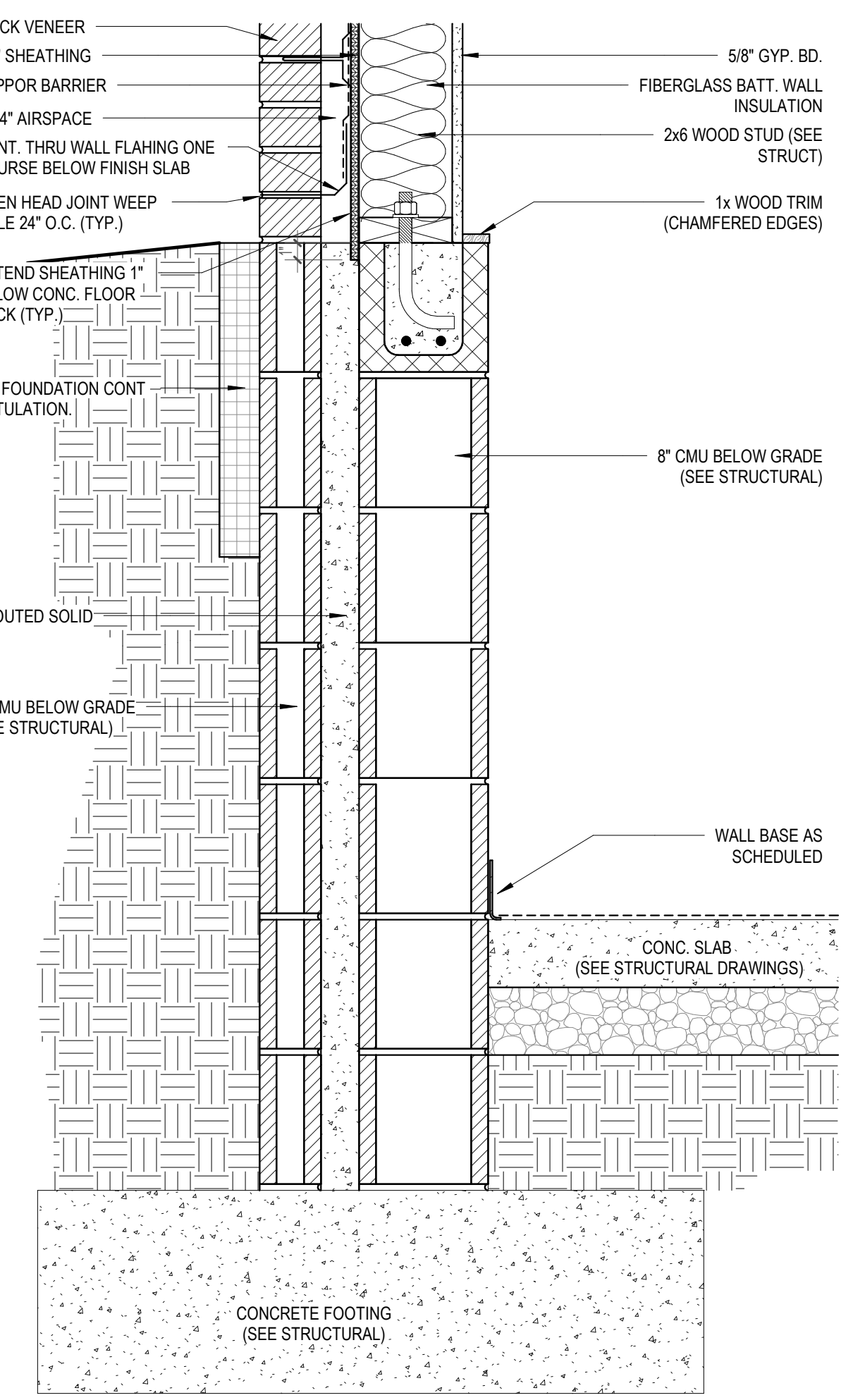
10 Section 15  
1" = 1'-0"



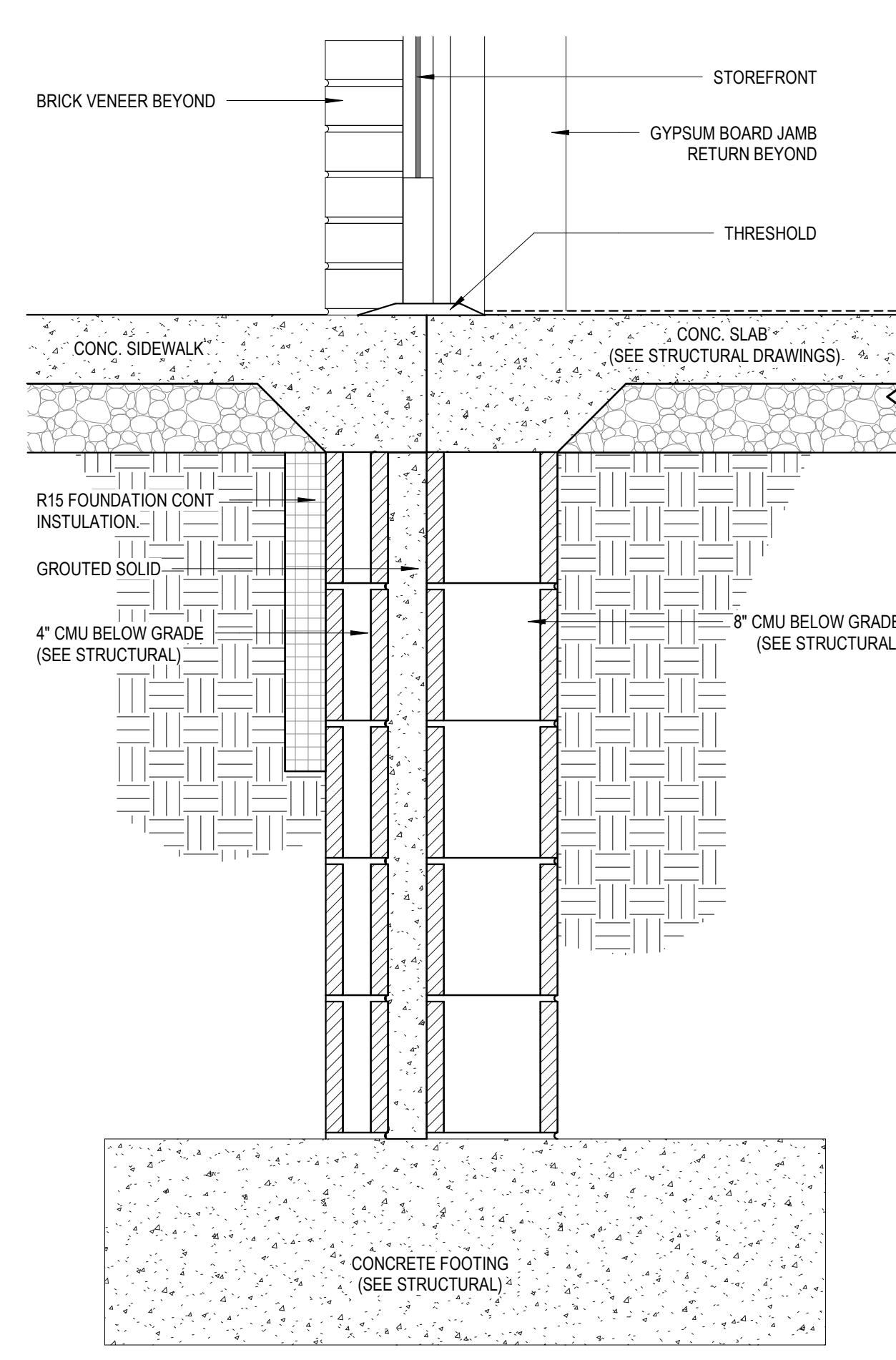
7 ROOF DETAIL  
1 1/2" = 1'-0"



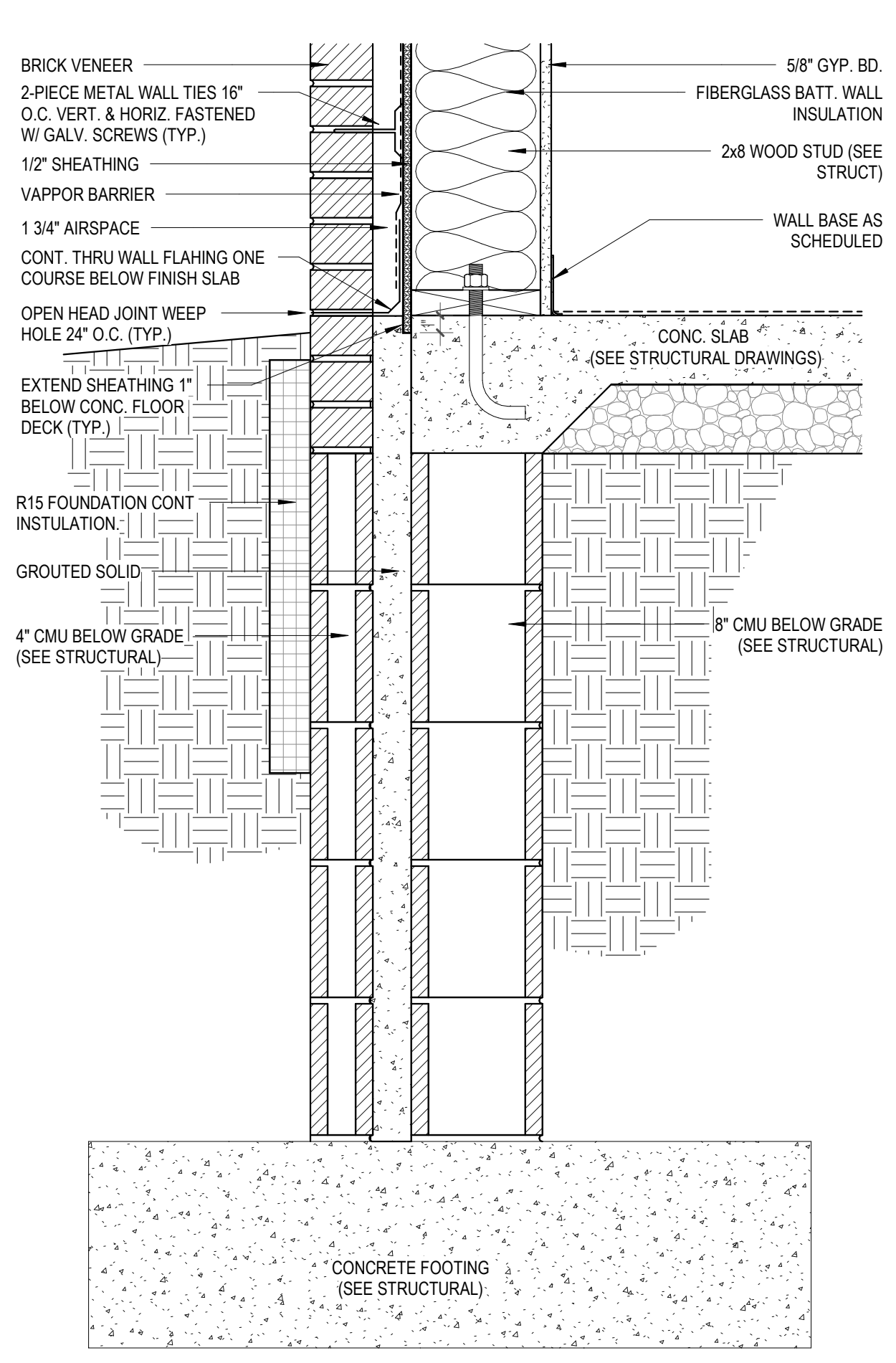
8 ROOF OVERHANG DETAIL  
1 1/2" = 1'-0"



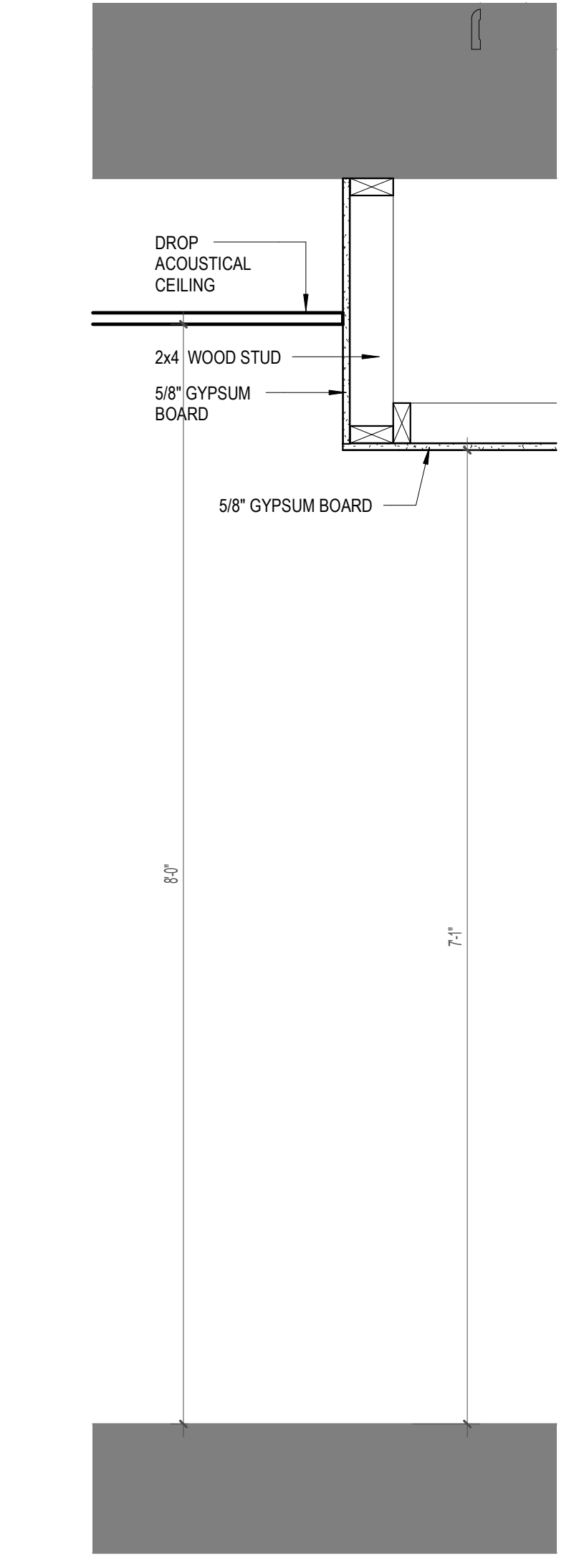
6 FOOTING AT FOUNDATION WALL  
1 1/2" = 1'-0"



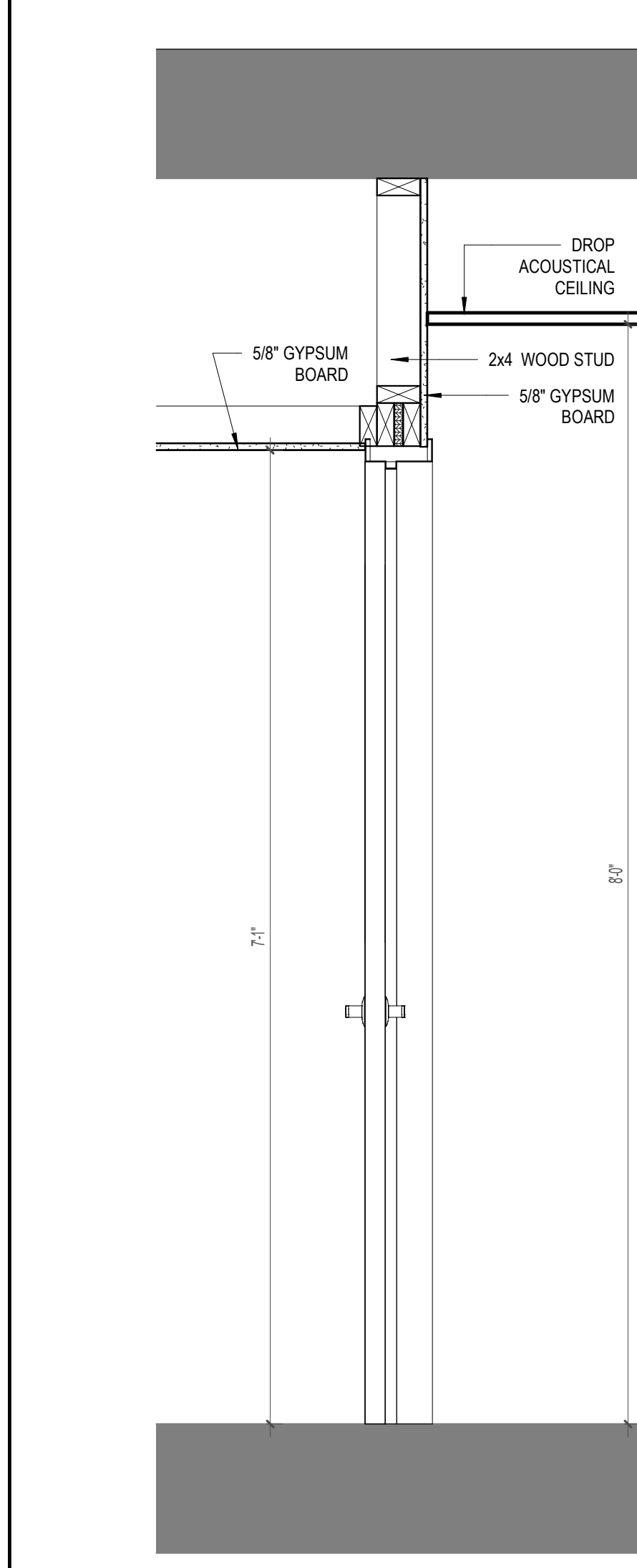
5 FOOTING AT OPENING  
1 1/2" = 1'-0"



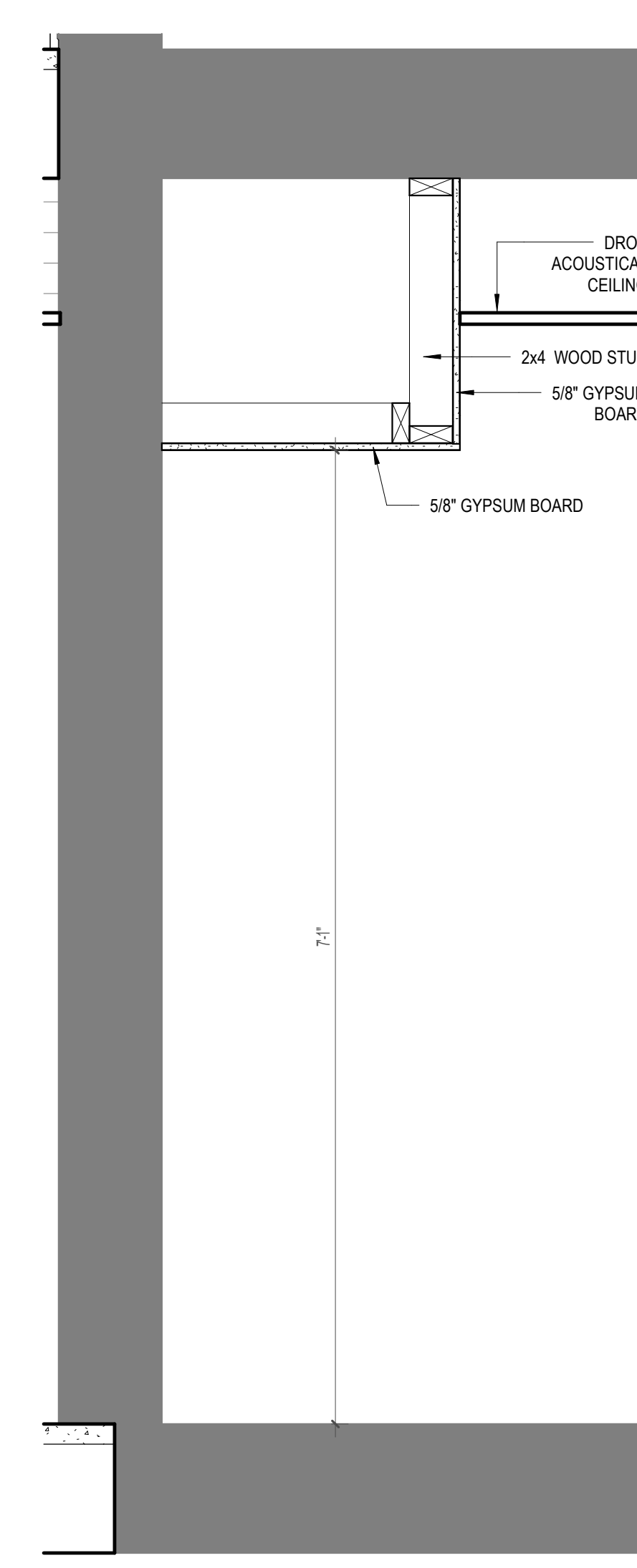
4 FOOTING DETAIL  
1 1/2" = 1'-0"



3 MECH CHASE BULKHEAD 3  
1" = 1'-0"



2 MECH CHASE BULKHEAD 2  
1" = 1'-0"



1 MECH CHASE BULKHEAD 1  
1" = 1'-0"

GENERAL CONSTRUCTION SPECIFICATIONS

- 1. THESE DRAWINGS ARE THE PROPERTY OF FLUHRER REED, PA. FOR USE SOLELY FOR THIS PROJECT AND SHALL NOT BE REPRODUCED, COPIED OR USED FOR OTHER PURPOSES WITHOUT WRITTEN PERMISSION OF FLUHRER REED, PA.
2. THE DESIGN PROFESSIONAL WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE STRUCTURAL ENGINEER OF RECORD FOR THE ADDITIONS AND/OR ALTERATIONS TO THE EXISTING STRUCTURE AS NOTED ON THESE DRAWINGS ONLY...

DESIGN LOADS

- 1. BUILDING CODES
A. NORTH CAROLINA STATE BUILDING CODE 2018 EDITION
B. 2015 INTERNATIONAL BUILDING CODE
C. MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES, ASCE 7-10
2. RISK CATEGORY II
3. ROOF LIVE LOAD 20 PSF
4. SNOW LOAD
A. GROUND SNOW LOAD, P\_g 15 PSF
B. FLAT-ROOF SNOW LOAD, P\_f 15 PSF
C. SNOW EXPOSURE FACTOR, C\_e 1.00
D. SNOW IMPORTANCE FACTOR, I\_s 1.00
E. THERMAL FACTOR, C\_t 1.00

COMPONENTS AND CLADDING WIND LOADS

COMPONENTS & CLADDING WIND PRESSURES (PSF) ASCE 7-10

Table with columns: LOCATION, ZONE, EFFECTIVE WIND AREA, A\_e, and values for Roof, Parapet, and Walls.

- NOTES:
1. z = z\_e + z\_d, WIDTH OF PRESSURE COEFFICIENT ZONE PER ASCE 7-10
2. EDGE AND CORNER ZONES EXTEND A MINIMUM DISTANCE 'a' FROM BUILDING CORNERS AND EDGES. REFER TO ASCE 7 FOR ROOF ZONE GEOMETRY.
3. USE EFFECTIVE WIND AREA, A\_e, AS DEFINED BY ASCE 7-10

BUILDING MOVEMENTS

- 1. THE BUILDING STRUCTURE IS ANTICIPATED TO MOVE BASED UPON THE FOLLOWING CRITERIA, AND SHOULD BE CONSIDERED IN THE DESIGN OF SECONDARY STRUCTURAL ELEMENTS AND IN CONSTRUCTION BY THE CONTRACTOR.
2. BUILDING DRIFT (HORIZONTAL MOVEMENT) - THE INTERSTORY DRIFT OR RELATIVE MOVEMENT OF ONE ADJACENT FLOOR TO THE NEXT HAS BEEN LIMITED TO FLOOR HEIGHT / 400 IN A TEN YEAR WIND EVENT AS SPECIFIED BY ASCE 7-10. PROVISIONS FOR INTERSTORY DRIFT SHOULD BE MADE IN THE DESIGN, FABRICATION AND INSTALLATION OF THE BUILDING'S CLADDING AND GLAZING.

SUBMITTALS

- 1. SHOP DRAWINGS AND SUBMITTALS SHALL BE SUBMITTED TO FLUHRER REED, PA. BEFORE REVIEW FOR ANY CONSTRUCTION BEGINS. THESE SUBMITTALS WILL BE REVIEWED FOR OVERALL COMPLIANCE AS IT RELATES TO THE STRUCTURAL DESIGN OF THIS PROJECT. VERIFICATION OF THE SHOP DRAWINGS FOR DIMENSIONS, OR FOR ACTUAL FIELD CONDITIONS IS NOT THE RESPONSIBILITY OF THE FLUHRER REED, PA.
2. ALLOW ENOUGH TIME FOR SUBMITTAL REVIEW, INCLUDING TIME FOR RESUBMITTALS. TIME FOR REVIEW SHALL COMMENCE ON FLUHRER REED'S RECEIPT OF SUBMITTAL, ALLOW 15 DAYS FOR INITIAL REVIEW OF EACH SUBMITTAL, AND 15 DAYS FOR REVIEW OF EACH RESUBMITTAL.

DELEGATED DESIGN

- 1. THE CONTRACTOR SHALL ENGAGE A QUALIFIED, LICENSED ENGINEER(S) OF THE STATE IN WHICH THE PROJECT IS CONSTRUCTED TO DESIGN, DETAIL, AND SUBMIT FOR REVIEW SEALED CALCULATIONS AND SHOP DRAWINGS FOR THE DELEGATED DESIGN SHOWN IN THE CONTRACT DOCUMENTS. ADDITIONAL DELEGATED DESIGN SYSTEMS MAY BE FOUND IN THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, PROCESS, LANDSCAPE AND CIVIL DRAWINGS NOT CONTAINED HEREIN.
2. REFER TO THE SUBMITTALS SECTION FOR ADDITIONAL REQUIREMENTS.

SELECTIVE DEMOLITION

- 1. DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS.
2. PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED. STRENGTHEN OR ADD NEW SUPPORTS WHEN REQUIRED DURING PROGRESS OF SELECTIVE DEMOLITION. DESIGN OF SHORING IS NOT THE RESPONSIBILITY OF FLUHRER REED, PA.
3. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.

FOUNDATIONS

- 1. THE SCOPE OF SERVICES FOR THIS PROJECT PROVIDED BY FLUHRER REED, PA. BEGINS FROM THE BOTTOM OF THE FOUNDATION ELEMENTS. SUBSURFACE INVESTIGATIONS ARE BEYOND THE SCOPE OF THE ARCHITECTURAL SERVICES PROVIDED. THE FOUNDATION SYSTEM SHOWN ON THESE DRAWINGS ARE BASED UPON THE ASSUMED SOIL PROPERTIES LISTED BELOW. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, OWNER OR OWNER'S AGENT TO CONTACT FLUHRER REED, PA. FOR AN ADVISORY SOIL ANALYSIS.
2. THE BOTTOM OF ALL FOOTINGS SHALL EXTEND BELOW THE FROST LINE FOR THE REGION IN WHICH THE FOOTING IS A MIN. OF 12" BELOW ADJACENT EXTERIOR GRADES.

CONCRETE FLOOR AND SLABS

- 1. REQUIREMENTS NOTED IN THIS SECTION APPLY TO CONCRETE SLABS ON GRADE. REFER TO THE CONCRETE SECTION OF THESE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
2. CONCRETE SLABS ON GRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 302.1R-04 "GUIDE FOR CONCRETE SLAB AND SLAB CONSTRUCTION".
3. SLABS ON GRADE DEPEND ON THE INTEGRITY OF BOTH THE SLAB AND FULL SOIL SUPPORT. PROVIDE SATISFACTORY SOIL MATERIALS UNDER SLABS ON GRADE ACCORDING TO GEOTECHNICAL ENGINEER'S WRITTEN RECOMMENDATIONS. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS WITH HEAVY PNEUMATIC-TIRED EQUIPMENT TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING.

CONCRETE

- 1. CONCRETE SHALL BE PROPORTIONED, MIXED, PLACED, AND TESTED IN ACCORDANCE WITH THE ACI MANUAL OF CONCRETE PRACTICE INCLUDING BUT NOT LIMITED TO ACI 318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND ACI 308-10 "SPECIFICATION FOR STRUCTURAL CONCRETE". COMPLY WITH ACI 117-10 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS". ACI 308.106 "SPECIFICATION FOR HOT WEATHER CONCRETING" AND ACI 308.110 "STANDARD SPECIFICATIONS FOR COLD WEATHER CONCRETING."
2. STEEL REINFORCEMENT SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
A. REINFORCING BARS: ASTM A615, GRADE 60, DEFORMED
B. REINFORCING BARS, WELDED: ASTM A706, GRADE 60, DEFORMED
C. PLAIN-STEEL WIRE: ASTM A1064, AS DRAWN
D. PLAIN-STEEL, WELDED: ASTM A1064, FABRICATED WIRE REINFORCEMENT FROM AS-DRAWN
E. JOINT WELDS: ASTM A1064, GRADE 60, PLAIN, FREE OF BURRS

CONCRETE COVER REQUIREMENTS

Table with columns: NON-POST TENSIONED CONCRETE, MINIMUM COVER, and values for concrete cast against earth and weather.

CONCRETE MIX DESIGN REQUIREMENTS

Table with columns: PROJECT CLASS, ELEMENT, 28 DAY f\_c (MIN), CONCRETE TYPE, ACI EXPOSURE CLASS, MAX AGGREGATE SIZE, and values for isolated footings and slabs.

UNIT MASONRY ASSEMBLIES

- 1. CONCRETE MASONRY UNITS (CMU) SHALL BE ERRECTED AS LOAD BEARING CONCRETE MASONRY. COMPLY WITH ACI 530.1 "SPECIFICATION FOR MASONRY STRUCTURES" FOR MATERIALS, METHODS, AND WORKMANSHIP AND ERECTION TOLERANCES.
2. PROVIDE CONCRETE MASONRY UNIT ASSEMBLIES (CMUAS) AS INDICATED ON THE DRAWINGS THAT DEVELOPS A MINIMUM NET AREA COMPRESSIVE STRENGTH (F\_m) OF 1900 PSI AT 28 DAYS AND AS FOLLOWS:
A. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH A MINIMUM AVERAGE NET-AREA COMPRESSIVE STRENGTH OF 1900 PSI.
B. WEIGHT CLASSIFICATION SHALL BE AS NOTED. UNLESS OTHERWISE NOTED
C. SIZE: MANUFACTURED TO DIMENSIONS 3/8" LESS THAN NOMINAL DIMENSIONS

DRAWING INDEX

Table with columns: No., Description, and Date, listing specifications S0.1 through S4.3.

PROJECT #:

2022303

DATE:

9/16/2022

SPECIFICATIONS, INDEX

Table with columns: No., Description, and Date, listing specifications S0.1 through S4.3.

S0.1

17'

DIGITAL PRINT DATE: 3/20/2023 5:32:13 PM

Design development ARCHITECTS logo and contact information for Christus Victor Lutheran Church Addition project.

FLUHRER REED logo and contact information for the project.

FLUHRER REED logo and contact information for the project.



No.	Description	Date
1	REVISION 1	3/20/23

PROJECT #: 2022303

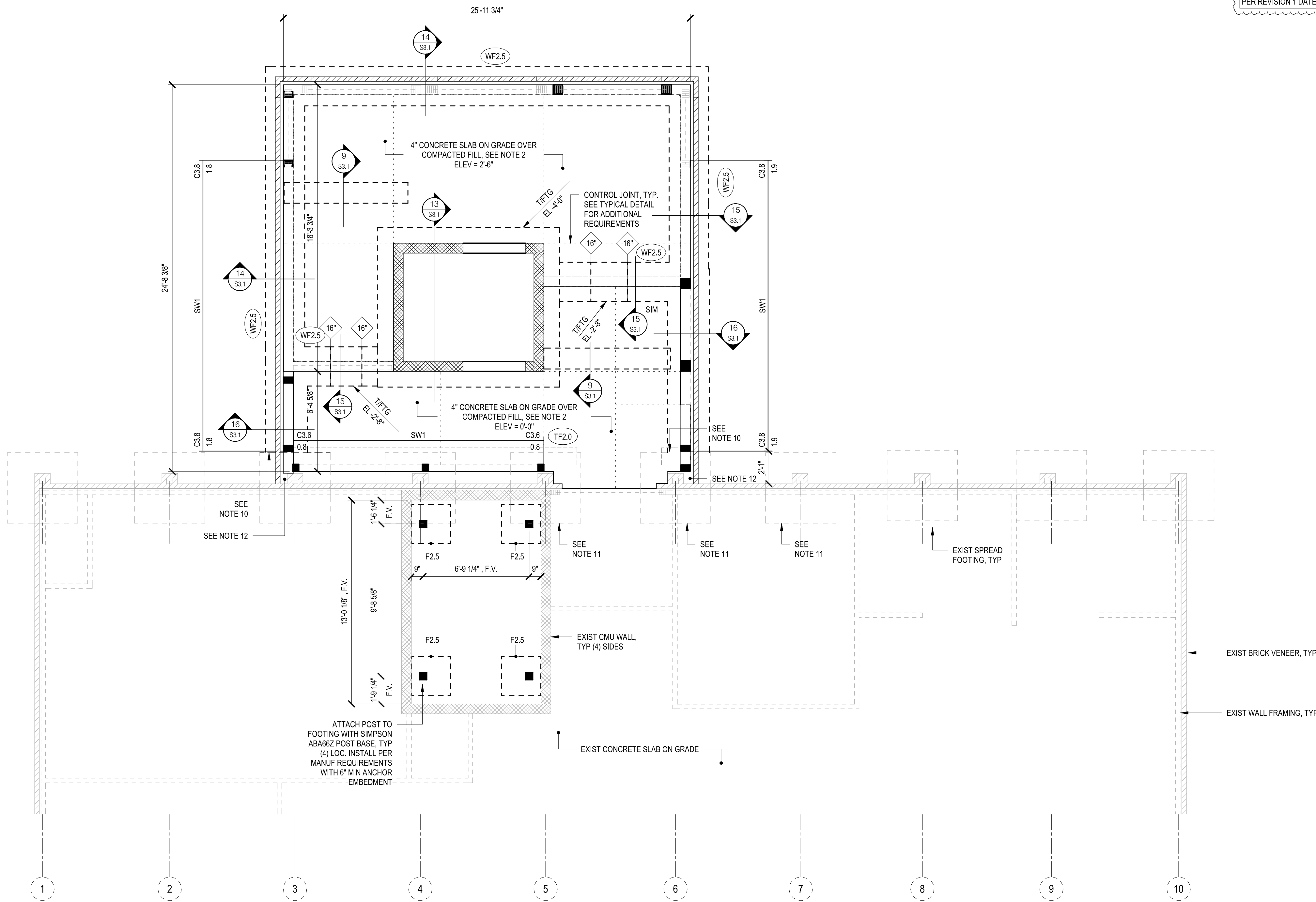
DATE: 9/16/2022

FOUNDATION PLAN

S1.1

DIGITAL PRINT DATE: 3/20/2023 5:32:13 PM

PLANS REVISED IN ITS ENTIRETY  
PER REVISION 1 DATED 3/20/2023

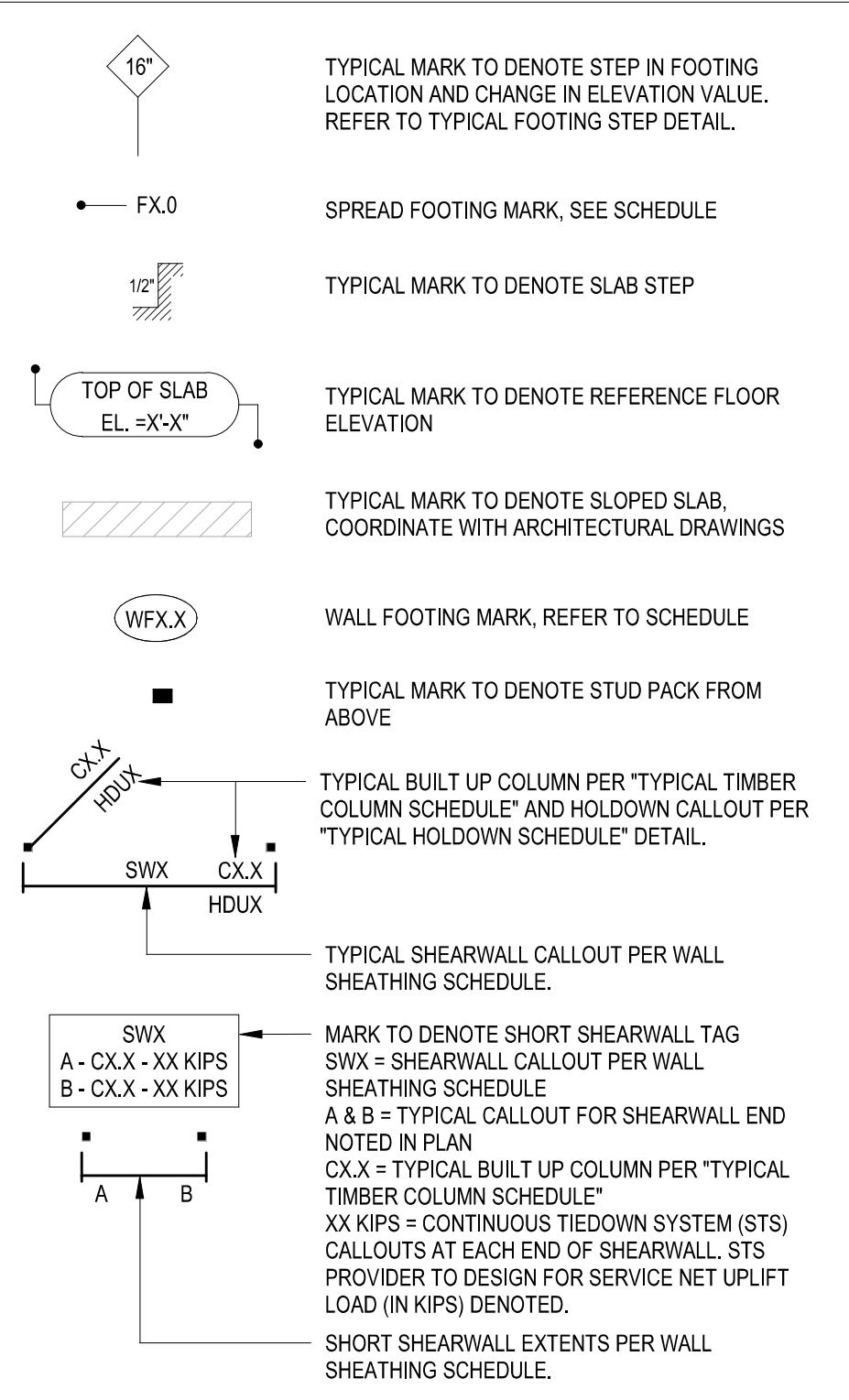


**1** BASEMENT FOUNDATION PLAN  
SCALE: 1/4" = 1'-0"

**FOUNDATION PLAN NOTES**

- REFER TO GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL STRUCTURAL INFORMATION.
- 4" SLAB ON GRADE WITH 6x6-W1.4W1.4 WELDED WIRE FABRIC, SPACE CONTRACTION JOINTS AT A MAXIMUM OF 11" O.C. EACH DIRECTION. SEE TYPICAL SLAB ON GRADE REQUIREMENTS' DETAIL FOR ADDITIONAL INFORMATION.
- SEE SCHEDULES FOR TYPICAL SPREAD FOOTINGS AND WALL FOOTINGS.
- DIMENSIONS SHOWN ARE FROM FACE OF STUDS AT EXTERIOR WALLS TO CENTERLINE OF WALL AT INTERIOR LOCATIONS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN ON THIS DRAWING.
- SLOPE ALL EXTERIOR SLABS AWAY FROM BUILDING AT A RATE OF 1/8" PER FOOT FOR PROPER DRAINAGE.
- SEE PLUMBING DRAWINGS FOR FLOOR DRAINS AND PIPING PENETRATIONS THROUGH THE FLOOR SLAB. REPORT ANY CONFLICTS WITH STRUCTURAL REQUIREMENTS FOR SLOPED OR DEPRESSED SLABS.
- SEE ARCHITECTURAL PLANS FOR LOCATION OF FLOOR FINISHES, AND AREAS REQUIRING SLOPED OR DEPRESSED SLABS.
- FINAL SITE DRAWINGS HAVE NOT BEEN RELEASED TO FLUHRER REED, PA BEFORE THE RELEASE OF THESE DRAWINGS. FLUHRER REED, PA HAS LOCATED STEPPED FOOTING LOCATIONS BASED UPON THE CURRENT ARCHITECTURAL DATA, HOWEVER, IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF THE FOOTING STEPS SHOWN WITH THE FINAL CIVIL DRAWINGS AND FIELD CONDITIONS. REPORT ANY DISCREPANCIES TO FLUHRER REED, PA BEFORE CONSTRUCTION.
- THICKEN SLAB AS REQUIRED AT ALL HOLDOWN LOCATIONS TO ALLOW FOR ANCHOR EMBEDMENT PER 'CONCRETE ANCHORAGE ATTACHMENT' DETAILS.
- WHERE NOTED ON PLAN, BOTTOM OF WALL FOOTING TO MATCH BOTTOM OF EXISTING FOOTING. ATTACH WALL FOOTING TO EXISTING SPREAD FOOTING PER DETAIL 335.2. GC FIELD VERIFY EXISTING FOOTING EXTENTS AND ELEVATION PRIOR TO CONSTRUCTION. NOTIFY FLUHRER REED OF DISCREPANCIES.
- WHERE NOTED ON PLAN, EXIST SPREAD FOOTING ASSUMED MIN 4'-0" x 4'-0" x 12" THICK. GC TO VERIFY EXIST FOOTING PRIOR TO CONSTRUCTION AND NOTIFY FLUHRER REED OF DISCREPANCIES.
- WHERE NOTED ON PLAN, GROUT VOID BETWEEN BRICK AND EXITS BUILDING SOLID BELOW GRADE TO TOP FOOTING.

**TYPICAL FOUNDATION PLAN SYMBOLS**



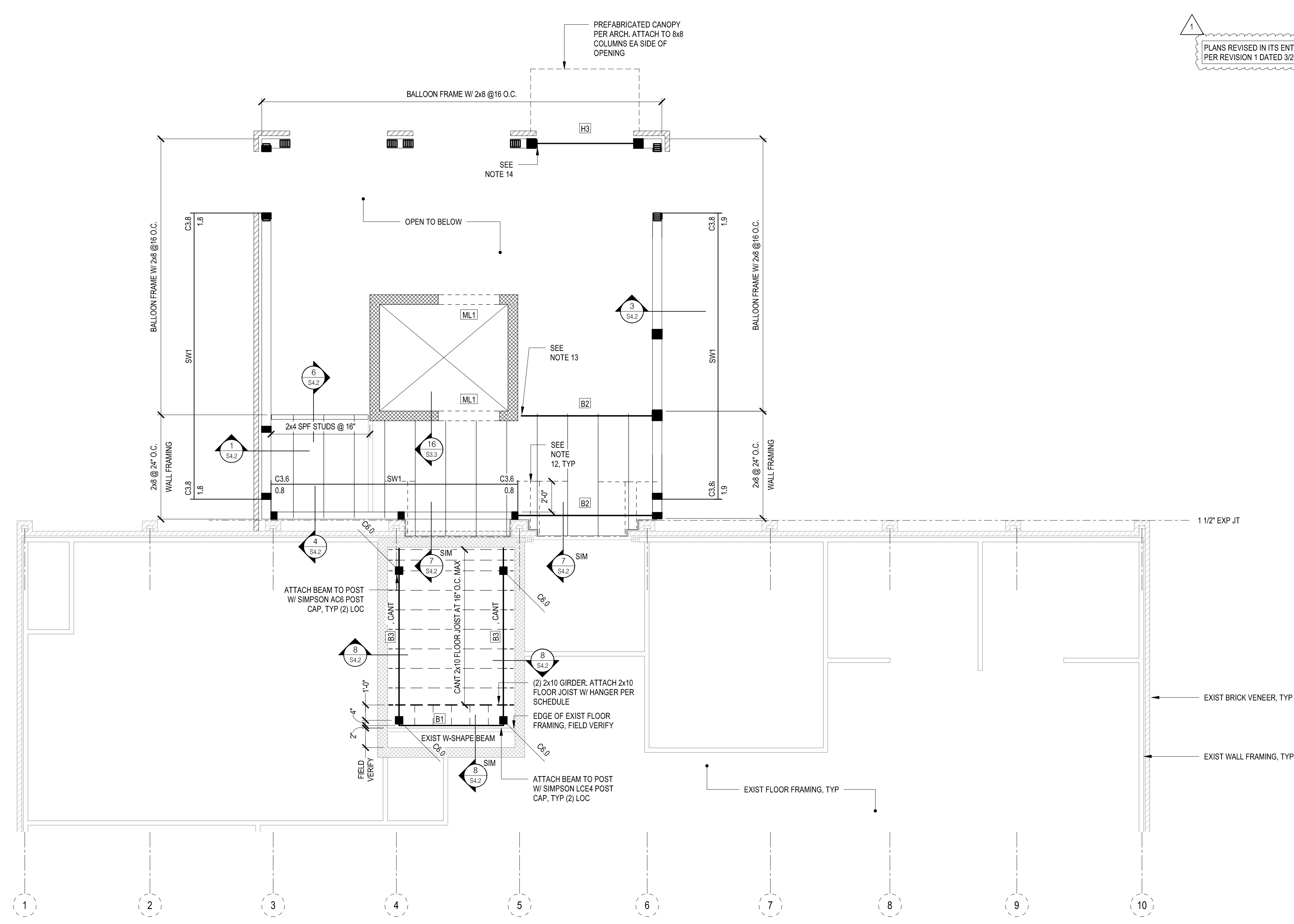
**WALL FOOTING SCHEDULE**

MARK	WIDTH	THICKNESS	T	REINFORCING	NOTES
TF2.0	2'-0"	1'-8"	3#45 CONT. BOT. #5@36" HORIZ. TIES	2,4	
WF2.5	2'-6"	1'-0"	3#45 CONT. BOT. #5@36" HORIZ. TIES	1,2	

**SPREAD FOOTING SCHEDULE**

MARK	PLAN SIZE	THICKNESS	REINFORCING	NOTES	
	L	W	BOTTOM	TOP	
F2.5	2'-6"	2'-6"	1'-0"	4#4 EA WAY	1,2

- NOTES:
- TYPICAL TOP OF FOOTING ELEVATION AT EXTERIOR (1-1'), UNO. TYPICAL TOP OF FOOTING AT INTERIOR IS FLUSH WITH THE ADJACENT SLAB ON GRADE, UNO.
  - BOTTOM STEEL SHALL BE PLACED 3" CLEAR FROM THE BOTTOM OF THE FOOTING.
  - TOP STEEL SHALL BE PLACED 2" CLEAR FROM THE TOP OF THE FOOTING.
  - NOTES TURNDOWN FOOTING TO BE POURED INTEGRAL WITH THE SLAB.



PLANS REVISED IN ITS ENTIRETY PER REVISION 1 DATED 3/20/2023

**1 BASEMENT FLOOR CEILING FRAMING PLAN**  
SCALE: 1/4" = 1'-0"

KING STUD SCHEDULE - BRICK			KING STUD SCHEDULE - ALT		
OPENING MAXIMUM WIDTH	STUD QUANTITY	SPACING	OPENING MAXIMUM WIDTH	STUD QUANTITY	SPACING
4'-0"	(2)	24"	4'-0"	(2)	24"
7'-0"	(3)	24"	7'-0"	(3)	24"
12'-0"	(4)	24"	12'-0"	(3)	24"

NOTES:  
1. STUDS ARE SOLID SAWN (UNO).  
2. MAXIMUM STUD HEIGHT 8'-0"; 2x8 BALLOON WALL FRAMING MAX STUD HEIGHT 10'-6".  
3. PROVIDE (1) 2x KING STUD MATCHING WALL STUD WIDTH AT ALL INTERIOR WALLS. TYPICAL (UNO).  
4. "KING STUD SCHEDULE - BRICK" TO BE USED AT ALL LOCATIONS WHERE BRITTLE FINISHES TO BE APPLIED. TYPICAL.  
5. "KING STUD SCHEDULE - ALT" TO BE USED AT ALL 2x8 FRAMED WALL LOCATIONS.

HEADER SCHEDULE - BASEMENT FLOOR CEILING		
MARK	BEAM DESCRIPTION	BEARING/JACK STUDS
H3	(3) 2x8	2 UNO

NOTES:  
1. JACK STUD QUANTITIES IN THIS SCHEDULE ARE STANDARD THROUGHOUT THE PLAN SHOWN. DIFFERENT STUD QUANTITIES REQUIRED ARE NOTED IN PLAN. KING STUDS SHALL ALSO BE PROVIDED PER KING STUD SCHEDULE AT THESE CONDITIONS.  
2. ONLY HEADERS FOR EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE DESIGNED BY FLUHRER REED, P.A. SEE ARCHITECTURAL PLANS FOR NON-LOAD BEARING INTERIOR REQUIREMENTS.  
3. ALL EXTERIOR HEADERS SHALL HAVE KING STUDS PER THE KING STUD SCHEDULE ON THIS SHEET. SEE KING STUD SCHEDULE NOTES FOR REQUIREMENTS AT INTERIOR LOCATIONS.  
4. PROVIDE 2x4 BEARING STUDS AT ALL 2-PLY HEADER LOCATIONS AND 2x6 BEARING STUDS AT ALL 3-PLY HEADER LOCATIONS, UNLESS NOTED OTHERWISE.  
5. SEE DETAIL 5154.1 FOR INSTALLATION REQUIREMENTS AND ADDITIONAL INFORMATION.

BEAM SCHEDULE - BASEMENT FLOOR CEILING		
MARK	BEAM DESCRIPTION	BEARING STUDS
B1	(2) 2x10	(2) 2x6 UNO
B2	(3) 2x12	(2) 2x6 UNO
B3	(3) 1.75 x 9.25 LVL	PER PLAN

NOTES:  
1. ONLY BEAMS FOR EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE DESIGNED BY FLUHRER REED, P.A. SEE ARCHITECTURAL PLANS FOR NON-LOAD BEARING INTERIOR REQUIREMENTS.  
2. ALL BEAMS EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.  
3. REFER TO DETAILS AND SECTIONS FOR ELEVATION OF BEAM. IF NOT SPECIFICALLY NOTED, BOTTOM OF BEAM TO BE SET FLUSH WITH BOTTOM OF ADJACENT FLOOR TRUSSES. TYPICAL (UNO). TOP OF BEAM AT SOLID SAWN FRAMING SHALL BE SET FLUSH WITH TOP OF ADJACENT FRAMING. TYPICAL (UNO).  
4. SEE DETAIL 434.1 FOR INSTALLATION REQUIREMENTS AND ADDITIONAL INFORMATION.

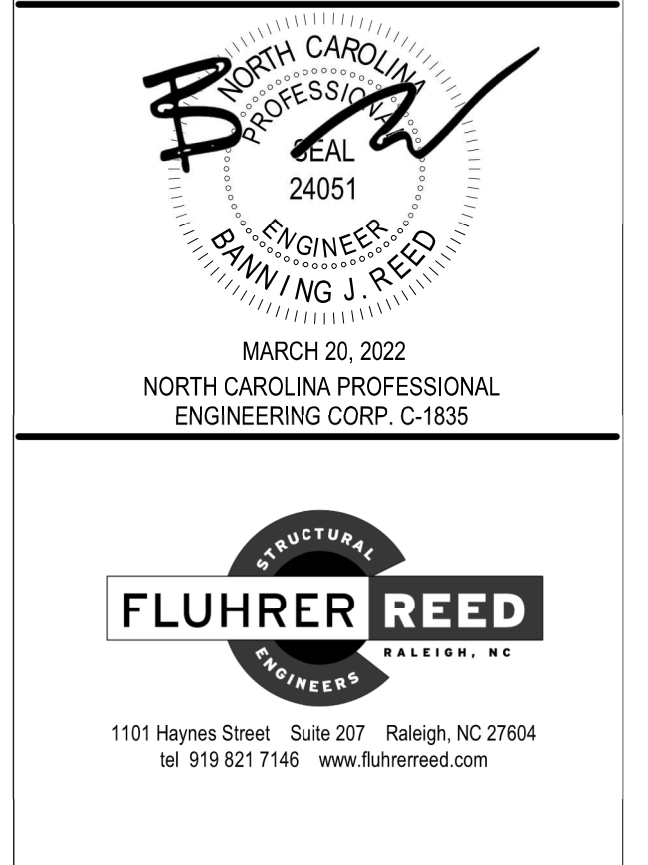
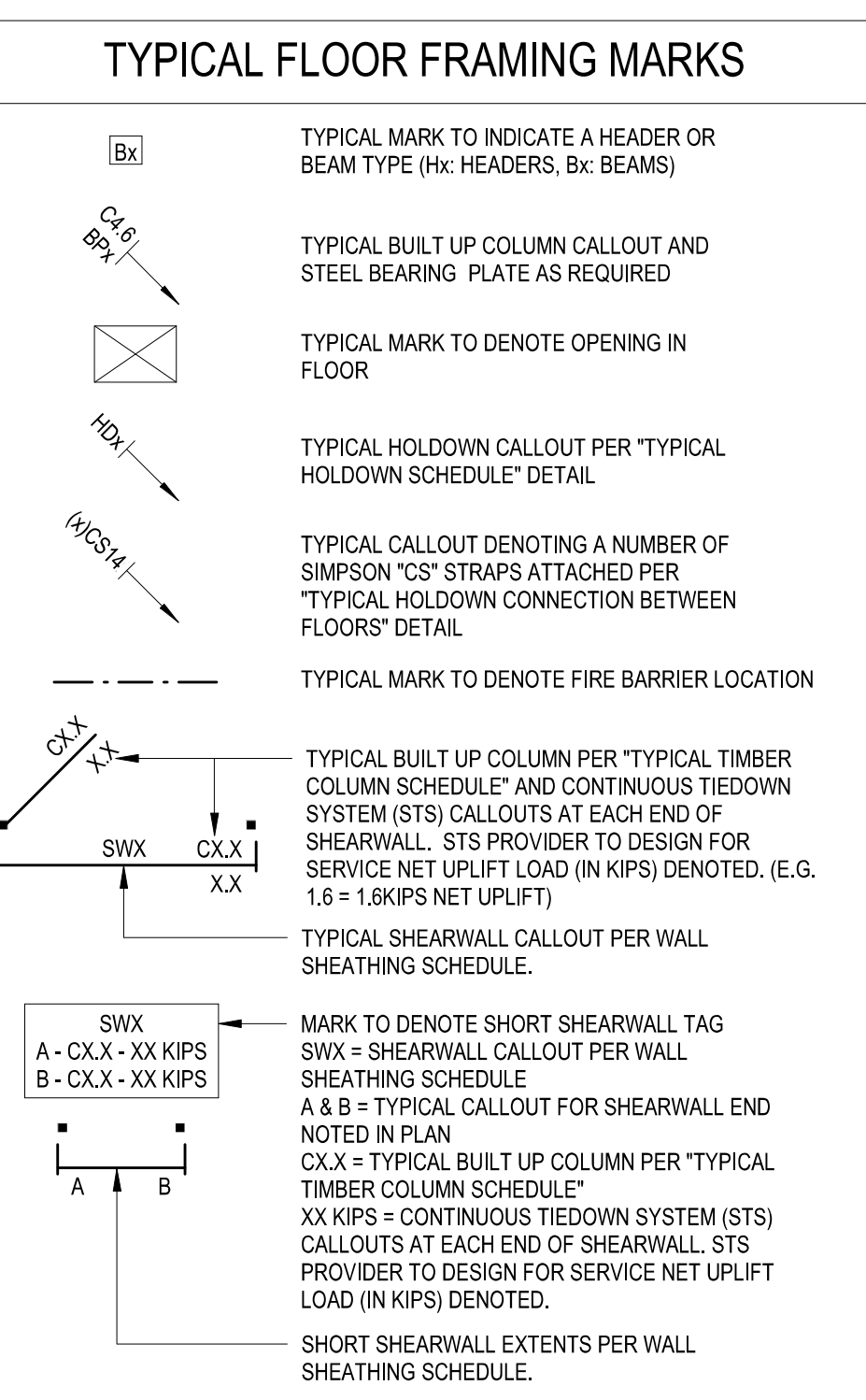
BASEMENT FLOOR CEILING WALL FRAMING SCHEDULE	
WALL TYPE	WALL FRAMING (SEE NOTE 1)
EXTERIOR WALLS	2x8 SPF STUDS @ 24" O.C. UNO
INTERIOR BEARING WALLS	2x6 SPF STUDS @ 16" O.C. UNO

NOTES:  
1. SEE ARCHITECTURAL DRAWINGS FOR 2x6 PLUMBING WALL LOCATIONS. 2x6 WALL TO BE SAME GRADE AND STUD SPACING AS 2x4 STUDS LISTED IN TABLE UNLESS SPECIFICALLY NOTED OTHERWISE.  
2. SEE DETAIL 1154.1 FOR ACCEPTABLE ANCHOR ALTERNATIVES.  
3. SILL PLATES IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED.

BASEMENT FLOOR CEILING WALL SHEATHING SCHEDULE						
WALL TYPE	SHEATHING TYPE (SEE NOTE 1)	SHEATHING LOCATION ON WALL (SEE NOTE 2)	NAIL SIZE (SEE NOTE 3)	PANEL EDGE NAIL SPACING	PANEL FIELD NAIL SPACING	5/8"Ø ANCHOR ROD SPACING (SEE NOTE 4)
SW1 SHEARWALL #1	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	6" O.C.	12" O.C.	4'-0" O.C. EXT 4'-0" O.C. INT
SW2 SHEARWALL #2	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	4" O.C.	12" O.C.	3'-0" O.C. EXT 4'-0" O.C. INT
SW3 SHEARWALL #3	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	3" O.C.	12" O.C.	2'-0" O.C. EXT 4'-0" O.C. INT

NOTES:  
1. SEE DETAIL 2154.1 FOR FURTHER INFORMATION.  
2. SHEATHING SCHEDULES DENOTES MINIMUM STRUCTURAL REQUIREMENTS FOR SHEATHING. COORDINATE WITH ARCHITECTURAL PLANS FOR ADDITIONAL SHEATHING REQUIREMENTS.  
3. SEE SCHEDULE 1106.1 FOR ACCEPTABLE ALTERNATE FASTENERS.  
4. SEE DETAIL 7153.1 FOR ACCEPTABLE ANCHOR ALTERNATIVES.  
5. FOR SHEARWALLS WITH PANEL EDGE NAILING LESS THAN OR EQUAL TO 3" O.C. SEE DETAIL 3154.1 FOR ADDITIONAL FRAMING INFORMATION.

- ### WALL FRAMING PLAN NOTES
- REFER TO GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL STRUCTURAL INFORMATION.
  - THIS PLAN SHOWS THE CEILING FRAMING OF THE LEVEL INDICATED. THE WALLS ON WHICH IT IS SUPPORTED BELOW.
  - DENOTES SPAN DIRECTION OF 2<sup>ND</sup> FLOOR TRUSSES DESIGNED AND BUILT PER THE TRUSS MANUFACTURER AND INDICATES THE GENERAL FRAMING LAYOUT. THE TRUSS MANUFACTURER SHALL COMPLETE THE LAYOUT FROM THE SCHEMATICALLY INDICATED FRAMING AND DESIGNED THE TRUSSES FOR THE LOADS SHOWN ON THESE DRAWINGS. TRUSSES SHALL BE SPACED AT A MAXIMUM OF 24" CENTERS (UNO).
  - TRUSSES SHALL BEAR AT AN ELEVATION OF 7.11 (4') ABOVE THE SUBFLOOR MATERIAL BELOW (UNO).
  - FLOOR SHEATHING IS PART OF LATERAL RESISTING SYSTEM. REFER TO THE DETAIL 4154.1 ON THESE DRAWINGS FOR FLOOR SHEATHING THICKNESS, TYPE AND ATTACHMENT REQUIREMENTS.
  - WALL FRAMING SHOWN ON THESE PLANS IS STANDARD WOOD PLATFORM FRAMING UNLESS NOTED OTHERWISE. REFER TO THE "WALL FRAMING SCHEDULE" ON THIS SHEET FOR STUD SIZES, SPACING, SPECIES, AND GRADE. REFER TO THE DETAIL 2154.1 FOR TYPICAL WALL SHEATHING THICKNESS, TYPE, AND ATTACHMENT REQUIREMENTS. REFER TO "WALL SHEATHING SCHEDULE" ON THIS SHEET FOR ADDITIONAL SHEATHING REQUIREMENTS NOTED ON PLAN.
  - TIMBER BEAM TO BEAM CONNECTIONS SHALL BE CONNECTED PER THE SCHEDULE 1154.1 SHOWN ON THESE DRAWINGS UNLESS A SPECIFIC HANGER IS NOTED ON THE PLANS.
  - PROVIDE 3 STUDS MINIMUM UNDER ALL BEAMS, TRUSS GRIDDERS, ETC. (UNO) ADDITIONAL TIMBER COLUMNS ARE NOTED ON THE PLANS. SEE THE SCHEDULE 6154.1 FOR FURTHER INFORMATION. AT POINT LOADS FROM ABOVE, PROVIDE THE SAME NUMBER OF STUDS AS ABOVE CONTIGUOUS TO FOUNDATION.
  - PROVIDE HEADERS AND BEAMS AND LOOSE STEEL LINTELS IN ACCORDANCE WITH THE "HEADER SCHEDULE" AND "BEAM SCHEDULE" AND THE SCHEDULE 1153.3 SHOWN ON THESE DRAWINGS.
  - STAIRS SHALL BE STEEL STAIR STRINGERS, TREADS, LANDINGS, AND RISERS PER THE STAIR MANUFACTURER DESIGNED FOR 100 PSF LIVE LOAD. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION. GROUT MASONRY CELLS SOLID AT LANDINGS SUPPORT BEAM ELEVATIONS AND AT ALL ELEVATOR RAIL ATTACHMENT POINTS.
  - TRUSS BLOCKS TO BE PROVIDED AT ALL SHEARWALL LOCATIONS NOTED ON PLAN EXCEPT WHERE CONTINUOUS SHEATHING FROM THE SHEARWALL BELOW EXTENDS TO THE UNDERSIDE OF THE FLOOR SHEATHING ABOVE. SEE CORRESPONDING DETAILS AND PROVIDE BLOCKING PER DETAILS 13154.1 WHERE REQUIRED.
  - PROVIDE CANTILEVERED 2x4 FLOOR JOIST BETWEEN TRUSSES WHERE TRUSS DOES NOT ALIGN WITH EDGE OF FLOOR. ATTACH TO (2)2x4 BLOCKING BETWEEN TRUSS TOP CHORD.
  - WHERE NOTED ON PLAN, ATTACH BEAM TO MASONRY WALL WITH SIMPSON HUC212-3 HANGER. INSTALL HANGER PER MANUFACTURER'S REQUIREMENTS.
  - WHERE NOTED ON PLAN, ATTACH BEAM TO FACE OF 6x6 COLUMN WITH SIMPSON HUC253-3 HANGER. INSTALL HANGER PER MANUFACTURER'S REQUIREMENTS.



CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

THE DRAWINGS AND DESIGN SHOWN ARE THE PROPERTY OF DESIGN DEVELOPMENT. THE REPRODUCTION OR USE OF THIS PROPERTY WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT IS PROHIBITED AND ANY REPRODUCTION OF THESE DRAWINGS IS SUBJECT TO LITIGATION.

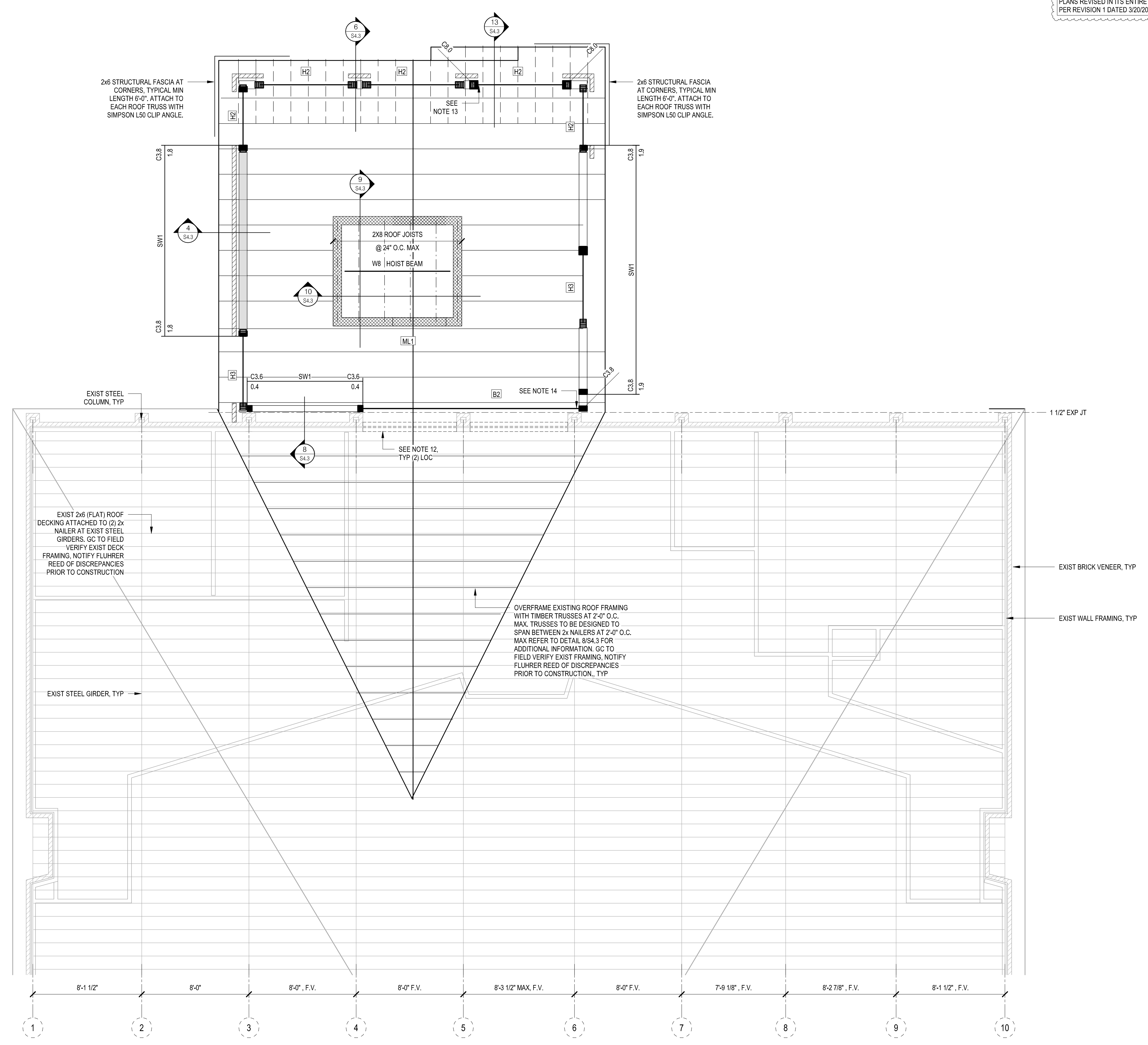
No.	Description	Date
1	REVISION 1	3/20/23

PROJECT #: 2022303  
DATE: 9/16/2022

BASEMENT FLOOR CEILING FRAMING PLAN

No.	Description	Date
1	REVISION 1	3/20/23

PLANS REVISED IN ITS ENTIRETY PER REVISION 1 DATED 3/20/2023



**1** ROOF/FIRST FLOOR CEILING FRAMING PLAN  
SCALE: 1/4" = 1'-0"

KING STUD SCHEDULE - BRICK			KING STUD SCHEDULE - ALT		
OPENING MAXIMUM WIDTH	STUDS	UPLIFT	OPENING MAXIMUM WIDTH	STUDS	UPLIFT
4'-0"	(2) 2x6	(2) CSHP20	4'-0"	(2) 2x6	(2) CSHP20
7'-0"	(3) 2x6	(3) CSHP20	7'-0"	(3) 2x6	(3) CSHP20
12'-0"	(4) 2x6	(4) CSHP20	12'-0"	(4) 2x6	(4) CSHP20

NOTES:  
1. STUDS ARE SOLID SAWN (UNO).  
2. MAXIMUM STUD HEIGHT 8'-0"; 2x6 BALLOON WALL FRAMING MAX STUD HEIGHT 10'-6".  
3. PROVIDE (1) 2x KING STUD MATCHING WALL STUD WIDTH AT ALL INTERIOR WALLS. TYPICAL (UNO).  
4. "KING STUD SCHEDULE - BRICK" TO BE USED AT ALL LOCATIONS WHERE BRITTLE FINISHES TO BE APPLIED. TYPICAL.  
5. "KING STUD SCHEDULE - ALT" TO BE USED AT ALL 2x6 FRAMED WALL LOCATIONS.

HEADER SCHEDULE - 1ST FLOOR CEILING			
MARK	BEAM DESCRIPTION	BEARING/JACK STUDS	UPLIFT
H2	(3) 2x6	2	CSHP20
H3	(3) 2x8	2	CSHP20

NOTES:  
1. JACK STUD QUANTITIES IN THIS SCHEDULE ARE STANDARD THROUGHOUT THE PLAN SHOWN. DIFFERENT STUD QUANTITIES REQUIRED ARE NOTED IN PLAN. KING STUDS SHALL ALSO BE PROVIDED PER KING STUD SCHEDULE AT THESE CONDITIONS.  
2. ONLY HEADERS FOR EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE DESIGNED BY FLUHRER REED. PA. SEE ARCHITECTURAL PLANS FOR NON-LOAD BEARING INTERIOR REQUIREMENTS.  
3. ALL EXTERIOR HEADERS SHALL HAVE KING STUDS PER THE KING STUD SCHEDULE ON THIS SHEET. SEE KING STUD SCHEDULE NOTES FOR REQUIREMENTS AT INTERIOR LOCATIONS.  
4. PROVIDE 2x6 BEARING STUDS AT ALL 2x6 WALL LOCATIONS AND 2x8 STUDS IN ALL 2x8 WALLS, UNLESS NOTED OTHERWISE.  
5. SEE DETAIL 254.1 FOR INSTALLATION REQUIREMENTS AND ADDITIONAL INFORMATION.

BEAM SCHEDULE - 1ST FLOOR CEILING			
MARK	BEAM DESCRIPTION	BEARING STUDS	UPLIFT
B2	(3) 2x12	(3) 2x6, (UNO)	(2) CSHP18

NOTES:  
1. ONLY BEAMS FOR EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE DESIGNED BY FLUHRER REED. PA. SEE ARCHITECTURAL PLANS FOR NON-LOAD BEARING INTERIOR REQUIREMENTS.  
2. ALL BEAMS EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.  
3. REFER TO DETAILS AND SECTIONS FOR ELEVATION OF BEAM. IF NOT SPECIFICALLY NOTED, BOTTOM OF BEAM TO BE SET FLUSH WITH BOTTOM OF ADJACENT FLOOR TRUSSES. TYPICAL (UNO). TOP OF BEAM AT SOLID SAWN FRAMING SHALL BE SET FLUSH WITH TOP OF ADJACENT FRAMING. TYPICAL (UNO).  
4. SEE DETAIL 254.1 FOR INSTALLATION REQUIREMENTS AND ADDITIONAL INFORMATION.

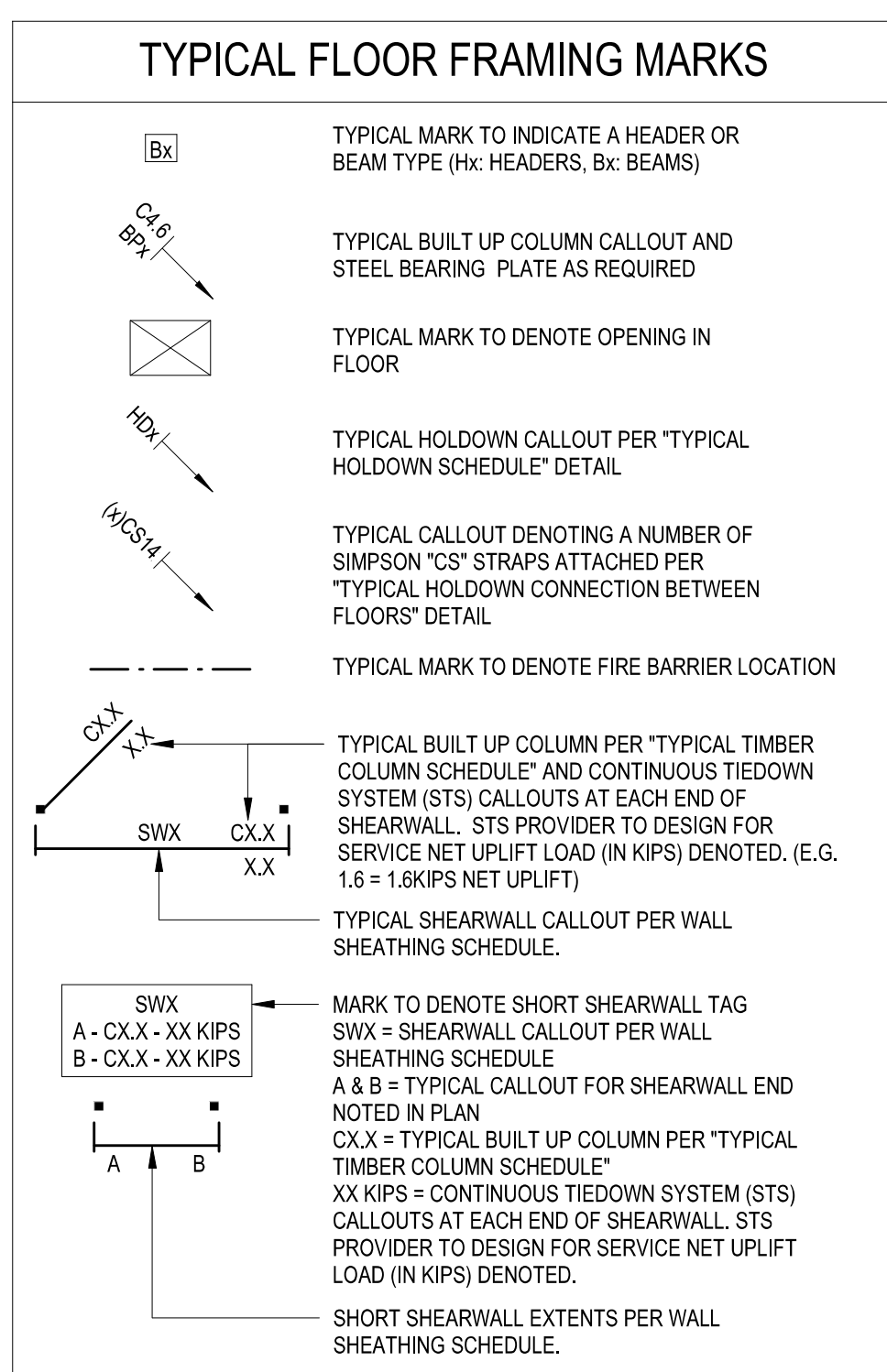
ROOF/FIRST FLOOR CEILING WALL FRAMING SCHEDULE	
WALL TYPE	WALL FRAMING
EXTERIOR WALLS	2x6 SPF STUDS @ 24" O.C.

NOTES:  
1. SEE ARCHITECTURAL DRAWINGS FOR 2x6 PLUMBING WALL LOCATIONS. 2x6 WALL TO BE SAME GRADE AND STUD SPACING AS 2x4 STUDS LISTED IN TABLE UNLESS SPECIFICALLY NOTED OTHERWISE.

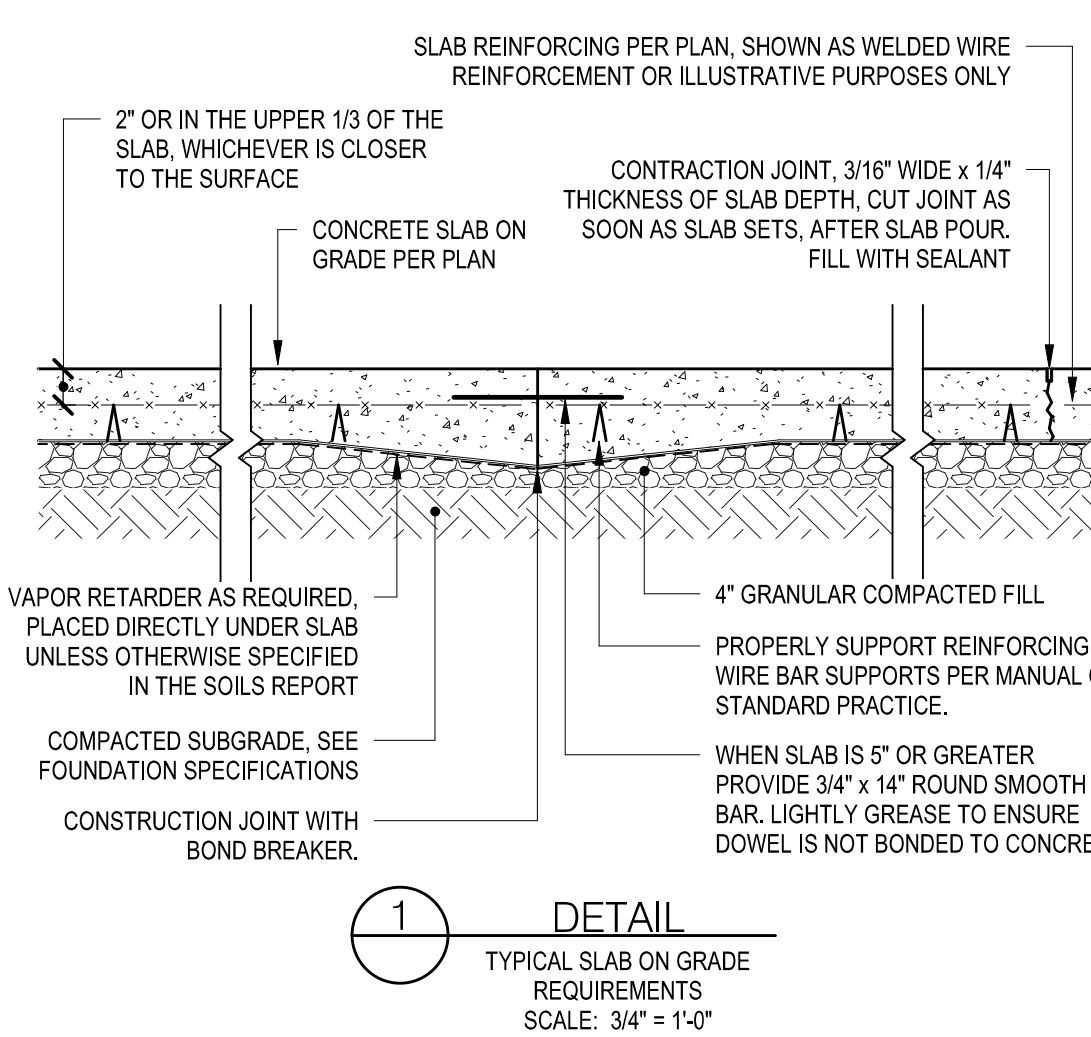
ROOF/FIRST FLOOR CEILING WALL SHEATHING SCHEDULE						
WALL TYPE	SHEATHING TYPE (SEE NOTE 1)	SHEATHING LOCATION ON WALL (SEE NOTE 2)	NAIL SIZE (SEE NOTE 3)	PANEL EDGE NAIL SPACING	PANEL FIELD NAIL SPACING	ATTACHMENT @ SILL PLATE (SEE NOTE 4)
SW1 SHEARWALL #1	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	6" O.C.	12" O.C.	(2) 16d CC NAILS @ 12" O.C.
SW2 SHEARWALL #2	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	4" O.C.	12" O.C.	(2) 16d CC NAILS @ 6" O.C.
SW3 SHEARWALL #3	7/16" APA RATED STRUCTURAL SHEATHING	EITHER	8d CC	6" O.C.	12" O.C.	(2) 16d CC NAILS @ 6" O.C.

NOTES:  
1. SEE DETAIL 254.1 FOR FURTHER INFORMATION.  
2. SHEATHING SCHEDULES DENOTES MINIMUM STRUCTURAL REQUIREMENTS FOR SHEATHING. COORDINATE WITH ARCHITECTURAL PLANS FOR ADDITIONAL SHEATHING REQUIREMENTS.  
3. SEE SCHEDULE 1154.1 FOR ACCEPTABLE ALTERNATE FASTENERS.  
4. AT INTERIOR LOCATIONS WHERE TRUSSES ARE PARALLEL AND TRUSS BLOCKS ARE PROVIDED THE SILL PLATE ATTACHMENT REQUIREMENTS ARE ADDRESSED IN THE TRUSS BLOCK DETAILS. ATTACHMENT NOTED IN THIS SCHEDULE IS NOT REQUIRED. AT EXTERIOR LOCATIONS WHERE TRUSSES ARE PERPENDICULAR TO THE WALL PROVIDE SINGLE NAILS AT HALF THE SPACING INDICATED IN THE SCHEDULE TO THE TRUSS BAND.  
5. FOR SHEARWALLS WITH PANEL EDGE NAILING LESS THAN OR EQUAL TO 3" O.C. SEE DETAIL 3/54.1 FOR ADDITIONAL FRAMING INFORMATION.

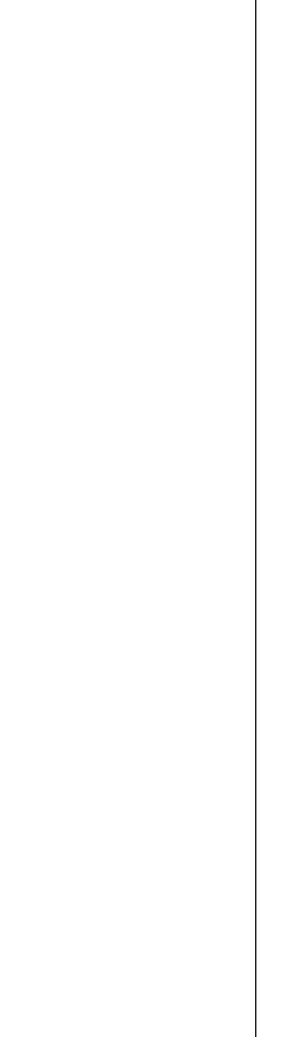
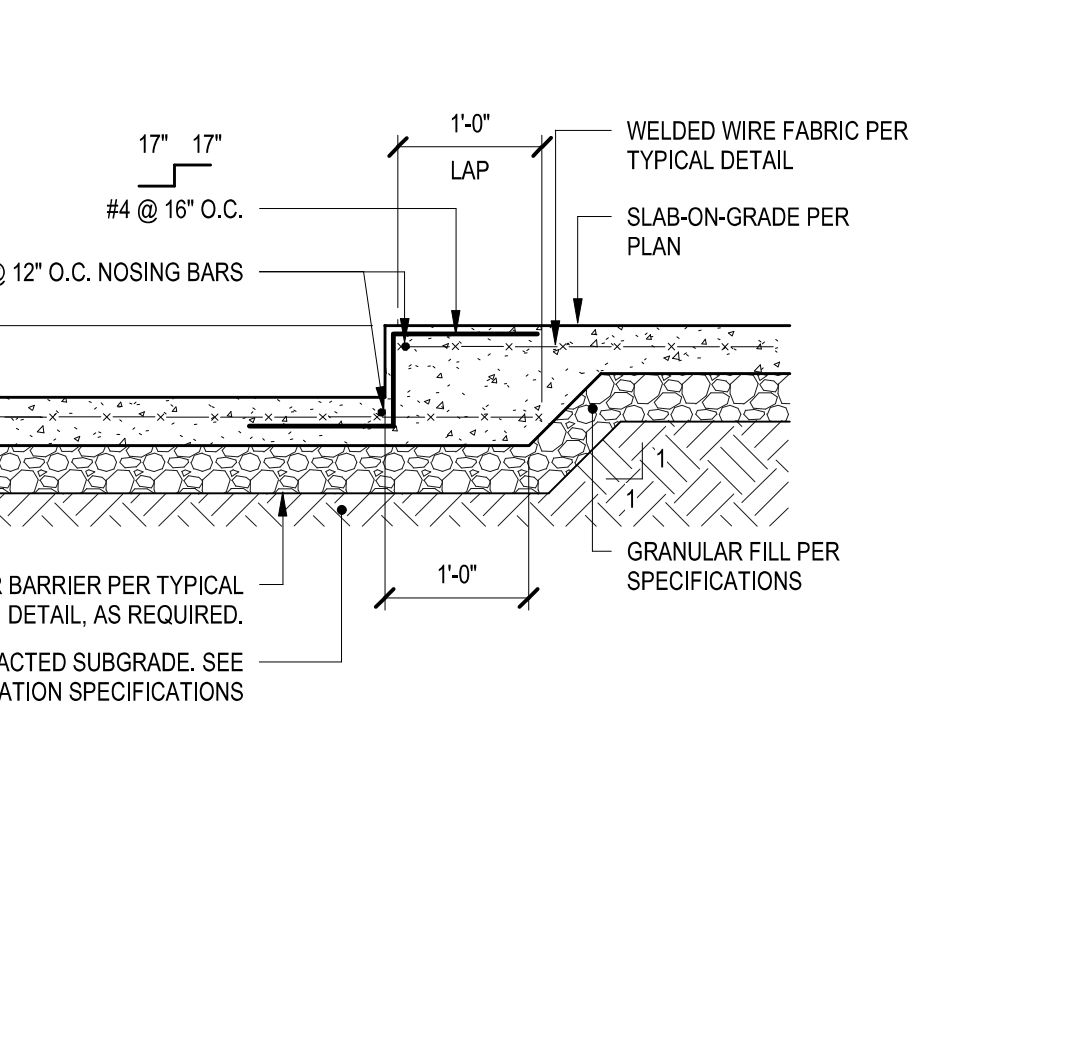
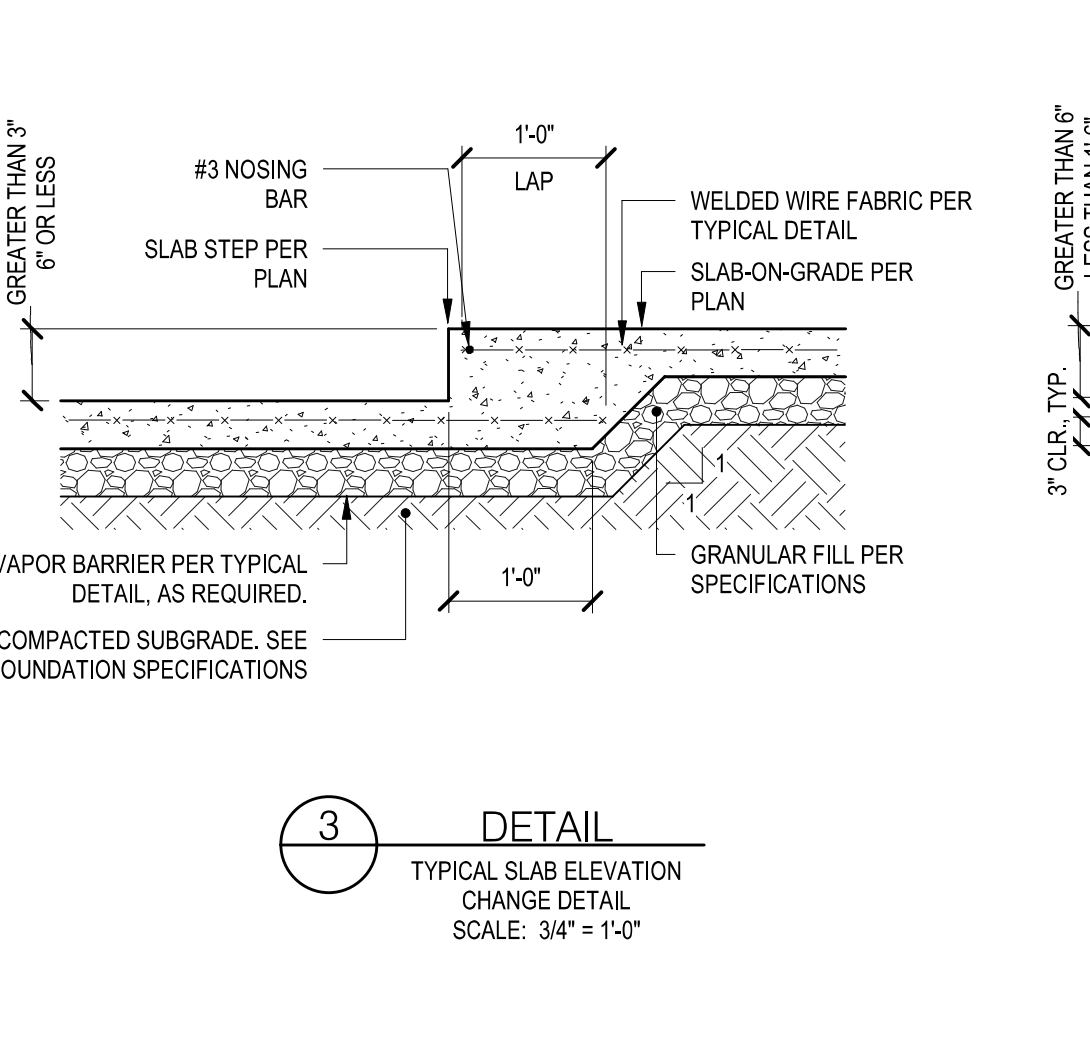
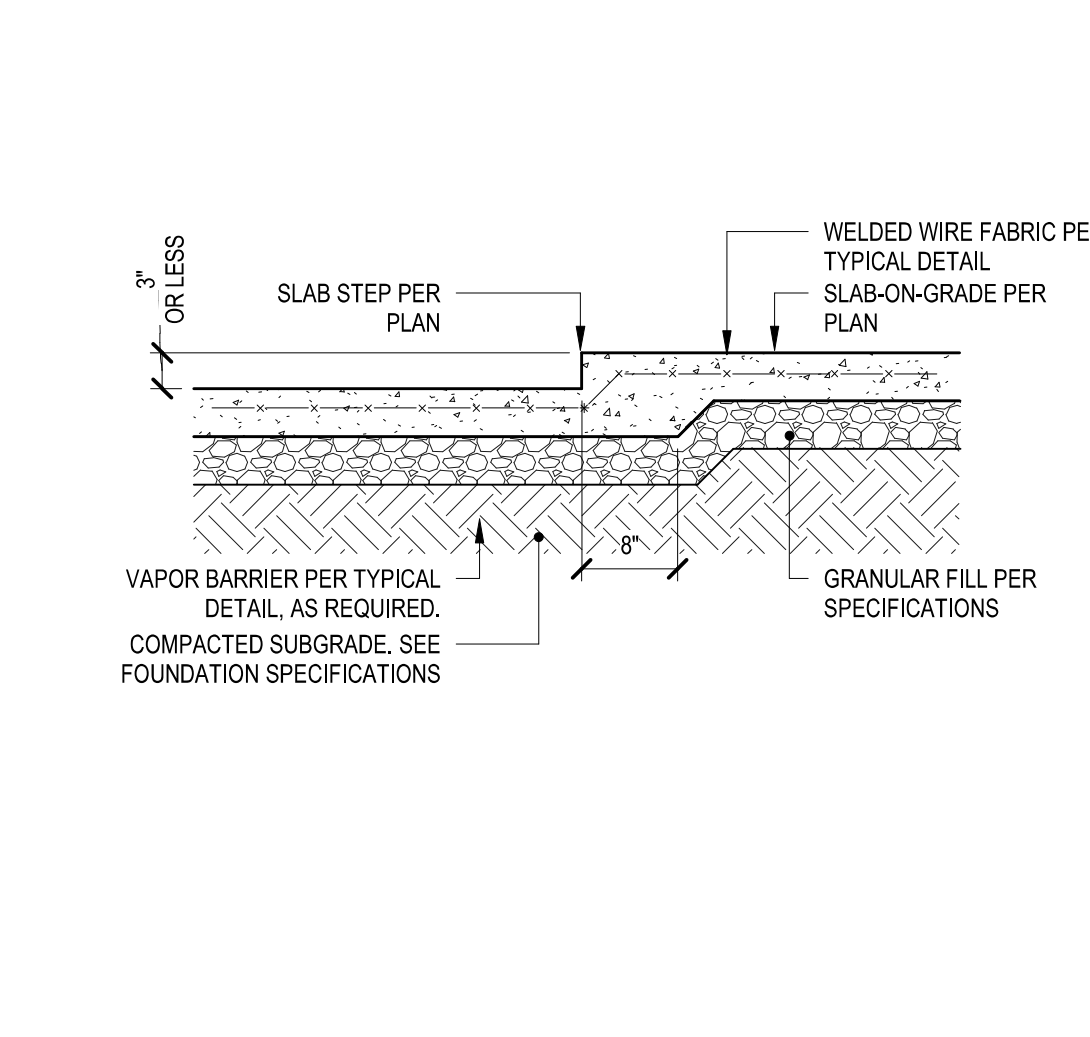
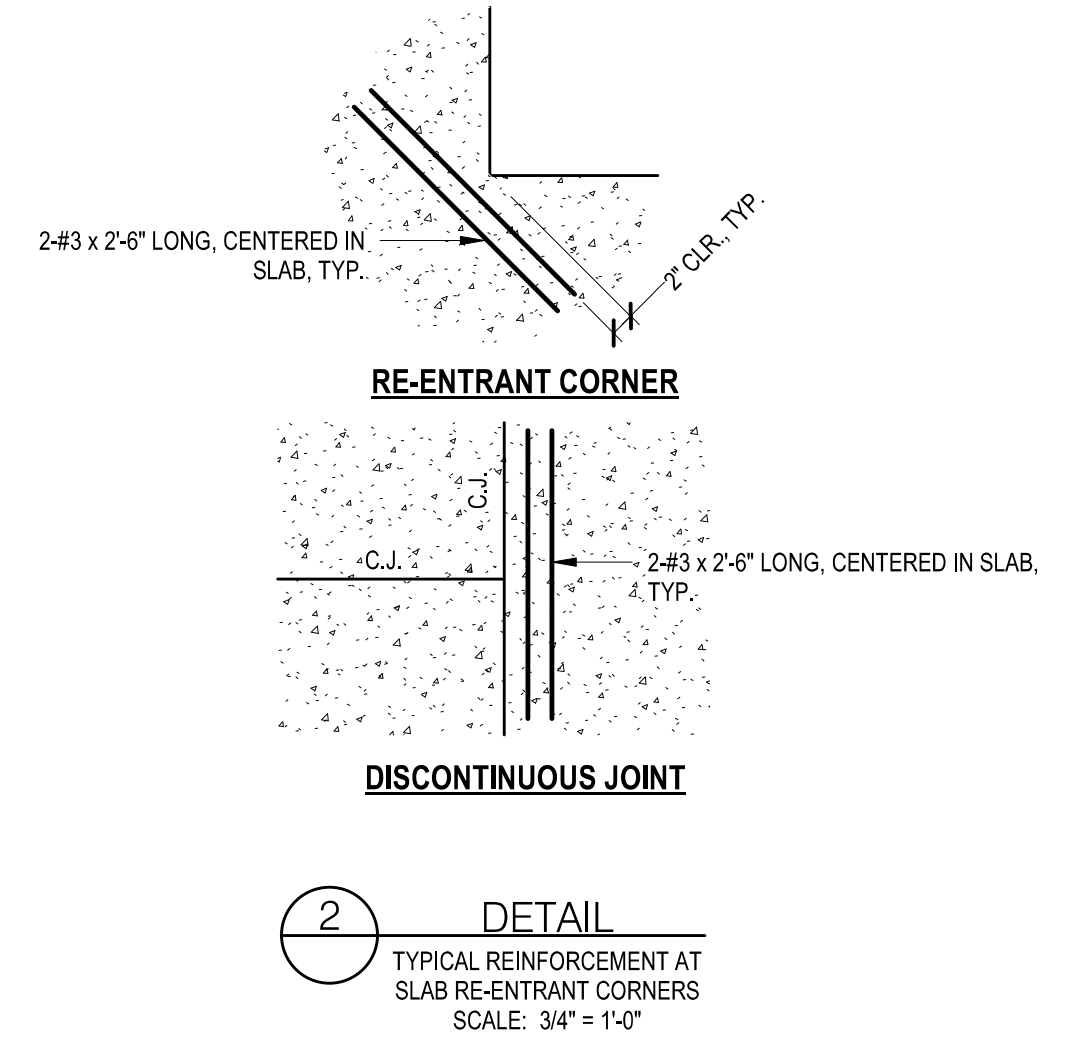
- ROOF & WALL FRAMING PLAN NOTES**
- REFER TO GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL STRUCTURAL INFORMATION.
  - REFER TO THE ARCHITECTURAL DRAWINGS FOR ROOF PITCHES, TYPICAL (UNO).
  - \_\_\_\_\_ DENOTES SLOPED ROOF TRUSSES DESIGNED AND BUILT PER THE TRUSS MANUFACTURER AND INDICATES THE GENERAL FRAMING LAYOUT. THE TRUSS MANUFACTURER SHALL COMPLETE THE LAYOUT FROM THE SCHEMATICALLY INDICATED FRAMING AND DESIGN THE TRUSSES FOR THE LOADS SHOWN ON THESE DRAWINGS AS WELL AS UNBALANCED LOAD CONDITIONS FROM BOTH RAIN AND SNOW LOADS. TRUSSES SHALL BE SPACED AT A MAXIMUM OF 24" O.C.
  - \_\_\_\_\_ DENOTES (1) 2x6 SPF #2 TIMBER OUTLOOKERS @ 16" O.C. MAXIMUM. SEE DETAILS AND ARCHITECTURAL DRAWINGS FOR ELEVATION AND ATTACHMENT REQUIREMENTS.
  - TRUSSES SHALL BEAR AT AN ELEVATION OF (8'-0") ABOVE THE SUBFLOOR MATERIAL BELOW (UNO).
  - REFER TO THE DETAIL 3/54.3 ON THESE DRAWINGS FOR ROOF SHEATHING THICKNESS, TYPE, AND ATTACHMENT REQUIREMENTS.
  - ANCHOR TRUSSES, HIP GIRDETS, AND TRUSS GIRDETS TO SUPPORTING WALLS OR BEAMS PER THE SCHEDULE 154.3 SHOWN ON THESE DRAWINGS. TRUSS TO TRUSS AND TRUSS TO BEAM CONNECTORS SHALL BE DESIGNED BY THE TRUSS SUPPLIER. TRUSS GIRDETS SHALL NOT BEAR OVER HEADERS UNLESS SHOWN ON THESE DRAWINGS. ALL HEADERS LONGER THAN 5'-0" AND ROOF BEAMS OVER 4'-0" SHALL BE ANCHORED TO EACH OF THEIR SUPPORTS WITH (1) SIMPSON HS HURRICANE TIE LOCATED AT EACH END OF THE BEAM.
  - WALL FRAMING SHOWN ON THESE PLANS IS STANDARD WOOD PLATFORM FRAMING UNLESS NOTED OTHERWISE. REFER TO THE "WALL FRAMING SCHEDULE" ON THIS SHEET FOR STUD SIZES, SPACING, SPECIES, AND GRADE. REFER TO THE DETAIL 254.1 FOR TYPICAL WALL SHEATHING THICKNESS, TYPE, AND ATTACHMENT REQUIREMENTS. REFER TO THE "WALL SHEATHING SCHEDULE" ON THIS SHEET FOR ADDITIONAL SHEATHING REQUIREMENTS NOTED ON PLAN.
  - PROVIDE 3 STUDS MINIMUM UNDER ALL BEAMS, TRUSS GIRDETS, ETC. (UNO) ADDITIONAL TIMBER COLUMNS ARE NOTED ON THE PLANS. SEE THE SCHEDULE 8/54.1 FOR FURTHER INFORMATION.
  - PROVIDE HEADERS AND BEAMS IN ACCORDANCE WITH THE "HEADER SCHEDULE" AND "BEAM SCHEDULE" SHOWN ON THESE DRAWINGS.
  - TRUSS BLOCKS TO BE PROVIDED AT ALL SHEARWALL LOCATIONS NOTED ON PLAN EXCEPT WHERE CONTINUOUS SHEATHING FROM THE SHEARWALL BELOW EXTENDS TO THE UNDERSIDE OF THE ROOF SHEATHING ABOVE. SEE CORRESPONDING DETAILS AND PROVIDE BLOCKING PER DETAILS 13/54.1 WHERE REQUIRED.
  - APPROXIMATE LOCATIONS OF MECHANICAL ROOFTOP UNITS ARE SHOWN ON PLAN. TRUSS MANUFACTURER TO COORDINATE ALL LOCATIONS AND WEIGHTS OF MECHANICAL ROOFTOP UNITS AND DESIGN TRUSSES ACCORDINGLY.
  - WHERE NOTED ON PLAN, REMOVE EXISTING BRICK AND WALL FRAMING FROM ROOF TO BASEMENT FLOOR CEILING ELEVATION.
  - WHERE NOTED ON PLAN, ATTACH BEAM TO FACE OF 6x6 COLUMN WITH SIMPSON HURRICANE HANGER.
  - WHERE NOTED ON PLAN, PROVIDE BLOCKING BETWEEN LVL AND 1ST ADJACENT TRUSS. ATTACH BEAM TO DOUBLE TOP PLATE W/ SIMPSON GA2 ANGLE PER MANUFACTURER'S REQUIREMENTS.







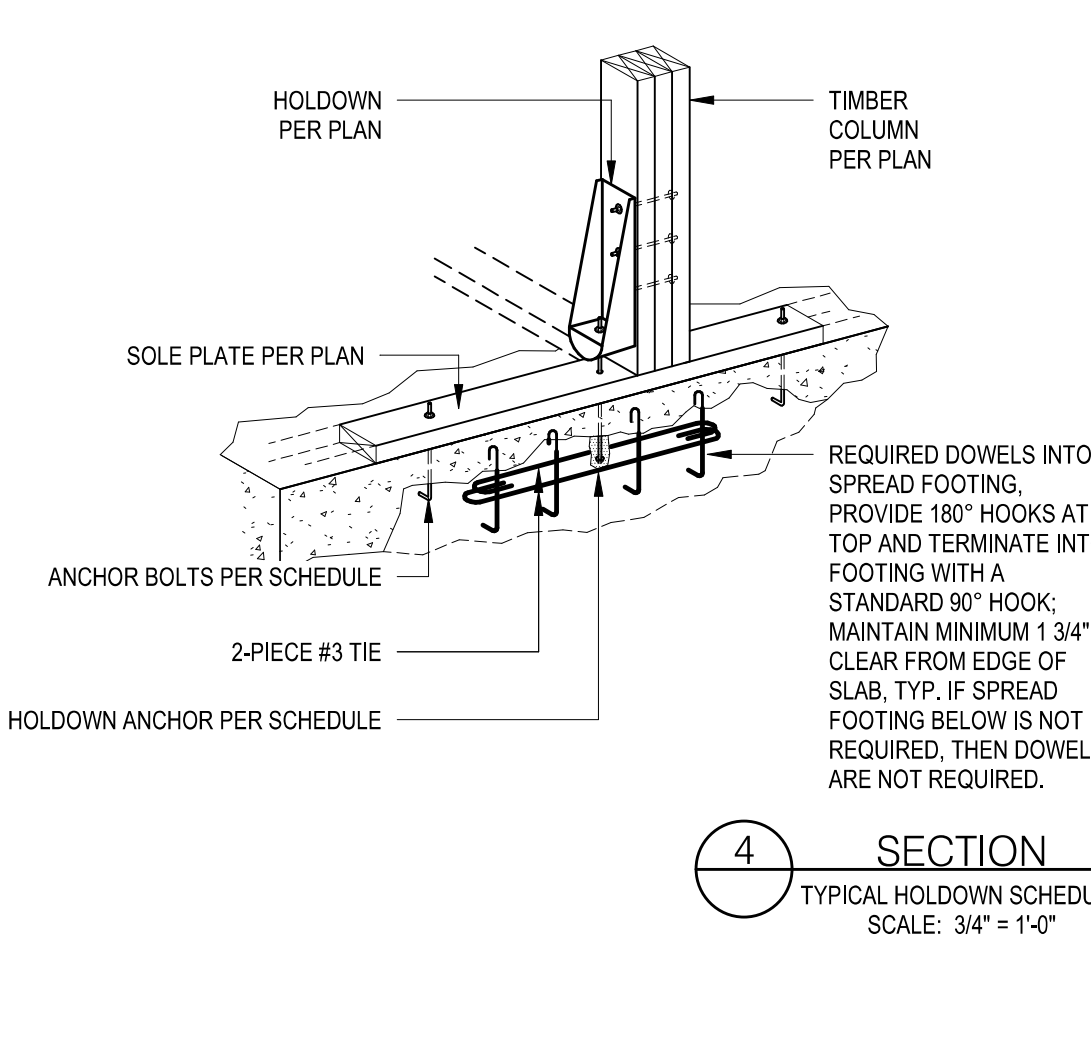
- SLAB-ON-GRADE NOTES:**
- THIS DETAIL DEPICTS JOINT TYPES AS WELL AS TYPICAL SLAB REQUIREMENTS. REFER TO THE CONCRETE SLAB AND FLOOR SPECIFICATIONS FOR FURTHER REQUIREMENTS.
  - SEE 'TYPICAL REINFORCEMENT AT SLAB RE-ENTRANT CORNERS' DETAIL FOR REINFORCING AT ALL RE-ENTRANT CORNERS EVEN IF NOT SHOWN ON THE FOUNDATION PLAN.
  - PROVIDE ISOLATION JOINTS AT JUNCTIONS, COLUMNS, EQUIPMENT FOUNDATIONS, FOOTINGS OR OTHER POINTS OF RESTRAINT SUCH AS DRAINS, MANHOLES, SUMPS AND STAIRWAYS EVEN IF NOT SHOWN ON THE FOUNDATION PLAN.
  - IF CONCRETING IS INTERRUPTED LONG ENOUGH FOR THE PLACED CONCRETE TO HARDEN PROVIDE A CONSTRUCTION JOINT AS SHOWN ON THIS DETAIL. CONSTRUCTION JOINTS SHALL NOT BE PLACED CLOSER THAN 5'-0" FROM ANY JOINT TO WHICH THEY ARE PARALLEL. THE USE OF ALTERNATE CONSTRUCTION JOINTS PER ACI 302.1R-04 MAY BE USED WITH APPROVAL FROM FLUHRER REED, PA.
  - PROVIDE CONTRACTION OR CONTROL JOINTS NOT TO EXCEED 11'-0" O.C. UNLESS A REQUIRED SPACING IS NOTED ON THE PLANS. PROVIDE CONTRACTION JOINTS BETWEEN COLUMN LINES AS SHOWN ON THE FOUNDATION PLANS.
  - CONSTRUCTION, CONTRACTION AND CONTROL JOINTS SHALL NOT OCCUR WITHIN 4'-0" OF PARALLEL THICKENED OR TURNDOWN SLABS.
  - SLAB HAS BEEN DESIGNED FOR UNIFORM LOADS NOTED IN THE PROJECT SPECIFICATIONS. CONTACT FLUHRER REED, PA PRIOR TO PLACEMENT IF ANY EQUIPMENT EXCEEDING 200 LBS IS TO BE PLACED ON THE SLAB. JOINT SPACING MAY NEED TO BE ALTERED AT THESE LOCATIONS.



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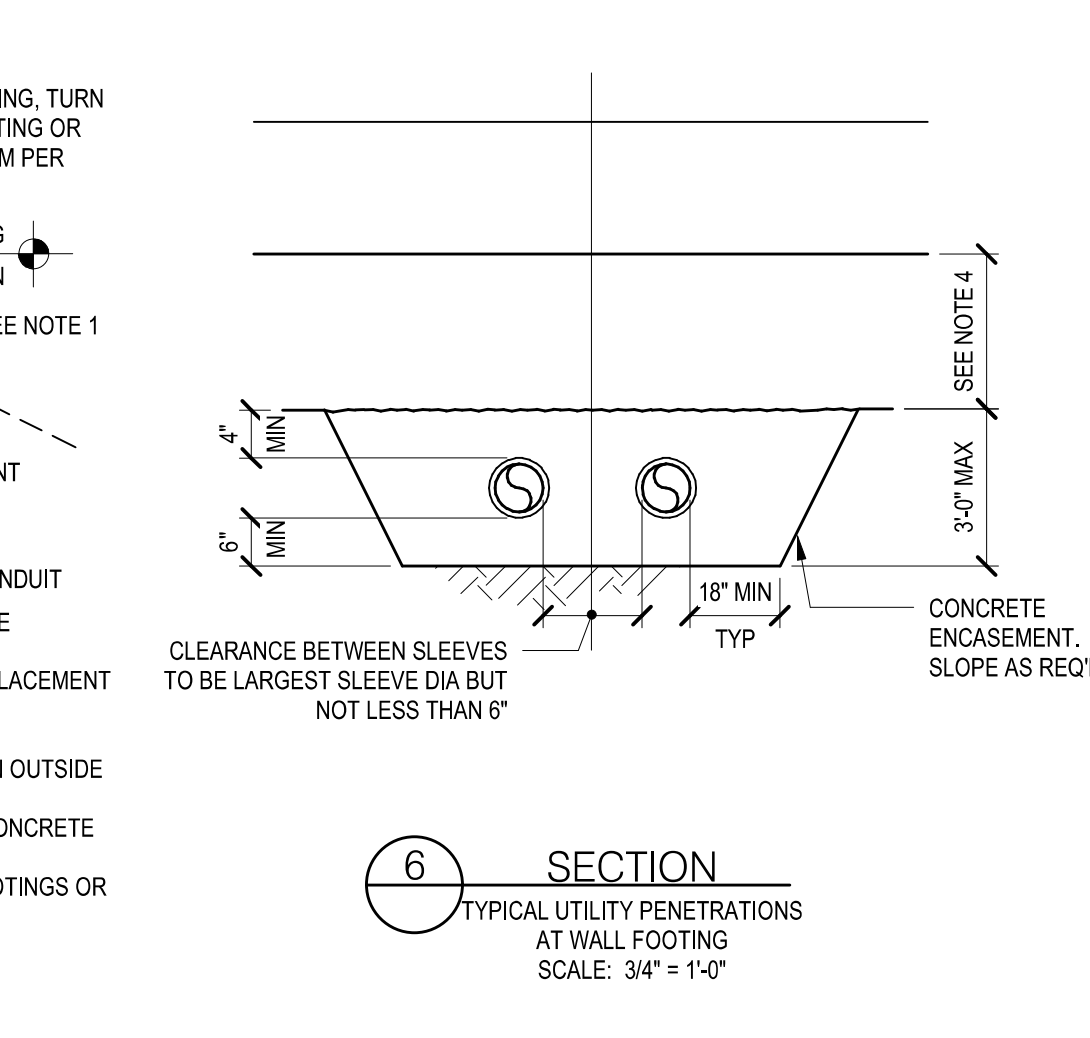
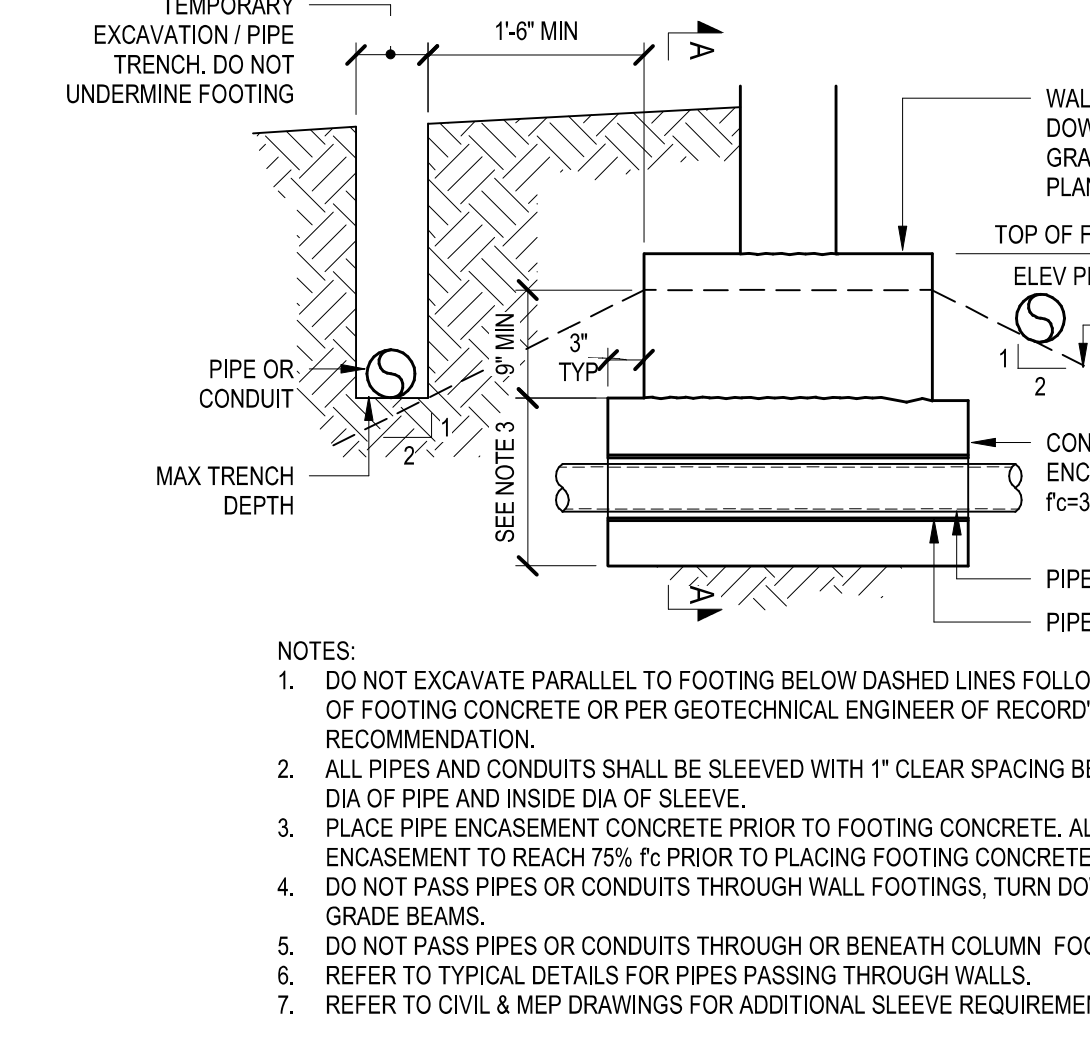
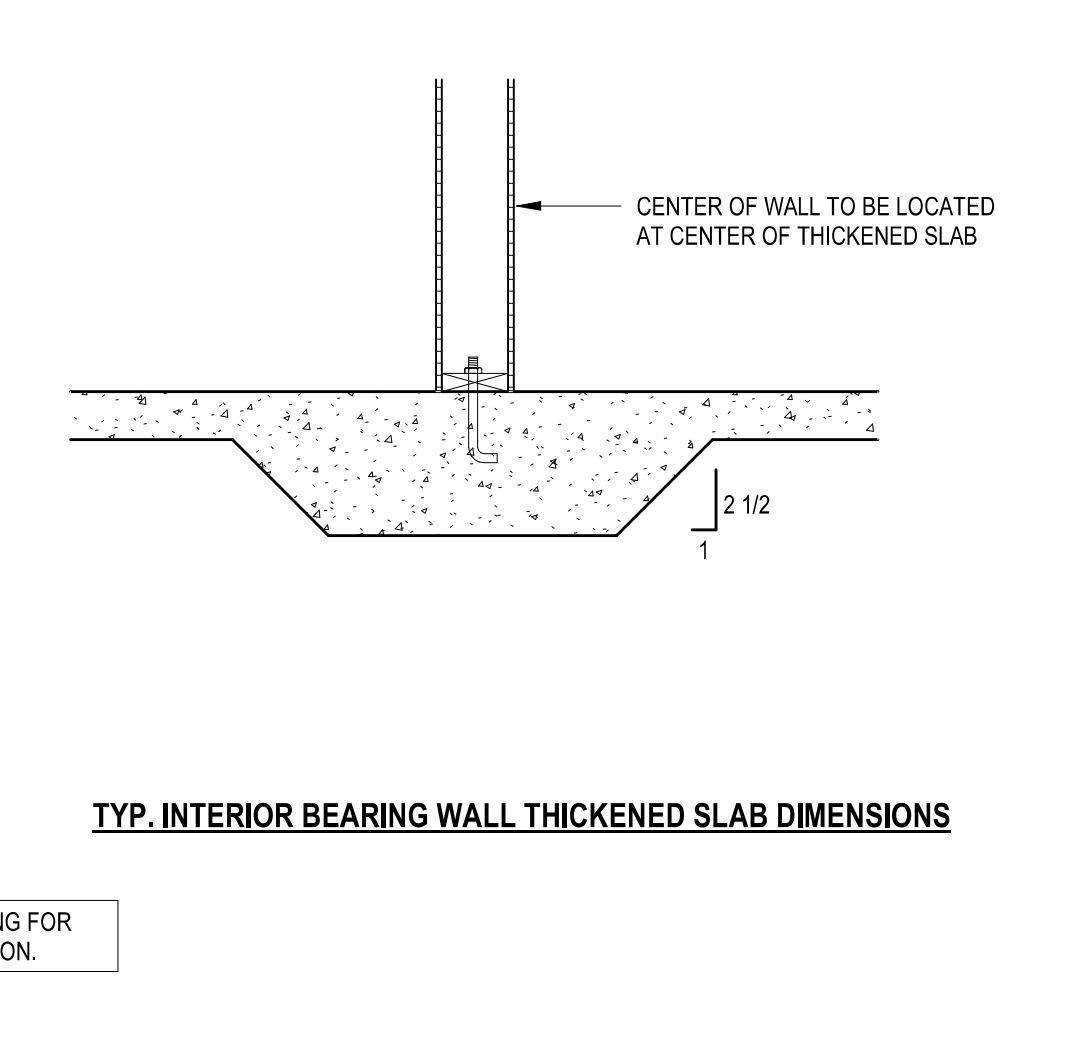
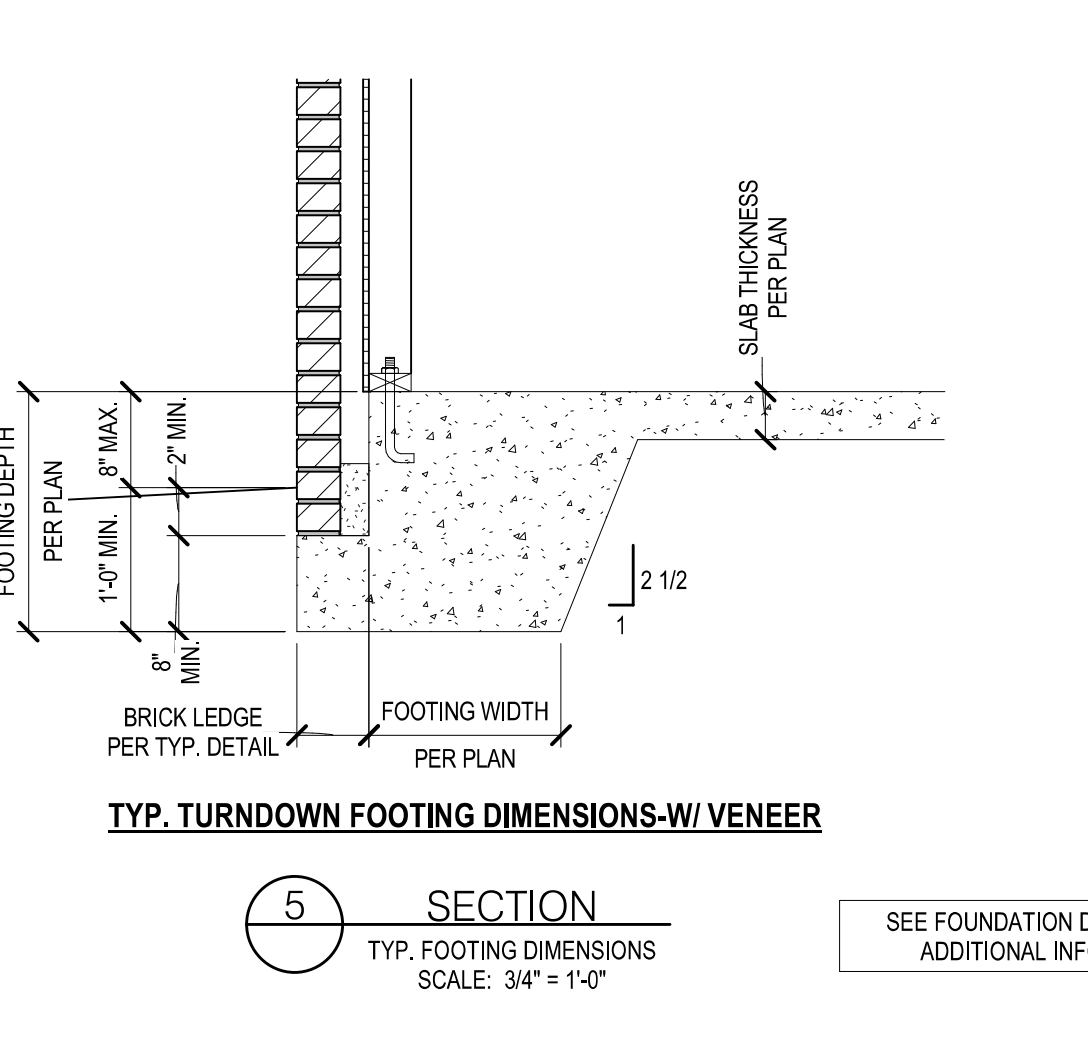
...drawing out your vision



**NOTES:**

- INSTALL HOLDOWNS AND ANCHOR BOLTS PER MANUFACTURER RECOMMENDATIONS.
- WHEN HOLDOWN OCCURS AT A CORNER PROVIDE A MINIMUM OF (4) DOWELS, (2) EACH SIDE OF THE CORNER AND A #4 CORNER BAR WITH 12" LEGS INSTEAD OF TIES.
- FLOOR TO FLOOR STRAPS MAY BE USED AT EXTERIOR WALLS; HOWEVER, THEY MAY NOT BE USED AT INTERIOR WALL LOCATIONS.

HOLDOWN MARK	TIMBER COLUMN	SIMPSON HOLDOWN	MINIMUM ALLOWABLE TENSION LOAD	REQUIRED DOWELS INTO SPREAD FOOTING
HDU2	(3) 2x4 S&P No.2	HDU2-SDS2.5	2215#	N/A
HDU4	(3) 2x4 S&P No.2	HDU4-SDS2.5	3285#	N/A



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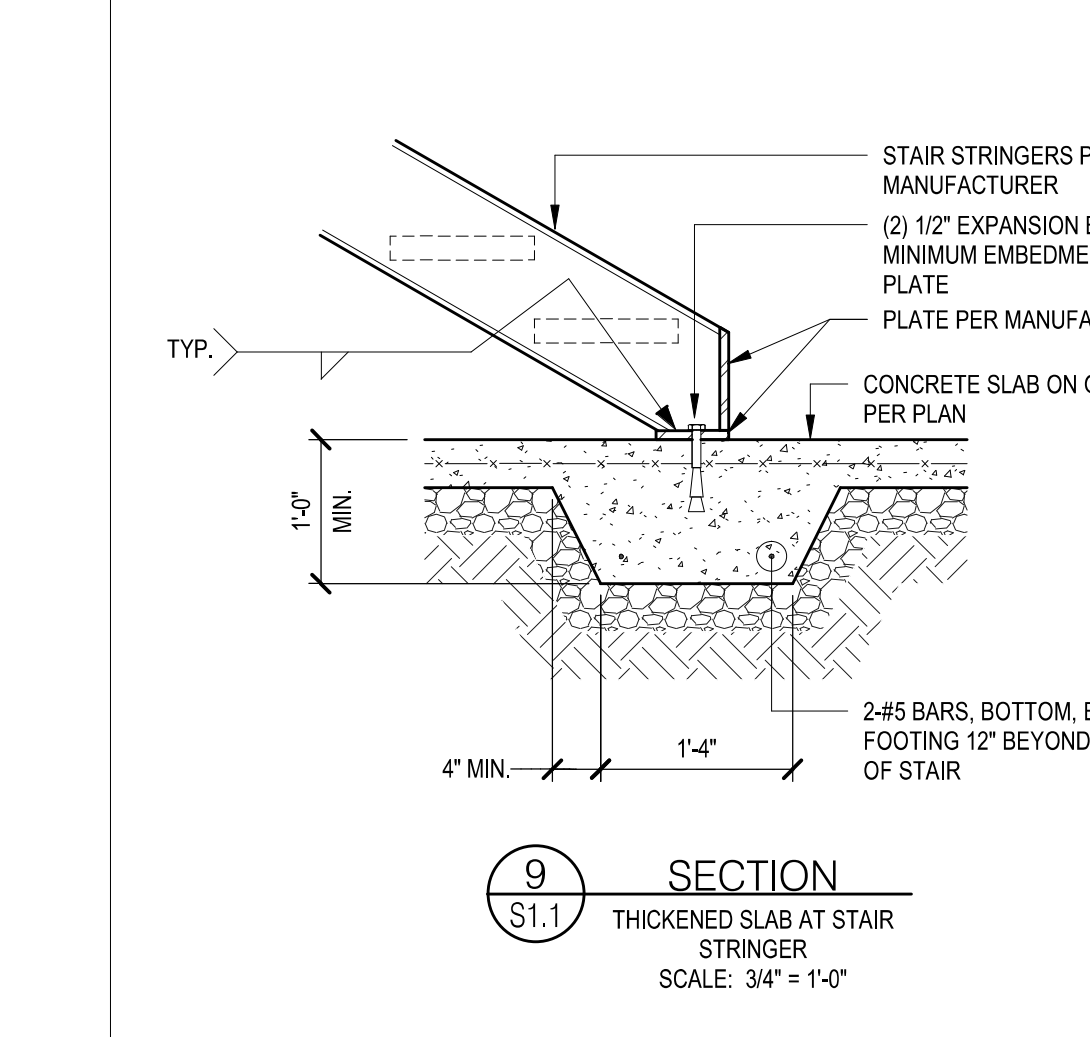
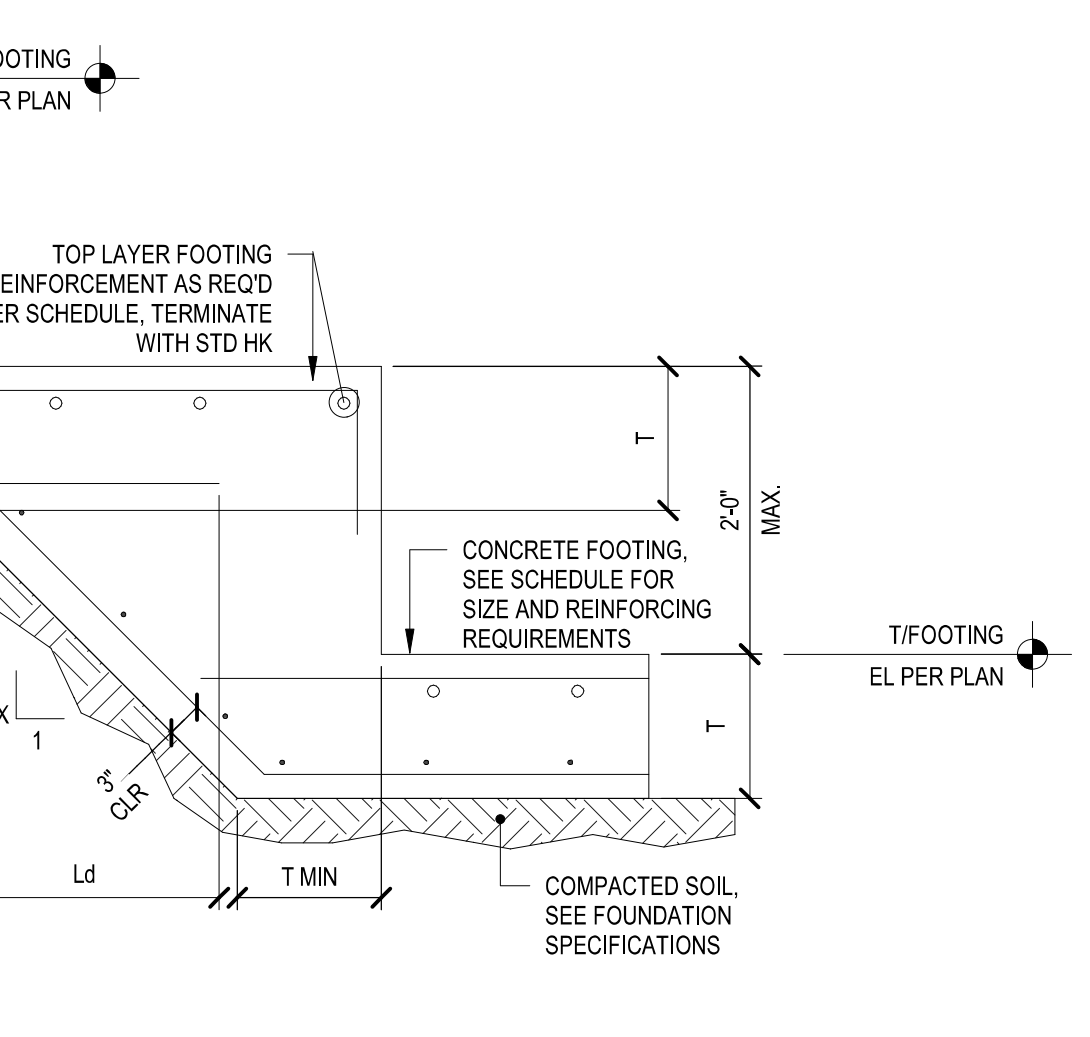
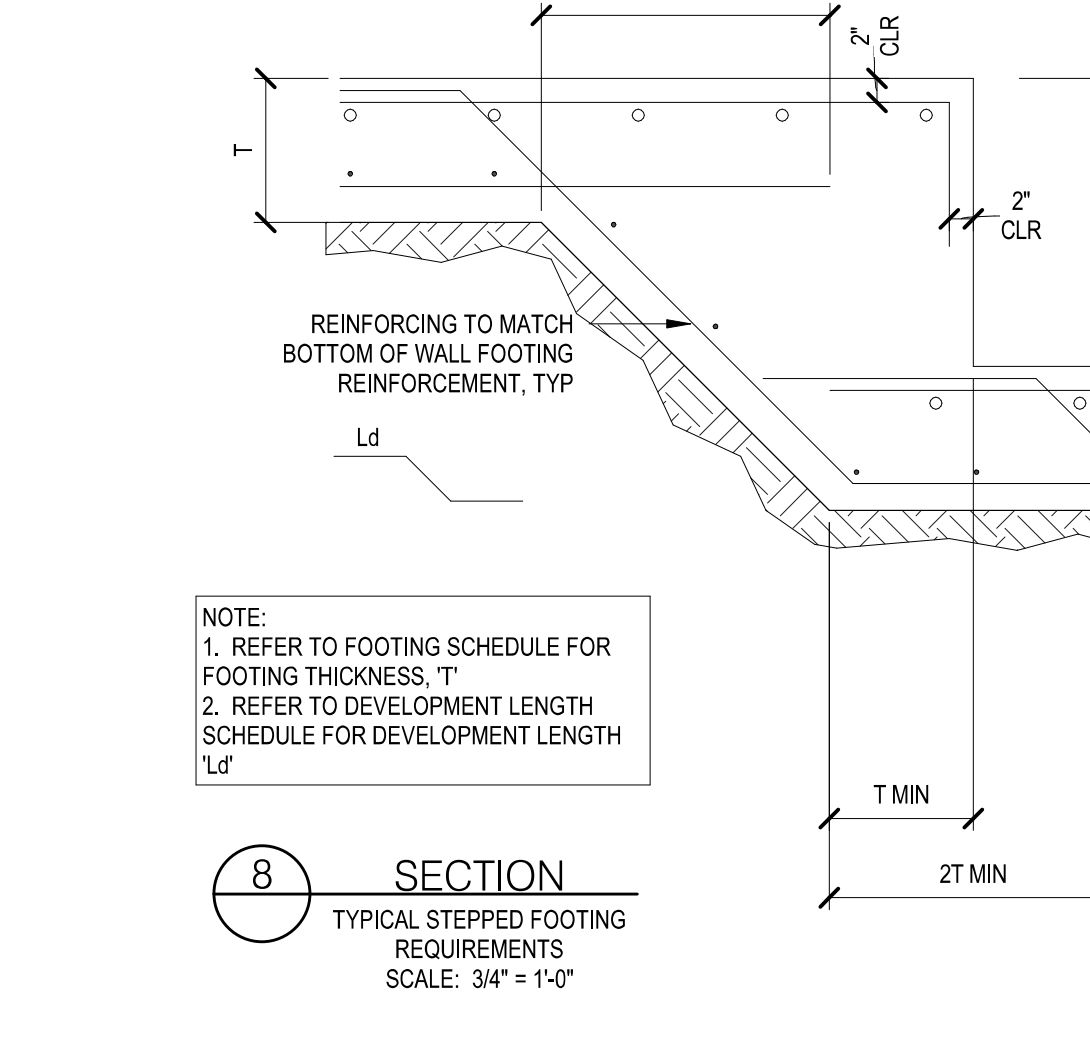
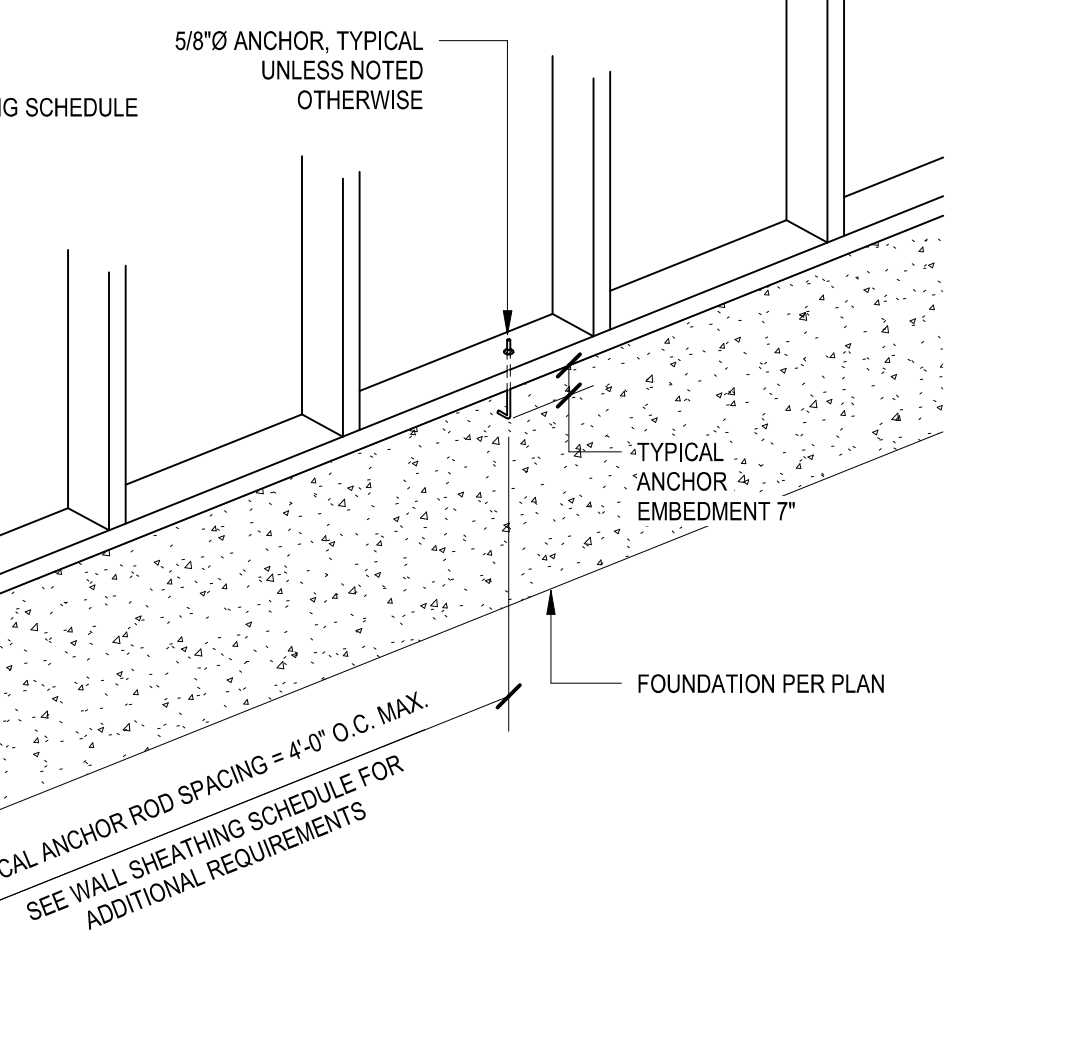
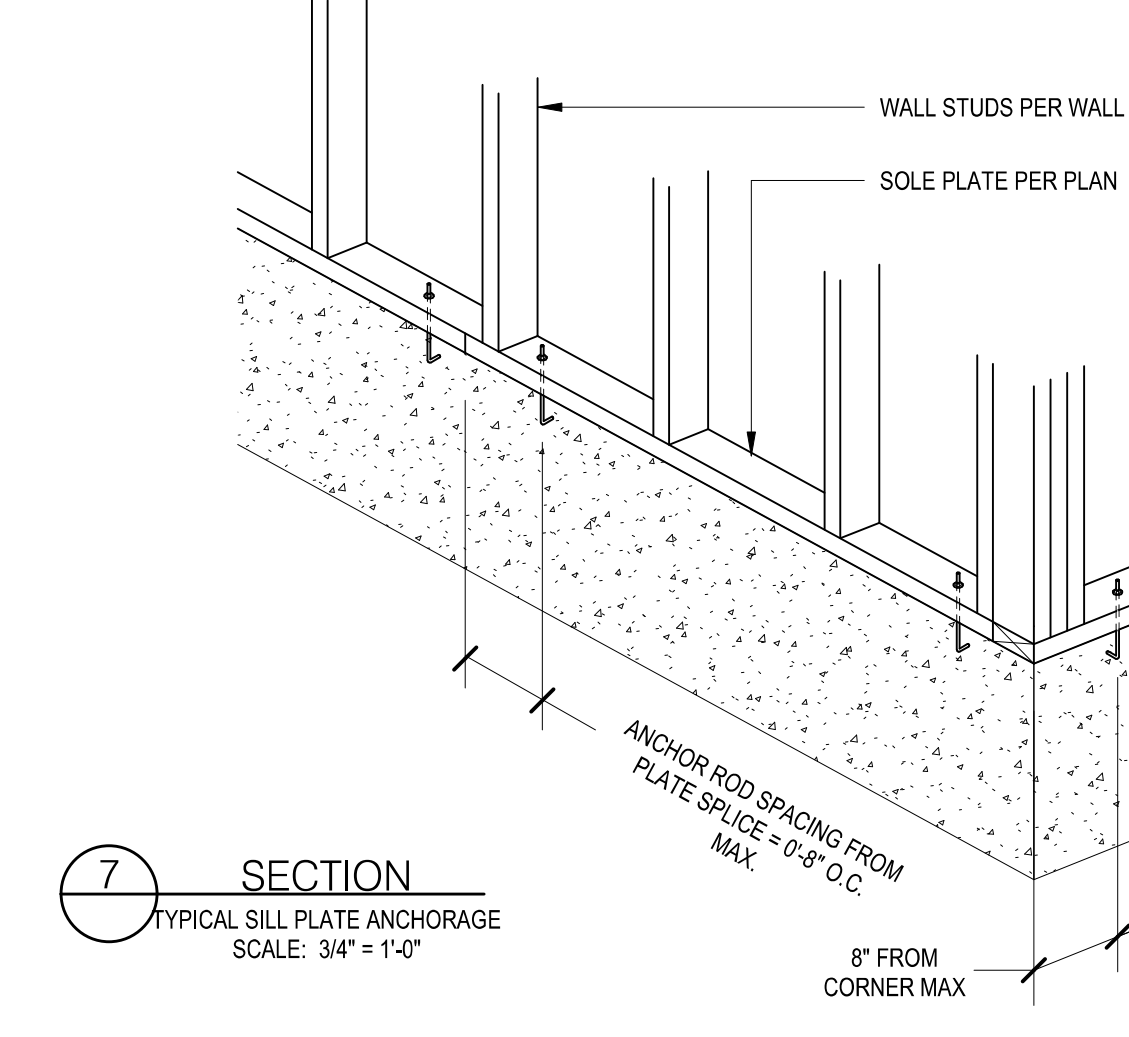
SEPTEMBER 16, 2022  
NORTH CAROLINA PROFESSIONAL ENGINEERING CORP. C-1835

**ALTERNATE ANCHOR SPACING**

STANDARD ANCHORS	SIMPSON "TITEN HD" ANCHORS		SIMPSON "MASA" ANCHORS		THREADED ROD WITH SIMPSON "SET" EPOXY	
	MIDDLE	EDGE	MIDDLE	EDGE	MIDDLE	EDGE
1/2" ANCHOR	3.5/8"	1.0	1.0	1.0	1.0	1.0
5/8" ANCHOR	4.1/8"	1.0	0.75	1.0	3.3/4"	1.0

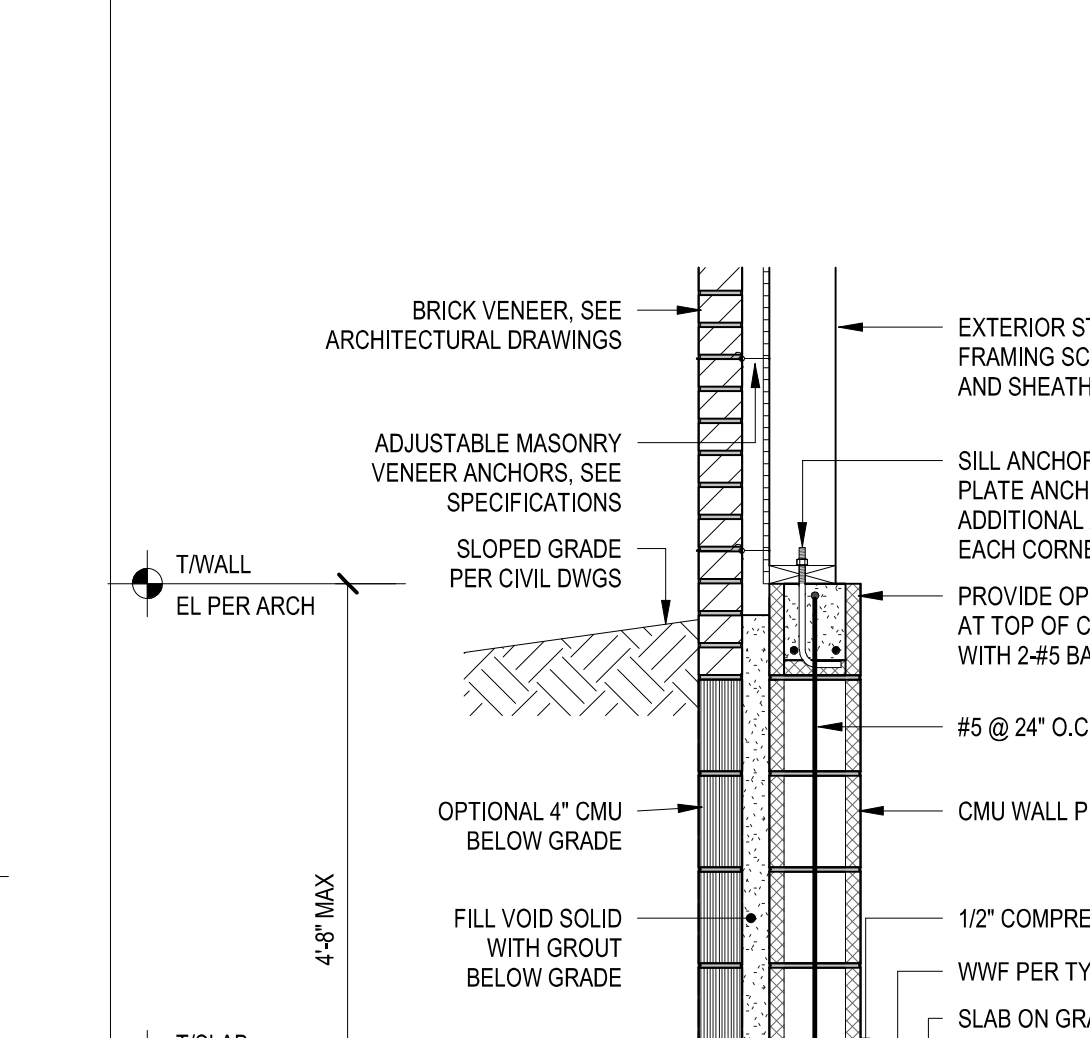
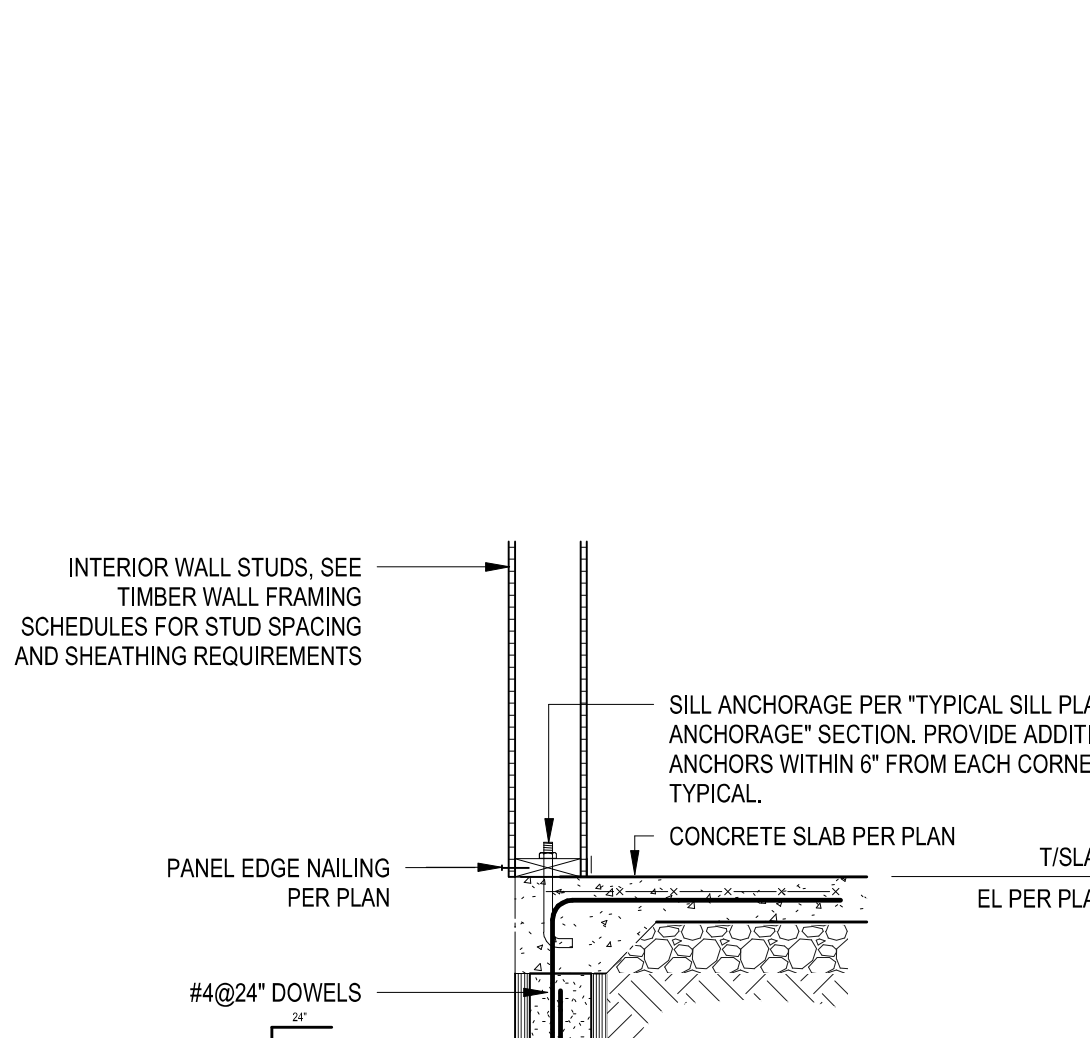
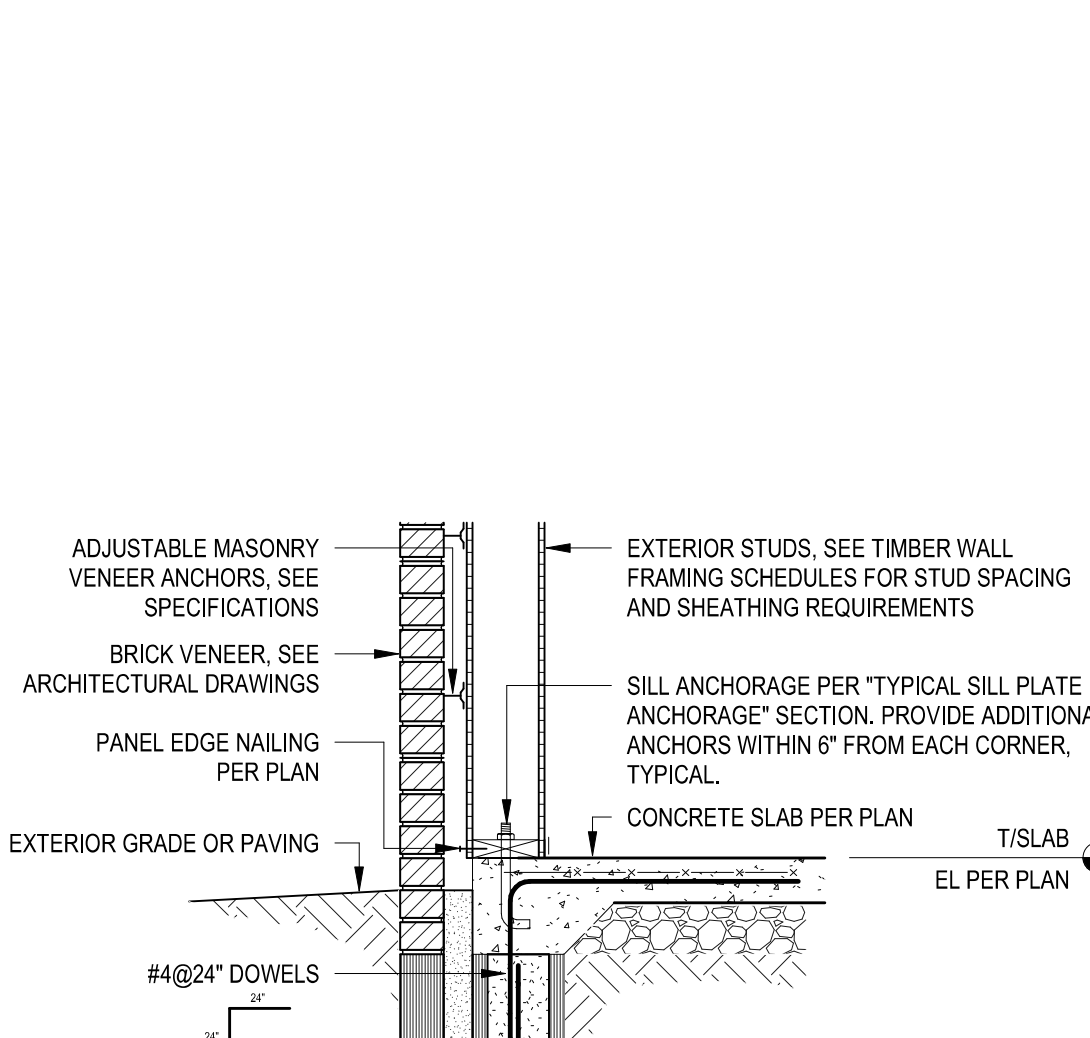
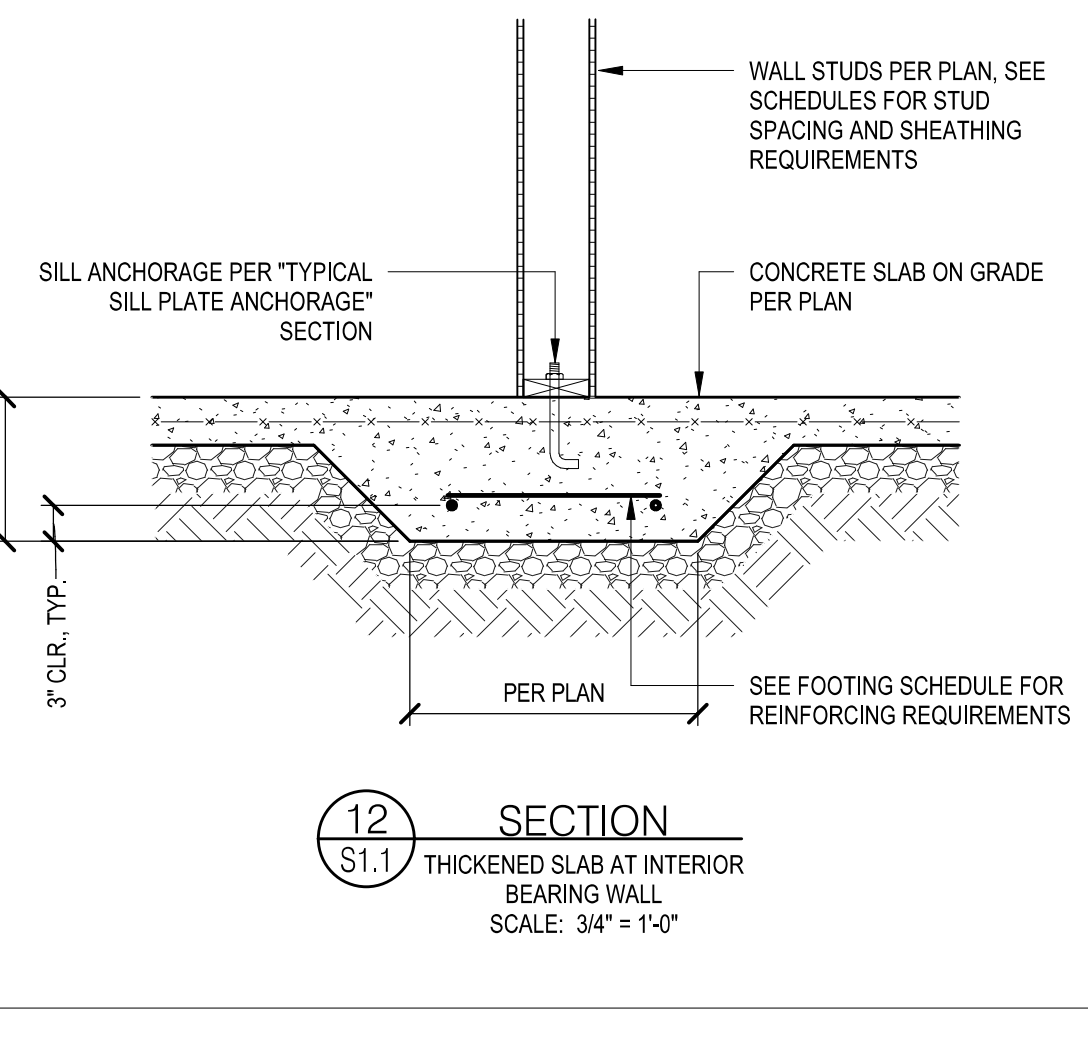
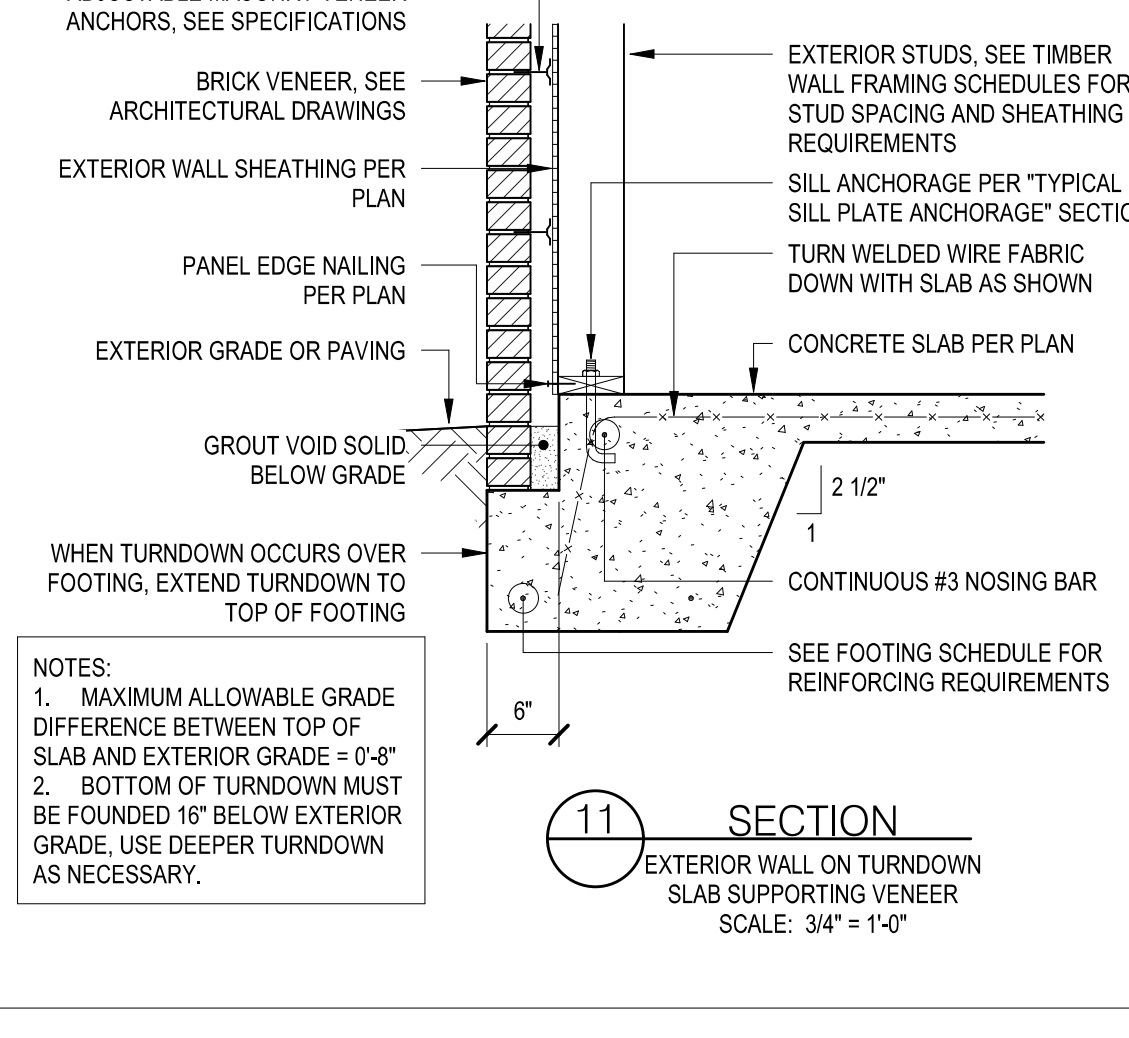
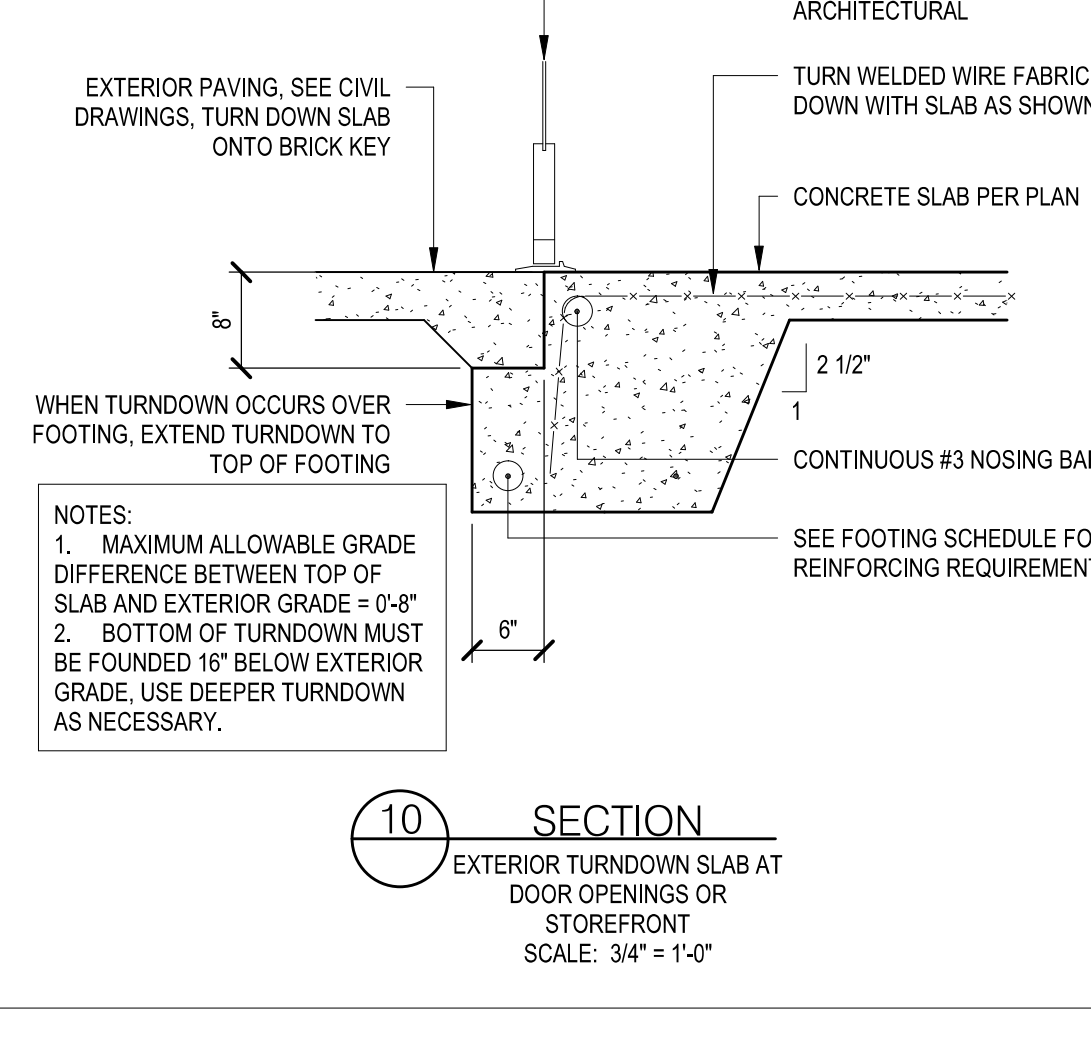
**NOTES:**

- VALUES PROVIDED ARE ADJUSTMENT FACTORS TO BE MULTIPLIED BY THE ANCHOR ROD SPACING PROVIDED IN THE "WALL FRAMING AND SHEATHING SCHEDULE" PER PLAN FOR EACH WALL TYPE.
- INSTALL EACH ALTERNATE ANCHORAGE SYSTEM PER MANUFACTURER INSTRUCTIONS.
- EDGE DISTANCES ARE MEASURED FROM EDGE OF SLAB TOWARDS INTERIOR. MINIMUM EDGE DISTANCE IS 1 3/4" AND MAXIMUM EDGE DISTANCE IS 6".

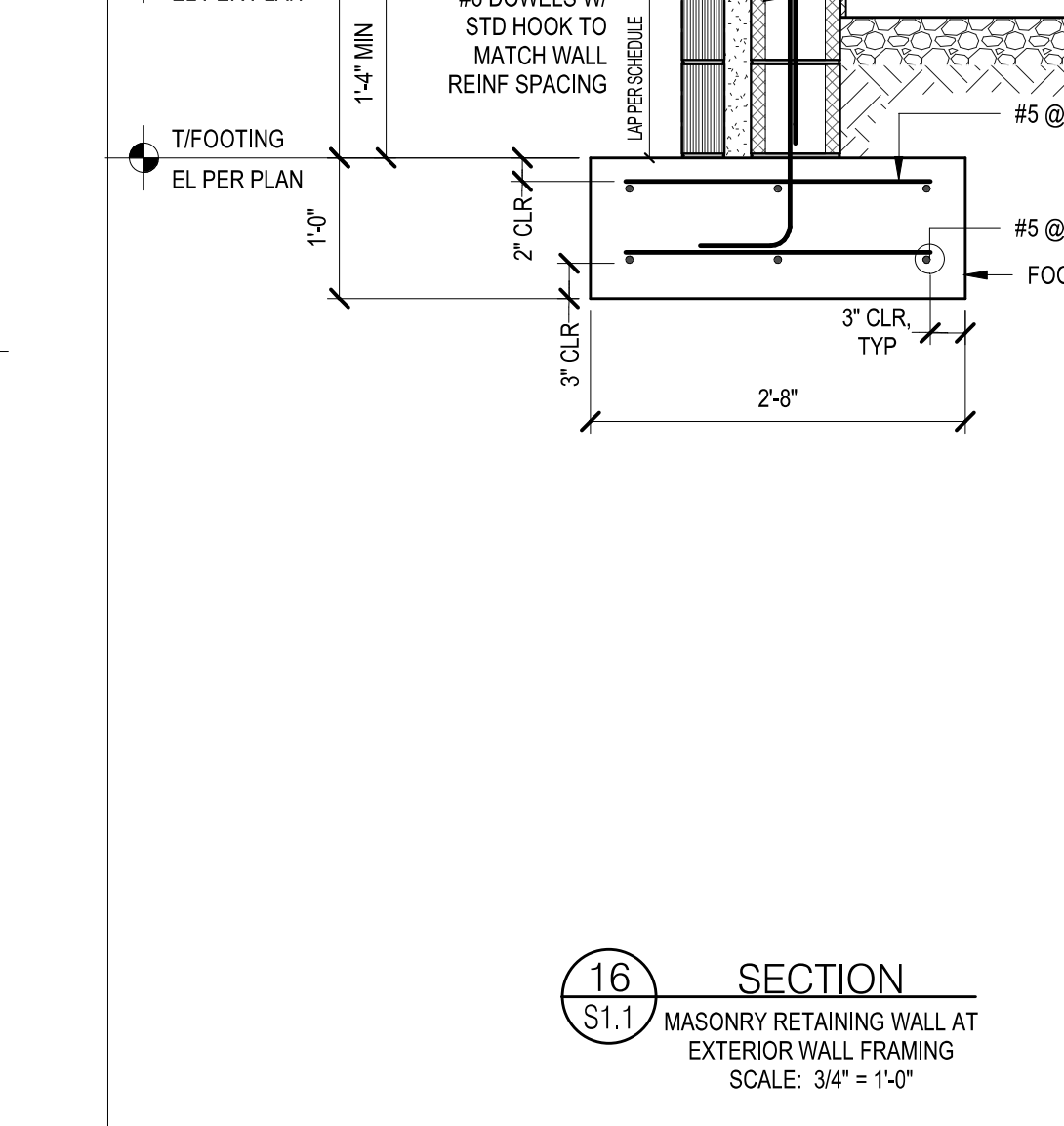
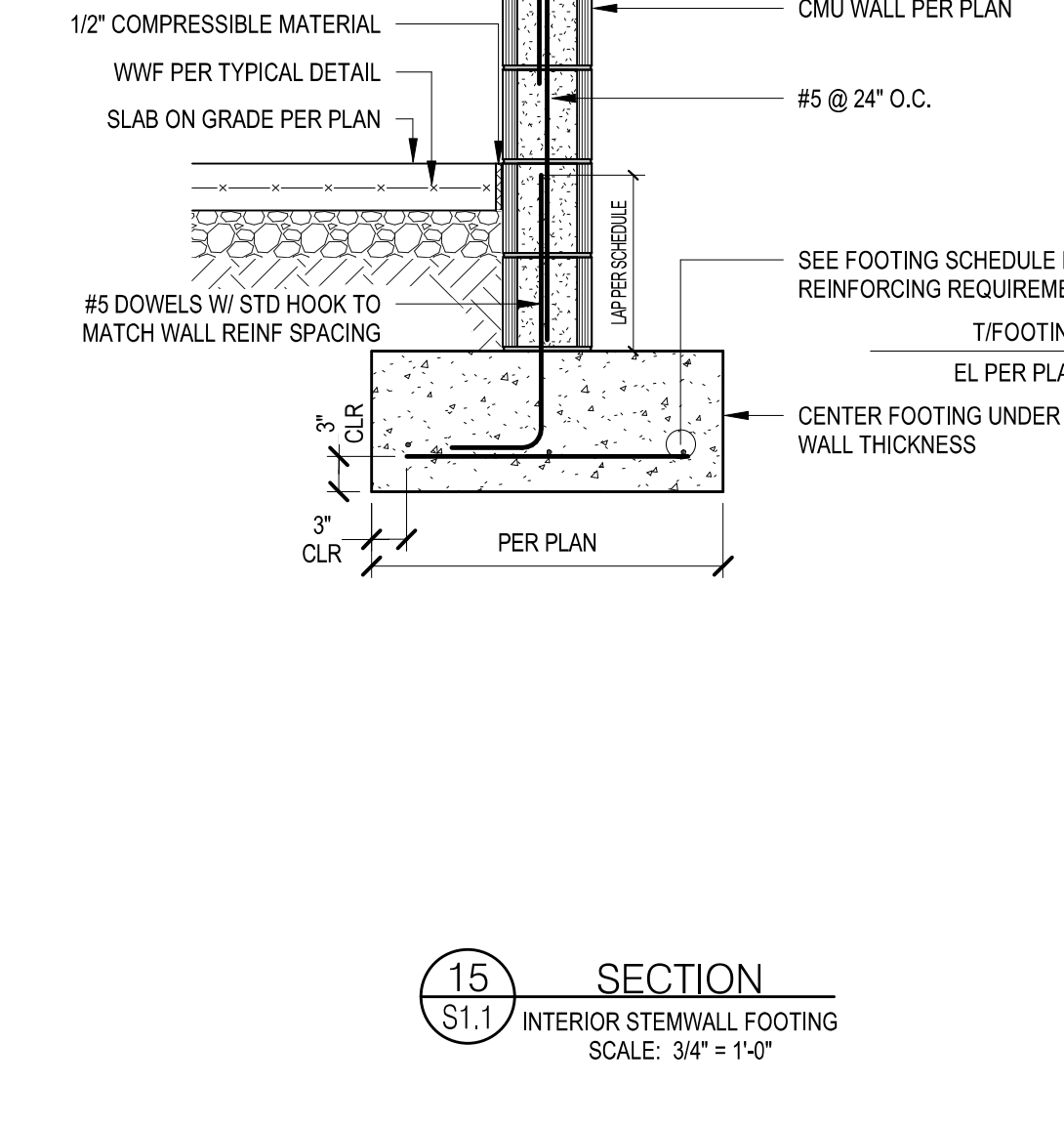
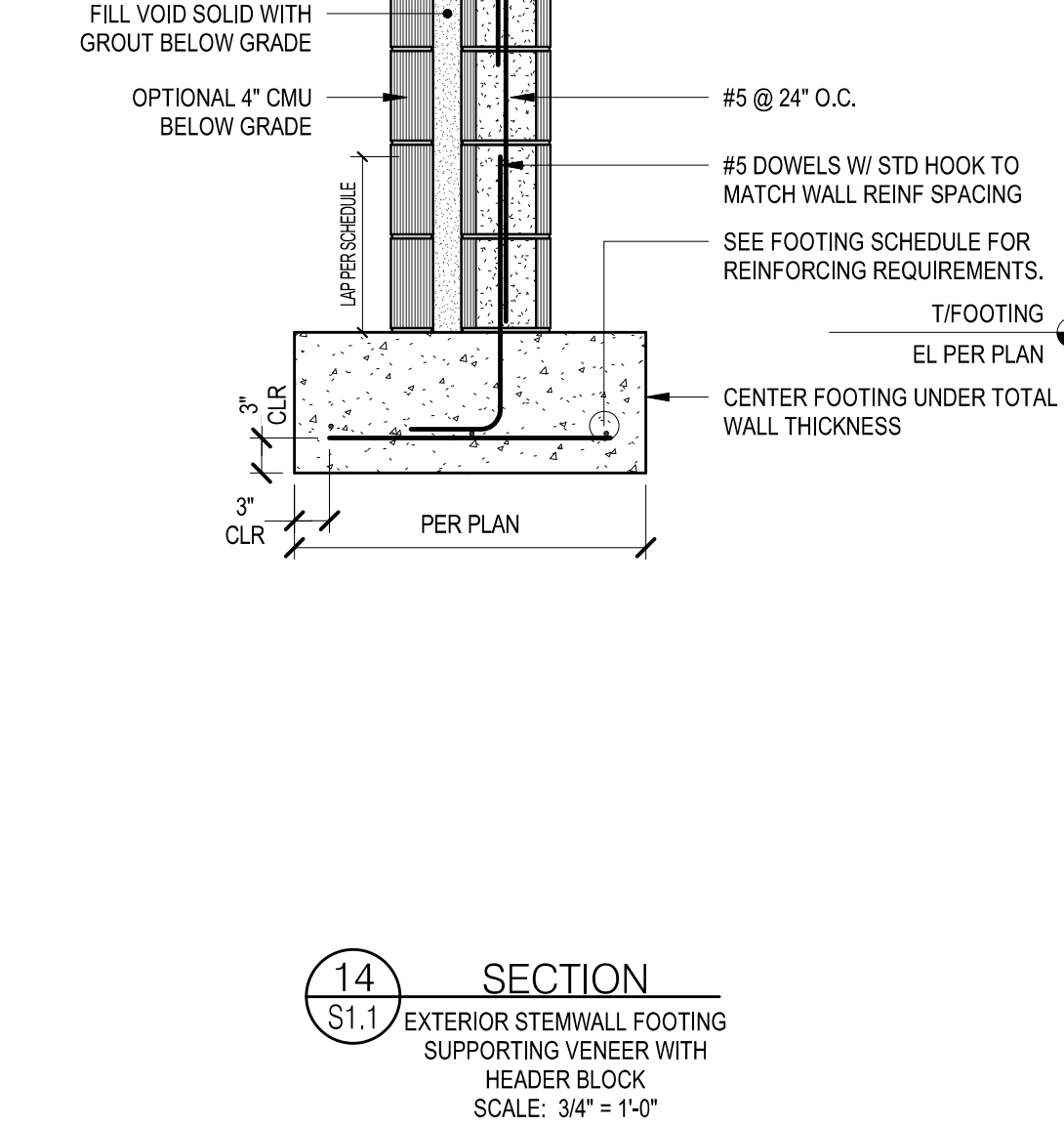
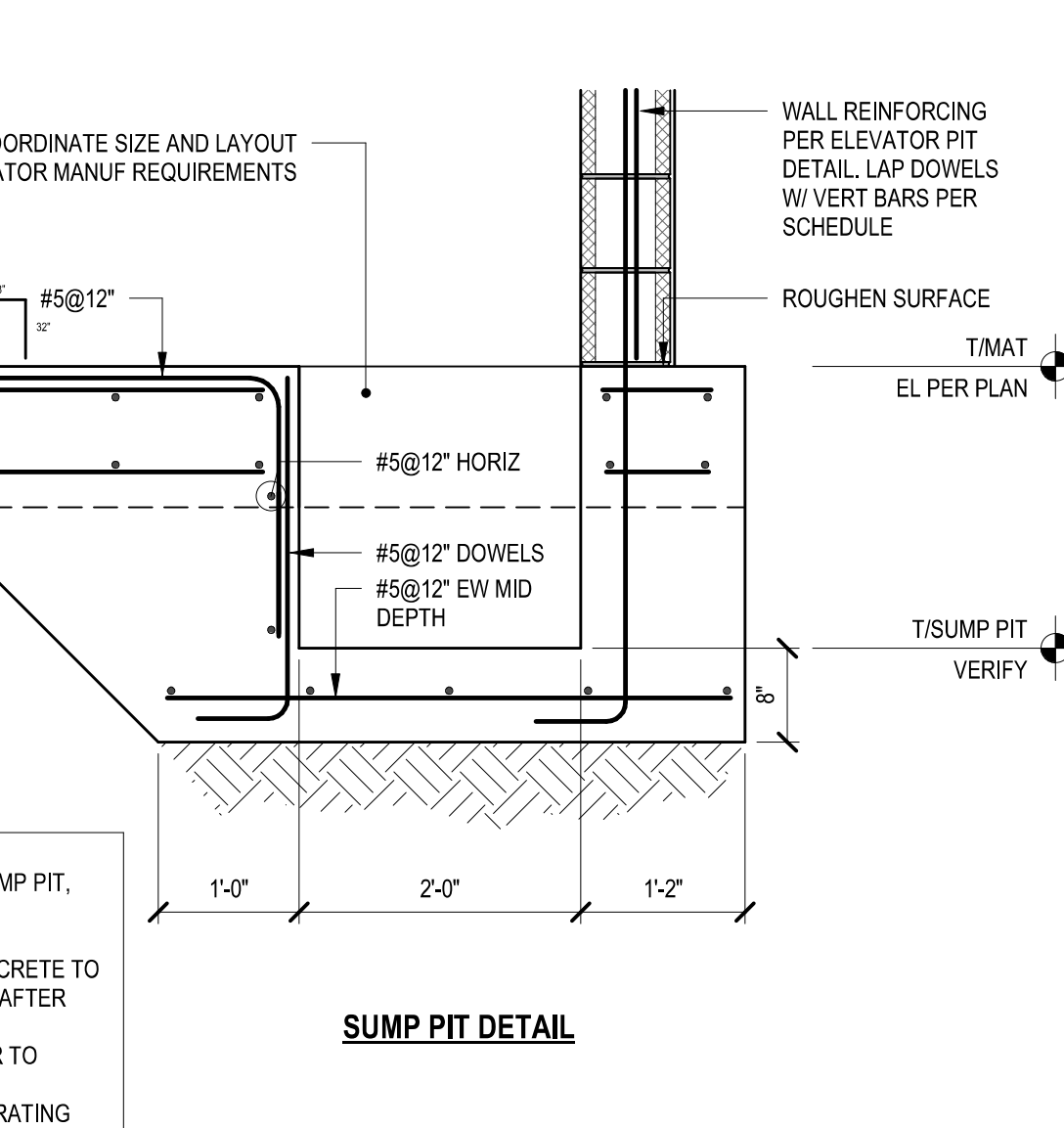
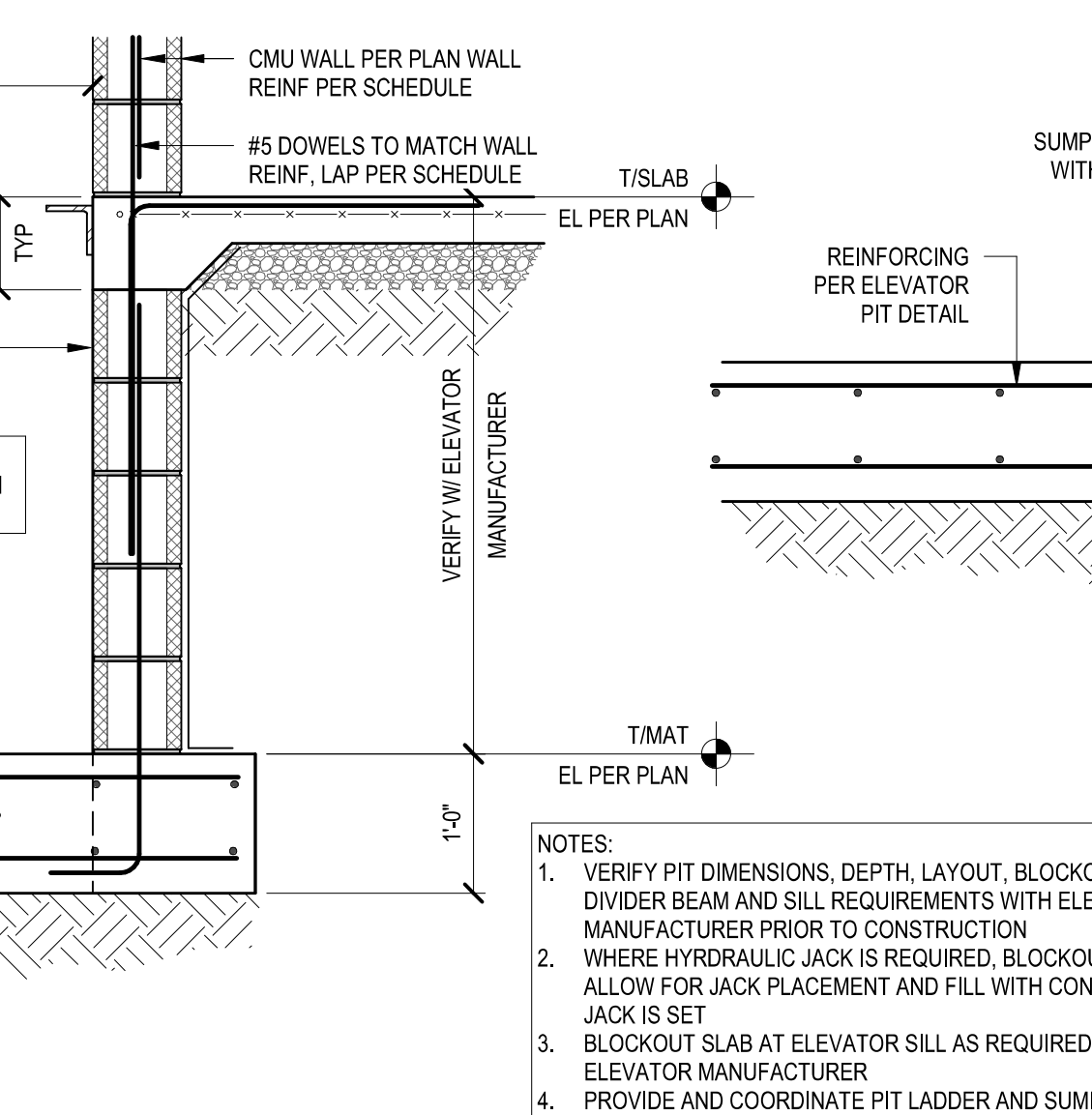
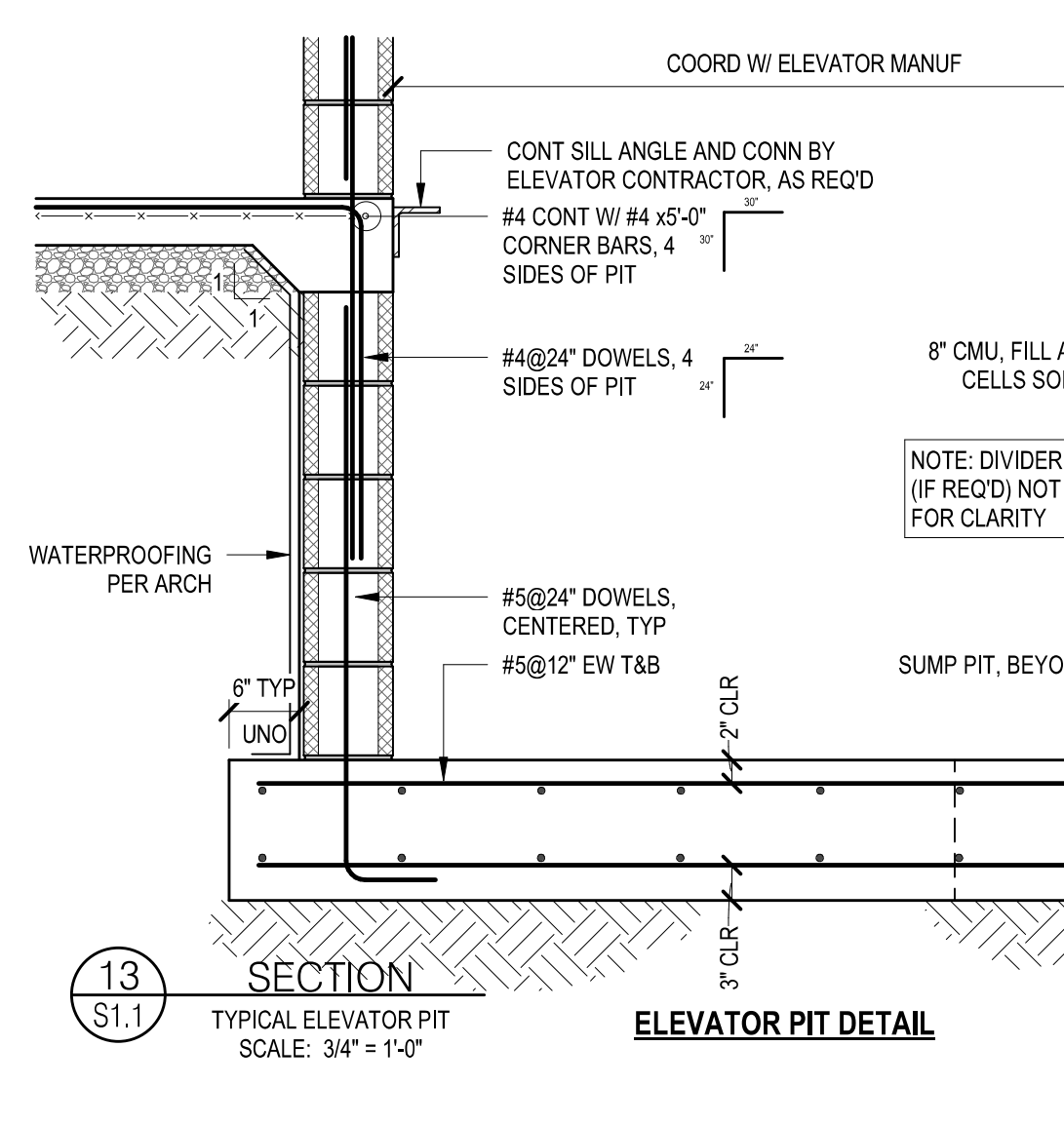


**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
1615 NC-54  
DURHAM, NC 27713

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No.	Description	Date



**S3.1**

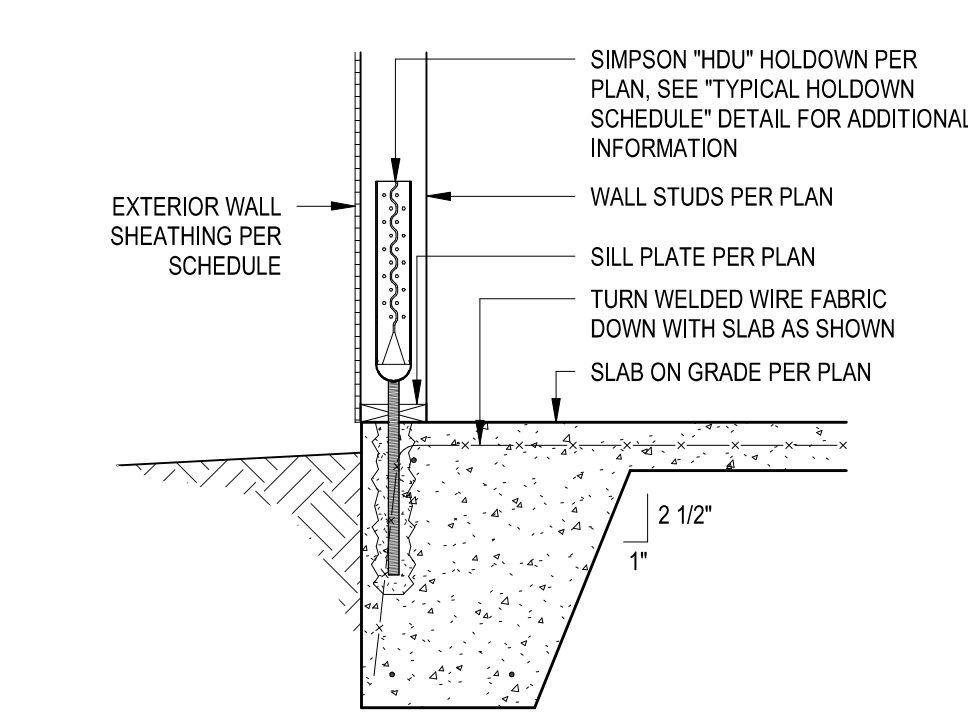
PROJECT #: 2022303  
DATE: 9/16/2022  
TYPICAL FOUNDATION DETAILS

DIGITAL PRINT DATE: 9/16/2022 12:00:55 PM

**EXTERIOR TURNDOWN SLAB  
(NO BRICK LEDGE)**

ALLOWABLE SERVICE DESIGN UPLIFT LOAD	STUD SIZE	MIN. TURNDOWN WIDTH	CAST IN PLACE ANCHOR EMBEDMENT REQUIREMENTS			POST INSTALLED ANCHOR EMBEDMENT REQUIREMENTS		
			ANCHOR DIAMETER	MIN. ANCHOR EMBED	MIN. TURNDOWN T	ANCHOR DIAMETER	MIN. ANCHOR EMBED	MIN. TURNDOWN T
≤ 5 KIPS	2x4	20"	3/4"	8"	10"	5/8"	11"	13"
	2x6	20"	3/4"	7"	8"	5/8"	10"	12"
≤ 10 KIPS	2x4	30"	N/A	N/A	N/A	1"	18"	21"
	2x6	30"	1"	13"	15"	7/8"	17"	19"

- NOTES:
- CAST IN PLACE ANCHOR OPTION DESIGNED WITH HEX BOLT ALLOWABLE CAPACITIES. POST INSTALLED VALUES DESIGNED WITH SIMPSON "SET-32" ADHESIVE AND A36 THREADED ROD. AT CONTRACTORS OPTION EQUAL ALTERNATIVE ADHESIVE SHALL BE USED.
  - CENTERLINE OF ANCHOR TO ALIGN WITH CENTERLINE OF TIMBER STUD, TYPICAL.
  - THICKEN TURNDOWN AS REQUIRED PER SCHEDULE A MINIMUM OF 24" EACH SIDE OF HOLDOWN ATTACHMENT LOCATION.
  - REFER TO "TYPICAL HOLDOWN SCHEDULE" DETAIL FOR ADDITIONAL HOLDOWN ATTACHMENT REQUIREMENTS.
  - REFER TO "TYP. FOOTING DIMENSIONS" DETAIL FOR STANDARD FOUNDATION DIMENSION REQUIREMENTS.
  - AT EXTERIOR TURNDOWN SLAB CONDITIONS REFER TO "EXTERIOR WALL ON TURNDOWN SLAB - NO VENEER" DETAIL FOR ADDITIONAL FRAMING REQUIREMENTS.

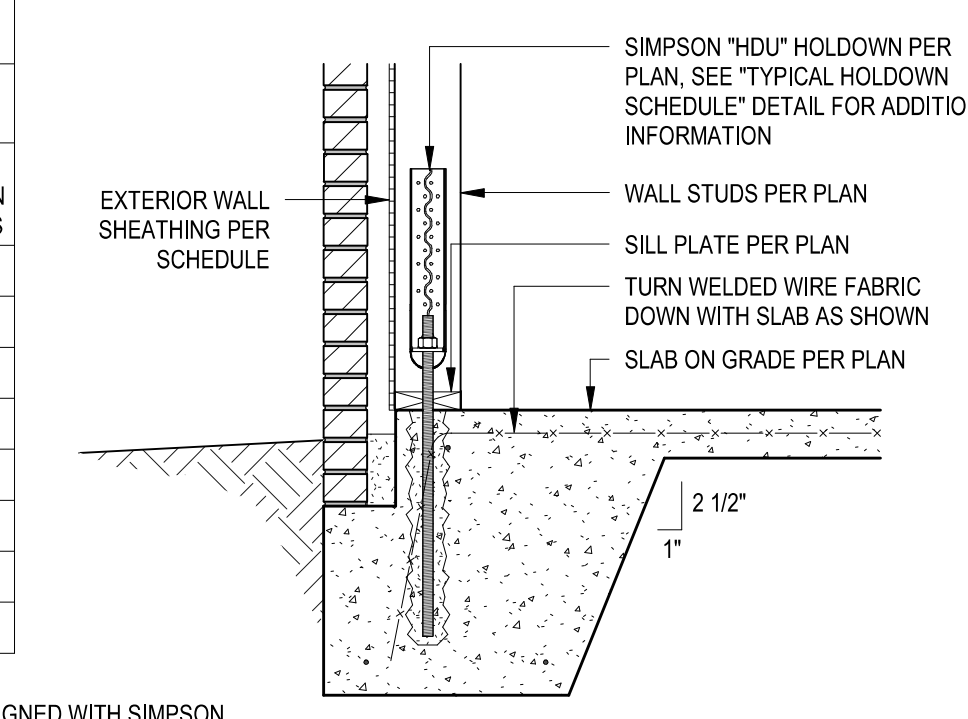


**1 SCHEDULE**  
CONCRETE ANCHORAGE ATTACHMENT - TURNDOWN EXTERIOR SLAB

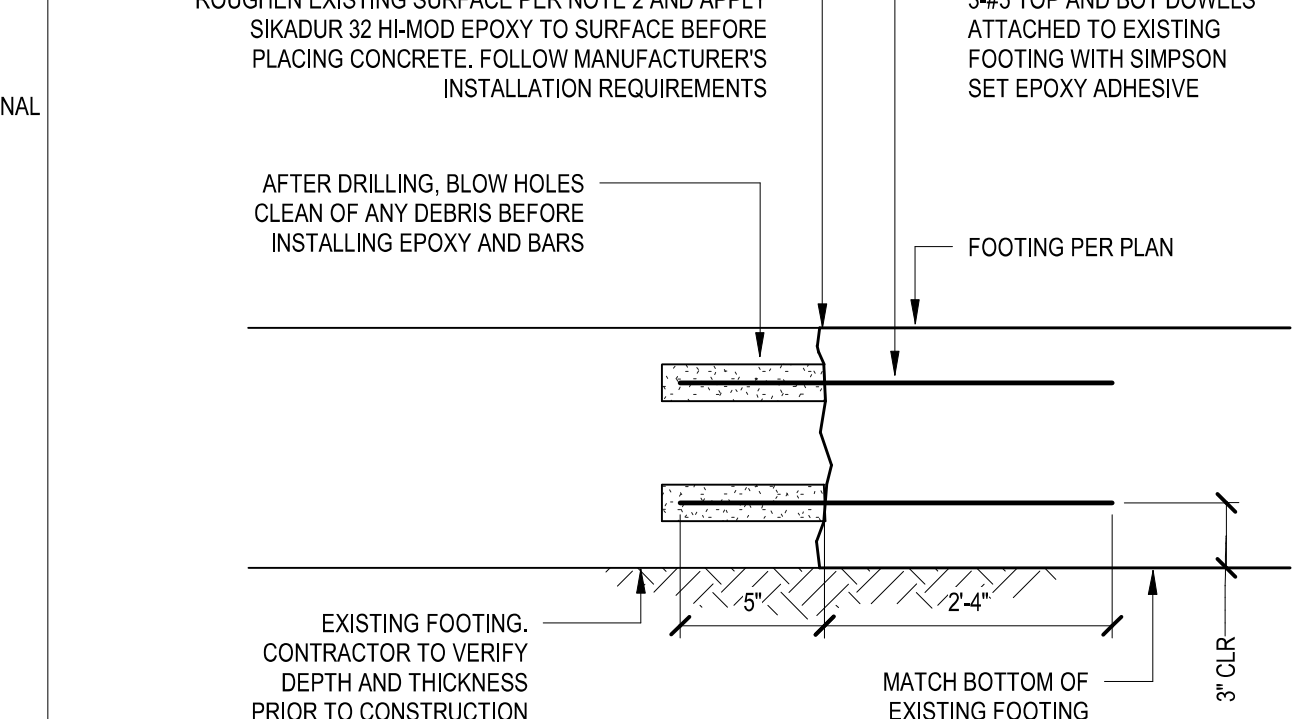
**EXTERIOR TURNDOWN SLAB  
WITH BRICK LEDGE**

ALLOWABLE SERVICE UPLIFT LOAD	STUD SIZE	MIN. TURNDOWN WIDTH	CAST IN PLACE ANCHOR EMBEDMENT REQUIREMENTS			POST INSTALLED ANCHOR EMBEDMENT REQUIREMENTS		
			ANCHOR DIAMETER	MIN. ANCHOR EMBED	MIN. TURNDOWN THICKNESS	ANCHOR DIAMETER	MIN. ANCHOR EMBED	MIN. TURNDOWN THICKNESS
≤ 5 KIPS	2x4	20"	3/4"	5"	6"	5/8"	7"	8"
	2x6	20"	3/4"	5"	6"	5/8"	6"	8"
≤ 10 KIPS	2x4	30"	1"	9"	11"	7/8"	14"	16"
	2x6	30"	1"	9"	11"	7/8"	13"	15"
≤ 15 KIPS	2x4	40"	1 1/4"	13"	15"	1"	19"	22"
	2x6	40"	1 1/4"	13"	15"	1"	19"	22"
≤ 20 KIPS	2x4	50"	N/A	N/A	N/A	1 1/4"	24"	27"
	2x6	50"	N/A	N/A	N/A	1 1/4"	24"	27"

- NOTES:
- CAST IN PLACE ANCHOR OPTION DESIGNED WITH HEX BOLT ALLOWABLE CAPACITIES. POST INSTALLED VALUES DESIGNED WITH SIMPSON "SET-32" ADHESIVE AND A36 THREADED ROD. AT CONTRACTORS OPTION EQUAL ALTERNATIVE ADHESIVE SHALL BE USED.
  - CENTERLINE OF ANCHOR TO ALIGN WITH CENTERLINE OF TIMBER STUD, TYPICAL.
  - THICKEN TURNDOWN AS REQUIRED PER SCHEDULE A MINIMUM OF 24" EACH SIDE OF HOLDOWN ATTACHMENT LOCATION.
  - REFER TO "TYPICAL HOLDOWN SCHEDULE" DETAIL FOR ADDITIONAL HOLDOWN ATTACHMENT REQUIREMENTS.
  - REFER TO "TYP. FOOTING DIMENSIONS" DETAIL FOR STANDARD FOUNDATION DIMENSION REQUIREMENTS.
  - AT EXTERIOR TURNDOWN SLAB CONDITIONS REFER TO "EXTERIOR WALL ON TURNDOWN SLAB SUPPORTING VENEER" DETAIL FOR ADDITIONAL FRAMING REQUIREMENTS.



**2 SCHEDULE**  
CONCRETE ANCHORAGE ATTACHMENT - EXTERIOR SLAB WITH BRICK LEDGE



- NOTES:
- REFER TO "POST INSTALLED ANCHORS" IN THE SPECIFICATIONS/GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.
  - LOCATE EXISTING REINFORCING AND DO NOT SEVER DURING DRILLING.
  - ROUGHEN EXISTING CONCRETE SURFACE TO AN AMPLITUDE OF 1/4". ENSURE EXISTING CONCRETE SURFACE IS CLEAN AND FREE OF LAITANCE.

**3 DETAIL**  
TYPICAL ATTACHMENT OF NEW TO EXISTING FOOTING  
SCALE: 3/4" = 1'-0"

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No.	Description	Date

PROJECT #: 2022303  
DATE: 9/16/2022

HOLDOWN ATTACHMENT DETAILS

S3.2

DIGITAL PRINT DATE: 9/16/2022 12:00:56 PM

CLEAR OPENING	LOOSE LINTEL ANGLE	BEARING LENGTH
0'-0" to 4'-0"	L4x4x1/4	4" MIN.
4'-1" to 6'-0"	L6x4x5/16	6" MIN.
6'-1" to 10'-0"	L7x4x3/8	8" MIN.
10'-1" to 12'-0"	L8x4x7/16	12" MIN.

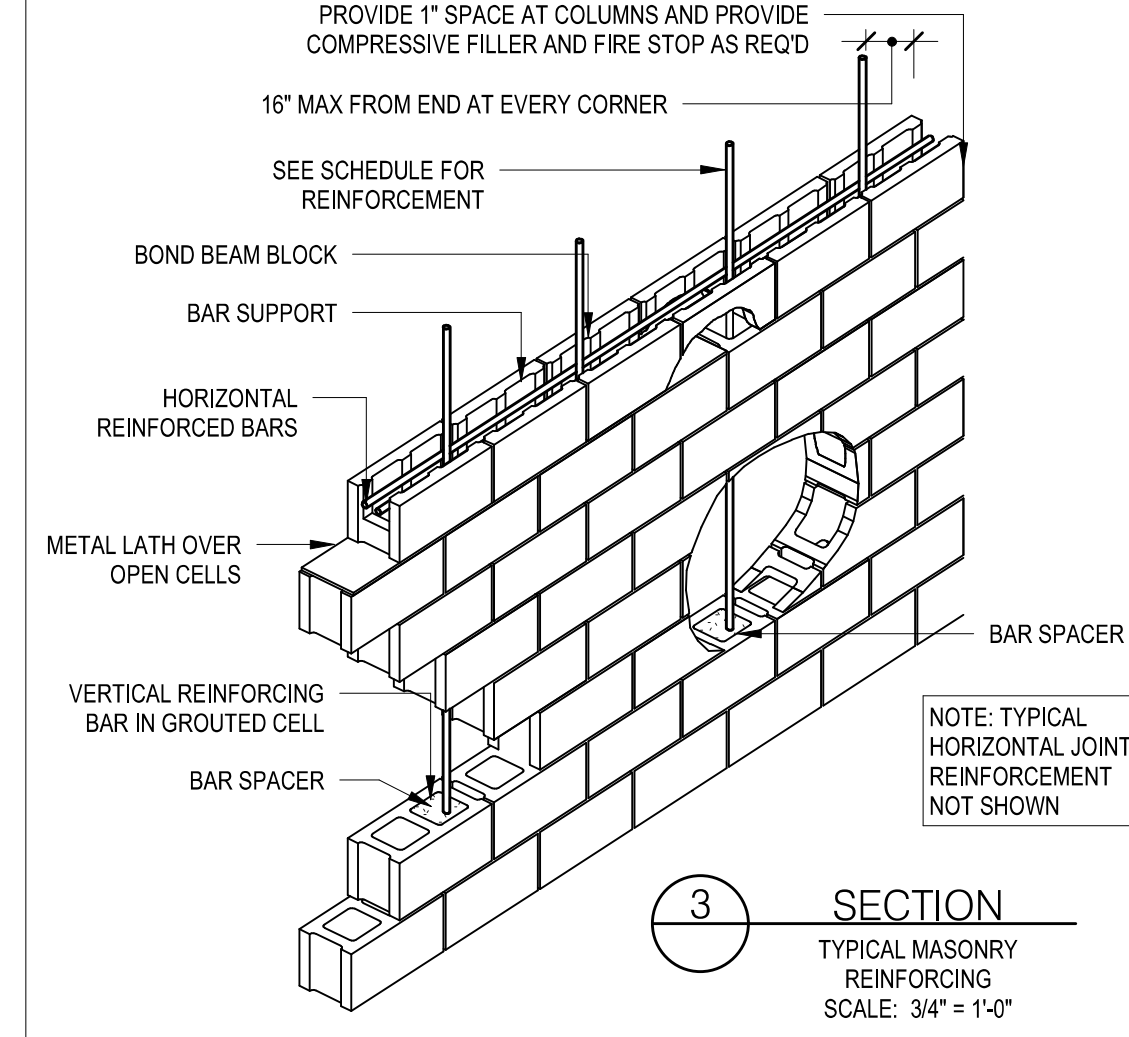
- LOOSE LINTELS ARE INTENDED TO SUPPORT 4" BRICK VENEER ONLY.
- ALL LOOSE LINTELS SHALL BE HOT DIPPED GALVANIZED.
- ALL LOOSE LINTELS SHALL BE INSTALLED WITH ITS LONG LEG VERTICAL (LV).
- DO NOT LOCATE MASONRY CONTROL JOINTS WITHIN 2'-0" OF OPENINGS LARGER THAN 8'-0" TO ALLOW FOR ARCHING ACTION.
- LOOSE LINTELS ARE NOT CALLED OUT ON THE FRAMING PLANS, REFER TO ARCHITECTURAL DRAWINGS FOR VENEER LOCATIONS.

**1 SECTION**  
TYPICAL LOOSE LINTEL SCHEDULE  
SCALE: 3/4" = 1'-0"

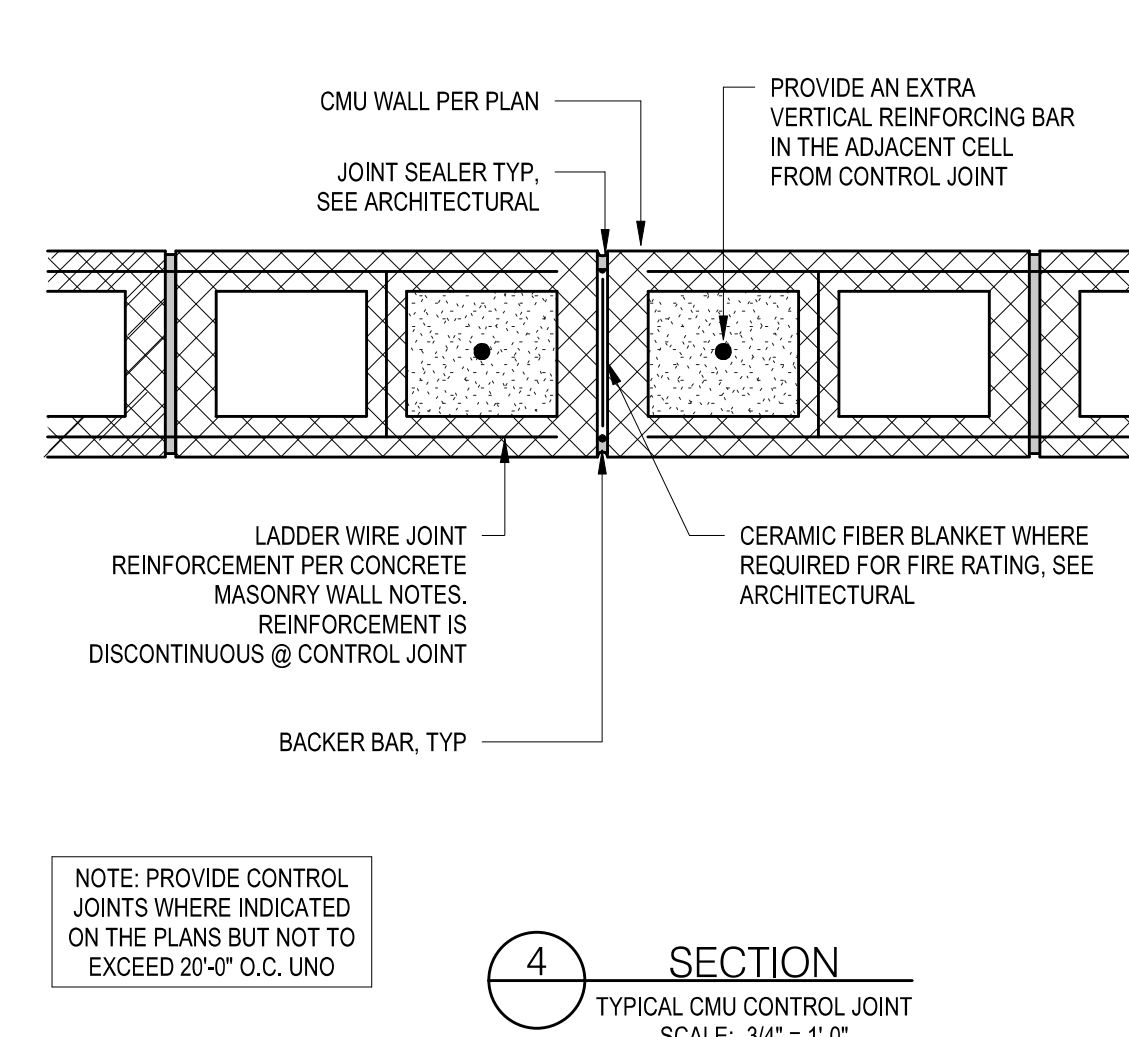
WALL THICKNESS	LOCATION	CLEARSPAN (H)	VERTICAL REINFORCING
8" CMU	INTERIOR	H ≤ 12'-0"	#5 @ 24" O.C.

- SEE PLANS FOR LOCATIONS OF MASONRY. WALL THICKNESS DOES NOT INCLUDE VENEER.
- EXTERIOR LOCATIONS INCLUDE AREAS THAT MAY BE RECESSED INTO THE BUILDING BUT MAY STILL HAVE DIRECT WIND EXPOSURE. INTERIOR LOCATIONS ARE LOCATIONS THAT ARE COMPLETELY ENCLOSED WITHIN THE BUILDING.
- REFER TO TYPICAL DETAILS AND SPECIFICATIONS FOR REBAR PLACEMENT, EMBEDMENT REQUIREMENT, BOND BEAM LOCATIONS, ETC.
- ALL MASONRY WALLS REQUIRE TOP OF WALL BRACING UNLESS DETAILED OR NOTED OTHERWISE. REFER TO DETAILS FOR REQUIREMENTS.

**2 SECTION**  
TYPICAL MASONRY WALL REINFORCING SCHEDULE  
SCALE: 3/4" = 1'-0"

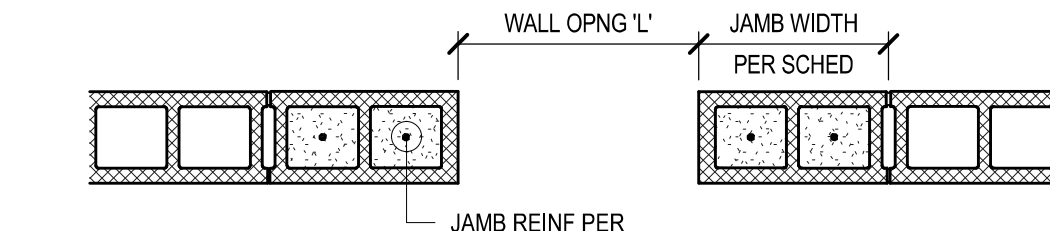


**3 SECTION**  
TYPICAL MASONRY REINFORCING SCHEDULE  
SCALE: 3/4" = 1'-0"

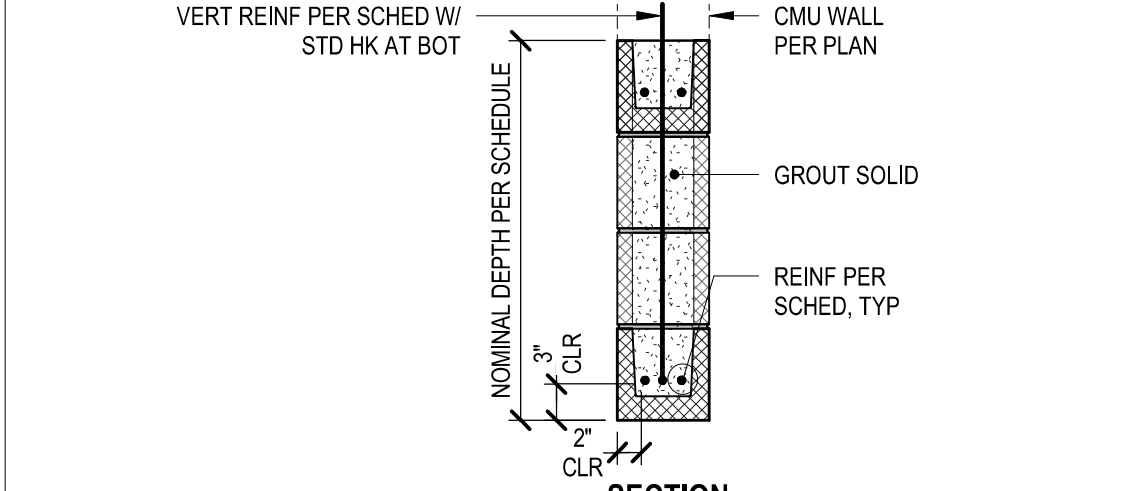


**4 SECTION**  
TYPICAL CMU CONTROL JOINT  
SCALE: 3/4" = 1'-0"

EXTERIOR MASONRY WALL JAMB SCHEDULE			INTERIOR MASONRY WALL JAMB SCHEDULE		
MAX OPNG	JAMB REINF	JAMB WIDTH	MAX OPNG	JAMB REINF	JAMB WIDTH
4'-0"	2-#5	16"	4'-0"	1-#5	8"
8'-0"	2-#5	16"	8'-0"	2-#5	16"
12'-0"	3-#5	24"	12'-0"	3-#5	24"



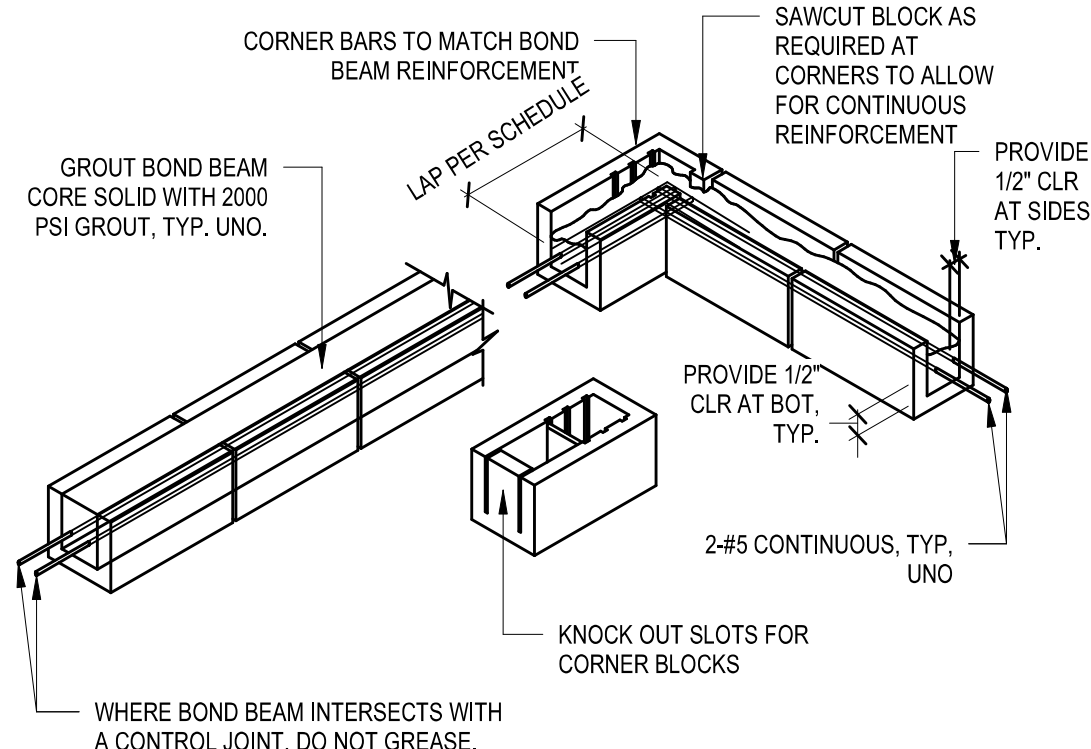
**5 SECTION**  
MASONRY JAMB SCHEDULE  
SCALE: 3/4" = 1'-0"



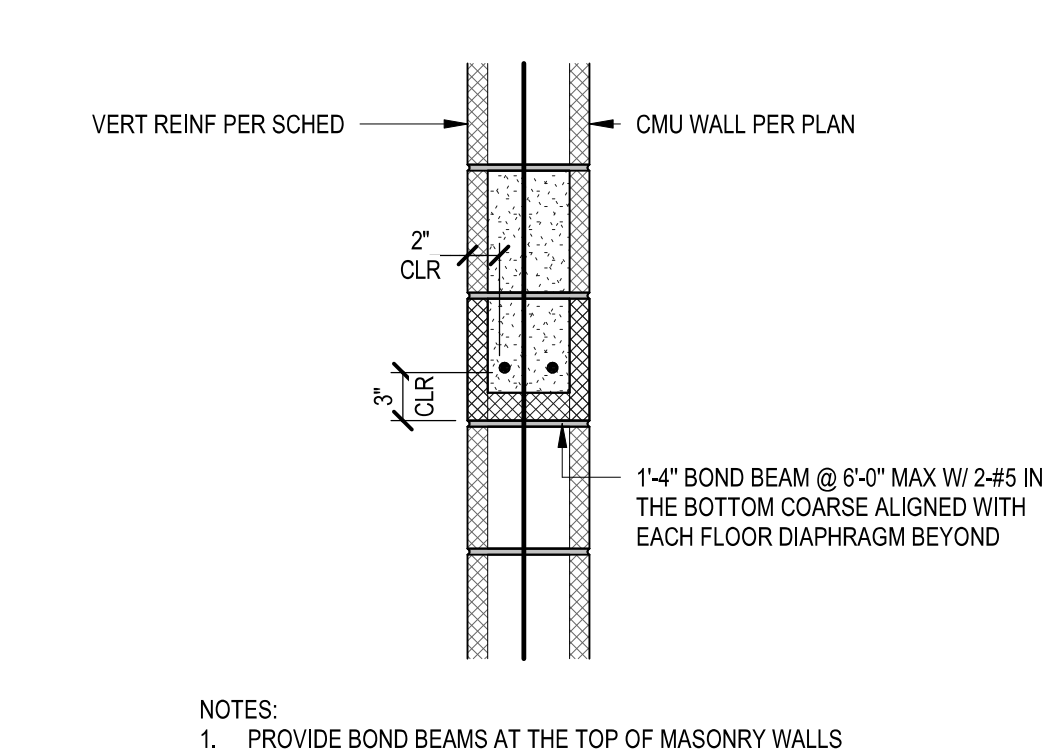
INTERIOR NON-LOAD BEARING MASONRY LINTEL SCHEDULE				
MAX OPENING	NOMINAL WIDTH	NOMINAL DEPTH	HORIZ REINFORCING	SHEAR REINFORCING
8'-0"	8"	16"	2-#5 BOT, 2-#5 TOP	-

- NOTES:
- EXTEND GROUT, OPEN END MASONRY UNITS AND REINFORCING 2'-0" PAST EACH JAMB. USE CORNER BARS WHERE 2'-0" CANNOT BE ACHIEVED.
  - LINTELS SPANNING OVER 8'-0" TO 12'-0" TO BEAR 12" ON SOLID GROUTED CMU BLOCK EA END

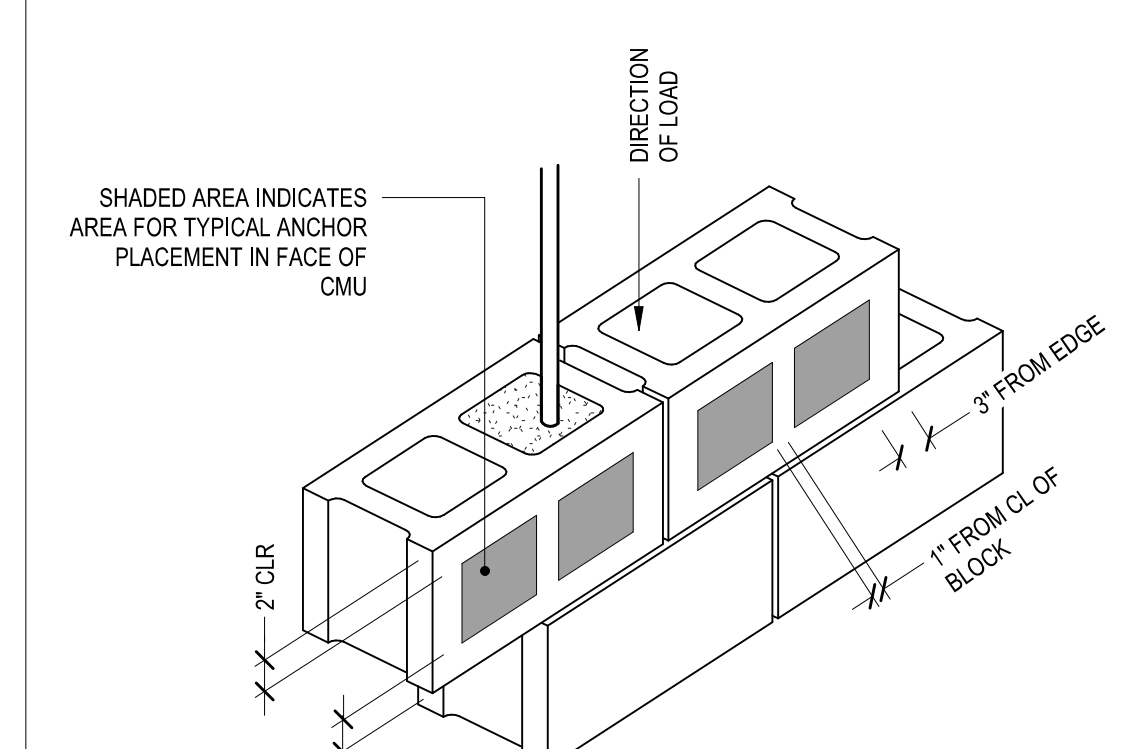
**6 SECTION**  
MASONRY LINTEL SCHEDULE  
SCALE: 3/4" = 1'-0"



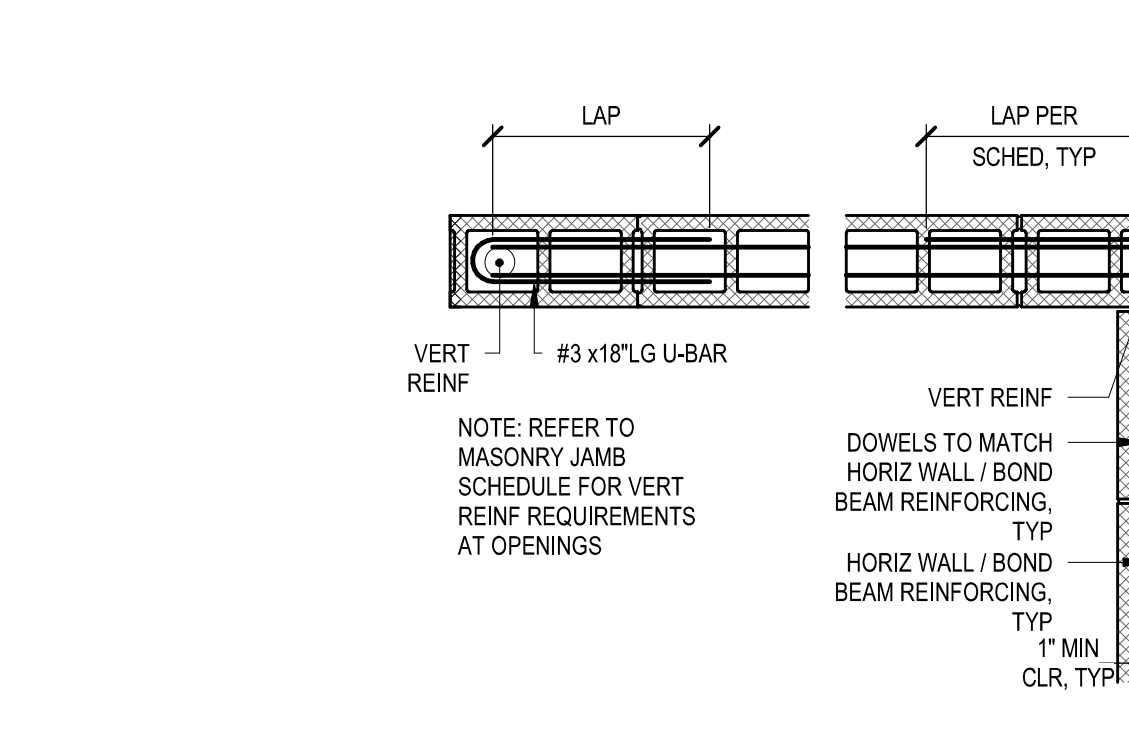
**7 SECTION**  
TYPICAL BOND BEAM SCHEDULE  
SCALE: 3/4" = 1'-0"



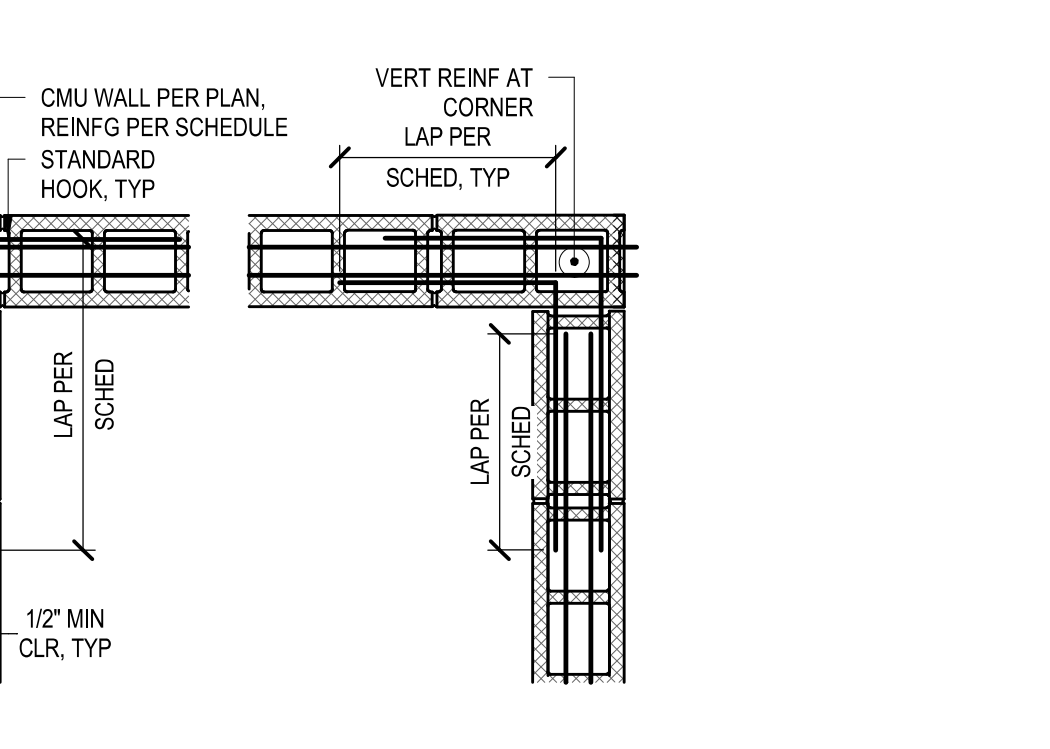
**8 SECTION**  
BOND BEAM REQUIREMENTS AT MASONRY WALLS  
SCALE: 1" = 1'-0"



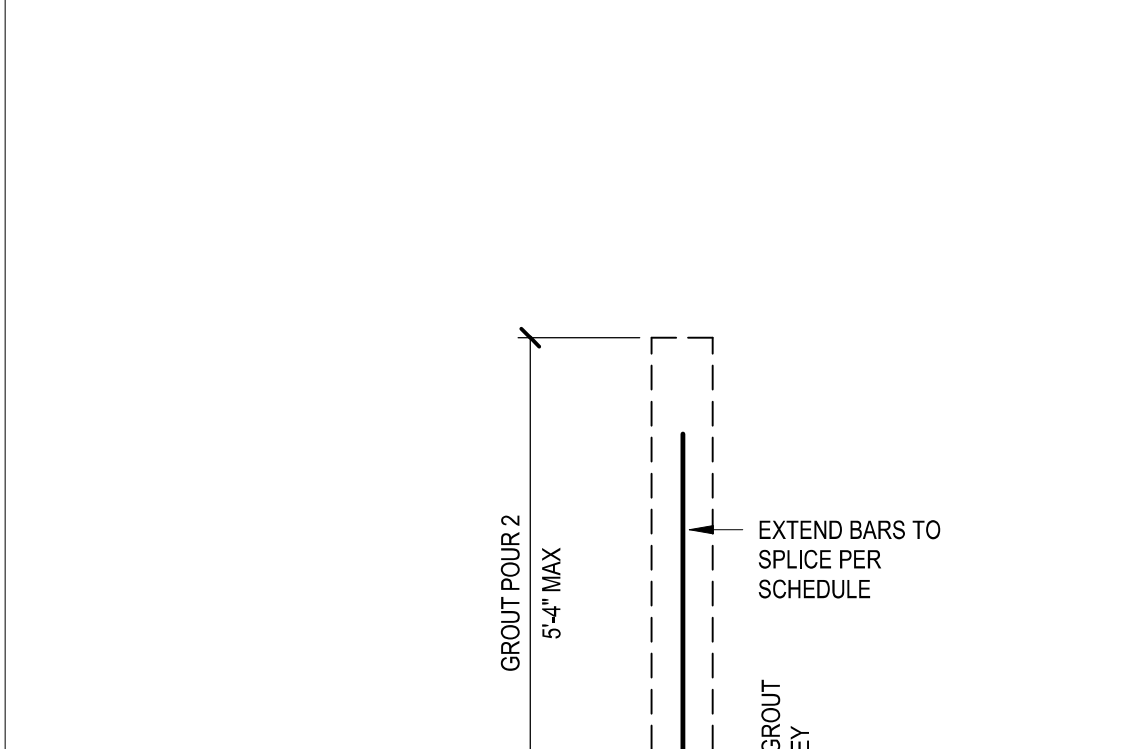
**9 SECTION**  
ALLOWABLE ANCHOR LOCATION IN FACE OF CMU  
SCALE: 3/4" = 1'-0"



**10 SECTION**  
TYPICAL CMU WALL CORNERS, INTERSECTIONS AND ENDS, 2 HORIZ BARS  
SCALE: 3/4" = 1'-0"



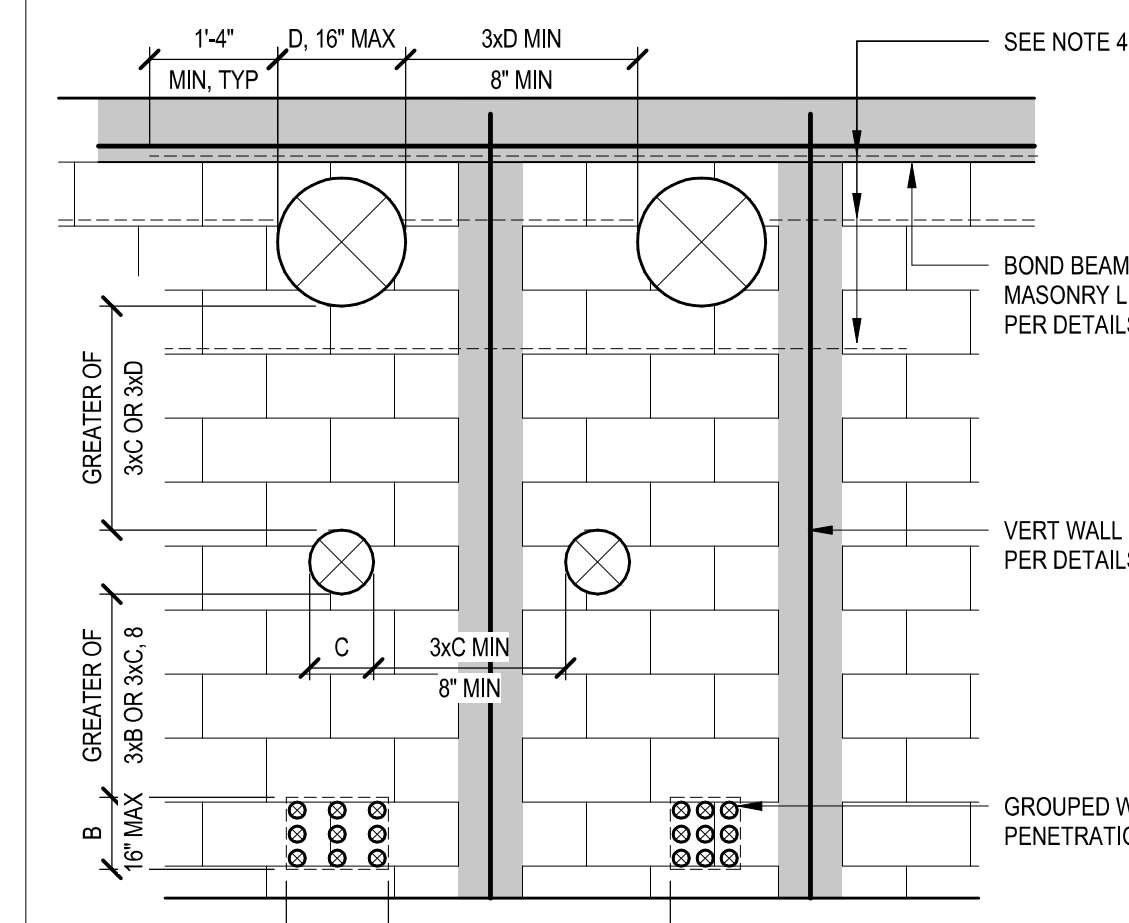
**11 SECTION**  
TYPICAL MASONRY WALL CORNERS, INTERSECTIONS AND ENDS, 2 HORIZ BARS  
SCALE: 3/4" = 1'-0"



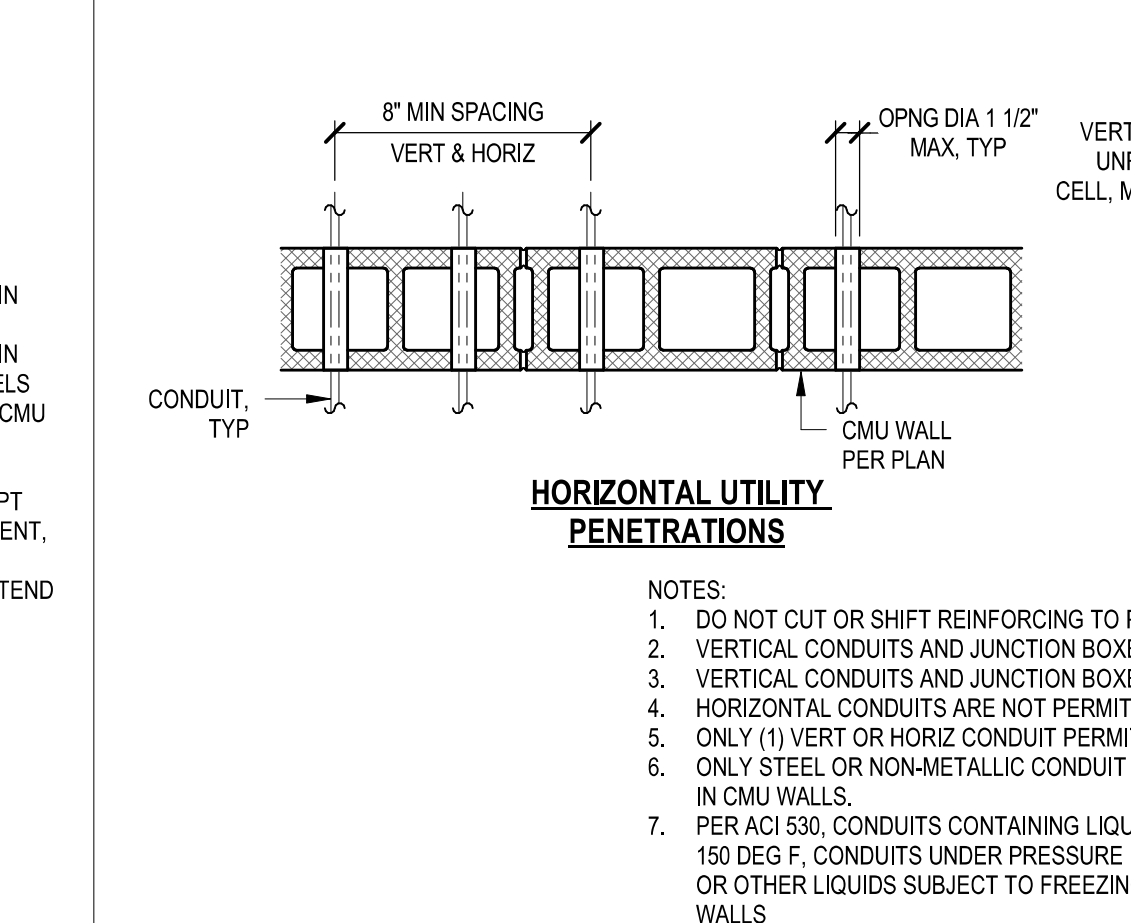
**12 SECTION**  
MASONRY LAP LENGTH SCHEDULE - IBC 2015  
SCALE: 3/4" = 1'-0"

MASONRY WALL REINFORCEMENT LAP & DEVELOPMENT LENGTH 'MLS' (INCHES)						
GR.60 REINFORCEMENT, UNCOATED						
BAR SIZE	1 BAR PER CELL, BARS CENTERED IN WALL				2 BARS OR OFFSET BARS	
	6 INCH	8 INCH	10 INCH	12 INCH	6, 8, 10, 12 INCH	6, 8, 10, 12 INCH
#3	12	12	12	12	15	15
#4	20	15	12	12	26	26
#5	32	23	18	15	40	40
#6	54	43	34	28	54	54
#7	-	60	46	38	63	63
#8	-	72	71	57	72	72
#9	-	-	82	74	82	82

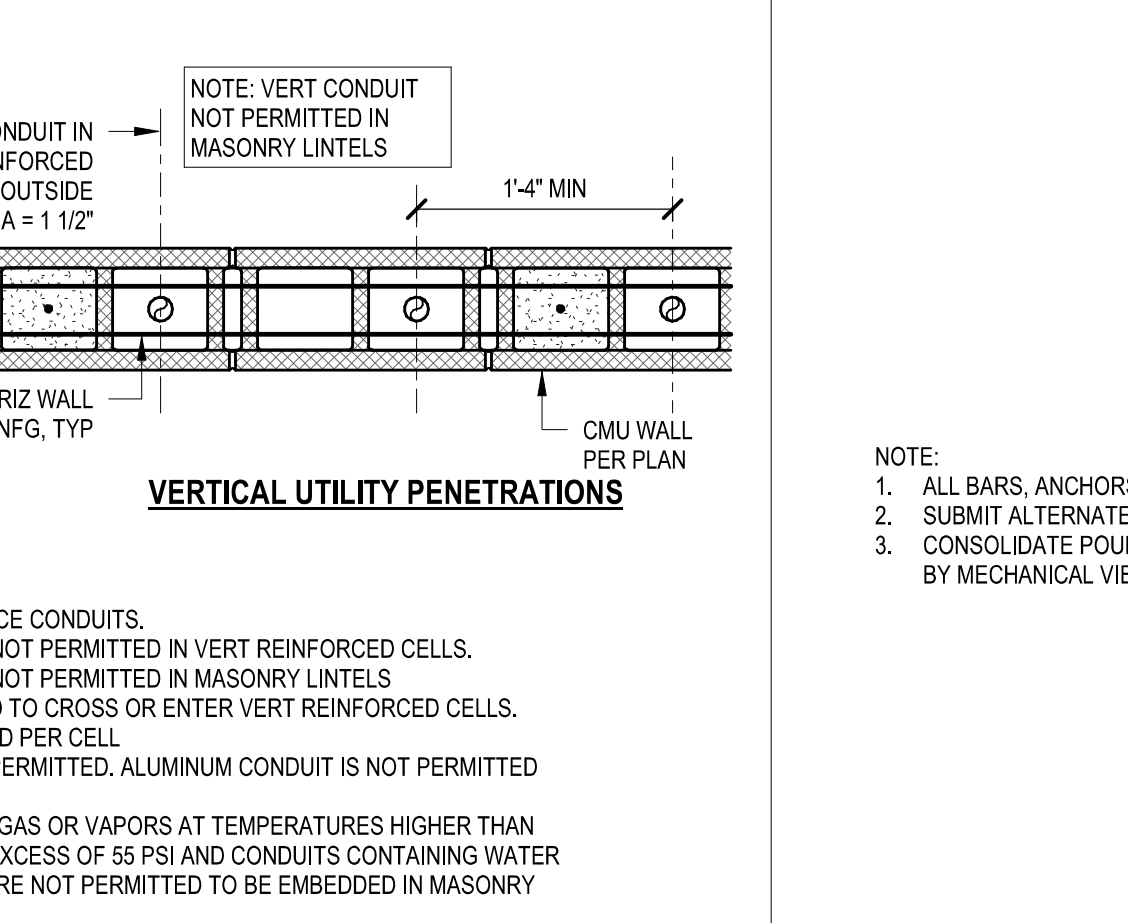
- NOTES:
- MASONRY LAP AND DEVELOPMENT LENGTHS INDICATED SHALL BE USED UNLESS NOTED OTHERWISE ON THE DRAWINGS.
  - LAP LENGTH OF SMALLER BAR SHALL BE USED WHEN SPLICING DIFFERENT SIZED BARS.



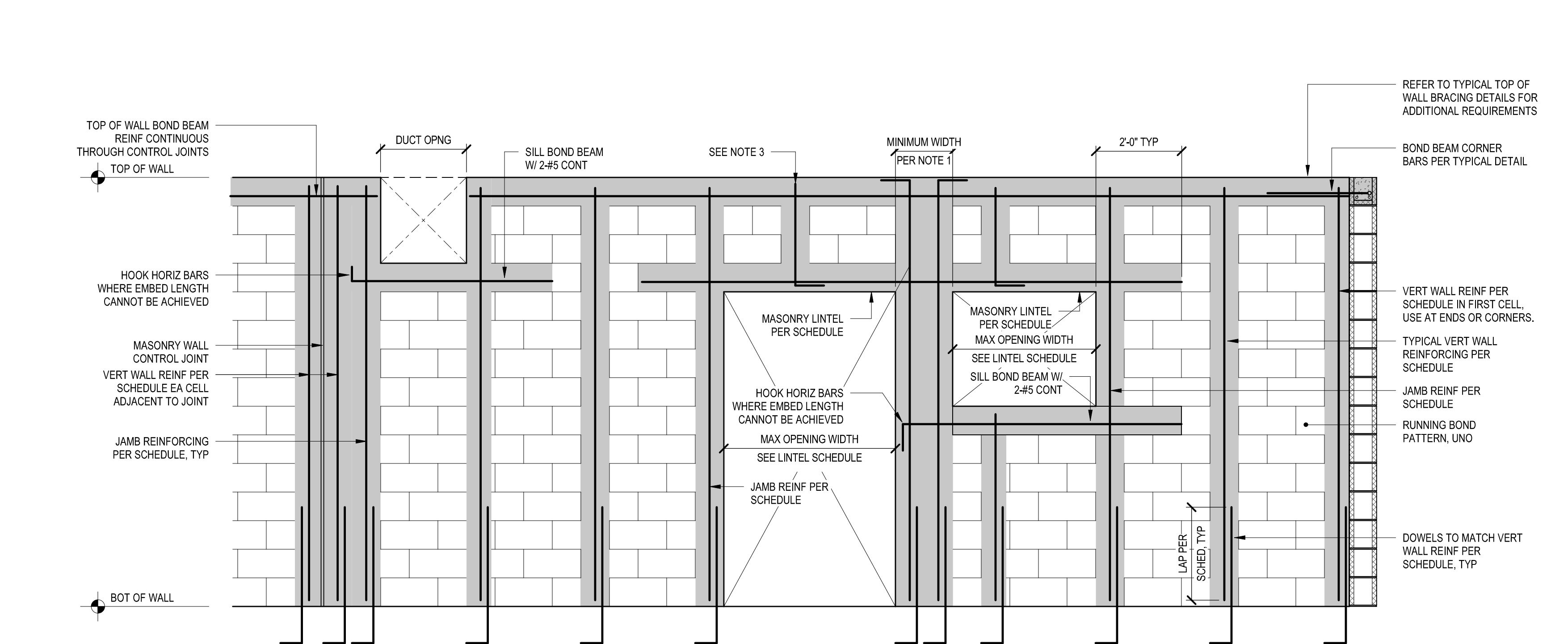
**13 SECTION**  
PIPE PENETRATIONS IN MASONRY WALLS  
SCALE: 1/2" = 1'-0"



**14 SECTION**  
TYPICAL CONDUITS IN CMU WALLS  
SCALE: 1" = 1'-0"

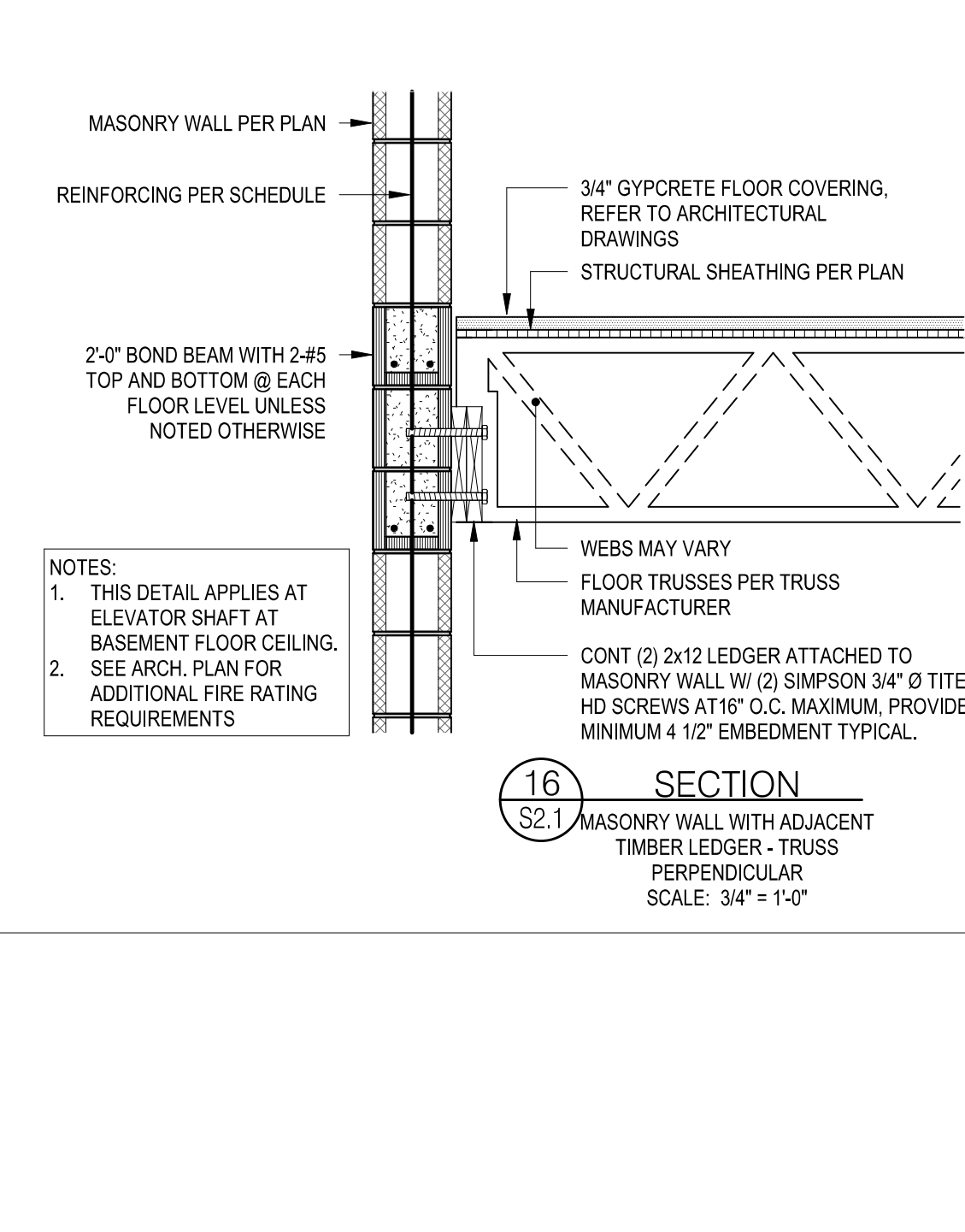


**15 SECTION**  
TYPICAL MASONRY WALLS GROUING LIFTS  
SCALE: 1/2" = 1'-0"



- NOTES:
- MINIMUM WIDTH OF MASONRY BETWEEN OPENINGS SHALL BE WIDE ENOUGH TO PROVIDE SCHEDULED JAMB REINFORCING FOR EACH OPENING WITHOUT OVERLAP, BUT NOT LESS THAN 16 INCHES, WHERE OPENINGS ARE CLOSER THAN MINIMUM. NOTIFY ENGINEER.
  - LADDER JOINT REINFORCING NOT SHOWN FOR CLARITY.
  - CONTINUE VERTICAL WALL REINFORCING OVER OPENINGS. TERMINATE INTO MASONRY LINTEL BEAMS WITH STANDARD HOOK. REFER TO STEEL LINTEL DETAILS FOR TERMINATION.
  - USE CLOSED BOTTOM LINTEL BLOCKS ONLY OVER OPENINGS REQUIRING MASONRY LINTELS. USE OPEN BOTTOM BOND BEAM BLOCKS IN FIELD OF WALL.

**15 SECTION**  
TYPICAL NON-LOAD BEARING INTERIOR CMU WALL ELEVATION W/ OPENINGS  
SCALE: 1/2" = 1'-0"



**16 SECTION**  
MASONRY WALL WITH ADJACENT TIMBER LEDGER - TRUSS PERPENDICULAR  
SCALE: 3/4" = 1'-0"

**designdevelopment** ARCHITECTS

600 E. Main Street, Suite 102  
Raleigh, NC 27601  
919.846.4474

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**FLUHRER REED** ENGINEERS

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SEPTEMBER 16, 2022  
NORTH CAROLINA PROFESSIONAL ENGINEERING CORP. C-1835

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**

1615 NC-54  
DURHAM, NC 27713

No. Description Date

PROJECT #: 2022303

DATE: 9/16/2022

CONCRETE/MASONRY DETAILS USED WITH TIMBER

**S3.3**

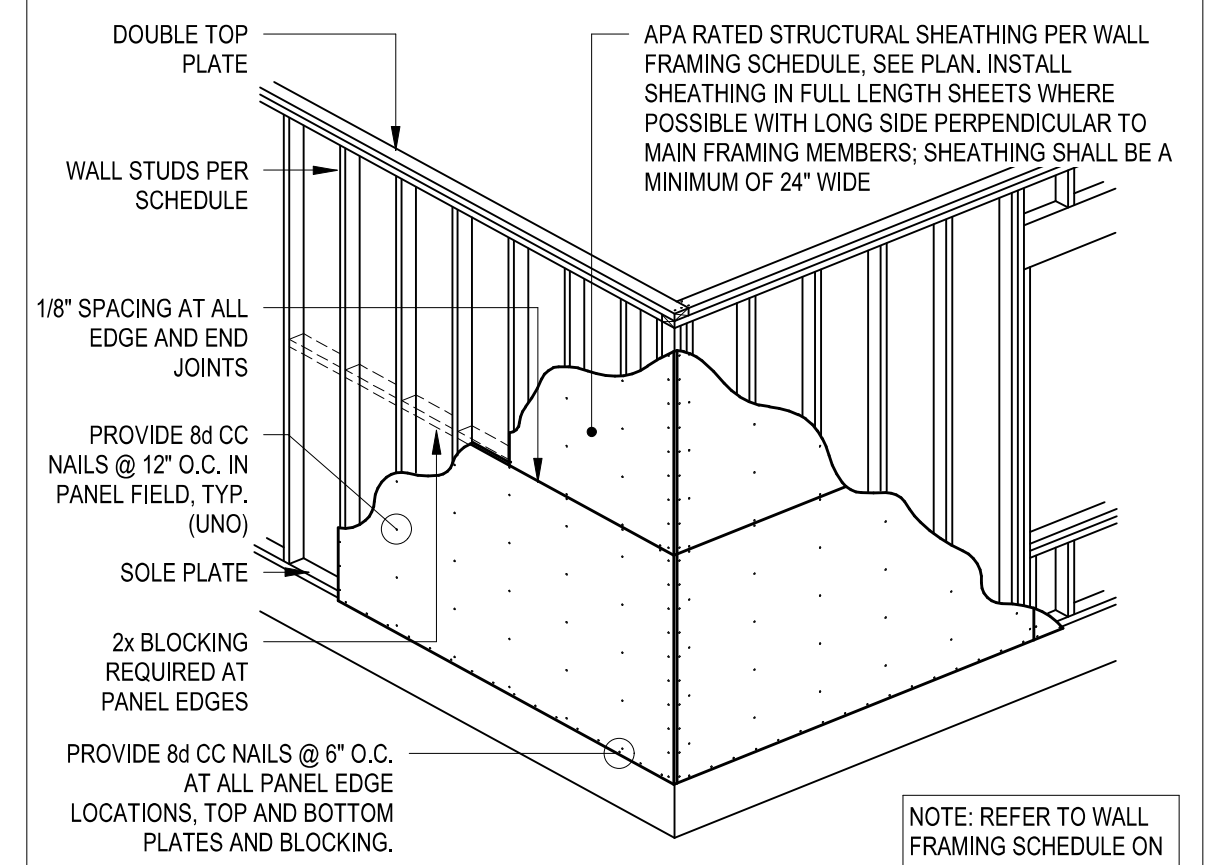
1/4" 1/2" 1" 2"

DATE: 9/16/2022 12:00:58 PM

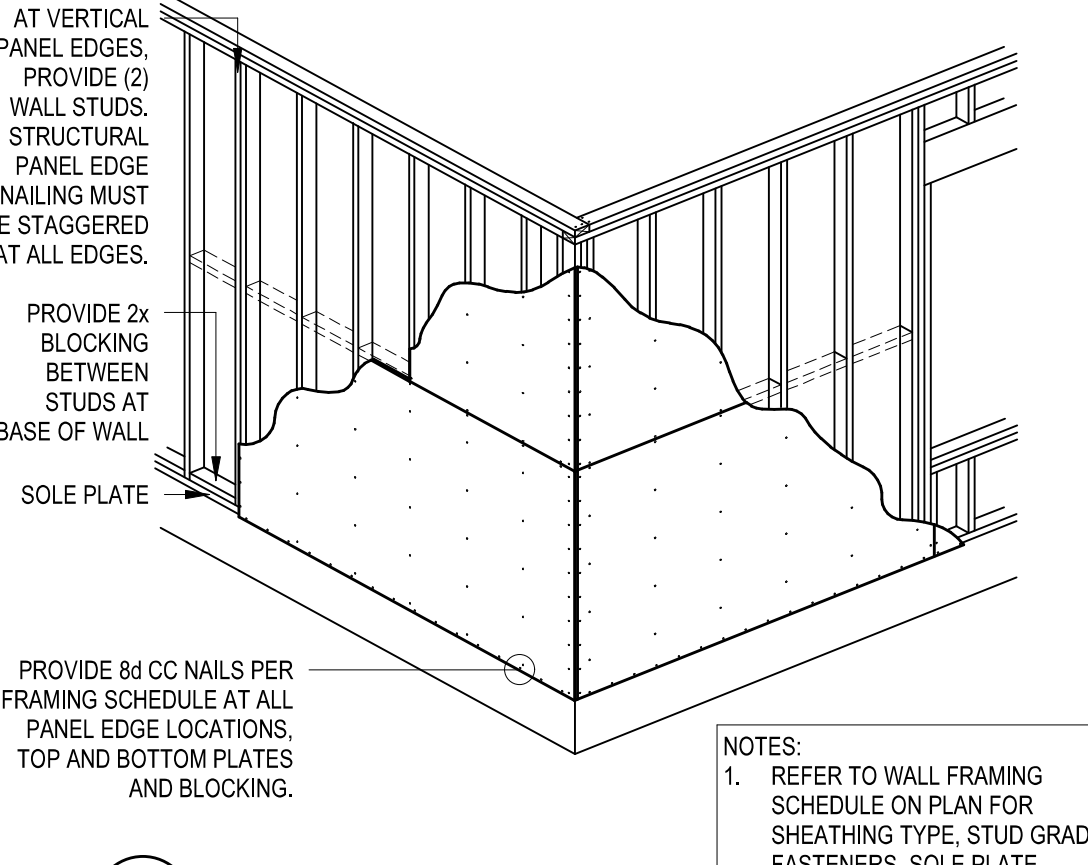
BEAM SIZE	SST HANGER TYPE	MIN. FACE NAILS	CAPACITY (POUNDS)
2x6	LUS26	(4) 10d	740
(2) 2x6	LUS26-2	(4) 16d	880
(3) 2x6	LUS26-3	(4) 16d	880
2x8	LUS28	(6) 10d	940
(2) 2x8	LUS28-2	(6) 16d	1125
(3) 2x8	LUS28-3	(6) 16d	1125
2x10	LUS210	(8) 10d	1145
(2) 2x10	HUS210-2	(8) 16d	1565
(3) 2x10	HU210-3HUC210-3 (MAX)	(18) 16d	2305
(4) 2x10	HHUS210-4	(30) 16d	4835
2x12	LUS212	(8) 10d	1145
(2) 2x12	HUS212-2	(10) 16d	2275
(3) 2x12	HU212-3HUC212-3 (MAX)	(22) 16d	2820
(2) 1.75"x7.25" LVL	HU48HUC48 (MAX)	(14) 16d	1795
(2) 1.75"x9.25" LVL	HU410HUC410 (MAX)	(18) 16d	2305
(3) 1.75"x9.25" LVL	HHUSS.5010	(30) 16d	4835
(2) 1.75"x11.25" LVL or (2) 1.75"x11.875" LVL	HU412HUC412 (MAX)	(22) 16d	2820
(3) 1.75"x11.25" LVL or (3) 1.75"x11.875" LVL	HHUSS.5010	(30) 16d	4835
(1) 1.75"x14" LVL	U14	(14) 16d	1735
(2) 1.75"x14" LVL	HU416HUC416 (MAX)	(26) 16d	3330
(3) 1.75"x14" LVL	HHUSS.5010	(30) 16d	4835
(2) 1.75"x16" LVL	HGU5410	(46) 16d	7825
(3) 1.75"x16" LVL	HGU5.5014	(86) 16d	8685
(2) 1.75"x18" LVL	HGU5414	(66) 16d	8685
(3) 1.75"x18" LVL	HHUSS.5014	(86) 16d	8685

- SST DENOTES SIMPSON STRONG TIE. USE HANGER PER SCHEDULE ABOVE (OR EQUIVALENT METAL HANGER) UNLESS HANGER NOTED ON PLANS.
- INSTALL HANGERS PER MANUFACTURER'S SPECIFICATIONS.
- THIS SCHEDULE SHALL NOT BE USED FOR TRUSS TO TRUSS CONNECTIONS. ALL TRUSS TO TRUSS CONNECTIONS SHALL BE DESIGNED AND PROVIDED BY TRUSS SUPPLIER.

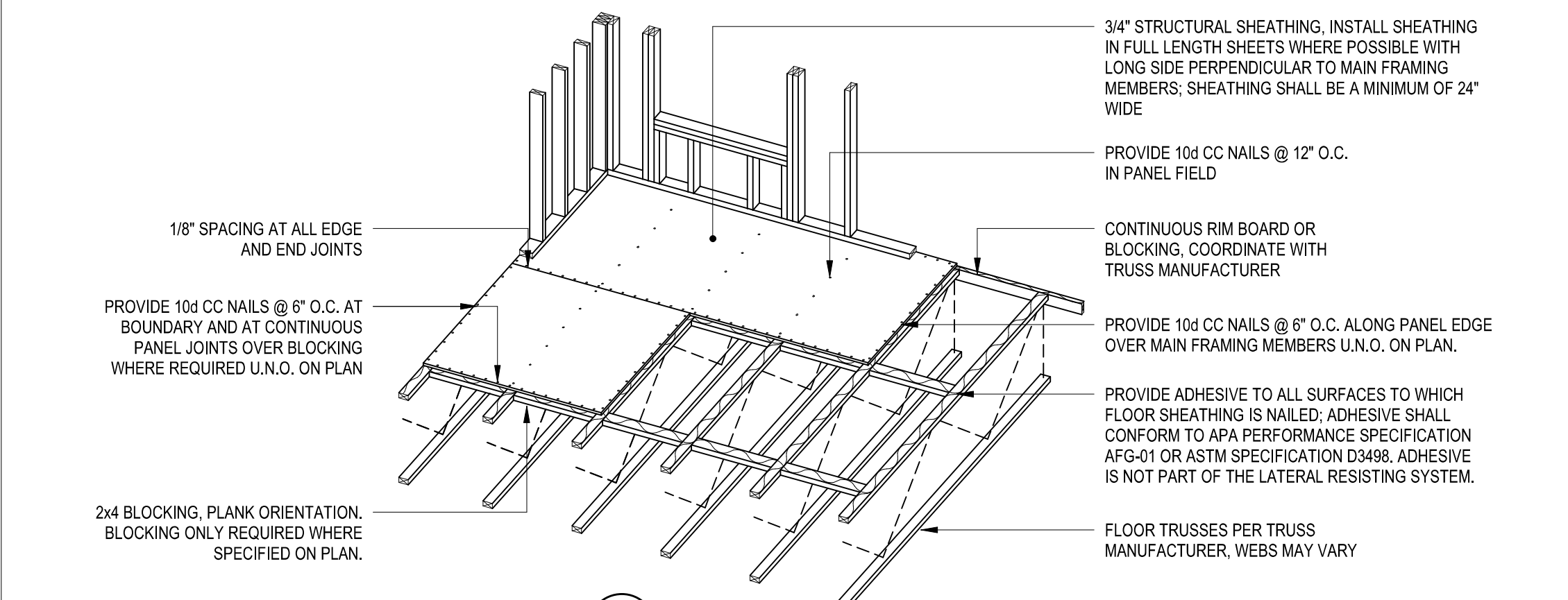
**1 SCHEDULE**  
TYPICAL HANGER SCHEDULE



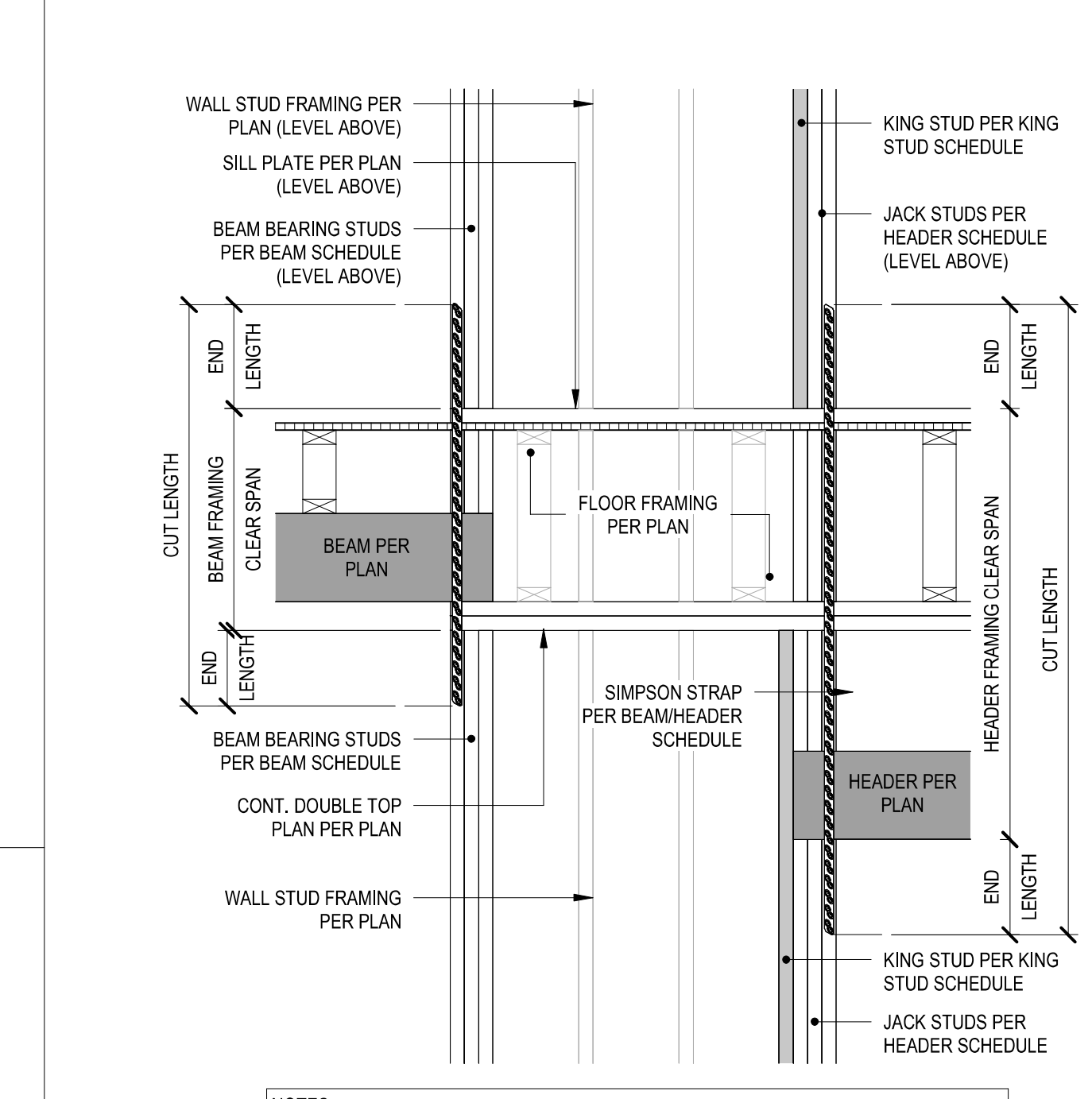
**2 DETAIL**  
TYPICAL WALL SHEATHING REQUIREMENTS  
SCALE: 3/4" = 1'-0"



**3 SECTION**  
ADDITIONAL SHEARWALL REQUIREMENTS FOR HIGH LOAD SHEARWALLS  
SCALE: 3/4" = 1'-0"



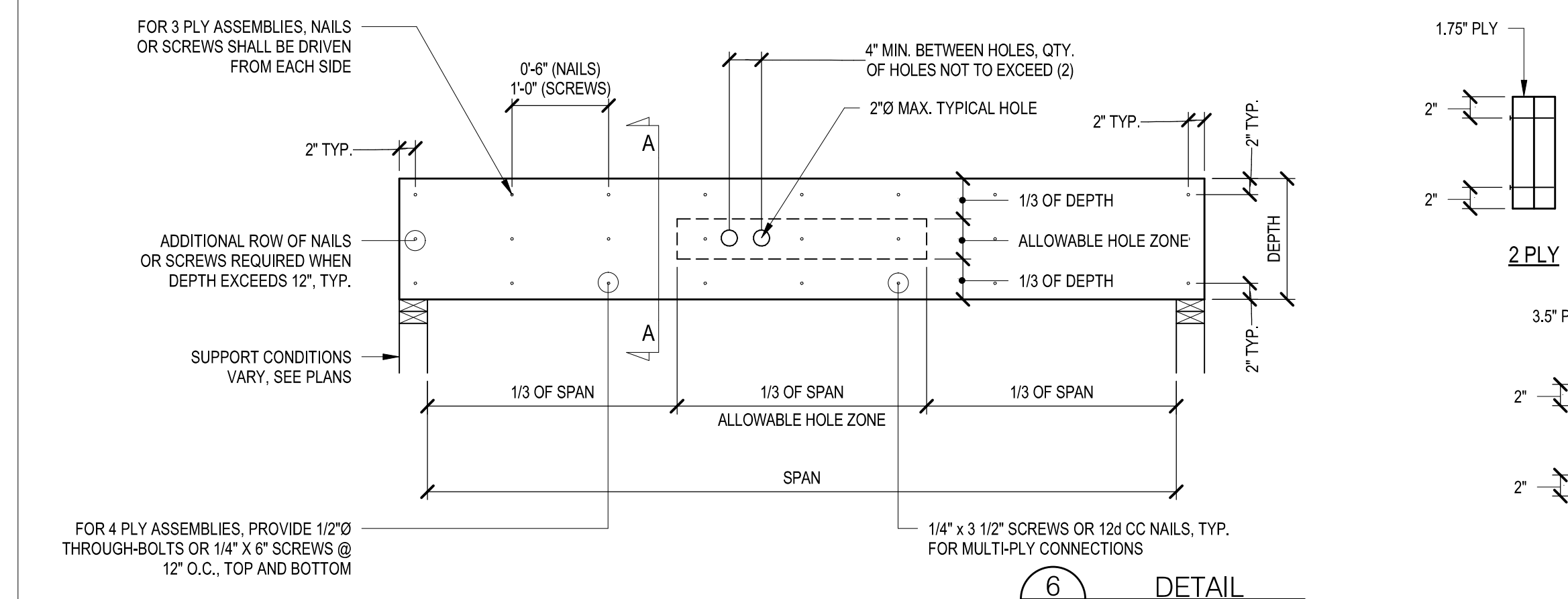
**4 DETAIL**  
TYPICAL FLOOR SHEATHING REQUIREMENTS AT TRUSSES // BLOCKING AT PANEL EDGES  
SCALE: 3/4" = 1'-0"



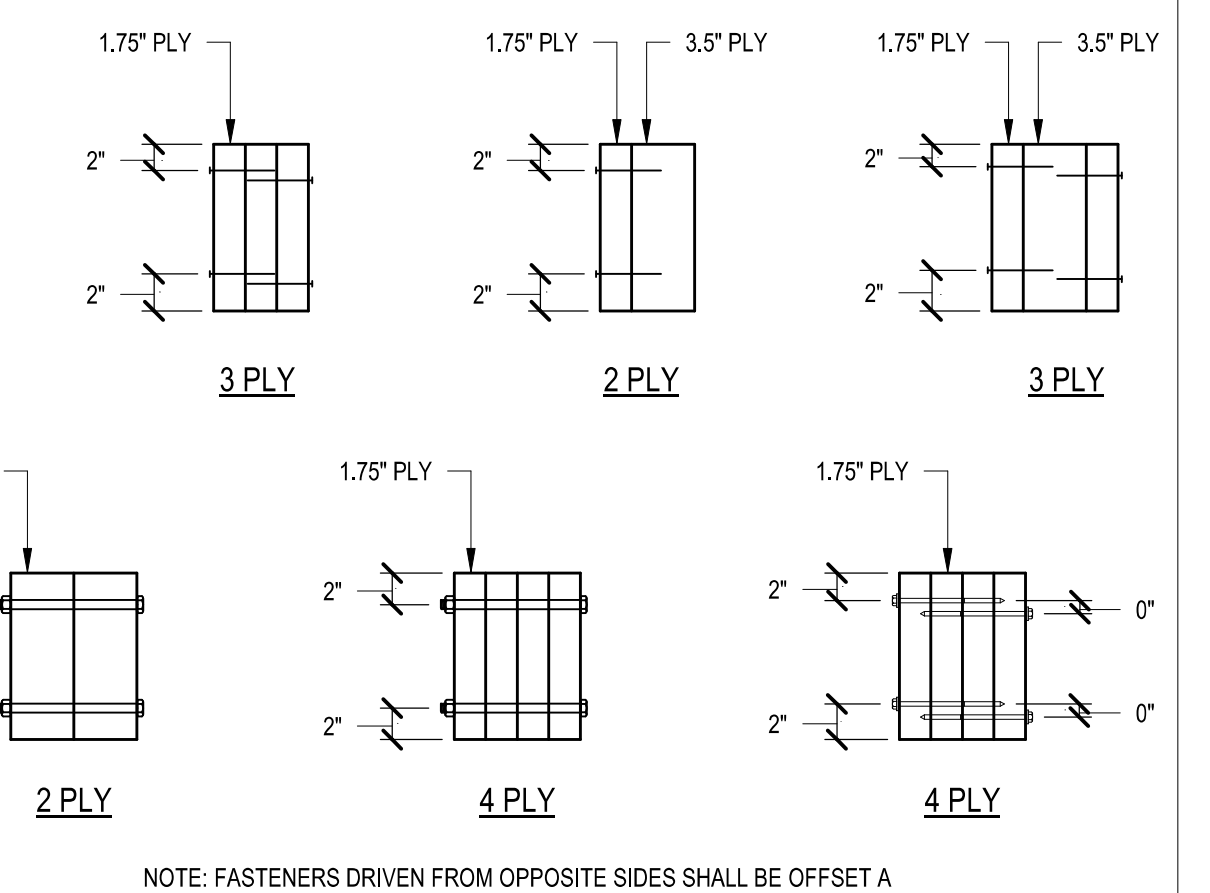
- NOTES:
- INSTALL SOLID BLOCKING BETWEEN FLOORS AT STRAPS, TYPICAL.
  - REFER TO MANUFACTURER INFORMATION FOR END LENGTH AND NAILING REQUIREMENTS TO MEET CAPACITIES NOTED IN TABLE BELOW. SIMPSON CSHP STRAPS ARE SUPPLIED IN CONTINUOUS ROLLS. CUT ON SITE FOR END LENGTH REQUIRED PER MANUFACTURER UNLESS NOTED OTHERWISE ON THE PLANS.
  - PROVIDE EQUAL NUMBER OF NAIL ATTACHMENT EACH END, TYPICAL.
  - PROVIDE A MIN. 1/8" END DISTANCE FOR NAILING, TYPICAL.
  - AT CONTRACTOR'S OPTION A CONTINUOUS THREADED ROD SYSTEM WITH THE CAPACITY OF THE STRAP NOTED AND A TAKEUP DEVICE AT THE HIGHEST LEVEL MAY BE USED IN LIEU OF THE STRAPS SPECIFIED.

SIMPSON STRAP REQUIREMENTS	
STRAP	STRAP DESIGN CAPACITY (LB)
CSHP18	1540
CSHP20	1160

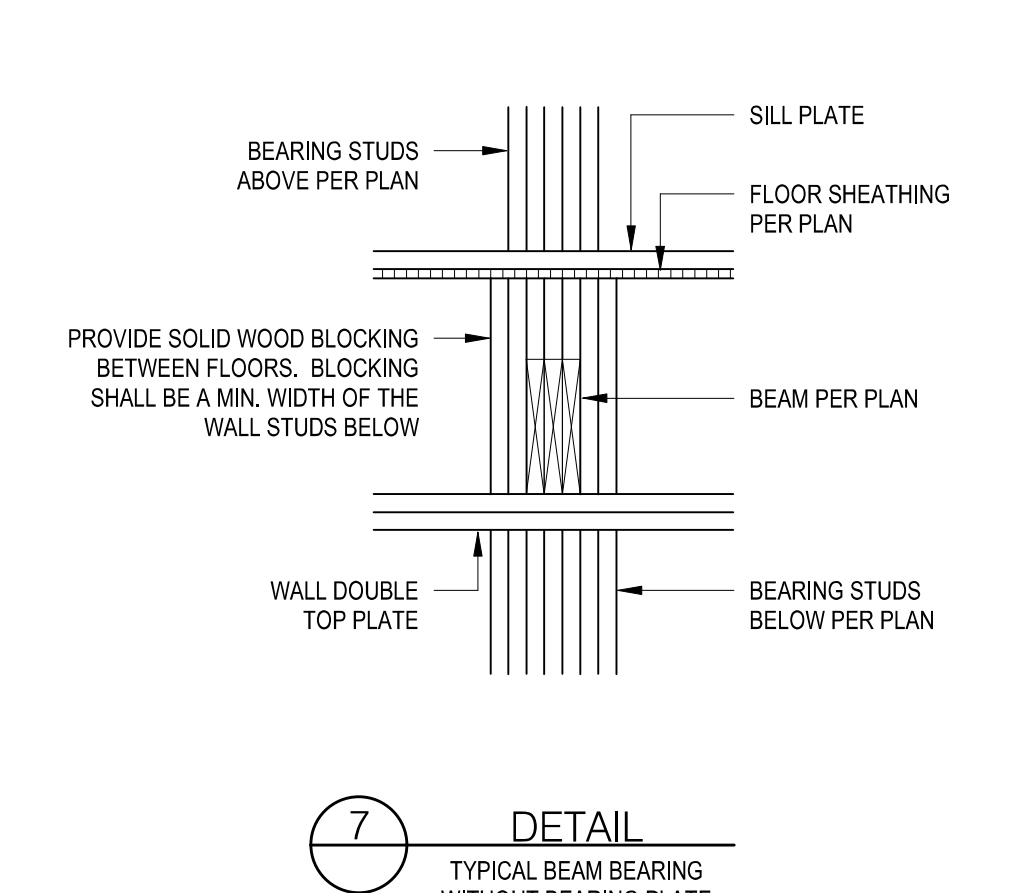
**5 DETAIL**  
TYPICAL HOLDOWN CONNECTION BETWEEN FLOORS  
SCALE: 3/4" = 1'-0"



**6 DETAIL**  
TYPICAL LVL REQUIREMENTS  
SCALE: 3/4" = 1'-0"



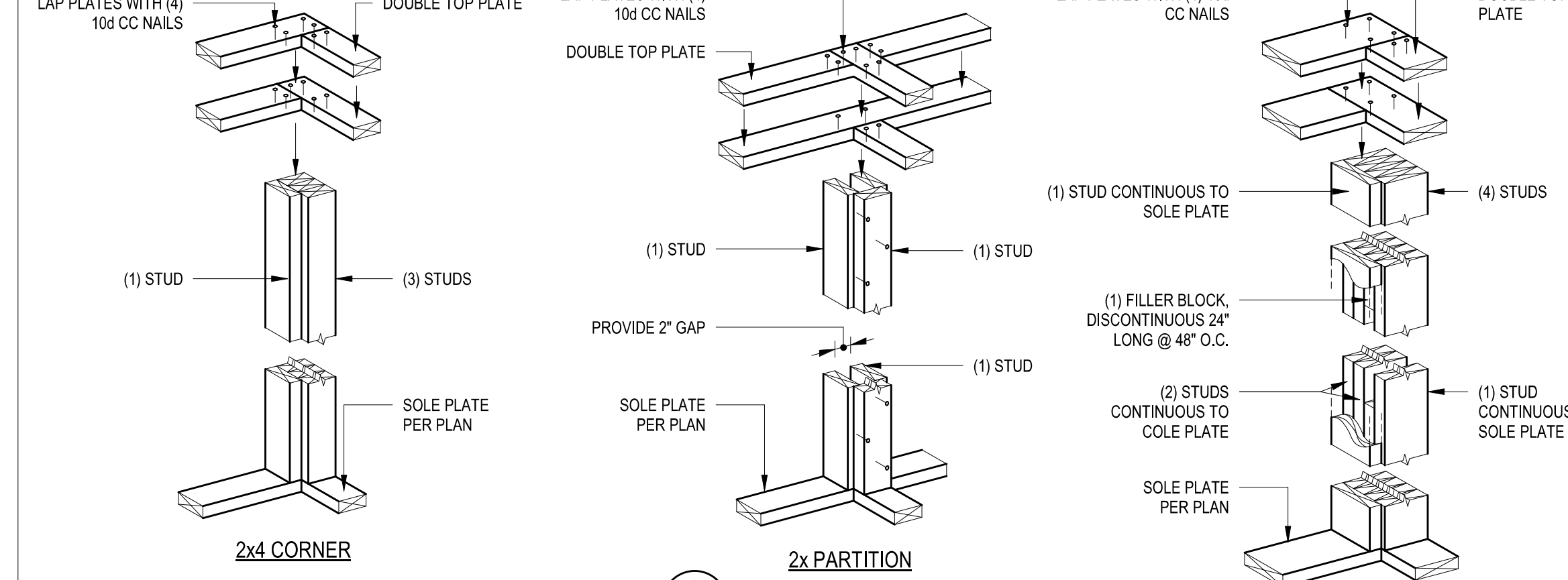
**SECTION A-A**



**7 DETAIL**  
TYPICAL BEAM BEARING WITHOUT BEARING PLATE  
SCALE: 3/4" = 1'-0"

MARK	SIZE	MARK	SIZE	MARK	SIZE	MARK	SIZE
C2.4	(2)2x4	C2.6	(2)2x6	C4.0	4x4	C8.0	8x8
C3.4	(3)2x4	C3.6	(3)2x6	C5.0	6x6	C10.0	10x10
C4.4	(4)2x4	C4.6	(4)2x6	C6.8	4x6	C12.0	12x12
C5.4	(5)2x4	C5.6	(5)2x6	C6.8	4x8	C8x10	8x10
C6.4	(6)2x4	C6.6	(6)2x6	C4x10	4x10	C8x12	8x12
C7.4	(7)2x4	C7.6	(7)2x6	C4x12	4x12	C10x12	10x12
C8.4	(8)2x4	C8.6	(8)2x6	C6x8	6x8		
C8.4	(9)2x4	C9.6	(9)2x6	C6x10	6x10		
C10.4	(10)2x4	C10.6	(10)2x6	C10.8	(10)2x8		
C11.4	(11)2x4	C11.6	(11)2x6	C11.8	(11)2x8		
C12.4	(12)2x4	C12.6	(12)2x6	C12.8	(12)2x8		

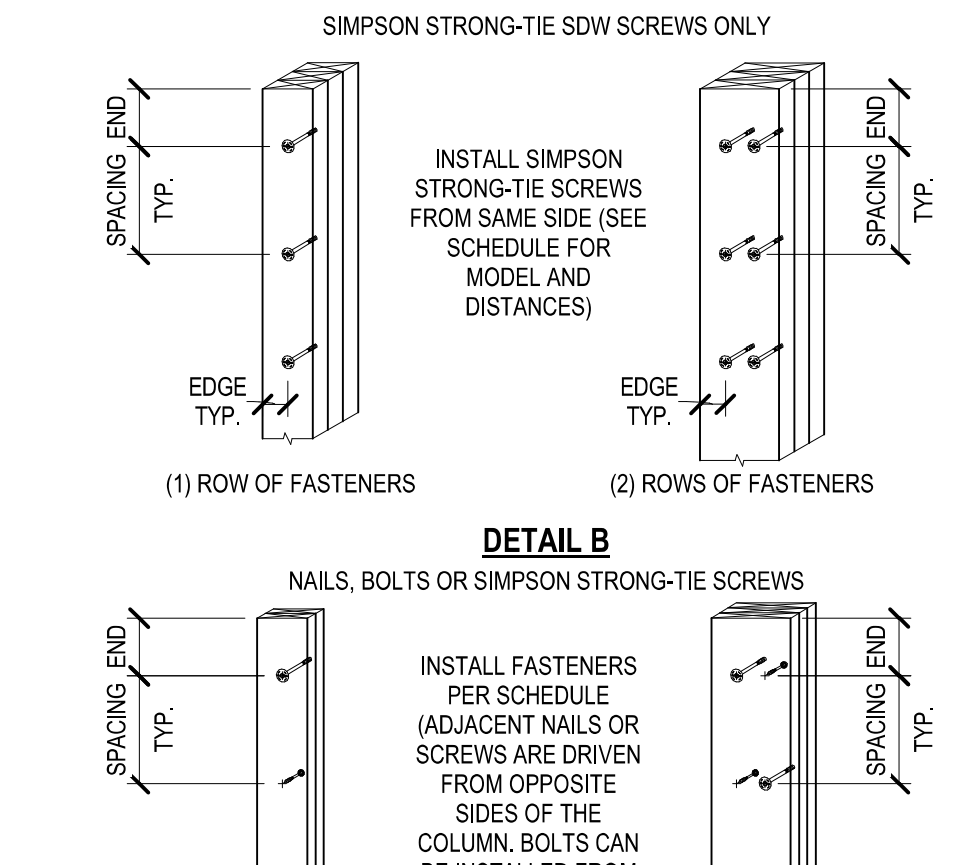
**8 SCHEDULE**  
TYPICAL TIMBER COLUMN SCHEDULE



**9 DETAIL**  
TYPICAL WALL FRAMING AT CORNERS AND INTERSECTIONS  
SCALE: 3/4" = 1'-0"

BUILT-UP COLUMN FASTENING SCHEDULE								
NO. OF PLYS	MIN. STUD SIZE	NO. OF ROWS	FASTENERS		END DISTANCE (IN.)	EDGE DISTANCE (IN.)	SPACING (IN.)	
			SIZE/MODEL				DETAIL A (ONE SIDE)	DETAIL B (BOTH SIDES)
2	2x4	1	10d COMMON		2.5	1	-	6
			SDW2300	3.5	1.5	6	8	
			SDS2300	4	1.5	-	6	
2x4	1	1	30d COMMON		3.5	1.5	-	8
			SDW2438	3.5	1.5	8	9	
			SDS2412	4	1.5	-	8	
2x6	2	2	30d COMMON		3.5	1.5	-	8
			SDW2438	3.5	1.5	9	10	
			SDS2412	4	1.5	-	8	
4	2x6	2	1/2" BOLT		4	2	-	8
			SDW2600	3.5	1.5	7	8	
			SDS2600	4	1.5	-	6	

**10 DETAIL**  
TYPICAL NAILING SCHEDULE FOR BUILT-UP COLUMNS/STUDS  
SCALE: 3/4" = 1'-0"

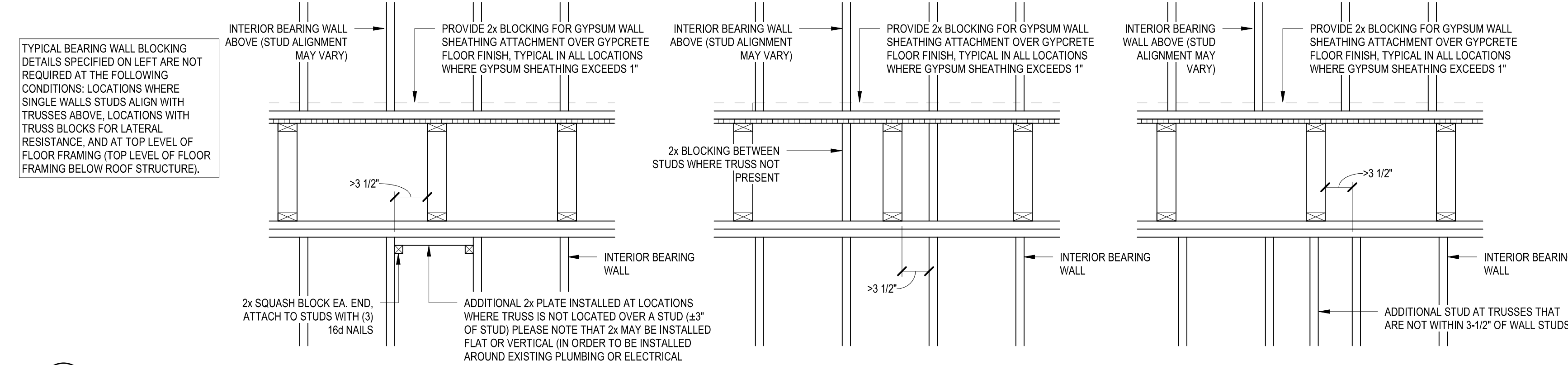


**DETAIL A**  
SIMPSON STRONG-TIE SDW SCREWS ONLY

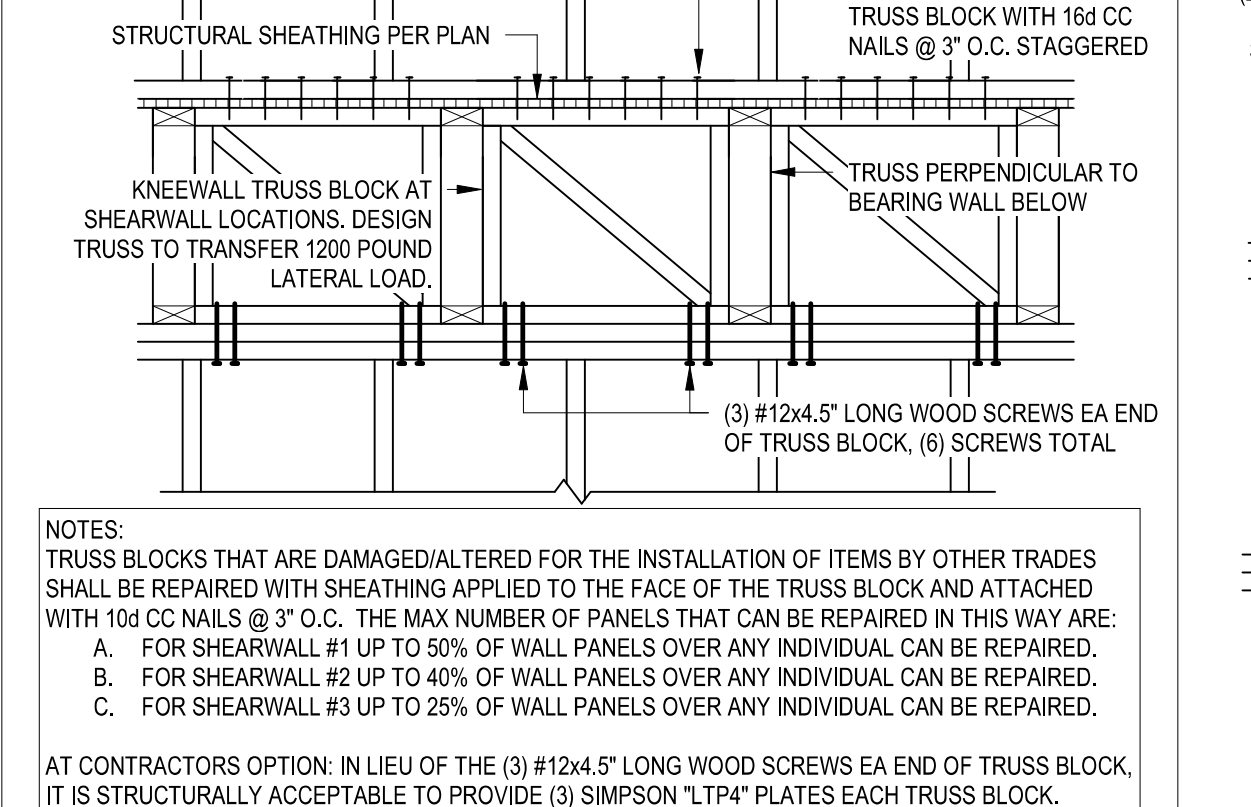
NAIL EQUIVALENT CHART		
NAIL SIZE	EQUIVALENT SCREW	EQUIVALENT NAIL GUN
8d	No. 8 x 2 1/2" LONG WOOD SCREW	10 1/4" x 2 1/2"
10d	No. 8 x 3" LONG WOOD SCREW	9 3/4" x 3"

NOTE: WOOD SCREWS ARE A SUITABLE SUBSTITUTE FOR NAILS HOWEVER NAILS CANNOT BE SUBSTITUTED FOR WOOD SCREWS.

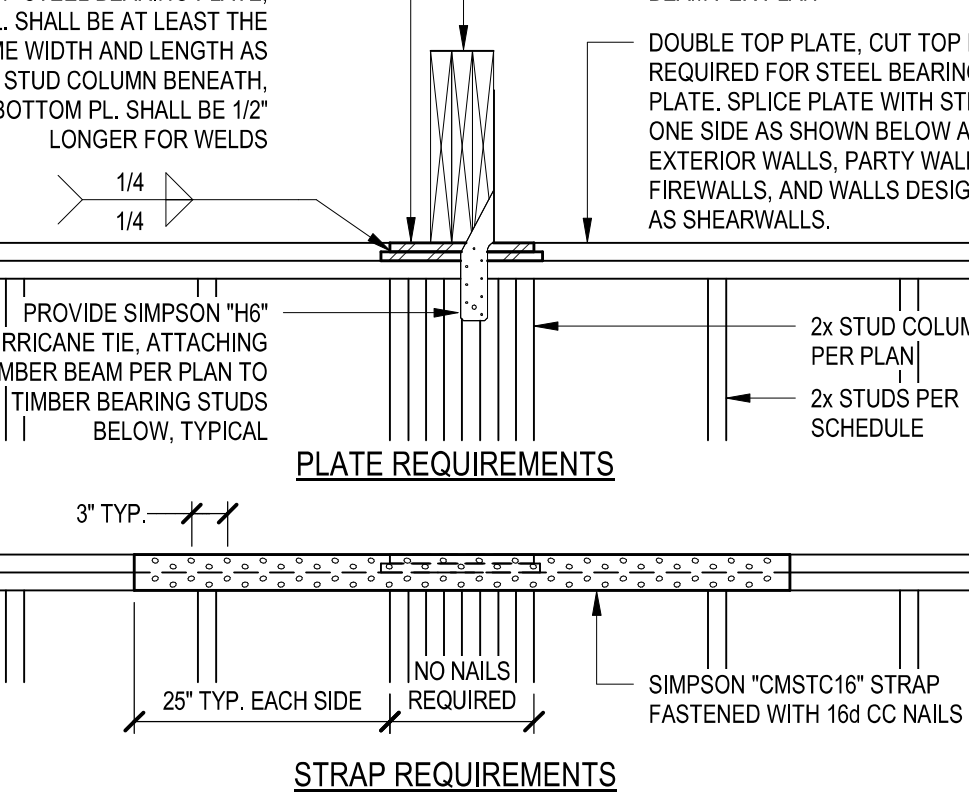
**11 SCHEDULE**  
ALTERNATE ATTACHMENT SCHEDULE



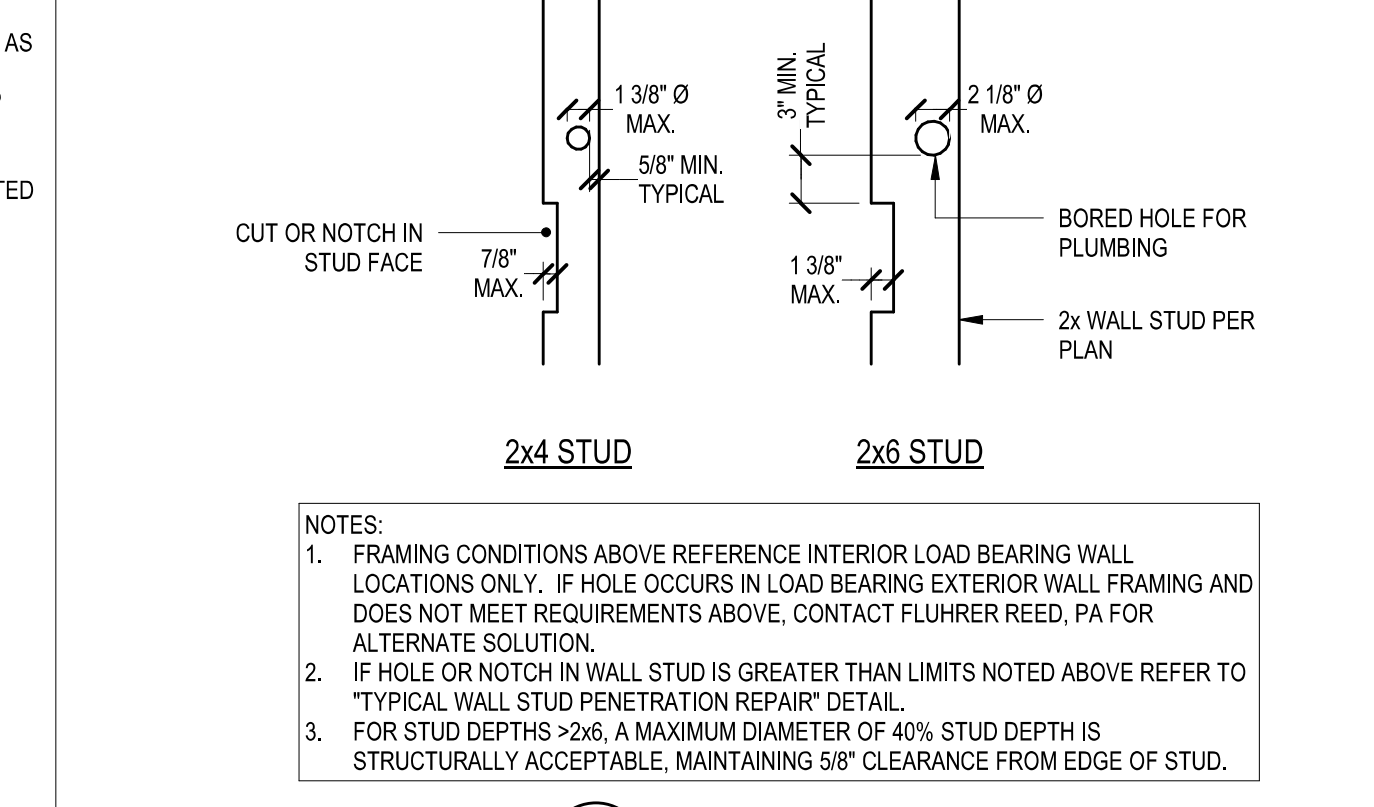
**12 DETAIL**  
TYPICAL BEARING WALL BLOCKING REQUIREMENTS  
SCALE: 3/4" = 1'-0"



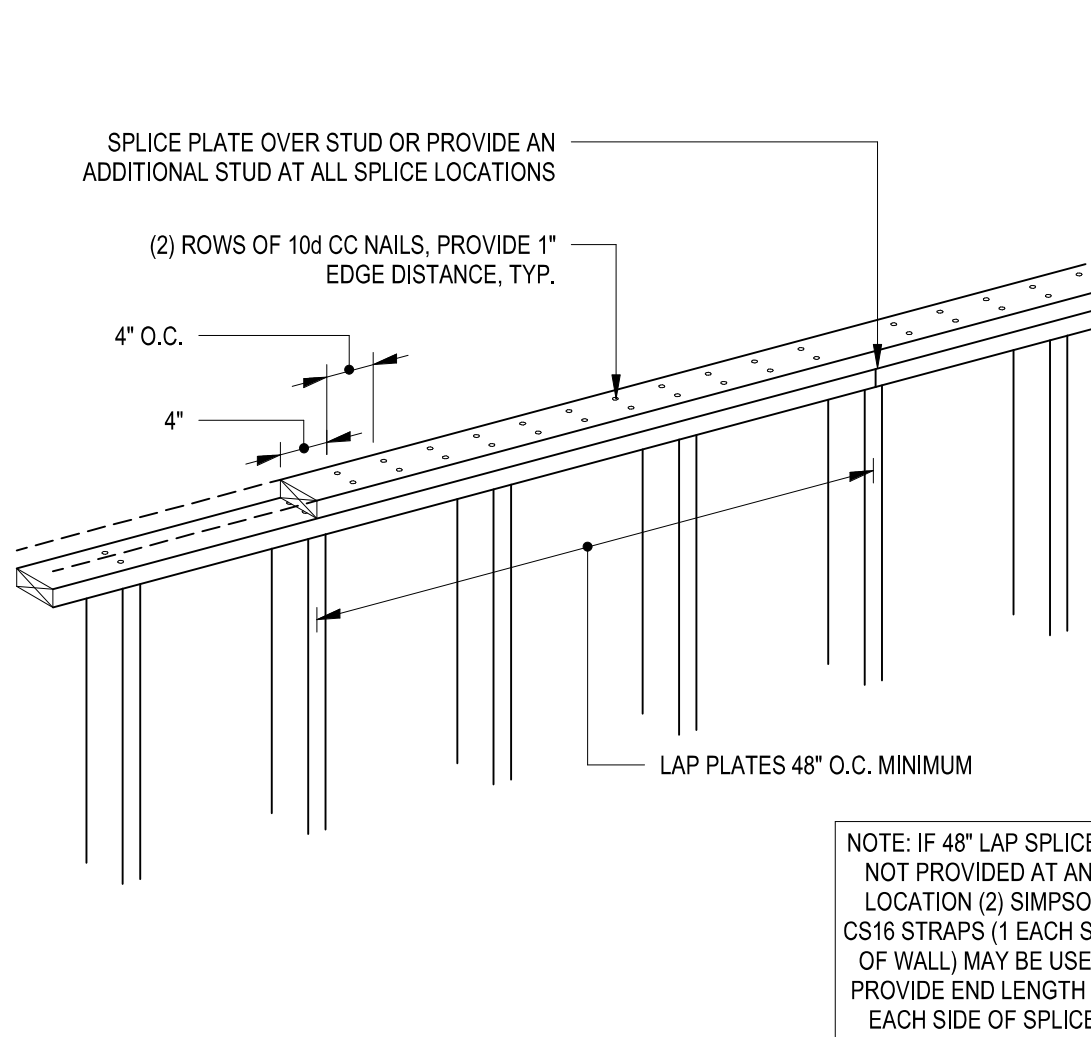
**13 DETAIL**  
TYPICAL KNEEWALL TRUSS BLOCKS FOR LATERAL LOAD TRANSFER (SW1 & SW3)  
SCALE: 3/4" = 1'-0"



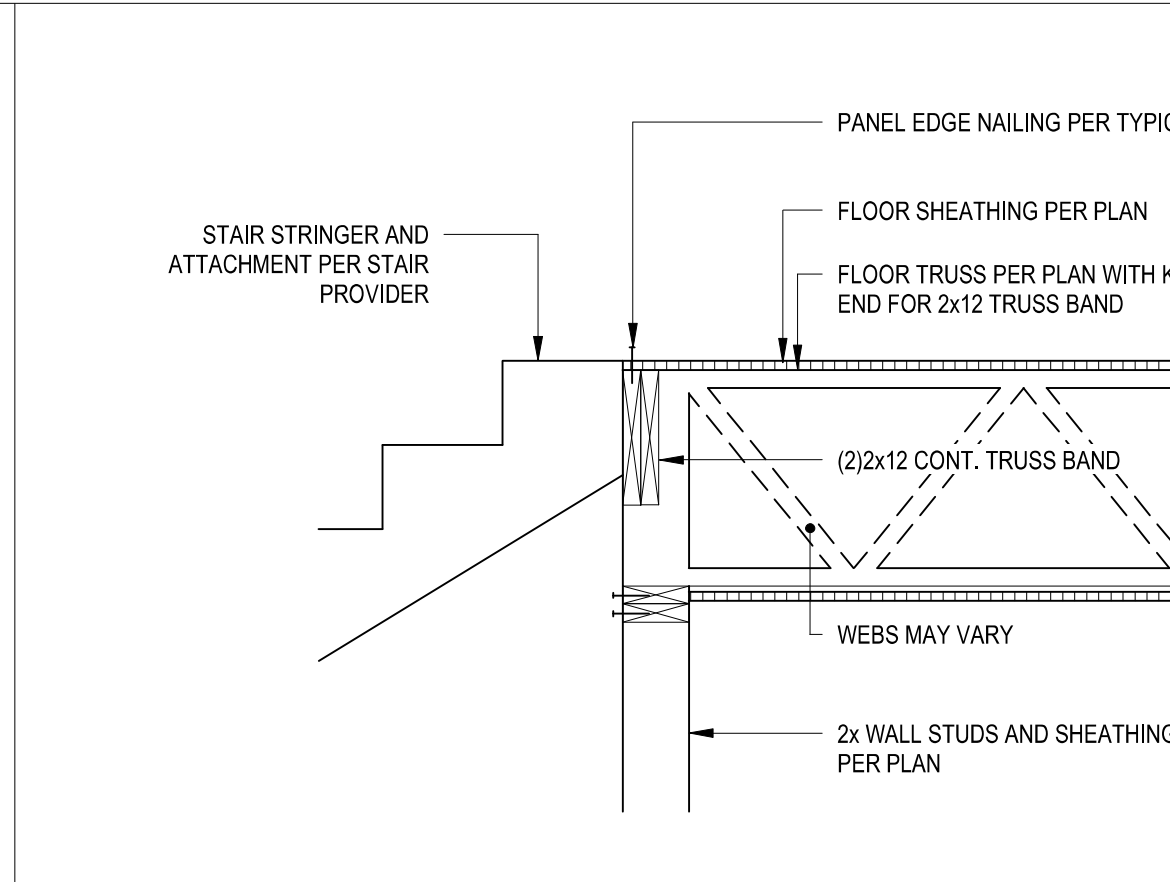
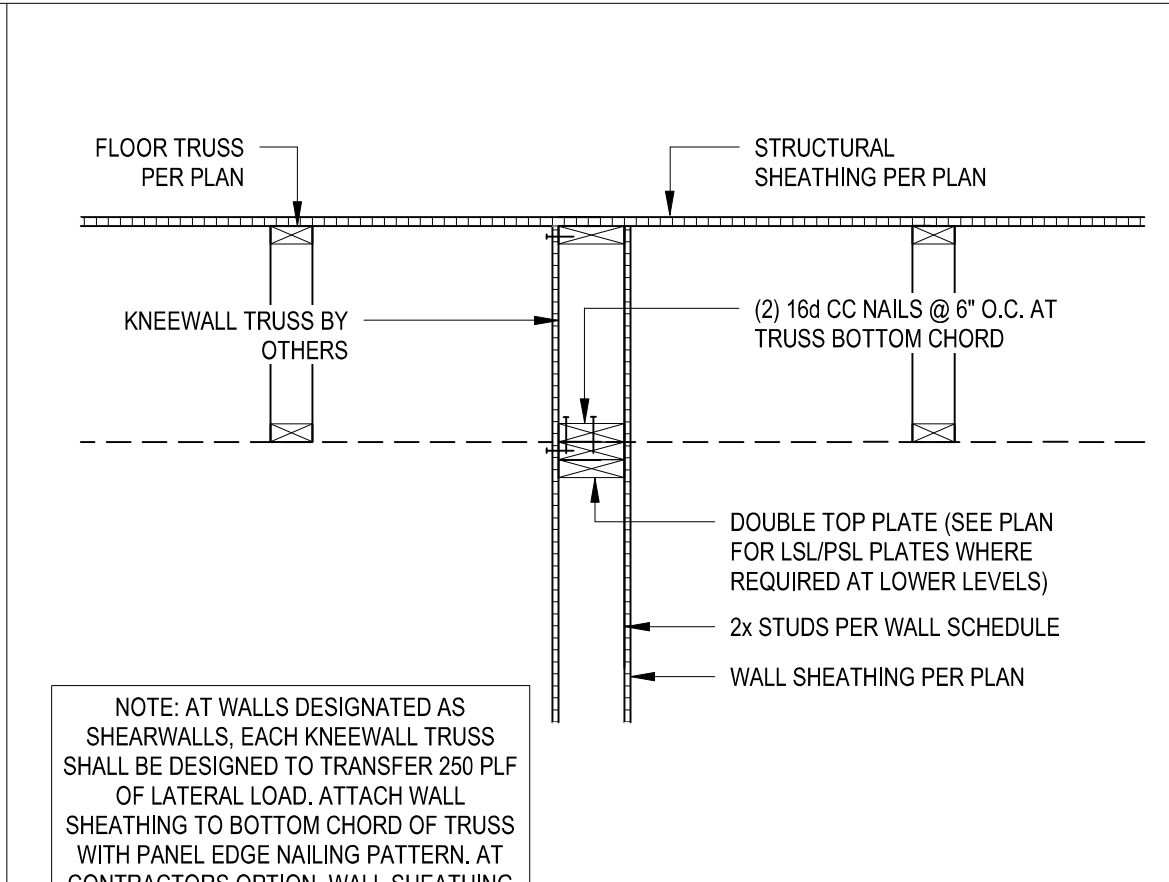
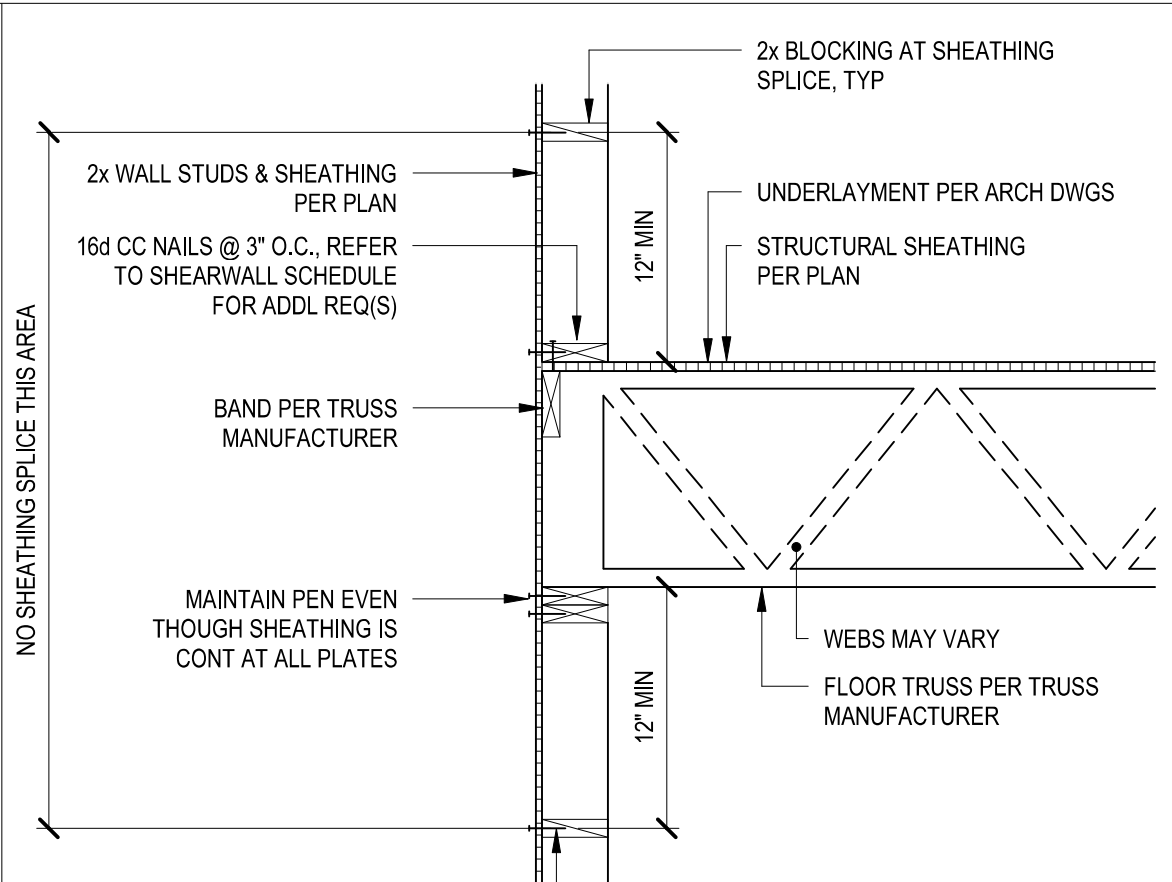
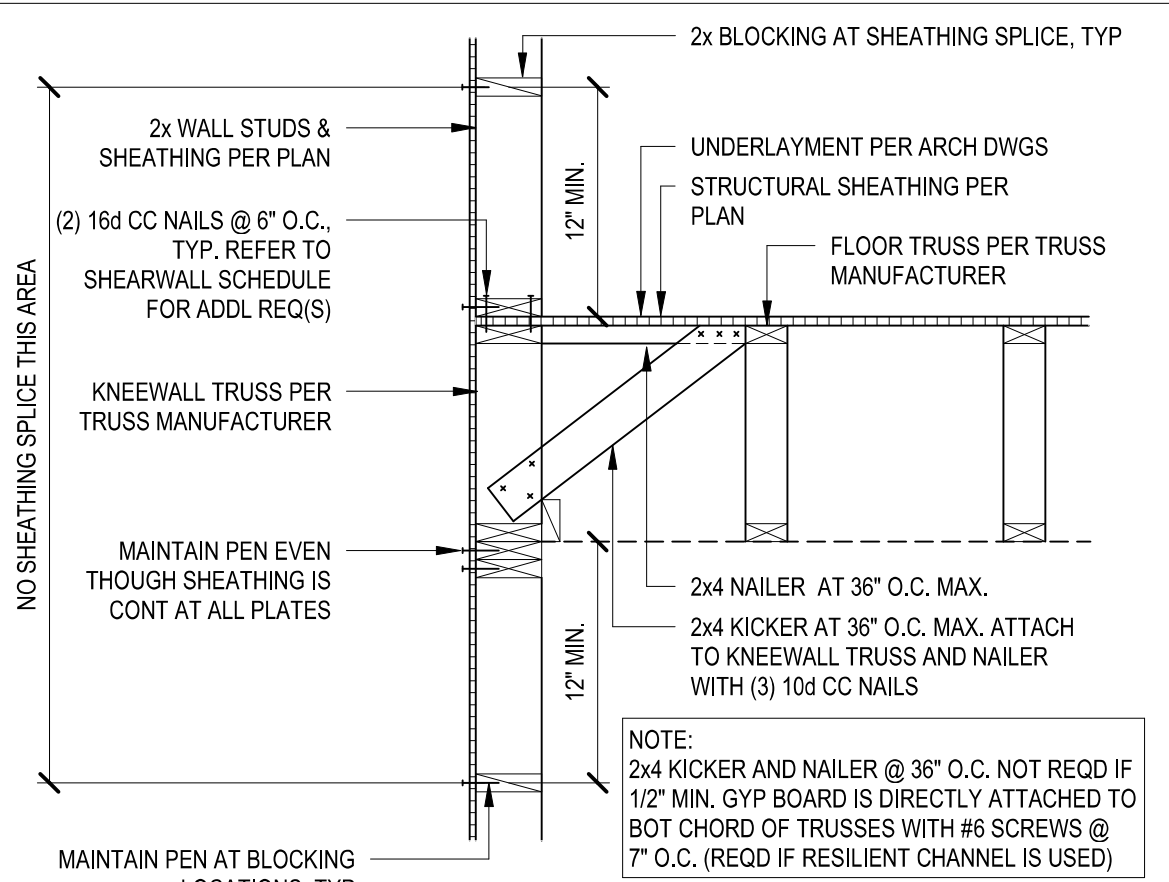
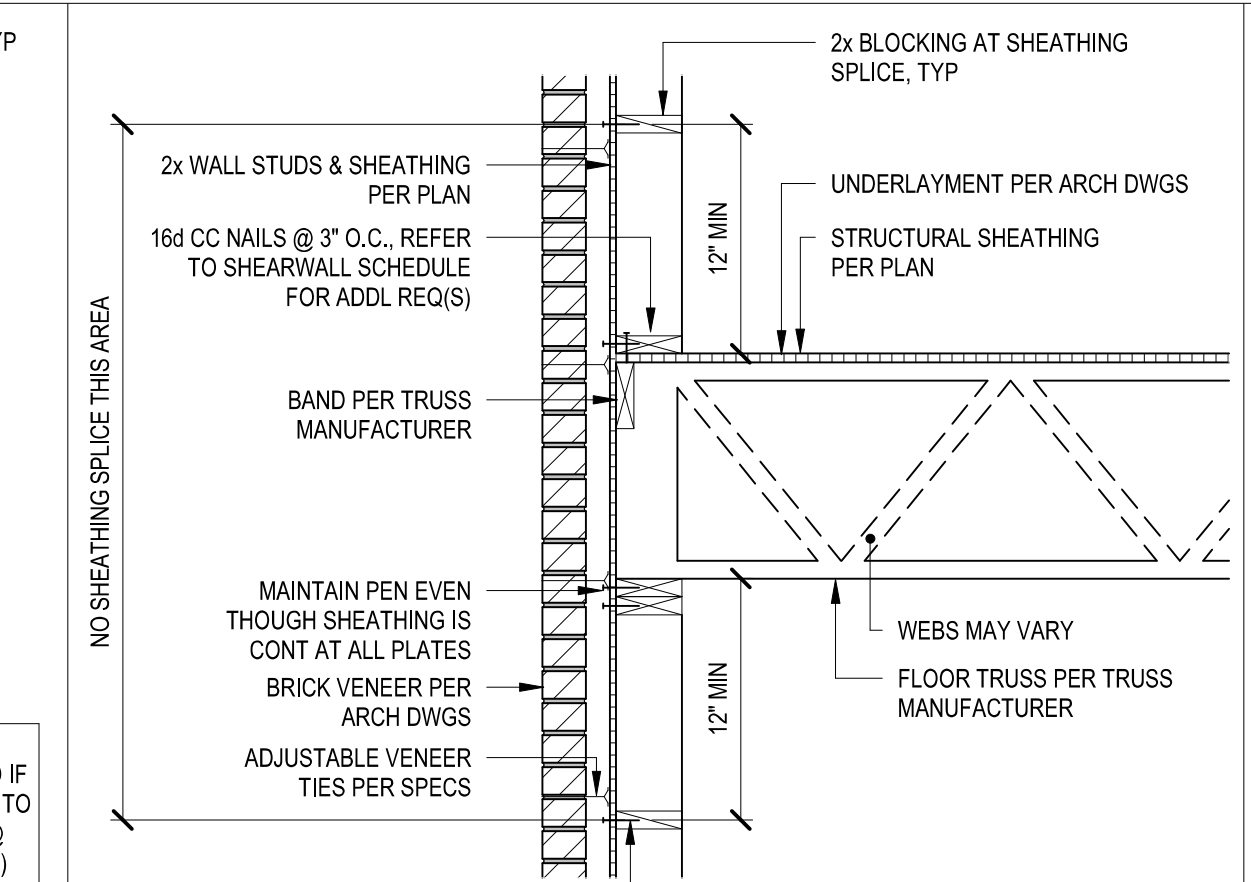
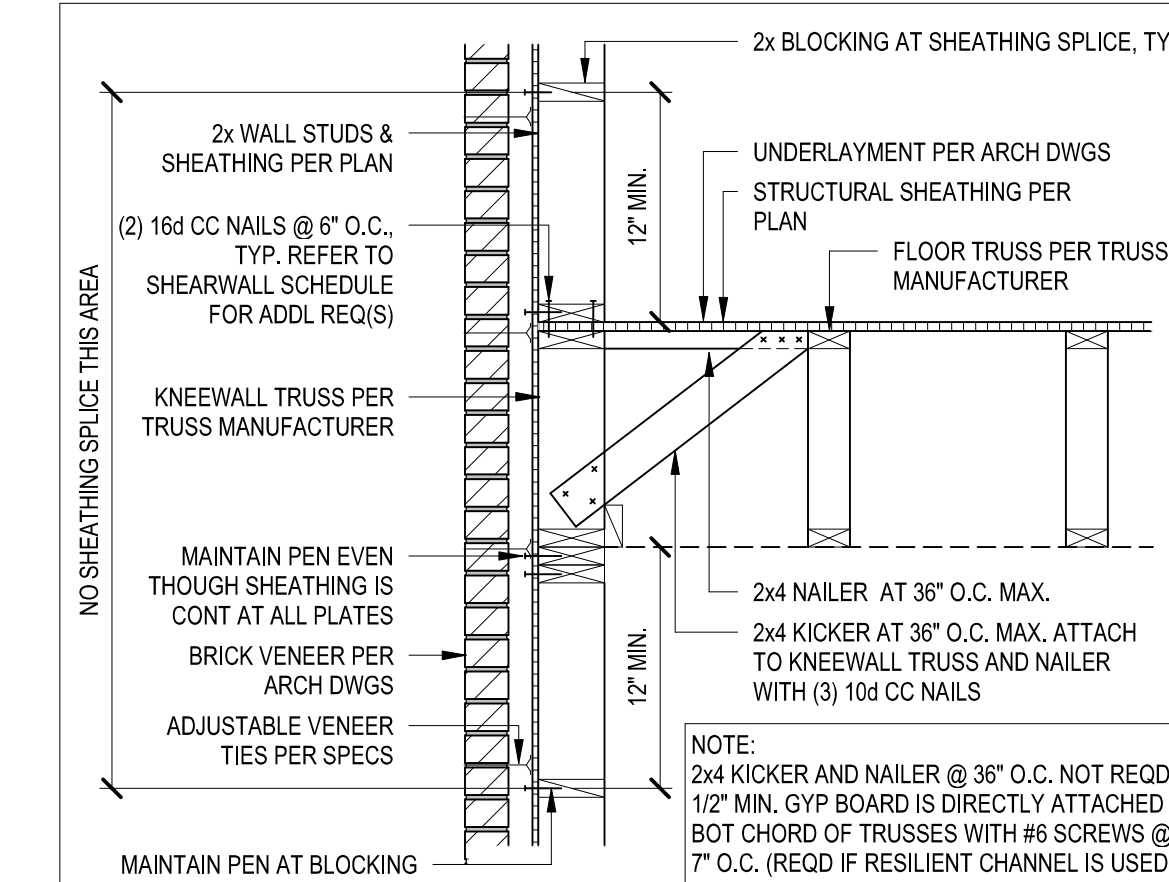
**14 DETAIL**  
TYPICAL STEEL BEARING PLATE AT DOUBLE TOP PLATE  
SCALE: 3/4" = 1'-0"



**15 DETAIL**  
ALLOWABLE WALL STUD PENETRATION INTO TOP PLATE REQUIREMENTS  
SCALE: 1" = 1'-0"



**16 DETAIL**  
TYPICAL TOP PLATE SPLICE AT EXTERIOR WALLS AND SHEARWALLS  
SCALE: 3/4" = 1'-0"



1 SECTION  
S2.1 TYPICAL TRUSS PARALLEL TO EXTERIOR WALL W/ BRICK VENEER  
SCALE: 3/4" = 1'-0"

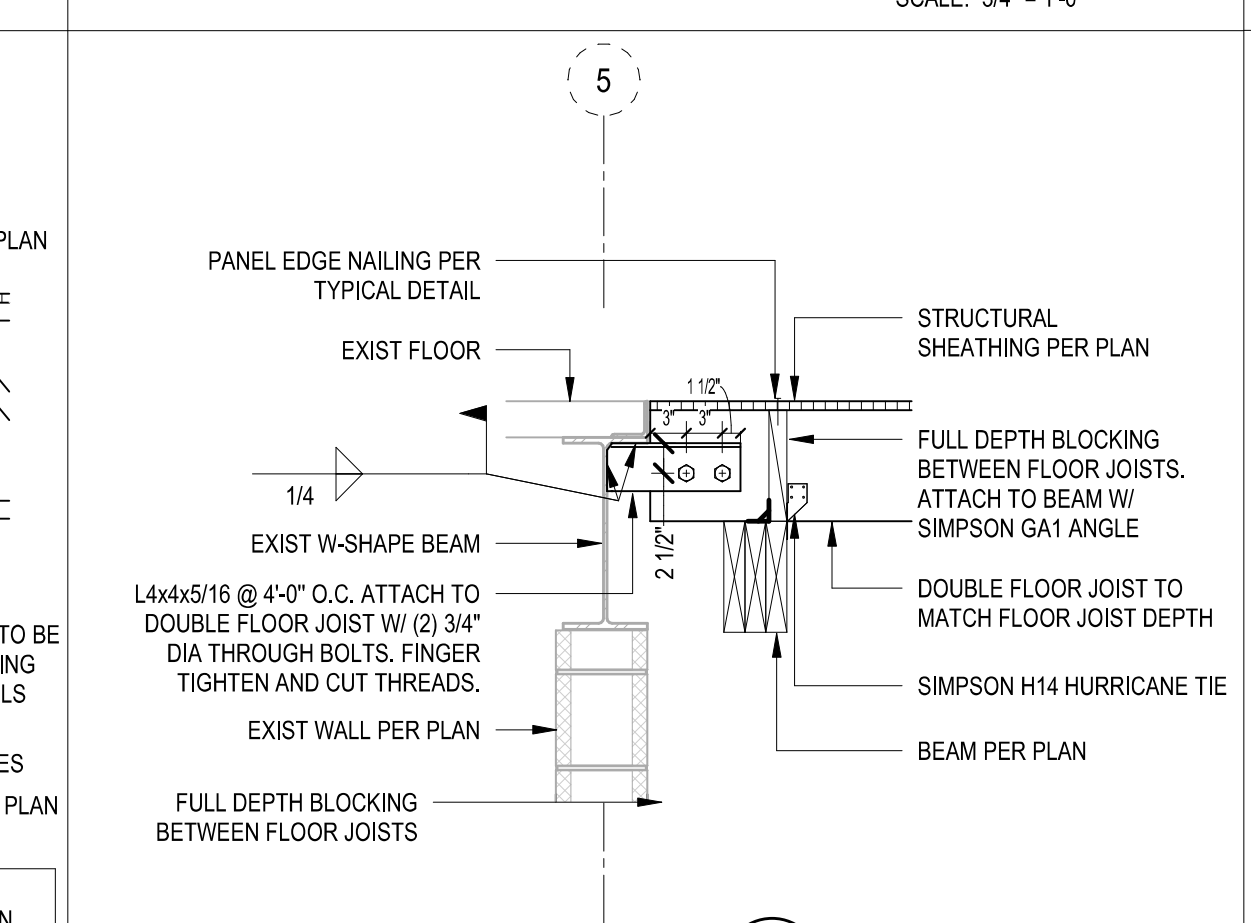
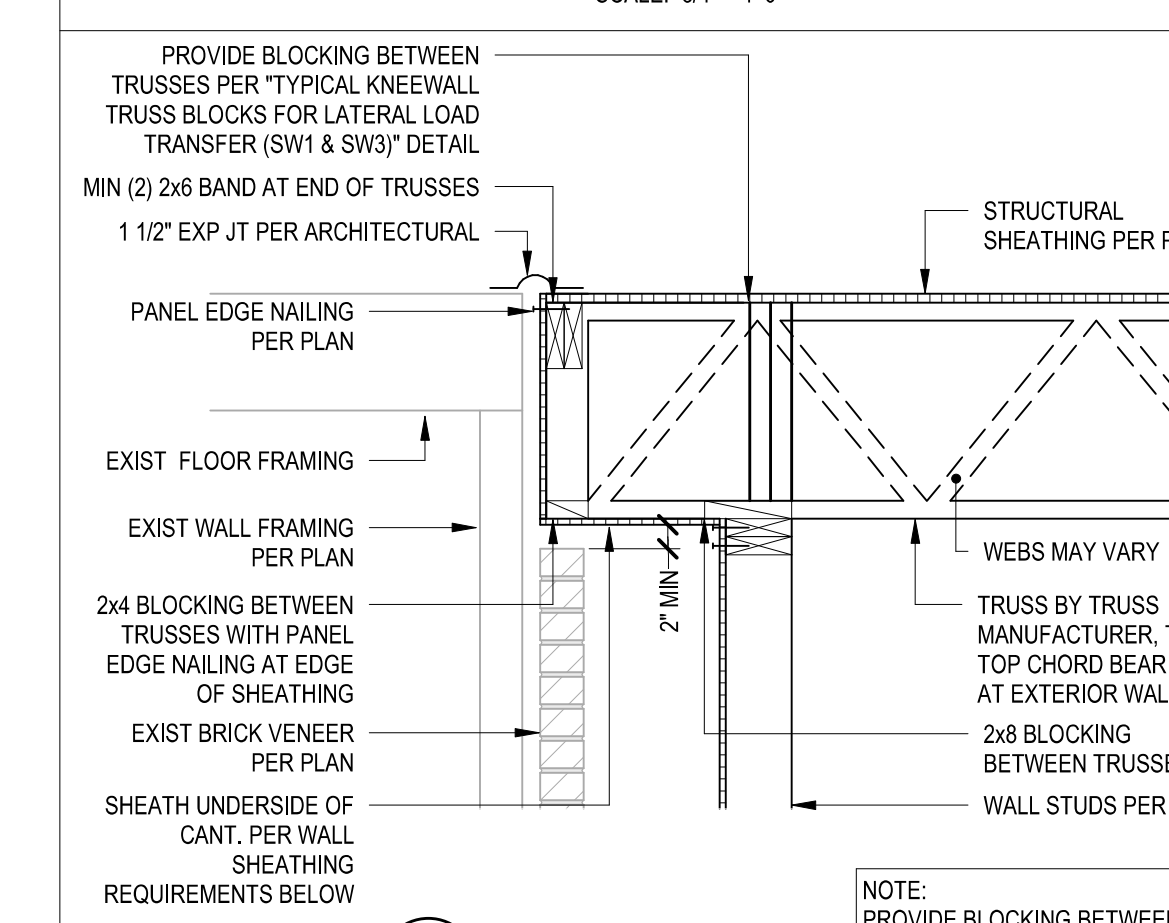
2 SECTION  
S2.1 TYPICAL TRUSS PERPENDICULAR TO EXTERIOR WALL W/ BRICK VENEER  
SCALE: 3/4" = 1'-0"

3 SECTION  
S2.1 TYPICAL TRUSS PARALLEL TO LOAD BEARING WALL W/ BRICK VENEER  
SCALE: 3/4" = 1'-0"

4 SECTION  
S2.1 TYPICAL TRUSS PERPENDICULAR TO EXTERIOR WALL  
SCALE: 3/4" = 1'-0"

5 SECTION  
S2.1 TYPICAL INTERIOR BEARING WALL FRAMING- TRUSSES PARALLEL  
SCALE: 3/4" = 1'-0"

6 SECTION  
S2.1 WALL FRAMING AT STAIR STRINGERS, TRUSSES PERPENDICULAR  
SCALE: 3/4" = 1'-0"



7 SECTION  
S2.1 CANTILEVERED FLOOR TRUSSES SUPPORTING EXTERIOR WALL  
SCALE: 3/4" = 1'-0"

8 SECTION  
S2.1 FLOOR FRAMING AT EXISTING STAIR INFILL  
SCALE: 3/4" = 1'-0"

NOTE: AT WALLS DESIGNATED AS SHEARWALLS, EACH KNEEWALL TRUSS SHALL BE DESIGNED TO TRANSFER 250 PLF OF LATERAL LOAD. ATTACH WALL SHEATHING TO BOTTOM CHORD OF TRUSS WITH PANEL EDGE NAILING PATTERN. AT CONTRACTORS OPTION, WALL SHEATHING PER SCHEDULE BELOW MAY BE EXTENDED TO TOP CHORD OF TRUSS IN LIEU OF DESIGNING TRUSSES TO COLLECT LOAD, G.C. TO COORDINATE.

North Carolina Professional Engineer Seal for Danwing J. Reed, No. 24051, dated September 16, 2022.  
FLUHRER REED ENGINEERS  
1101 Haynes Street, Suite 207, Raleigh, NC 27604  
tel: 919.821.7146 www.fluhrerreed.com

CHRISTUS VICTOR LUTHERAN CHURCH ADDITION  
1615 NC-54  
DURHAM, NC 27713

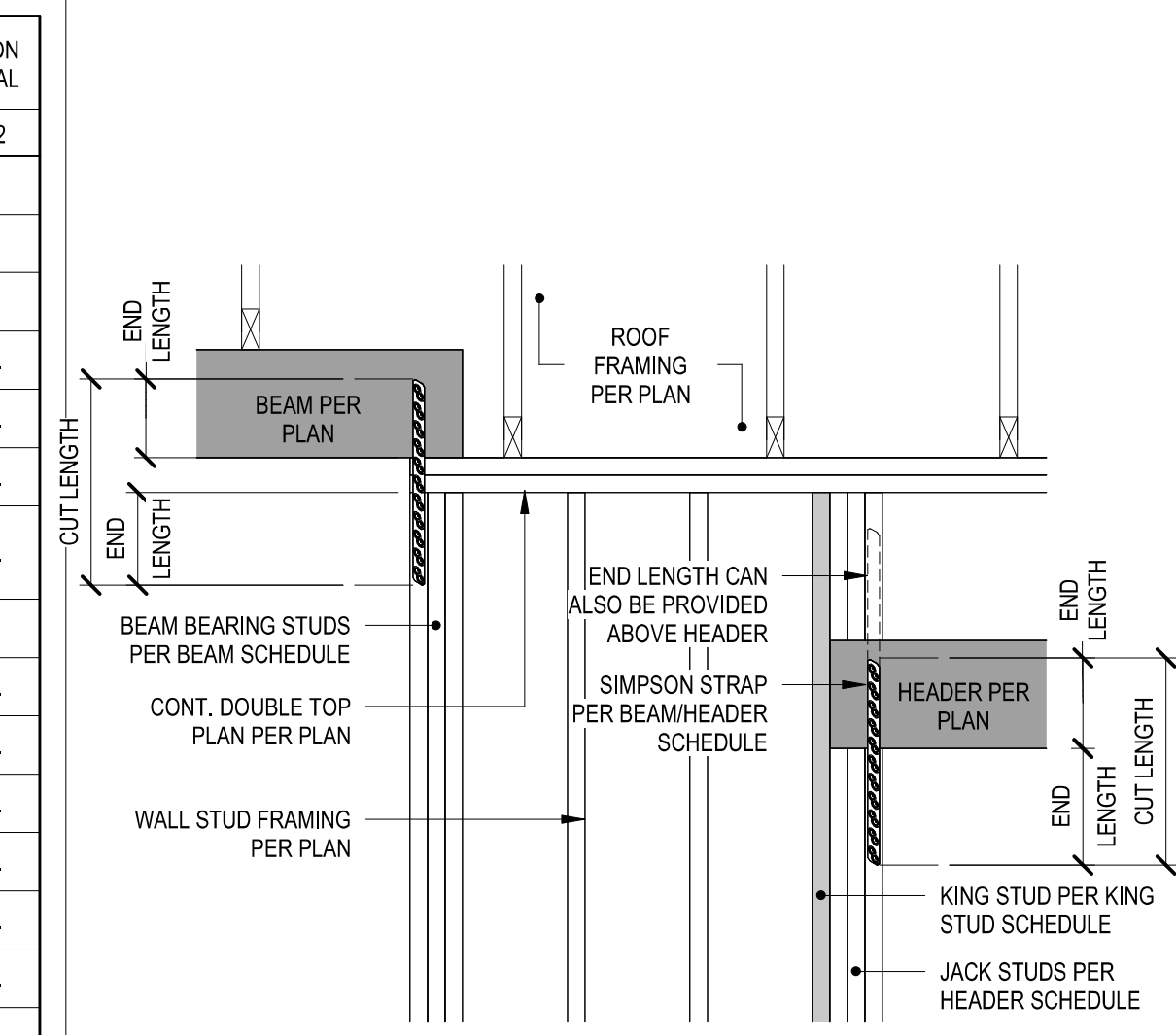
No.	Description	Date
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PROJECT #: 2022303  
DATE: 9/16/2022  
FLOOR FRAMING- WALL SECTIONS  
S4.2  
DIGITAL PRINT DATE: 9/16/2022 12:01:01 PM

MEMBER TYPE	HURRICANE TIE TYPE	ALLOWABLE UPLIFT BASED ON DOUBLE TOP PLATE MATERIAL	
		SYP No.2	SPF No.2
ROOF TRUSS/SINGLE PLY GIRDER	SIMPSON H2.5A	600 lbs.	520 lbs.
KING HIP TRUSS/SINGLE PLY GIRDER	SIMPSON HCP-2	605 lbs.	520 lbs.
ROOF TRUSS/SINGLE PLY GIRDER	SIMPSON H3	455 lbs.	320 lbs.
ROOF TRUSS/SINGLE PLY GIRDER	SIMPSON H10A	1140 lbs.	1015 lbs.
ROOF TRUSS/SINGLE PLY GIRDER	SIMPSON H14	1350 lbs.	1050 lbs.
ROOF TRUSS/SINGLE PLY GIRDER	(2) SIMPSON H2.5A	1200 lbs.	1040 lbs.
ROOF TRUSS/SINGLE PLY GIRDER	(1) SIMPSON H2.5A (1) SIMPSON H10	1505 lbs.	1300 lbs.
2-PLY KING HIP TRUSS GIRDER	SIMPSON HCP-4	1000 lbs.	860 lbs.
2-PLY TRUSS GIRDER	SIMPSON H15-2	1300 lbs.	1120 lbs.
2-PLY TRUSS GIRDER	SIMPSON H16-2	1470 lbs.	1265 lbs.
(2) 4-PLY TRUSS GIRDER	(2) SIMPSON H6	1830 lbs.	1570 lbs.
(2) 4-PLY TRUSS GIRDER	SIMPSON LGT-2	2050 lbs.	1785 lbs.
2- or 3-PLY TRUSS GIRDER	(2) SIMPSON MGT	3865 lbs.	3330 lbs.
2- or 3-PLY TRUSS GIRDER	SIMPSON VGT	4940 lbs.	3555 lbs.
2- or 3-PLY TRUSS GIRDER	(2) SIMPSON VGT	9880 lbs.	7110 lbs.
2-PLY TRUSS GIRDER	SIMPSON HGT-2	10980 lbs.	6485 lbs.
3-PLY TRUSS GIRDER	SIMPSON HGT-3	10530 lbs.	9035 lbs.
4-PLY TRUSS GIRDER	SIMPSON HGT-4	9250 lbs.	9250 lbs.

1. ANCHOR TRUSSES IN ACCORDANCE WITH THIS SCHEDULE BASED UPON THE SEALED TRUSS DESIGN UPLIFT REACTIONS. ANY HURRICANE TIE SHOWN IN THIS SCHEDULE MAY BE USED PROVIDED THE ALLOWABLE UPLIFT VALUE, WHICH IS BASED UPON SPECIES OF DOUBLE TOP PLATE, IS GREATER THAN THE UPLIFT VALUE PER THE TRUSS DRAWINGS.  
 2. \*HGT TIES SHALL BE CONNECTED TO A SIMPSON HT22 TENSION TIE ATTACHED TO THE SIDE OF THE SUPPORTING STUD COLUMN BELOW THE TRUSS GIRDER WITH A 5/8"Ø THREADED ROD.  
 3. \*HGT TIES SHALL BE CONNECTED TO (1) SIMPSON HT22 TENSION TIE ATTACHED TO EACH SIDE OF THE SUPPORTING STUD COLUMN BELOW THE TRUSS GIRDER WITH (2) 5/8"Ø THREADED RODS. THIS TYPE OF TIE REQUIRES A CONTINUOUS TENSION LOAD PATH TO THE FOUNDATION. SEE THE "TYPICAL HOLD-DOWN SCHEDULE" AND THE PLAN FOR FURTHER REQUIREMENTS.

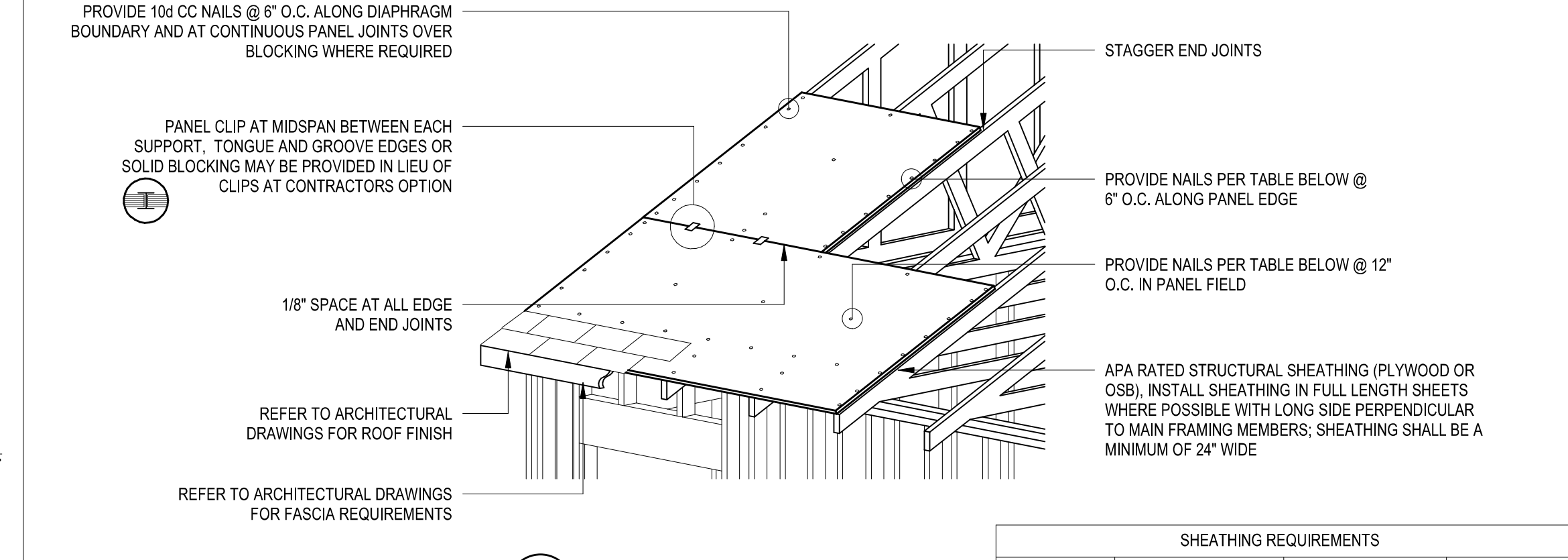
**1 SCHEDULE**  
TYPICAL ROOF TRUSS ANCHORAGE SCHEDULE



NOTES:  
 1. REFER TO MANUFACTURER INFORMATION FOR END LENGTH AND NAILING REQUIREMENTS TO MEET CAPACITIES NOTED IN TABLE BELOW. SIMPSON CSHP STRAPS ARE SUPPLIED IN CONTINUOUS ROLLS. CUT ON SITE FOR END LENGTH REQUIRED PER MANUFACTURER UNLESS NOTED OTHERWISE ON THE PLANS.  
 2. PROVIDE EQUAL NUMBER OF NAIL ATTACHMENT EACH END, TYPICAL.  
 3. PROVIDE A MIN. 1 5/8" END DISTANCE FOR NAILING, TYPICAL.  
 4. AT CONTRACTOR'S OPTION A CONTINUOUS THREADED ROD SYSTEM WITH THE CAPACITY OF THE STRAP NOTED AND A TAKEUP DEVICE AT THE HIGHEST LEVEL MAY BE USED IN LIEU OF THE STRAPS SPECIFIED.  
 5. WHERE END LENGTH REQUIRED BY MANUFACTURER CAN NOT BE ACHIEVED DUE TO BEAM/HEADER DEPTH AND AT LEAST HALF THE NAILS CAN BE INSTALLED. AN ADDITIONAL STRAP OF THE SAME SIZE NOTED IN PLAN SHOULD BE INSTALLED.

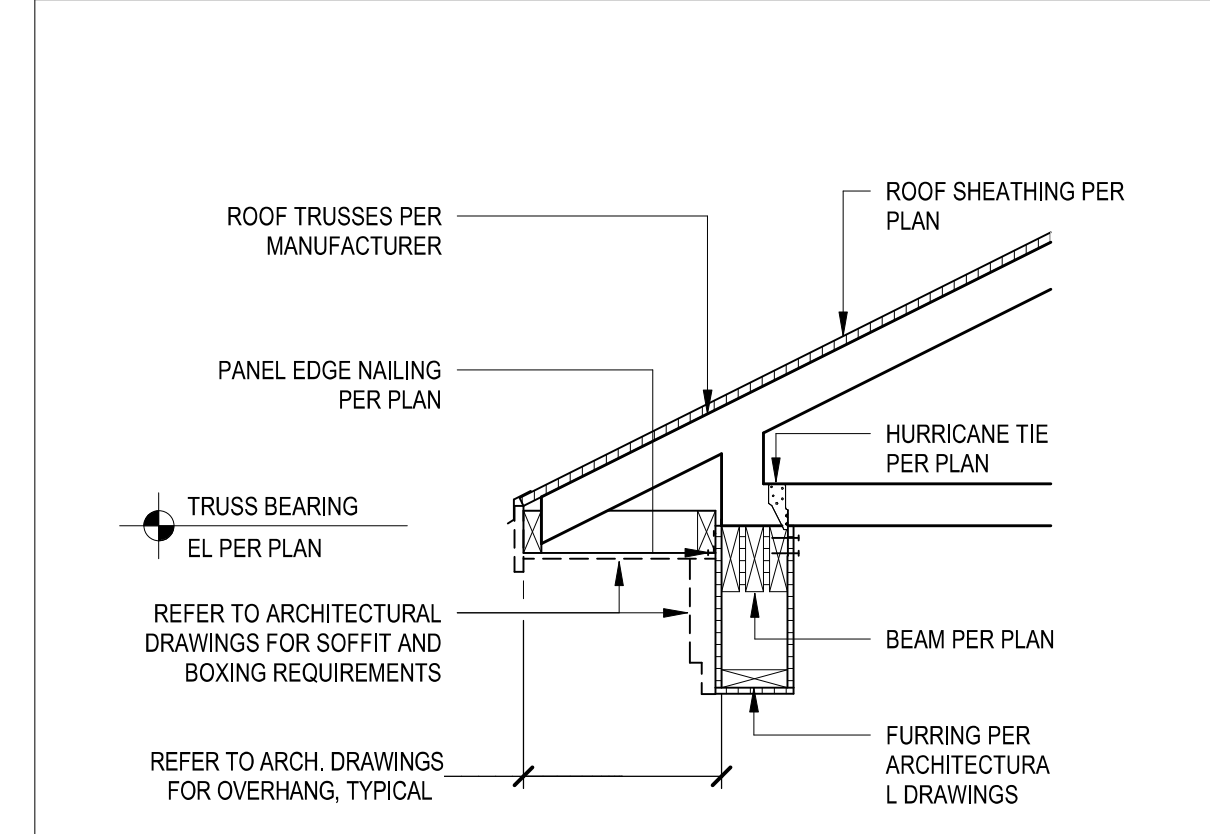
SIMPSON STRAP REQUIREMENTS	
STRAP	STRAP DESIGN CAPACITY (LB)
CSHP18	1540
CSHP20	1160

**2 DETAIL**  
TYPICAL UPLIFT STRAP CONNECTION AT ROOF  
SCALE: 3/4" = 1'-0"

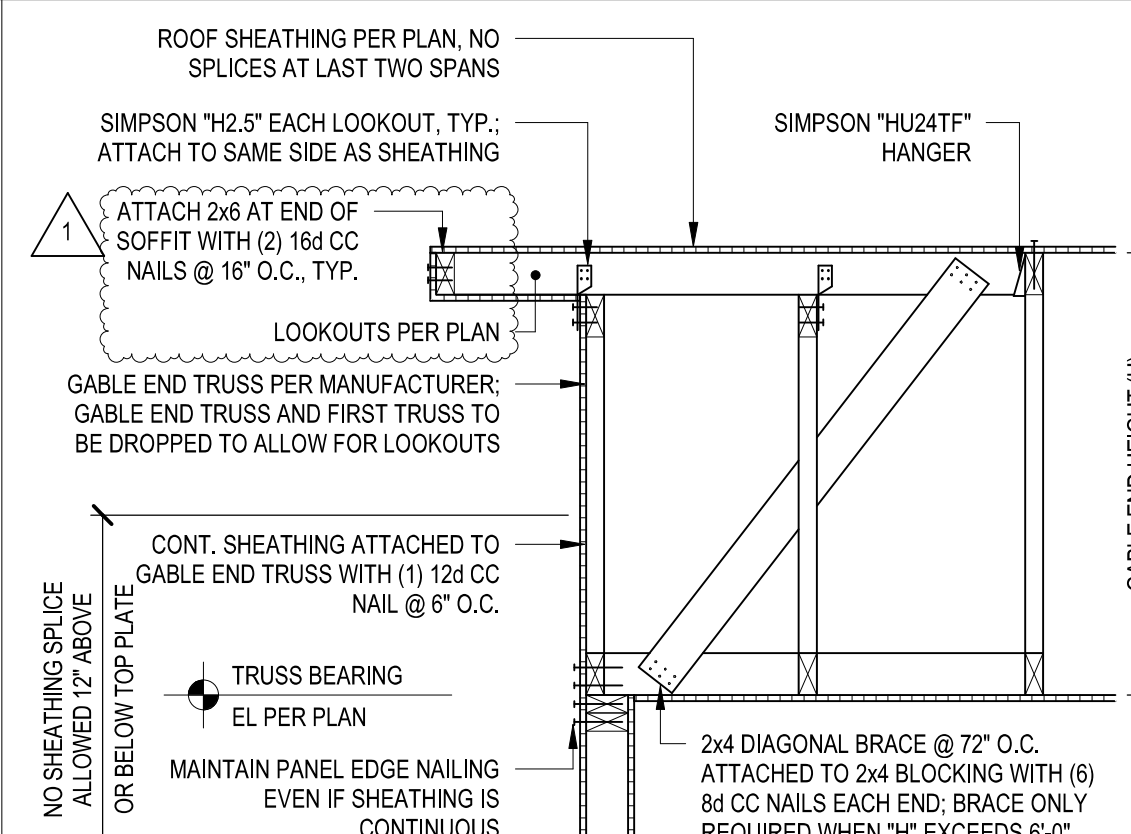


**3 DETAIL**  
TYPICAL ROOF SHEATHING REQUIREMENTS OVER TRUSSES  
SCALE: 3/4" = 1'-0"

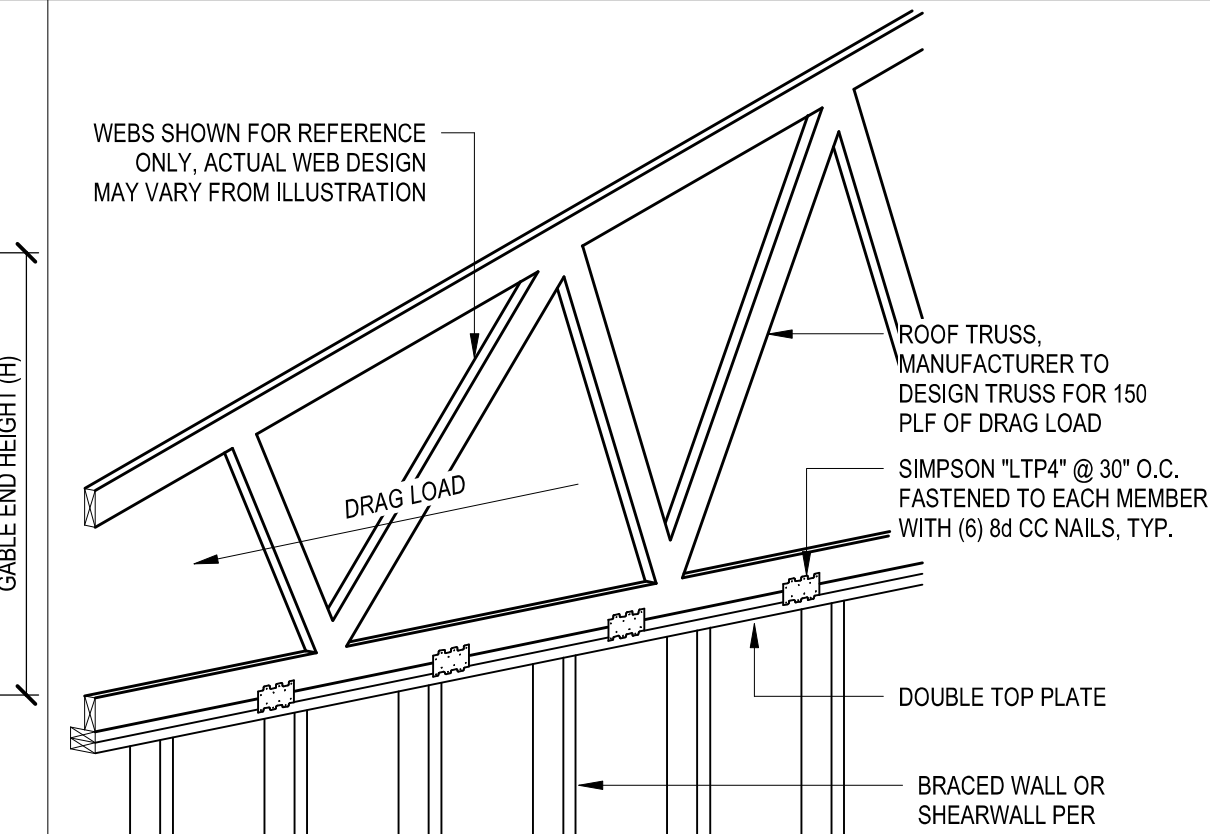
SHEATHING REQUIREMENTS			
ROOF SLOPE	RECOMMENDED	PERMITTED	NAIL TYPE
FLAT-3:12	5/8" APA RATED	15/32" APA RATED	10d CC
>3:12	15/32" APA RATED	7/16" APA RATED	8d CC



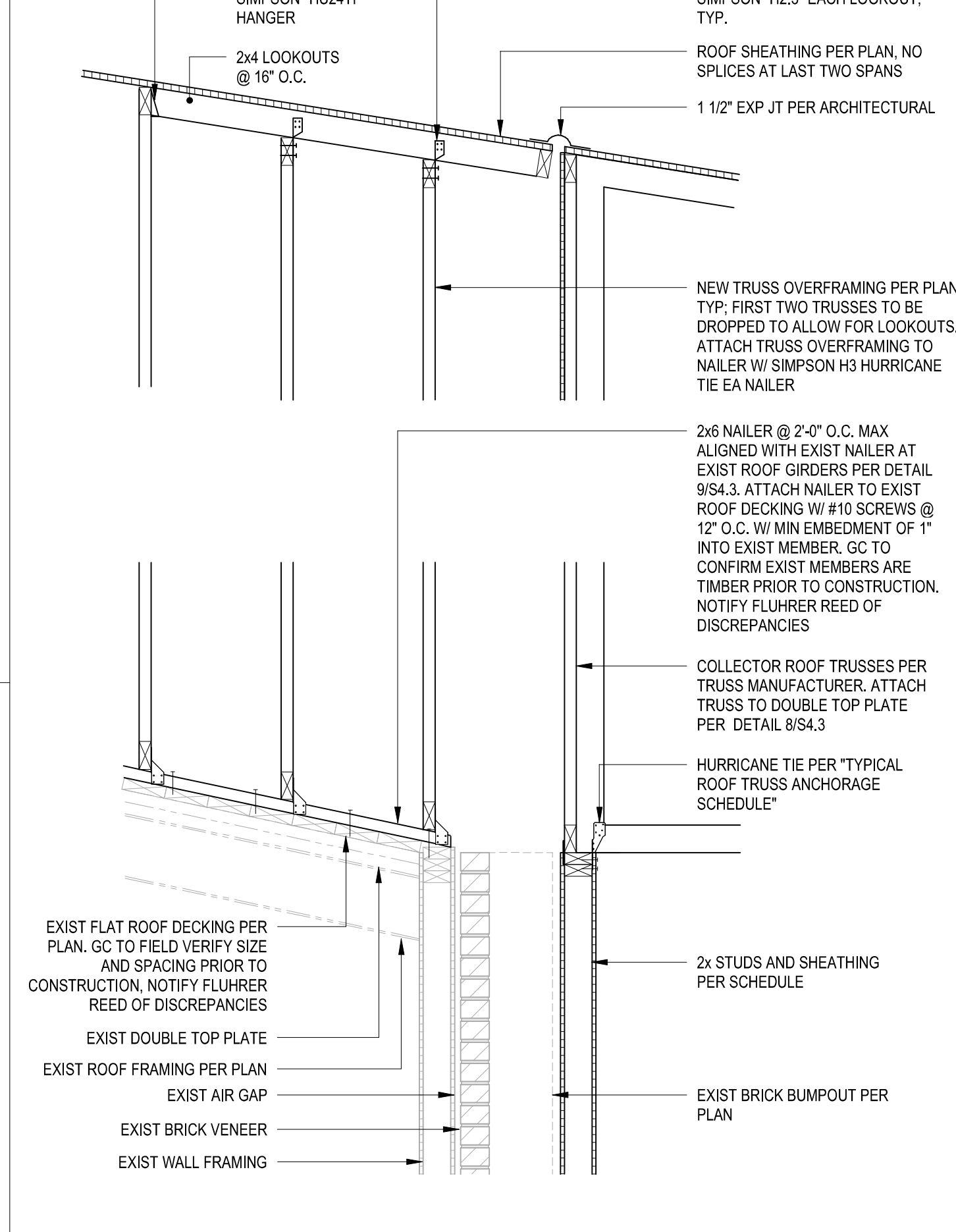
**5 SECTION**  
ROOF TRUSS ATTACHMENT TO TIMBER BEAM  
SCALE: 3/4" = 1'-0"



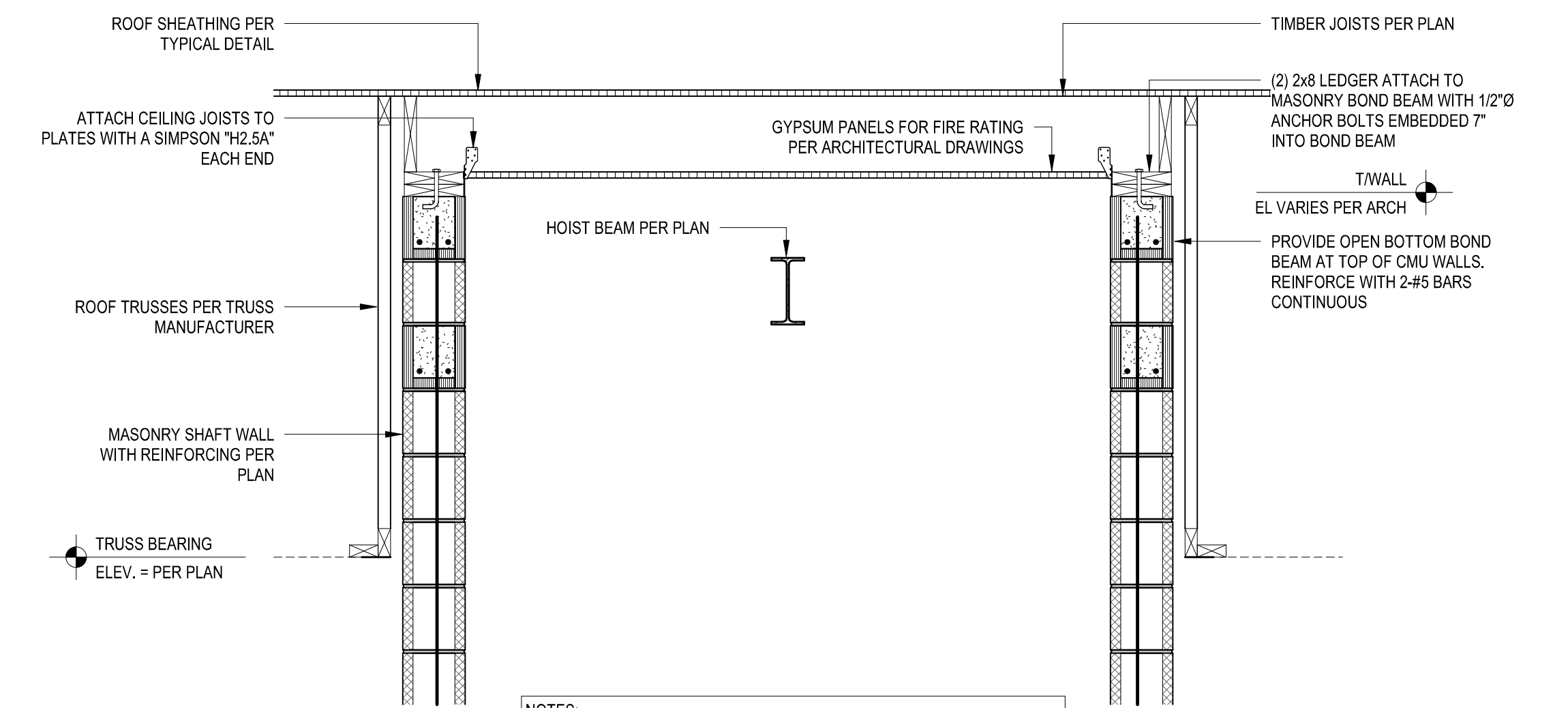
**6 SECTION**  
FRAMING AT GABLE END TRUSS  
SCALE: 3/4" = 1'-0"



**7 DETAIL**  
TYPICAL COLLECTOR TRUSS ATTACHMENT TO STUD WALL  
SCALE: 3/4" = 1'-0"

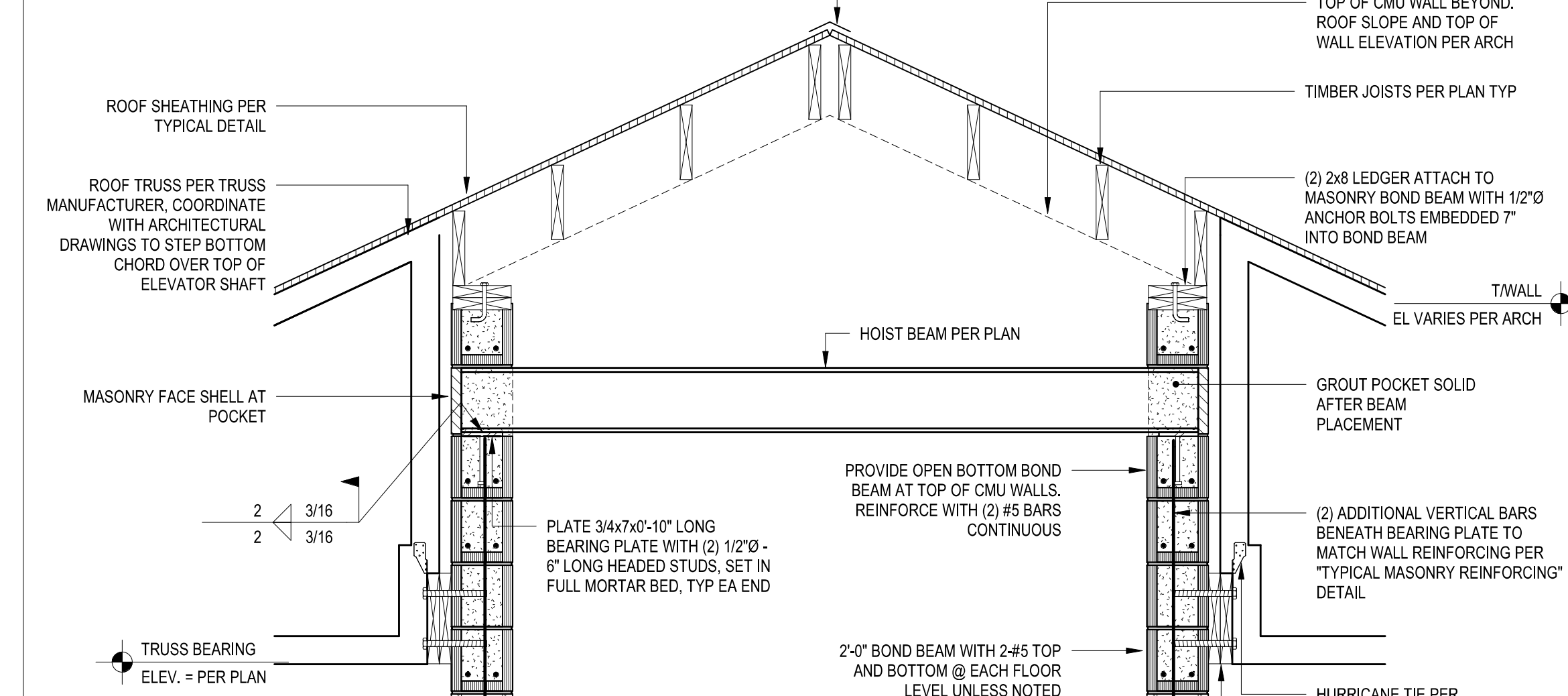


**8 SECTION**  
ROOF TRUSS OVER INTERIOR BEARING WALL - ALT TRUSS DIRECTIONS  
SCALE: 3/4" = 1'-0"



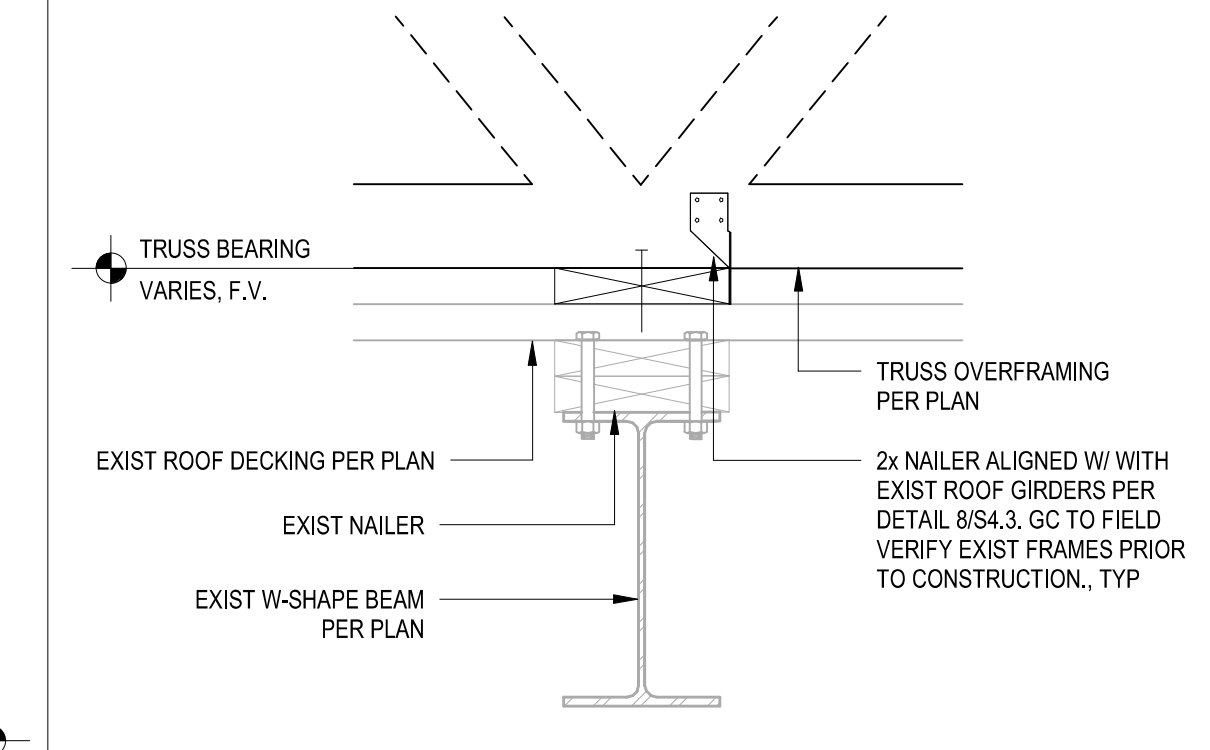
NOTES:  
 1. SEE "TYPICAL CMU AT TOP OF ELEVATOR SHAFT HOIST BEAM ATTACHMENT" DETAIL FOR ADDITIONAL INFORMATION.  
 2. REFER TO ARCHITECTURAL FOR FIRE RATING REQUIREMENTS.

**9 SECTION**  
TYPICAL CMU AT TOP OF ELEVATOR SHAFT  
SCALE: 3/4" = 1'-0"

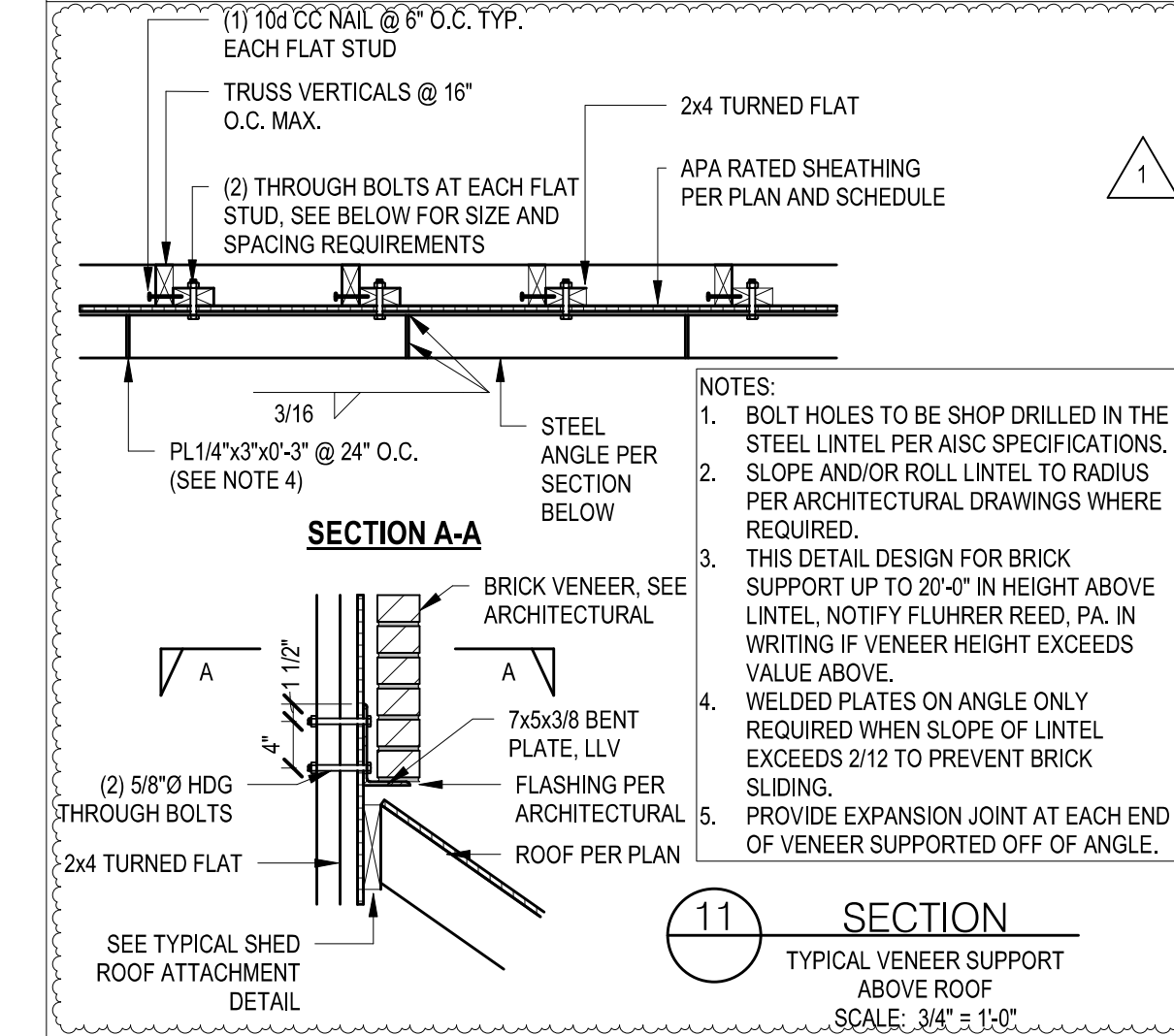


NOTES:  
 1. SEE "TYPICAL CMU AT TOP OF ELEVATOR SHAFT HOIST BEAM ATTACHMENT" DETAIL FOR ADDITIONAL INFORMATION.  
 2. REFER TO ARCHITECTURAL FOR FIRE RATING REQUIREMENTS.

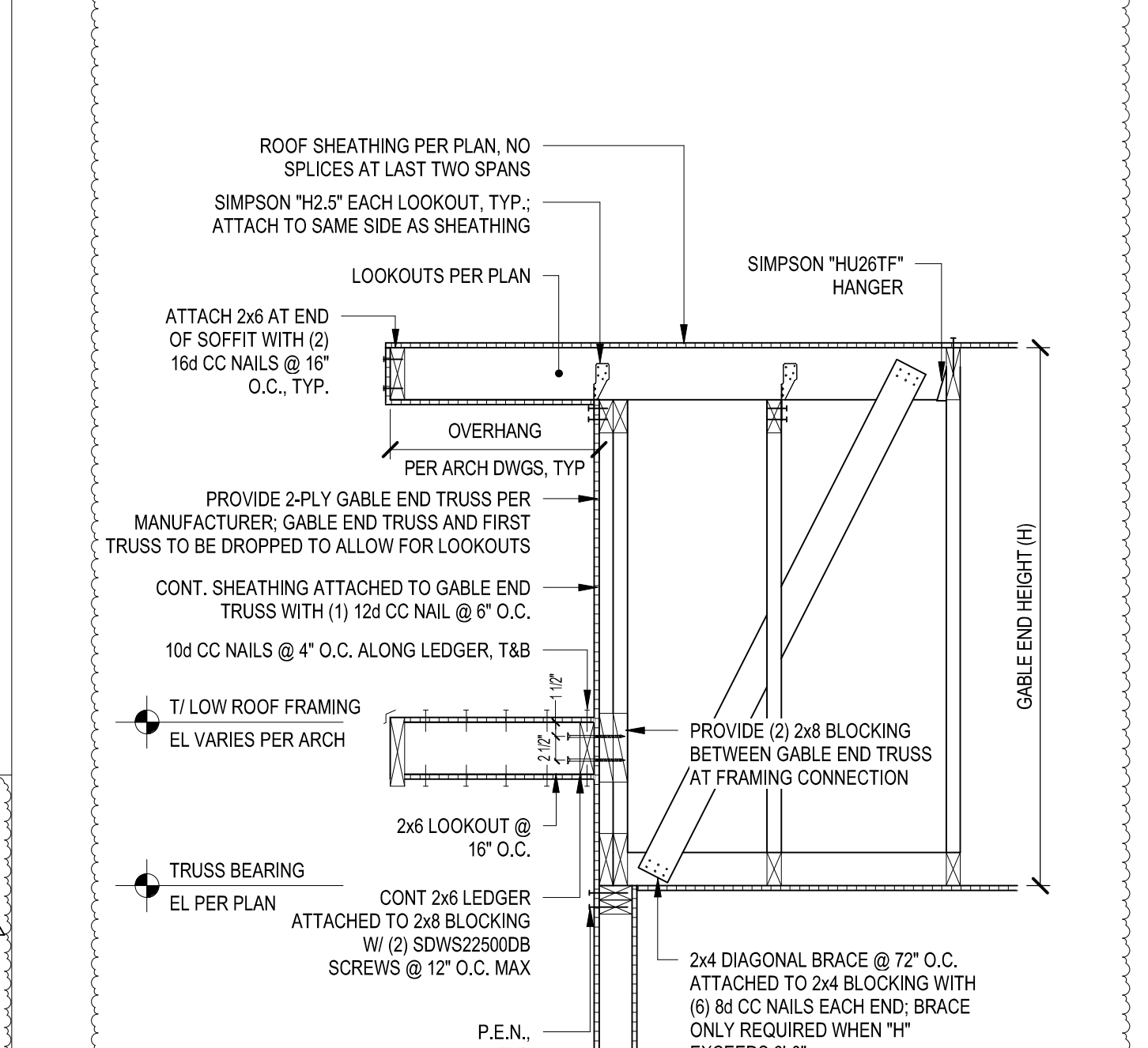
**10 SECTION**  
TYPICAL CMU AT TOP OF ELEVATOR SHAFT HOIST BEAM ATTACHMENT  
SCALE: 3/4" = 1'-0"



**12 SECTION**  
TRUSS OVERFRAMING AT EXIST STEEL BEAM  
SCALE: 1 1/2" = 1'-0"



**11 SECTION**  
TYPICAL VENTER SUPPORT ABOVE ROOF  
SCALE: 3/4" = 1'-0"



NOTES:  
 1. PROVIDE SHADED AREA COMPONENTS @ 24" O.C., SHEATH ONE SIDE WITH 1/2" OSB. ATTACH OSB WITH 8d CC NAILS AT 8" O.C. ALONG EACH FRAMING MEMBER.  
 2. SHADED AREA DIMENSIONS TO BE PROVIDED BY ARCHITECTURAL DRAWINGS. IF DIMENSIONS ARE LARGER THAN MAX PROVIDED IN DETAIL CONTACT FLUHRER REED, PA PRIOR TO CONSTRUCTION.  
 3. BRICK NOT SHOWN FOR CLARITY. AT LOCATIONS WHERE BRICK IS ABOVE THE LOW ROOF FRAMING SUPPORT BRICK ABOVE LOW ROOF PER DETAIL 1154.3. COORD WITH TRUSS MANUFACTURER.

**13 SECTION**  
FRAMING AT GABLE END TRUSS WITH EXTRA FRAMING ABOVE ROOF BEARING  
SCALE: 3/4" = 1'-0"

**designdevelopment**  
ARCHITECTS

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Raleigh, NC 27605  
919.846.4474

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 1615 NC-94  
 DURHAM, NC 27713

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No.	Description	Date
1	REVISION 1	3/20/23

PROJECT #: 2022303  
 DATE: 9/16/2022

TYPICAL TIMBER ROOF FRAMING DETAILS

**S4.3**

1" = 4' 0"  
 1" = 12'  
 1" = 2'

DIGITAL PRINT DATE: 3/20/2023 5:32:14 PM



**MECHANICAL NOTES AND SPECIFICATIONS**

**GENERAL REQUIREMENTS**

1. THE HEATING AND AIR CONDITIONING CONTRACTOR (THE CONTRACTOR) SHALL PROVIDE ALL SPECIFIED AND MISCELLANEOUS MATERIAL AND LABOR AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
2. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES AND RECOMMENDATIONS OF THE MANUFACTURERS. IF THERE IS A CONFLICT IN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE THEIR WORK UNDER THIS CONTRACT.
4. PRIOR TO BIDDING, THE CONTRACTOR SHALL VISIT THE SITE TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND RESOLVE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THESE PLANS WITH THE ENGINEER.
5. ALL DUCTWORK AND EQUIPMENT SHOWN ON THESE DRAWINGS IS STRICTLY DIAGRAMMATIC. ALL DUCTWORK SIZES SHOWN ARE FREE AREA SIZES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ITEMS FURNISHED UNDER THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND SHALL PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTS SHALL BE RESOLVED WITH THE ENGINEER.
6. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES. ALL DRAWINGS INDICATE THE GENERAL ARRANGEMENT DESIRED, THE EXACT LOCATIONS AND DETAILS OF CONSTRUCTION MAY BE SUCH THAT VARIANCES ARE REQUIRED. THE DRAWINGS DO NOT SHOW ALL BENDS, OFFSETS, AND FITTINGS THAT MAY BE REQUIRED FOR THE COMPLETE EXECUTION OF THIS CONTRACT. SUCH VARIANCES AND CONTINGENCIES SHALL BE ALLOWED FOR IN THE CONTRACTOR'S BID AND SHALL BE ACCOMPLISHED WITHOUT ADDITIONAL COST TO THE OWNER. PRIOR TO ORDERING EQUIPMENT, THE CONTRACTOR SHALL PREPARE COORDINATION DRAWINGS SHOWING HOW THEIR EQUIPMENT IS TO BE LOCATED IN THE SPACE INDICATED. THIS DRAWING SHALL SHOW THE NEW AND EXISTING WORK OF ALL OTHER TRADES. THE CONTRACTOR SHALL CONTACT THE OTHER CONTRACTORS INVOLVED FOR DIMENSIONS, LOCATIONS, AND REQUIRED CLEARANCES OF THE EQUIPMENT THEY INTEND TO PROVIDE FOR THIS JOB. THE AFOREMENTIONED COORDINATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. DO NOT SCALE THESE DRAWINGS. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS.
8. ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
9. ALL MATERIALS USED SHALL BE NEW AND FREE OF DEFECTS. WHERE TRADE NAMES ARE MENTIONED, THEY ARE GIVEN AS A REFERENCE TO THE QUALITY OF THE APPARATUS REQUIRED. ALL MATERIALS AND EQUIPMENT SHALL BEAR THE UL LABEL OR EQUIVALENT WHERE APPLICABLE. OTHER MAKES MAY BE USED IF APPROVED IN WRITING BY THE ENGINEER. PROVIDE A COMPLETE LIST OF MATERIALS AND EQUIPMENT PROPOSED FOR USE IN THIS CONTRACT TO THE ENGINEER WITHIN TEN DAYS FOLLOWING THE AWARD OF CONTRACT. IF SUCH LIST IS NOT SUBMITTED, THE CONTRACTOR SHALL SUPPLY THE MATERIALS AND EQUIPMENT SPECIFIED OR AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE FOUR COPIES OF SUBMITTALS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING EQUIPMENT.
10. WORKMANSHIP SHALL BE FIRST-CLASS AND PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMEN.
11. COORDINATE EXACT LOCATION OF ALL DIFFUSERS WITH LIGHTS, SPRINKLER HEADS, AND OTHER CEILING MOUNTED DEVICES. SEE THE REFLECTED CEILING PLAN.
12. UPON COMPLETION OF THE WORK, A TEST AND BALANCE SHALL BE PERFORMED IN ACCORDANCE WITH "ABAC" REQUIREMENTS. FURNISH FINAL COPY OF ALL TESTING, ADJUSTING, AND BALANCING REPORTS AS A PART OF THE OPERATING AND MAINTENANCE MANUALS. INDICATE DEFICIENCIES PREVENTING PROPER TESTING, ADJUSTING AND BALANCING OF SYSTEMS AND EQUIPMENT TO ACHIEVE SPECIFIED PERFORMANCE. ADJUST AIR HANDLING SYSTEMS TO WITHIN PLUS OR MINUS TO PERCENT OF DESIGN. ADJUST TOTAL AIR TO ALL AIR OUTLETS AND INLETS TO WITHIN PLUS TO PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST INDIVIDUAL OUTLETS AND INLETS TO WITHIN PLUS OR MINUS TO PERCENT OF DESIGN. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO OBTAIN REQUIRED OR DESIGN SUPPLY, RETURN AND EXHAUST AIR QUANTITIES. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE SNEAK DROVE CHANGES TO VARY FAN SPEED IF REQUIRED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL PRESSURE DROPS AND TOTAL PRESSURE ACROSS FAN. MAKE ALLOWANCES FOR 50 PERCENT LOADING OF FILTERS. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS. AT MODULATING DAMPER LOCATIONS, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS.
13. ALL EQUIPMENT SHALL BE PROVIDED WITH PERMANENT LABELS FOR IDENTIFICATION. ALL PIPE SHALL BE LABELED TO INDICATE PIPE FUNCTION AND DIRECTION OF FLOW. PROVIDE VALVE TAGS FOR ALL VALVES. COORDINATE NOMENCLATURE AND NUMBERING WITH OWNER PRIOR TO INSTALLATION.
14. THE CONTRACTOR SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF PROJECT.
15. THE CONTRACTOR SHALL, AT THE COMPLETION OF THE WORK, CLEAN, POLISH, AND/OR WASH ALL EXPOSED ITEMS OF MATERIALS, EQUIPMENT, AND FIXTURES IN THEIR CONTRACT TO LEAVE SUCH ITEMS BRIGHT AND CLEAN. THE CONTRACTOR SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM THEIR WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT COMPLETION OF THE CONTRACT.
16. MECHANICAL AND ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION, AS DETERMINED BY THE ENGINEER. IF SUCH NOISE OR VIBRATION SHOULD BE PRODUCED AND TRANSMITTED TO OCCUPIED PORTIONS OF THE BUILDING, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES TO CORRECT THE NOISE OR VIBRATION WITHOUT ADDITIONAL COST TO THE OWNER.
17. THE CONTRACTOR SHALL PROVIDE A COMPLETE 1-YEAR WARRANTY ON ALL LABOR AND MATERIALS UNDER THIS CONTRACT. REFRIGERATION COMPRESSORS PROVIDED UNDER THIS CONTRACT SHALL CARRY THE MANUFACTURER'S PUBLISHED 5-YEAR NON-PRORATED WARRANTY.
18. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE EQUIPMENT PROVIDED UNDER THIS CONTRACT.
19. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING FOR THEIR EQUIPMENT.
20. OUTSIDE AIR INTAKES SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ALL EXHAUST DISCHARGE AND PLUMBING VENTS.
21. REPLACE ALL FILTERS JUST PRIOR TO ACCEPTANCE BY THE OWNER.
22. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SETS.
23. ROUTE REFRIGERANT LINES FROM OUTDOOR CONDENSING UNITS IN THE MOST DIRECT PATH TO AIR HANDLER LOCATED ABOVE CEILING. INSULATE WITH FOAM INSULATION. PROVIDE LONG LINE REFRIGERATION KIT AS REQUIRED.
24. PROVIDE AN AUXILIARY DRAIN PAN FOR ANY AIR CONDITIONING EQUIPMENT LOCATED ABOVE A CEILING OR WHERE CONDENSATE OVERFLOW WOULD DAMAGE BUILDING COMPONENTS. THE AUXILIARY DRAIN PAN SHOULD BE PROVIDED WITH A FLOAT SWITCH THAT STOPS THE FAN UPON ACCUMULATION OF CONDENSATE IN THE PAN. LOCATE ALL EQUIPMENT ABOVE THE CEILING SO THAT ADEQUATE SLOPE IS PROVIDED FOR ALL DRAIN LINES. IF A CONDENSATE PUMP IS SPECIFIED, EXTEND THE AUXILIARY DRAIN PAN UNDER THE CONDENSATE PUMP. CONDENSATE DRAIN LINES IN RETURN AIR PLENUMS SHALL BE MADE OF TYPE "K" COPPER PIPE. INSULATE DRAIN LINES TO PREVENT SWEATING. ROUTE CONDENSATE DRAINS AS DIRECTED ON PLANS.

**MATERIALS AND EQUIPMENT**

**DUCTWORK:**  
ALL SHEET-METAL DUCTWORK UNLESS OTHERWISE SPECIFIED SHALL BE CONSTRUCTED OF GALVANIZED STEEL SHEETS IN ACCORDANCE WITH SMAQNA GAGES AND STANDARDS. DUCT SHALL BE CONSTRUCTED FOR 1" STATIC PRESSURE AND SEALED TO SMAQNA CLASSIFICATION "B". INSULATE ALL DUCTWORK UNLESS OTHERWISE NOTED WITH FOL-FACED 1" PFD DENSITY FIBERGLASS DUCT WRAP. INSULATION R-VALUE SHALL BE PER 2018 NC ENERGY CODE.

DOUBLE WALL ROUND DUCT AND FLAT OVAL:  
ALL SPIRAL AND FLAT OVAL DUCT IN EXPOSED LOCATIONS SHALL BE OF DOUBLE WALL CONSTRUCTION CONSISTING OF AN OUTER SHELL WITH A NOMINAL 1" LAYER OF FIBERGLASS INSULATION AND A PERFORATED INNER SHELL. CONSTRUCTION SHALL BE OF ASTM A-927 GALVANIZED STEEL WITH 4-PLY SPIRAL LOCK SEAM. PROVIDE WITH FACTORY MADE FITTINGS. SHEET METAL GAUGES SHALL BE PER ASHRAE AND SMAQNA SPECIFICATIONS. FURNISH WITH PAINT GRIP FINISH. SEAL ALL JOINTS WITH DUCT SEALER AND FASTEN ALL EXPOSED CONNECTIONS WITH POP-RIVETS. ALL DUCTWORK IN EXPOSED LOCATIONS THAT IS NOTED TO BE UNFINISHED SHALL HAVE THE STANDARD DUCT FINISH AND BE PROVIDED WITH GASKETED JOINTS TO ELIMINATE DUCT SEALER.

**EXTERIOR DUCTWORK:**  
ALL EXPOSED DUCTWORK SHALL BE CONSTRUCTED FOR 2" STATIC PRESSURE AND SEALED TO SMAQNA CLASSIFICATION "A". INSULATE ALL RECTANGULAR EXPOSED DUCTWORK WITH FOL-FACED, 2" THICK, 1.5 PFD DENSITY FIBERGLASS DUCT BOARD AND WRAP WITH A G-90 SHEET METAL SHROUD. INSULATION R-VALUE SHALL BE PER 2018 NC ENERGY CODE.

**FLEXIBLE DUCT:**  
SHALL BE INSULATED, SOUND ATTENUATING, LOW VELOCITY TYPE AND SHALL COMPLY WITH NFPA 90A AND 90B. FLEXIBLE DUCT SHALL BEAR THE UL CLASS 1 AIR DUCT LABEL AS TESTED UNDER UL 181. FLEXIBLE DUCT SHALL BE FACTORY-FORMED, COMPOSED OF SPIRAL WOUND CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER. DUCT SHALL BE FACTORY INSULATED WITH A FOUL VAPOR BARRIER ADJCT. INSULATION R-VALUE SHALL BE PER 2018 NC ENERGY CODE.

THE INSTALLATION OF FLEX DUCT SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 3 OF THE SMAQNA HVAC DUCT CONSTRUCTION STANDARDS, THIRD EDITION (2005). BENDS IN FLEXIBLE DUCT SHALL NOT BE LESS THAN TWO DUCT DIAMETERS CENTERLINE RADIUS AND BENDS SHALL NOT BEGIN WITHIN THREE INCHES OF A SHEET METAL CONNECTION. DUCT SHALL NOT BE COMPRESSED. SUPPORT DUCT FROM STRUCTURE AT INTERVALS NOT TO EXCEED TEN FEET. MAXIMUM PERMISSIBLE SAG IS 1/2" INCH PER FOOT OF SPACING BETWEEN SUPPORTS. HANGER OR SADDLE MATERIAL IN CONTACT WITH THE DUCT SHALL BE WIDE ENOUGH SO THAT IT DOES NOT REDUCE THE INTERNAL DIAMETER OF THE DUCT WHEN THE SUPPORTED SECTION RESTS ON THE SUPPORT AND IN NO CASE SHALL BE LESS THAN 1" WIDE.

**DUCT ELBOWS:**  
USE FULL-RADIUS ELBOWS OR SQUARE BONDS WITH TURNING VANES.

**SYSTEM BALANCING:**  
PROVIDE LOCKING QUADRANT TYPE MANUAL VOLUME DAMPER AT EACH FLEXIBLE DUCT RUNOUT. PROVIDE SPLITTER DAMPERS AT SUPPLY TEES AND EXTRACTORS AT ALL SUPPLY AIR BRANCHES. PROVIDE BALANCING DAMPERS IN ALL DUCTS WHERE REQUIRED FOR SYSTEM BALANCING AS SHOWN OR AS REQUIRED.

**AIR DISTRIBUTION:**  
PROVIDE ALL GRILLES, REGISTERS, AND DIFFUSERS PER THE SCHEDULE ON THE DRAWINGS. PROVIDE SUPPORT FROM THE STRUCTURE FOR EACH DIFFUSER AND DAMPER INSTALLED IN A LAY-IN CEILING. SLOT DIFFUSERS SHALL BE CONSTRUCTED SO THAT EACH SLOT MAY BE INDEPENDENTLY CONFIGURED TO INSURE A FULL 180° AIR CONTROL PATTERN. THE CONTRACTOR SHALL COORDINATE FINISH STYLES AND COLORS WITH THE ARCHITECT PRIOR TO ORDERING EQUIPMENT. THE BACKS OF ALL AIR DISTRIBUTION SHALL BE INSULATED FROM UNCONDITIONED SPACE.

**FLEXIBLE DUCT CONNECTIONS:**  
FURNISH AND INSTALL FLEXIBLE DUCT CONNECTORS ON SUPPLY AND RETURN CONNECTIONS OF ALL AIR HANDLING UNITS.

**ESCUTOCHIONS:**  
FURNISH AND INSTALL ESCUTOCHIONS IN ALL PLACES WHERE PIPING OR MECHANICAL EQUIPMENT PENETRATES A FINISHED WALL OR CEILING IN AN EXPOSED LOCATION.

**SMOKE DETECTORS:**  
THE MECHANICAL CONTRACTOR SHALL PROVIDE SMOKE DETECTORS PER THE 2018 NC MECHANICAL CODE, SECTION 606.2.1. SMOKE DETECTORS SHALL BE UL LISTED FOR DUCT INSTALLATION AND BE LOCATED IN THE RETURN AIRSTREAM TO SHUT DOWN THE SUPPLY AIR FAN UPON ACTIVATION. THE SYSTEM SHALL BE WIRED SO THAT THE FAN IMMEDIATELY SHUTS DOWN UPON A SIGNAL FROM THE DETECTOR AND BYPASSES ANY BUILT-IN DELAYS. THE MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL AND WIRE ALL SMOKE DETECTORS PER THE MANUFACTURER'S RECOMMENDATIONS. THE SMOKE DETECTORS SHALL BE CAPABLE OF INTERCONNECTABILITY FOR MULTI-FAN SHUT DOWN AND SHALL BE WIRED SO THAT ACTIVATION OF ANY DETECTOR WILL SHUT DOWN ALL SUPPLY AIR FANS ON THE PROJECT. EACH DETECTOR SHALL BE PROVIDED WITH A VISIBLE AND AUDIBLE SIGNAL LOCATED TO INDICATE GENERAL LOCATION OF SMOKE ORIGINS PER THE NC MECHANICAL CODE, SECTION 606. EACH DETECTOR SHALL ALSO BE PROVIDED WITH A TROUBLE SIGNAL AND SHALL BE LABELED.

**ACCESS PANELS:**  
THE MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, DAMPERS, CONTROLS, OR ANY OTHER ITEM INSTALLED UNDER THIS CONTRACT WHERE SUCH ITEM IS CONCEALED BEHIND CONSTRUCTION WHICH RENDER THE ITEM INACCESSIBLE FOR SERVICE OR ADJUSTMENT. SAID ACCESS PANELS OR DOORS SHALL BE FIRE RATED AS NECESSARY TO MAINTAIN THE INTEGRITY OF THE CONSTRUCTION WHEREIN THE PANEL OR DOOR IS INSTALLED.

**HVAC EQUIPMENT:**  
ALL EQUIPMENT SHALL BEAR THE UL, CSA, MET OR OTHER ACCREDITED TESTING LABORATORY LABEL WHERE APPROPRIATE. ALL EQUIPMENT SHALL CONFORM TO THE TYPE, SIZE, RATING, AND PERFORMANCE OF THAT LISTED ON THE DRAWINGS UNDER THIS CONTRACT. SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS.

**CONTROL WIRING:**  
ALL CONTROL WIRING SHALL BE RUN IN A METALLIC RACEWAY. RACEWAY SHALL BE ROUTED PARALLEL AND PERPENDICULAR WITH THE BUILDING STRUCTURE. THE METALLIC RACEWAY MAY BE OMITTED WHERE FLEMING-GATED CABLE IS INSTALLED ABOVE AN ACCESSIBLE CEILING WITHIN THE BUILDING ENVELOPE. THERE SHALL BE NO SPLICES IN THE CONTROL SYSTEM WIRING OTHER THAN AT TERMINAL BLOCKS. WIRE NUTS AND CRAMP SPLICES ARE NOT PERMITTED.

**GAS PIPING:**  
ALL GAS PIPING SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR. GAS PIPE SHALL BE SCHEDULE 40 BLACK STEEL. PROVIDE ALL VALVES, FITTINGS AND CONTROLS AS REQUIRED BY LOCAL, STATE, AND NATIONAL CODES OR BY MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR A COMPLETE AND OPERATIONAL SYSTEM.

**GENERAL NOTES: (APPLY TO ALL SHEETS)**

1. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF 2018 NC MECHANICAL CODE WITH REGARDS TO ALL MECHANICAL WORK.
2. MECHANICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL EQUIPMENT, PIPING, AND DUCTWORK UNDER THIS CONTRACT WITH THE BUILDING STRUCTURE. CONTRACTOR SHALL MAKE ADJUSTMENTS WHERE NECESSARY WITHOUT ADDITIONAL COST TO OWNER.
3. COORDINATE ALL SUPPLY, RETURN AND EXHAUST GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
4. INSULATE ALL NEW SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK WITH EXTERIOR DUCT WRAP. ALL EXPOSED ROUND DUCTWORK SHALL BE DOUBLE WALL INSULATED SPIRAL DUCT.

**MECHANICAL SYSTEMS AND EQUIPMENT**

**METHOD OF COMPLIANCE:**  
Prescriptive  Energy Cost Budget

Thermal Zone 4A

**Exterior Design Conditions**  
winter dry bulb 36F  
summer dry bulb 93F

**Interior Design Conditions**  
winter dry bulb 70F  
summer dry bulb 77F  
relative humidity 50%

**Tenant Heating Load** 139,500 BTU/hr  
**Tenant Cooling Load** 315,800 BTU/hr

**Mechanical Spacing Conditioning System**  
History - The building served by two packaged air conditioning units with natural gas heat, three split system heat pumps and five ductless split system air heat pumps.  
Boiler - Not applicable to this project.  
Chiller - Not applicable to this project.

**Equipment efficiencies**  
Efficiencies are listed on equipment schedules - See drawings.

**Equipment schedules with motors.**  
Multipass motors are used on this project and are included in the efficiency rating of the unit. See drawings for efficiencies.

**DESIGNER STATEMENT:**  
To the best of my knowledge and belief, the design of this building complies with the mechanical system and equipment requirements of the 2018 NC Mechanical Code.

**DRAWING LEGEND**

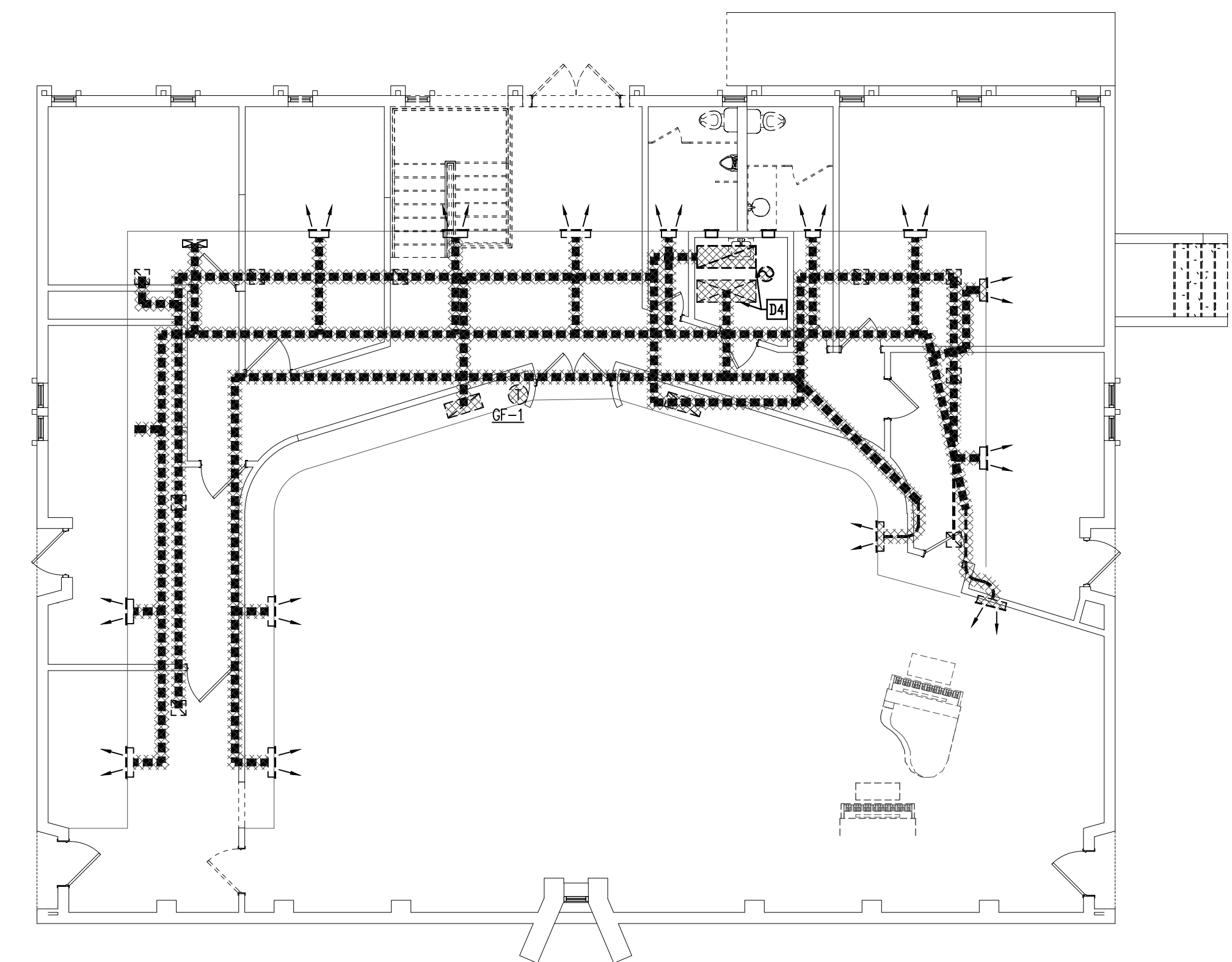
	CEILING SUPPLY DIFFUSER
	LINEAR SLOT DIFFUSER
	SIDEWALL SUPPLY DIFFUSER
	CEILING RETURN GRILLE
	CEILING EXHAUST GRILLE
	SIDEWALL RETURN/EXHAUST GRILLE
	RECTANGULAR DUCT (W = WIDTH, H = HEIGHT)
	ROUND DUCT (D = DIAMETER)
	EXISTING DUCT, DIFFUSER OR EQUIPMENT
	EXISTING DUCT, DIFFUSER OR EQUIPMENT TO BE DEMOLISHED
	SPIN-IN TAP WITH TRANSITION FROM HARD TO FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
	ROUND DUCT TURNS DOWN
	ROUND DUCT TURNS UP
	DUCT MOUNTED SMOKE DETECTOR
	DIFFUSER TAG
	GAS PIPING
	PIPING ELBOW TURNS DOWN
	PIPING ELBOW TURNS UP
	GAS SHUT-OFF VALVE
	MEDIUM PRESSURE GAS REGULATOR
	WALL MOUNTED THERMOSTAT

No.	Description	Date

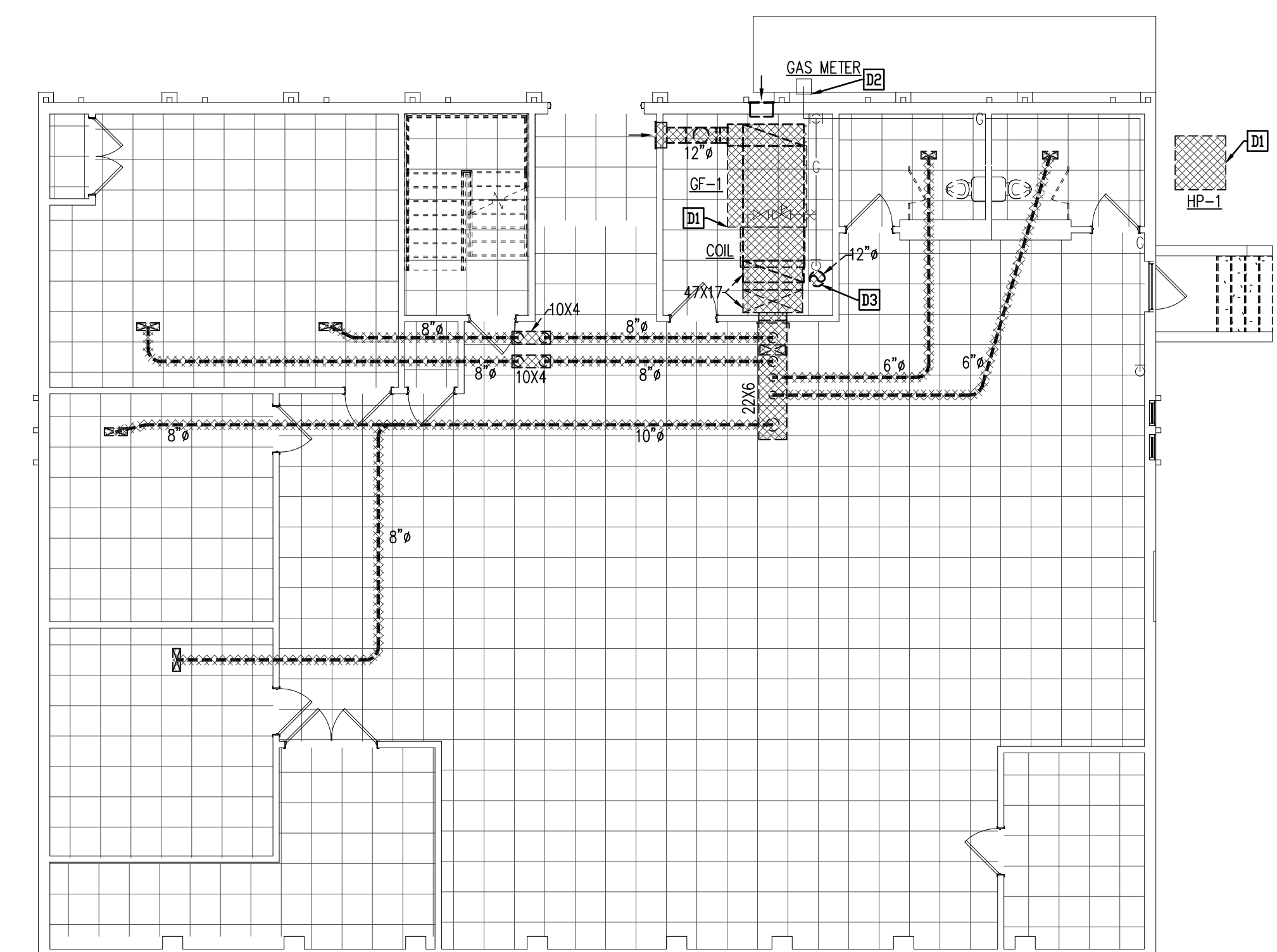
PROJECT #: 210029  
DATE: 03-09-2023

**MECHANICAL COVER SHEET**

**MO.1**



**2 FIRST FLOOR PLAN - MECHANICAL DEMOLITION**  
 SCALE: 1/8" = 1'-0"



**1 GROUND FLOOR PLAN - MECHANICAL DEMOLITION**  
 SCALE: 1/8" = 1'-0"

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLLUMS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

	EXISTING WALL TO REMAIN
	NEW WALL TO BE CONSTRUCTED
	EXISTING WALL TO BE DEMOLISHED
	ONE HOUR FIRE BARRIER

**DEMOLITION NOTES:**

- 01** DEMOLISH EXISTING SPLIT SYSTEM AIR HANDLING UNIT, CONDENSING UNIT, THERMOSTAT, ALL ASSOCIATED AIR DISTRIBUTION DUCTWORK, REFRIGERANT PIPING, AND GAS PIPING. CAP GAS PIPING.
- 02** PRIOR TO CONSTRUCTION MECHANICAL CONTRACTOR SHALL CONTACT GAS COMPANY TO CONFIRM IF GAS METER REPLACEMENT IS REQUIRED FOR NEW TOTAL GAS LOAD.
- 03** DEMOLISH EXISTING FLUE DUCTWORK UP TO ROOF. COORDINATE ROOF REPAIR WITH GENERAL CONTRACTOR.
- 04** DEMOLISH ALL EXISTING SUPPLY AND RETURN AIR DUCTWORK AND ASSOCIATED AIR DISTRIBUTION SERVING FIRST FLOOR.

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

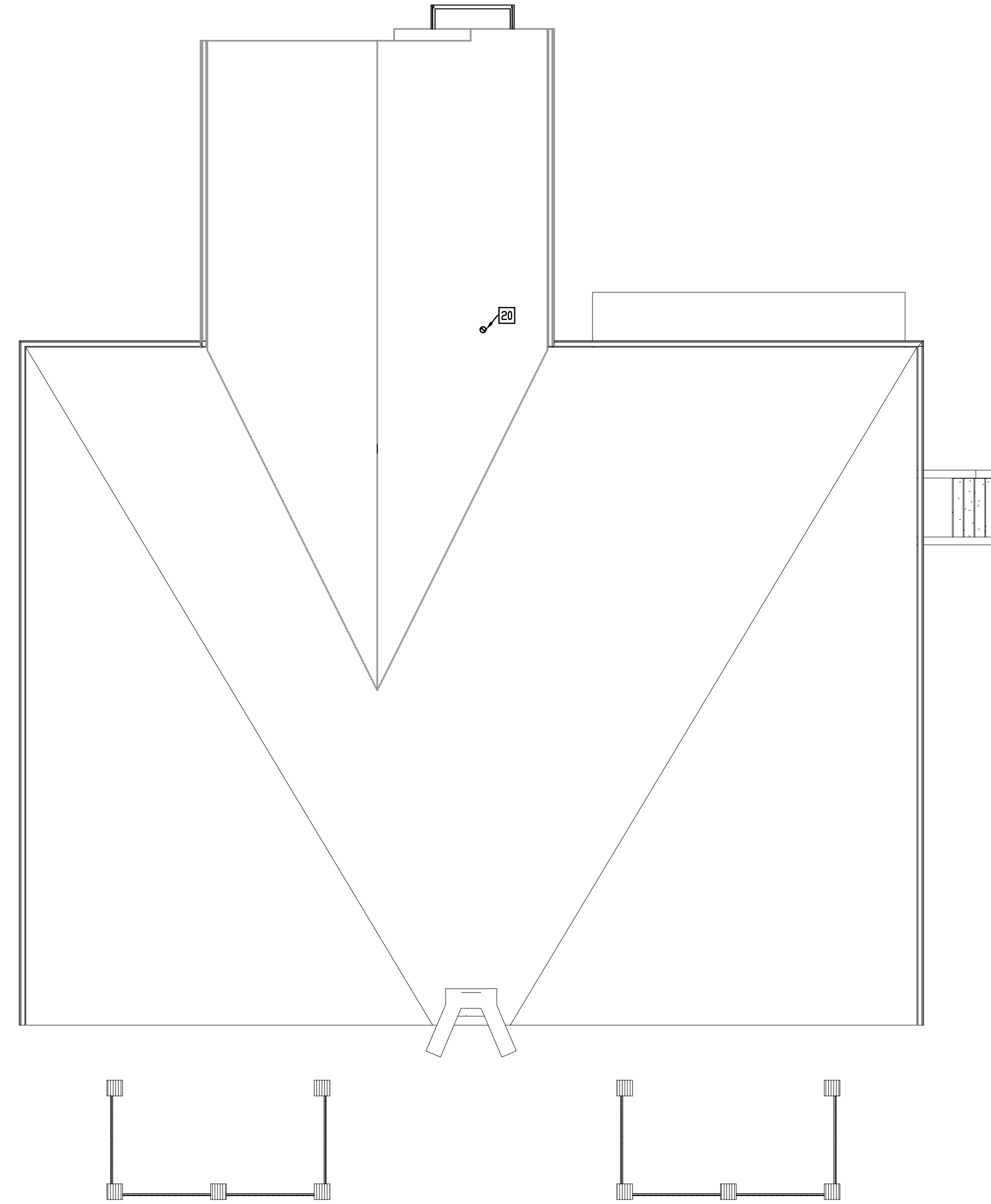
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GROUND AND FIRST FLOOR PLANS - MECHANICAL DEMOLITION

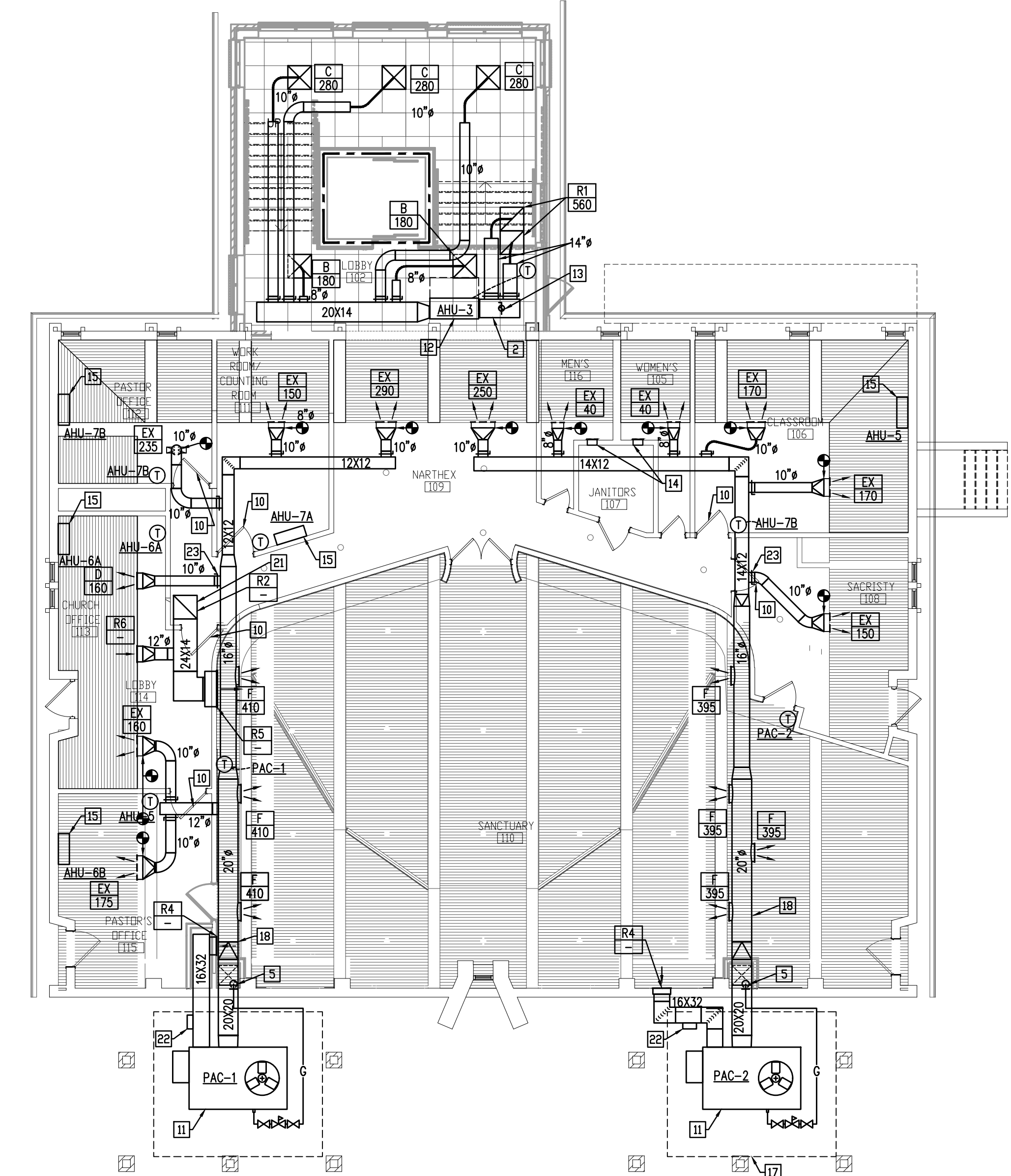
**M1.1**

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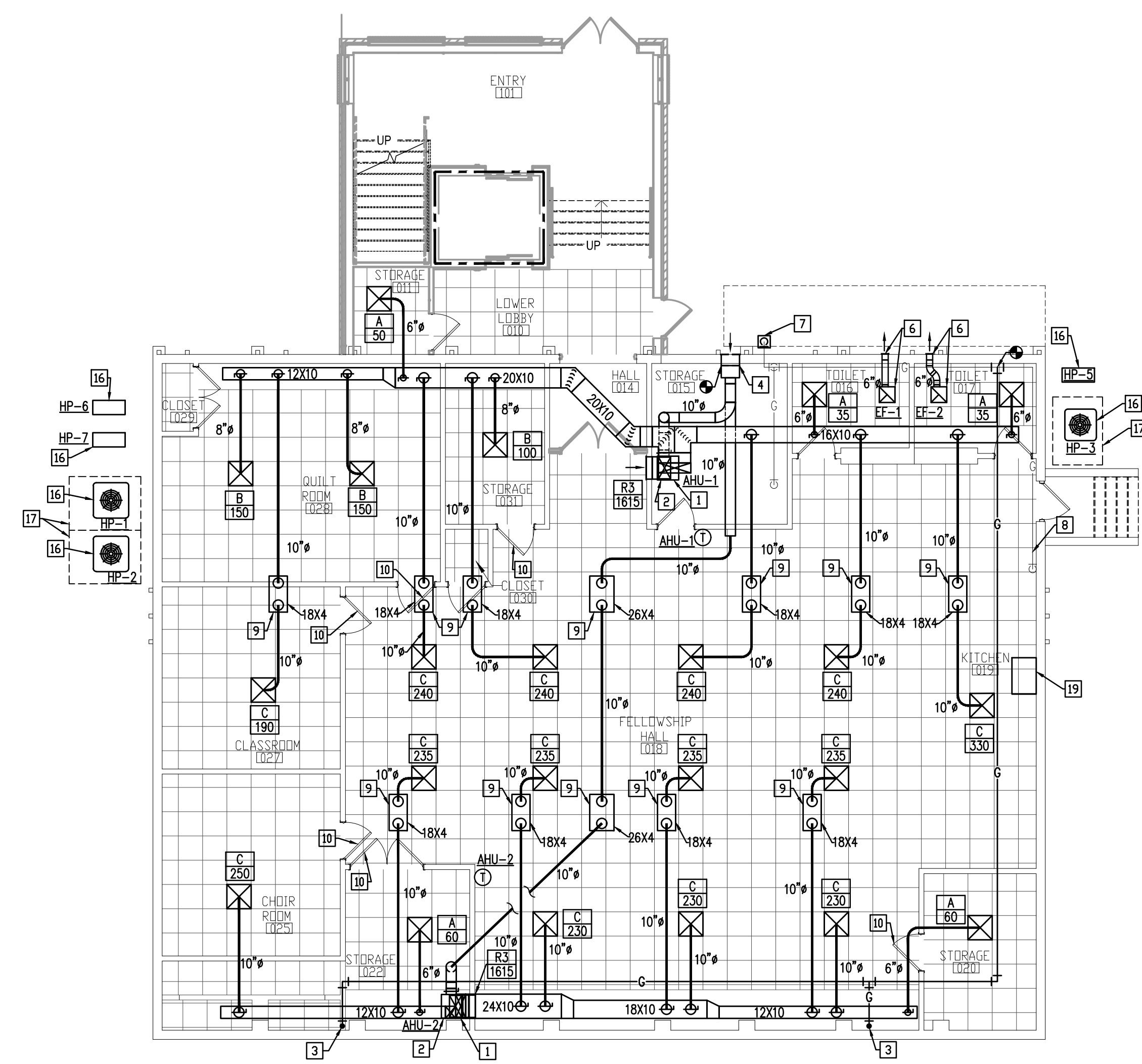




**3 ROOF FLOOR PLAN - MECHANICAL**  
 SCALE: 1/8" = 1'-0"



**2 FIRST FLOOR PLAN - MECHANICAL**  
 SCALE: 1/8" = 1'-0"



**1 GROUND FLOOR PLAN - MECHANICAL**  
 SCALE: 1/8" = 1'-0"

- PLAN NOTES:**
- INSTALL VERTICAL SPLIT SYSTEM AIR HANDLING UNIT ON EQUIPMENT STAND PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES.
  - PROVIDE RETURN AIR DUCT FULL SIZE OF UNIT CONNECTION. BELOW AIR HANDLING UNIT AND CONNECT TO WALL GRILLE.
  - ROUTE GAS PIPING UP TO FIRST FLOOR IN LOCATION INDICATED.
  - EXISTING LOUVER TO REMAIN. PROVIDE LOUVER WITH FULL SIZE INSULATED PLENUM AND CONNECT (2) 10" OUTSIDE AIR DUCTS TO WALL LOUVER.
  - CONTINUE GAS PIPING FROM FLOOR BELOW INSIDE CHASE BELOW SUPPLY DUCT. ROUTE GAS PIPING THROUGH WALL ABOVE GRADE TO NEW EQUIPMENT. PROTECT PIPING AS REQUIRED.
  - INSTALL CEILING CABINET EXHAUST FAN PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES. ROUTE EXHAUST DUCTWORK TO NEW WALL CAP. MAINTAIN 10'-0" MINIMUM CLEARANCE TO OUTSIDE AIR INTAKE.
  - PROVIDE NEW GAS PIPING FROM GAS METER INTO BUILDING. PROTECT PIPING AT WALL PENETRATION AS REQUIRED.
  - REFER TO "GAS RISER" FOR GAS LINE TYPES AND SIZES.
  - PROVIDE SHALLOW DUCT WITH (2) TOP TAPS BELOW EXISTING STRUCTURAL STEEL TO ALLOW AIR DISTRIBUTION TO BE ROUTED AS INDICATED.
  - DOOR SHALL BE UNDERCUT BY A MINIMUM OF 1" TO ALLOW FREE AIR RETURN BACK TO AIR HANDLING UNIT.
  - INSTALL PACKAGED A/C UNIT WITH GAS HEAT PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES. COORDINATE FINAL LOCATION OF UNIT WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION.
  - INSTALL HORIZONTAL SPLIT SYSTEM AIR HANDLING UNIT PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES.
  - ROUTE 6" OUTSIDE AIR DUCT UP TO ROOF. PROVIDE APPROVED ROOF CAP. MAINTAIN 10'-0" MINIMUM CLEARANCE TO ANY EXHAUST AIR DISCHARGE OR VENT PIPE OPENING.
  - EXHAUST PROVIDED THROUGH EXISTING WALL GRILLES.
  - INSTALL DUCTLESS SPLIT SYSTEM AIR HANDLING UNIT HIGH ON WALL PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES.
  - INSTALL SPLIT SYSTEM HEAT PUMP PER MANUFACTURER'S RECOMMENDATIONS AND CLEARANCES.
  - MANUFACTURER'S RECOMMENDED CLEARANCES. (TYPICAL)
  - ALL NEW EXPOSED DUCTWORK SHALL BE DOUBLE WALL SPIRAL DUCTWORK. ALL SPIRAL DUCT MOUNTED DIFFUSERS SHALL BE MOUNTED AT 30° ANGLE. SPIRAL DUCTWORK SHALL BE MOUNTED AS HIGH AS POSSIBLE.
  - EXISTING RESIDENTIAL RANGE HOOD TO REMAIN.
  - PROVIDE APPROVED ROOF CAP FOR OUTSIDE AIR. MAINTAIN 10'-0" MINIMUM CLEARANCE TO EXHAUST AIR INTAKES ON ROOF UNITS.
  - PROVIDE TRANSFER AIR DUCTWORK AS INDICATED TO CONNECT CEILING AND WALL GRILLES.
  - LOCATION OF FIELD INSTALLED BAROMETRIC RELIEF DAMPER ACCESSORY IN RETURN AIR DUCTWORK. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
  - PROVIDE CABLE OPERATED DAMPER ABOVE INACCESSIBLE CEILING (TYPICAL).

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

—	EXISTING WALL TO REMAIN
—	NEW WALL TO BE CONSTRUCTED
- - -	EXISTING WALL TO BE DEMOLISHED
- - -	ONE HOUR FIRE BARRIER

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

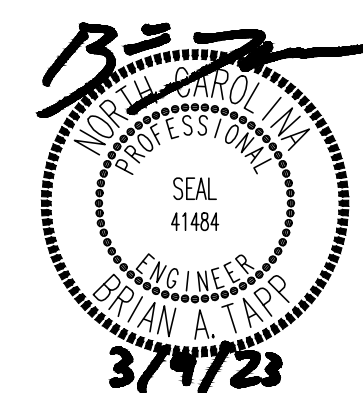
No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023  
 GROUND AND FIRST FLOOR PLANS - MECHANICAL

**M1.2**

1/4" = 1'-0"  
 1/2" = 1'-0"

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OUTSIDE AIR CALCULATION										
UNIT IDENTIFICATION	SPACE CLASSIFICATION	FLOOR AREA (SQ. FT.)	PEOPLE PER 1000 SQ. FT.	TOTAL PEOPLE	CFM PER PERSON	CFM PER SF	REQUIRED CFM	DESIGN CFM	REMARKS	
PAC-1&2	RELIGIOUS WORSHIP	1794	120	133	5	0.06	772	960	①②③	
	CORRIDOR	985	N/A	N/A	N/A	0.06	59		①②	
	STORAGE	112	N/A	N/A	N/A	0.06	6		①②	
	CLASSROOM (AGE 9 PLUS)	296	35	10	7.5	N/A	75		①②	
AHU-1&2	OFFICE	580	5	2	5	0.06	44	770	①②	
	CLASSROOM (AGE 9 PLUS)	638	35	23	7.5	N/A	173		①②	
	RELIGIOUS WORSHIP	2770	120	85	5	0.06	491		①②③④	
	STORAGE	855	N/A	N/A	N/A	0.12	103		①②	
AHU-3	CORRIDOR	1276	N/A	N/A	N/A	0.06	76	80	①②	
TOTAL							1799	1850		

- ① PER 2018 NC MECHANICAL CODE, TABLE 403.3.
- ② ZONE AIR DISTRIBUTION EFFECTIVENESS IS 1.0.
- ③ TOTAL PEOPLE BASED ON ARCHITECTURAL FURNITURE LAYOUT.

PACKAGED A/C UNIT WITH GAS HEAT SCHEDULE																				
MARK	MANUFACTURER	NOMINAL TONNAGE	MODEL NO.	ARI COOLING (MBH)	SEER	EER	HEAT INPUT (MBH)	HEAT OUTPUT (MBH)	HEAT STAGES	AFUE	S.A. CFM	O.A. CFM	ESP (IN. H2O)	FAN HP	DRIVE	VOLT/PH	MCA	MOCP	WEIGHT (LBS)	REMARKS
PAC-1	TRANE	7.5	YSC07H3	71.0	N/A	11.2	150.0/105.0	120.0/84.0	2	80.0%	2400	480	0.5	1.0	BELT	208/3	35	50	900	①②③④⑤⑥
PAC-2	TRANE	7.5	YSC07H3	71.0	N/A	11.2	150.0/105.0	120.0/84.0	2	80.0%	2400	480	0.5	1.0	BELT	208/3	35	50	900	①②③④⑤⑥

- ① ARI COOLING CAPACITY BASED ON INDOOR ENTERING AIR CONDITION OF 80°F DRY BULB, 67°F WET BULB AND OUTDOOR AIR CONDITION OF 95°F DRY BULB.
- ② UNIT TO BE CONFIGURED FOR NATURAL GAS AND UTILIZE R410A REFRIGERANT.
- ③ PROVIDE UNIT WITH ANTI-SHORT CYCLE TIMER, COIL GUARD, AND ALL ACCESSORIES REQUIRED FOR HORIZONTAL FLOW OPERATION.
- ④ PROVIDE UNIT WITH 100% OUTDOOR AIR, ENTHALPY CONTROLLED, FULLY MODULATING ECONOMIZER. PROVIDE FIELD INSTALLED BAROMETRIC RELIEF DAMPER ACCESSORY, INSTALLED IN RETURN AIR DUCT.
- ⑤ PROVIDE SINGLE ZONE TEMPERATURE SENSOR WITH DIGITAL DISPLAY, OVERRIDE, AND SETPOINT ADJUSTMENT.
- ⑥ PROVIDE PACKAGED A/C UNIT WITH SMOKE DETECTOR INSTALLED IN RETURN AIR SECTION. FAN SHALL SHUT DOWN UPON SMOKE ALARM. CONTROLS, INCLUDING AUDIBLE AND VISIBLE ALARMS, SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.

SPLIT SYSTEM HEAT PUMP SCHEDULE													
MARK	MANUFACTURER	NOMINAL TONNAGE	MODEL NO.	ARI COOLING (MBH)	ARI HEATING (MBH)	SEER	HSPF	VOLT/PH	MCA	MOCP	WEIGHT (LBS)	REMARKS	
HP-1	TRANE	5.0	4TWS060H1	58.0	53.5	15	9.5	208/1	32	50	260	①②③④	
HP-2	TRANE	5.0	4TWS060H1	58.0	53.5	15	9.5	208/1	32	50	260	①②③④	
HP-3	TRANE	3.0	4TWS030H1	34.8	33.0	15	9.5	208/1	18	30	200	①②③④	

- ① COOLING CAPACITY BASED ON INDOOR ENTERING AIR CONDITION OF 80°F DRY BULB, 67°F WET BULB AND OUTDOOR AIR CONDITION OF 95°F DRY BULB. HEATING CAPACITY BASED ON INDOOR ENTERING AIR CONDITION OF 70°F DRY BULB AND OUTDOOR AIR CONDITION OF 47°F DRY BULB.
- ② STANDARD UNIT FEATURES SHALL INCLUDE FILTER DRIER, FRONT SEATING SERVICE VALVES, INTERNAL PRESSURE RELIEF VALVE, INTERNAL THERMAL OVERLOAD, SUCTION LINE ACCUMULATOR, HIGH PRESSURE SWITCH AND LOSS OF CHARGE SWITCH.
- ③ ACCESSORY UNIT FEATURES SHALL INCLUDE: COMPRESSOR START ASSIST, CRANKCASE HEATER, THERMOSTATIC EXPANSION VALVE AND TIME DELAY RELAY.
- ④ REFRIGERANT LINES SHALL BE SIZED AND APPROVED BY THE EQUIPMENT MANUFACTURER FOR "LONG LINE" APPLICATION. PROVIDE ALL OF THE MANUFACTURER'S RECOMMENDED COMPONENTS FOR "LONG LINE" APPLICATION. LINES SHALL BE SIZED SO THAT MAXIMUM CAPACITY LOSS DUE TO LINE LENGTH IS 3%. ALL PIPING SHALL BE HARD COPPER PIPE.

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE													
MARK	MANUFACTURER	MODEL NO.	S.A. CFM	O.A. CFM	ESP (IN. H2O)	FAN HP	ELEC. HEAT (KW)	HEAT STAGES	VOLT/PH	MCA	MOCP	WEIGHT (LBS)	REMARKS
AHU-1	TRANE	TEMA60C0K0H51	2,000	385	0.5	0.75	14.4	1	208/1	94	100	175	①②③
AHU-2	TRANE	TEMA60C0K0H51	2,000	385	0.5	0.75	14.4	1	208/1	94	100	175	①②③
AHU-3	TRANE	TEMA40B36S31	1,200	80	0.5	0.3	9.6	1	208/1	27	30	145	①②③

- ① PROVIDE FAN COIL WITH FACTORY INSTALLED ELECTRIC HEATER, FILTER, DISCONNECT SWITCH AND SINGLE POINT WIRING CONNECTION.
- ② PROVIDE UNIT WITH TRANE 7-DAY PROGRAMMABLE THERMOSTAT.
- ③ PROVIDE UNIT WITH 120 VOLT PLENUM RATED CONDENSATE PUMP, AUXILIARY DRAIN PAN AND FLOAT SWITCH.

DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE																					
INDOOR UNIT											OUTDOOR UNIT										
MARK	MANUFACTURER	MODEL NO.	TYPE	SERVICE	VOLT/PH	MCA	MOCP	WEIGHT	MARK	MODEL NO.	NOMINAL COOLING	NOMINAL HEATING	SEER	HSPF	MCA	MOCP	VOLT/PH	WEIGHT	REMARKS		
AHU-5	TRANE	NTXWS12A112A	HEAT PUMP	CLASSROOM 106	208/1	1	N/A	22 LBS	HP-5	NTXSS12A112A	12.0 MBH	14.4 MBH	23.1	12.5	9.0	15.0	208/1	81 LBS	①②③④		
AHU-6A	TRANE	NTXWS12A112A	HEAT PUMP	OFFICE 113	208/1	1	N/A	22 LBS	HP-6	NTXMX24A132AA	22.0 MBH	25.0 MBH	18.0	9.5	22.1	25	208/1	137 LBS	①②③④		
AHU-6B	TRANE	NTXWS12A112A	HEAT PUMP	OFFICE 115	208/1	1	N/A	22 LBS													
AHU-7A	TRANE	NTXWS12A112A	HEAT PUMP	WORK ROOM 111	208/1	1	N/A	22 LBS	HP-7	NTXMX24A132AA	22.0 MBH	25.0 MBH	18.0	9.5	22.1	25	208/1	137 LBS	①②③④		
AHU-7B	TRANE	NTXWS12A112A	HEAT PUMP	OFFICE 112	208/1	1	N/A	22 LBS													

- ① PROVIDE UNIT WITH WALL MOUNTING BRACKET AND WALL MOUNTED THERMOSTAT.
- ② PROVIDE ALL ACCESSORIES REQUIRED FOR LOW AMBIENT OPERATION DOWN TO 0°F, INCLUDING WIND BAFFLE.
- ③ PROVIDE UNIT WITH MANUFACTURER'S ACCESSORY BLUE DIAMOND, MAXI BLUE, MODEL: X87-721, 208/230 VOLT CONDENSATE PUMP. PUMP SHALL BE POWERED THROUGH AIR HANDLING UNIT. INSTALL PUMP PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. ROUTE CONDENSATE TO APPROVED LOCATION.
- ④ INDOOR UNIT SHALL BE POWERED FROM OUTDOOR UNIT. ALL POWER WIRING BY ELECTRICAL CONTRACTOR.

AIR DISTRIBUTION SCHEDULE						
MARK	MANUFACTURER	MODEL/DESCRIPTION	PANEL SIZE	TYPE	NECK SIZE	REMARKS
A	NAILOR	MODEL RNS, STEEL, STAMPED SQUARE FACE, HIGH PERFORMANCE	24X24	LAY-IN SUPPLY	6"	①
B	NAILOR	MODEL RNS, STEEL, STAMPED SQUARE FACE, HIGH PERFORMANCE	24X24	LAY-IN SUPPLY	8"	①
C	NAILOR	MODEL RNS, STEEL, STAMPED SQUARE FACE, HIGH PERFORMANCE	24X24	LAY-IN SUPPLY	10"	①
D	NAILOR	MODEL 610V, STEEL REGISTER, DOUBLE DEFLECTION, ADJUSTABLE BLADES	N/A	DUCT MOUNTED SUPPLY	16X6	①
F	NAILOR	MODEL 610VC-DEX, STEEL REGISTER, DOUBLE DEFLECTION, ADJUSTABLE BLADES	N/A	SPIRAL DUCT MOUNTED SUPPLY	18X12	①②④
R1	NAILOR	MODEL 4360, STEEL, PERFORATED FACE WITH DUCT COLLARS	24X24	LAY-IN RETURN	22X22	①②
R2	NAILOR	MODEL 6145H, STEEL REGISTER, SINGLE DEFLECTION, FIXED BLADES	N/A	SURFACE MOUNTED RETURN	24X24	①
R3	NAILOR	MODEL 6145H, STEEL REGISTER, SINGLE DEFLECTION, FIXED BLADES	N/A	SURFACE MOUNTED RETURN	22X36	①
R4	NAILOR	MODEL 6145H, STEEL REGISTER, SINGLE DEFLECTION, FIXED BLADES	N/A	SURFACE MOUNTED RETURN	18X36	①
R5	NAILOR	MODEL 6145H, STEEL REGISTER, SINGLE DEFLECTION, FIXED BLADES	N/A	SURFACE MOUNTED RETURN	36X16	①
R6	NAILOR	MODEL 6145H, STEEL REGISTER, SINGLE DEFLECTION, FIXED BLADES	N/A	SURFACE MOUNTED RETURN	16X12	①
EX	EXISTING	RELOCATE/REBALANCE EXISTING DIFFUSER/GRILLE	---	---	---	⑤

- ① VERIFY ALL CEILING OR WALL TYPES WITH ARCHITECTURAL PLANS. COORDINATE COLOR WITH ARCHITECT.
- ② PROVIDE SQUARE-TO-ROUND TRANSITION AS REQUIRED.
- ③ PROVIDE OPPOSED BLADE DAMPER ADJUSTABLE FROM FACE OF DIFFUSER.
- ④ COORDINATE SPIRAL DUCT DIFFUSER CURVATURE WITH SPECIFIC DUCT DIAMETER.
- ⑤ CLEAN DIFFUSER. REPLACE AS NECESSARY.

FAN SCHEDULE												
MARK	MANUFACTURER	MODEL NO.	SERVICE	TYPE	CFM	ESP (IN. H2O)	MOTOR SIZE	RPM	DRIVE	VOLT/PH	WEIGHT (LBS)	REMARKS
EF-1	COOK	GC-124	TOILET EXHAUST	CEILING CABINET	75	0.25	64 W	877	DIRECT	120/1	13	①②
EF-2	COOK	GC-124	TOILET EXHAUST	CEILING CABINET	75	0.25	64 W	877	DIRECT	120/1	13	①②

- ① PROVIDE FAN WITH BACKDRAFT DAMPER AND HANGING ISOLATOR KIT. SUPPORT FAN FROM STRUCTURE.
- ② FAN TO BE CONTROLLED BY WALL SWITCH PROVIDED BY ELECTRICAL CONTRACTOR.

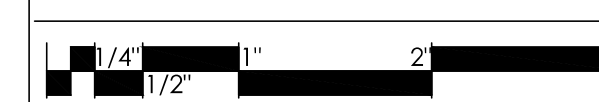
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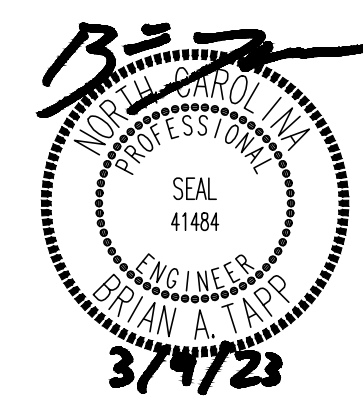
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MECHANICAL SPECIFICATIONS

**M2.1**



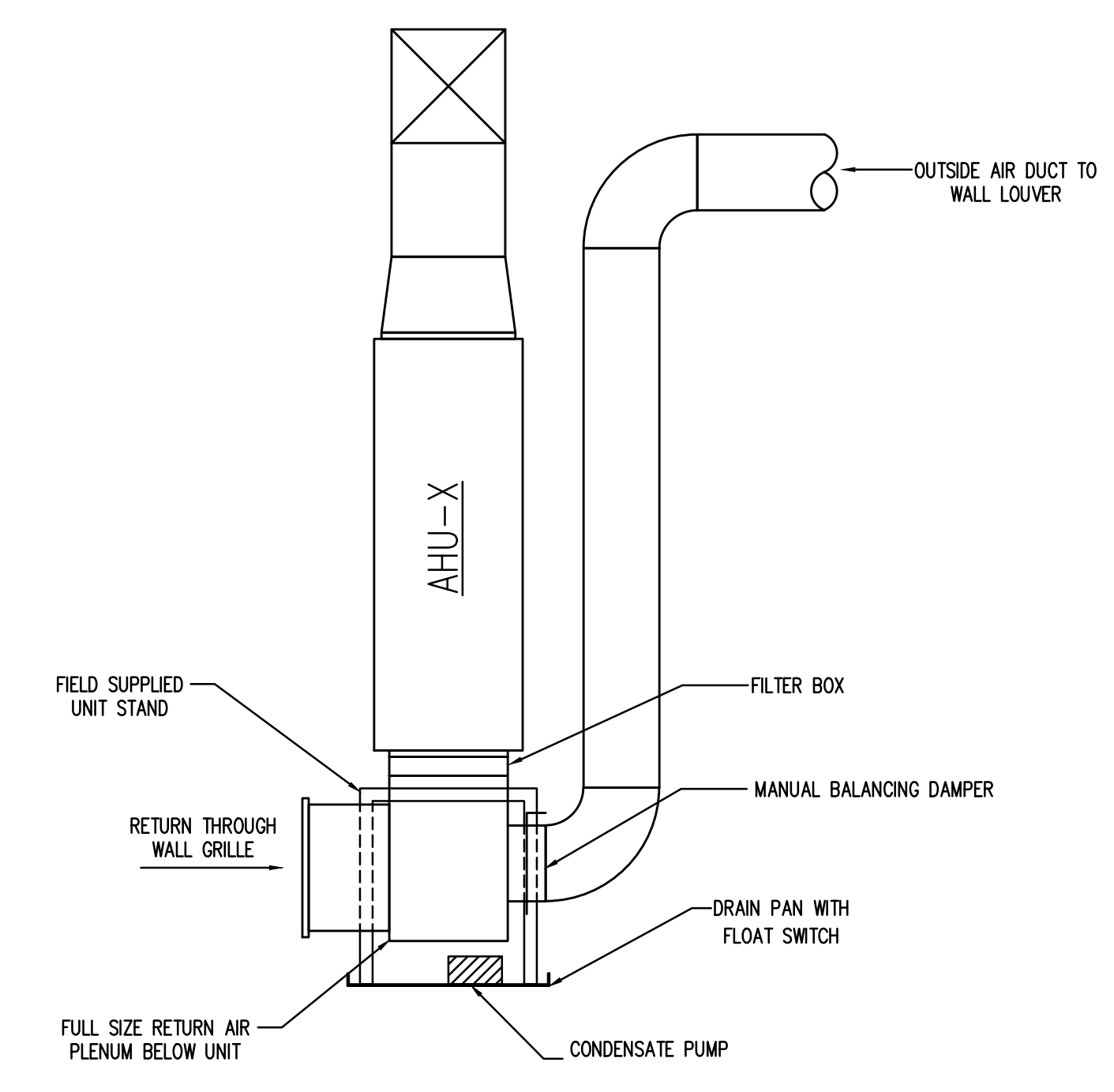
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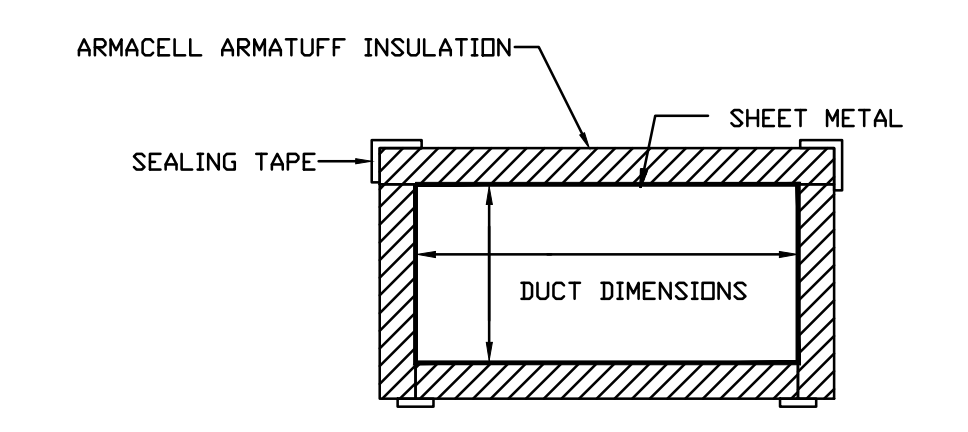
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PROJECT #: 210029  
 DATE: 03-09-2023

MECHANICAL  
 DETAILS

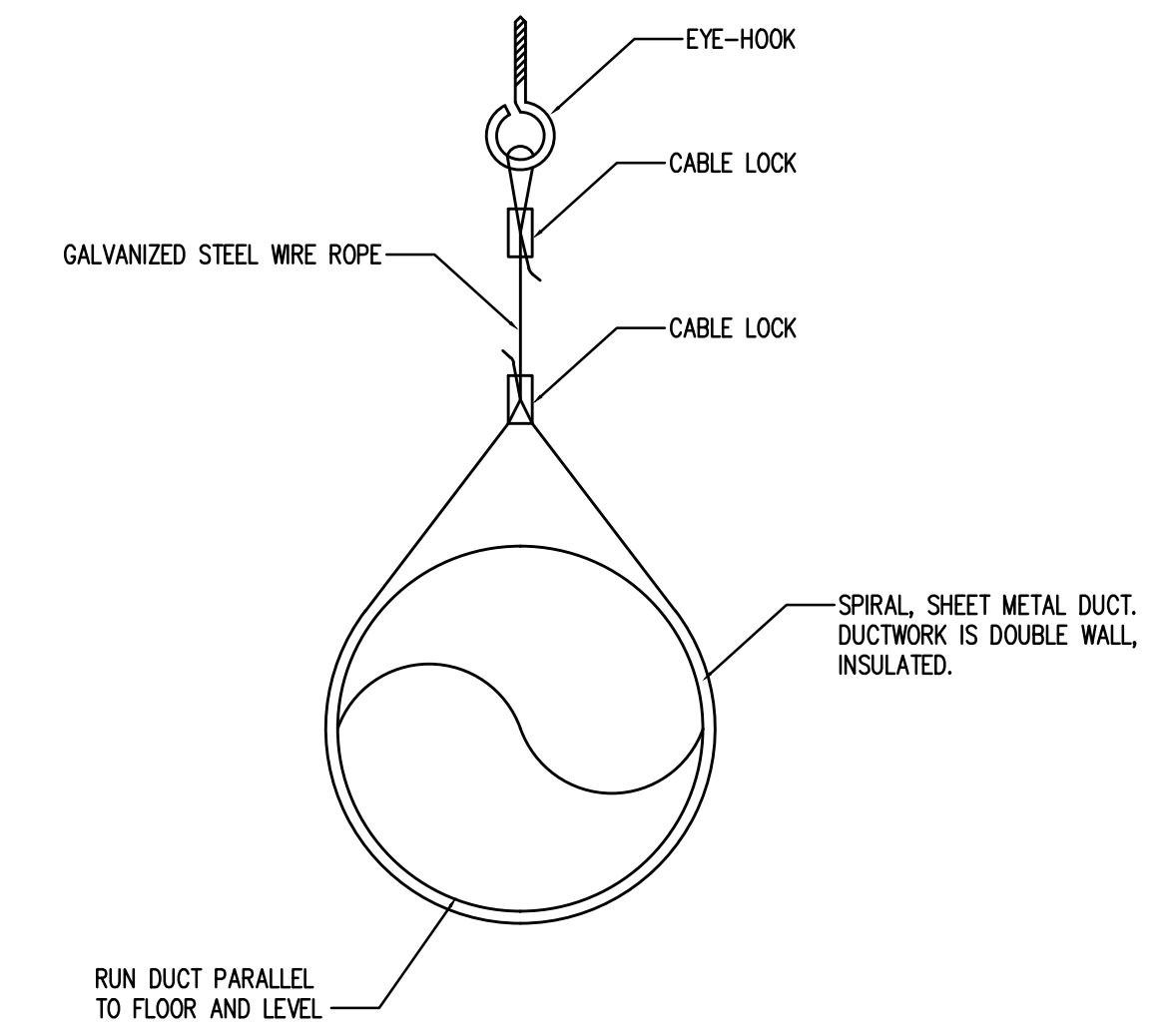


**8 VERTICAL AHU INSTALLATION DETAIL**  
 SCALE: NONE



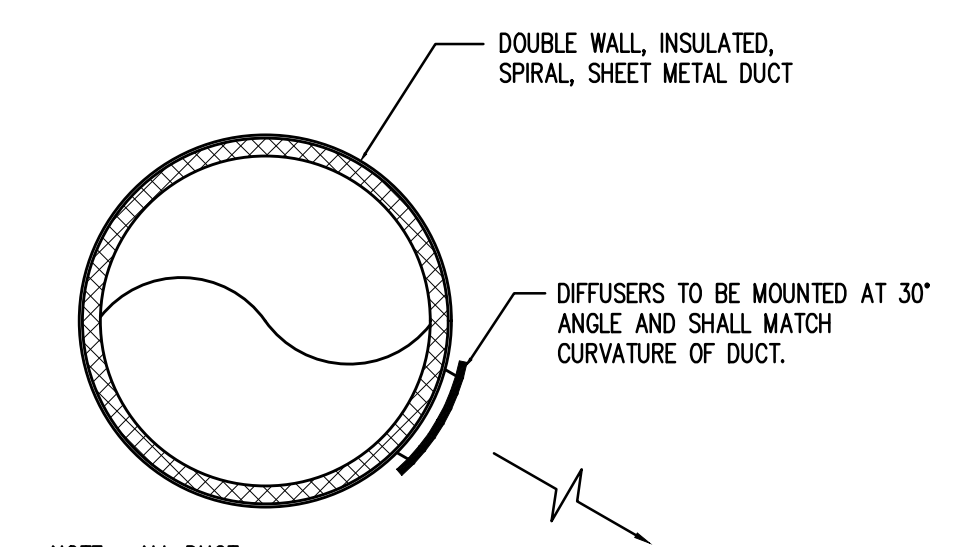
**NOTES:**  
 PROVIDE 2" THICK (R-8 INSTALLED MINIMUM) ARMACELL ARMATUFF LAMINATED SHEET INSULATION OR APPROVED EQUAL.  
 OVERLAP SIDE PIECES OF ARMATUFF WITH TOP PIECE. SEAL AND PROTECT ALL EXPOSED EDGES AND SEAMS WITH ARMATUFF SEAL TAPE OR APPROVED EQUAL.

**4 EXTERIOR DUCT FABRICATION DETAIL**  
 SCALE: NONE



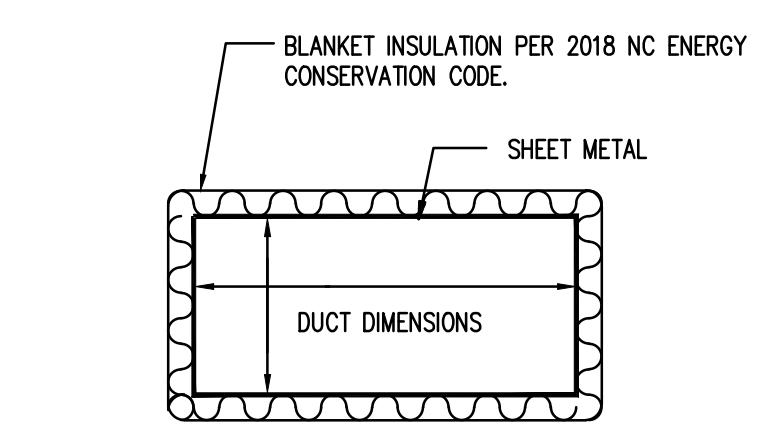
**NOTES:**  
 1. ALL DUCT DIMENSIONS SHOWN ON THESE DRAWINGS ARE INSIDE CLEAR DIMENSIONS.  
 2. SPACE AND INSTALL HANGERS PER LATEST EDITION OF SMACNA.

**1 EXPOSED SPIRAL DUCT FABRICATION DETAIL**  
 SCALE: NONE



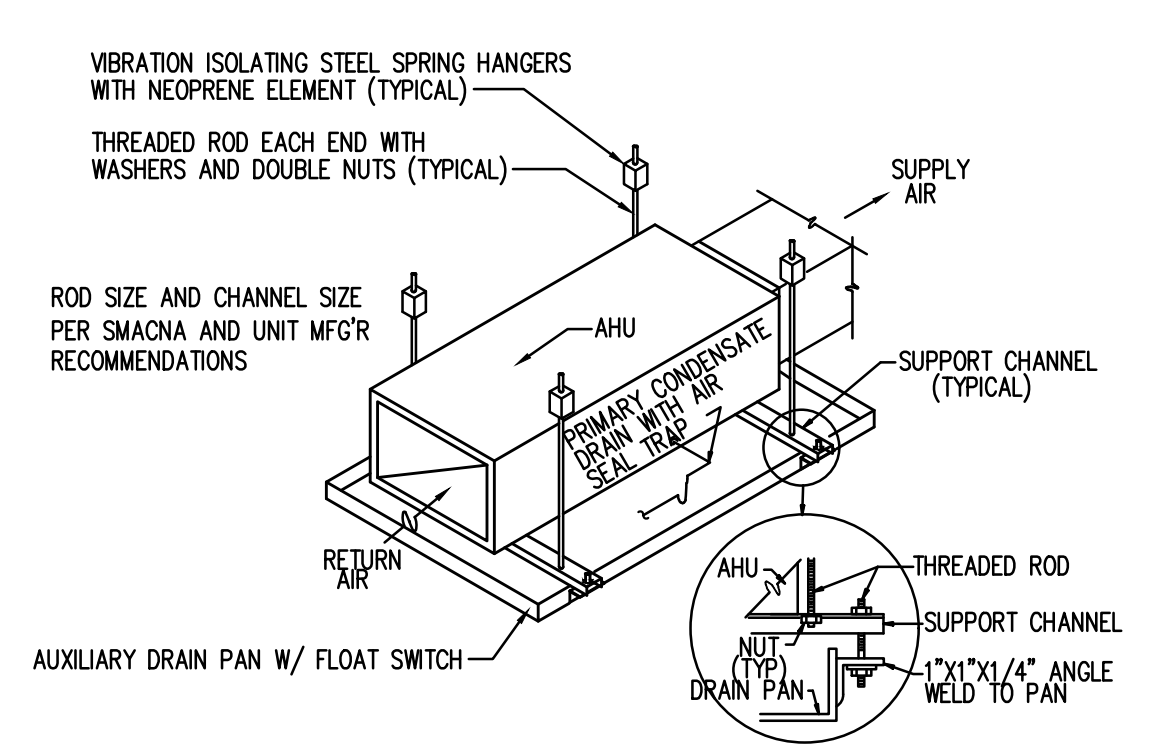
**NOTES:** ALL DUCT DIMENSIONS SHOWN ON THESE DRAWINGS ARE INSIDE CLEAR.

**5 DUCT MOUNTED DIFFUSER DETAIL**  
 SCALE: NONE

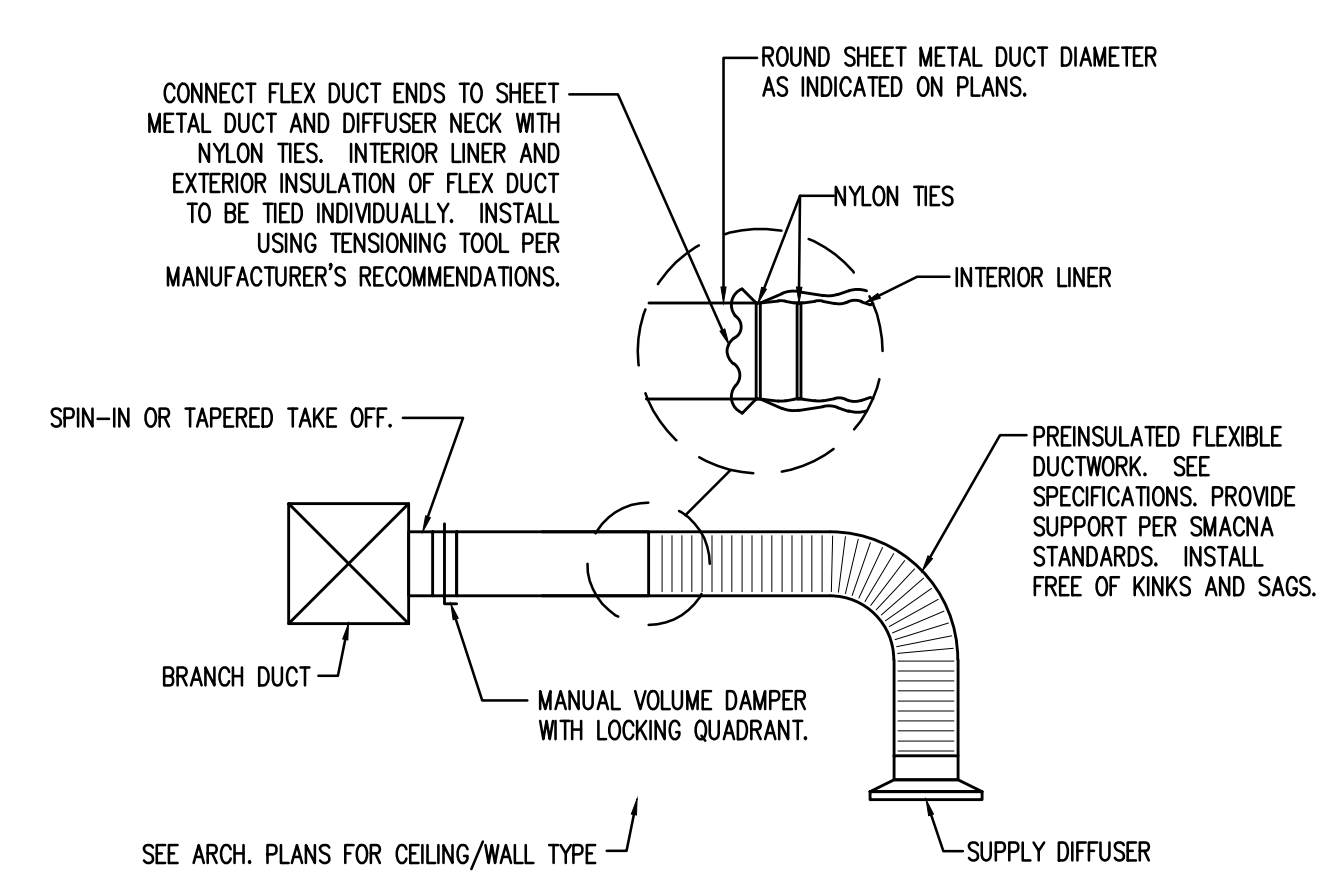


**NOTES:**  
 1. ALL DUCT DIMENSIONS SHOWN ON THESE DRAWINGS ARE INSIDE CLEAR.  
 2. PROVIDE A MINIMUM OF R-6 INSULATION WHEN DUCT IS LOCATED IN UNCONDITIONED SPACE.

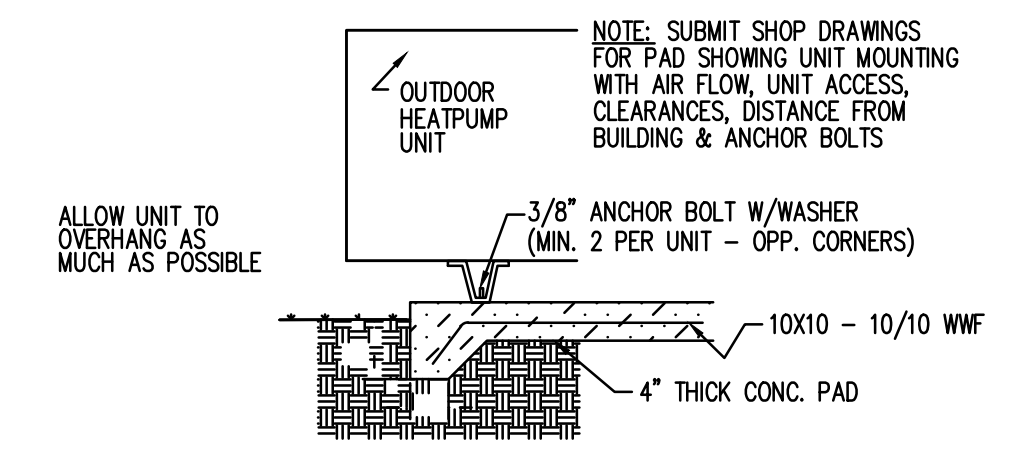
**2 DUCT FABRICATION DETAIL**  
 SCALE: NONE



**6 AHU HANGER DETAIL ABOVE CEILING**  
 SCALE: NONE



**3 FLEXIBLE DUCT TAKE-OFF**  
 SCALE: NONE



**7 OUTDOOR HEAT PUMP MOUNTING DETAIL**  
 SCALE: NONE

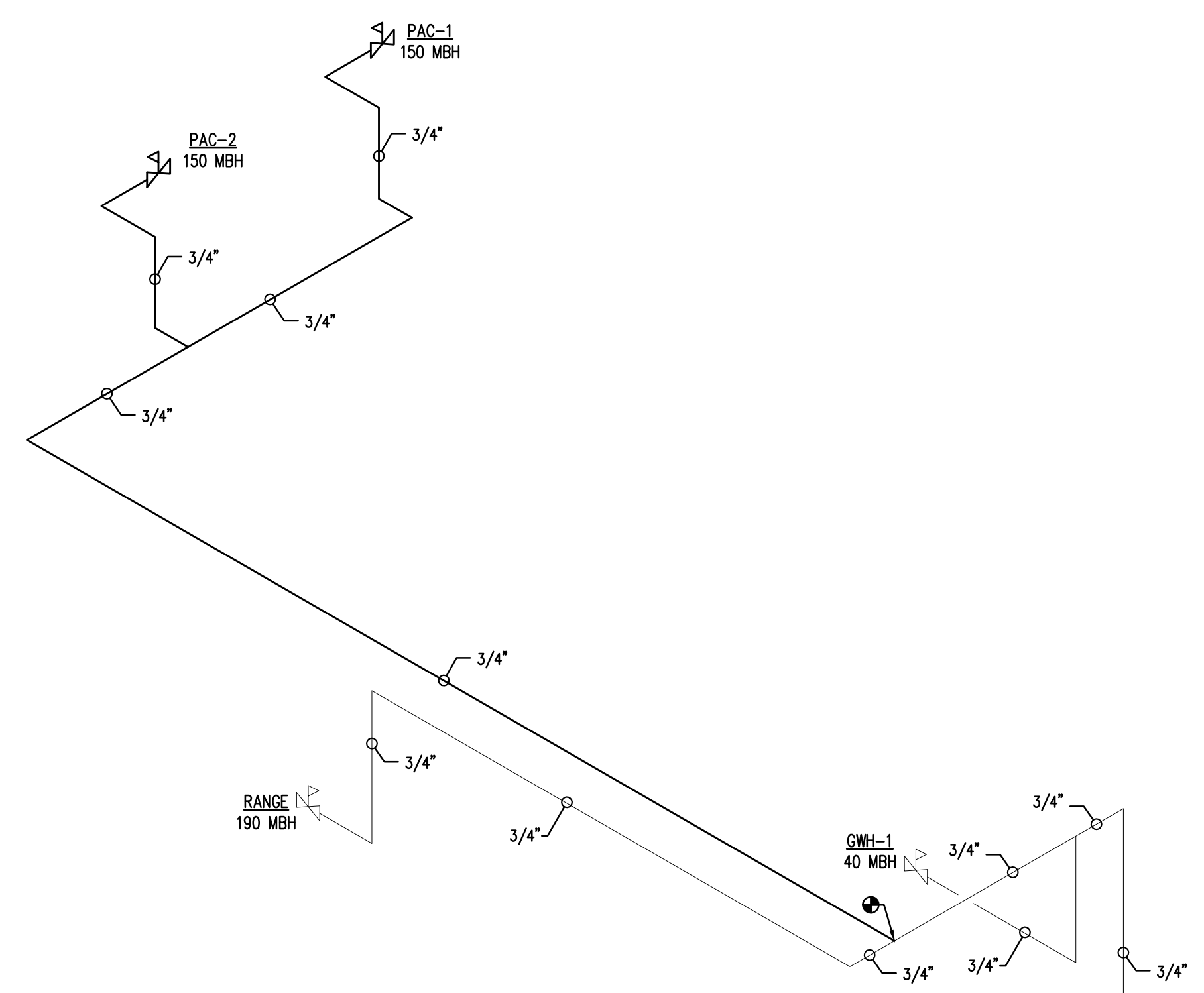
GAS PIPING SIZES UPSTREAM OF MP REGULATORS BASED ON AN INITIAL PRESSURE OF 2 PSI, A PRESSURE DROP OF 1 PSI, 0.6 SPECIFIC GRAVITY GAS AND SCHEDULE 40 PIPE. SIZES BASED ON TABLE 402.4(3) OF THE 2018 NC FUEL GAS CODE. GAS PIPING SIZES DOWNSTREAM OF MP REGULATORS ARE BASED ON A LOW PRESSURE SYSTEM (< 2 PSI), A PRESSURE DROP OF 0.5" WATER COLUMN, 0.8 SPECIFIC GRAVITY GAS AND SCHEDULE 40 PIPE. SIZES BASED ON TABLE 402.4(2) OF THE 2018 NC FUEL GAS CODE.

**GAS RISER NOTES:**

- PROVIDE MANUAL SHUTOFF VALVE FOR EACH PIECE OF GAS EQUIPMENT.
- CONTRACTOR SHALL VERIFY GAS REQUIREMENTS FOR EACH PIECE OF EQUIPMENT PRIOR TO INSTALLING GAS PIPING. CONFIRM EQUIPMENT WITH OWNER.
- GAS PIPING SHALL BE SCHEDULE 40 ASTM A53 OR A120, T&C, WHERE EXPOSED TO WEATHER, PAINT TO PREVENT CORROSION. INSTALL PER NFPA 54.
- MECHANICAL CONTRACTOR TO VERIFY METER LOCATION AND MAXIMUM LINE LENGTHS PRIOR TO INSTALLATION. IF CONDITIONS VARY FROM THOSE SHOWN ON THE DRAWINGS, CONTACT ENGINEER FOR LINE SIZING.
- A LISTED SHUTOFF VALVE SHALL BE INSTALLED IMMEDIATELY AHEAD OF EACH MP REGULATOR.
- MP REGULATORS MUST BE INSTALLED AND VENTED IN ACCORDANCE WITH SECTION 410 OF THE 2018 NC FUEL GAS CODE.
- A TEST TEE FITTING SHALL BE INSTALLED BETWEEN THE MP REGULATOR AND ITS UPSTREAM SHUTOFF VALVE. A SEPARATE TEST TEE FITTING SHALL BE INSTALLED NOT LESS THAN 10 PIPE DIAMETERS DOWN STREAM OF THE MP REGULATOR OUTLET. PROVIDE TEST TEE FITTINGS FOR ANY NEW OR EXISTING MP REGULATORS.

MARK	EQUIPMENT	BTUH INPUT
PAC-1	PACKAGED A/C UNIT	150,000
PAC-2	PACKAGED A/C UNIT	150,000
RANGE	RANGE	190,000
GW-H-1	GAS WATER HEATER	40,000
TOTAL		530,000

MAXIMUM EQUIVALENT LENGTH FROM GAS METER TO MOST REMOTE REGULATOR = 200'  
 MAXIMUM EQUIVALENT LENGTH FROM REGULATOR TO MOST REMOTE APPLIANCE = 10'  
 GAS PIPING SHALL BE 3/4" TRANSITION TO APPLIANCE INLET



**9 GAS RISER**  
 SCALE: NONE

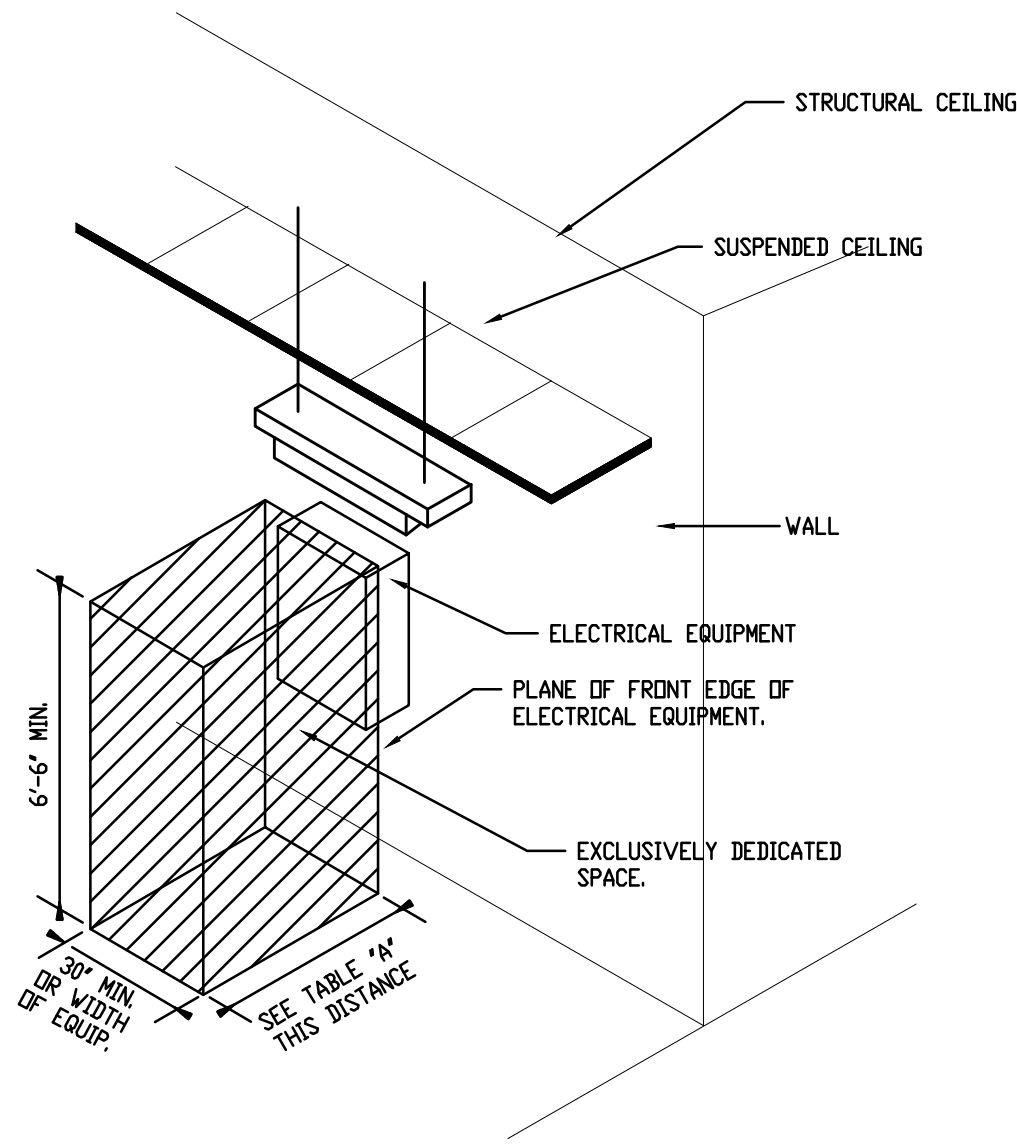


TABLE A - WORKING CLEARANCES				
VOLTAGE TO GROUND NOMINAL	CONDITION	MINIMUM CLEAR DISTANCE (FEET)		
		1	2	3
0-150		3	3	3
151-600		3	3-1/2	4

- WHERE THE 'CONDITIONS' ARE AS FOLLOWS:
- EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR EXPOSED GROUNDING PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS; INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
  - EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDING PARTS ON THE OTHER SIDE.
  - EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

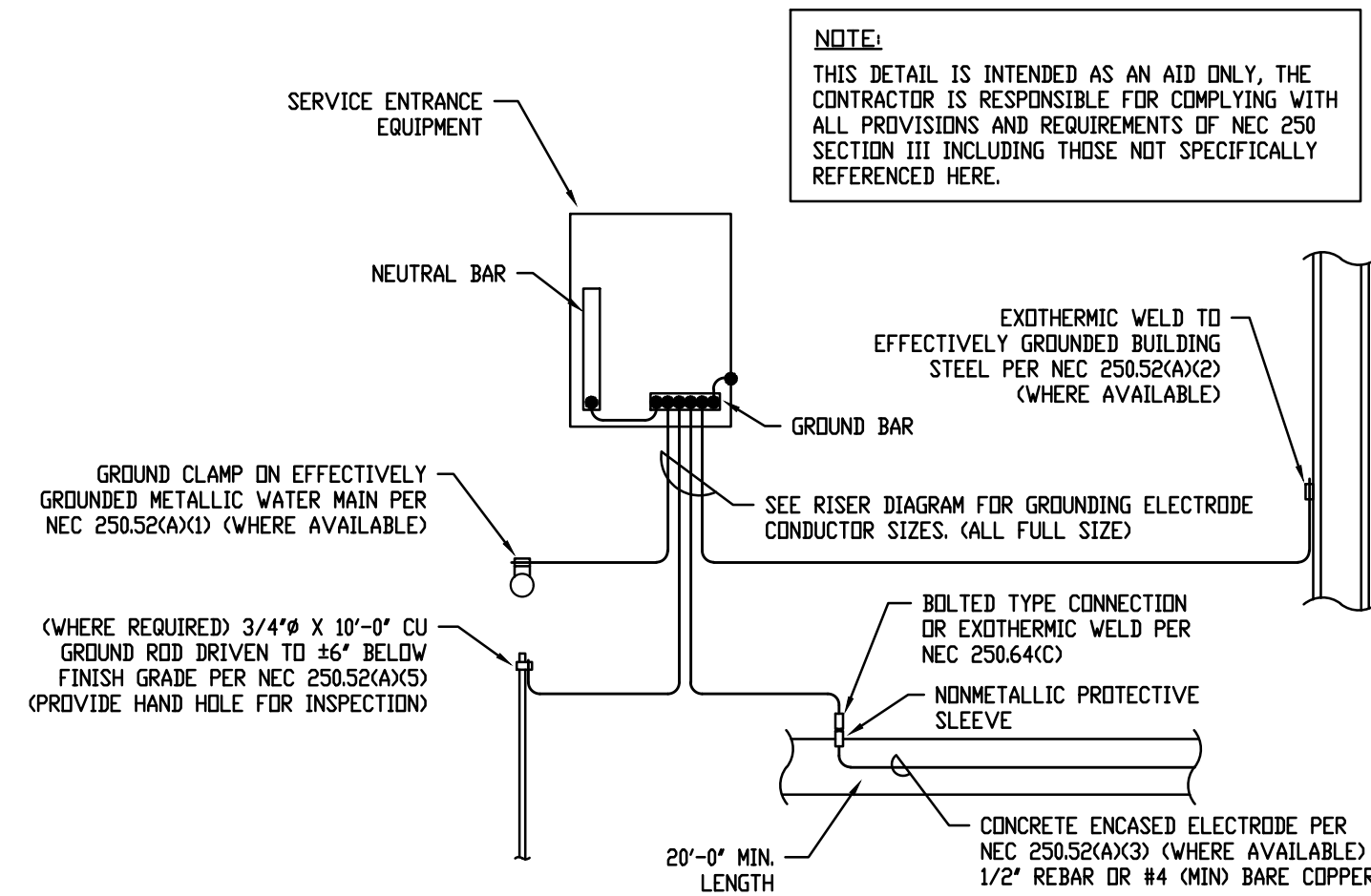
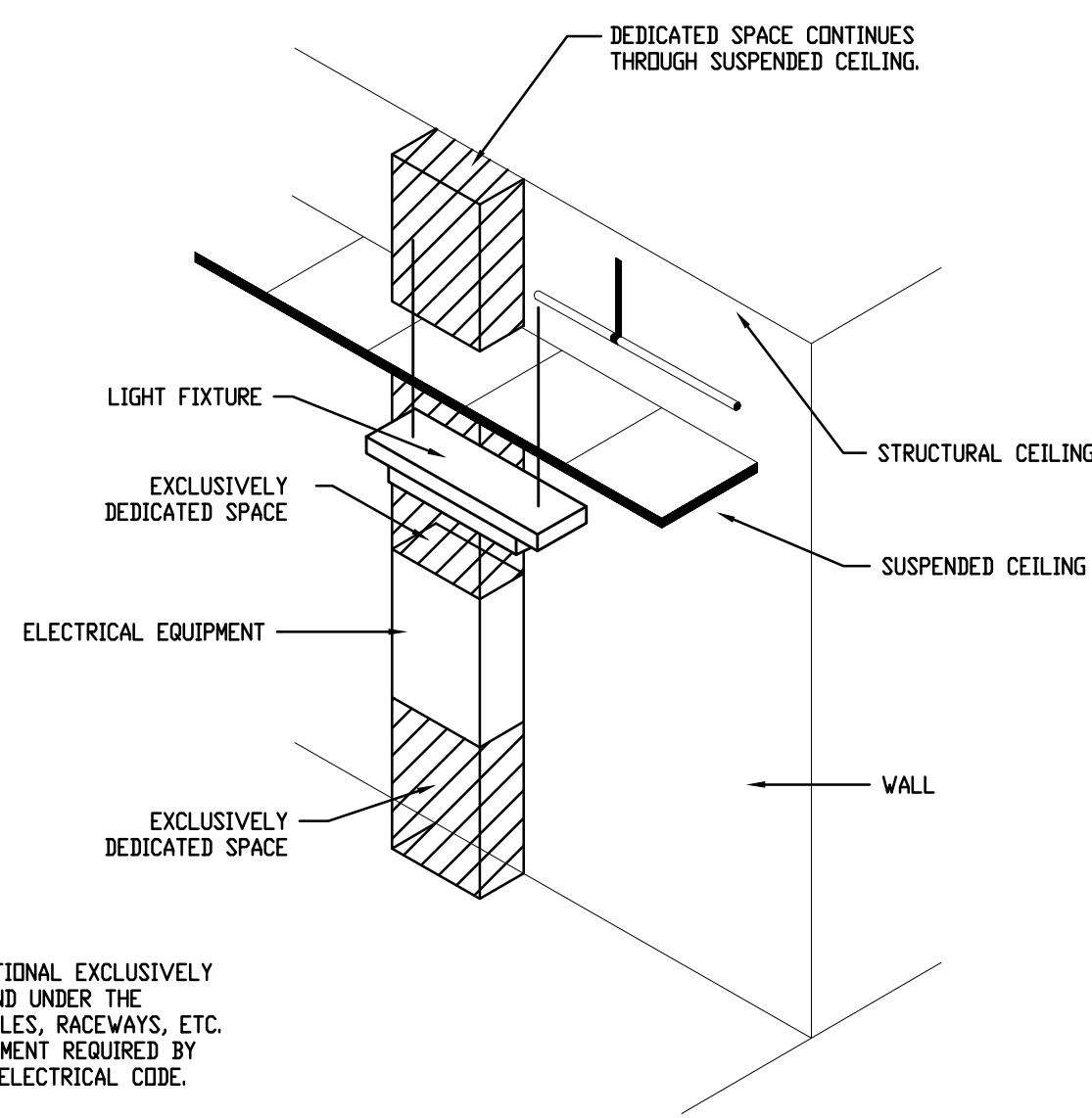
NOTE:  
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.

**1 N.E.C. ART. 110.26 WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT**  
SCALE: NONE

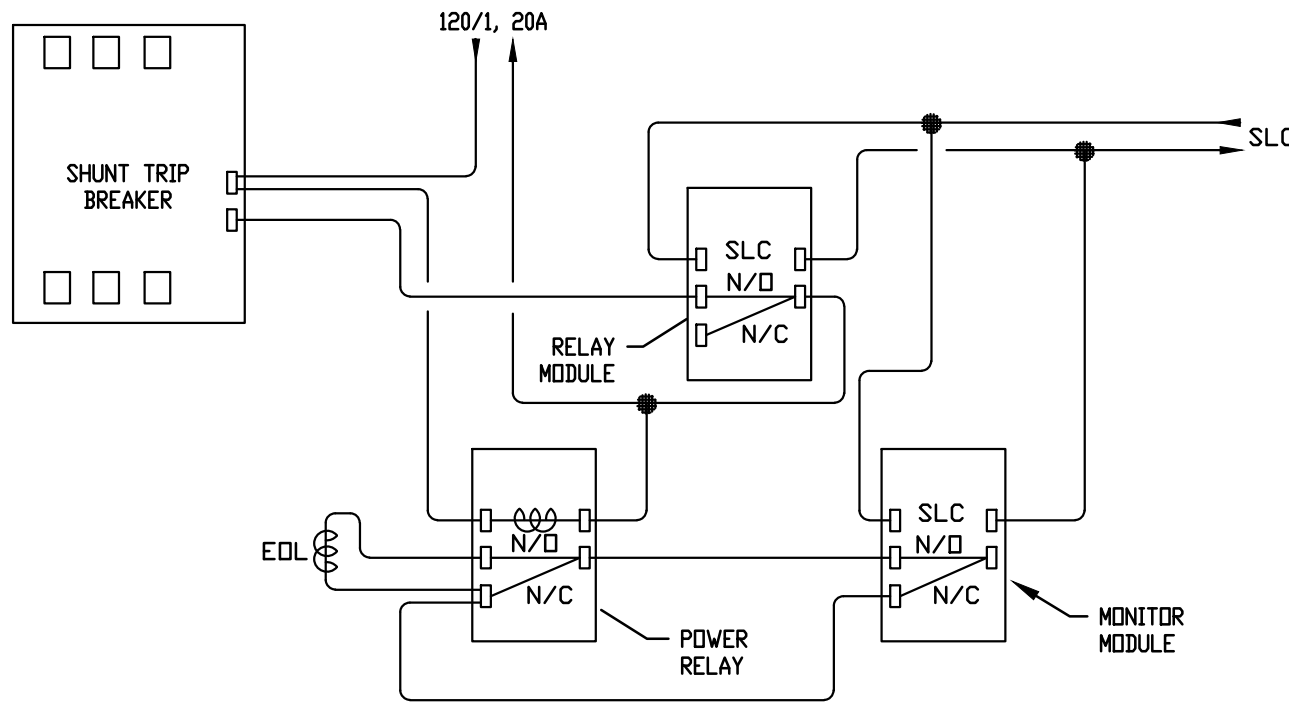


NOTE:  
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER THE ELECTRICAL EQUIPMENT FOR THE CABLES, RACEWAYS, ETC. TO AND FROM THE ELECTRICAL EQUIPMENT REQUIRED BY SECTION 110.26(E) OF THE NATIONAL ELECTRICAL CODE.

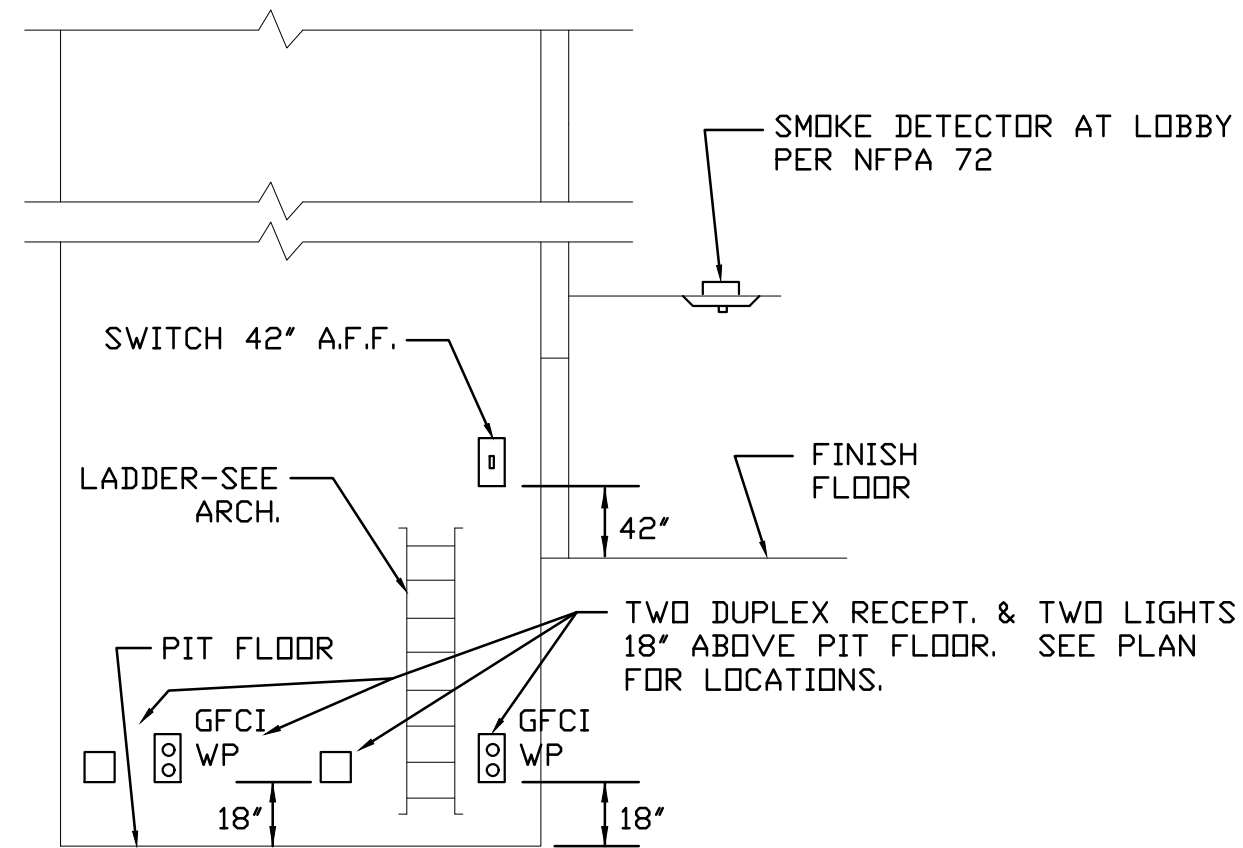
**2 NEC 110.26(E) DEDICATED SPACE FOR ELECTRICAL EQUIPMENT**  
SCALE: NONE



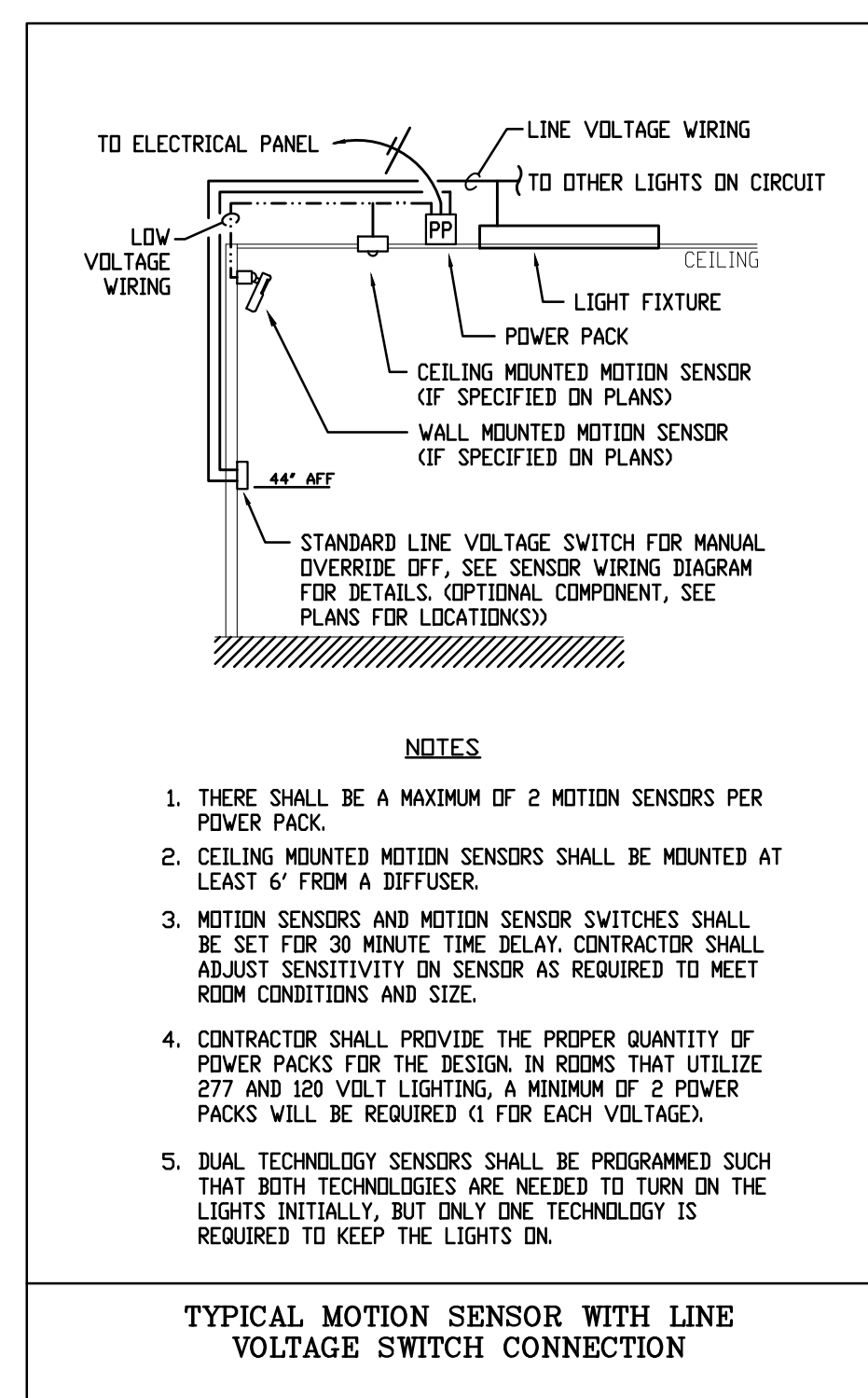
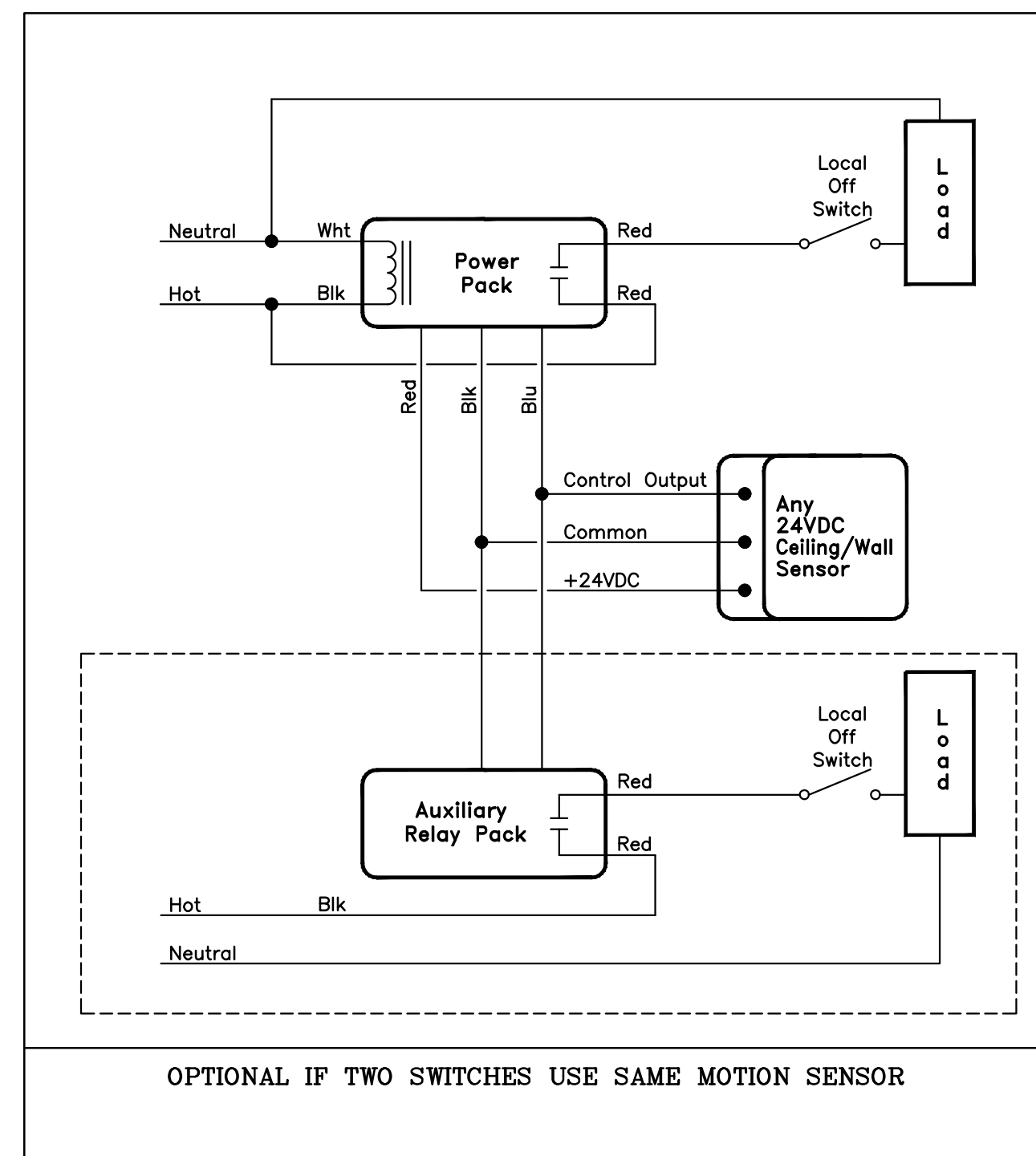
**3 SERVICE GROUND DETAIL**  
SCALE: NONE



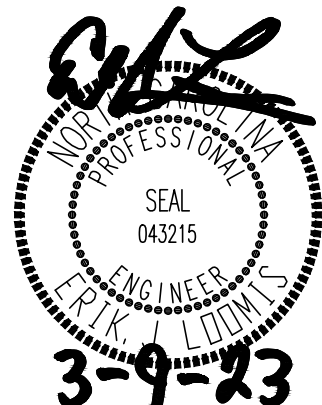
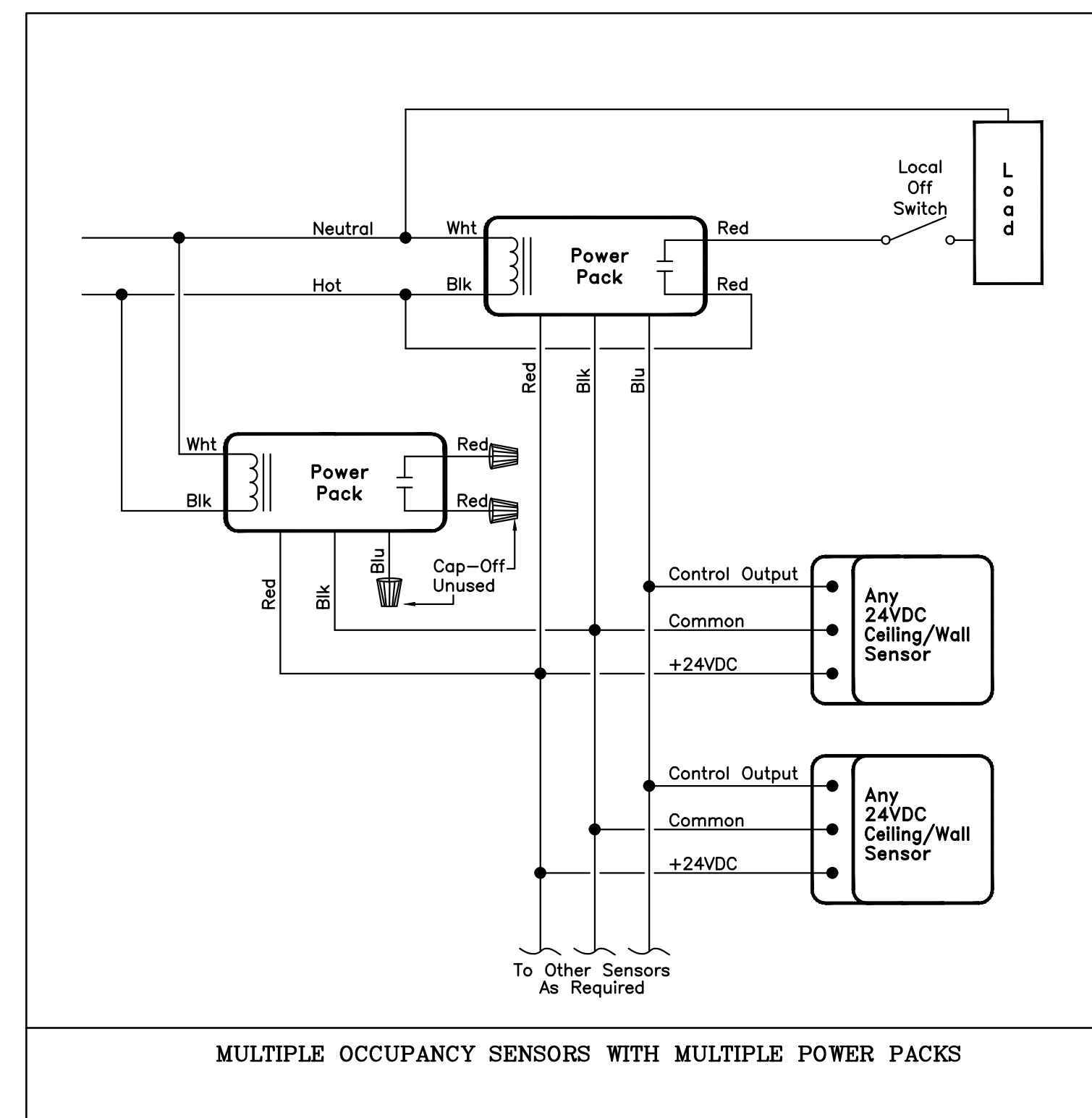
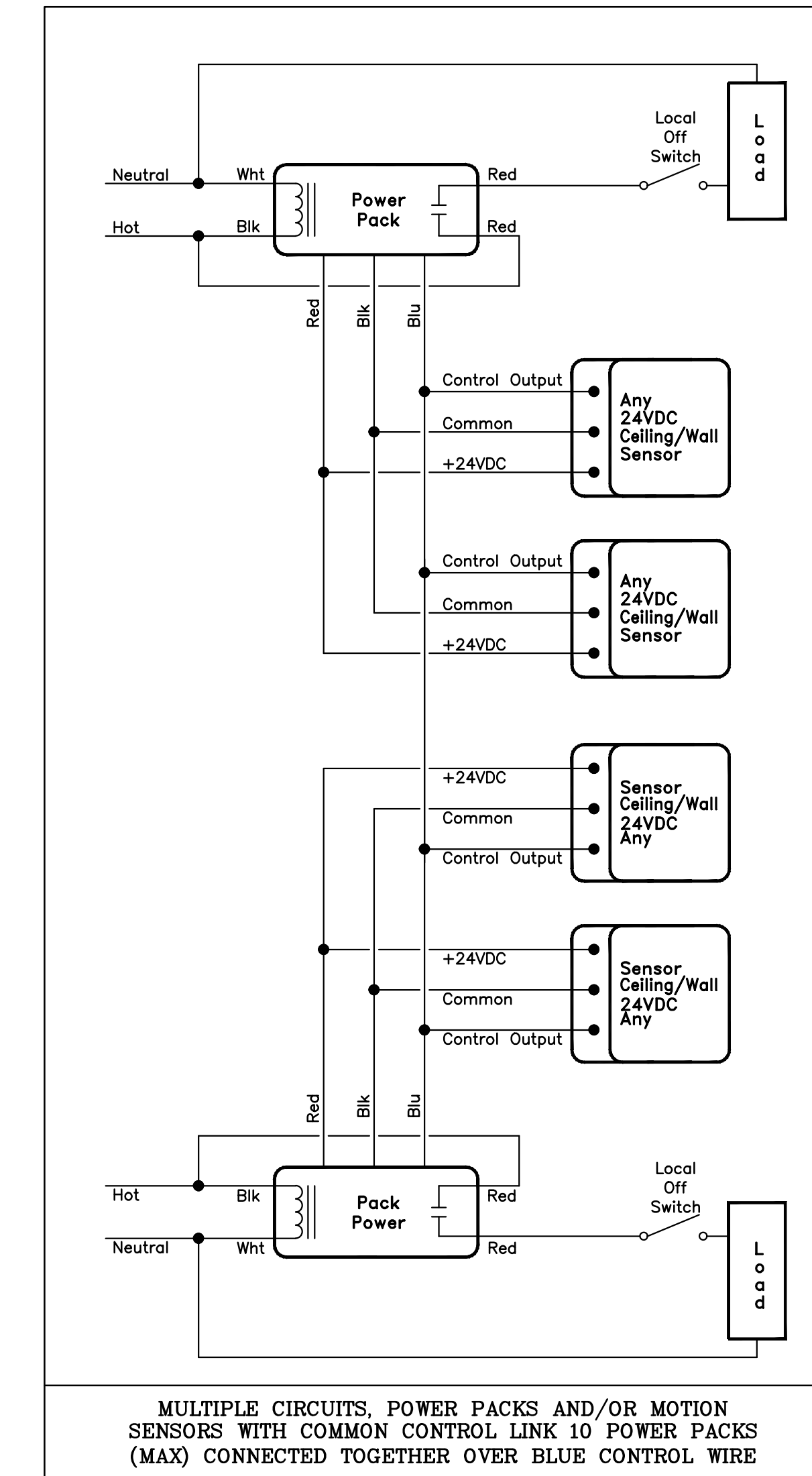
**4 SHUNT TRIP BREAKER DETAIL**  
SCALE: NONE



**5 ELEVATOR PIT DETAIL**  
SCALE: NONE



**6 TYPICAL MOTION SENSOR CONNECTION DETAILS**  
SCALE: NONE



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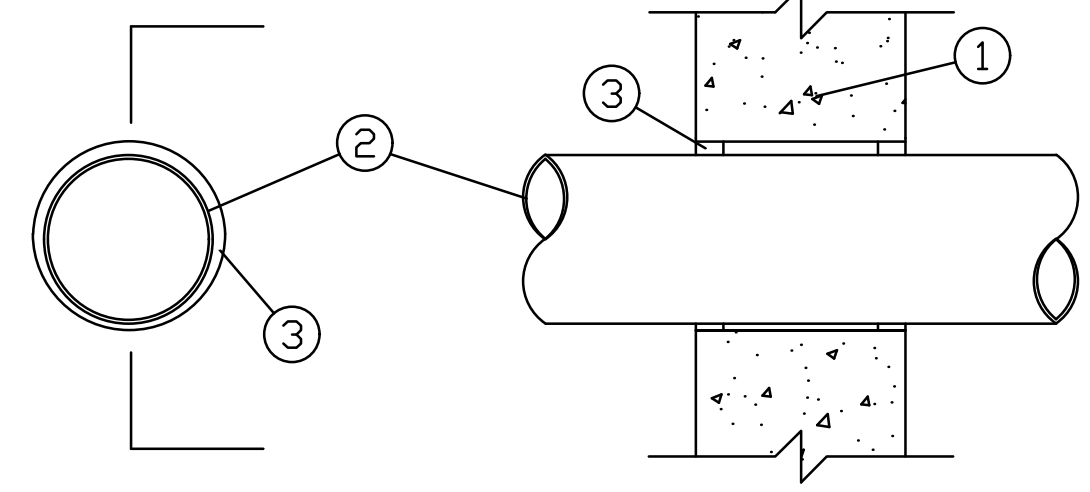
**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
DATE: 03-09-2023  
ELECTRICAL DETAILS

Classified by Underwriters Laboratories, Inc. to ASTM/UL1479 (ASTM E814)

**System No. W-J-1071**  
 F Rating - 4 Hr  
 T Rating - 0 Hr  
 L Rating At Ambient - Less Than 1 CFM/sq ft  
 L Rating At 400 F - Less Than 1 CFM/sq ft



- Wall Assembly - Min 7.5 in. thick concrete masonry unit (CMU) wall with a minimum 2 in. thick mortar bed on both sides of the opening. The mortar bed shall be applied to the exterior and interior surfaces of the CMU wall.
- Through Penetrant - One metallic pipe, conduit or tube to be installed eccentrically or concentrically within the firestop system. The annular space between the pipe, conduit or tube and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm).
- Through Penetrant - One metallic pipe, conduit or tube to be installed eccentrically or concentrically within the firestop system. The annular space between the pipe, conduit or tube and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm).


A. Steel Pipe - Nom 8 in. (203 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.  
 B. Iron Pipe - Nom 8 in. (203 mm) diam (or smaller) cast or ductile iron pipe.  
 C. Conduit - Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit, nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 4 in. (102 mm) diam (or smaller) flexible steel conduit.  
 D. Copper Pipe - Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.  
 E. Copper Tube - Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tube.

Fill, Void or Cavity Material\* - Sealant - Min 1 in. thickness of fill material applied within the annulus, flush with top surface of wall assembly.

ESPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

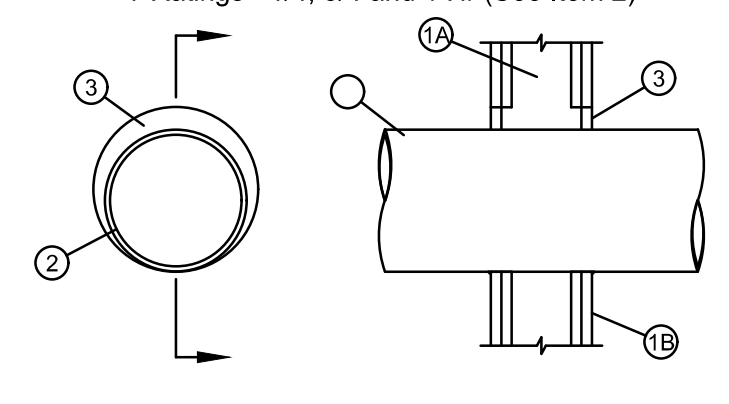
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**1** FOR CMU WALLS ONLY  
**4 HOUR PENETRATION FIRESTOP**  
 FOR METALLIC PIPE, CONDUIT, OR TUBING  
 SCALE: NONE

Classified by Underwriters Laboratories, Inc. to ASTM/UL1479 (ASTM E814)

**System No. W-L-1222**  
 F Ratings - 1 and 2 Hr (See Item 1)  
 T Ratings - 1/4, 3/4 and 1 Hr (See Item 2)




- Wall Assembly - The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:  
 A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.  
 B. Gypsum Board\* - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Max diam of opening is 10-5/8 in. (270 mm).  
 The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
- Through Penetrant - One metallic pipe, conduit or tube to be installed eccentrically or concentrically within the firestop system. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. The annular space between the pipe, conduit or tube and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm). Pipe, conduit or tube to be rigidly supported on both sides of the wall assembly. The following types and sizes of metallic pipes, conduits and tubes may be used:  
 A. Steel Pipe - Nom 8 in. (203 mm) diam (or smaller) Schedule 5 (or heavier) steel pipe.  
 B. Iron Pipe - Nom 8 in. (203 mm) diam (or smaller) cast or ductile iron pipe.  
 C. Conduit - Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit, nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or nom 4 in. (102 mm) diam (or smaller) flexible steel conduit.  
 D. Copper Pipe - Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.  
 E. Copper Tube - Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tube.


- Through Penetrating Product\* - Flexible Metal Piping - As an alternate to Item 2, one nom 1-1/4 in. (32 mm) diam (or smaller) steel flexible metal pipe to be installed either concentrically or eccentrically within the firestop system. The annular space between the pipe and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 2 in. (51 mm). Pipe to be rigidly supported on both sides of the wall assembly.  
 OMEGA FLEX INC  
 GASTITE, DIV OF TITEFLEX  
 WARD MFG L L C
- Fill, Void or Cavity Material\* - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall assembly. At point contact location, min 1/4 in. (6 mm) diam bead of fill material applied at metallic pipe/gypsum board interface on both surfaces of wall.  
 SPECIFIED TECHNOLOGIES INC - SpecSeal LCI Sealant

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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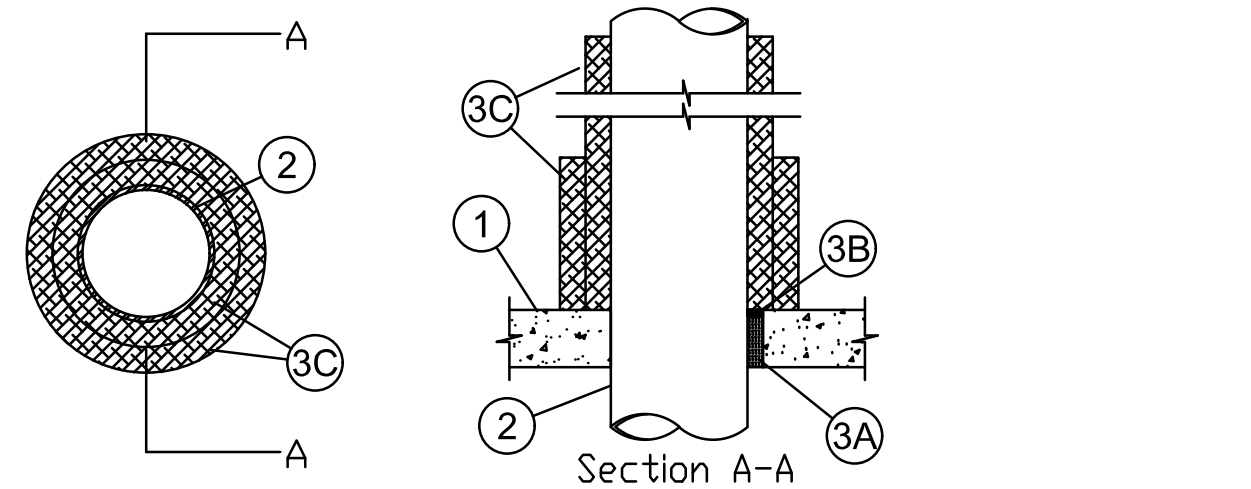


**2** FOR FRAMED WALLS ONLY  
**1 OR 2 HOUR PENETRATION FIRESTOP**  
 FOR METALLIC PIPE, CONDUIT, OR TUBING  
 SCALE: NONE

Classified by Underwriters Laboratories, Inc. to ANSI/UL 1479 (ASTM E814) and CAN/ULC S115


**System No. F-A-1093**

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Ratings - 1-1/2, 1-3/4 and 2 Hr (See Item 2)	FT Ratings - 1-1/2, 1-3/4 and 2 Hr (See Item 2)
L Rating At Ambient - Less Than 1 CFM/sq ft	FH Rating - 2 Hr
L Rating At 400 F - Less Than 1 CFM/sq ft	FTH Ratings - 1-1/2, 1-3/4 and 2 Hr (See Item 2)
W Rating - Class 1 (See Item 3B)	L Rating At Ambient Less Than 5.1 L/s/m <sup>2</sup>
	L Rating At 204 C Less Than 5.1 L/s/m <sup>2</sup>



- Floor Assembly - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete. As an alternate, any min 2 hr fire rated D700, D800 or D900 Series Floor-Ceiling Design in the UL Fire Resistance Directory having a min 2-1/2 in. (64 mm) thickness of lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete topping over the steel deck may be used. Floor may also be constructed of any min 6 in. (152 mm) thick hollow core UL Classified Precast Concrete Units\*. Max diam of opening 12 in. (305 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm).
- Through-Penetrant - One metallic pipe, conduit or tubing installed concentrically or eccentrically within opening. Annular space between penetrant and periphery of opening shall be min of 0 in. (0 mm, point contact) to max 2 in. (51 mm). Penetrant to be rigidly supported on both sides of floor assembly. The following types and sizes of penetrants may be used:  
 A. Steel Pipe - Nom 10 in. (254 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.  
 B. Iron Pipe - Nom 10 in. (254 mm) diam (or smaller) cast or ductile iron pipe.  
 C. Copper Tubing - Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.  
 D. Copper Pipe - Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.  
 E. Conduit - Nom 6 in. (152 mm) diam (or smaller) steel conduit, nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT), or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.  
 The T, FT and FTH Ratings are 2 Hr when Item 2A, 2B or 2E is used or when max 2 in. (51 mm) diam copper tubing (Item 2C) or copper pipe (Item 2D) is used. The T, FT and FTH Ratings are 1-1/2 hr when copper tubing or copper pipe (Item 2C or 2D) larger than nom 2 in. (51 mm) diam is used in floors having a min concrete thickness which is less than 4-1/2 in. (114 mm). The T, FT and FTH Ratings are 1-3/4 Hr when copper tubing or copper pipe (Item 2C or 2D) larger than nom 2 in. (51 mm) diam is used in floors having a min 4-1/2 in. (114 mm) concrete thickness.

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**3** FOR CONCRETE SLAB  
**2 HOUR PENETRATION FIRESTOP**  
 FOR METALLIC PIPE, CONDUIT, OR TUBING  
 SCALE: NONE

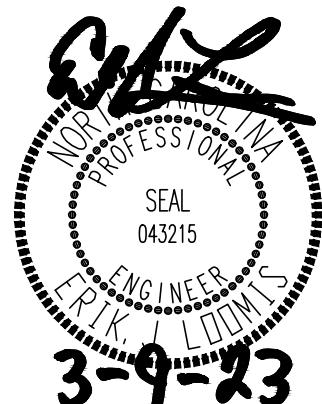
- Firestop System - The details of the firestop system shall be as follows:  
 A. Packing Material - Min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to extend through entire thickness of concrete floor except for recess at top surface of floor to accommodate the required thickness of fill material.  
 B. Fill, Void or Cavity Materials\* - Sealant or Putty - Min 1/2 in. (13 mm) thickness of caulk or putty applied within the annulus, flush with top surface of floor. At point contact, apply min 1/4 in. (6 mm) bead at penetrant/concrete interface on top surface of floor.  
 SPECIFIED TECHNOLOGIES INC - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal LC150 Sealant, SpecSeal LE600 Sealant, SpecSeal Putty, Pensil 300 Sealant or SpecSeal Series SIL300 Sealant for floors or walls and Pensil 300 SL Sealant or SpecSeal Series SIL300SL Sealant for floors only.  
 W Rating applies only when Pensil 300, SpecSeal Series SIL300, Pensil 300 S/L or SpecSeal Series SIL300SL Sealants are used with solid penetrant (not flexible steel conduit).  
 C. Duct Wrap Material\* - Min 1-1/2 in. (38 mm) thick duct wrap tightly wrapped around penetrant to extend 36 in. (914 mm) above floor. An additional layer of min 1-1/2 in. (38 mm) thick duct wrap tightly wrapped around the first layer of duct wrap to extend 12 in. (305 mm) above floor. All longitudinal seams of both layers of duct wrap are sealed with foil tape.  
 THERMAL CERAMICS INC - FireMaster FastWrap\*, FireMaster FastWrap XL, or Pyroscat Duct Wrap XL.

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

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**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023

ELECTRICAL  
 DETAILS

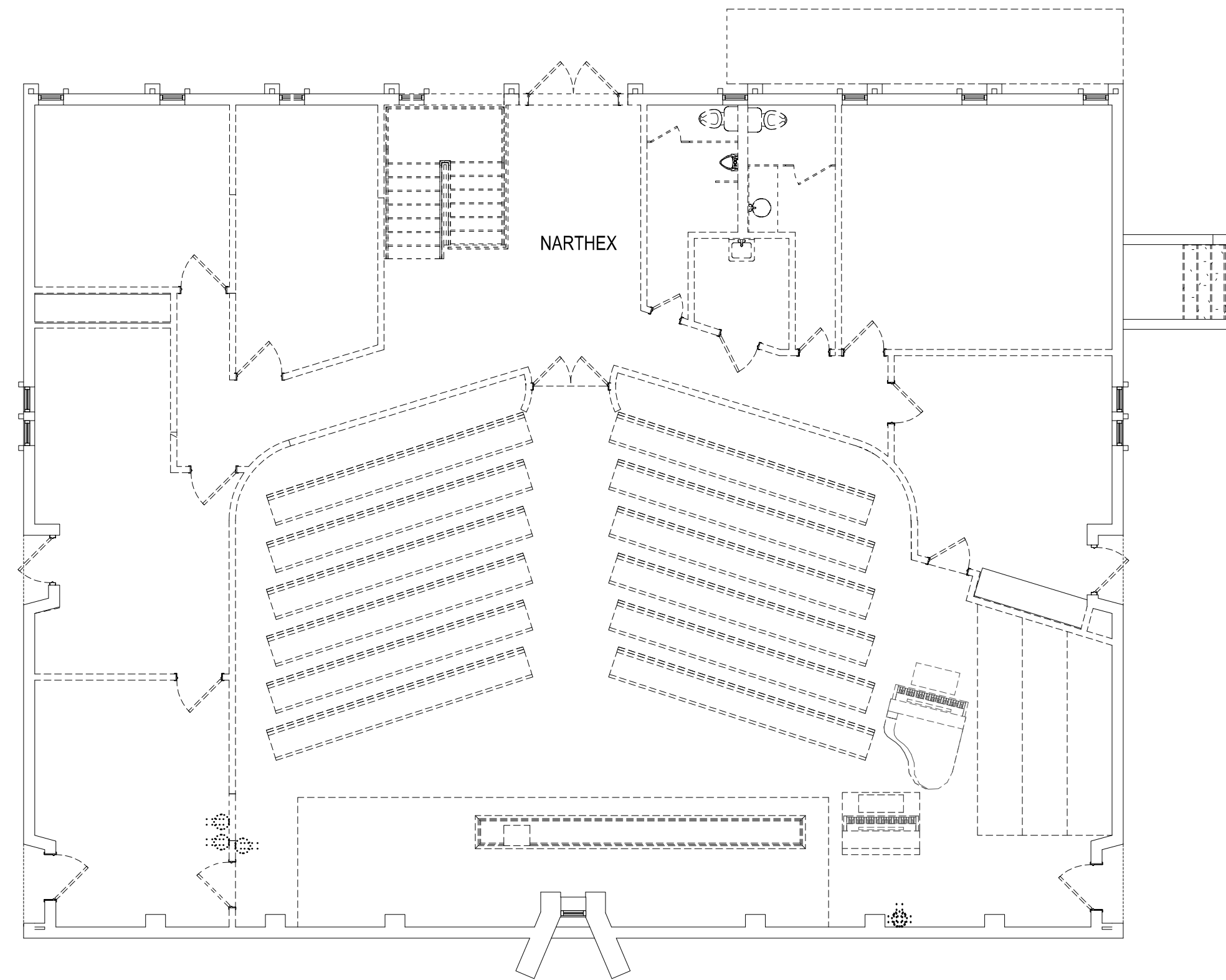
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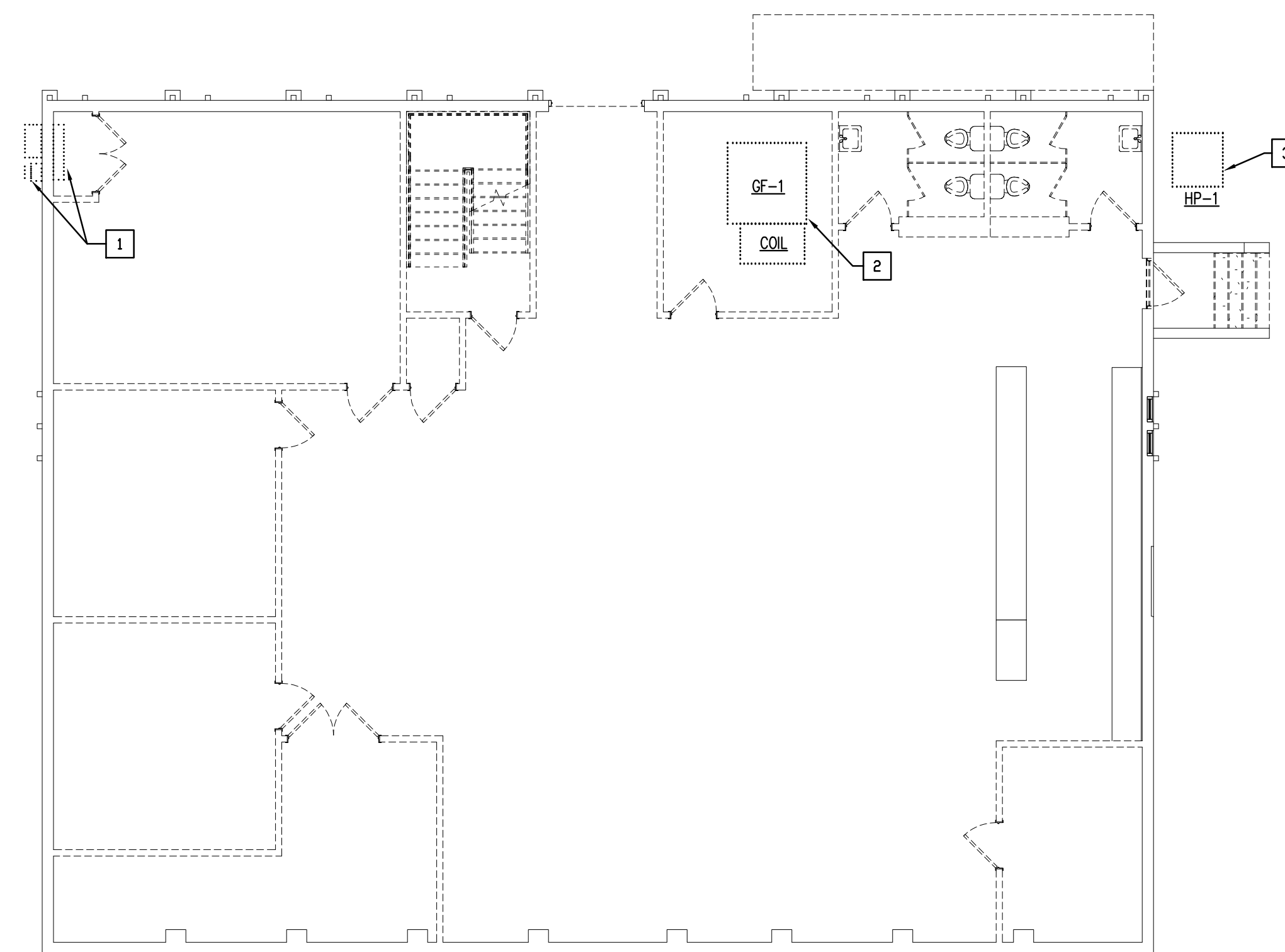


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**1 FIRST FLOOR PLAN - POWER DEMOLITION**  
 SCALE: 1/8" = 1'-0"

- PLAN NOTES:**
- EXISTING ELECTRICAL SERVICE TO BE REPLACED AND UPGRADED. SEE ELECTRICAL DEMOLITION RISER DIAGRAM AND ELECTRICAL RISER DIAGRAM.
  - MECHANICAL CONTRACTOR IS REMOVING THE EXISTING GAS FURNACE. EC SHALL REMOVE BRANCH CIRCUIT BACK TO EXISTING JUNCTION BOX AND LABEL FOR POSSIBLE REUSE AS REQUIRED. COORDINATE WITH MECHANICAL.
  - MECHANICAL CONTRACTOR IS REMOVING THE EXISTING HEAT PUMP. EC SHALL REMOVE BRANCH CIRCUIT BACK TO EXISTING JUNCTION BOX AND LABEL FOR POSSIBLE REUSE AS REQUIRED. COORDINATE WITH MECHANICAL.



**2 BASEMENT PLAN - POWER DEMOLITION**  
 SCALE: 1/8" = 1'-0"

**NOTE:**  
 THE EXISTING LOCATIONS SHOWN ON BEMO PLAN TO BE REMOVED OR RELOCATED ARE FOR REFERENCE ONLY AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. ANY ITEMS REQUIRED TO BE REMOVED OR RELOCATED SHALL BE INCLUDED IN CONTRACTOR'S COST, WHETHER SHOWN ON THIS PLAN OR NOT. UNLESS SPECIFICALLY NOTED OTHERWISE, WHERE A DEVICE OR ITEM IS NOTED TO BE DEMOLISHED, THE WORK SHALL INCLUDE REMOVING ALL ASSOCIATED BOXES, CONDUITS, CONDUCTORS, CABLES, ETC. AND SHALL INCLUDE ANY PATCH, REPAIR, PAINT OR REFINISH NECESSARY TO RESTORE THE LOCATION TO MATCH THE SURROUNDING. THE CONTRACTOR MAY REUSE ANY EXISTING CONDUCTORS, BOXES, ETC. WHERE THEY HAVE BEEN INSPECTED AND ARE DETERMINED TO BE ACCEPTABLE TO THE OWNER AND/OR IN LIKE-NEW CONDITION.

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

—————	EXISTING WALL TO REMAIN
—————	NEW WALL TO BE CONSTRUCTED
- - - - -	EXISTING WALL TO BE DEMOLISHED
—————	ONE HOUR FIRE BARRIER

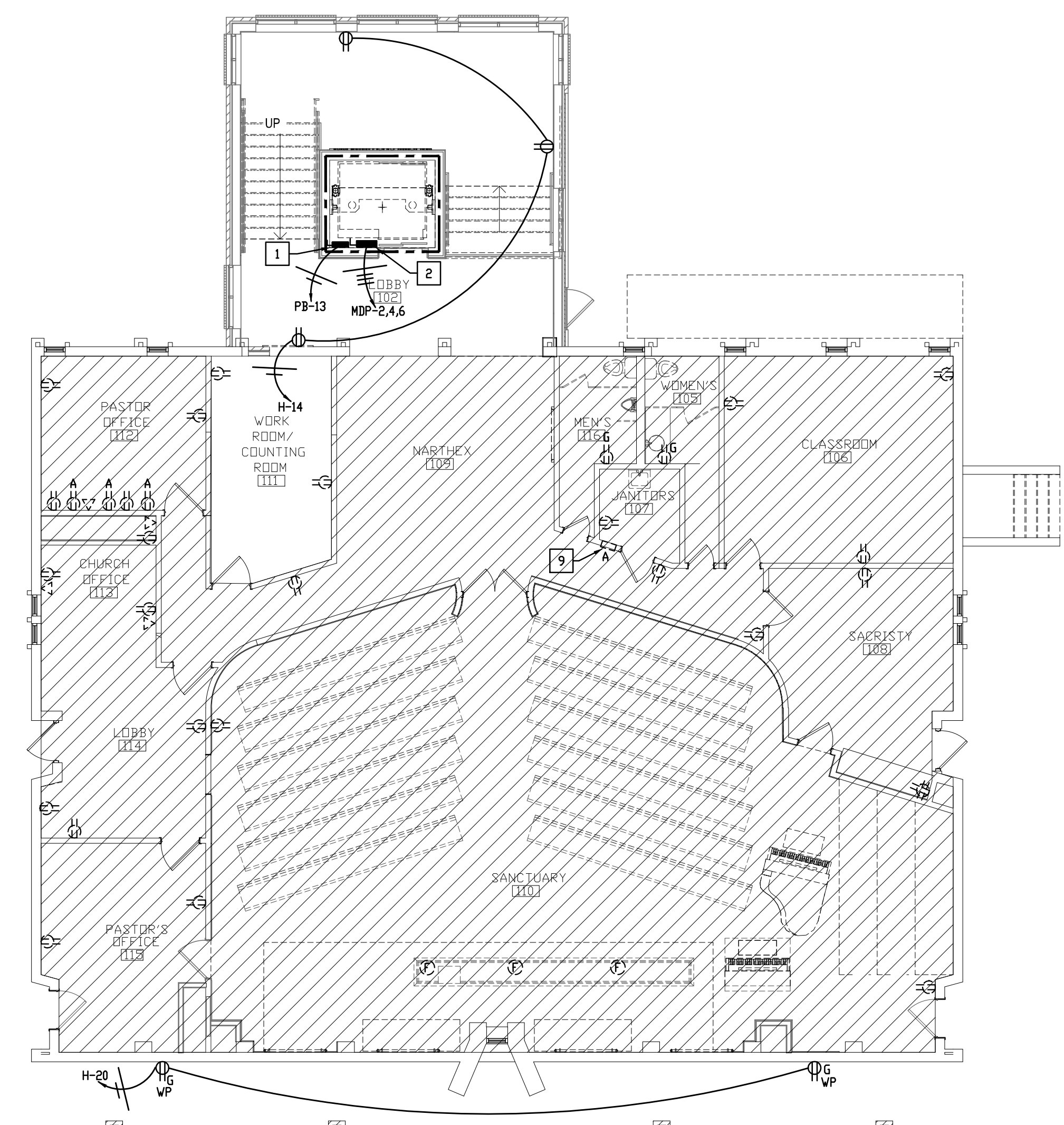
**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

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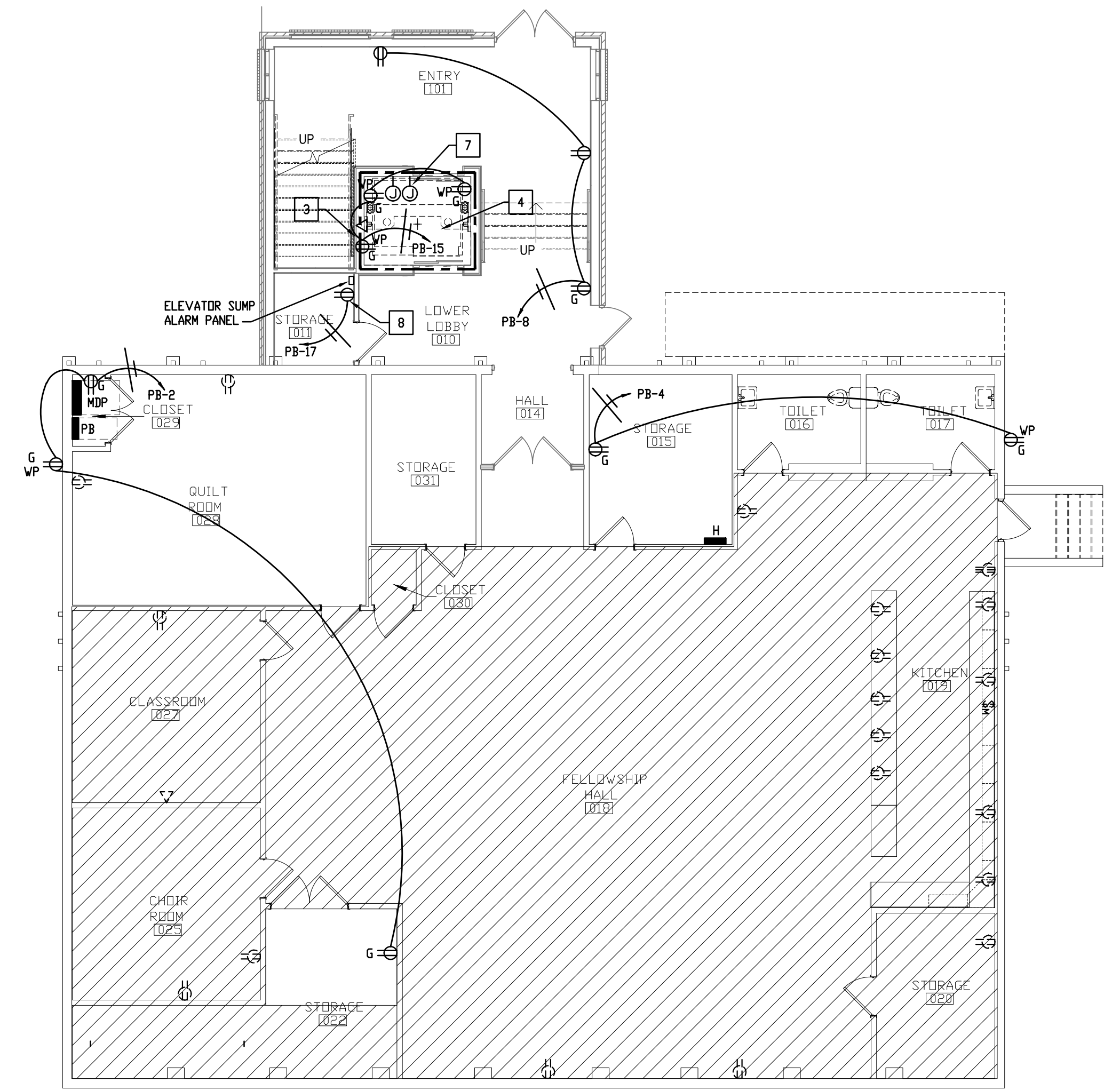
No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023

FLOOR PLANS -  
 POWER DEMOLITION



**2 FIRST FLOOR PLAN - POWER**  
 SCALE: 1/8" = 1' - 0"



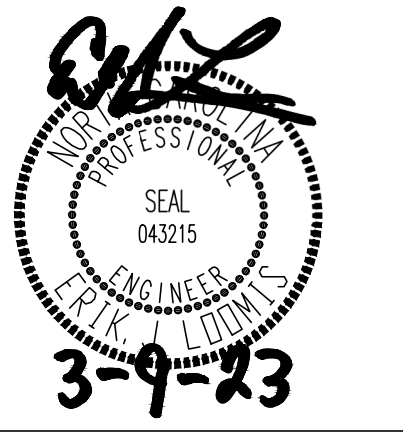
**1 GROUND FLOOR PLAN - POWER**  
 SCALE: 1/8" = 1' - 0"

**NOTES**

- INDIVIDUAL BRANCH CIRCUITS ARE SHOWN WITH A DEDICATED NEUTRAL UNLESS INDICATED OTHERWISE. WHEN MULTIWIRE BRANCH CIRCUITS ARE TO BE INSTALLED, PROVIDE MULTIPLE CIRCUIT BREAKERS AS REQUIRED BY NEC 210.4(B).
- ALL ELECTRICAL BOXES MOUNTED IN RATED WALLS SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSBC, SECTION 714.3.2. ALL ELECTRICAL BOXES MOUNTED IN RATED CEILING/HORIZONTAL ASSEMBLIES SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSBC, SECTION 714.4.2. UNLESS OTHERWISE NOTED, DEVICES SHOWN IN RATED ASSEMBLIES SHALL BE FLUSH WITH CONDUIT CONCEALED. PROVIDE HORIZONTAL SEPARATION PUTTY PANS, RATED BOXES ETC. AS REQUIRED FOR REQUIRED INSTALLATION. ALL LOW VOLTAGE ELECTRICAL DEVICES MOUNTED IN RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE SECTIONS LISTED ABOVE.
- SEE VOLTAGE DROP SCHEDULE ON DETAILS SHEET FOR WIRE SIZING INFORMATION FOR ALL BRANCH CIRCUITS OVER 65' IN LENGTH.
- ALL RECEPTACLES WITHIN 6 FEET FROM THE OUTSIDE EDGE OF ANY SINK SHALL BE GFI PER NEC 210.8(B)(5).

**PLAN NOTES:**

- 30% DISCONNECT SWITCH FOR ELEVATOR CAB LIGHTS. COORDINATE EXACT LOCATION AND REQUIREMENTS W/ EQUIPMENT SUPPLIER PRIOR TO BEGINNING WORK. PROVIDE LABELING FOR DISCONNECT SWITCH PER NEC 620.52.
- DISCONNECT SWITCH FOR ELEVATOR CONTROLLER. IF ELEVATOR IS EQUIPPED WITH AN EMERGENCY RETURN UNIT PROVIDE MICROSWITCH AND AUXILIARY CONTACT ON DISCONNECT SWITCH AS REQUIRED. COORDINATE EXACT LOCATION AND REQUIREMENTS W/ EQUIPMENT SUPPLIER PRIOR TO BEGINNING WORK. PROVIDE LABELING FOR DISCONNECT SWITCH PER NEC 620.52.
- POWER AND DATA IN LOCATION REQUIRED BY ELEVATOR SUPPLIER FOR ELEVATOR EQUIPMENT SERVICE.
- SEE ELEVATOR PIT DETAIL.
- FLUSH FLOOR BOX FOR POWER & DATA. VERIFY EXACT LOCATION W/ ARCHITECT PRIOR TO ROUGH-IN. SEE LEGEND FOR SPECIFICATION.
- FLUSH FLOOR BOX FOR POWER ONLY. VERIFY EXACT LOCATION W/ ARCHITECT PRIOR TO ROUGH-IN. SEE LEGEND FOR SPECIFICATION.
- PROVIDE JUNCTION BOXES, 1-2" CONDUIT, AND 1-1/2" CONDUIT W/ PULL WIRE TO SUMP PUMP CONTROL PANEL LOCATION. COORDINATE W/ PLUMBING.
- PROVIDE 120V RECEPTACLE NEAR SUMP PUMP CONTROL PANEL IN STORAGE 011. FIELD COORDINATE EXACT REQUIREMENTS AND LOCATION WITH PLUMBING CONTRACTOR PRIOR TO BEGINNING WORK. SEE PLUMBING FOR MORE DETAILS. PROVIDE 1/2-2" CONDUIT, AND 1-1/2" CONDUIT W/ PULL WIRE TO EACH ELEVATOR PIT.
- EXISTING PANEL 'A' TO REMAIN AND BE RECONNECTED. SEE NEW ELECTRICAL RISER DIAGRAM.



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**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

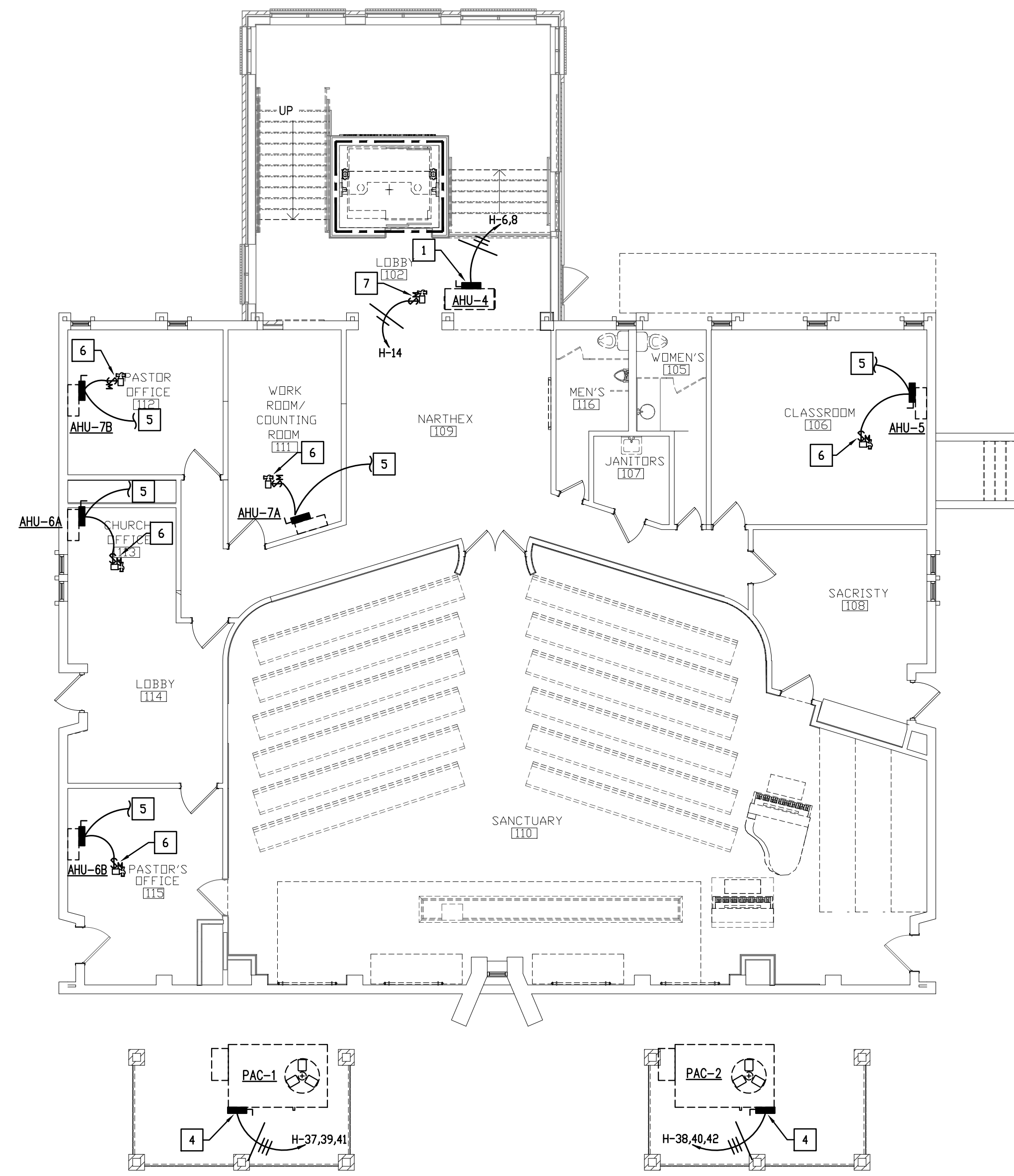
PROJECT #: 210029  
 DATE: 03-09-2023

FLOOR PLANS - POWER

**E1.2**

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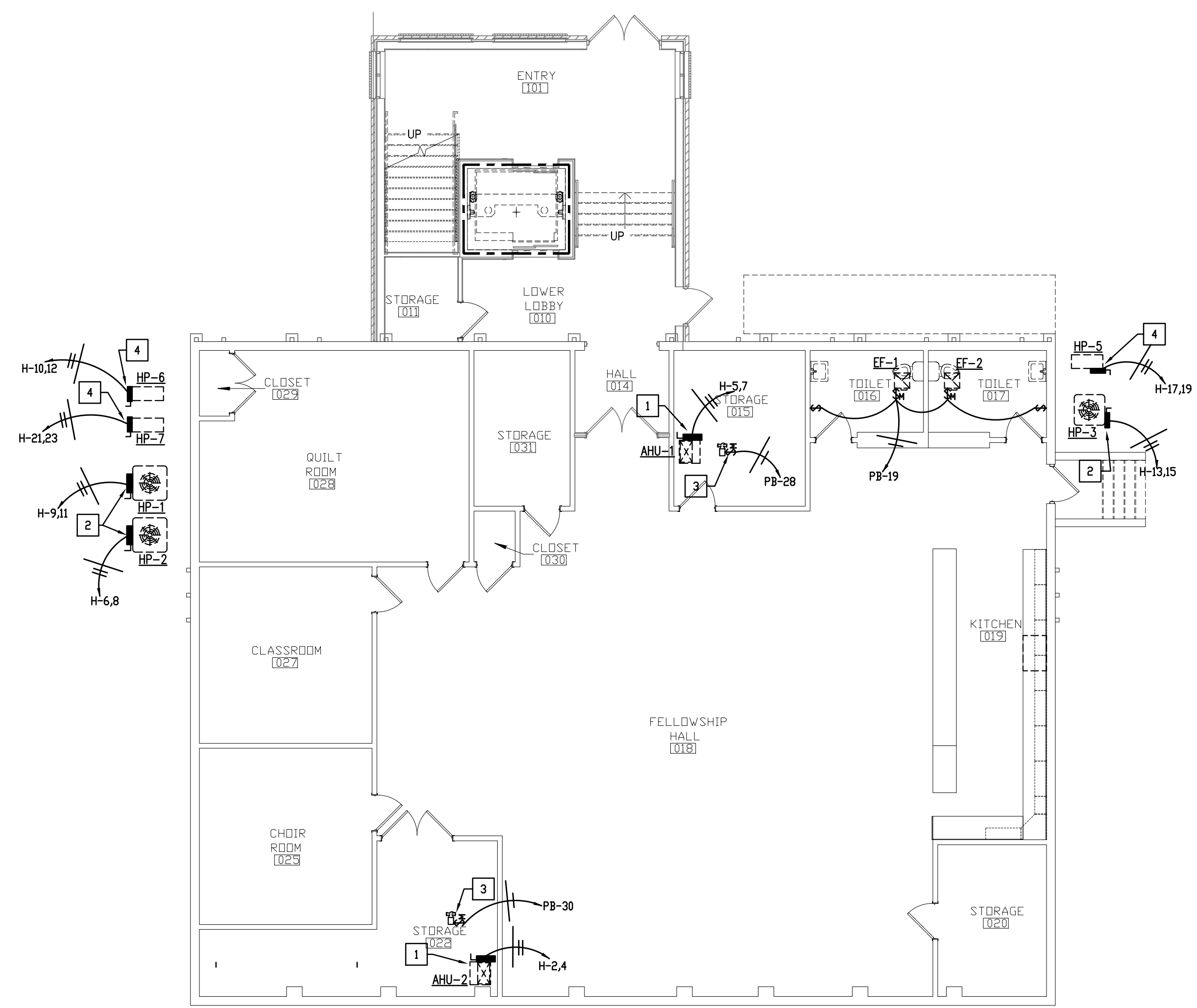




**1 FLOOR PLAN - EQUIPMENT CONNECTIONS**  
 SCALE: 1/8" = 1'-0"

- NOTES**
- INDIVIDUAL BRANCH CIRCUITS ARE SHOWN WITH A DEDICATED NEUTRAL UNLESS INDICATED OTHERWISE. WHEN MULTIPLE BRANCH CIRCUITS ARE TO BE INSTALLED, PROVIDE MULTIPLE CIRCUIT BREAKERS AS REQUIRED BY NEC 210.4(B).
  - ALL ELECTRICAL BOXES MOUNTED IN RATED WALLS SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSBC, SECTION 714.5.2. ALL ELECTRICAL BOXES MOUNTED IN RATED CEILINGS/HORIZONTAL ASSEMBLIES SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSBC, SECTION 714.4.2. UNLESS OTHERWISE NOTED, DEVICES SHOWN IN RATED ASSEMBLIES SHALL BE FLUSH WITH CONDUIT CONCEALED. PROVIDE HORIZONTAL SEPARATION, PUTTY PADS, RATED BOXES ETC. AS REQUIRED FOR REQUIRED INSTALLATION. ALL LOW VOLTAGE ELECTRICAL DEVICES MOUNTED IN RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE SECTIONS LISTED ABOVE.
  - SEE VOLTAGE DROP SCHEDULE ON DETAILS SHEET FOR WIRE SIZING INFORMATION FOR ALL BRANCH CIRCUITS OVER 65' IN LENGTH.
  - ALL RECEPTACLES WITHIN 6 FEET FROM THE OUTSIDE EDGE OF ANY SINK SHALL BE GFI PER NEC 210.8(K)(5).

- PLAN NOTES:**
- CONNECT SPLIT SYSTEM AIR HANDLING UNIT AS REQUIRED. COORDINATE WITH MECHANICAL.
  - CONNECT SPLIT SYSTEM HEAT PUMP AS REQUIRED. COORDINATE WITH MECHANICAL.
  - CONNECT CONDENSATE UNIT AS REQUIRED. COORDINATE WITH MECHANICAL.
  - CONNECT BUUCTLESS SPLIT SYSTEM HEAT PUMP (OUTDOOR UNIT) AS REQUIRED. OUTDOOR UNIT POWERS INDOOR UNIT. COORDINATE WITH MECHANICAL.
  - CONNECT BUUCTLESS SPLIT SYSTEM AIR HANDLING UNIT (INDOOR UNIT) AS REQUIRED. OUTDOOR UNIT POWERS RESPECTIVE INDOOR UNIT. COORDINATE WITH MECHANICAL.
  - CONNECT CONDENSATE UNIT AS REQUIRED. CONDENSATE PUMP IS POWERED THROUGH AIR HANDLING UNIT. COORDINATE WITH MECHANICAL.
  - GANG EXHAUST FAN SWITCH WITH EXISTING LIGHT SWITCH.



**2 BASEMENT PLAN - EQUIPMENT CONNECTIONS**  
 SCALE: 1/8" = 1'-0"

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

—	EXISTING WALL TO REMAIN
- - -	NEW WALL TO BE CONSTRUCTED
- - - - -	EXISTING WALL TO BE DEMOLISHED
—	ONE HOUR FIRE BARRIER

No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023

FLOOR PLANS -  
 EQUIPMENT  
 CONNECTIONS

**E1.3**  
 1/4" = 1'-0"  
 1/2" = 1'-0"  
 DIGITAL PRINT DATE: 2/23/2023 2:44:03 PM

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

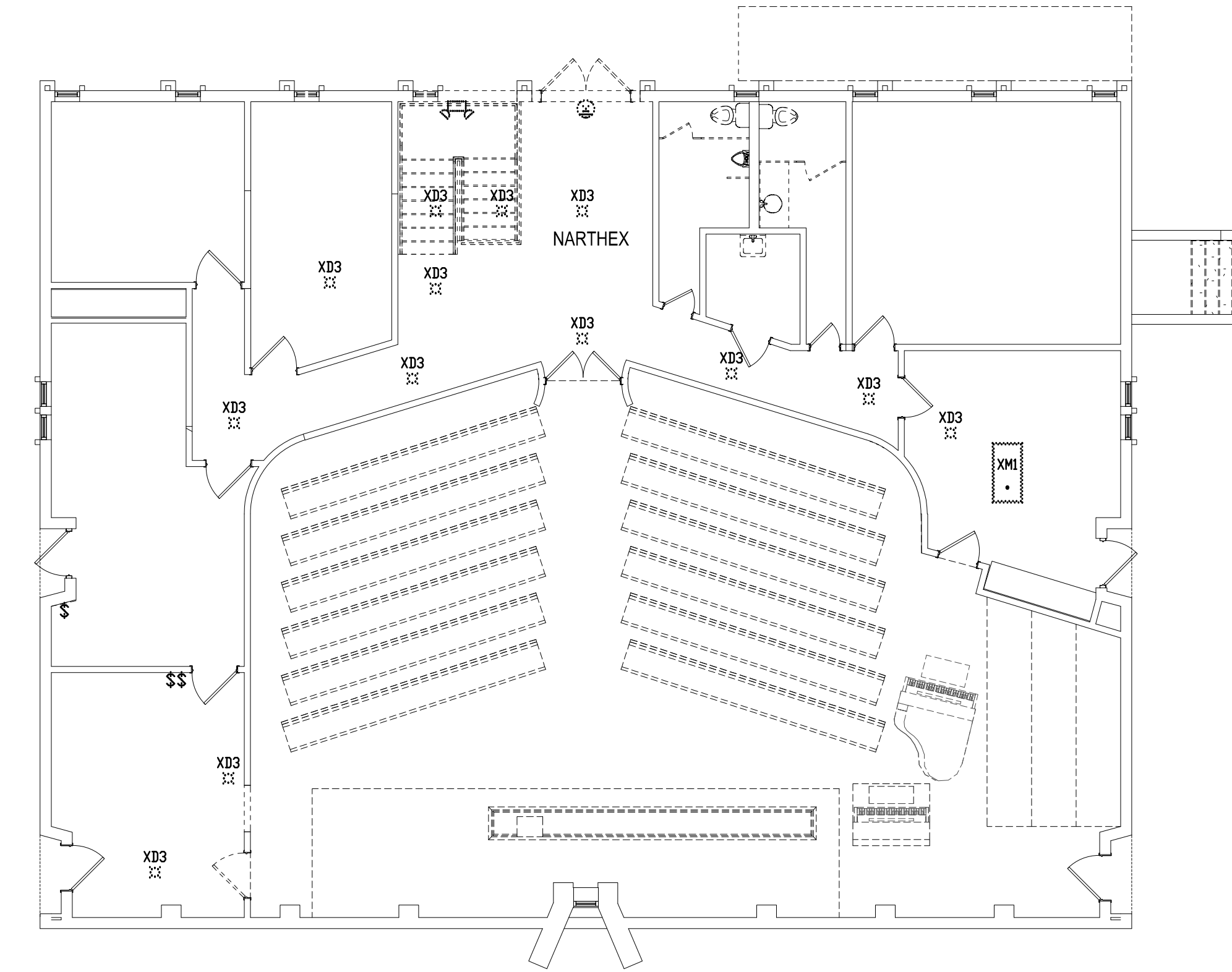
THE DRAWINGS & DESIGN SHOWN ARE THE PROPERTY OF DESIGN DEVELOPMENT. THE REPRODUCTION OR USE OF THIS PROPERTY WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT IS PROHIBITED AND ANY VIOLATION OF THESE RIGHTS IS SUBJECT TO LEGAL ACTION.



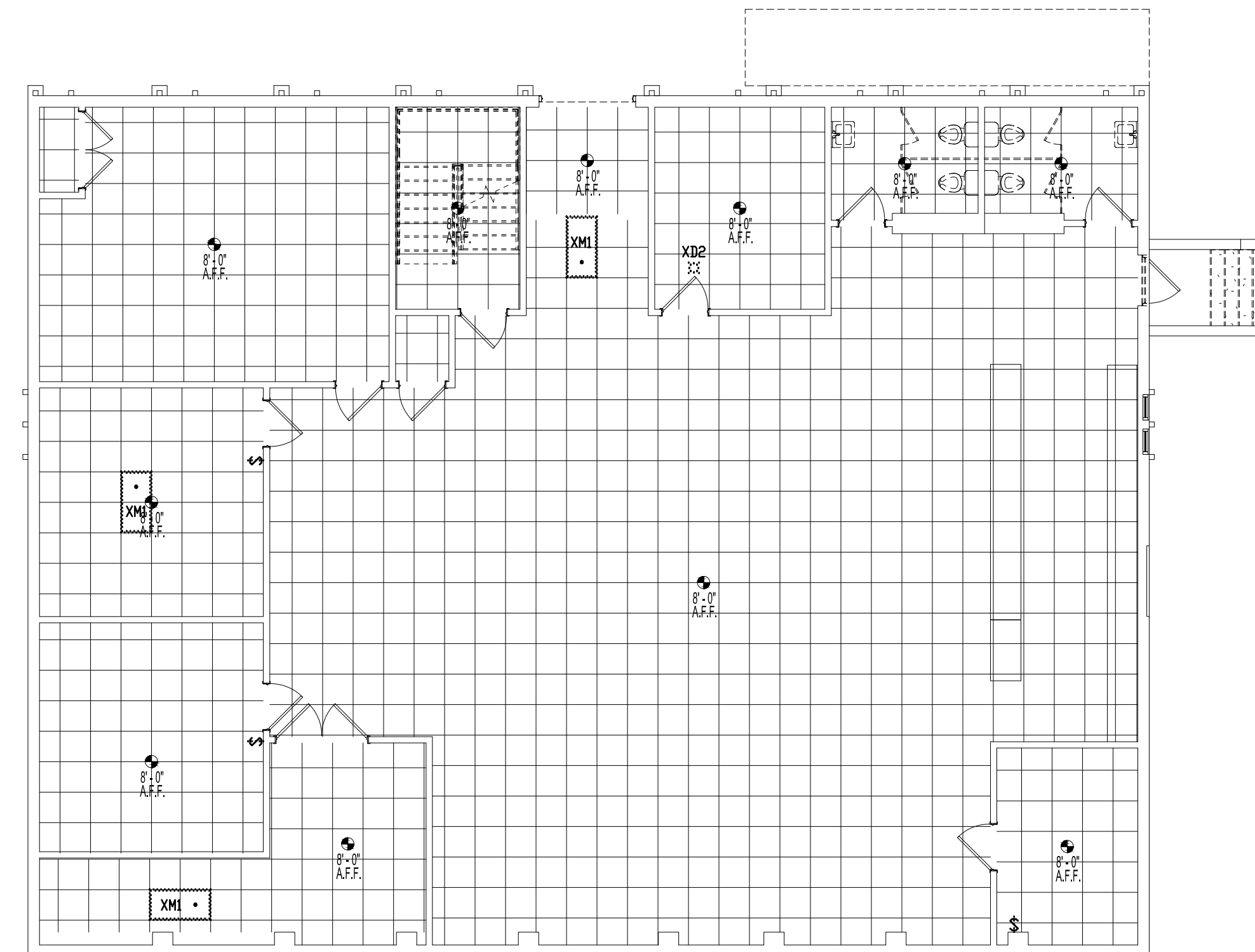
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**1 FLOOR PLAN - LIGHTING DEMOLITION**  
 SCALE: 1/8" = 1'-0"



**2 BASEMENT PLAN - LIGHTING DEMOLITION**  
 SCALE: 1/8" = 1'-0"

**NOTE:**  
 THE EXISTING LOCATIONS SHOWN ON THIS PLAN TO BE REMOVED OR RELOCATED ARE FOR REFERENCE ONLY AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. ANY ITEMS REQUIRED TO BE REMOVED OR RELOCATED SHALL BE INCLUDED IN CONTRACTOR'S COST, WHETHER SHOWN ON THIS PLAN OR NOT. UNLESS SPECIFICALLY NOTED OTHERWISE, WHERE A DEVICE OR ITEM IS NOTED TO BE DEMOLISHED, THE WORK SHALL INCLUDE REMOVING ALL ASSOCIATED BOXES, CONDUITS, CONDUCTORS, CABLES ETC. AND SHALL INCLUDE ANY PATCH, REPAIR, PAINT OR REFINISH NECESSARY TO RESTORE THE LOCATION TO MATCH THE SURROUNDING. THE CONTRACTOR MAY REUSE ANY EXISTING CONDUCTORS, BOXES ETC. WHERE THEY HAVE BEEN INSPECTED AND ARE DETERMINED TO BE ACCEPTABLE TO THE OWNER AND/OR IN LIKE-NEW CONDITION.

**WALL TYPES AND RATINGS LEGEND**  
 REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

- EXISTING WALL TO REMAIN
- NEW WALL TO BE CONSTRUCTED
- EXISTING WALL TO BE DEMOLISHED
- ONE HOUR FIRE BARRIER

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

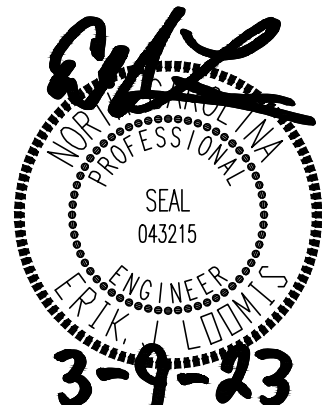
PROJECT #: 210029

DATE: 03-09-2023

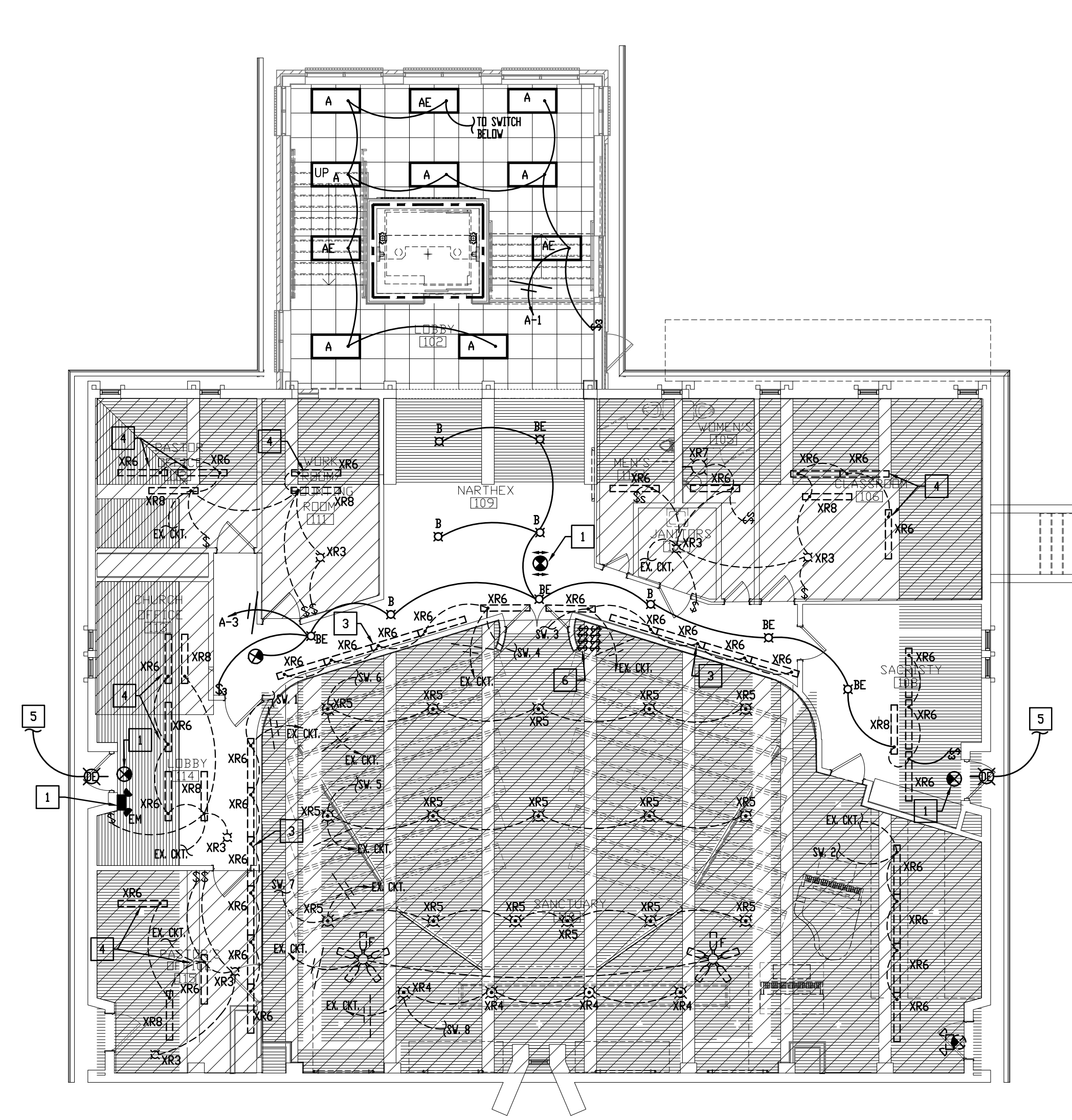
FLOOR PLANS -  
 LIGHTING  
 DEMOLITION

**E2.1**

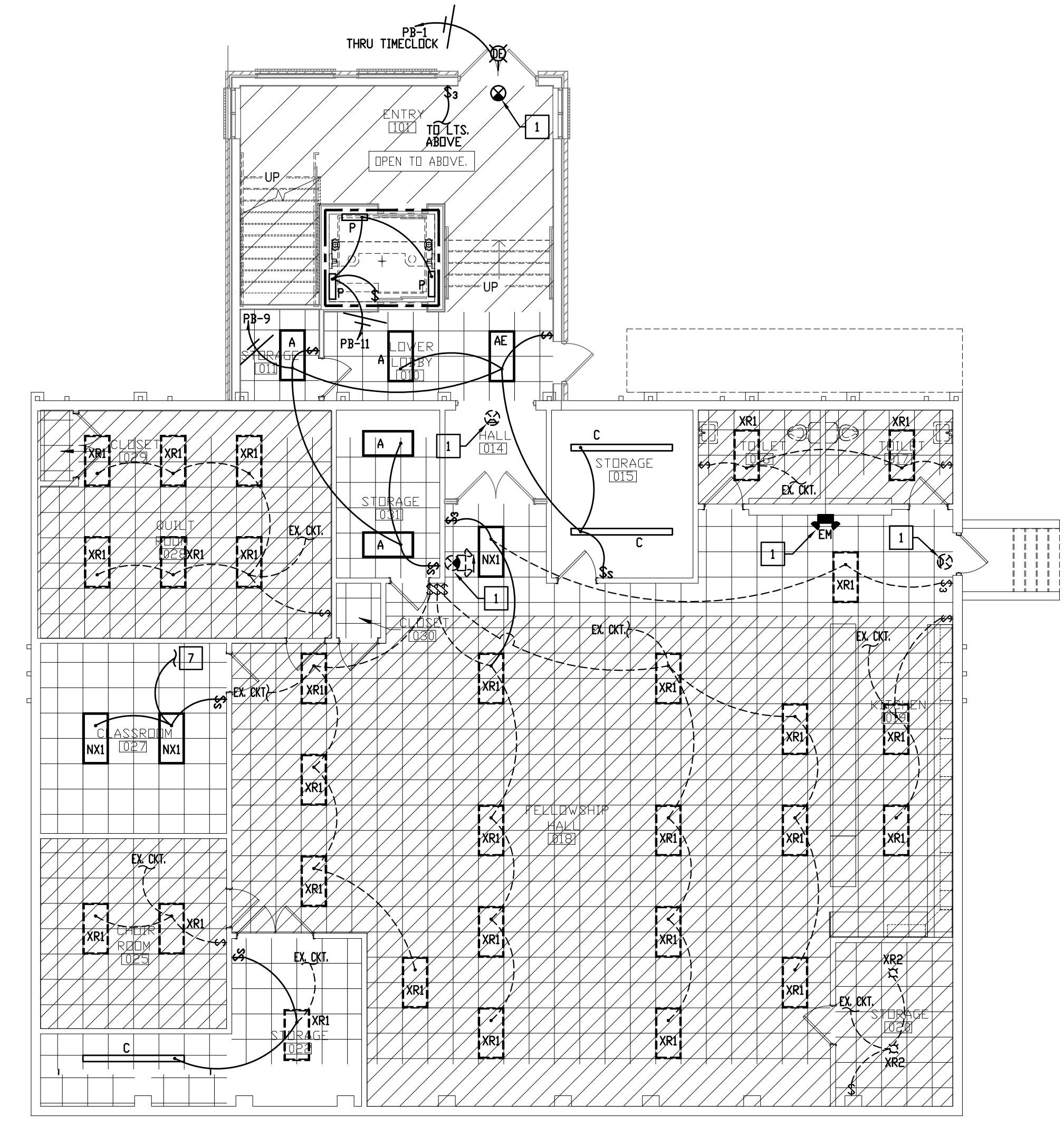
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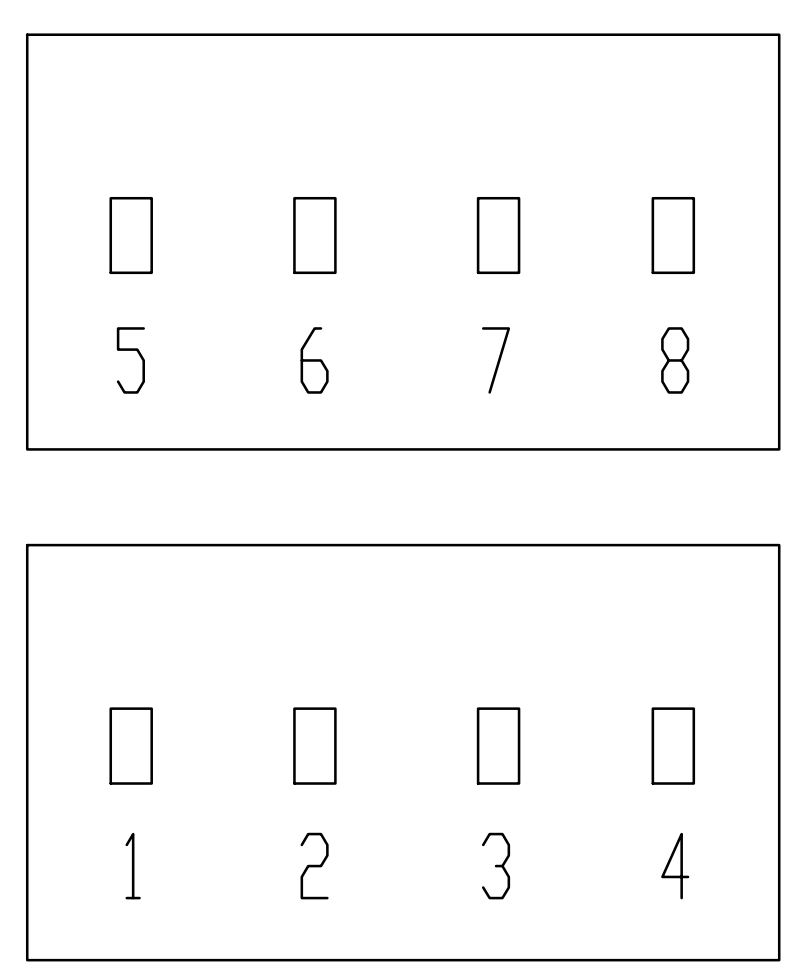
**1 FLOOR PLAN - LIGHTING**  
 SCALE: 1/8" = 1'-0"



**2 BASEMENT PLAN - LIGHTING**  
 SCALE: 1/8" = 1'-0"

- NOTES**
- CONNECT WALLPACS OR OTHER NORMALLY OFF EMERGENCY LIGHTS, EXIT LIGHTS AND NIGHT LIGHTS AHEAD OF LOCAL SWITCHES, RELAYS, AND MOTION SENSOR POWER PACKS (TOTAL FIXTURE UNSWITCHED). WHERE NOT INDICATED AS A NIGHT LIGHT, FIXTURES WITH EMERGENCY BATTERIES SHALL BE CONNECTED WITH THE BATTERY AHEAD OF SWITCH SO THAT EMERGENCY BALLAST COMES ON ONLY IN THE EVENT OF POWER LOSS. FIXTURE IS SWITCHED WITH OTHER LIGHTS UNDER NORMAL CONDITIONS.
  - INDIVIDUAL BRANCH CIRCUITS ARE SHOWN WITH A DEDICATED NEUTRAL UNLESS INDICATED OTHERWISE. WHEN MULTIPLE BRANCH CIRCUITS ARE TO BE INSTALLED, PROVIDE MULTIPLE CIRCUIT BREAKERS AS REQUIRED BY NEC 210.7.
  - ALL ELECTRICAL BOXES MOUNTED IN RATED WALLS SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSC SECTION 714.3.2. ALL ELECTRICAL BOXES MOUNTED IN RATED CEILING/HORIZONTAL ASSEMBLIES SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCSC SECTION 714.4.2. UNLESS OTHERWISE NOTED, DEVICES SHOWN IN RATED ASSEMBLIES SHALL BE FLUSH WITH CONDUIT CONCEALED. PROVIDE HORIZONTAL SEPARATION, PUTTY PADS, RATED BOXES ETC. AS REQUIRED FOR REQUIRED INSTALLATION. ALL LOW VOLTAGE ELECTRICAL DEVICES MOUNTED IN RATED ASSEMBLIES SHALL BE PROTECTED IN ACCORDANCE WITH THE SECTIONS LISTED ABOVE.
  - CONTRACTOR MAY REUSE ANY EXISTING EMERGENCY EXIT LIGHT, GIVEN THAT THE DEVICE IS IN PROPER WORKING ORDER. REPLACE CHEVRONS AND ROTATE EXIT SIGNS AS SHOWN ON PLANS.
  - SEE MOTION SENSOR DETAIL FOR DEVICE SPECIFICATIONS AND WIRING DETAILS.
  - SEE VOLTAGE DROP SCHEDULE ON DETAILS SHEET FOR WIRE SIZING INFORMATION FOR ALL BRANCH CIRCUITS OVER 65' IN LENGTH.
  - FOR LIGHTING CONTROLS WHICH INCLUDE DAYLIGHT OR OCCUPANT SENSING AUTOMATIC CONTROLS, AUTOMATIC SHUT-OFF CONTROLS, OCCUPANCY SENSORS OR AUTOMATIC TIME SWITCHES, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE LIGHTING CONTROLS PER SECTION C406.3 OF THE 2018 NC ENERGY CONSERVATION CODE TO ENSURE THAT CONTROLS, DEVICES, COMPONENTS, EQUIPMENT, AND SYSTEMS ARE CALIBRATED, ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED TO ENSURE THEY OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

- PLAN NOTES:**
- CONNECT / CONFIRM CONNECTION OF EMERGENCY AND EXIT LIGHTS AHEAD OF LOCAL SWITCH AS REQUIRED. (TOTAL FIXTURE UNSWITCHED)
  - LOW VOLTAGE CEILING MOUNTED MOTION SENSOR. MUST BE AT LEAST 6" FROM ANY DIFFUSER. CONNECT TO ALL LIGHTS IN THIS AREA AS REQUIRED. SEE MOTION SENSOR DETAIL. TYPICAL.
  - EXISTING FLUORESCENT STRIP UP LIGHTS IN ALCOVE AROUND SANITARY TO REMAIN. TYPICAL.
  - EXISTING FLUORESCENT STRIP UP LIGHTS IN COVE ABOVE TO REMAIN. TYPICAL.
  - CONNECT TO EXTERIOR LIGHTING CIRCUIT PB-1 AS REQUIRED.
  - EXISTING SWITCHBANK 1. SEE DETAIL THIS SHEET.
  - CONTRACTOR SHALL CONNECT RELOCATED OR REMAINING LIGHTS TO EXISTING 120V/1 CIRCUIT CURRENTLY SERVING THESE LIGHTS. NO NEW 120V/1 VOLT LIGHTS ARE BEING ADDED TO THESE CIRCUITS. JUST BEING RELOCATED AND RESWITCHED OR JUST RESWITCHED. IF TWO OR MORE BRANCH CIRCUITS ARE UTILIZED IN NEW CONFIGURATION, CONTRACTOR SHALL VERIFY THAT TOTAL WATTAGE ON ANY CIRCUIT DOES NOT EXCEED 1,500 WATTS.



**3 EXISTING SWITCHBANK 1**  
 SCALE: NONE

LIGHT FIXTURE SCHEDULE						
DESIGNATION	MANUFACTURER	DESCRIPTION	VOLTAGE	BALLAST TYPE/ QUANTITY	NUMBER/TYPE LAMPS	TOTAL WATTS
XM1	EXISTING FIXTURE TO BE RELOCATED	2x4 LED	120/1	1-LED DRIVER	INTEGRAL LED	40
XD3	EXISTING FIXTURE TO BE DEMOLISHED	6" INCANDESCENT DOWNLIGHT	120/1	N/A	VERIFY	VERIFY
XD6	EXISTING FIXTURE TO BE DEMOLISHED	4' FLUORESCENT STRIP	120/1	1 - ELECTRONIC	2 - F32T8	64
XR1	EXISTING FIXTURE TO REMAIN	2x4 LED	120/1	1-LED DRIVER	INTEGRAL LED	40
XR2	EXISTING FIXTURE TO REMAIN	INCANDESCENT PORCELAIN KEYLESS	120/1	N/A	VERIFY	100
XR3	EXISTING FIXTURE TO REMAIN	6" INCANDESCENT DOWNLIGHT	120/1	N/A	VERIFY	VERIFY
XR4	EXISTING FIXTURE TO REMAIN	INCANDESCENT SPOT LIGHT	120/1	N/A	VERIFY	100
XR5	EXISTING FIXTURE TO REMAIN	INCANDESCENT CYLINDER PENDANT	120/1	N/A	N/A	100
XR6	EXISTING FIXTURE TO REMAIN	4' FLUORESCENT STRIP	120/1	1 - ELECTRONIC	2 - F32T8	64
XR7	EXISTING FIXTURE TO REMAIN	BATHROOM VANITY FIXTURE	120/1	VERIFY	VERIFY	VERIFY
XR8	EXISTING FIXTURE TO REMAIN	4' 2 LAMP WRAPAROUND	120/1	1 - ELECTRONIC	VERIFY	VERIFY
NX1	NEW LOCATION OF EXISTING FIXTURE	2x4 LED	120/1	1-LED DRIVER	INTEGRAL LED	40
A	LITHONIA #BLBT-48L-ADP-GZI-LP835	2X4 LED	120/1	1-LED DRIVER	INTEGRAL LED	38
AE	SAME AS 'A' WITH EMERGENCY BATTERY	2X4 LED	120/1	1-LED DRIVER	INTEGRAL LED	38
B	LITHONIA #LDN6CYL-35/25-L06AR-LSS-MVOLT-EZ1-PM-DWHG	6" LED CYLINDER PENDANT	120/1	1-LED DRIVER	INTEGRAL LED	28
BE	SAME AS 'B' WITH EMERGENCY BATTERY	6" LED CYLINDER PENDANT	120/1	1-LED DRIVER	INTEGRAL LED	35
C	LITHONIA #CSS-L96-ALD46000 LUMEN -MVOLT-35K-80CRI	8' LED STRIP	120/1	1-LED DRIVER	INTEGRAL LED	55
DE	LITHONIA #WRCI-LED-P3-40K-MVOLT-E4WH-DOBXD	EXTERIOR LED WALLPACK W/ EMERGENCY BATTERY	120/1	1-LED DRIVER	INTEGRAL LED	25
P	LITHONIA #DMV2-L24-4000LM-ACL-MD-MVOLT-GZ1-35K-80CRI	ELEVATOR PIT LIGHT	120/1	1-LED DRIVER	INTEGRAL LED	40
EM	LITHONIA #ELM2L	2 HEAD EMERGENCY LIGHT (BATTERY)	120/1	-	-	-
	LITHONIA #LGM-S-W-1-R-EL N (1 FACE)	EMERGENCY EXIT LIGHT (BATTERY)	120/1	-	-	-
	LITHONIA #LGM-S-W-3-R-EL N (2 FACE)	EMERGENCY EXIT LIGHT (BATTERY)	120/1	-	-	-

**NOTES:**

- ALL FIXTURES, BALLASTS, AND DRIVERS SHALL COMPLY WITH NC BUILDING CODE, 2018 NORTH CAROLINA ENERGY CONSERVATION CODE AND SHALL BE UL LISTED. ALL T8 BALLASTS SHALL BE INSTANT START, HIGH-PERFORMANCE ELECTRONIC WITH NORMAL BALLAST FACTOR (0.88) UNLESS OTHERWISE NOTED. ALL LED DRIVERS SHALL COMPLY WITH NEMA 410.
- ALL FIXTURES NOTED AS EMERGENCY SHALL HAVE EMERGENCY ILLUMINATION FUNCTIONALITY AS DESCRIBED BELOW. IN ALL CASES, BATTERIES MUST BE RATED FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
  - INTERIOR LINEAR FLUORESCENT & LED FIXTURES SHALL HAVE 1100 LUMEN OMINIMUM OUTPUT, 90 MINUTE BATTERY PACK. FLUORESCENT & LED DOWNLIGHTS SHALL HAVE A 500 LUMEN OMINIMUM OUTPUT, 90 MINUTE BATTERY PACK OR SHALL BE PROVIDED WITH A FULL OUTPUT INVERTER.
  - EXTERIOR EMERGENCY LIGHTS SHALL HAVE AN INTEGRAL EXTERIOR RATED 0P/P OR REMOTE MOUNTED 1100 LUMEN OUTPUT 90 MINUTE BATTERY.
  - TEST SWITCHES FOR EMERGENCY BATTERIES SHALL BE INTEGRAL TO THE FIXTURE SERVED BY THE BATTERY.
  - EMERGENCY FIXTURES SHALL OPERATE ONE LAMP WHERE MULTIPLE EMERGENCY FIXTURES ARE TO BE INSTALLED IN AN AREA, AND SHALL OPERATE TWO LAMPS WHERE THE LOSS OF A SINGLE LAMP WOULD RENDER THE SPACE IN TOTAL DARKNESS DURING EMERGENCY OPERATION.
  - EMERGENCY LIGHTING DESIGN IS BASED ON EXISTING FIXTURES LUMEN OUTPUTS AS DESCRIBED ABOVE. CONTRACTOR SHALL VERIFY ANY EXISTING EMERGENCY FIXTURE BATTERIES HAVE LUMEN OUTPUTS AS INDICATED AND SHALL REPLACE ANY BATTERIES RATED LESS.
  - EMERGENCY LIGHTING UNITS WITH DEDICATED EMERGENCY HEADS SHALL PROVIDE 1 F.C. FOR AT LEAST 25' FOR A MINIMUM OF 90 MINUTES.
- ALL NEW, RELOCATED, OR RESWITCHED FIXTURES THAT UTILIZE BALLASTS SHALL BE PROVIDED WITH A LUMINAIRE DISCONNECT WHERE REQUIRED PER NEC SECTION 410.13(B)(6). USE IDEAL POWERPLUG OR EQUAL INTERNAL TO FIXTURE.
- LAMP COLOR TEMPERATURE FOR NEW LAMPS SHALL MATCH EXISTING LAMPS IN EXISTING FIXTURES TO REMAIN, AND ALL LAMP COLORS FOR DIFFERENT FIXTURE TYPES AND SOURCES SHALL BE CONSISTENT THROUGHOUT THE SPACE OR AREA UNLESS SPECIFICALLY NOTED OTHERWISE. NEW LAMPS WITH NO EXISTING LAMPS TO MATCH SHALL BE 3500K UNLESS OTHERWISE NOTED. CONTRACTOR SHALL ENSURE THAT ALL INTERIOR AND EXTERIOR LAMPS ARE THE SAME COLOR TEMPERATURE.
- EQUALS MUST BE APPROVED BY ENGINEER PRIOR TO ORDER. VENDORS, CONTRACTORS OR MANUFACTURERS OF SUBMITTED ALTERNATE FIXTURE(S) SHALL BE PREPARED TO PROVIDE BOTH IES FILES OF THE PROPOSED FIXTURE(S) AS WELL AS A COMPLETE PHOTOMETRIC ANALYSIS OF THE ILLUMINATED AREA/SPACE TO DEMONSTRATE THE ALTERNATE FIXTURE(S) ARE PHOTOMETRICALLY EQUAL TO SPECIFIED FIXTURE(S).
- FIXTURES INDICATED AS DIMMABLE SHALL BE PROVIDED WITH ALL NECESSARY COMPONENTS (BALLAST, DRIVER, SWITCH ETC.) AS NECESSARY TO ACHIEVE 1% (OR LESS) MINIMUM DIMMING UNLESS A SPECIFIC MINIMUM DIMMING LEVEL IS INDICATED. CONTRACTOR SHALL PROVIDE ALL LOW-VOLTAGE CONTROL WIRING AS REQUIRED FOR PROPER DIMMING OPERATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE PROPER LAMP(S) FOR EACH FIXTURE, AS RECOMMENDED BY THE FIXTURE MANUFACTURER AND FIXTURE SCHEDULE.

**ELECTRICAL SYSTEM AND EQUIPMENT**

METHOD OF COMPLIANCE: Prescriptive

Total Interior Wattage Specified VS Allowed: **1,135 V/S 1,298**

See Exterior Lighting Summary for exterior energy code calculations.  
 See Light Fixture Schedule for Lamp Type, Quantity, Ballast, Total Wattage and other information.

**DESIGNER STATEMENT:**

To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the North Carolina State Building Code, 2018 NC State Energy Conservation Code.

Name: ERIK J. LOOMIS

Title: PROFESSIONAL ENGINEER

**ENERGY CODE SECTION C406 COMPLIANCE**

THIS PROJECT IS COMPLYING WITH SECTION C406 OF THE ENERGY CODE UNDER THE PROVISIONS OF C406.3 (REDUCED LIGHTING POWER DENSITY). THE REMAINING PROVISIONS ARE THEREFORE NOT REQUIRED AND HAVE NOT BEEN INCLUDED IN THIS DESIGN.

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

- EXISTING WALL TO REMAIN
- - - NEW WALL TO BE CONSTRUCTED
- - - - EXISTING WALL TO BE DEMOLISHED
- - - - ONE HOUR FIRE BARRIER

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023

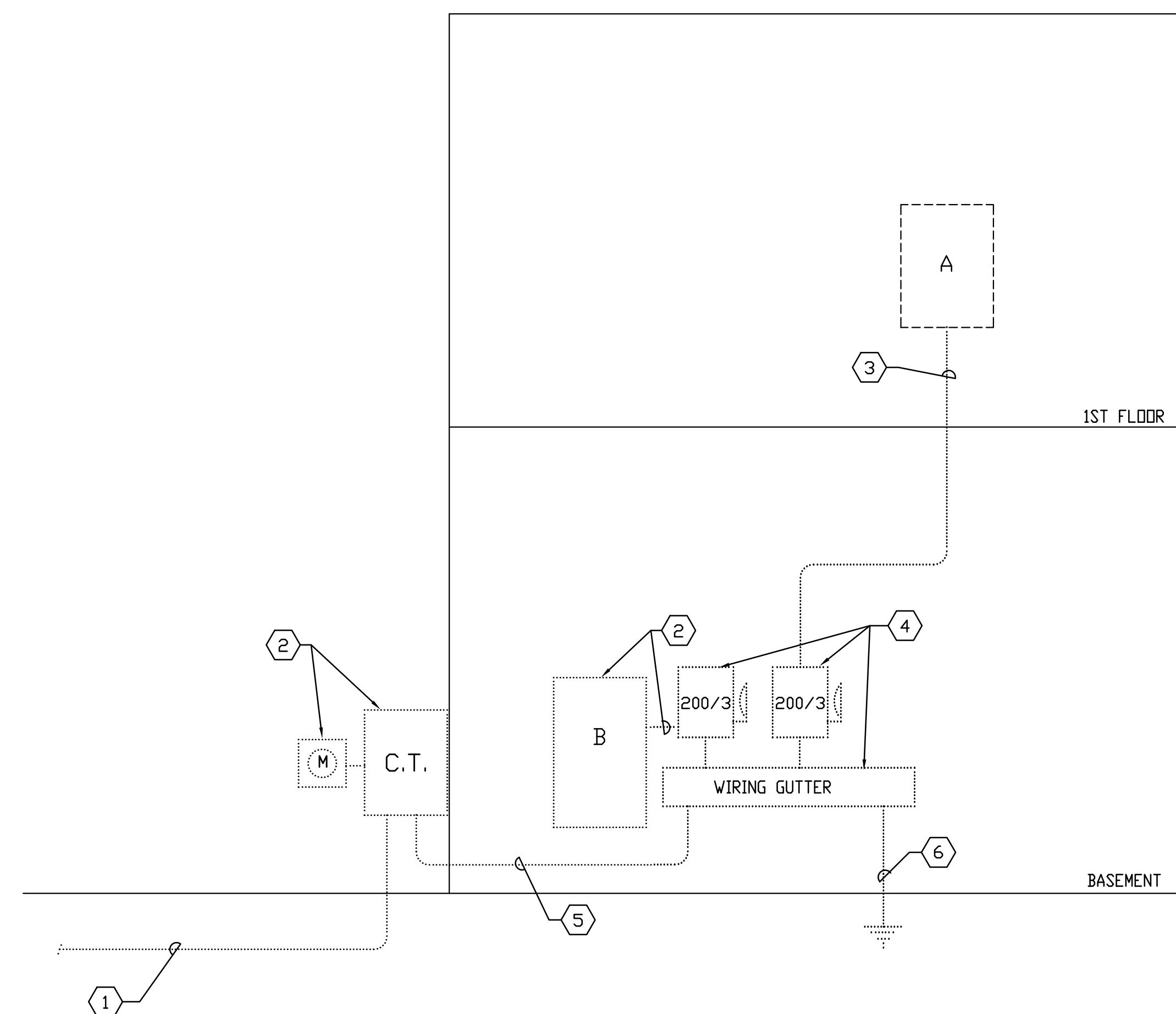
FLOOR PLANS - LIGHTING

**E2.2**

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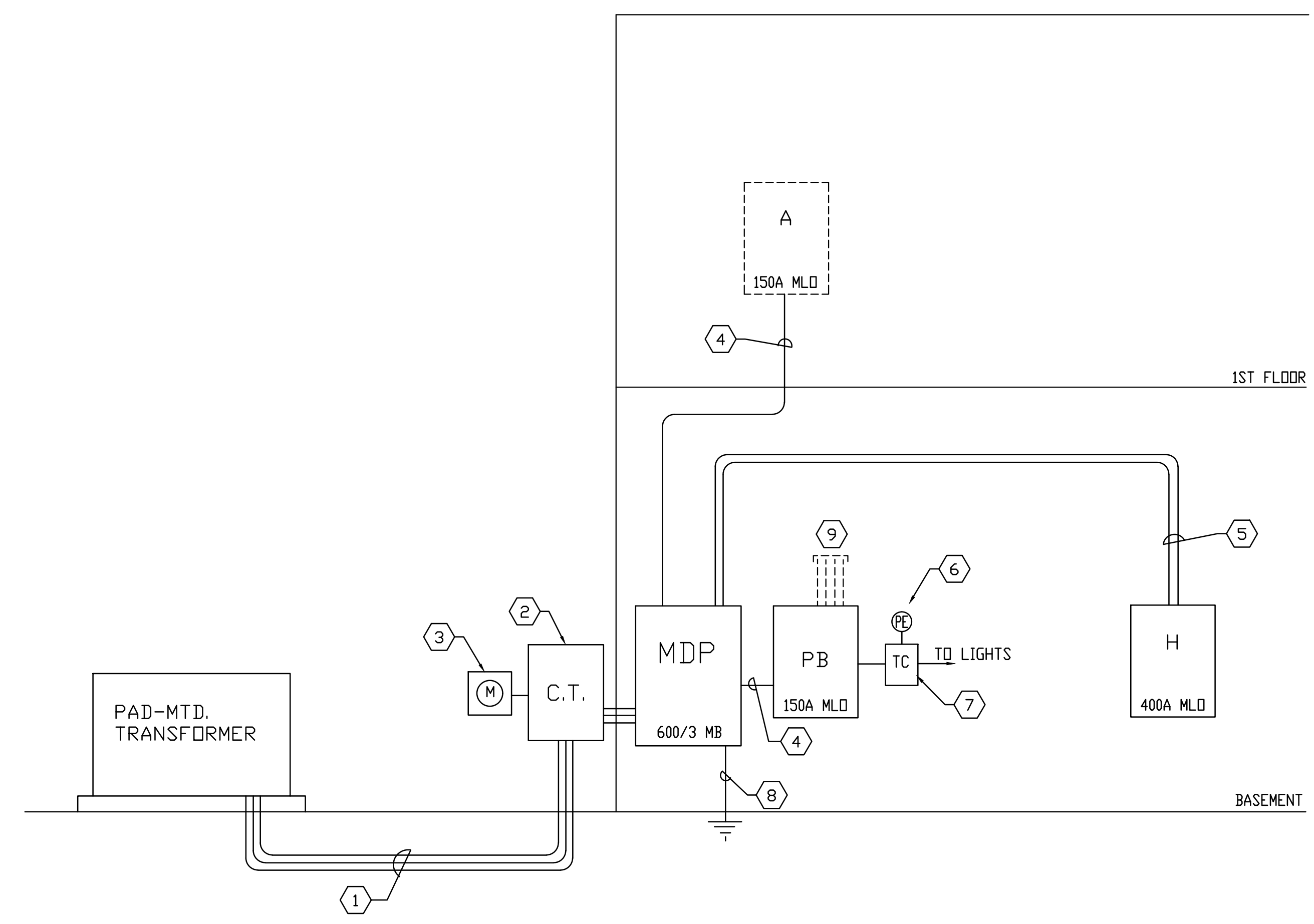
**1 ELECTRICAL DEMOLITION RISER DIAGRAM**  
 SCALE: NONE

**RISER KEY NOTES:**

- ① REMOVE EXISTING UNDERGROUND SERVICE.
- ② REMOVE EXISTING METER AND CT CABINET COMPLETELY.
- ③ REMOVE EXISTING 150 AMP CONDUCTORS AND CONDUIT COMPLETELY TO EXISTING PANEL 'A'. EXISTING PANEL 'A' SHALL REMAIN AND BE REUSED.
- ④ REMOVE EXISTING WIRING GUTTER AND SERVICES DISCONNECTS COMPLETELY.
- ⑤ REMOVE EXISTING ELECTRICAL SERVICE CONDUCTORS AND CONDUIT COMPLETELY.
- ⑥ REMOVE EXISTING SERVICE GROUND COMPLETELY.

**RISER NOTES**

1. DESIGN IS BASED ON AN ESTIMATED FAULT CURRENT OF 32,000. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY ACCOUNT HOLDER AND POWER COMPANY TO CONFIRM THE VERIFIED AVAILABLE FAULT CURRENT AND SERVICE ENTRANCE CONDUCTOR LENGTH. THIS INFORMATION SHALL BE SUBMITTED TO ENGINEER AS PART OF THE GEAR SUBMITTAL, PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF NEC 250.50 FOR SERVICE GROUND. CONNECT TO STRUCTURAL STEEL AND METAL WATER PIPING WITHIN 5' OF ENTERING BUILDING. SEE SERVICE GROUND DETAIL FOR MORE INFORMATION.
3. PROVIDE PLAQUES PER NEC 230.2(4) AND GRAPHIC KEY PLANS FOR EACH SERVICE AND SERVICE DISCONNECTING MEANS FOR EACH BUILDING SERVICE. ALL DISCONNECTING MEANS FOR EACH SERVICE SHALL BE GROUPED. LABEL EACH DISCONNECTING MEANS FOR EACH SERVICE AS DISCONNECT#\_OF\_ FOR SERVICE NUMBER \_OF\_.
4. GROUNDS FOR ALL SERVICES SHALL BE BONDED TOGETHER PER NEC 250.58 AND SHALL MEET ALL REQUIREMENTS OF NEC 250.104.
5. SERVICE DISCONNECTS IN PANEL 'MDP' SHALL BE LABELED ON SITE AS SERVICE DISCONNECT PER NEC 230.2(5).
6. NEW SERVICE ENTRANCE CONDUCTORS FOR PANEL 'MDP' SHALL NOT BE MORE THAN TWICE THE NOMINAL WIDTH OF THE SERVICE ENCLOSURE ROUTED HORIZONTALLY AND SHALL NOT BE MORE THAN THE GREATER OF 5' OR TWICE THE NOMINAL HEIGHT OF THE SERVICE ENCLOSURE ROUTED VERTICALLY INSIDE THE BUILDING PRIOR TO THE MAIN BREAKER.
7. PER NEC 110.25(C)(2), FOR ROOMS CONTAINING EQUIPMENT 900A OR MORE THAT CONTAINS OVERCURRENT DEVICES, SWITCHING DEVICES, OR CONTROL DEVICES WHICH HAVE PERSONNEL DOORS WITHIN 25' OF THE NEAREST EDGE OF THE WORKING SPACE, THESE PERSONNEL DOORS MUST SWING IN THE DIRECTION OF EGRESS AND BE EQUIPPED WITH LISTED PANIC HARDWARE.
8. PER NEC 110.22, WHERE CIRCUIT BREAKERS OR FUSES ARE APPLIED IN COMPLIANCE WITH THE SERIES COMBINATION RATINGS MARKED ON THE EQUIPMENT BY THE MANUFACTURER, THE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE EQUIPMENT HAS BEEN APPLIED WITH A SERIES COMBINATION RATING. THE MARKING SHALL BE READILY VISIBLE AND STATE THE FOLLOWING "CAUTION - SERIES COMBINATION SYSTEM RATED \_\_\_\_\_ AMPERES - IDENTIFIED REPLACEMENT COMPONENTS REQUIRED".
9. THE CONTRACTOR SHALL COORDINATE THE RESPONSIBILITY OF THE TRANSFORMER PAD WITH THE UTILITY COMPANY. UNLESS OTHERWISE CONFIRMED WITH THE POWER COMPANY, THE TRANSFORMER PAD IS TO BE PROVIDED BY THE E.C. AT THE DIRECTION AND SPECIFICATION OF THE UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY.
11. PROVIDE LABELING AND GRAPHIC KEY PLAN AT MAIN ELECTRICAL PANEL (OR PANELS) SHOWING THE LOCATION AND IDENTIFICATION OF THEIR DISCONNECTING MEANS.
12. PER NEC 110.24, THE SERVICE EQUIPMENT ENCLOSURE(S) SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE THE AVAILABLE FAULT CURRENT PRIOR TO FINAL INSPECTION. THE ELECTRICAL CONTRACTOR SHALL OBTAIN FROM THE POWER COMPANY THE ACTUAL AVAILABLE FAULT CURRENT AT THE POINT OF DELIVERY. THE CONTRACTOR SHALL CONTACT THE ENGINEER WITH THIS VALUE AND THE VERIFIED LENGTH OF CONDUCTORS RUN FROM THE POINT OF DELIVERY TO THE SERVICE ENCLOSURE FOR CALCULATION OF THE AVAILABLE FAULT CURRENT. THE RESULTING CALCULATED VALUE SHALL BE MARKED ON THE EXTERIOR OF THE SERVICE ENCLOSURE ON AN ENGRAVED PLAQUE THAT SHALL READ AS FOLLOWS:  
 AVAILABLE FAULT CURRENT: \_\_\_\_\_  
 DATE CALCULATED: \_\_\_\_\_



**2 ELECTRICAL RISER DIAGRAM**  
 SCALE: NONE

**RISER KEY NOTES:**

- ① UNDERGROUND SERVICE BY POWER COMPANY.
- ② C.T. CABINET BY ELECTRICAL CONTRACTOR. C.T.'S BY POWER COMPANY COORDINATE REQUIREMENTS W/ POWER COMPANY.
- ③ METER BASE BY ELECTRICAL CONTRACTOR. METER BY POWER COMPANY. COORDINATE REQUIREMENTS W/ POWER COMPANY.
- ④ 4-#1/0, 1-#6 GND, 2" C.
- ⑤ 2 RUNS, 4-3/0, 1-#3 GND, 2" CONDUIT IN EACH RUN.
- ⑥ PHOTOCELL ON ROOF FACING NORTH. ADJUST SENSITIVITY AS REQUIRED FOR PROPER OPERATION.
- ⑦ 7-DAY PROGRAMMABLE NEMA 3R TIME CLOCK W/ PHOTOCELL, SEASONABLE DAYLIGHT SCHEDULE ADJUSTMENT AND HAVE 4 HOUR BATTERY BACKUP.
- ⑧ 1-#2/0 CU SERVICE GROUND.
- ⑨ ALL EXISTING BRANCH CIRCUITS TO REMAIN THAT WERE FED FROM EXISTING REMOVED PANEL 'B' SHALL BE EXTENDED TO AND RECONNECTED TO NEW PANEL 'PB' AS REQUIRED.

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023

ELECTRICAL DETAILS

**E3.1**

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**FIRE ALARM SPECIFICATIONS (Addressable)**

**GENERAL**

The electrical contractor shall provide all specified and miscellaneous material and labor as required for a complete and operating Fire Alarm system in accordance with the drawings, specifications and the contract documents.

All work shall be in accordance with NFPA 72, all manufacturers requirements and recommendations, all city & local and state requirements as well as other applicable requirements.

As used the following definitions shall apply: "provide" shall mean furnish and install; "furnish" shall mean to supply for installation or use by others; "install" shall mean installation of items furnished by others.

The drawings are diagrammatic and are not intended to show minor details and exact locations. Installation shall be as adjusted to accommodate interferences anticipated and encountered.

See Fire Alarm System Matrix for required control sequence.

Contractor shall provide and submit shop drawings for approval as required.

**MATERIALS**

All materials and equipment shall be new and of the highest quality in the class specified. Where trade names are mentioned they are given as a reference to the quality of apparatus required. All materials shall bear UL label or equivalent where applicable. Other notes may be used if approved in writing by the engineer provided the equipment meets all of the requirements of these specifications. All items in the equipment section of these specifications may not be used, refer to the drawings for locations and equipment to be used.

Conduit, conductors, boxes hangers etc shall be provided as required.

**SYSTEM DESCRIPTION** - The fire detection and alarm system shall be the addressable type, with each initiating device individually reporting to the fire alarm control panel (FACP).

The addressable fire alarm system shall be connected, programmed, and tested only by the manufacturer or by an authorized distributor who stocks a full complement of spare parts for the system. Technicians performing this service shall be trained and individually certified by the manufacturer for the model of system being installed. Copies of their certification must be submitted along with submittal data.

The complete programming for the addressable fire alarm system shall be permanently stored on removable media and archived by the manufacturer or authorized distributor. A backup copy of the program on removable media shall be provided to the owner when the system is commissioned.

The manufacturer or authorized distributor shall maintain software version records on the system installed. The system software shall be upgraded free of charge if the manufacturer releases a new version of the software during the warranty period.

Each signaling line (addressable loop controller) circuit shall have a minimum of 20% spare addresses for future use.

The connections between individual addressable modules and their contact type initiating devices must be supervised.

The system shall have multiple access levels, which permit the owner's authorized personnel to make temporary changes in the system alarm response matrix, without actually changing the system programming. This must include the ability to override selected alarm inputs or system responses to alarms, without affecting the remaining portions of the system.

The manufacturer or authorized distributor must test all software logic functions for the system and provide a written test report of checklist. This documentation must include a system function matrix, which gives the fire alarm control panel response for each initiating device input.

The system shall be nominal 24VDC, non coded, and supervised (including control circuits). All equipment supplied must be listed for the purpose for which it is used, and installed in accordance with any instructions included in its listing.

The FACP power supply shall have a continuous rating adequate to power all zones and functions in full alarm continuously.

The FACP must have an Alarm Silence switch and be equipped with the subsequent alarm (alarm resound) Feature.

The system includes air handling unit shutdown. Silencing the alarm (without resetting) shall not reverse the shutdown. A supervised "AHU Shutdown Defect" switch must be provided in the FACP, with its "Normal" position indicated.

The coverage of each fire alarm zone shall be indicated on the FACP LCD display and any remote annunciator. Systems are to be provided with a separate and independent source of emergency power. Switching to emergency power during alarm shall not cause signal dropout. Batteries must meet the appropriate NFPA capacity requirements.

The system shall be electrically supervised for open or ground fault conditions in detection, alarm and control circuits. Removal of any detection device, alarm appliance, plug-in relay, system module or standby battery connection shall also result in a trouble signal. Fire alarm signal shall override trouble signals, but any pre-alarm trouble signal shall reappear when the panel is reset.

**EQUIPMENT**

Equipment shall be provided as specified in legend and in this section or equal.

1. The Fire Alarm Panel (FACP) shall be provided with modules as required to accomplish the functions specified herein. The panel shall have sealed maintenance free, lead-acid battery back up with capacity to power all functions and devices for standby and alarm per NFPA 72 section 4.4.1.3.3. Provide battery calculations as part of submittal data. The panel shall be surface or semi-recessed as indicated on the drawings. The panel shall have addressable detection loops as indicated and/or required plus at least 20% spare addresses on each loop. Provide lightning arrestors and transient suppression. Install lightning arrestors at circuit breaker in panel serving fire alarm panel. Provide auxiliary relays, switches, monitor modules and control modules as required to perform indicated functions. Base system has at least 198 intelligent device capacity.

2. Manual Pull Stations shall be addressable double action stations with terminal strip. Glass rods are prohibited.

3. Smoke Detectors shall be addressable photoelectric type detector. Detectors shall be listed to UL standard UL268 and shall be documented compatible with the control equipment to which it is connected. The detectors shall obtain their power from the fire alarm supervised detection loop. Removal of the detector from its base shall cause a trouble signal to be generated at the control panel indicating the specific location of the trouble. Activating the reset switch on the control panel shall reset the detector. The detectors shall have an LED indicator to show normal and alarm state of the detector.

4. Automatic Heat Detectors shall be addressable combination rate-of-rise and fixed temperature type.

5. Audio/Visual Units shall be combination electronic horn with field selectable candela strobe light set as indicated on plans. The device shall comply with the requirements of the American with Disabilities Act.

6. Visual Dry Units shall be strobe light with field selectable candela strobe light set as indicated on plans. The device shall comply with the requirements of the American with Disabilities Act.

7. Digital Communicator shall be a listed cellular dialer system (with integral 24 hour battery backup) that complies with 2013 NFPA 72, Section 26.6.3 and provides for a second method of communication where required by the AHJ. Note that 2013 NFPA 72 does not permit telephone line(s) as the sole means of communication. If another approved communication method is elected, the fire alarm contractor shall coordinate installation of all necessary communication equipment and provide 24 hour battery backup for all such equipment as part of the fire alarm scope.

8. Water Flow, Pressure Switches and Valve Tamper Switches shall be provided and installed by the sprinkler contractor and connected by the electrical contractor and monitored by the fire alarm control panel. Monitoring shall be accomplished by use of monitor modules.

9. Duct Mounted Smoke Detectors shall be an addressable photoelectric smoke detector. Removal of the detector head shall interrupt the supervised detection loop and cause a trouble signal at the fire alarm control panel indicating the specific detector in trouble. The detector shall obtain its operating power from the supervised detection loop. An LED indicator shall be visible through the cover that indicates the alarm state of the detector. Where indicated furnish a remote indicator/test switch. The duct detector shall be supplied complete with proper size duct sampling tubes.

10. Control Module shall be located as indicated on the plans and/or as required for control functions and NAC applications.

11. Remote Annunciator shall be beckett 88 character minimum LCD annunciator located as indicated on the plans with the location approved by the fire marshal.

12. Door Holders shall be flush wall mounted as indicated on the plans.

13. Relay Module shall be located as indicated on the plans and/or as required for control functions such as duct detectors.

14. The remote NAC Power Supplies shall be provided with built-in sync for the strobe lights. Each Power Supply shall have battery back-up.

**EXECUTION**

All work shall be installed as required per NFPA 72, all manufacturers requirements and recommendations, all city & local and state requirements as well as other applicable requirements. All connections at the FACP must be made by the manufacturer's authorized, factory trained representative (rather than by the electrical contractor).

Provide and install the system in accordance with the plans and specifications, all applicable codes and the manufacturer's recommendations. Use conduit as specified in the electrical section. Notification Appliance circuit conductors shall be copper type THHN or XHHW and shall be number 14 AWG stranded minimum.

Permanent wire markers shall be used to identify all connections and terminations for each circuit. Identification for all splices shall indicate which conductor leads to the control panel.

Wiring must be in metal conduit (3/4" minimum diameter), or surface metal raceway. Initiating circuit conductors must be new 18 AWG minimum shielded, solid copper, type THHN/THWN, except that wiring between the FACP and any Remote Annunciator may optionally be listed multi-conductor cable with 18 AWG solid copper conductors. All junction boxes shall be sprayed red and labeled "Fire Alarm". Wiring color code shall be maintained throughout the installation. Provide terminal blocks in all junction boxes where connections are made.

Detection or alarm circuits shall not be installed in raceways containing power or line voltage control wiring. Within the FACP, any AC control wiring must be properly separated from other circuits and the enclosure must have an appropriate warning label to alert service personnel to the hazard.

Location of devices and equipment - All devices shall be located as detailed or indicated. In general devices shall be centered in spaces or above other outlets.

Install lightning arrestor at circuit breaker in panel serving fire alarm.

Provide an engraved or other permanent type marker on each device installed indicating the device number and addressable loop number. Provide the zone information inside the box for each device.

Provide framed operating instructions mounted adjacent to the fire alarm control panel.

Smoke detectors shall not be located closer than three feet to an air conditioning supply or return. Locate wall mounted smoke detectors maximum of twelve inches from ceiling.

Testing shall include all tests noted for electrical systems and testing and certification by the fire alarm system supplier. Test results shall be provided to the Engineer for inclusion in the project documents.

Certification for system shall be provided from installer/supplier of the equipment furnished. Provide instruction manuals and instruction to owner personnel.

Upon completion of the system testing shall be performed by the contractor and the manufacturer's authorized representative. The test shall include testing of every alarm initiating device for proper response and device indication, every alarm signaling device for effectiveness and all other functions such as detector capture and control of smoke doors/dampers, HVAC systems and pressurization fans. All supervised circuits must also be tested to verify proper supervision control circuits and remote annunciation lines are among those required to be supervised. The Engineer must be given advance notice of the test, so that he and/or the owner may witness them if desired.

The contractor shall submit the following test documentation:

- (1) Written verification that the fire alarm 100% system test was performed.
- (2) Measured sensitivity of each smoke detector.
- (3) NFA "Fire Alarm System Certification and Description".

After completion of the 100% system test and submission of the above documentation, the contractor will request the Engineer to inspect the system. The system must operate for at least two days prior to this inspection.

The system will be inspected and functionally tested by the engineer on at least a two-day sample basis. Equipment intended for open area protection or releasing device service may be subjected to simulated or actual test fires, in accordance with ANSI/UL guidelines and sound engineering practice, to verify proper response.

After successful completion of engineer inspections and tests and final acceptance, the warranty period begins. In the event of malfunctions or excessive nuisance alarms, the contractor must take prompt corrective action. The engineer may require a repeat of the contractor's 100% system test. Continued improper performance during the warranty period shall be cause to require the contractor to replace the system.

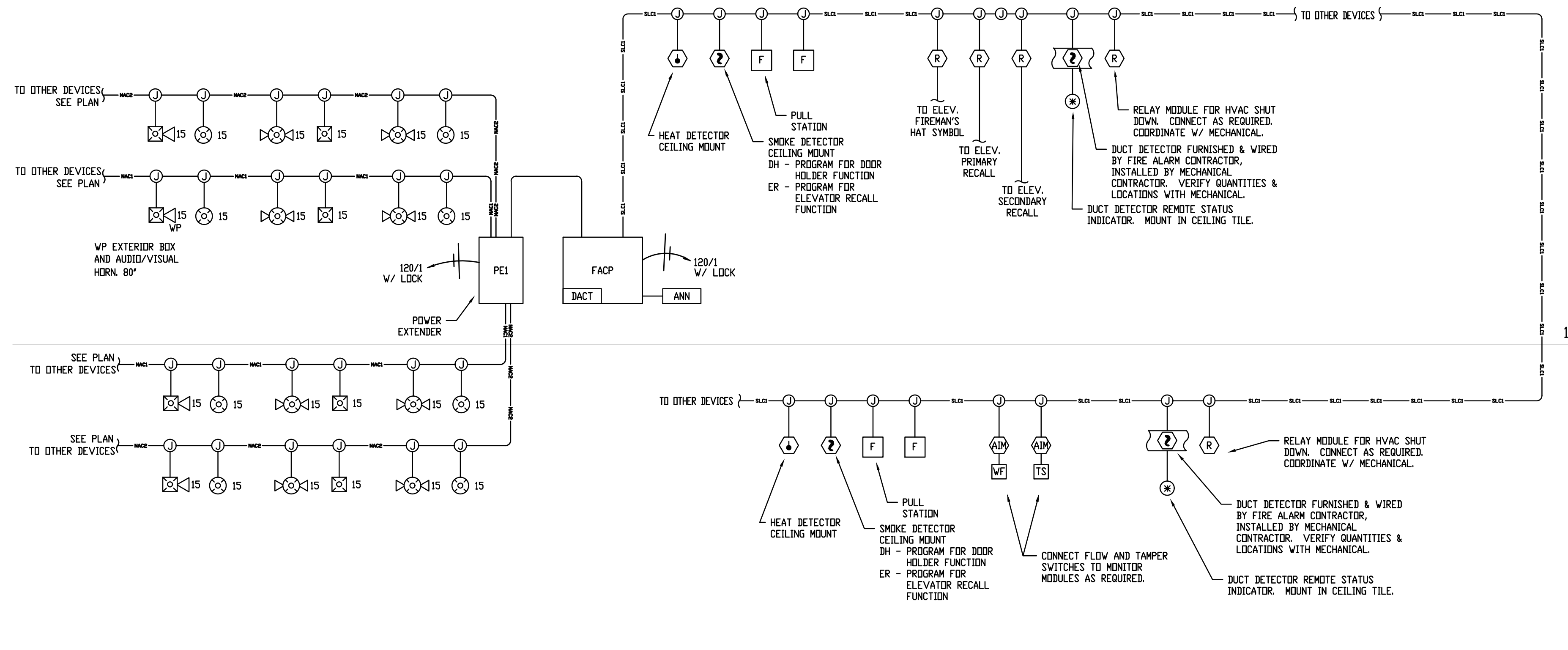
**SYSTEM DOCUMENTATION, TRAINING AND MAINTENANCE**

The contractor shall provide the engineer with three copies of the following, to be forwarded to the owner:

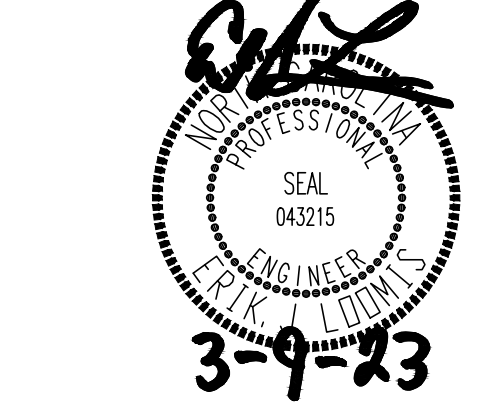
- (1) As-built wiring and conduit layout diagrams, including wire color code and/or label numbers, and showing all interconnections in the system, etc.

**FIRE ALARM SCOPE/SYSTEM NOTE:**  
 THE SCOPE OF FIRE ALARM WORK FOR THIS PROJECT IS TO INSTALL A NEW MANUAL FIRE ALARM SYSTEM FOR AN EXISTING BUILDING BEING EXPANDED. NOTIFICATION AND INITIATING DEVICES SHALL BE PROVIDED AS NECESSARY TO PROVIDE CODE REQUIRED COVERAGE. THE SYSTEM SHALL UTILIZE HORN-STROBE NOTIFICATION.

FIRE ALARM LEGEND			
SYMBOL (NEW)	DESCRIPTION	NOTES	MODEL NUMBER
[FACP]	FIRE ALARM CONTROL PANEL	24V, ADDRESSABLE, WITH 50-POINT SLC LOOP, RED ENCLOSURE	FIRE-LITE #ES-50X (OR EQUAL)
[F]	FIRE ALARM POWER EXTENDER	4 OUTPUT NOTIFICATION APPLIANCE CIRCUITS WITH 80 AMP FULL LOAD OUTPUT (30 AMP MAX PER CIRCUIT)	FIRE-LITE #FCPS-24FSB
[ANN]	FIRE ALARM ANNUNCIATOR PANEL	-	FIRE-LITE #LCD-80F
[DC]	INTERNAL DIGITAL COMMUNICATOR	MOUNT INSIDE FACP ENCLOSURE OR PROVIDE REMOTE ENCLOSURE (NOTIFIER #ABS-BRB) AS REQUIRED.	N/A
[F]	ADDRESSABLE MANUAL PULL STATION	MOUNT AT 44" AFF TO CENTER OF BOX.	FIRE-LITE #BG-12LX
[R]	FIRE ALARM SMOKE DETECTOR	-	FIRE-LITE #SD355
[R]	FIRE ALARM SMOKE DETECTOR	SMOKE DETECTOR SHALL BE PROGRAMMED FOR ELEVATOR RECALL FUNCTION.	FIRE-LITE #SD355
[R]	DUCT SMOKE DETECTOR WITH REMOTE LED INDICATOR	-	FIRE-LITE #D509PL W/ FIRE-LITE #RTS4SI
[R]	RELAY MODULE	-	FIRE-LITE #CRF-300
[R]	PAM RELAY MODULE	-	FIRE-LITE #PAM-1
[R]	MONITOR MODULE	-	FIRE-LITE #MMF-300
[R]	CONTROL MODULE	-	FIRE-LITE #MMF-300
[XX]	WALL MOUNTED FIRE ALARM VISUAL STROBE ONLY - WHITE	CANDELA STROBE AS INDICATED ON PLANS, CONNECT AS REQUIRED. SEE MOUNTING HEIGHT DETAIL FOR MOUNTING REQUIREMENTS.	SYSTEM SENSOR SPECTRALERT #5V
[XX]	CEILING MOUNTED FIRE ALARM VISUAL STROBE ONLY - WHITE	CENTER DEVICE IN CEILING TILE. DEVICE SHALL BE UL LISTED FOR USE IN CEILINGS. CONNECT AS REQUIRED.	SYSTEM SENSOR SPECTRALERT #5CV
[XX]	WALL MOUNTED FIRE ALARM HORN-STROBE - WHITE	CANDELA STROBE AS INDICATED ON PLANS, CONNECT AS REQUIRED. SEE MOUNTING HEIGHT DETAIL FOR MOUNTING REQUIREMENTS.	SYSTEM SENSOR SPECTRALERT #5VW
[XX]	WALL MOUNTED FIRE ALARM ADJUSTABLE HORN ONLY (OMNI HORN NOT ACCEPTABLE) - WHITE	CONNECT AS REQUIRED. SEE MOUNTING HEIGHT DETAIL FOR MOUNTING REQUIREMENTS.	SYSTEM SENSOR SPECTRALERT #5HW
[XX]	CEILING MOUNTED FIRE ALARM HORN-STROBE - WHITE	CENTER DEVICE IN CEILING TILE. DEVICE SHALL BE UL LISTED FOR USE IN CEILINGS. CONNECT AS REQUIRED.	SYSTEM SENSOR SPECTRALERT #5CVW
[XX]	CEILING MOUNTED FIRE ALARM ADJUSTABLE HORN ONLY (OMNI HORN NOT ACCEPTABLE) - WHITE	CENTER DEVICE IN CEILING TILE. DEVICE SHALL BE UL LISTED FOR USE IN CEILINGS. CONNECT AS REQUIRED.	SYSTEM SENSOR SPECTRALERT #5HW
FIRE ALARM LINETYPE LEGEND			
[---]	NEW DEVICE OR RELOCATED EXISTING DEVICE		
[---]	NAC1 - NEW NAC CIRCUIT. NUMBER INDICATES CIRCUIT IN NAC PANEL.		
[---]	SLC1 - NEW SLC CIRCUIT. NUMBER INDICATES CIRCUIT IN CONTROL PANEL.		



**1 FIRE ALARM RISER DIAGRAM**  
 SCALE: NONE



DIGITALLY CERTIFIED DOCUMENT. THIS DOCUMENT WAS ORIGINALLY CERTIFIED, DIGITALLY SIGNED AND LOCKED TO PREVENT ALTERATION. ALL PRINTED COPIES OF THIS DOCUMENT, ALONG WITH ANY DIGITAL DOCUMENT NOT BEARING THE DIGITAL CERTIFICATION SIGNATURE ARE UNCERTIFIED COPIES OF THE ORIGINAL CERTIFIED DOCUMENT.

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

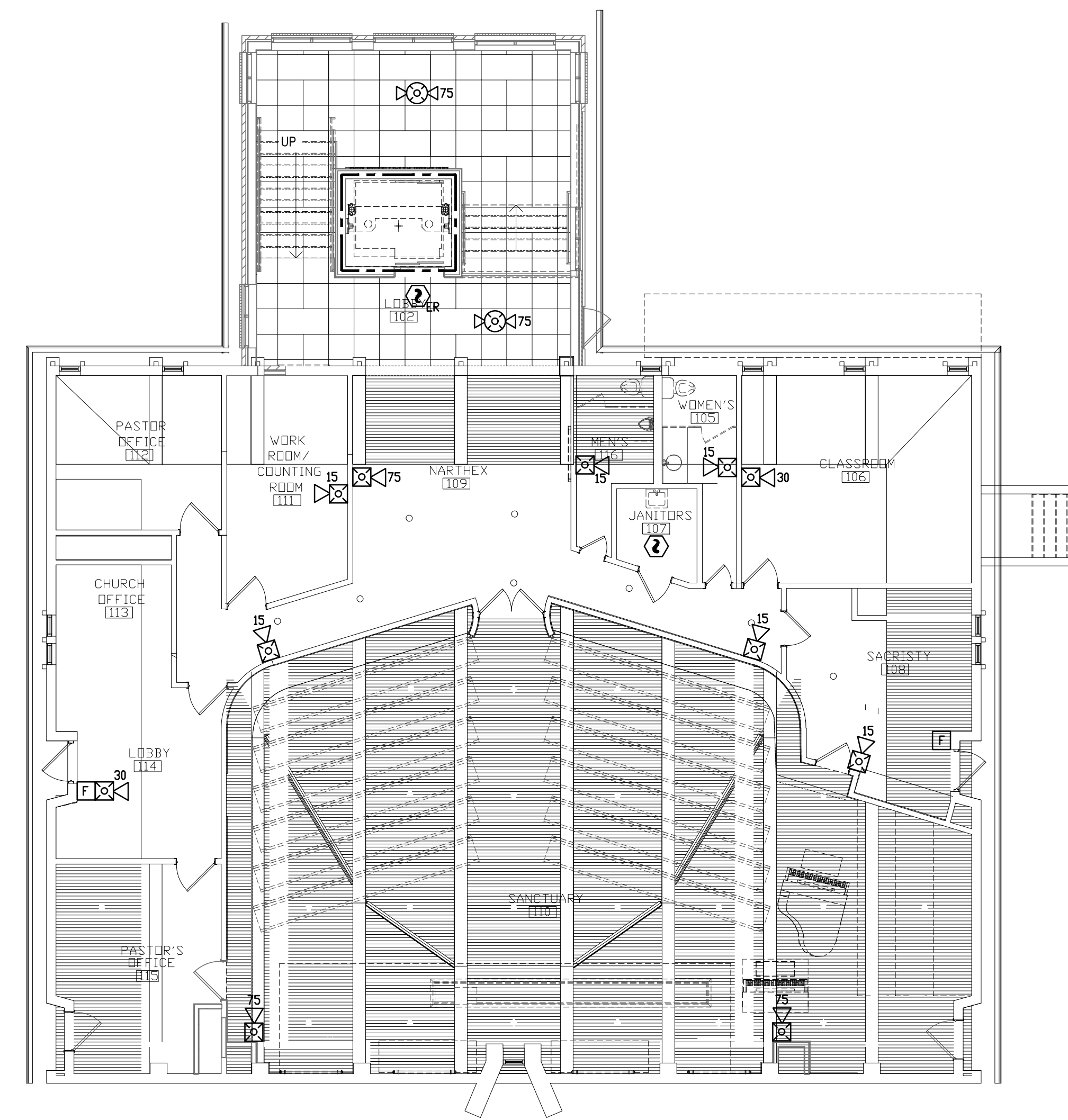
PROJECT #: 210029  
 DATE: 03-09-2023

FIRE ALARM COVER SHEET

**FA0.1**

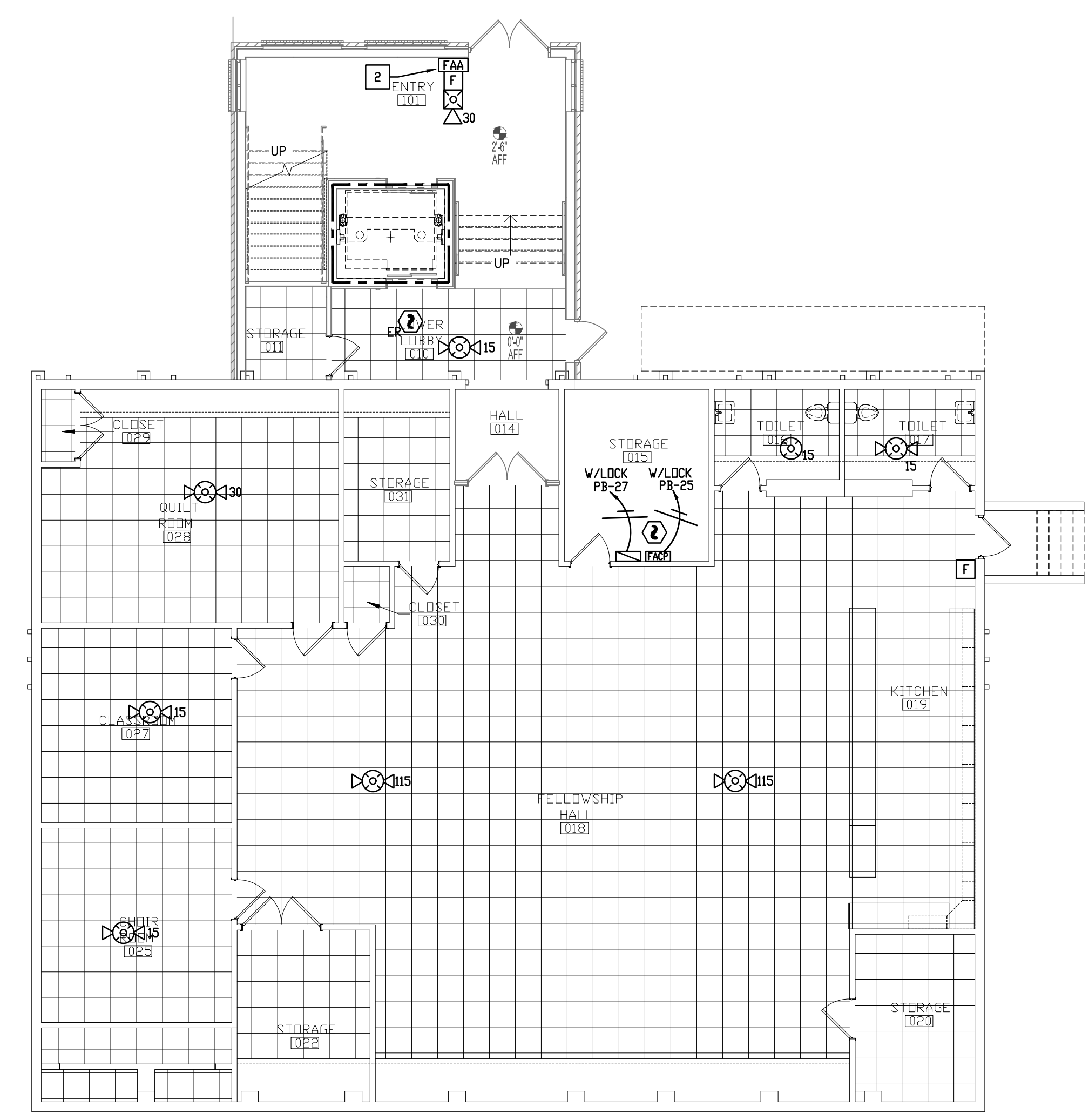


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**1 FLOOR PLAN - FIRE ALARM**  
 SCALE: 1/8" = 1'-0"

- NOTES**
- IT IS NOTED THAT THE CEILING IS 8'-0" AFF IN ALL AREAS WITH AN ACT CEILING. THEREFORE, FIRE ALARM SYSTEM HAS BEEN DESIGNED BASED ON A MAXIMUM CEILING HEIGHT OF 10'-0" AFF.
- PLAN NOTES:**
- NEW FIRE ALARM CONTROL PANEL AND POWER EXTENDER. SEE FIRE ALARM RISER DIAGRAM.
  - PROVIDE FLUSH FIRE ALARM ANNUNCIATOR AS REQUIRED. VERIFY LOCATION OF ANNUNCIATOR WITH FIRE MARSHAL PRIOR TO BEGINNING WORK.
  - PROVIDE DUCT DETECTOR IN RETURN AIR DUCT AND CONNECT REMOTE LED INDICATOR IN CEILING GRID AS REQUIRED. COORDINATE W/ MECH TYPICAL.



**2 BASEMENT PLAN - FIRE ALARM**  
 SCALE: 1/8" = 1'-0"

**FIRE ALARM SCOPE/SYSTEM NOTE:**  
 THE SCOPE OF FIRE ALARM WORK FOR THIS PROJECT IS TO ADD NEW NOTIFICATION AND/OR INITIATING DEVICES AS NECESSARY TO PROVIDE CODE REQUIRED COVERAGE FOR THE TENANT SPACE INDICATED ON PLANS. THE EXISTING SYSTEM UTILIZES HORN/STROBE NOTIFICATION.

**FIRE ALARM SYNCHRONIZATION NOTE:**  
 ALL FIRE ALARM DEVICES IN COMMON SIGHT LINES MUST BE VISUALLY SYNCHRONIZED AND ALL AUDIBLE FIRE ALARM DEVICES MUST BE AUDIBLY SYNCHRONIZED AND OF A CONSISTENT AUDIBLE SIGNAL THROUGHOUT THE BUILDING. REPLACE DEVICES AND / OR PROVIDE SYNC MODULES IN BOOSTER PANELS / IAC OUTPUTS AS NECESSARY TO ACHIEVE SYNCHRONIZATION THROUGHOUT. EXISTING DEVICES / BOOSTER PANELS SHOWN TO REMAIN IN THESE DRAWINGS SHOULD BE CONSIDERED EXISTING TO REMAIN ONLY IF THE FIRE ALARM CONTRACTOR VERIFIES THEIR ABILITY TO SYNCHRONIZE, AND SHOULD BE CONSIDERED NEW OTHERWISE. ALL COST ASSOCIATED WITH SYNCHRONIZATION SHOULD BE IDENTIFIED AND INCLUDED IN ANY PRICING OR BID.

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLUMNS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

---	EXISTING WALL TO REMAIN
---	NEW WALL TO BE CONSTRUCTED
---	EXISTING WALL TO BE DEMOLISHED
---	ONE HOUR FIRE BARRIER

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
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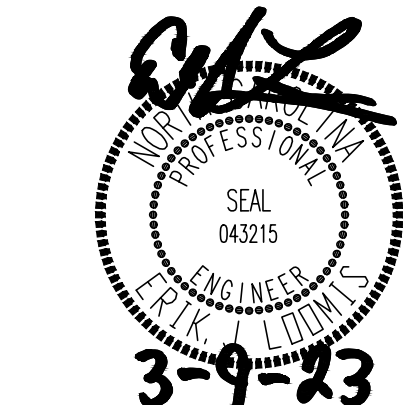
No.	Description	Date

PROJECT #: 210029  
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FLOOR PLANS -  
 FIRE ALARM

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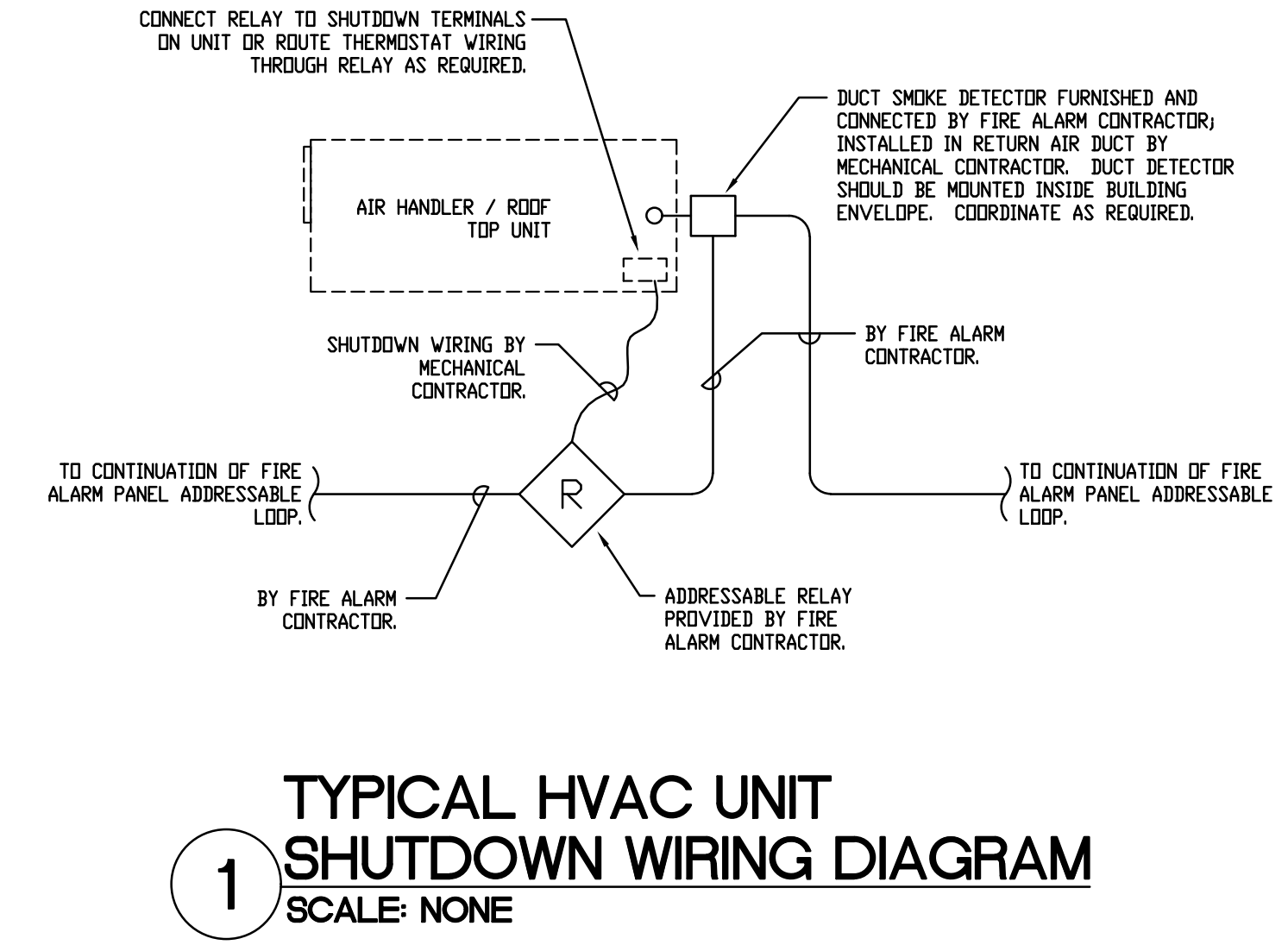
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**GENERAL NOTES AND REQUIREMENTS.**

- ALL BOXES MOUNTED IN RATED WALLS SHALL COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCBC, SECTION 714.3.2. UNLESS OTHERWISE NOTED, DEVICES SHOWN IN RATED WALLS SHALL BE FLOSI WITH CONDUIT CONCEALED. PROVIDE HORIZONTAL SEPARATION, PUTTY PADS, RATED BOXES ETC. AS REQUIRED FOR REQUIRED INSTALLATION.
- SEE ARCHITECTURAL CEILING PLANS FOR CEILING TYPES. WHERE NEW INACCESSIBLE GYP. CEILINGS ARE BEING INSTALLED THE CONTRACTOR SHALL NOT MOUNT ANY JUNCTION BOXES, CONDUIT BUNDLES OR OTHER EQUIPMENT OR FITTINGS REQUIRING ACCESS ABOVE THE NEW INACCESSIBLE CEILING, AND SHALL RELOCATE ALL SUCH ITEMS REQUIRING ACCESS TO ADJACENT AREAS WHERE ACCESS IS PROVIDED. NO ACCESS PANELS IN THE HARD CEILING ARE ALLOWED WITHOUT APPROVAL.
- THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS. THE LOCATION OF ALL WALL MOUNTED DEVICES, INCLUDING MOUNTING HEIGHTS, SHALL BE FIELD VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION. COORDINATE LOCATIONS OF ALL LIGHT FIXTURES WITH THE REFLECTED CEILING PLANS. LIGHT FIXTURES INSTALLED IN MECHANICAL AREAS SHALL AVOID MECHANICAL PIPING, EQUIPMENT, DUCTWORK, ETC.
- THE CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT. PRIOR TO INSTALLATION OF ELEC. EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
- CONTRACTOR SHALL INCLUDE COST OF PAINTING ALL EXPOSED CONDUITS SUBJECT TO PUBLIC VIEW. JUNCTION BOX COVERS SHALL BE PERMANENTLY LABELED AND CONDUIT SHALL BE LABELED EVERY 10'.
- CONDUITS AND CABLES SHALL BE CONCEALED WHEREVER POSSIBLE BY EITHER ROUTING ABOVE CEILING, IN INTERSTITIAL SPACES OR RUNNING EXPOSED IN UNFINISHED SPACES AS MUCH AS FEASIBLE. CONDUITS MAY BE RUN EXPOSED IN MECHANICAL AREAS OR OTHER AREAS NOT SUBJECT TO PUBLIC VIEW WHERE APPROVED BY THE OWNER. WHEREVER CONDUITS OR CABLES ARE EXPOSED, CONDUITS AND CABLES SHALL BE RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS AND SHALL BE RUN IN BUNDLES IN GROUPS, AND THE INSTALLATION SHALL BE NEAT AND ORDERLY. EVEN WHEN EXPOSED, CONDUITS AND CABLES SHALL BE RUN TO MINIMIZE VIEW FROM PERSONNEL. SEAL ALL PENETRATIONS AIR TIGHT AROUND ALL CONDUITS PASSING THROUGH WALLS OR FLOORS USING APPROPRIATE PENETRATION PROTECTION WHEN PASSING INTO OR THROUGH RATED ASSEMBLIES.
- ALL MOUNTING HEIGHTS ARE GIVEN TO THE BOTTOM OF THE DEVICE UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL PATCH ANY WALL, CEILING, OR FLOOR OPENINGS AND PENETRATIONS RESULTING FROM DEMOLITION OR NEW WORK IN EXISTING AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY DISPOSING OF ALL WASTE MATERIALS, DEMO MATERIALS AND OTHER TRASH. THIS INCLUDES BUT IS NOT LIMITED TO PROPER DISPOSAL OF MERCURY CONTAINING LAMPS, RECYCLABLE MATERIALS ETC.
- IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE W/ ALL OTHER TRADES REGARDING VOLTAGES, LOADS, CIRCUIT BREAKERS, ETC. PRIOR TO BEGINNING ANY WORK.
- AS USED ON THESE DOCUMENTS, THE WORD "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL THE ITEM OR EQUIPMENT AND MAKE THE FINAL CONNECTION AS REQUIRED.
- CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL REQUIREMENTS OF THE 2018 NORTH CAROLINA BUILDING CODE, ACCESSIBILITY CODE WHICH ARE APPLICABLE TO THIS PROJECT REGARDLESS OF WHETHER ALL DETAILS ARE INDICATED ON PLANS.
- ALL PULL STATIONS SHALL COMPLY WITH ALL REQUIREMENTS OF 2018 NORTH CAROLINA STATE BUILDING CODE, CHAPTER 11 ACCESSIBILITY CODE.
- CONTRACTOR SHALL VERIFY ALL AREAS THAT ARE USED AS A RETURN PLENUM WITH MECHANICAL CONTRACTOR AND PROVIDE PLENUM RATED CABLE FOR ALL CABLES NOT RUN IN METAL CONDUIT. THIS INCLUDES ALL TELECOMMUNICATIONS, FIRE ALARM, OR CONTROL WIRING ABOVE CEILING.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SEISMIC REQUIREMENTS.
- BOXES AND WIRING SHALL NOT BE RECESSED INTO OR PENETRATE STRUCTURAL COLUMNS. BOXES/CONDUITS SHALL BE SURFACE MOUNTED TO COLUMN AND/OR RECESSED IN STUD WALL WHERE POSSIBLE. COORDINATE WITH ARCHITECT.
- ALL EQUIPMENT CONNECTED TO OR ASSOCIATED WITH FIRE ALARM SYSTEM OR OTHERWISE INCLUDED IN THE SCOPE OF WORK SHALL BE LISTED AND LABELED BY A THIRD PARTY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.
- COE HAS RESERVED THE OPPORTUNITY TO CHOOSE THE SOFTWARE PACKAGE(S) OR OTHER MEANS DEEMED MOST EFFICIENT TO DELIVER THESE PLANS AND CONSIDERS ANY DIGITAL FILES OR SOFTWARE USED DURING THIS PROCESS AS INSTRUMENTS OF SERVICE, AND AS SUCH REMAIN THE SOLE PROPERTY OF COE. THE CONTRACTOR SHOULD NOT ASSUME THAT DIGITAL FILES IN ANY FORMAT WILL BE MADE AVAILABLE DURING BIDDING OR AFTER AWARD. IF DIGITAL FILES ARE REQUESTED, COE RESERVES THE RIGHT TO SELECTIVELY PROVIDE THEM WHEN AVAILABLE AND/OR REQUEST ADDITIONAL CONSIDERATION FOR THE TIME INCURRED TO PREPARE THEM.
- CONTRACTOR SHALL NOT PUT AN ACCESS DOOR IN HARD CEILING FOR ANY REASON. CONTRACTOR SHALL INSTALL APPROPRIATE JUNCTION BOXES, ETC ABOVE THE CEILING IN AREAS THAT CAN BE ACCESSED BY THE REMOVAL OF LAY-IN GRID.
- ALL NECESSARY CORE DRILLS SHALL BE LOCATED AND COORDINATED WITH THE AFFECTED TENANT SPACES ABOVE OR BELOW AS WELL AS THE BUILDING MANAGER OR OWNER PRIOR TO BEGINNING WORK. SCHEDULE CORE DRILLS TO MINIMIZE INTERRUPTION AND ADDRESS SECURITY CONCERNS ETC.

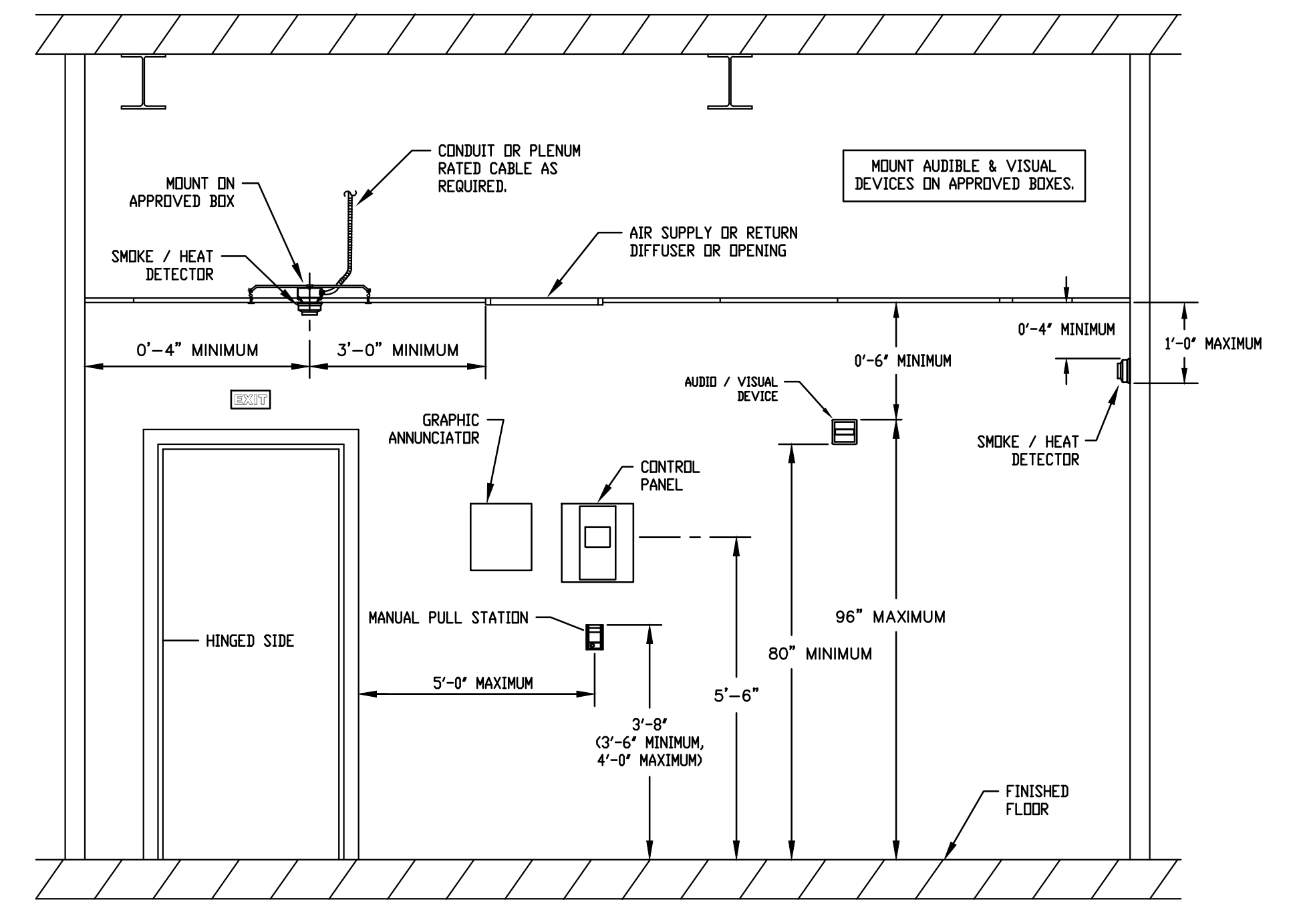
**FIRE ALARM NOTES:**

- SEE LEGEND & SPECIFICATIONS FOR MODEL NUMBERS.
- ALL FIRE ALARM SYSTEM CONDUCTORS SHALL BE RUN IN 3/4" EMT CONDUIT UNLESS NOTED OTHERWISE. PROVIDE ALL HANGERS, JUNCTION BOXES, FITTINGS, SUPPORTS ETC. AS REQUIRED. JUNCTION BOXES FOR ALL FIRE ALARM JUNCTION BOXES SHALL BE LABELED AND PAINTED RED. CIRCUITS CAN BE COMBINED IN CONDUIT AS NECESSARY.
- PROVIDE SYNCHRONIZATION AS REQUIRED BY ADA.
- A NOISE LEVEL OF 15 DBA ABOVE AVERAGE AMBIENT (PER 2018 NFPA 72, TABLE A.8.1.3.3) SHALL BE MAINTAINED IN ALL OCCUPIABLE AREAS MEASURED 5' ABOVE THE FLOOR USING THE A-WEIGHTED SCALE UNLESS OTHERWISE NOTED. A MINIMUM OF 90 DBA SHALL BE MAINTAINED IN ALL MECHANICAL EQUIPMENT ROOMS PER THE 2018 NORTH CAROLINA FIRE CODE, SECTION 907.5.2.11. THE TOTAL SOUND PRESSURE LEVEL PRODUCED BY COMBINING THE AMBIENT AND NOTIFICATION LEVELS SHALL NOT EXCEED 110 DBA ANYWHERE IN THE OCCUPIABLE AREA. DEVICES HAVE BEEN SHOWN TO PROVIDE THE GENERAL INFRASTRUCTURE TO ACHIEVE SUCH LEVELS HOWEVER, DUE TO SPECIFIC SITE CONSIDERATIONS INCLUDING WALL CONSTRUCTION AND SOUND ATTENUATION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE LEVEL OF ALL AUDIBLE DEVICES AS NEEDED AND PROVIDE ANY ADDITIONAL AUDIBLE DEVICES AS REQUIRED TO MEET THESE AUDIBILITY REQUIREMENTS.
- PROVIDE PLACARDS FOR THE ENTIRE FIRE ALARM SYSTEM FOR ZONES AND DEVICE ADDRESSES. PROVIDE PANEL AND CIRCUIT NUMBERS ON A ZONE MAP AFFIXED TO OR ADJACENT TO THE FACP OR AS REQUIRED BY THE FIRE MARSHAL.
- FUNCTIONAL TESTING METHOD OF PROPER OPERATION OF SMOKE DETECTORS SHALL BE DETERMINED BY A.H.J.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT THIS INSTALLATION AND DESIGN OF FIRE ALARM SYSTEM COMPLY WITH ALL REQUIREMENTS OF THE 2018 NCBC FIRE CODE CHAPTER 9, 2018 NCBC CHAPTER 9, 2018 NFPA 72, AND NFPA 70. CONTRACTOR SHALL REVIEW DESIGN DRAWINGS PRIOR TO BID/BEGINNING WORK AND SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY ITEMS WHICH HE FEELS MAY BE OMISSIONS, INSUFFICIENT, ETC. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ANY ADDITIONAL REQUIRED ITEMS NOT NOTED TO ENGINEER PRIOR TO BEGINNING WORK AT NO ADDITIONAL COST TO OWNER.
- CONTRACTOR SHALL PROVIDE ALL TESTING AND DOCUMENTATION AS REQUIRED BY THE LOCAL FIRE MARSHAL AND STATE AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO:  
 1. ACCEPTANCE TESTS AS REQUIRED PER 2018 NC FIRE CODE, SECTION 907.7.  
 2. REQUIRED INSPECTIONS, TESTING AND MAINTENANCE AS REQUIRED BY THE 2018 NC FIRE CODE.  
 3. INSTRUCTIONS PER 2018 NC FIRE CODE, SECTION 907.7.3 AND RECORD OF COMPLETION PER 2018 NC FIRE CODE, SECTION 907.7.2.
- PROVIDE A LISTED CELLULAR DIALER SYSTEM (WITH INTEGRAL 24 HOUR BATTERY BACKUP) THAT COMPLIES WITH 2018 NFPA 72, SECTION 26.6.3 AND PROVIDES FOR A SECOND METHOD OF COMMUNICATION WHERE REQUIRED BY THE LOCAL CODES. NOTE THAT 2018 NFPA 72 DOES NOT PERMIT TELEPHONE LINES AS THE SOLE MEANS OF COMMUNICATION. IF ANOTHER APPROVED COMMUNICATION METHOD IS ELECTED, THE FIRE ALARM CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL NECESSARY COMMUNICATION EQUIPMENT AND PROVIDE 24 HOUR BATTERY BACKUP FOR ALL SUCH EQUIPMENT AS PART OF THE FIRE ALARM SCOPE.
- DEVICES SHALL BE OF COLOR SPECIFIED OR MATCH THE COLOR OF ANY EXISTING FIXTURES TO REMAIN OR BE REUSED IN THE AREA OF WORK IF THERE ARE EXISTING DEVICES TO MATCH.
- PULL STATIONS ARE ONLY PROVIDED AT REQUIRED EXITS.
- THE CONTRACTOR SHALL SUBMIT FIRE ALARM SHOP DRAWINGS TO THE FIRE PREVENTION OFFICE PRIOR TO BEGINNING WORK. NO INSPECTIONS ALLOWED PRIOR TO RECEIVING APPROVAL FROM THE FIRE MARSHAL.
- ALL FIRE ALARM DEVICES IN COMMON SIGHT LINES MUST BE VISUALLY SYNCHRONIZED AND ALL AUDIBLE FIRE ALARM DEVICES MUST BE AUDIBLY SYNCHRONIZED AND OF A CONSISTENT AUDIBLE SIGNAL THROUGHOUT THE BUILDING. REPLACE DEVICES AND / OR PROVIDE SYNC MODULES IN BOOSTER PANELS / MFC OUTPUTS AS NECESSARY TO ACHIEVE SYNCHRONIZATION THROUGHOUT. EXISTING DEVICES / BOOSTER PANELS SHOWN TO REMAIN IN THESE DRAWINGS SHALL BE CONSIDERED EXISTING TO REMAIN ONLY IF THE FIRE ALARM CONTRACTOR VERIFIES THEIR ABILITY TO SYNCHRONIZE AND SHOULD BE CONSIDERED NEW OTHERWISE. ALL COST ASSOCIATED WITH SYNCHRONIZATION SHOULD BE IDENTIFIED AND INCLUDED IN ANY PRICING OR BIDS.
- INTERLOCK FIRE ALARM SYSTEM WITH SECURITY SYSTEM SUCH THAT WHEN FIRE ALARM SYSTEM IS ACTIVATED, SECURITY SYSTEM UNLOCKS DOORS AS REQUIRED BY 2018 NORTH CAROLINA BUILDING CODE, SECTION 1008.15.8, NOTE #4. COORDINATE WITH SECURITY CONTRACTOR. SYSTEM SHALL FAIL SAFE UPON POWER LOSS.
- CONTRACTOR SHALL PREPARE FIRE ALARM SHOP DRAWINGS INCLUDING A FLOOR PLAN(S) SHOWING DEVICE AND CIRCUIT LAYOUTS WITH A DETAILED RISER DIAGRAM SHOWING EACH DEVICE AND ALL CIRCUITS. FIRE ALARM SHOP DRAWINGS SHALL INCLUDE DETAILED BATTERY AND VOLTAGE DROP CALCULATIONS AS REQUIRED BY THE 2018 NC FIRE CODE, SECTION 907. BATTERY CALCULATIONS SHALL SHOW BATTERY REQUIREMENTS FOR THE ENTIRE SYSTEM (INCLUDING ANY OTHER FITTINGS). IF BATTERY CALCULATIONS SHOW THE SYSTEM AS INSUFFICIENT, CONTRACTOR SHALL PROVIDE ALTERNATE PRICE TO ADD A NEW 4 CIRCUIT POWER EXTENDER(S) AND CONNECT REQUIRED DEVICES TO IT. CONTRACTOR SHALL SUBMIT MINIMUM 5 COPIES OF PLAN, RISER DIAGRAM, BATTERY CALCULATIONS & VOLTAGE DROP CALCULATIONS WITH SUBMITTAL DATA TO ENGINEER FOR REVIEW PRIOR TO BEGINNING ANY WORK OR SUBMITTING TO THE LOCAL FIRE MARSHAL.
- INITIATING DEVICE CIRCUITS SHALL BE LOADED TO A MAXIMUM OF 75% CAPACITY.
- AUDIBLE/VISUAL CIRCUITS SHALL BE LOADED TO A MAXIMUM OF 75% CAPACITY.
- PROVIDE POWER EXTENDERS AS REQUIRED FOR NOTIFICATION APPLIANCE CIRCUITS.
- RISER DIAGRAM DEVICES ARE GENERIC AND DO NOT REPRESENT DEVICE QUANTITIES REQUIRED FOR THIS PROJECT. SEE PLANS FOR QUANTITIES.



**1 TYPICAL HVAC UNIT SHUTDOWN WIRING DIAGRAM**  
 SCALE: NONE

**NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS**



**2 FIRE ALARM DEVICE MOUNTING HEIGHTS**  
 SCALE: NONE

**FIRE ALARM SEQUENCE OF OPERATION:**

- UPON CHANGE IN STATUS OF ANY DEVICE ON THE SYSTEM, THE FIRE ALARM CONTROL PANEL SHALL ACTIVATE AUDIBLE AND VISIBLE CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT.
- REMOVAL OF ANY DEVICE, WIRING DISARRANGEMENT, OR SYSTEM COMPONENT FAILURE SHALL DISPLAY IN THE OPERATOR TERMINAL, THE CHANGE OF STATUS, TIME, DATE, POINT DESCRIPTION ON A POINT BY POINT BASIS, AND THE MESSAGE ASSOCIATED WITH THE POINT AND TRANSMIT A TROUBLE SIGNAL TO A U.L. LISTED CENTRAL STATION.
- INDICATION EVACUATION TONE SHALL BE THREE BEAT TEMPORAL PATTERN, UNLESS HIGH RISE OR LARGE ASSEMBLY.
- FIRE ALARM SHUNT TRIP, CONTROL PANEL AND RELAY SHALL BE PROGRAMMED WITH A DELAY THAT WILL ALLOW TIME FOR THE ELEVATOR CAR TO TRAVEL FROM THE TOP OF THE HOISTWAY TO THE LOWEST RECALL LEVEL. FIELD COORDINATE EXACT TIMING WITH ELEVATOR VENDOR.
- ACTIVATION OF ANY MANUAL STATION, KITCHEN HOOD EXTINGUISHING SYSTEM, WATERFLOW DEVICE, SMOKE DETECTOR, HEAT DETECTOR, SUPERVISORY DEVICE OR OTHER INITIATING DEVICE WILL CAUSE THE FOLLOWING FUNCTIONS TO OCCUR:
- MANUAL STATION OPERATION SHALL:**
- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
  - TRANSMIT AN ALARM SIGNAL TO A U.L. LISTED CENTRAL STATION.
  - ACTIVATE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES IN THE BUILDING.
  - RELEASE THE DOOR LOCKING SYSTEMS OF ACCESS-CONTROLLED EGRESS DOORS.
  - SHUT DOWN AIR HANDLERS.
- WATERFLOW SWITCH OPERATION SHALL:**
- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
  - TRANSMIT AN ALARM SIGNAL TO A U.L. LISTED CENTRAL STATION.
  - ACTIVATE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES IN THE BUILDING.
  - RELEASE THE DOOR LOCKING SYSTEMS OF ACCESS-CONTROLLED EGRESS DOORS.
  - SHUT DOWN AIR HANDLERS.
- SMOKE DETECTOR OR HEAT DETECTOR OPERATION SHALL:**
- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
  - TRANSMIT AN ALARM SIGNAL TO A U.L. LISTED CENTRAL STATION.
  - ACTIVATE THE AUDIBLE AND VISUAL NOTIFICATION APPLIANCES IN THE BUILDING.
  - RELEASE THE DOOR LOCKING SYSTEMS OF ACCESS-CONTROLLED EGRESS DOORS.
  - SHUT DOWN AIR HANDLERS.
- DUCT SMOKE DETECTOR ACTIVATION SHALL:**
- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
  - TRANSMIT AN ALARM SIGNAL TO A U.L. LISTED CENTRAL STATION.
  - SHUT DOWN AIR HANDLERS AS FOLLOWS:
    - IN BUILDINGS WITH ONE TENANT OR COMMON HVAC SYSTEM OR ONE LARGE AIR VOLUME, ANY DUCT DETECTOR SHALL SHUT DOWN ALL AIR HANDLERS OF THE HVAC SYSTEM.
    - IN BUILDINGS WITH MULTIPLE TENANTS SEPARATED INTO DIFFERENT AIR VOLUMES WITH HVAC UNITS DEDICATED TO THOSE TENANTS / AIR VOLUMES, ANY DUCT DETECTOR WITHIN A GIVEN TENANT / AIR VOLUME SHALL SHUT DOWN ALL AIR HANDLERS ASSOCIATED WITH THAT TENANT / AIR VOLUME.
- SUPERVISORY DEVICE ACTIVATION, INCLUDING VALVE SUPERVISORY DEVICES SHALL:**
- ACTIVATE AUDIBLE AND VISUAL STATUS CHANGE INDICATORS AND DISPLAY POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT ON THE PANEL.
  - TRANSMIT A SUPERVISORY SIGNAL TO A U.L. LISTED CENTRAL STATION. THIS SIGNAL SHALL BE DISTINCTLY DIFFERENT THAN A TROUBLE SIGNAL.

SYSTEM INPUTS	BUILDING SYSTEM OUTPUTS												CENTRAL COMMUNICATOR							
MANUAL FIRE ALARM PULL STATION	X	X												X	X	X				
BUILDING SMOKE DETECTOR	X	X												X	X	X				
BUILDING HEAT DETECTOR	X	X												X	X	X				
SPRINKLER WATERFLOW	X	X												X	X	X				
SPRINKLER TAMPER		X	X				X							X	X	X				
FIRE ALARM AC POWER FAILURE			X	X		X			X					X	X	X				X
FIRE ALARM SYSTEM LOW BATTERY			X	X		X			X					X	X	X				X
OPEN CIRCUIT			X	X		X			X					X	X	X				X
GROUND FAULT			X	X		X			X					X	X	X				X
NOTIFICATION APPLIANCE CIRCUIT SHORT			X	X		X			X					X	X	X				X
HOOD SUPPRESSION SYSTEM		X	X			X			X					X	X	X				X
DUCT DETECTORS			X	X		X			X					X	X	X				X
HEAT DETECTOR IN ELEVATOR SHAFT		X	X			X			X				X	X	X	X				X
SMOKE DETECTOR IN ELEVATOR SHAFT		X	X			X			X				X	X	X	X				X
HEAT DETECTOR IN ELEVATOR EQUIPMENT ROOM		X	X			X			X				X	X	X	X				X
SMOKE DETECTOR IN ELEVATOR EQUIPMENT ROOM		X	X			X			X				X	X	X	X				X
ELEVATOR LOBBY SMOKE DET. ON PRIMARY RECALL FLOOR		X	X			X			X				X	X	X	X				X
ELEVATOR LOBBY SMOKE DET. ON OTHER THAN PRIMARY RECALL FLOOR		X	X			X			X				X	X	X	X				X

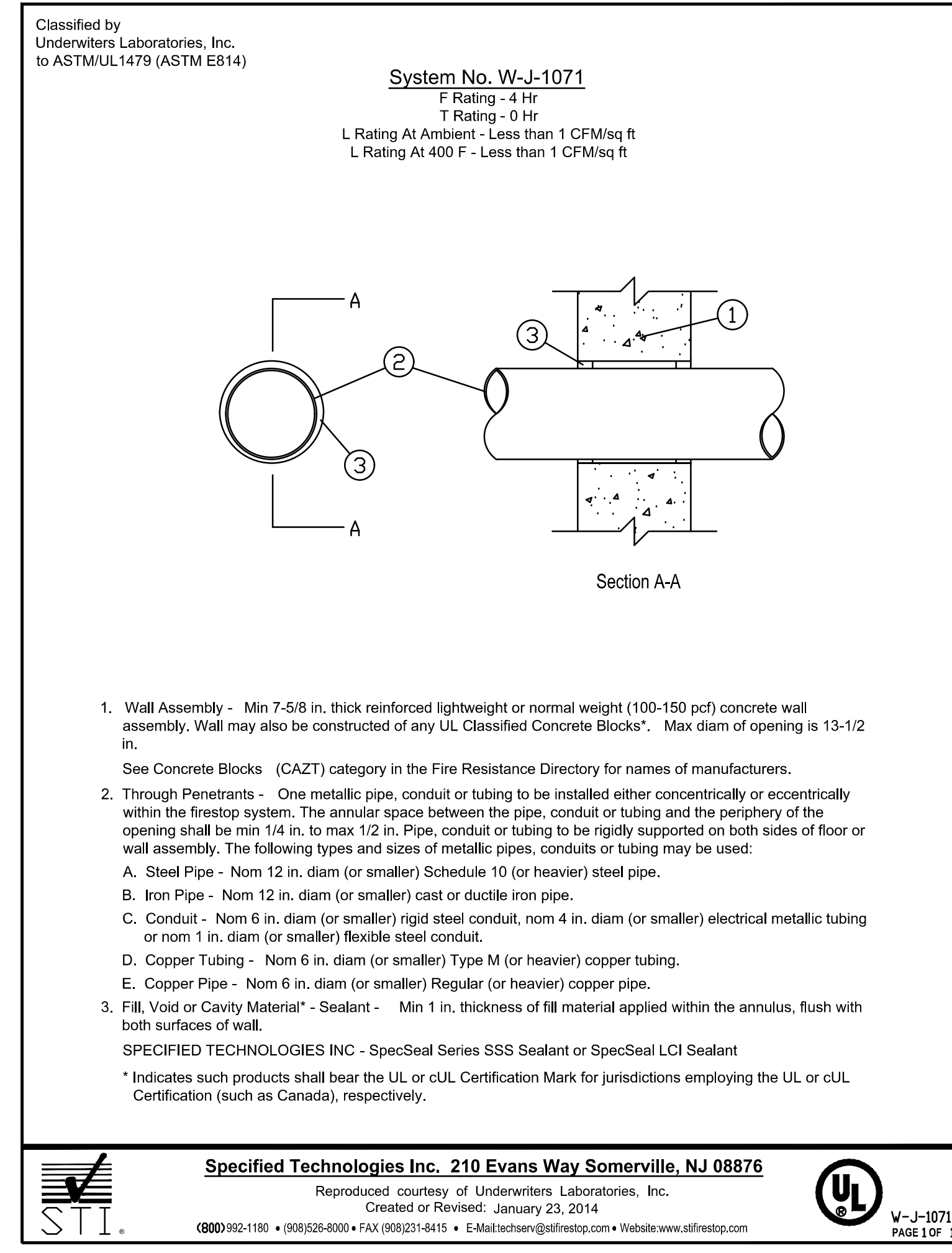
**FIRE ALARM SYSTEM MATRIX**

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029  
 DATE: 03-09-2023  
**FIRE ALARM DETAILS**

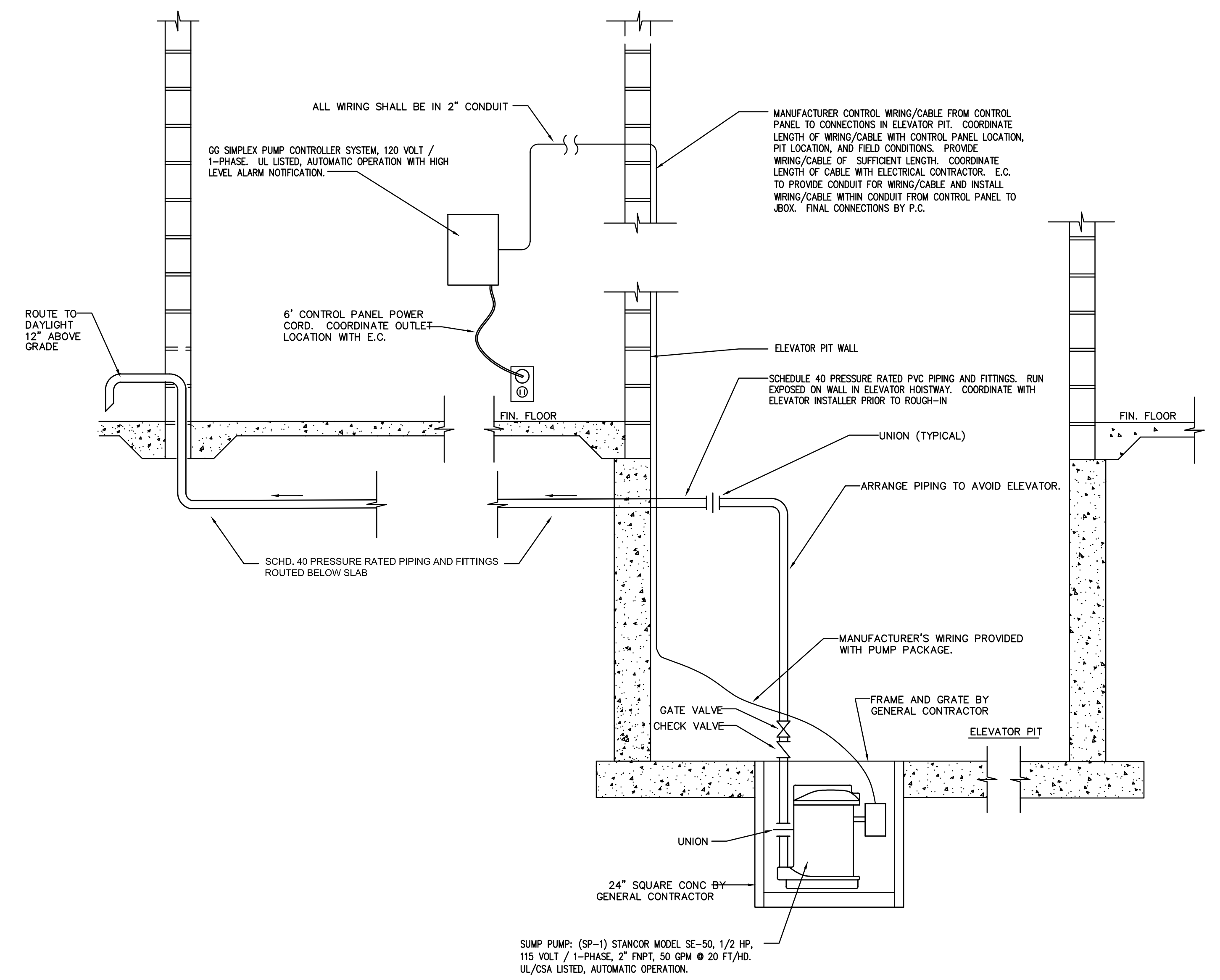
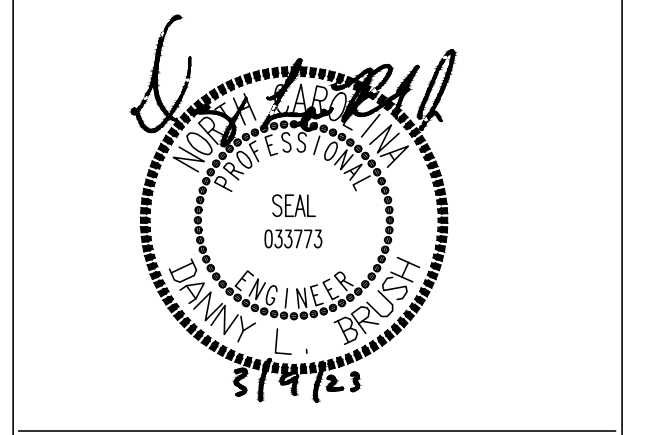




**FOR CMU WALLS ONLY**  
**4 HOUR PENETRATION FIRESTOP**  
**FOR METALLIC PIPE, CONDUIT, OR TUBING**  
 SCALE: NTS

**PLUMBING LEGEND AND ABBREVIATIONS**

---	SANITARY SEWER PIPING ( W )
----	VENT PIPING ( V )
-----	COLD WATER PIPING ( CW )
-----	HOT WATER PIPING ( HW )
○	ELL TURNS UP
○	ELL TURNS DOWN
○	TEE FROM BELOW
○	CHECK VALVE
○	BALL VALVE
○	CLEANOUT IN WALL (WCO)
○	CONNECT TO EXISTING
○	AIR ADMITTANCE VALVE
FD - X	FLOOR DRAIN - TYPE ( SEE SCHEDULE )
H.B.	HOSE BIBB
P.C.	PLUMBING CONTRACTOR
V.T.R.	VENT THROUGH ROOF
CV	COMMON VENT
BPZ	REDUCED PRESSURE ZONE
ETR	EXISTING TO REMAIN
HD	HUB DRAIN
FM	FORCE MAIN



**2 ELEVATOR SUMP PUMP DETAIL**  
 SCALE: NTS

**RENOVATION NOTES:**

- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS.
- SEE ARCHITECTURAL FOR EXTENT OF RENOVATIONS.
- SEE ARCHITECTURAL FOR SCOPE OF DEMOLITION WORK. CAP AND/OR PLUG ALL WASTE, WATER AND VENT LINES PREVIOUSLY SERVING FIXTURES AND EQUIPMENT BEING REMOVED. VERIFY CAPPED PIPING WILL BE CONCEALED AND/OR WILL NOT CONFLICT WITH NEW SPACE LAYOUT. ENSURE THAT ALL WASTE LINES BEING REMOVED ARE PLUGGED SUCH THAT SEWER GASES WILL NOT ESCAPE SANITARY SYSTEM.
- ALL NEW PIPING SHALL BE CONCEALED IN WALLS OR ABOVE CEILING / BELOW SLAB UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL RECONNECT ANY EXISTING FIXTURES TO REMAIN WHERE THE EXISTING PIPING IS AFFECTED BY THE NEW OR DEMOLITION WORK.
- WHERE AFFECTED BY NEW OR DEMOLITION WORK, CONTRACTOR SHALL RELOCATE ANY EXISTING PIPING, COMPONENTS, OR SYSTEMS THAT ARE REQUIRED TO REMAIN IN ORDER TO KEEP EXISTING SYSTEMS OPERATIVE.
- CONTRACTOR SHALL VERIFY THAT THERE IS SUFFICIENT CLEARANCE ABOVE CEILING FOR ALL AREAS AFFECTED BY NEW OR DEMOLITION WORK.
- CONTRACTOR SHALL SURVEY THE EXISTING UNDER SLAB SEWER PIPING WITH A CAMERA PRIOR TO CUTTING CONCRETE. THE ENGINEER SHALL BE CONTACTED IF THE EXISTING LINES ARE NOT IN THE LOCATION SHOWN OR ARE IN POOR WORKING ORDER.
- ANY SLAB CUTTING FOR PLUMBING ACCESS REQUIRES SOIL COMPACTION, VAPOR BARRIER AND EMBEDDED #4 DOWELS 18" O.C.
- CLEAN AND SERVICE ALL EXISTING FIXTURES TO REMAIN SO THAT FIXTURES FUNCTION PROPERLY.

**NOTE:**  
 THE EXISTING LOCATIONS SHOWN ON DEMO PLAN TO BE REMOVED OR RELOCATED ARE FOR REFERENCE ONLY AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO BEGINNING WORK. ANY ITEMS REQUIRED TO BE REMOVED OR RELOCATED SHALL BE INCLUDED IN CONTRACTOR'S COST. WHETHER SHOWN ON THIS PLAN OR NOT. UNLESS SPECIFICALLY NOTED OTHERWISE, WHERE A FIXTURE OR ITEM IS NOTED TO BE DEMOLISHED, THE WORK SHALL INCLUDE REMOVING ALL ASSOCIATED PIPING, FITTINGS, INSULATION ETC. AND SHALL INCLUDE ANY PATCH, REPAIR, PAINT OR REFRESH NECESSARY TO RESTORE THE LOCATION TO MATCH THE SURROUNDING. THE CONTRACTOR MAY REUSE ANY EXISTING PIPING, FITTINGS, VALVES ETC. WHERE THEY HAVE BEEN INSPECTED AND ARE DETERMINED TO BE ACCEPTABLE TO THE OWNER AND/OR IN LIKE-NEW CONDITION.

**PLUMBING SPECIFICATIONS:**

- THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE AND LOCAL PLUMBING INSPECTOR.
- ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
- THESE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL PROVIDE ALL NECESSARY OFFSETS, TEES, ELBOWS, ETC FOR A COMPLETE WORKING PLUMBING SYSTEM.
- THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, INSPECTIONS, TAPS, ETC.
- CONTRACTOR SHALL COORDINATE ANY PLUMBING SYSTEM REQUIRING SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
- ALL DOMESTIC WATER PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.
- ALL DOMESTIC WATER PIPING (ABOVE SLAB) SHALL BE TYPE "L" COPPER WITH 95/5 LEAD FREE SOLDER.
- ALL WATER PIPING SHALL BE INSULATED WITH CLOSED CELL (ARMAFLEX) TYPE INSULATION WITH THE FLAME DENSITY RATING NOT EXCEEDING 25 & THE SMOKE DENSITY RATING NOT EXCEEDING 50. THICKNESS FOR COLD WATER PIPING SHALL BE 1/2" THICK. THICKNESS FOR HOT WATER & RETURN PIPING SHALL BE 1" THICK. ROOF DRAIN BODIES AND HORIZONTAL PRIMARY PIPING SHALL BE INSULATED WITH MINERAL FIBER INSULATION WITH FACTORY APPLIED ASJ, MINIMUM 1-1/2" THICK.
- ALL BRANCH LINES AND BASE OF RISERS SHALL HAVE SHUT-OFF VALVES. ALL DOMESTIC WATER BALL VALVES SHALL BE BRASS BODY, FULL PORT, CHROME PLATED BALL, TEFLON SEATS, 150 # WSP, FOR SIZES 1/2" THRU 3". SIZES ABOVE 3" SHALL BE BRONZE GATE VALVE, 150 # SOLID DISC, SCREW OVER BONNET, 125 # WSP. PROVIDE VALVE HANDLE EXTENDING AS REQUIRED FOR INSULATION.
- ALL PLUMBING FIXTURES WITH QUICK-CLOSING VALVES AND KITCHEN EQUIPMENT SHALL HAVE A PISTON TYPE WATER HAMMER ARRESTOR SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS & PDI STANDARDS.
- ALL SANITARY SEWER PIPING SHOWN IS ABOVE CEILING/WITHIN WALLS UNLESS NOTED OTHERWISE.
- ALL STORM WASTE AND VENT PIPING (ABOVE SLAB) SHALL SERVICE WEIGHT CAST IRON WITH NO-HUB FITTINGS CONFORMING TO CSPI 301-30. JOINTS SHALL BE ONE-PIECE NEOPRENE GASKET WITH STAINLESS STEEL BAND AND BOLTS CONFORMING TO ASTM C564-85.
- ALL STORM WASTE & VENT PIPING (UNDERGROUND) SHALL BE PVC-DWV WITH PIPING AND FITTINGS CONFORMING TO ASTM D-2665.
- ALL PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY 2018 NORTH CAROLINA PLUMBING CODE & MANUFACTURER'S RECOMMENDATIONS.
- ALL PIPING PENETRATIONS THRU NEW / EXISTING WALLS/FLOORS SHALL BE SEALED TO EQUAL THE RATING OF THE NEW / EXISTING WALL OR FLOOR.
- ALL PLUMBING SYSTEMS SHALL BE TESTED AS REQUIRED PER 2018 NORTH CAROLINA PLUMBING CODE.
- THE PLUMBING CONTRACTOR SHALL COORDINATE ALL UNDERSLAB PLUMBING PIPING WITH ALL STRUCTURAL FOUNDATIONS. P.C. SHALL COORDINATE ALL UNDERSLAB PLUMBING PIPING ELEVATION INVERTS WITH SITE UTILITY ELEVATION INVERTS.
- THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED AS REQUIRED PER LOCAL AUTHORITY. PURGE WATER PIPING PRIOR TO SETTING BACKFLOW PREVENTER.
- THE NEW PORTION OF THE DOMESTIC WATER SYSTEM SHALL BE PURGED OF DELETERIOUS MATTER AND DISINFECTED IN ACCORDANCE WITH 2018 NORTH CAROLINA PLUMBING CODE. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES. SUBMIT THIRD-PARTY WITNESS REPORTS OF PURGING AND DISINFECTING ACTIVITIES.
- PLUMBING CONTRACTOR SHALL PROVIDE SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.
- PLUMBING CONTRACTOR SHALL PROVIDE CLEANOUTS IN COMPLIANCE WITH NCPD SECTION 708, INCLUDING THE FOLLOWING LOCATIONS:  
 - ON ALL HORIZONTAL DRAINS, NO FURTHER THAN 100FT APART.  
 - AT EVERY FOUR (4) 45° TURNS OR EVERY TWO (2) 90° TURNS.  
 - AT THE BASE OF WASTE STACKS.  
 - AS SHOWN ON PLANS.

**PLUMBING SUMMARY**

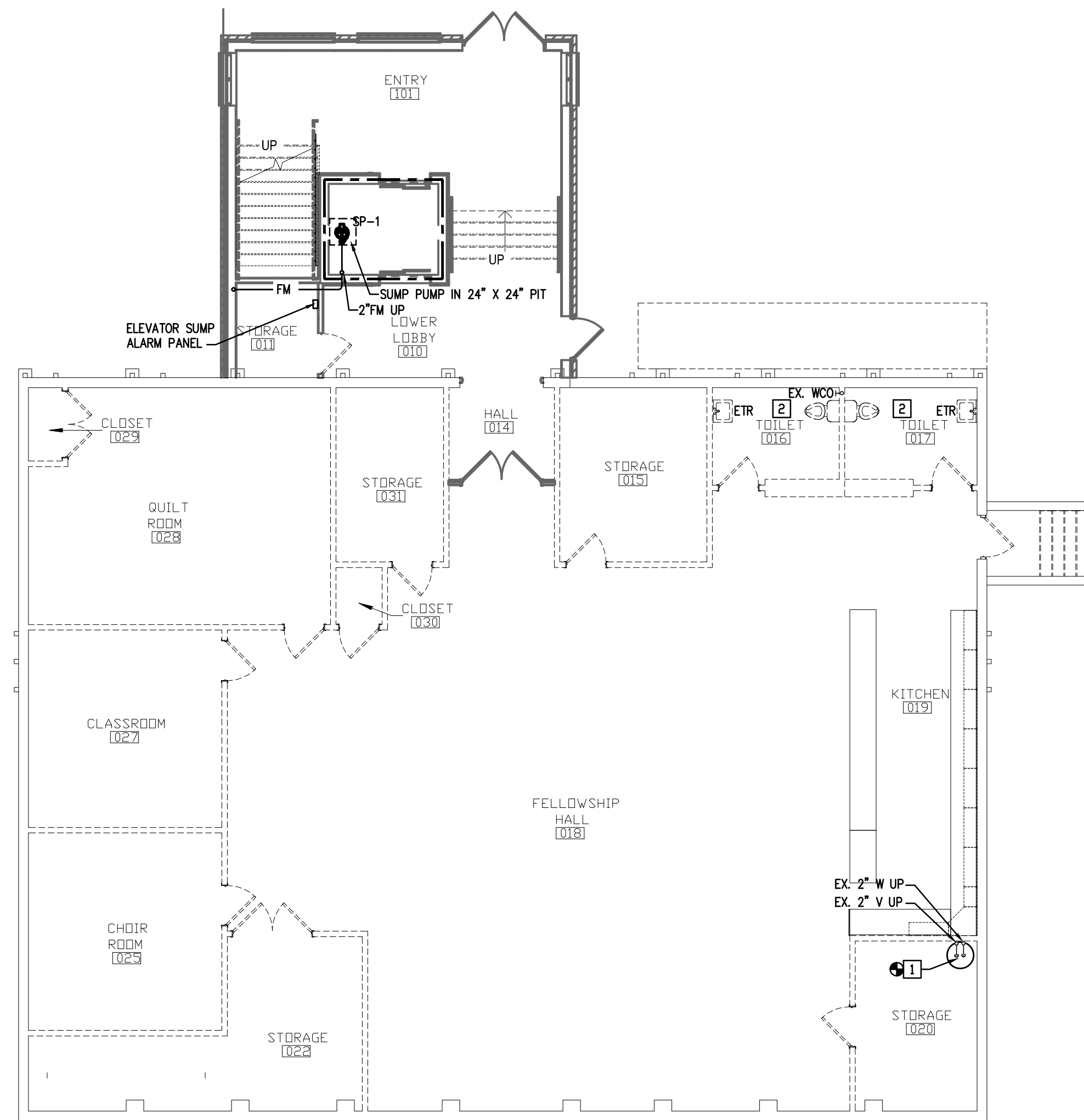
SYSTEM & MATERIAL	FIXTURE UNITS	MAIN SIZE
WASTE AND VENT SYSTEM		
BELOW SLAB: PVC DWV SCHEDULE 40 IPS (SOLID) CONFORMING TO ASTM D-2665	N/A	N/A
ABOVE SLAB: SERVICE WEIGHT CAST IRON WITH NO-HUB FITTINGS		
DOMESTIC WATER SYSTEM		
BELOW SLAB: TYPE "K" SOFT COPPER WITH NO JOINTS BELOW SLAB	N/A	N/A
ABOVE SLAB: TYPE "L" ANNEALED COPPER WITH 95/5 SOLDER JOINTS.		

\* PLUMBING FIXTURES BEING ADDED ARE EQUAL TO OR LESS THAN THOSE BEING DEMOLISHED. THE EFFECT ON THE BUILDING PLUMBING SYSTEM IS NEUTRAL.

No.	Description	Date

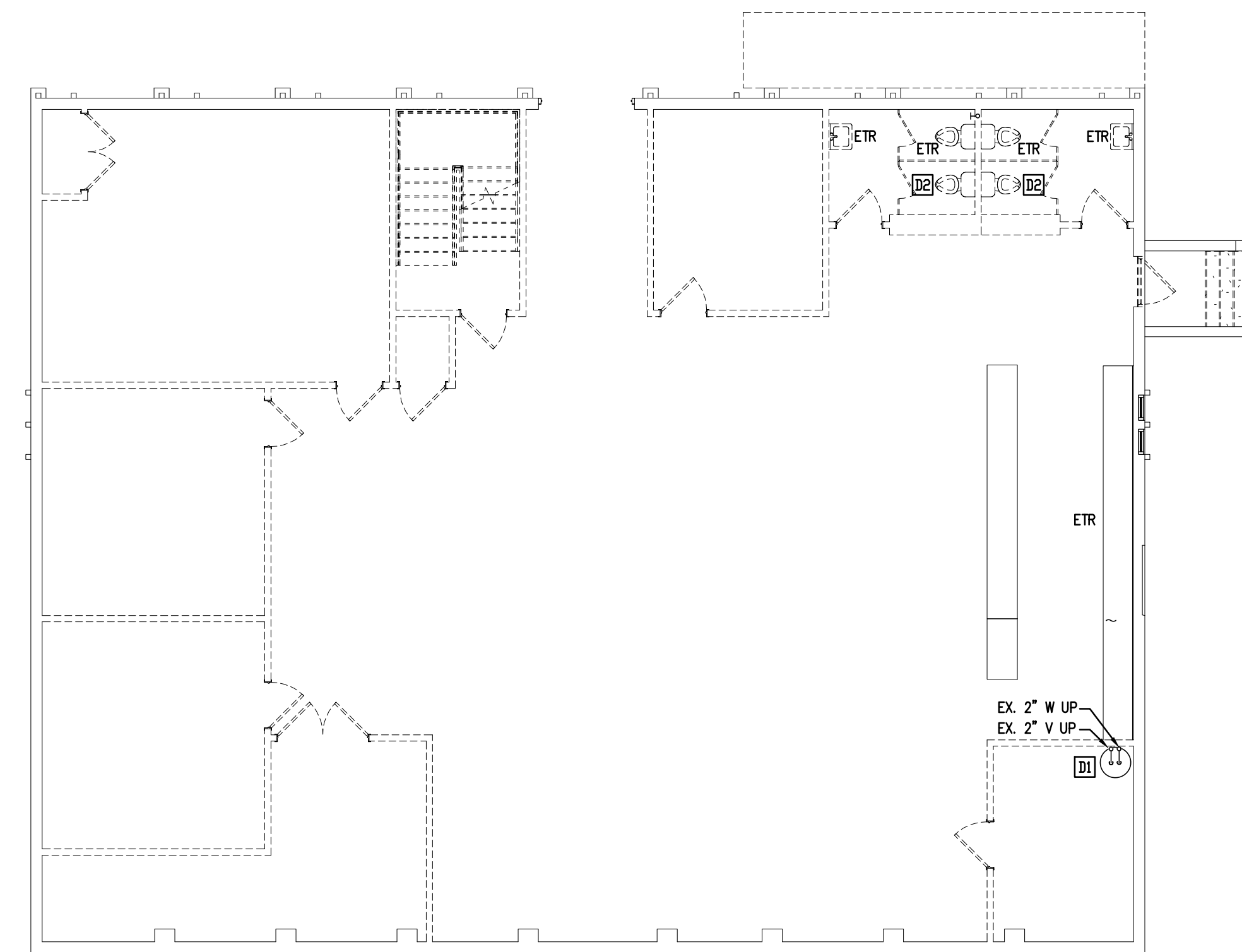
PROJECT #: 210029  
 DATE: 03-09-2023

PLUMBING COVER SHEET



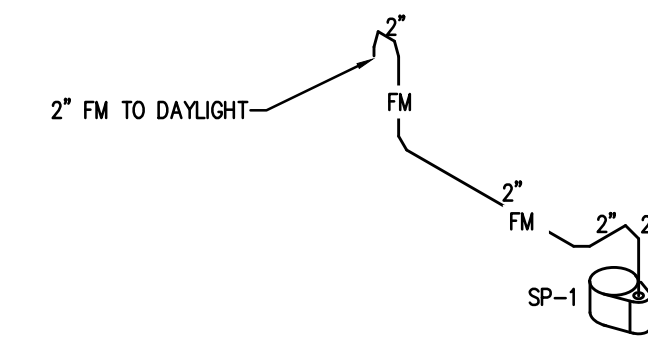
**2 BASEMENT FLOOR PLAN - WASTE AND VENT**  
 SCALE: 1/8" = 1' - 0"

- PLAN NOTES:**
1. INSTALL NEW LIFT PUMP BASIN (LIBERTY PUMPS 700 SERIES 24" X 36" DEEP) AND LIFT PUMP RETAINED FROM DEMOLITION AT EXISTING LOCATION. RECONNECT TO EXISTING FORCED MAIN AND VENT ABOVE CEILING. P.O. SHALL VERIFY EXISTING LIFT PUMP AND ASSOCIATED EQUIPMENT ARE IN GOOD WORKING ORDER.
  2. EXISTING TOILET IN EXISTING LOCATION. ADJUST EXISTING TOILET LOCATION TO ENSURE ADA CLEARANCE REQUIREMENTS ARE MET. P.C. SHALL PROVIDE FITTINGS, PIPING, OFFSETS AND EXTENSIONS REQUIRED FOR AN ADA COMPLIANT INSTALLATION.

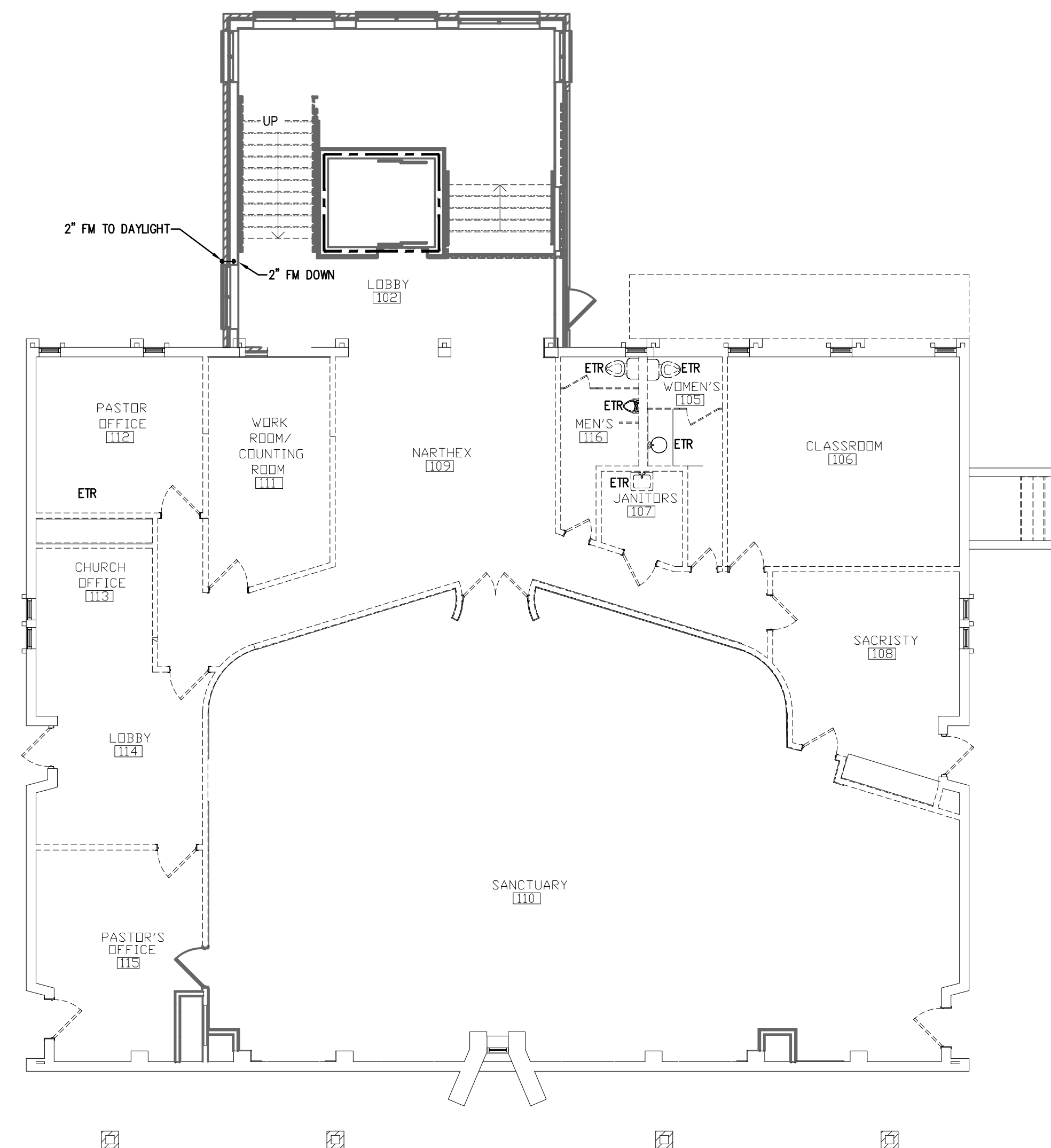


**1 BASEMENT FLOOR PLAN - PLUMBING DEMOLITION**  
 SCALE: 1/8" = 1' - 0"

- DEMOLITION NOTES:**
1. EXCAVATE AND REMOVE EXISTING LIFT PUMP BASIN AT THIS LOCATION. REMOVE EXISTING SANITARY LIFT PUMP. PROVIDE PROTECTION FOR EXISTING W, V, PUMP, FLOOR SWITCHES AND CONTROLS AND RETAIN FOR REUSE. SECURE EXCAVATION AND PREPARE TO INSTALL NEW BASIN.
  2. REMOVE EXISTING TOILET, DEMO WASTE & CW BACK TO ACTIVE BRANCH AND CAP.



**4 RISER - ELEVATOR SUMP**  
 SCALE: NTS



**3 FIRST FLOOR PLAN - WASTE AND VENT**  
 SCALE: 1/8" = 1' - 0"

**WALL TYPES AND RATINGS LEGEND**

REFER TO ARCHITECTURAL SHEETS FOR MORE INFORMATION ON RATINGS AND ADDITIONAL RATED CONSTRUCTIONS INCLUDING COLLUMS WHERE APPLICABLE. PROTECT ALL RATED CONSTRUCTIONS AS REQUIRED.

—	EXISTING WALL TO REMAIN
—	NEW WALL TO BE CONSTRUCTED
- - -	EXISTING WALL TO BE DEMOLISHED
—	ONE HOUR FIRE BARRIER

**CHRISTUS VICTOR LUTHERAN CHURCH ADDITION**  
 1615 NC-54  
 DURHAM, NC 27713

No.	Description	Date

PROJECT #: 210029

DATE: 03-09-2023

FLOOR PLANS - PLUMBING

**P1.1**



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