

#6 WELL BUILDING ADDITION

45 Twin Rivers Drive, East Windsor, NJ 08520

FOR THE

EAST WINDSOR MUNICIPAL UTILITY AUTHORITY

7 Wiltshire Drive
East Windsor, N.J. 08520



PROJECT SITE

HARRISON HAMNETT, PC
STRUCTURAL ENGINEERS



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CONSTRUCTION DOCUMENTS 9-30-2022

#6 WELL BUILDING ADDITION

22M006

DRAWING NUMBER:

CS.1

MATERIAL SYMBOLS

	BATT INSULATION / SOUND ATTENUATION
	BRICK
	CONCRETE
	CONCRETE MASONRY UNIT (CMU)
	EARTH
	FIRE SAFING
	GYPSUM WALL AND/OR CEILING BOARD
	MORTAR NET
	MORTAR / GROUT
	PLYWOOD
	POROUS FILL OR SUB-SLAB AGGREGATE
	RIGID INSULATION
	SPRAY FOAM INSULATION
	STEEL
	STONE
	CONTINUOUS WOOD BLOCKING
	WOOD SHIM OR BLOCKING

DRAWING SYMBOLS

	SIM/OPP TAG	DETAIL IDENTIFICATION
	DETAIL NO.	BUILDING SECTION IDENTIFICATION
	SECTION NO.	WALL SECTION IDENTIFICATION
	EXTERIOR	ELEVATION MARKS
	INTERIOR	ROOM TAG
	ROOM NAME	COLUMN NUMBER
	ROOM NUMBER	REVISION NUMBER
	GROSS SF	DOOR NUMBER
	OCCUPANTS	WINDOW TYPE
	NAME	PARTITION TYPE
	ELEVATION	CURTAIN WALL or STOREFRONT TAG
	TOILET ACCESSORY TAG	DATUM or ELEVATION MARK CENTERLINE
	VIEW REFERENCE	

ABBREVIATIONS

CJ	CONTROL JOINT
CMU	CONCRETE MASONRY UNIT
CFMF	COLD FORMED METAL FRAMING
DN	DOWN
DWG	DRAWING
EFS	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
EQ	EQUAL
EJ	EXPANSION JOINT
EWIC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER (BRACKET MOUNTED)
FEC	FIRE EXTINGUISHER CABINET
FT	FOOT or FEET
FRTW	FIRE RETARDANT TREATED WOOD
GALV	GALVANIZED
GWF	GROSS SQUARE FEET
GWB	GYPSUM WALL BOARD
HM	HOLLOW METAL
HP	HIGH POINT
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
MO	MASONRY OPENING
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NSF	NET SQUARE FEET
OC	ON CENTER
OD	OVERFLOW DRAIN OR OUTSIDE DIAMETER
PTD	PAINT or PAINTED
PTW	PRESSURE TREATED WOOD
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
REINF	REINFORCED OR REINFORCING
RWC	RAIN WATER CONDUCTOR
SF	SQUARE FEET
TOS	TOP OF STEEL
TYP	TYPICAL
VF	VERIFY IN FIELD

DOOR AND FRAME NOTES

UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS FURNISH AND INSTALL LINTELS FOR ALL SQUARE HEAD MASONRY OPENINGS IN ALL MASONRY WALLS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND COMMENTS.

MASONRY OPENING	LINTEL SIZE	REMARKS
UP TO 4'-0"	L-3 1/2" X 3 1/2" X 11/4"	
4'-1" TO 6'-0"	L-5 1/2" X 3 1/2" X 5/16"	
6'-1" TO 8'-0"	L-6" X 3 1/2" X 5/16"	
OVER 8'-0"	W8X18 + PLATE LINTEL	

ABBREVIATIONS:
HM - HOLLOW METAL
AL - ALUMINUM

DOOR AND FRAME NOTES

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MASONRY OPENING	LINTEL SIZE	REMARKS
2'-0" TO 6'-0"	WT 7X11	
6'-1" TO 8'-0"	WT 8X13	

NOTES:
1. PROVIDE (1) ANGLES FOR EACH 4" OF MASONRY WIDTH
2. BEAR LINTELS 6" MINIMUM EACH SIDE OF OPENING
3. ALL LINTELS IN EXTERIOR WALLS TO BE GALVANIZED
4. WHERE OPENING LOCATED NEXT TO COLUMNS OR BEAMS, ATTACH STRUCTURAL STEEL CONNECTION NOT TO PROTRUDE INTO OPENING
5. CONSULT ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR OPENING SIZE AND LOCATION.

LIST OF DRAWINGS

DWG. NO.	TITLE	CURRENT REVISION
GENERAL:		
CS.1	COVER	
CS.2	DETAILS, NOTES, ABBREVIATIONS, AND LIST OF DRAWINGS	
ARCHITECTURAL:		
AT.1	FLOOR PLANS	

GENERAL STRUCTURAL NOTES

- FOUNDATION**
- All footings shall bear on soil having a minimum safe bearing capacity of 1.5 tons per square foot. Confirm in field prior to placing footings.
- CAST-IN-PLACE CONCRETE**
- All concrete work shall conform to the latest edition of the ACI Building Code.
 - All concrete, except slabs on grade, shall attain 3000 PSI compressive strength at 28 days. All concrete for slabs on grade shall attain 3500 PSI compressive strength at 28 days.
- REINFORCING**
- All reinforcing bar details shall conform to the latest ACI code and detailing manual.
 - All bars shall be ASTM A-615, Grade 60.
 - Welded wire fabric shall be ASTM A-185.
- MASONRY**
- All block work shall be in accordance with IBC2018 w/ NJ Modification and other applicable codes.
 - All block shall be lightweight aggregate and conform to ASTM C 90.
 - Mortar shall be ASTM C 270, Type M for below grade and Type S for above grade work.
 - Horizontal reinforcing shall be No. 3 pipe "Duo-o-wall" or equivalent. Provide fabricated corner sections at all corners. Where masonry is laid in other than running bond, horizontal joint reinforcement is to be provided at every horizontal joint.
 - Where block fill is called for on drawings, use Type M mortar or concrete with a compressive strength of 2500 PSI in accordance with ASTM C 476, and installed in accordance with ACI-313 for high or low lift procedures.
 - Coordinate masonry with all trades requiring items to be built-in.
- PREFABRICATED WOOD**
- Prefabricated wood or metal trusses shall be designed and manufactured by the truss manufacturer. See required design loads on drawings.
 - Submit signed and sealed shop drawings and calculations for review prior to fabrication or erection.
 - Installation to be in strict accordance with manufacturer's recommendations. Brace trusses during erection as per manufacturer's recommendations.
- MISCELLANEOUS**
- Contractor shall verify all dimensions, sections and elevations on the job.
 - Consult the Architectural drawings for verification of location and dimensions of chases, inserts, openings, sleeves, washes, drips, reveals, depressions, equipment pads and other product requirements.
 - All walls shall be braced during construction until permanently restrained.
 - Reproductions of contract documents are not acceptable as shop drawings and will be rejected.

CODE REVIEW:

CERTIFICATE:



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CONSULTANTS:

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REVISIONS:

REV.	REVISION NAME	DATE
1		

FOR BID: 09-30-2022

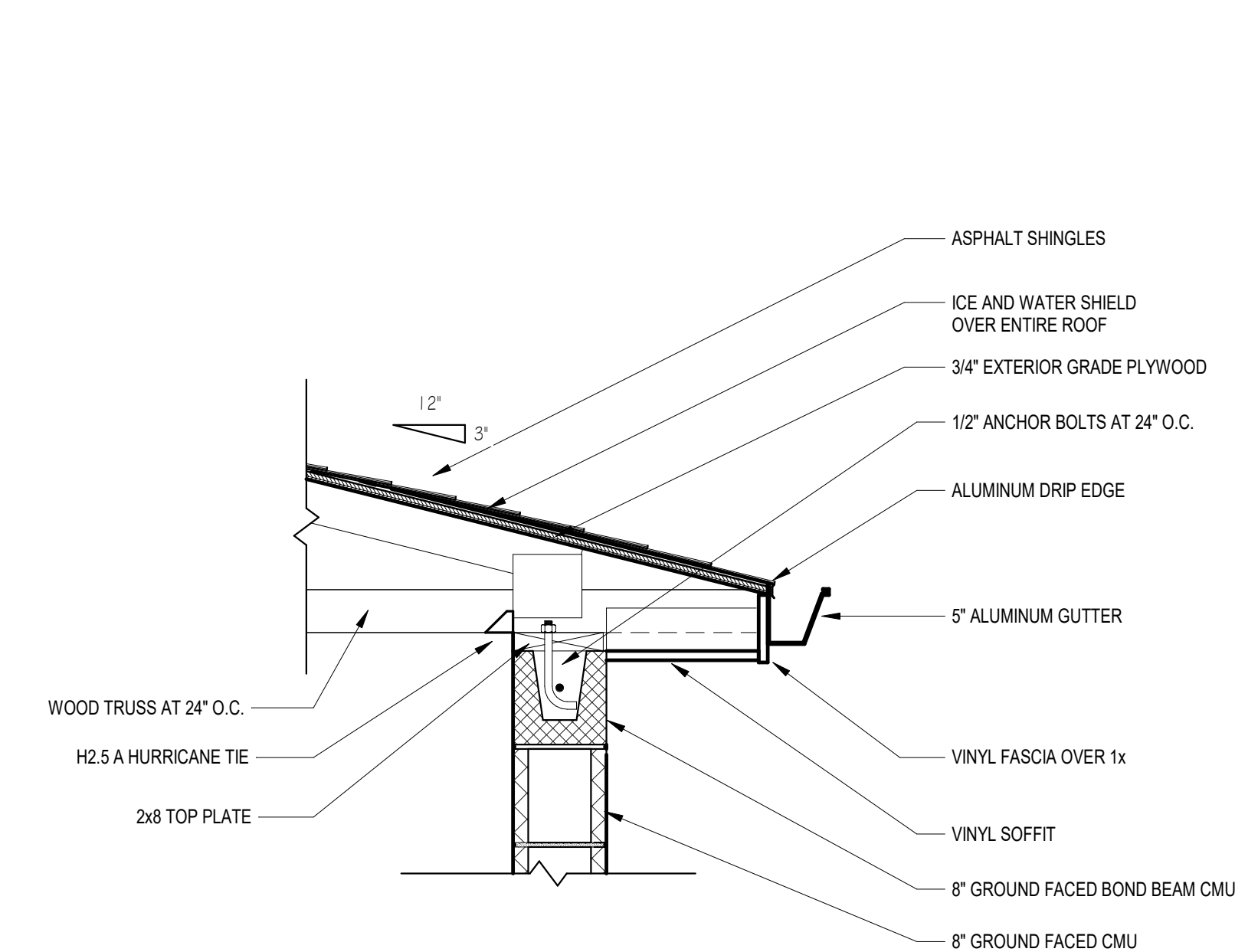
DRAWING TITLE:

DETAILS, NOTES, ABBREVIATIONS, AND LIST OF DRAWINGS

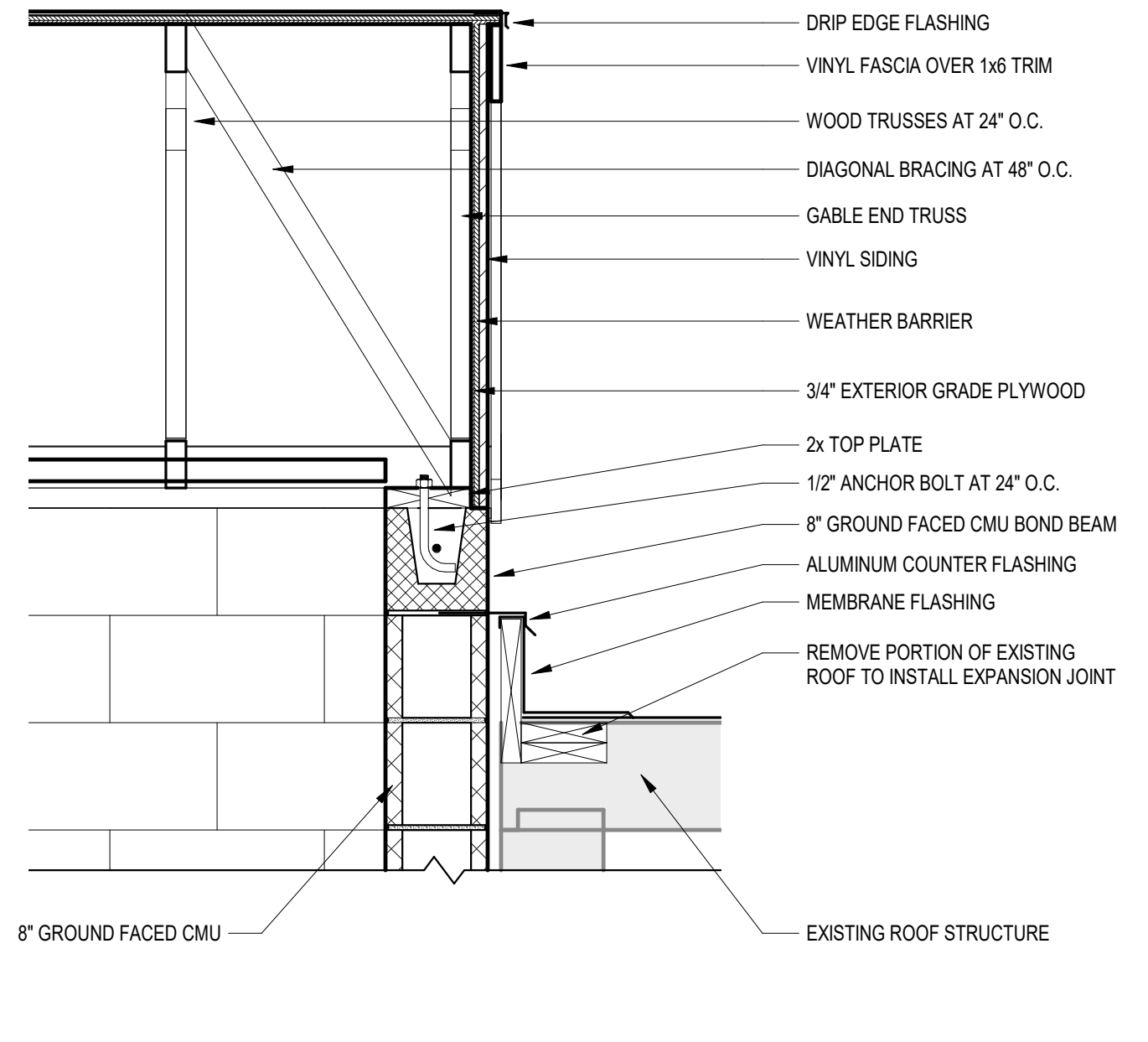
COMMISSION NUMBER: 22M006

DO NOT SCALE THE DRAWINGS

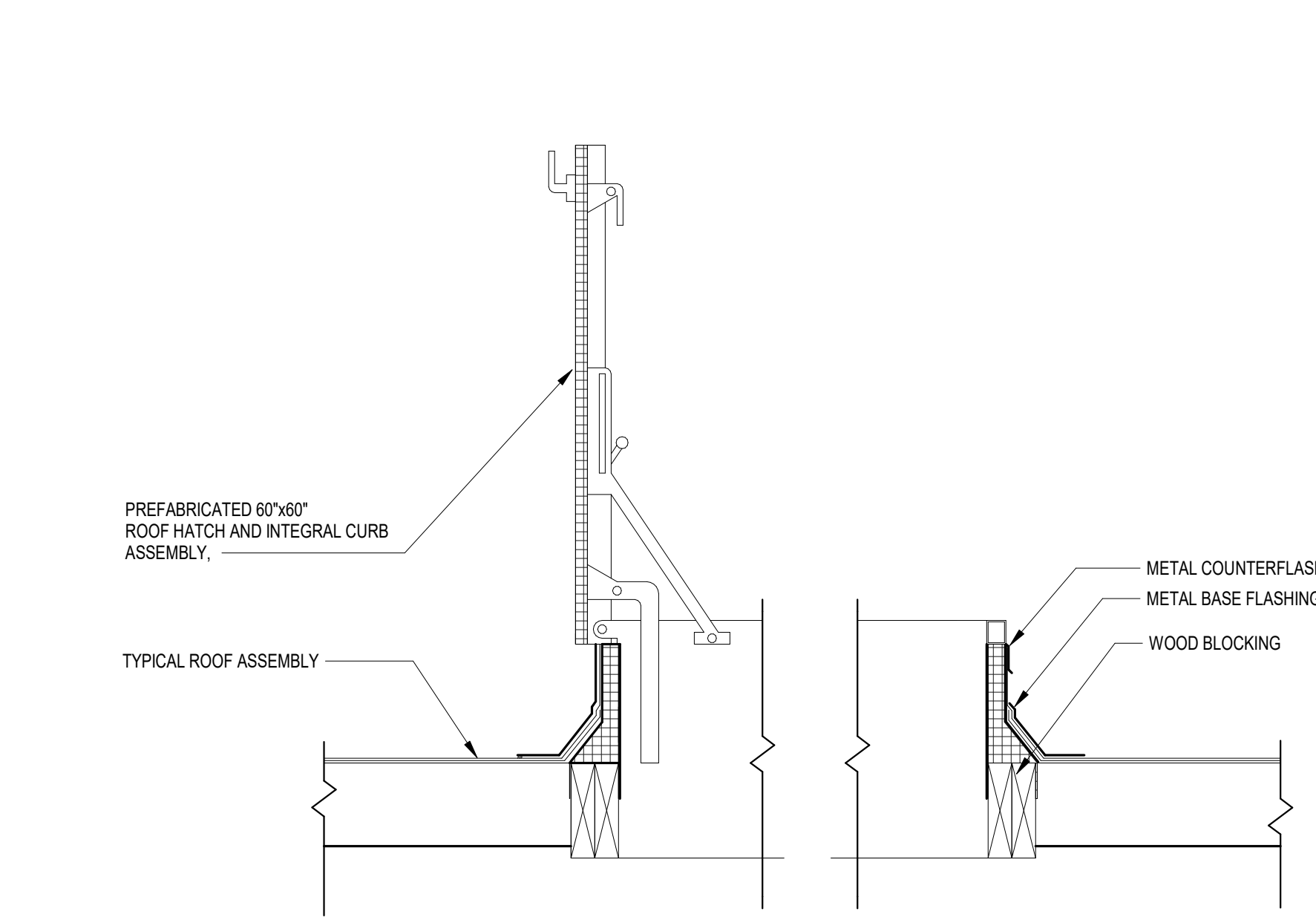
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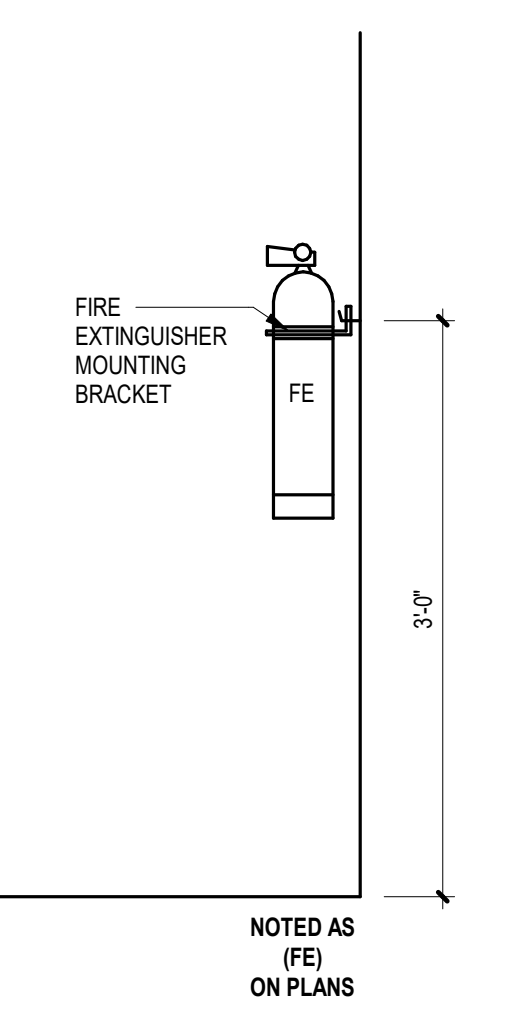
4 ROOF EDGE DETAIL
1" = 1'-0"



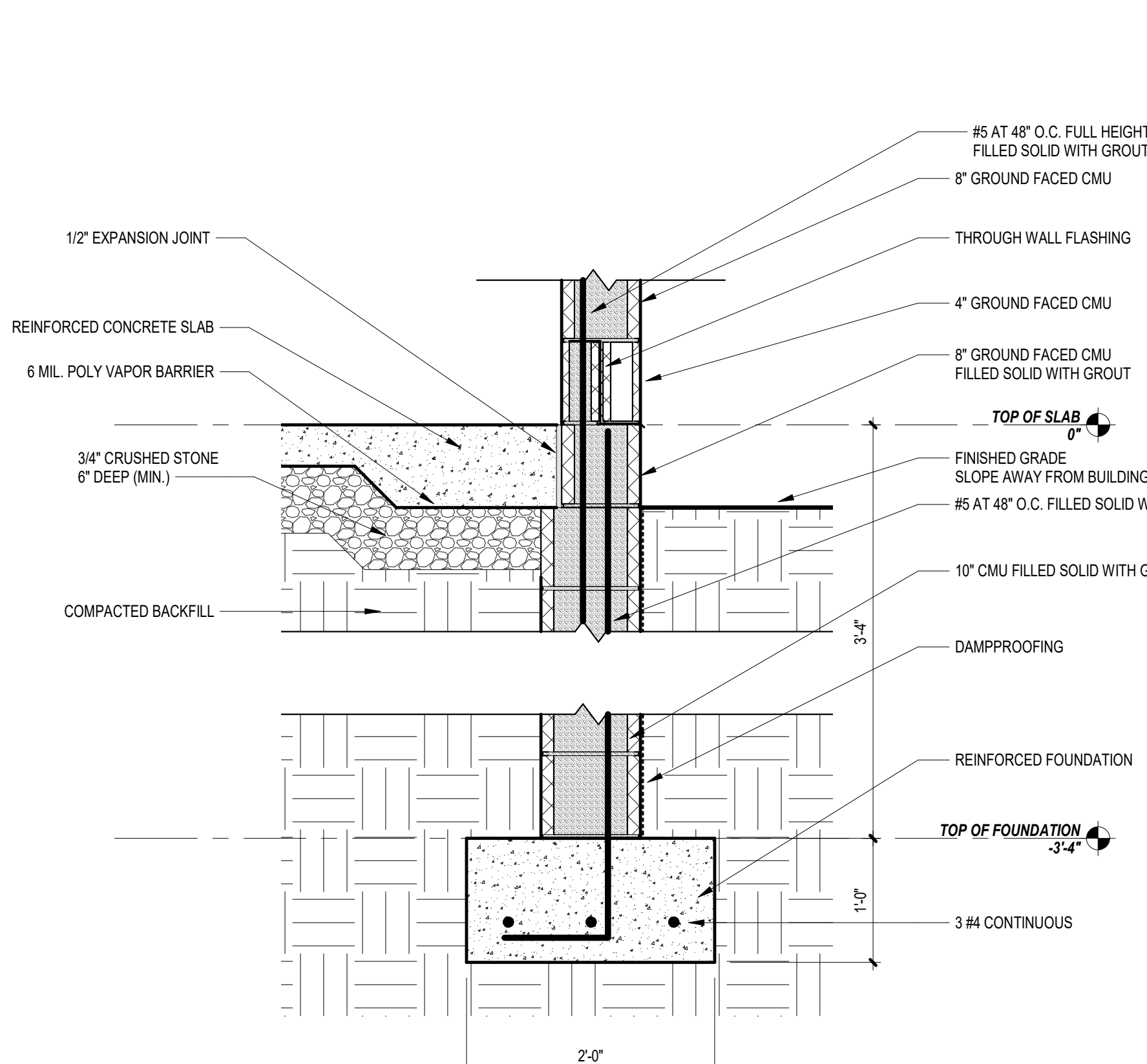
6 ROOF EDGE DETAIL
1" = 1'-0"



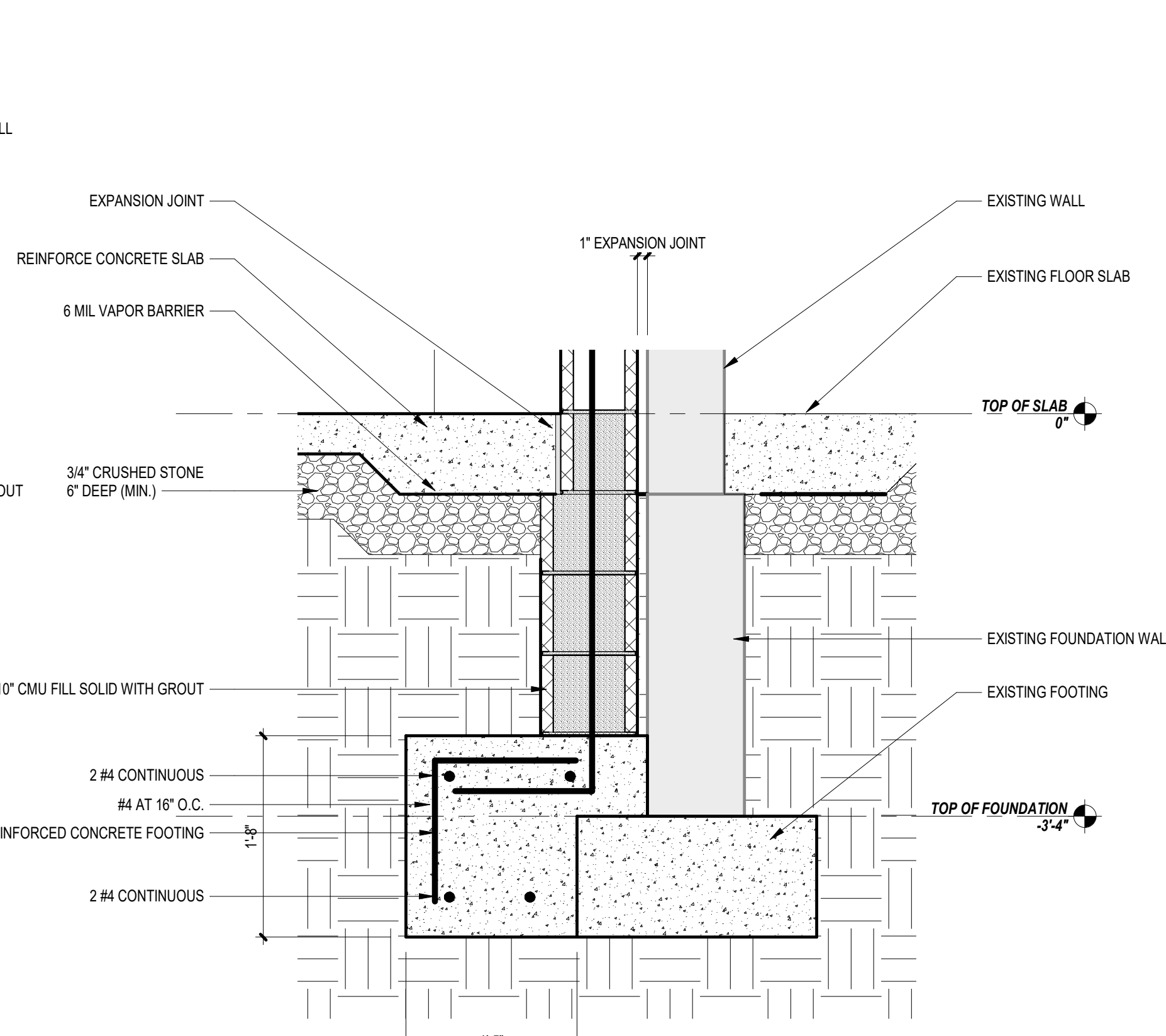
12 ROOF - TYPICAL HATCH DETAIL
1" = 1'-0"



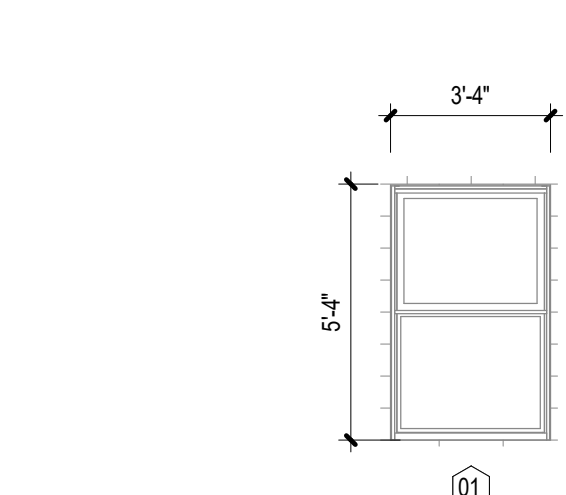
2 FIRE EXTINGUISHER DETAIL
1" = 1'-0"



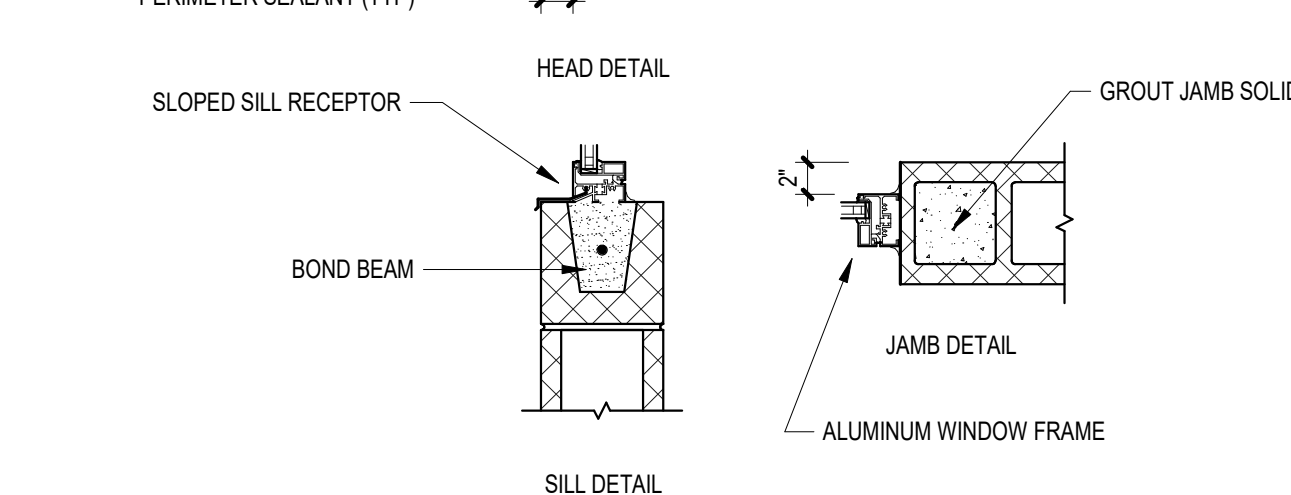
3 FOUNDATION DETAIL 1
1" = 1'-0"



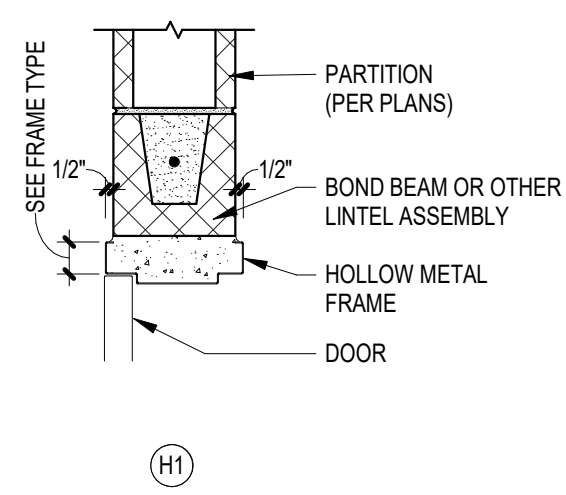
5 FOUNDATION DETAIL
1" = 1'-0"



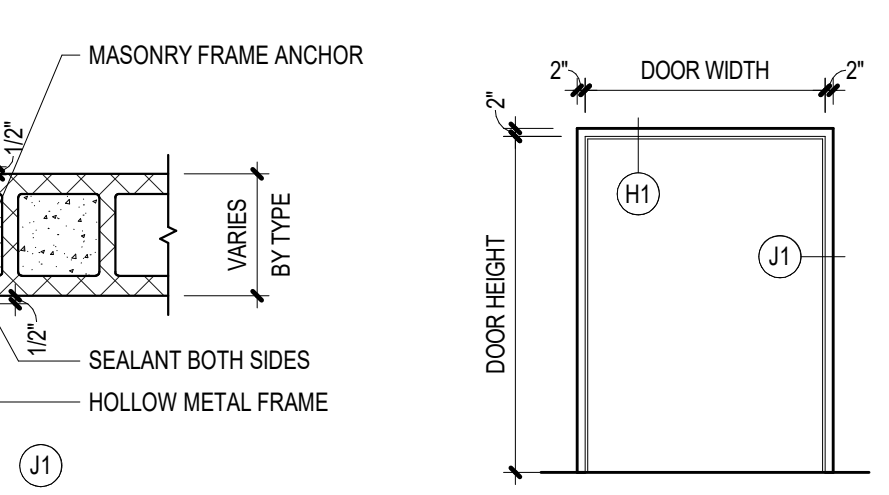
9 WINDOW TYPE
1/4" = 1'-0"



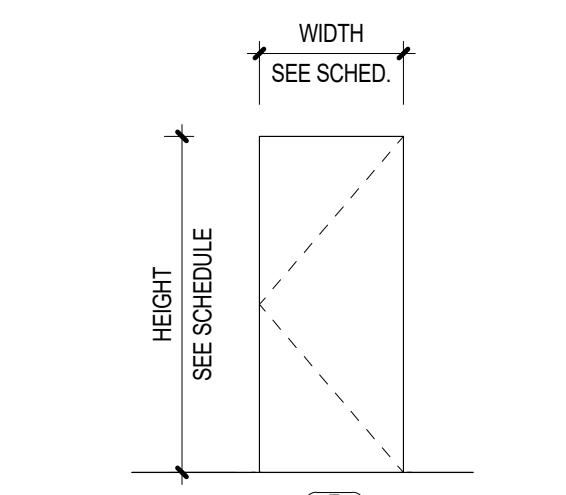
10 WINDOW DETAILS
1" = 1'-0"



7 FRAME DETAILS
1" = 1'-0"



8 FRAME TYPES
1/4" = 1'-0"



11 DOOR TYPES
1/4" = 1'-0"

DOOR AND FRAME SCHEDULE

MARK	LOCATION	DOOR WIDTH (IN)	DOOR HEIGHT (IN)	TYPE	MATERIAL	FRAME TYPE	RATING (MIN)	HARDWARE SET	REMARKS
001	WELL BUILDING #6	3'-0" / 3'-0"	7'-0"	F	HM	HM1		001	

BUILDING DATA

INTERNATIONAL BUILDING CODE (2018)

CHAPTER 3 - OCCUPANCY CLASSIFICATION AND USE
302 USE GROUP CLASSIFICATION U

CHAPTER 5 - BUILDING HEIGHTS AND AREAS

504.3	ALLOWABLE BUILDING HEIGHT	55'
	ACTUAL BUILDING HEIGHT	16'
504.4	ALLOWABLE NUMBER OF STORIES	3
	ACTUAL NUMBER OF STORIES	1

506.2 (EQ. 5-1) $A_b = A_i + (NS \times I)$
 $32,660 = 23,000 + (23,000 \times 42\%)$

AI = TABULAR ALLOWABLE AREA FACTOR (TABLE 506.2) 23,000 SF
 NS = CONSTANT FROM (TABLE 506.2) 23,000 SF
 I = AREA INCREASE DUE TO FRONTAGE % (506.3) 42%
 Aa = ALLOWABLE BUILDING AREA PER FLOOR
 EXISTING AREA PER FLOOR 825 SF
 ADDITION AREA PER FLOOR 764 SF
 ACTUAL MAXIMUM AREA PER FLOOR 1,589 SF

ALLOWABLE AREA INCREASE (EQ. 5-5)
 $I = [(FP) - 0.25] (W/30)$
 $I = [(116 / 172) - 0.25] (W/30)$
 P = PERIMETER OF ENTIRE BUILDING (FT) 172'
 I = AREA INCREASE DUE TO FRONTAGE % 42%

CHAPTER 6 - TYPES OF CONSTRUCTION

MIN. CONSTRUCTION TYPE REQ.	VB	IB
TABLE 601		REQ'D RATING (HRS)
PRIMARY STRUCTURAL FRAME		0
BEARING WALLS	EXTERIOR	0
	INTERIOR	0
NON BEARING WALLS	EXTERIOR (TABLE 602)	0
	INTERIOR	0
FLOOR CONSTRUCTION		0
ROOF CONSTRUCTION		0

CHAPTER 8 - INTERIOR FINISHES

OCCUPANCY (NON SPRINKLERED)	ES1
INTERIOR EXIT STAIRS, RAMPS, PASSAGEWAYS	NO RESTRICTION
CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	NO RESTRICTION
ROOMS AND ENCLOSED SPACES	NO RESTRICTION

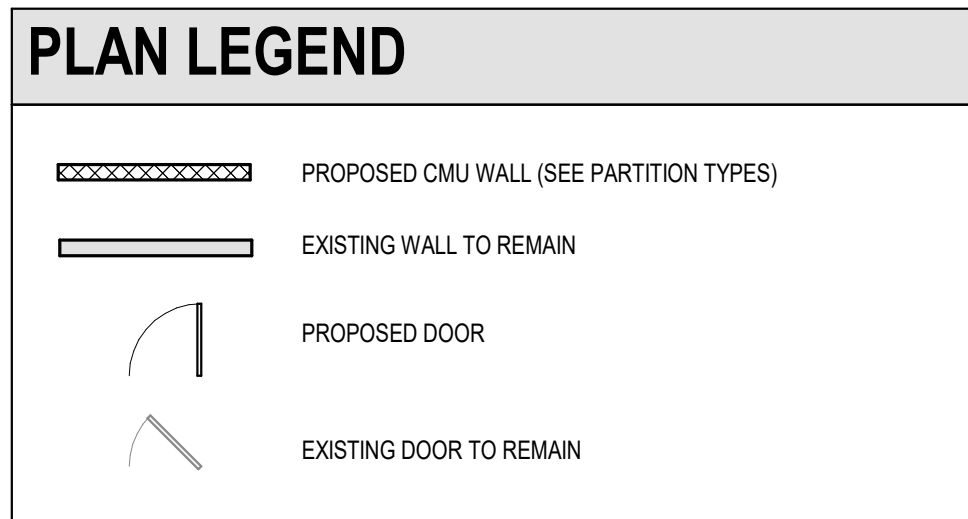
CHAPTER 9 - FIRE PROTECTION

AUTOMATIC SPRINKLER SYSTEM PROVIDED (NO)

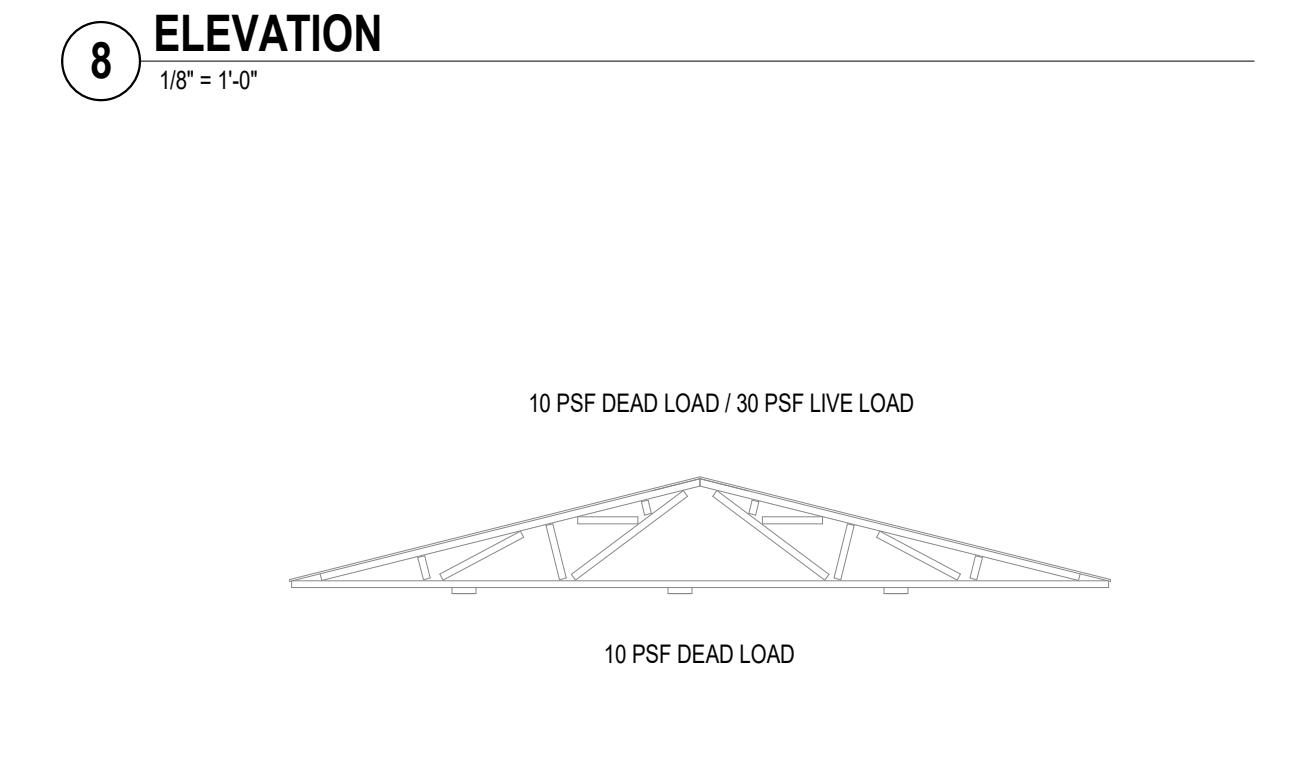
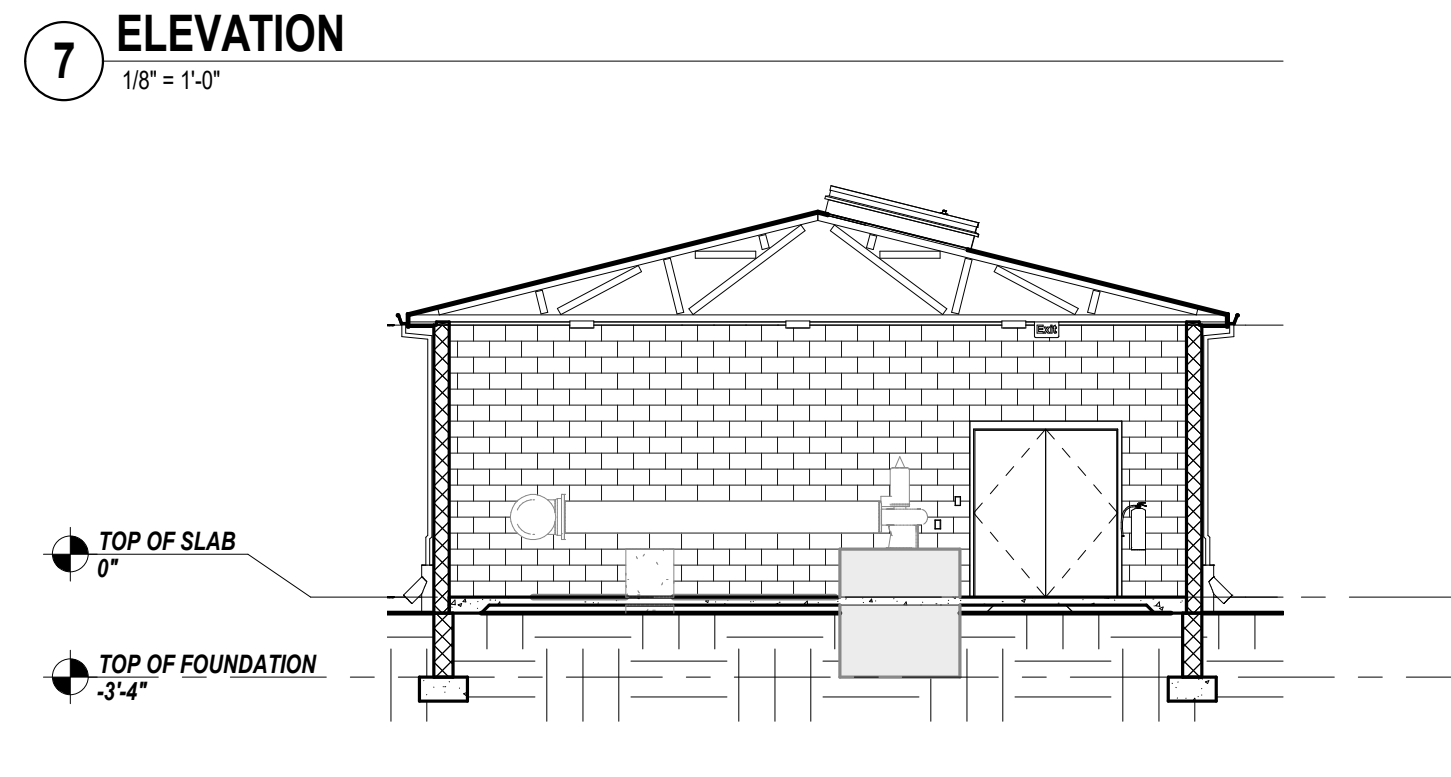
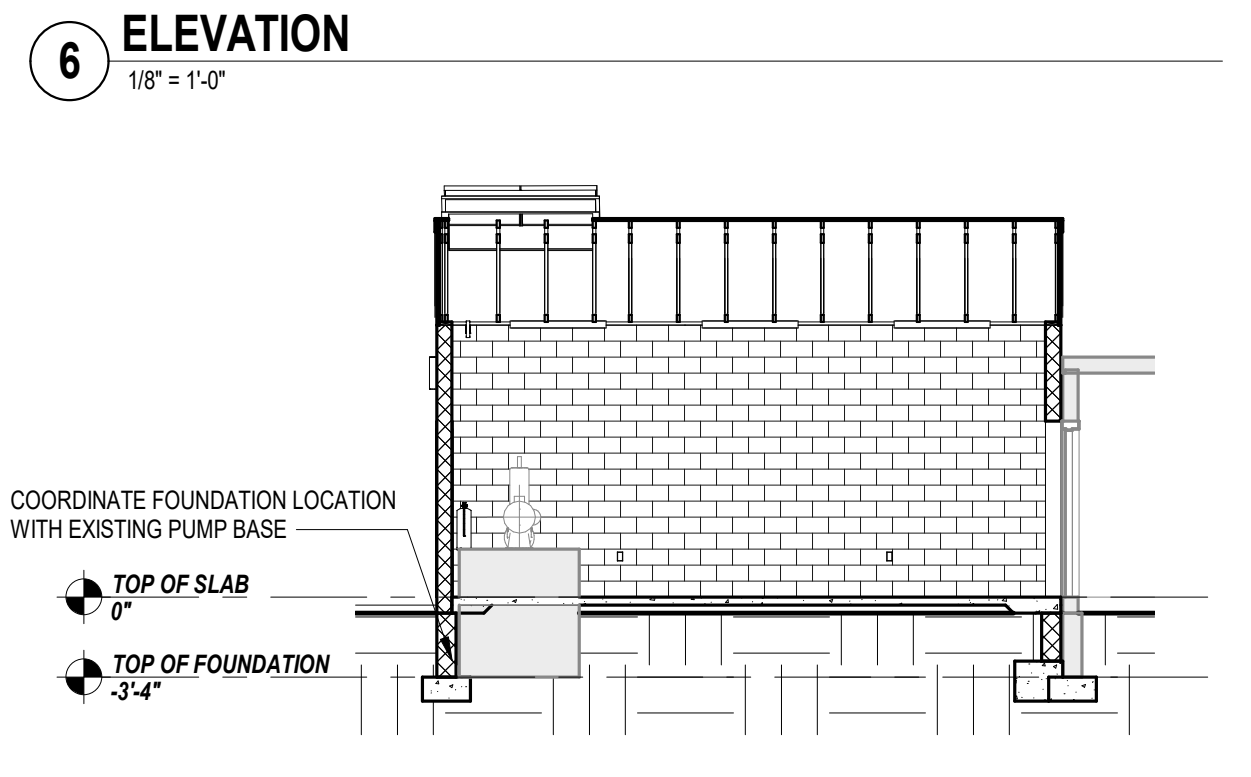
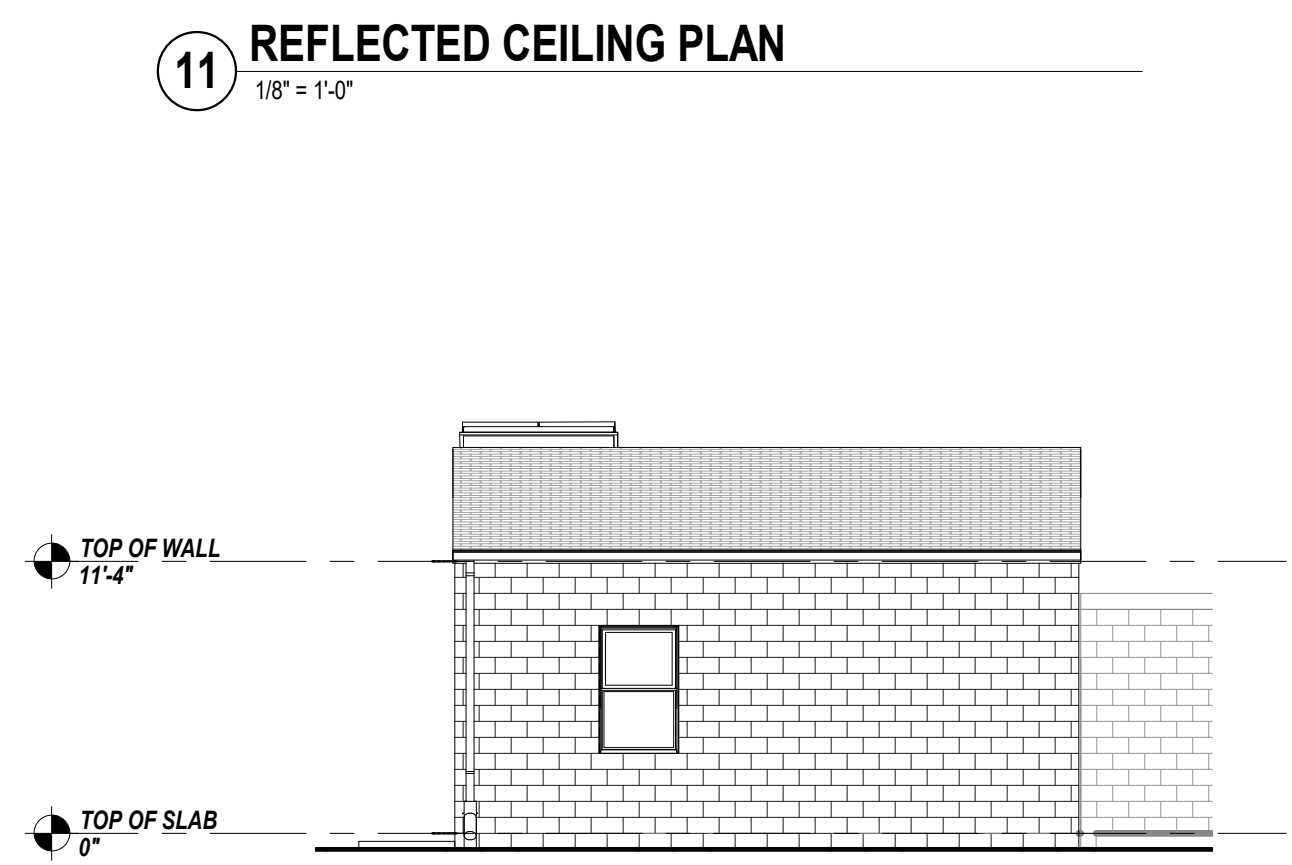
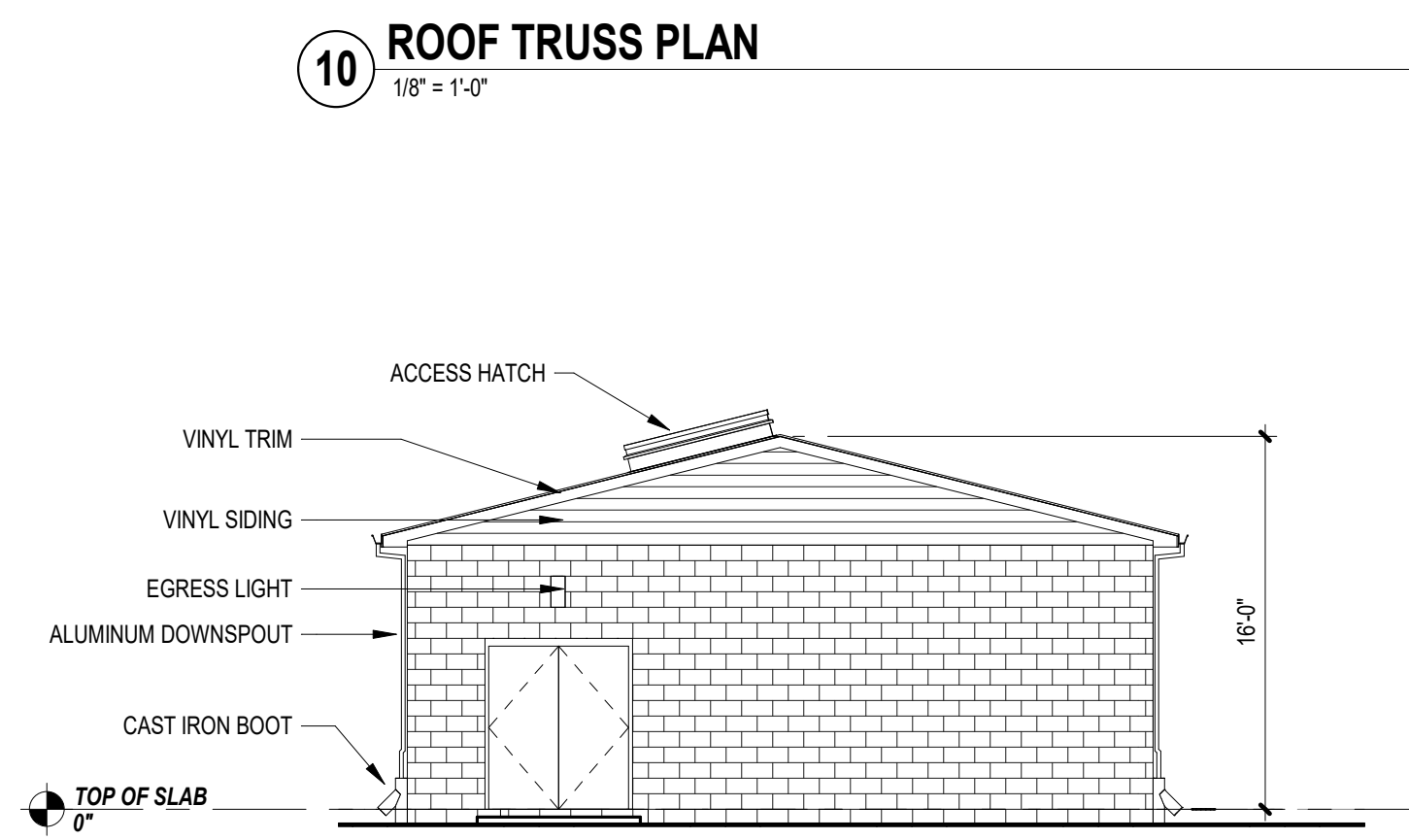
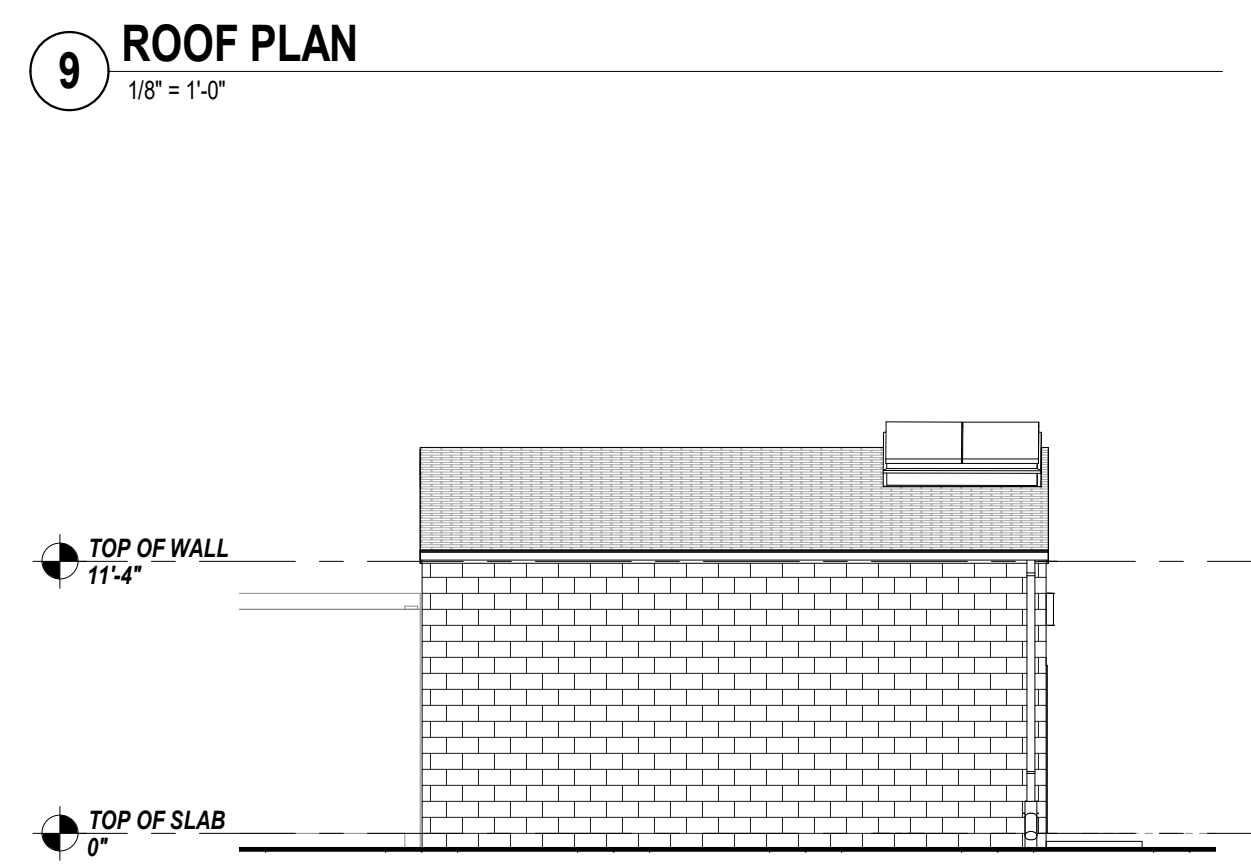
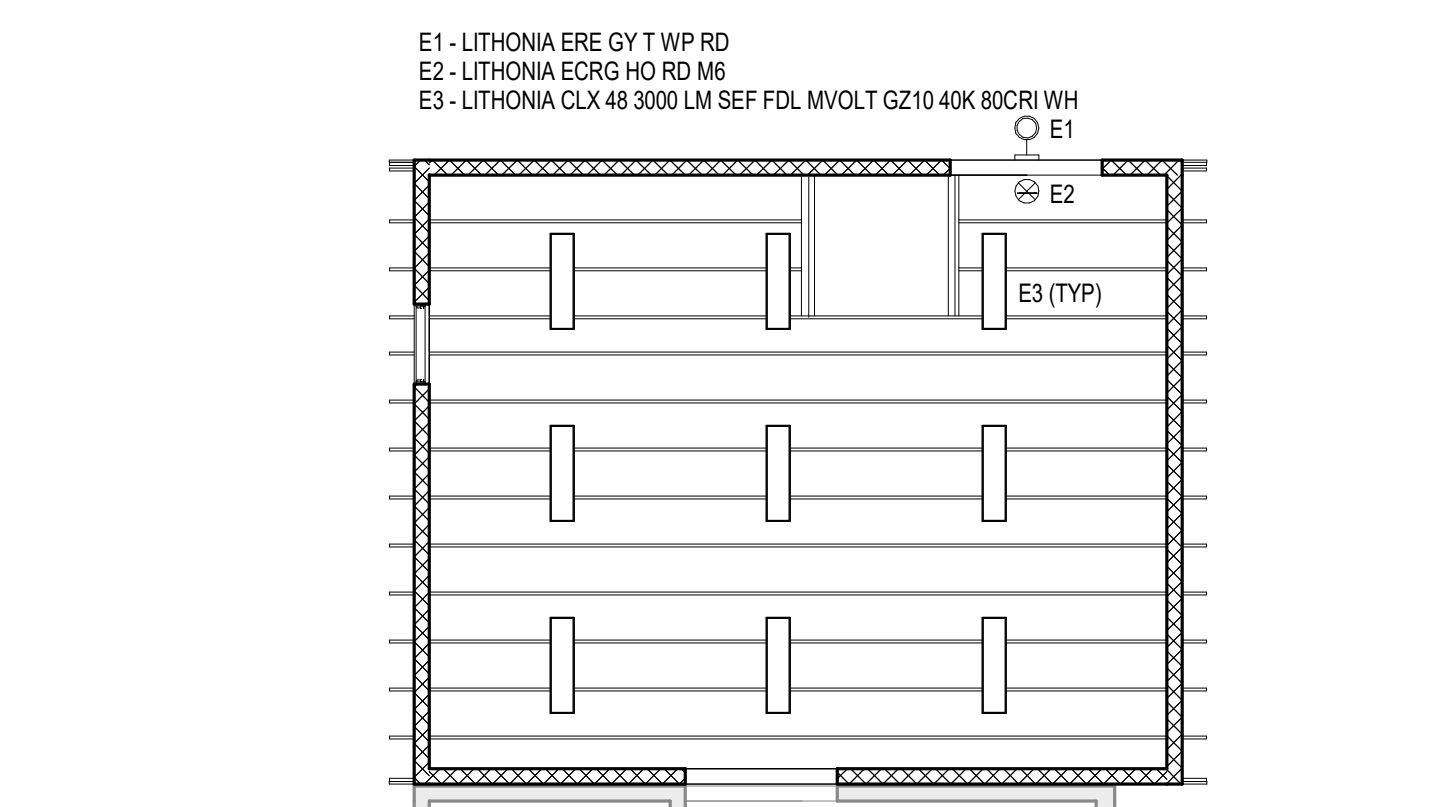
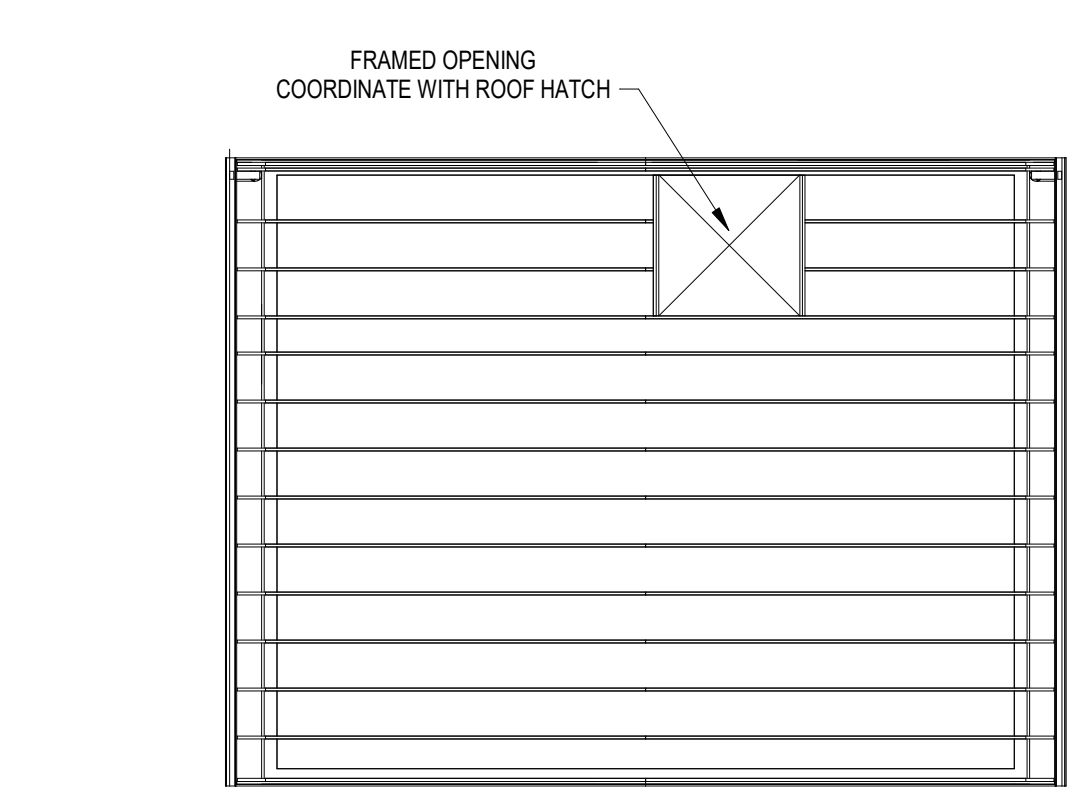
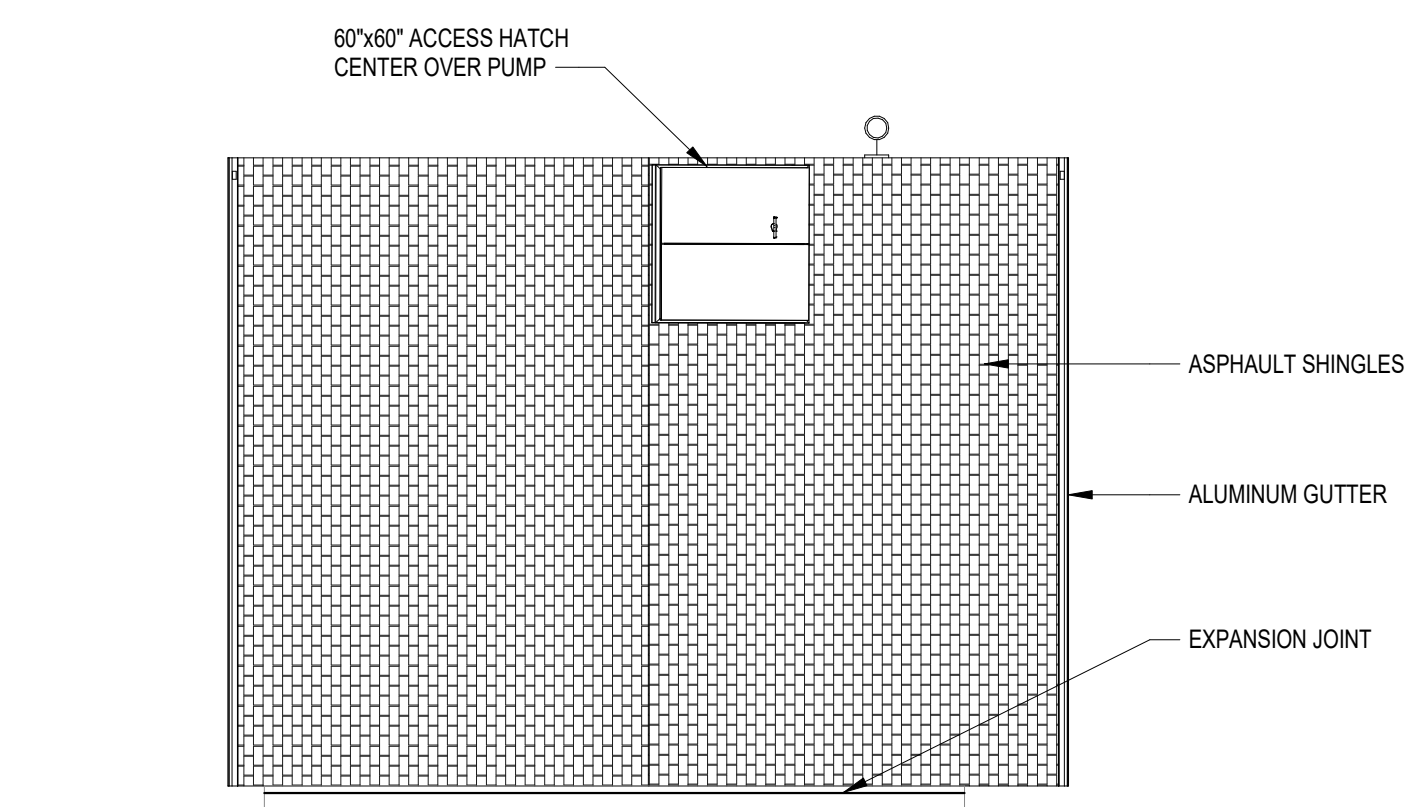
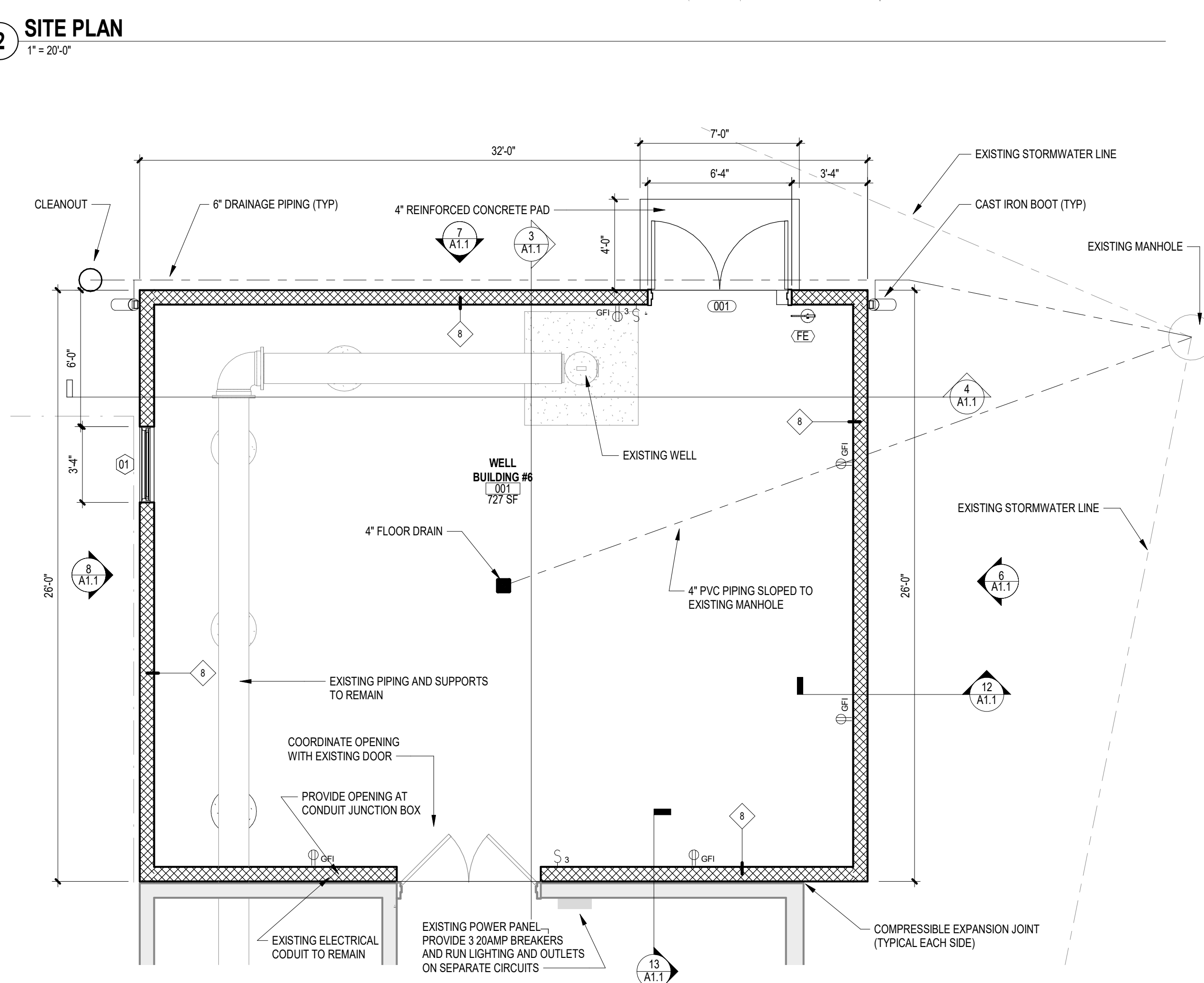
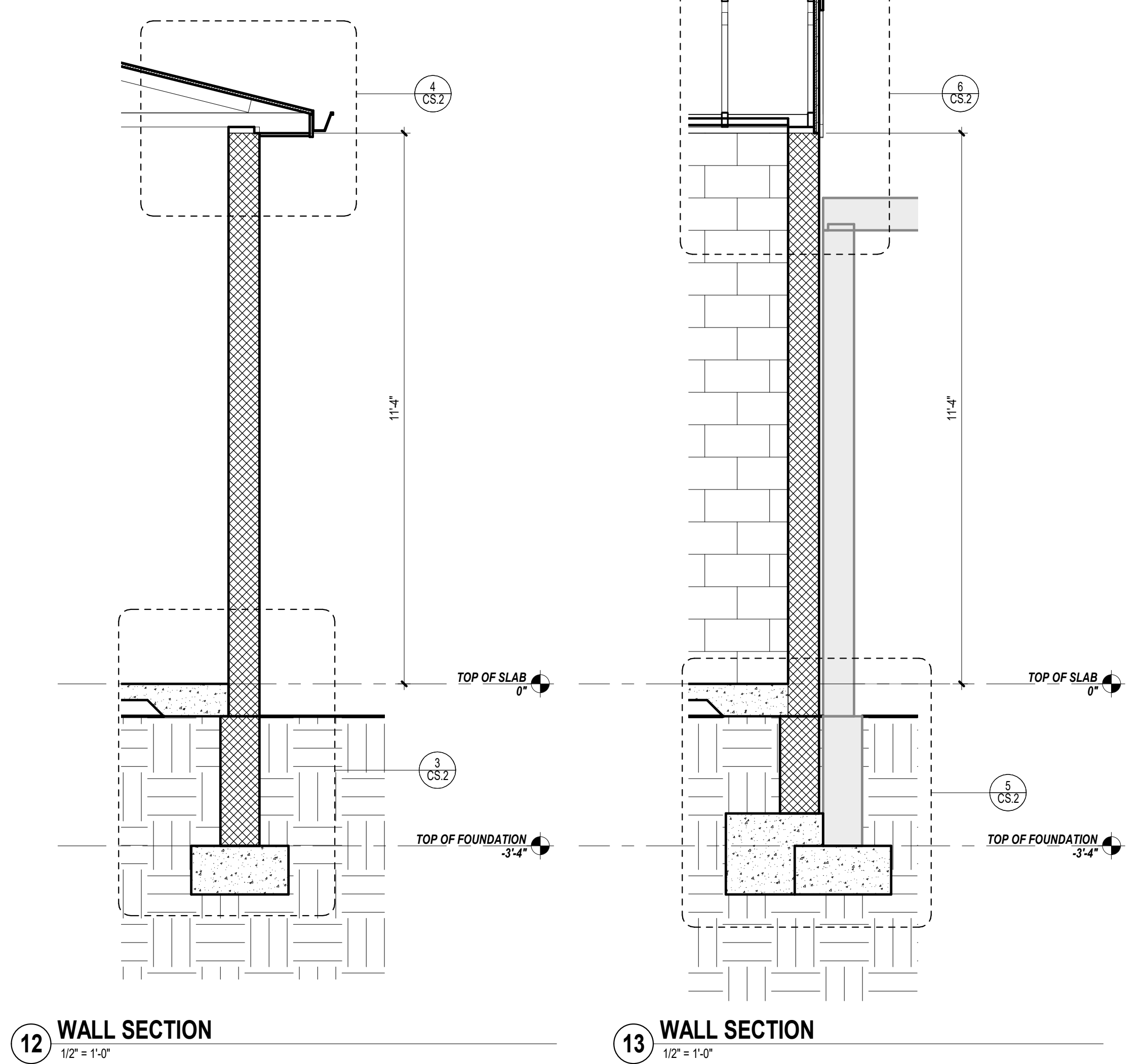
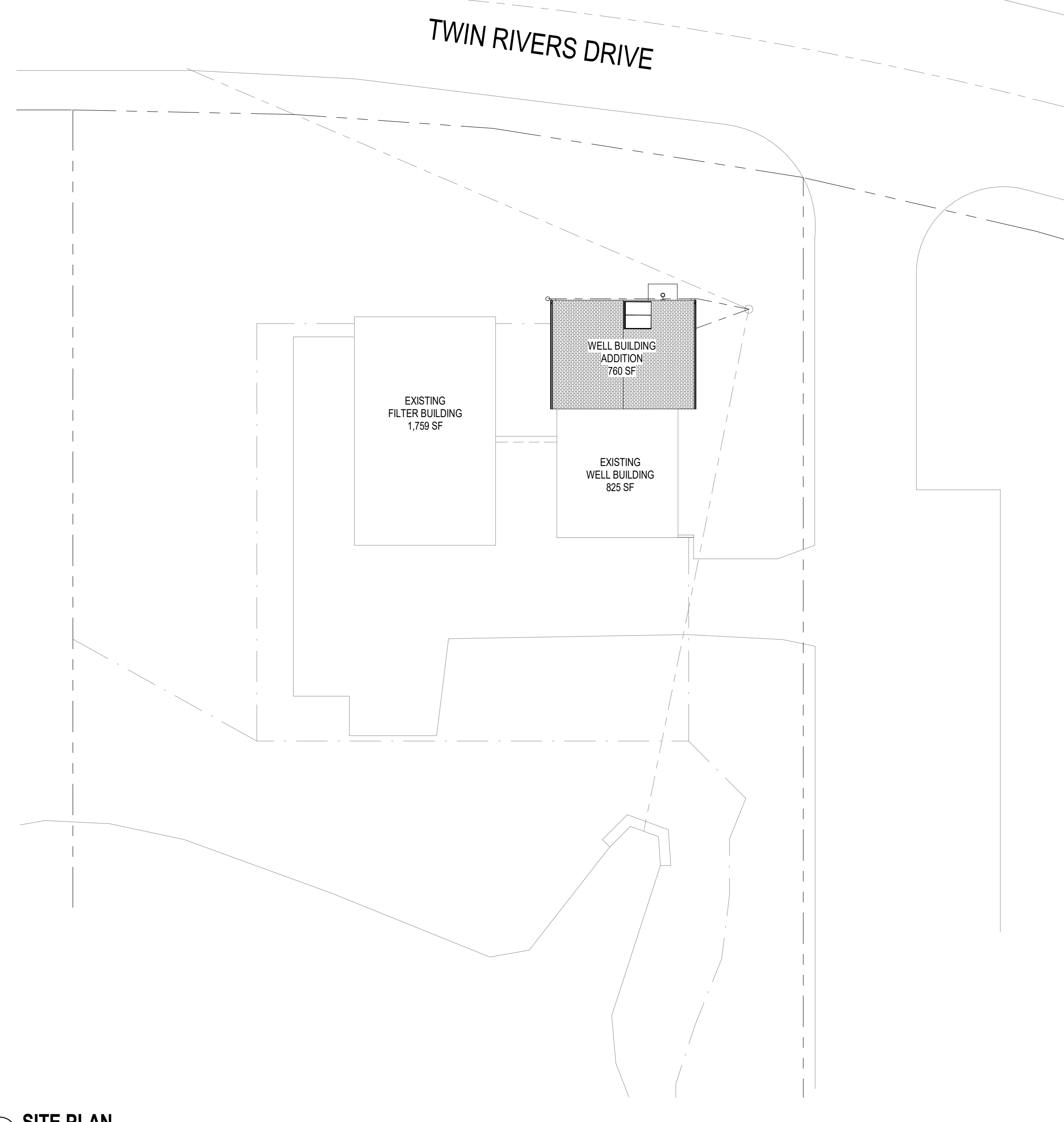
CHAPTER 10 - MEANS OF EGRESS

FUNCTION OF SPACE	AREA (SF)	OCCUPANCY LOAD FACTOR	NUMBER OF OCCUPANTS
EQUIPMENT	764	300 GSF	3
TOTAL			3

- ### APPLICABLE CODES (NJ)
1. NJ UNIFORM CONSTRUCTION CODE - N.J.A.C. 5:23
 2. INTERNATIONAL BUILDING CODE - 2018 NEW JERSEY EDITION
 3. NATIONAL STANDARD PLUMBING CODE - 2018
 4. NATIONAL ELECTRICAL CODE (NFPA 70) - 2017
 5. ENERGY SUBCODE - ASHRAE 90.1-2010
 6. INTERNATIONAL MECHANICAL CODE - 2018
 7. INTERNATIONAL FUEL GAS CODE - 2018
 8. REHABILITATION SUBCODE, CHAPTER 11 OF IBC-2018 & ICC/ANSI A117.1-2009
 9. BARRIER FREE SUBCODE, CHAPTER 11 OF IBC-2018 & ICC/ANSI A117.1-2009
 10. ELEVATOR SUBCODE - N.J.A.C. 5:23-12



- ### GENERAL NOTES
1. ELEVATION AT TOP OF FINISHED FLOOR SLAB SHALL BE REFERENCED AS DATUM ELEVATION 0'-0".
 2. DO NOT SCALE THE DRAWINGS. IF A DIMENSION IS UNCLEAR OR A DISCREPANCY IS FOUND IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
 3. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO THE COMMENCEMENT OF WORK WHERE FABRICATION IS REQUIRED. DIMENSIONS SHALL BE VERIFIED PRIOR TO THE PRODUCTION OF SHOP DRAWINGS.
 4. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STATUTES, AND REGULATIONS IN PERFORMANCE OF THE WORK.
 5. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED IN A SIMILAR MANNER OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION. MODIFICATIONS MAY BE REQUIRED BY THE CONTRACTOR TO ACCOMMODATE FOR MINOR VARIATIONS IN THE WORK.
 6. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES AND COORDINATING WITH NEW WORK. ADVISE ARCHITECT/ENGINEER OF CONFLICTS PRIOR TO COMMENCEMENT OF WORK.
 7. ALL GRADING SHALL SLOPE AWAY FROM THE BUILDING.
 8. PRIOR TO POURING OF CONCRETE FOOTINGS, THE CONCRETE REINFORCEMENT STEEL SHALL BE GROUNDING AND BONDED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) SECTION 250.96. A CONDUCTIVE REINFORCING BAR MEASURING AT LEAST 1/2" IN DIAMETER AND A MINIMUM OF 20 FEET IN LENGTH THAT IS ENCASED IN A MINIMUM OF 2" CONCRETE COVER SHALL SUFFICE FOR USE AS AN ELECTRODE.
 9. THE CONTRACTOR SHALL INSTALL LOOSE UNTELS FOR ALL WALL PENETRATIONS WIDER THAN 1/2" AS A RESULT OF DUCT, PIPE OR OTHER EQUIPMENT INSTALLATIONS.
 10. ALL WALL AND FLOOR PENETRATIONS SHALL BE PATCHED AND SEALED BY THEIR RESPECTIVE TRADES.
 11. ALL FLOOR PENETRATIONS FOR PIPING AND CONDUIT SHALL BE SLEEVED AND SEALED.
 12. PARTITIONS SHALL BE LAID OUT STARTING FROM CONDITIONS WHERE ALIGNMENT WITH EXISTING CONSTRUCTION IS SHOWN. UNLESS OTHERWISE NOTED, DIMENSIONS ARE TAKEN TO THE FACE OF WALLS/PARTITIONS.
 13. DIMENSIONS TO MASONRY CONSTRUCTION ARE GIVEN TO THE NOMINAL FACE OF THE WALL. EXTERIOR MASONRY DIMENSIONS ARE TAKEN TO THE NOMINAL FACE OF THE WALL UNLESS OTHERWISE NOTED. CLEAR DIMENSIONS SHALL BE TAKEN FROM THE FINISHED FACE OF WALLS.
 14. ALL OUTSIDE CMU CORNERS OF INTERIOR WALLS SHALL BE BULLNOSED, UNLESS OTHERWISE NOTED.



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SPIEZLE ARCHITECTURAL GROUP, INC.	2140200000

SEAL:

CONSULTANTS:

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FOR BID: 09-30-2022

DRAWING TITLE:

FLOOR PLANS

COMMISSION NUMBER: 22M006

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER:

A1.1