

MISSOULA, MONTANA

WILDROOT

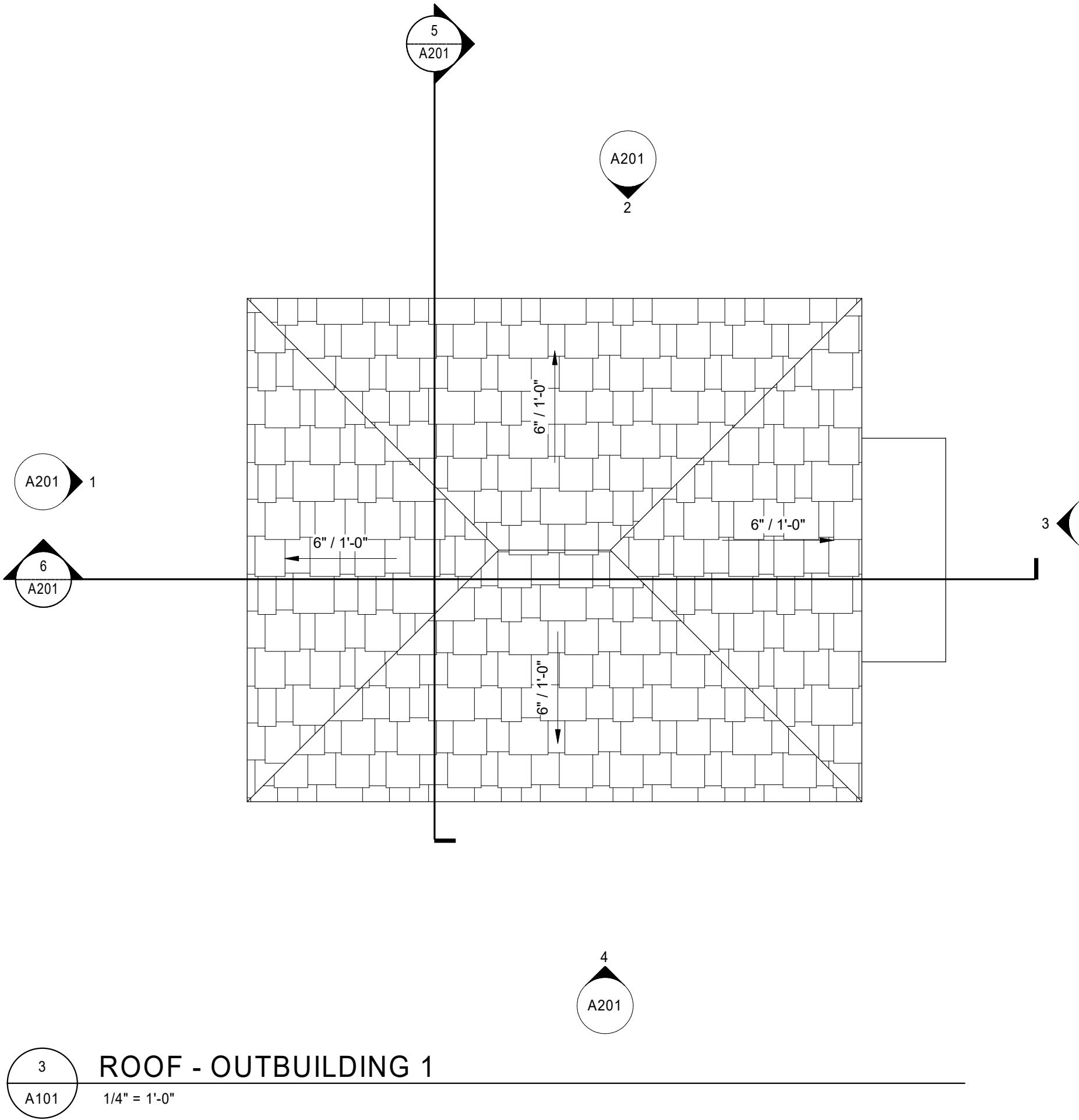
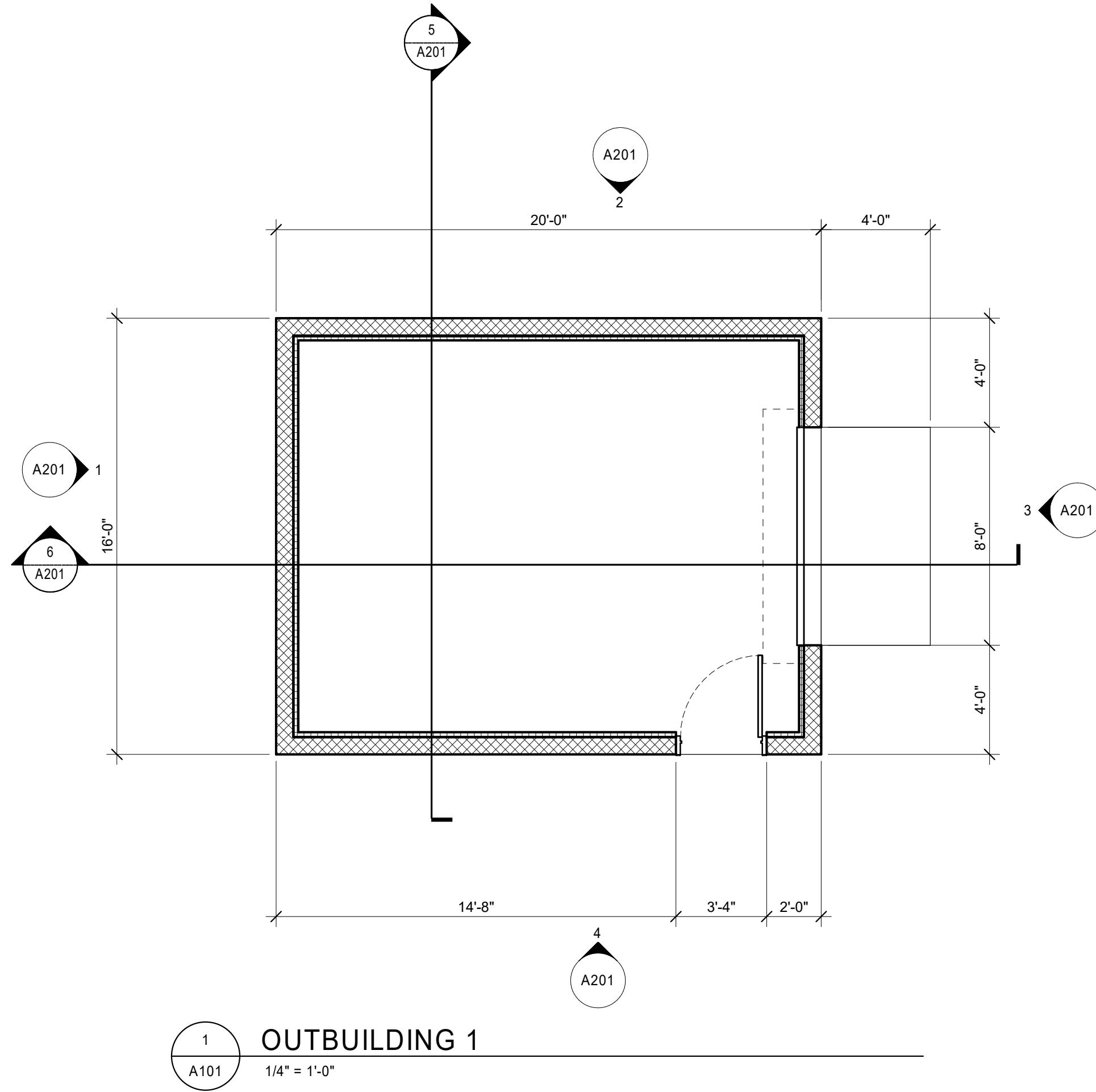
NOT FOR CONSTRUCTION - EXHIBIT

X409

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EXHIBIT

12.05.2023
DRAWN BY | MASCIA
CHECKED BY |
REVISIONS

PUMPHOUSE
SITE PLANS



WALL TYPE LEGEND

SCALE: 1" = 1'-0"

GENERAL WALL TYPE NOTES:
 A. SEE INTERIOR ELEVATIONS (SHEET A801) AND FINISH SCHEDULE (SHEET A501) FOR WALL FINISHES.
 B. PROVIDE BLOCKING AS REQUIRED TO SECURE WALL HUNG COMPONENTS.
 C. EXTEND ALL COMPONENTS TO UNDERSIDE OF DECK, UNLESS NOTED OTHERWISE.

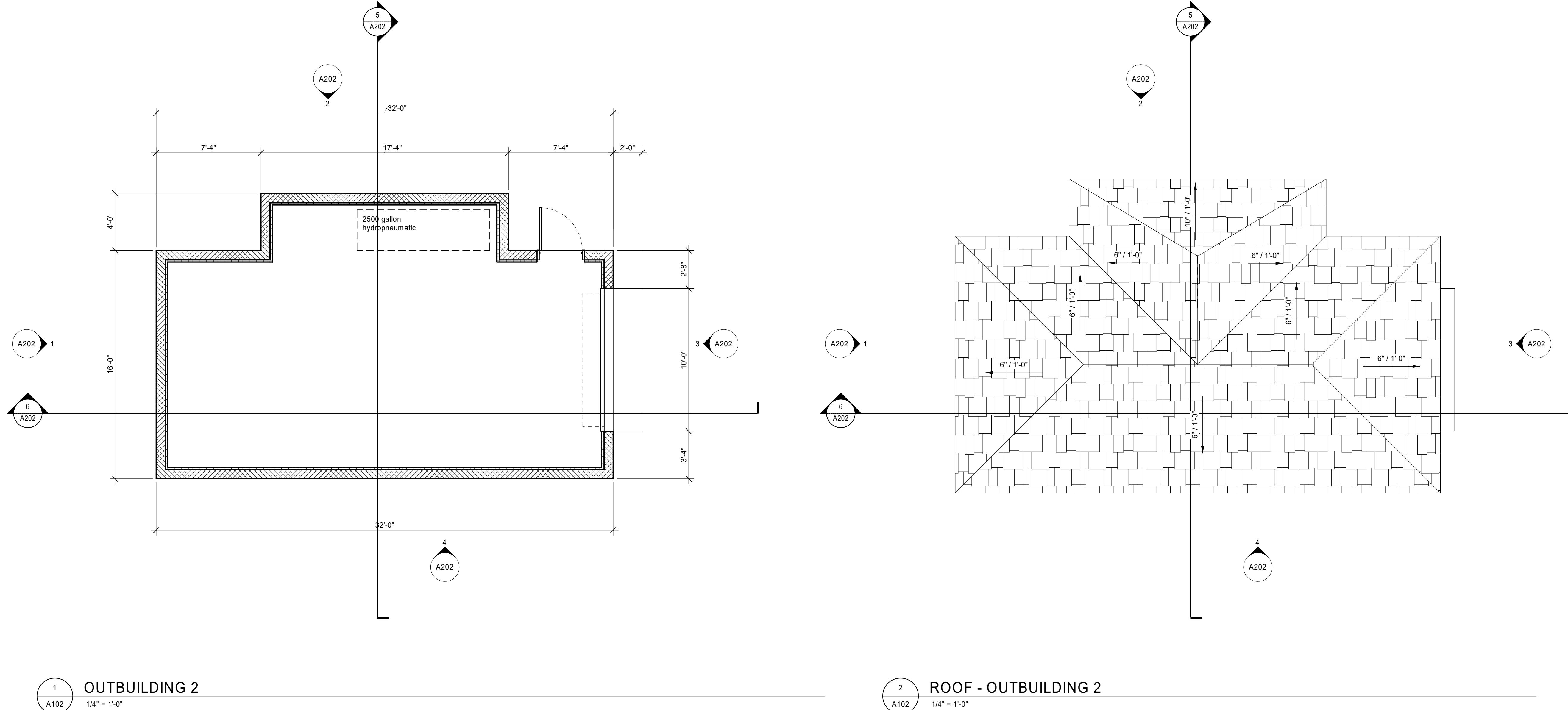
WALL TYPE MODIFIERS:
 1. NOT USED.
 2.

WALL TYPE DESCRIPTION

PLAN LEGEND

	ASSEMBLY TYPE (SEE ASSEMBLIES SHEET)
	ASSEMBLY MODIFIER, PER TYPE
	NAME
	101 → ROOM NAME AND NUMBER
	WINDOW TYPE (SEE A600s)
	KEYNOTE
	DIRECTION OF VIEW, IF APPLICABLE
	1 → DRAWING NUMBER
	X000 → SHEET WHERE DRAWN
	101 → DOOR NUMBER (SEE SHEET A601)
	DIMENSION TO FACE OF FRAMING
	DIMENSION TO GRID LINE
	DIMENSION TO CENTER LINE

KEYNOTES



NOT FOR CONSTRUCTION - PRELIMINARY DESIGN

A102

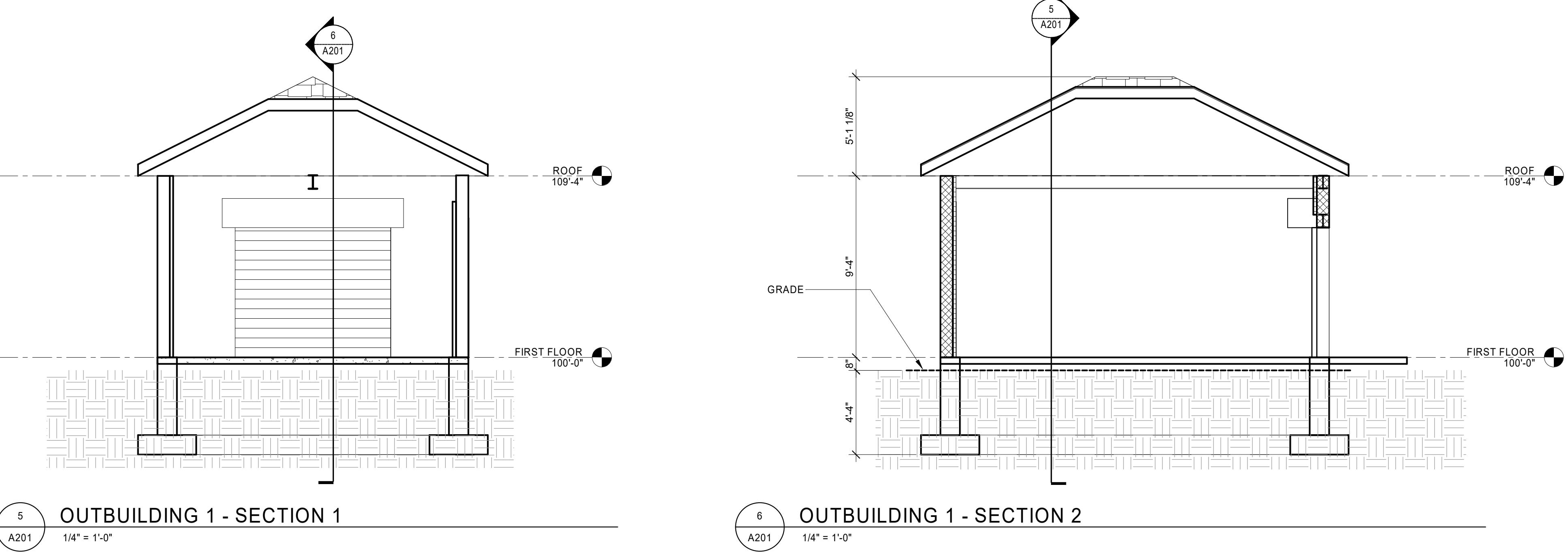
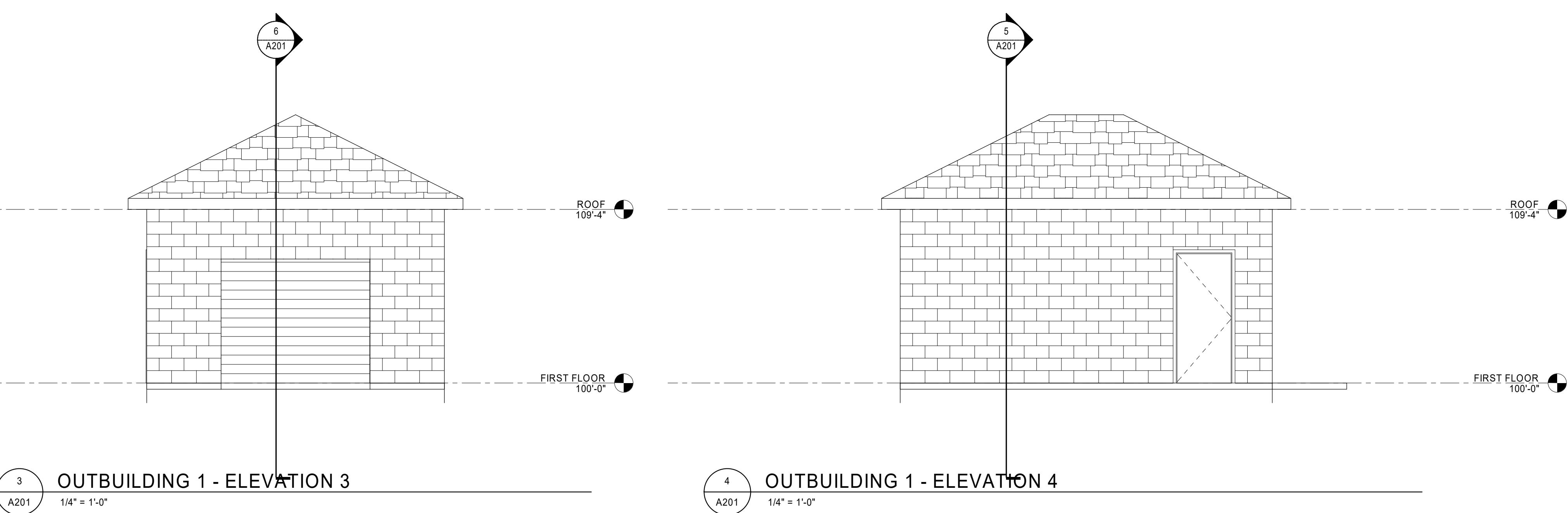
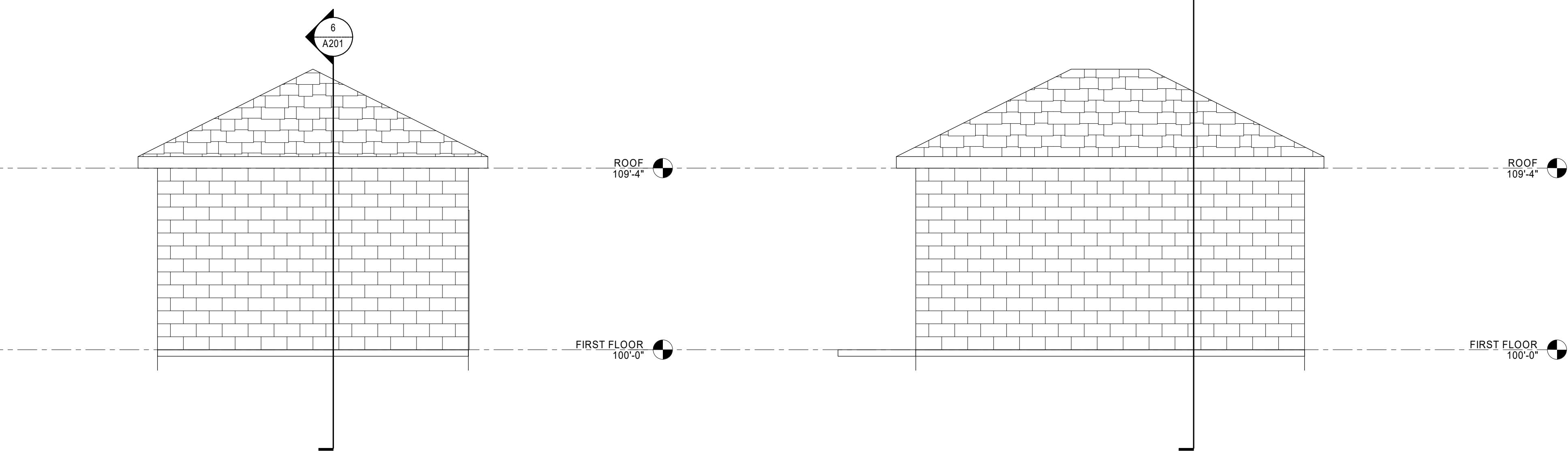
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WILDRoOT

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MATERIALS LEGEND



KEYNOTES



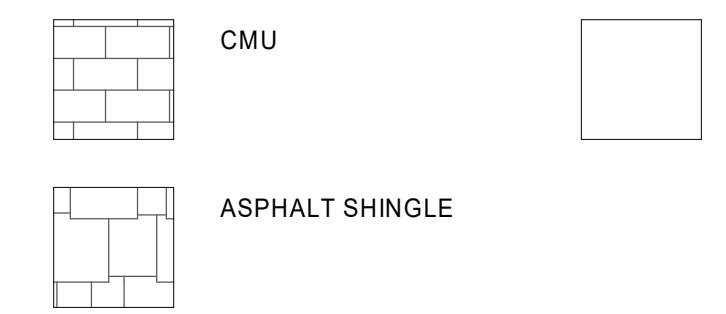
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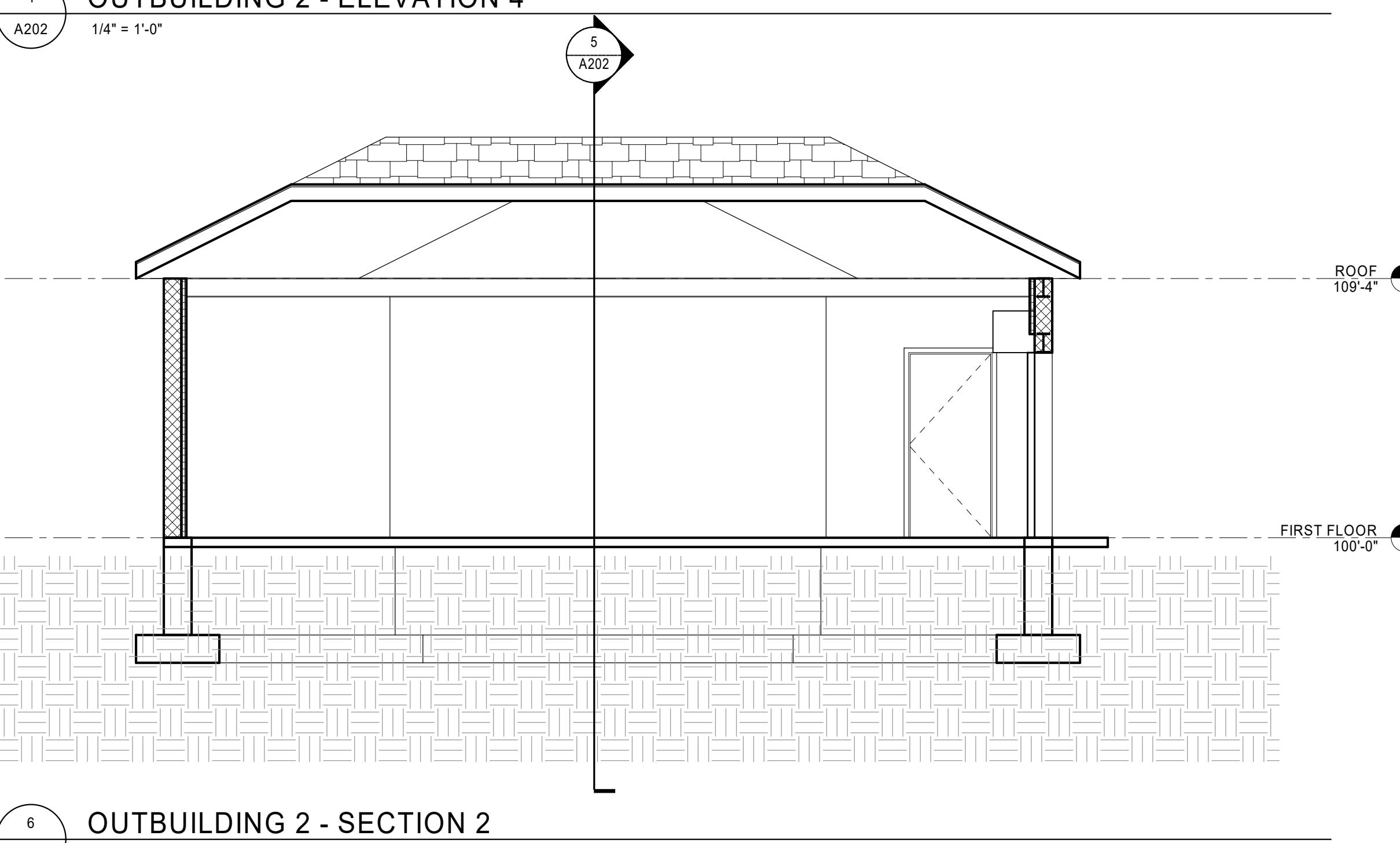
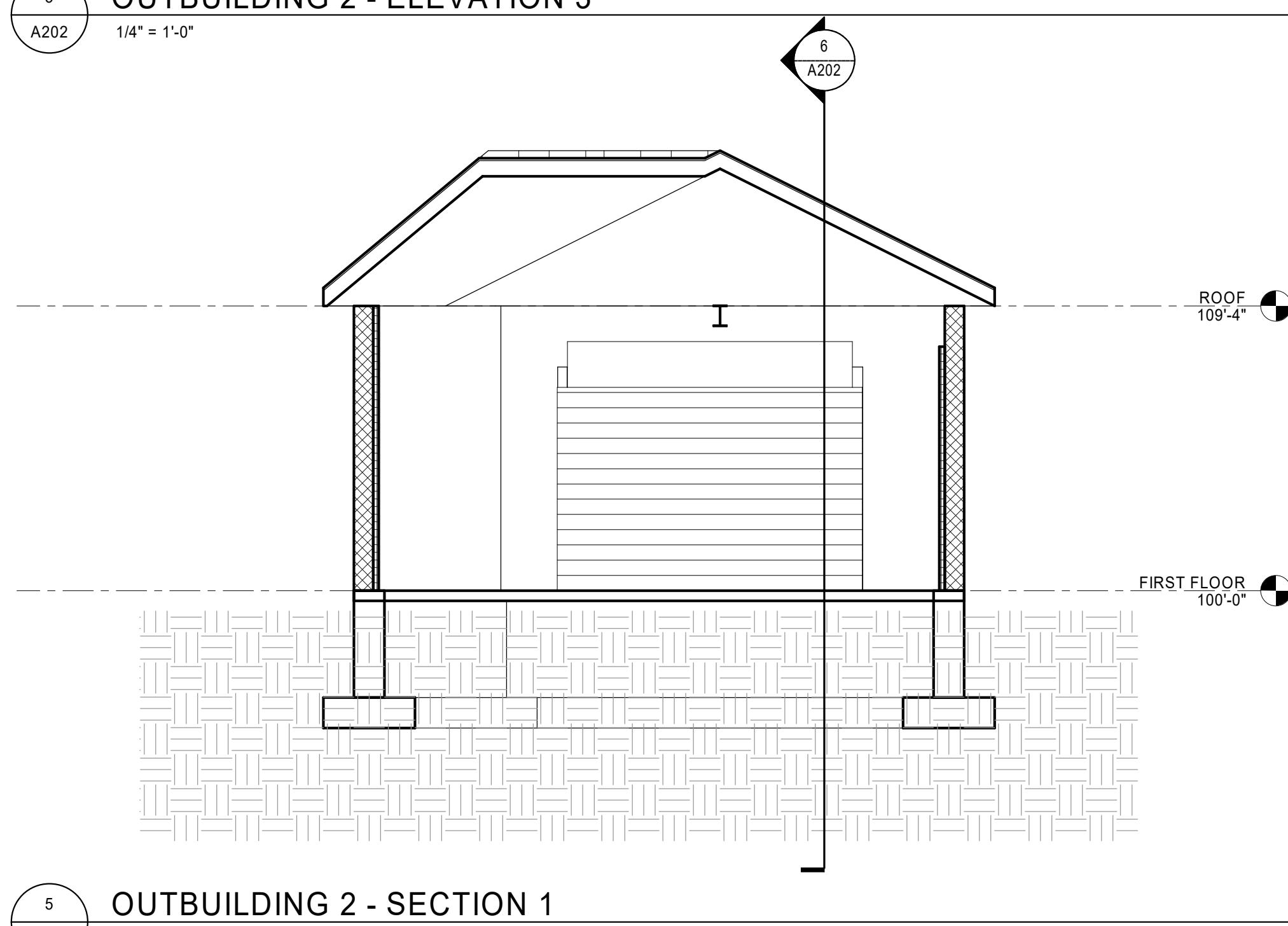
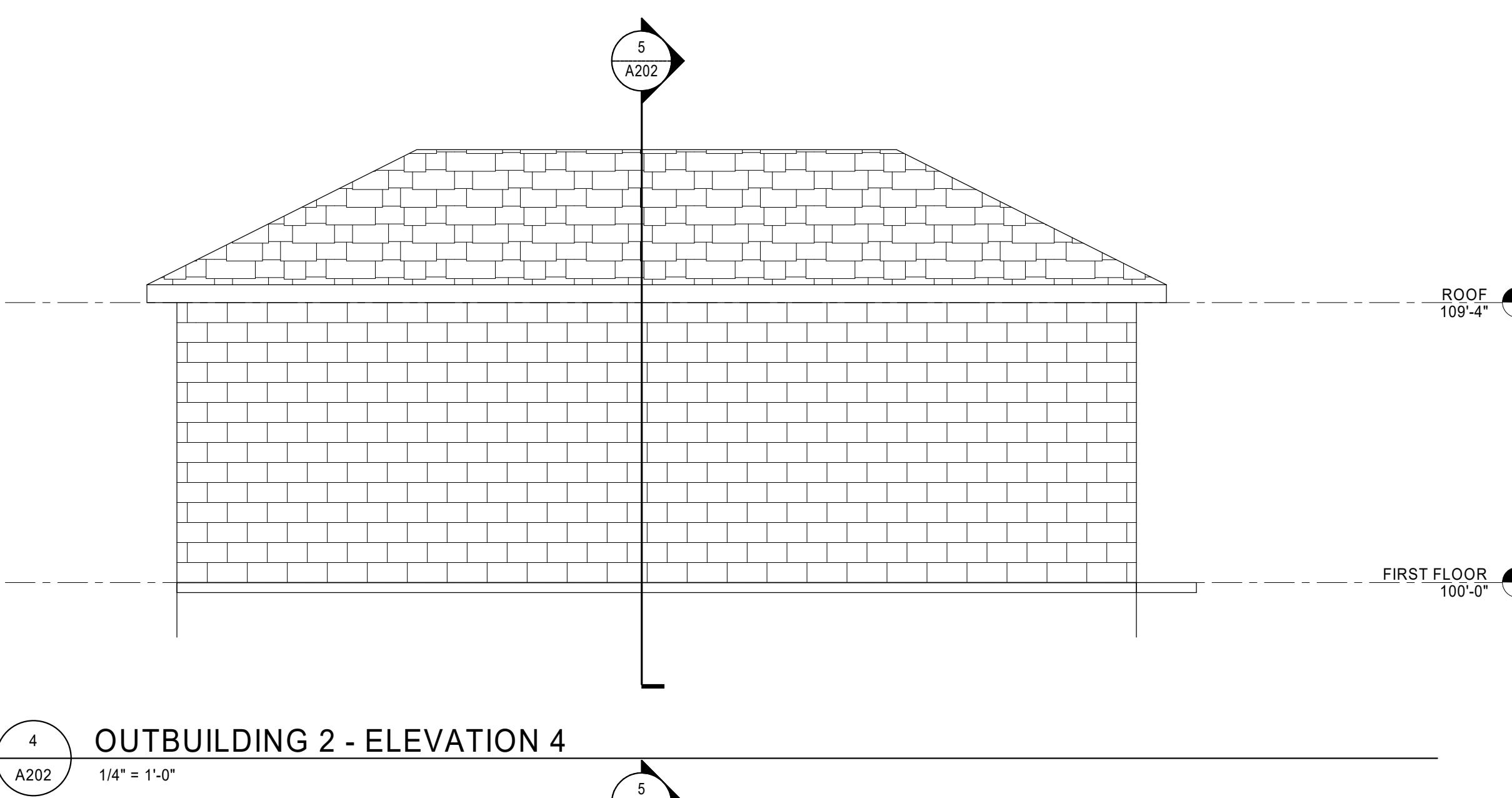
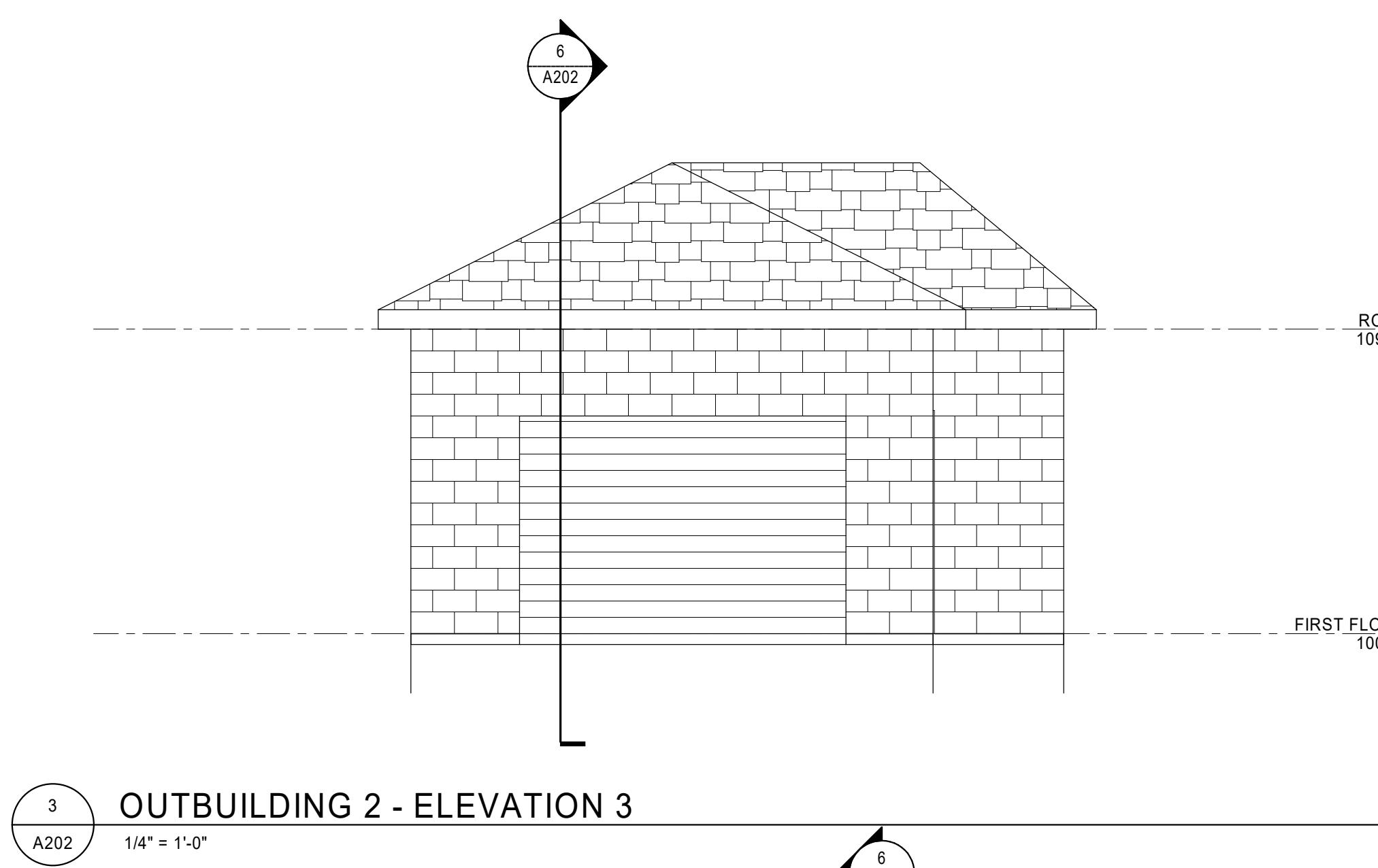
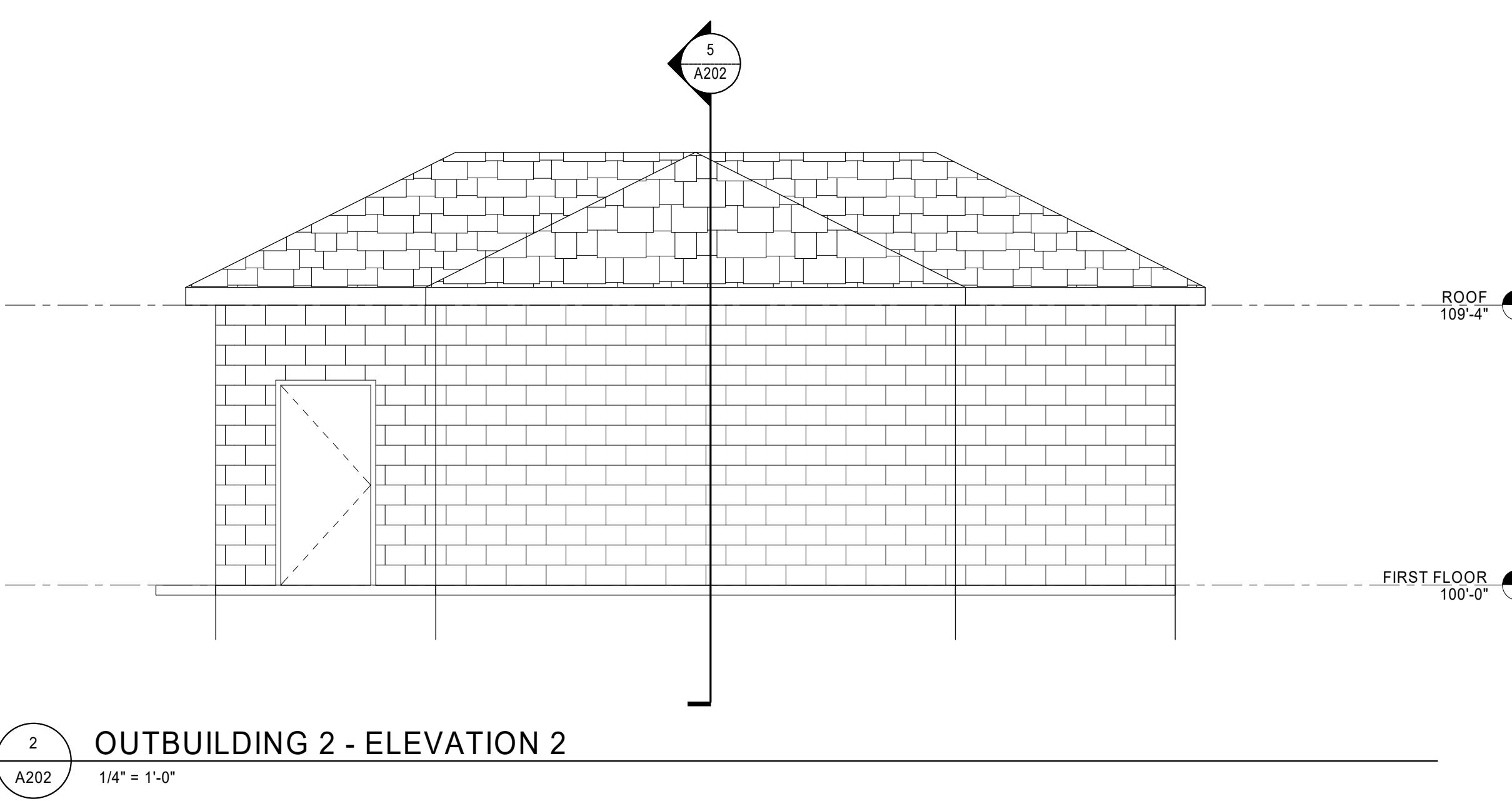
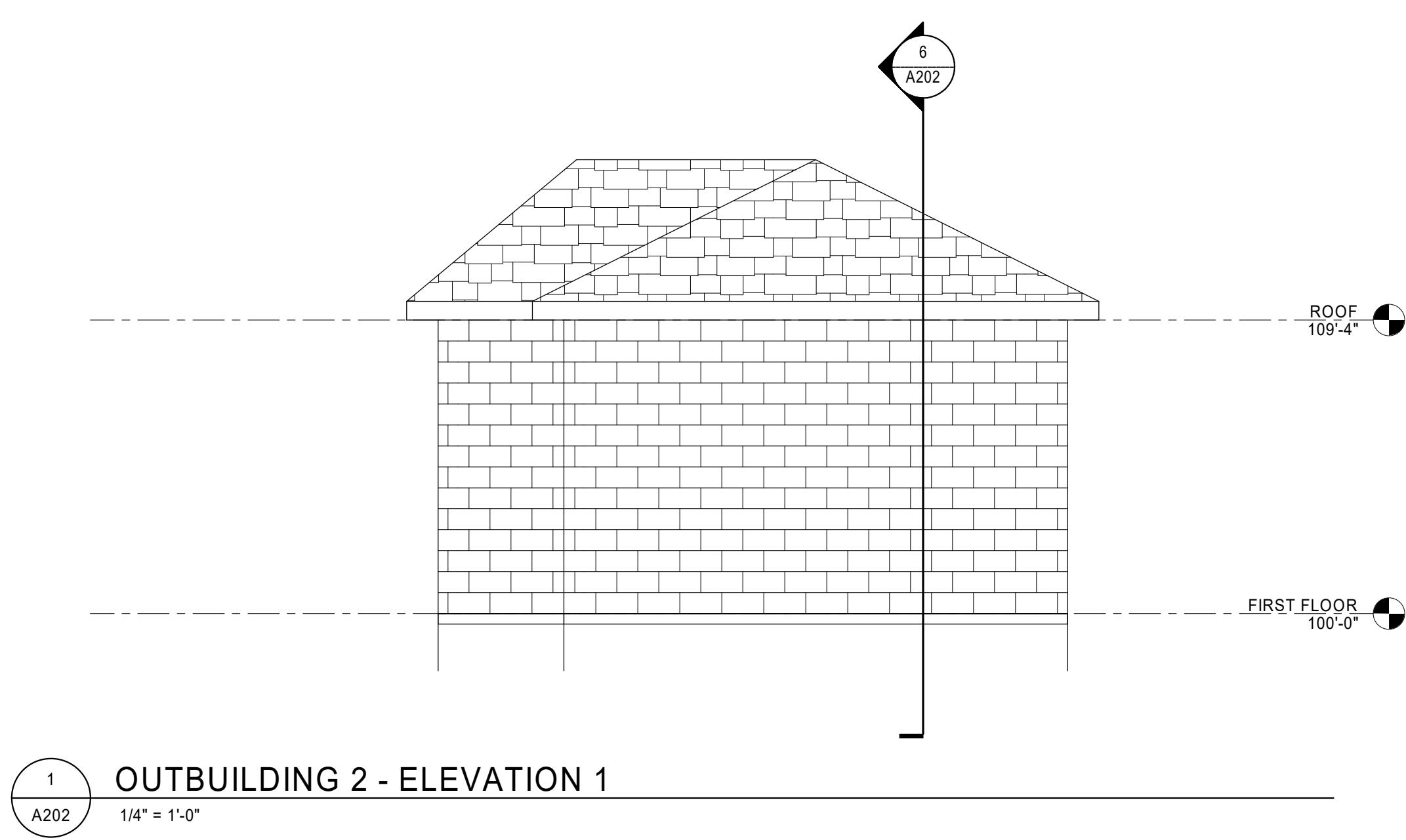
EXTERIOR
ELEVATIONS

A201

MATERIALS LEGEND



KEYNOTES



MISSOULA, MONTANA
WILDRoOT

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12.05.2023
DESIGNED BY | Designer
DRAWN BY | Author
REVIEWED BY | Checker

REVISIONS

EXTERIOR
ELEVATIONS

A202

GENERAL STRUCTURAL NOTES:

THESE DRAWINGS HAVE BEEN PREPARED SOLELY FOR USE IN THE CONSTRUCTION OF THE CORVALLIS WASTEWATER TREATMENT PLANT AT THE LOCATION OF CORVALLIS, MT. POSSESSION OF THESE DRAWINGS DOES NOT GRANT A LICENSE TO CONSTRUCT OR FABRICATE THE WHOLE, OR PARTS OF THIS PROJECT IN OTHER LOCATIONS.

STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH PROCESS, ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SITE CIVIL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THESE DRAWINGS INCLUDING BUT NOT LIMITED TO DIMENSIONS, BLOCKOUTS, OPENINGS, SLEEVES, EMBEDDED ITEMS, ETC. INTO THEIR SHOP DRAWINGS AND WORK. NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER OF RECORD OF ANY DISCREPANCIES OR IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN OR NOTED.

THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRIORITY OVER THE GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

THE CONTRACTOR SHALL FURNISH THE PRODUCTS SPECIFIED ON THE DRAWINGS. SUBSTITUTIONS WILL BE CONSIDERED ONLY IF THE CONTRACTOR PROVIDES DOCUMENTATION TO PROVE THE ALTERNATIVE EQUALS OR EXCEEDS THE STRUCTURAL PERFORMANCE CHARACTERISTICS OF THE SPECIFIED PRODUCT.

CODE REQUIREMENTS:
ALL WORK SHALL BE IN STRICT COMPLIANCE WITH:
A. 2021 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE STATE OF MONTANA (INTERNATIONAL BUILDING CODE, 2021 EDITION, EFFECTIVE JUNE 9, 2022)
B. ALL OTHER STATE AND LOCAL BUILDING REQUIREMENTS THAT APPLY.

TEMPORARY CONDITIONS:
CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SUPPORT PRIOR TO COMPLETION OF VERTICAL AND LATERAL LOAD SYSTEMS. MORRISON-MAIERLE HAS NOT BEEN RETAINED TO PROVIDE ANY SERVICES RELATED TO JOB SITE SAFETY PRECAUTIONS, OR TO REVIEW THE MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES FOR THE CONTRACTOR TO PERFORM WORK. UNLESS WE ARE SPECIFICALLY RETAINED AND COMPENSATED TO DO OTHERWISE, OUR WORK IS LIMITED TO THE FINAL DESIGN OF THE WORK DESCRIBED ON OUR DRAWINGS FOR THIS PROJECT.

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

ASSUMED FUTURE CONSTRUCTION:

VERTICAL: NONE

HORIZONTAL: NONE

DESIGN CRITERIA:
DESIGN IS BASED ON THE FOLLOWING LOADING FOR THE BASIS OF STRENGTH, PERFORMANCE, AND SERVICEABILITY OF THE STRUCTURE:

DESIGN CRITERIA

LIVE LOAD CRITERIA (IBC 1603.1.1)

FLOOR LIVE LOADS:	UNIFORM LOAD	CONCENTRATED LOAD
MANUFACTURING: LIGHT	125 PSF (NON-REDUCABLE)	2000 LBS

ROOF LIVE LOAD CRITERIA (IBC 1603.1.2)

ORDINARY FLAT, PITCHED, CURVED	20 PSF (SEE SNOW LOAD)	N/A
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SNOW LOAD CRITERIA (IBC 1603.1.3)

DESIGN ROOF SNOW LOAD	36 PSF
SNOW DRIFT	PER ASCE 7-16 AS SHOWN ON PLANS
GROUND SNOW LOAD	Pg = 43 PSF (MONTANA SNOW LOAD FINDER)
FLAT ROOF SNOW LOAD	Pf = 36 PSF
SNOW EXPOSURE FACTOR	Ce = 0.9
SNOW LOAD IMPORTANCE FACTOR	Is = 1.1
Thermal Factor	Ct = 1.2

WIND LOAD CRITERIA (IBC 1603.1.4)

BASIC DESIGN WIND SPEED	V = 112 MPH
RISK CATEGORY	III
WIND EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	GCpi = +/- 0.18
SEISMIC LOAD CRITERIA (IBC 1603.1.5)	
RISK CATEGORY	III
SEISMIC IMPORTANCE FACTOR	Ie = 1.25
MAPPED SPECTRAL RESPONSE	Ss = 0.320
SITE CLASS	C
DESIGN SPECTRAL RESPONSE	Sds = 0.256
SEISMIC DESIGN CATEGORY	B
BASIC SEISMIC FORCE RESISTING SYSTEM (SFRS)	X DIRECTION (E/W) Z DIRECTION (N/S) ORDINARY REINFORCED MASONRY SHEAR WALLS ORDINARY REINFORCED MASONRY SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT	0.160
RESPONSE MODIFICATION FACTOR	2.0
ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE

GEOTECHNICAL CRITERIA (IBC 1603.1.6)

DESIGN BASED ON REPORT BY	TETRA TECH DATED 03/20/2023
DESIGN SOIL BEARING PRESSURE	3000 PSF (DL + LL)

STRUCTURAL OBSERVATIONS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE ENGINEER OF RECORD A MINIMUM OF 24 HOURS IN ADVANCE OF REQUIRED OBSERVATION(S). CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE OBSERVER. APPROVAL BY THE MUNICIPAL INSPECTOR DOES NOT PRECLUDE OBSERVATIONS BY THE ENGINEER OF RECORD AND APPROVAL BY THE ENGINEER OF RECORD DOES NOT PRECLUDE THE INSPECTION PROCESS BY THE MUNICIPAL INSPECTOR AND ANY OTHER CODE REQUIREMENTS FOR INSPECTION.

UPON COMPLETION OF WORK THE STRUCTURAL OBSERVER SHALL SUBMIT A REPORT TO THE OWNER AND BUILDING OFFICIAL ATTESTING TO THE VISUAL OBSERVATION MADE. THE REPORT SHALL IDENTIFY ANY REPORTED DEFICIENCIES WHICH HAVE NOT BEEN RESOLVED.

STRUCTURAL OBSERVATIONS SHALL BE PERFORMED TO DOCUMENT GENERAL CONFORMANCE OF THE STRUCTURAL DRAWINGS AND SPECIFICATIONS AT THE FOLLOWING STAGES:

- FOOTING REINFORCING
- AT COMPLETION OF ROOF DIAPHRAGM FASTENING
- AS REQUIRED TO ADDRESS STRUCTURAL ISSUES

SUBMITTALS:

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

SUBMITTALS		
ITEM	SUBMITTAL	DEFERRED SUBMITTAL
METAL PLATE-CONNECTED WOOD TRUSSES	X	X
CONCRETE MIX DESIGNS	X	
CONCRETE REINFORCEMENT	X	
MASONRY REINFORCEMENT	X	
MASONRY BLOCK, MORTAR, GROUT MATERIALS	X	

SHOP DRAWINGS SUBMITTALS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION FOR ALL STRUCTURAL PRODUCTS DELIVERED TO THE PROJECT. IF THE SHOP DRAWINGS DEVIATE FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER OF RECORD.

DEFERRED SUBMITTAL DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. THE DEFERRED SUBMITTAL SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER FOR LOADS IMPOSED ON THE SUPPORTING STRUCTURE. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE CODES AND DESIGN CRITERIA NOTED IN THESE GENERAL STRUCTURAL NOTES.

THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT, MACHINERY AND ASSOCIATED PIPING WITH THE STRUCTURE. CONNECTIONS TO STRUCTURE SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION.

FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DEVIATE FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION.

THE USE OF REPRODUCTIONS OR PHOTOCOPIES OF THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED. WHEN CAD OR REVIT FILES ARE PROVIDED TO THE CONTRACTOR OR SUBCONTRACTORS, IT IS THE RESPONSIBILITY OF THE DETAILEERS TO REMOVE ALL INFORMATION NOT DIRECTLY RELEVANT TO THE CREATION OF THE PLACING DRAWINGS AS WELL AS ALL REFERENCES TO THE OUTSIDE SOURCE FILES.

SUBMITTAL DOCUMENTS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO BEING SUBMITTED TO THE ARCHITECT FOR REVIEW.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE REVIEWED SUBMITTAL TO THE BUILDING DEPARTMENT FOR DEFERRED PERMIT APPLICATION. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

EARTHWORK:

GENERAL:

GEOTECHNICAL INVESTIGATION AND REPORT HAS BEEN COMPLETED AS NOTED IN THE 'DESIGN CRITERIA'. REFER TO GEOTECHNICAL REPORT FOR RECOMMENDATIONS ON SITE PREPARATIONS, FILL SPECIFICATIONS AND SITE SPECIFIC CONSTRUCTION CONSIDERATIONS.

STABILITY OF CONSTRUCTION EXCAVATION AND WORKER SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR, BASED UPON THE GEOTECHNICAL REPORT. TEMPORARY CONSTRUCTION EXCAVATIONS, ABOVE GROUNDWATER, TO BE PLANNED IN ACCORDANCE WITH OSHA PROVISIONS SHOULD ASSUME TYPE B MATERIAL FOR STIFF CLAY, AND TYPE C MATERIAL FOR SAND.

DO NOT EXCAVATE CLOSER THAN 2:1 SLOPE BELOW FOOTING EXCAVATIONS.

ALL SLABS-ON-GRADE SHALL BEAR ON COMPACTED STRUCTURAL FILL OR COMPETENT NATIVE SOIL PER THE GEOTECHNICAL REPORT. ALL MOISTURE SENSITIVE SLABS-ON-GRADE OR THOSE SUBJECT TO RECEIVE MOISTURE SENSITIVE COATINGS OR COVERINGS SHALL BE PROVIDED WITH AN APPROPRIATE CAPILLARY BREAK AND VAPOR BARRIER OR RETARDANT OVER THE SUBGRADE PREPARED AND INSTALLED AS NOTED IN THE GEOTECHNICAL REPORT. BARRIER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND COORDINATED WITH THE FINISHES SPECIFIED BY THE ARCHITECT.

CONCRETE:

CAST-IN-PLACE CONCRETE:

CONCRETE SHALL BE IN ACCORDANCE WITH ACI 301, SPECIFICATION FOR STRUCTURAL CONCRETE, AND ACI 117, SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS, UNLESS NOTED OTHERWISE.

AVERAGE CONCRETE STRENGTH DETERMINED BY JOB CAST LAB CURED CYLINDER TO BE AS INDICATED BELOW PLUS INCREASE DEPENDING ON THE PLANT'S STANDARD DEVIATION AS SPECIFIED IN ACI 318. MINIMUM CONCRETE PROPERTIES SHALL BE AS FOLLOWS:

CONCRETE PROPERTIES					
USE	EXPOSURE	MIN COMPRESSIVE STRENGTH	TEST AGE DAYS	AIR CONTENT	MAX WATER TO CEMENT RATIO
EXTERIOR FOOTINGS AND WALLS	F2	4,500 PSI	28	6% +/- 1.5%	0.45
INTERIOR FOOTINGS AND WALLS	F0	4,000 PSI	28	NO LIMIT	0.45
EXTERIOR SLABS ON GRADE	F1	3,500 PSI	28	4.5% +/- 1.5%	0.55
INTERIOR SLABS ON GRADE	F0	3,500 PSI	28	NO LIMIT	0.50

THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ALONG WITH TEST DATA A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE.

CONDUTS EMBEDDED IN SLABS SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN ONE THIRD OF THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON CENTER.

CURING OF CONCRETE SHALL COMPLY WITH ACI 308, UNLESS NOTED OTHERWISE.

WHERE CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.

PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CONCRETE CORNERS UNLESS NOTED OTHERWISE.

PROVIDE TOOLED OR SAW-CUT CONTROL JOINTS IN SLABS ON GRADE COMPLYING WITH THE FOLLOWING CRITERIA. THE CONTRACTOR SHALL SUBMIT CONTROL JOINT PLAN PRIOR TO POURING THE SLABS.

- JOINT SPACING SHALL NOT EXCEED 30 TIMES THE SLAB THICKNESS
- ASPECT RATIO OF SLAB PANELS SHALL BE MAXIMUM OF 1.5 TO 1.0; HOWEVER A RATIO OF 1.0 TO 1.0 IS PREFERABLE
- JOINTS SHALL BE CONTINUOUS ACROSS INTERSECTING JOINTS, NOT STAGGERED OR OFFSET
- JOINTS SHALL EXTEND FROM ISOLATION JOINT AROUND COLUMNS AND WALLS

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING PROPERTIES:

REINFORCEMENT STEEL PROPERTIES

STATEMENT OF SPECIAL INSPECTION AND TESTING NOTES:

SPECIAL INSPECTIONS SHALL CONFORM TO CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE (IBC), CONTRACT DOCUMENTS, AND APPROVED SUBMITTALS. THE OWNER SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS AND TESTING DESCRIBED HEREIN.

SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED AND ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (GENERAL), ASTM D3740 (SOILS), ASTM C1077 (CONCRETE), ASTM A880 (STEEL), AND ASTM E543 (NON-DESTRUCTIVE). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE ARCHITECT AND ENGINEER A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE APPROVED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER AWS D1.1.

THE CONSTRUCTION OR WORK FOR WHICH SPECIAL INSPECTION IS REQUIRED SHALL REMAIN ACCESSIBLE AND EXPOSED FOR SPECIAL INSPECTION PURPOSES UNTIL COMPLETION OF THE REQUIRED SPECIAL INSPECTIONS.

THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONTRACT DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS. ISSUES REQUIRING IMMEDIATE CORRECTIVE ACTIONS OR ENGINEERING INPUT ARE TO BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY UPON DISCOVERY.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, ARCHITECT, ENGINEER, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED, IS IN CONFORMANCE WITH THE APPROVED CONTRACT DOCUMENTS, AND THAT ALL DISCREPANCIES NOTED IN THE REPORTS HAVE BEEN CORRECTED.

EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR A WIND- OR SEISMIC-RESISTING COMPONENT LISTED SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO COMMENCEMENT OF WORK ON THE SYSTEM OF COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED HEREIN.

INSPECTION FREQUENCY:

- A. CONTINUOUS INSPECTION: THE SPECIAL INSPECTOR SHALL BE PRESENT WHEN AND WHERE THE WORK IS BEING PERFORMED AT ALL TIMES.
- B. PERIODIC INSPECTION: THE SPECIAL INSPECTOR SHALL BE INTERMITTENTLY PRESENT WHEN AND WHERE THE WORK IS BEING PERFORMED. THE INSPECTOR SHALL OBSERVE THE WORK AT ITS COMMENCEMENT, AT PERIODIC INTERVALS THEREAFTER, AND WHEN THE WORK IS COMPLETED.
- C. OBSERVE: THE INSPECTOR SHALL OBSERVE THESE FUNCTIONS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED DURING OBSERVATIONS (REFERENCE AISC 360 AND AISC 341 FOR ADDITIONAL INFORMATION).
- D. PERFORM: THESE INSPECTIONS SHALL BE PERFORMED PRIOR TO FINAL ACCEPTANCE OF THE ITEM (REFERENCE AISC 360 AND AISC 341 FOR ADDITIONAL INFORMATION).
- E. DOCUMENT: THE INSPECTOR SHALL PREPARE REPORTS INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS (REFERENCE AISC 360 AND AISC 341 FOR ADDITIONAL INFORMATION).

SPECIAL INSPECTIONS ARE NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.

A. STEEL FABRICATORS AND INSTALLERS CERTIFIED THROUGH AISC COMPLY WITH THIS PROVISION. THE FABRICATOR AND INSTALLER MUST STILL COMPLETE AND DOCUMENT THE QUALITY CONTROL TASKS AND NON-DESTRUCTIVE TESTING OUTLINED IN AISC 360 AND AISC 341, AS APPLICABLE.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS				
TASK	IBC REFERENCE	REFERENCE STANDARD	FREQUENCY	REMARKS
VERIFY MATERIALS BELOW SHALLOW FOUNDATION ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY			PERIODIC	
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL			PERIODIC	
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL			BY THE GEOTECHNICAL ENGINEER	
PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY			PERIODIC	

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION				
TASK	IBC REFERENCE	REFERENCE STANDARD	FREQUENCY	REMARKS
INSPECTION OF REINFORCING STEEL AND PLACEMENT	TABLE 1705.3	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	PERIODIC	
INSPECTION OF ANCHORS CAST-IN CONCRETE		ACI 318: 17.8.2	PERIODIC	
INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE: VERIFY ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, PRODUCT EXPIRATION DATE (IF APPLICABLE), COMPLIANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE (IF APPLICABLE) FOR:		ACI 318: 17.8.2.4 PRODUCT EVALUATION REPORT	CONTINUOUS	
a) ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARD- INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS				
b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN a)				
INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE: VERIFY ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, PRODUCT EXPIRATION DATE (IF APPLICABLE), COMPLIANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE (IF APPLICABLE) FOR:		ACI 318: 17.8.2 PRODUCT EVALUATION REPORT	PERIODIC	
b) MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN a)				
VERIFY USE OF REQUIRED MIX DESIGN		ACI 318: CH. 19, 26.4.3, 26.4.4	PERIODIC	
INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES		ACI 318: 26.5, 26.12	CONTINUOUS	
INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		ACI 318: 26.5.3-25.5.5	PERIODIC	
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		ACI 318: 26.11.1.2(b)	PERIODIC	

SPECIAL INSPECTION OF MASONRY CONSTRUCTION MINIMUM QUALITY ASSURANCE LEVEL				
DESIGNED IN ACCORDANCE WITH	RISK CATEGORY I, II OR III	RISK CATEGORY IV	REMARKS	
TMS 402-16 PART 3 OR APPENDIX B OR APPENDIX C	LEVEL 2	LEVEL 3	THE QUALITY ASSURANCE PROGRAM SHALL COMPLY WITH THE LEVEL DESIGNATED IN TABLE 3.1, DEPENDING ON HOW THE MASONRY WAS DESIGNED AND THE RISK CATEGORY, AS DEFINED IN ASCE 7-16 FOR THE LEGALLY ADOPTED BUILDING CODE	
SPECIAL INSPECTION OF MASONRY CONSTRUCTION MINIMUM VERIFICATION REQUIREMENTS				
MINIMUM VERIFICATION	REQUIRED FOR QA	REFERENCE FOR CRITERIA	REMARKS	
	LEVEL 1	LEVEL 2	LEVEL 3	TMS 602
PRIOR TO CONSTRUCTION, VERIFICATION OF COMPLIANCE OF SUBMITTALS	R	R	R	ART. 1.5
PRIOR TO CONSTRUCTION, VERIFICATION OF f'm AND f'cc, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THE CODE	NR	R	R	ART 1.4B
DURING CONSTRUCTION, VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE	NR	R	R	ART 1.5, 1.6.3
INSPECTION OF ANCHORS POST-INSTALLED IN MASONRY CONSTRUCTION. VERIFY ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, PRODUCT EXPIRATION DATE (IF APPLICABLE), COMPLIANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE (IF APPLICABLE)				PERIODIC INSPECTION

TESTING OF SOILS AND FOUNDATIONS			
TASK	IBC REFERENCE	REFERENCE STANDARD	FREQUENCY
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	TABLE 1705.6	PROJECT GEOTECHNICAL REPORT	PERIODIC

TESTING OF CONCRETE CONSTRUCTION			
TASK	IBC REFERENCE	REFERENCE STANDARD	FREQUENCY
CONCRETE STRENGTH TEST SPECIMENS	ASTM C31 AND C39	TABLE 1705.3	FOR EACH CLASS OF CONCRETE (E.G., Poured, Wall, or Slab) Grade (One Set of Specimens Each Day or Lesser of One Set for Each 150 Yds of Concrete or One Set for Each 5,000 Square Feet of Slabs or Wall)
	ASTM C172 ACI 318-14: 26.4 AND 26.12		FOR EACH SPECIMEN

TESTING OF MASONRY CONSTRUCTION LEVEL B QUALITY ASSURANCE			
TASK	IBC REFERENCE	REFERENCE STANDARD	FREQUENCY
VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX AS DELIVERED TO THE PROJECT SITE FOR SELF CONSOLIDATING GROUT	1705.4	TMS TABLE 1.19.2	
VERIFICATION OF f'm PRIOR TO CONSTRUCTION BY THE UNIT STRENGTH METHOD			

SPECIAL INSPECTION TASKS AS MASONRY CONSTRUCTION BEGINS				
INSPECTION TASK	FREQUENCY	REFERENCE FOR CRITERIA	REMARKS	
PROPORTIONS OF SITE-PREPARED MORTAR	NR	P	P	ART. 2.1, 2.6 A, & 2.6C
GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	NR	P	P	ART. 2.4 B & 2.4 H
GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	NR	P	P	ART. 3.4 & 3.6 A
SAMPLE PANEL CONSTRUCTION	NR	P	C	ART. 1.6 D
SPECIAL INSPECTION OF MASONRY CONSTRUCTION MINIMUM VERIFICATION REQUIREMENTS				
INSPECTION TASK	FREQUENCY	REFERENCE FOR CRITERIA	REMARKS	
LEVEL 1	LEVEL 2	LEVEL 3	TMS 402	TMS 602
GROUT SPACE	NR	P	C	ART. 3.2 D & 3.2 F
PLACEMENT OF PRESTRESSING TENDONS AND ANCHORAGES	NR	P	P	SEC. 10.8 & 10.9
PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS	NR	P	C	SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7
PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	NR	P	P	ART. 2.6 B & 2.4 G.1.b
SPECIAL INSPECTION TASKS DURING MASONRY CONSTRUCTION				
INSPECTION TASK	FREQUENCY	REFERENCE FOR CRITERIA	REMARKS	
MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS	NR	P	P	ART. 1.5
PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION	NR	P	P	ART. 3.3B
SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	NR	P	P	ART. 3.3F
WELDING OF REINFORCEMENT	NR	C	C	SEC. 6.1.6.1.2
PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEGREES FAHRENHEIT (4.4 DEGREES CELSIUS)) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEGREES FAHRENHEIT (32.2 DEGREES CELSIUS))	NR	P	P	ART. 1.8C & 1.8D
SPECIAL INSPECTION TASKS DURING MASONRY TESTING				
INSPECTION TASK	FREQUENCY	REFERENCE FOR CRITERIA	REMARKS	
LEVEL 1	LEVEL 2	LEVEL 3	TMS 402	TMS 602
OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	NR	P	C	ART. 1.4 B.2.3, 1.4 B.2.3, 1.4 B.2.3, 1.4 B.3, & 1.4 B.4

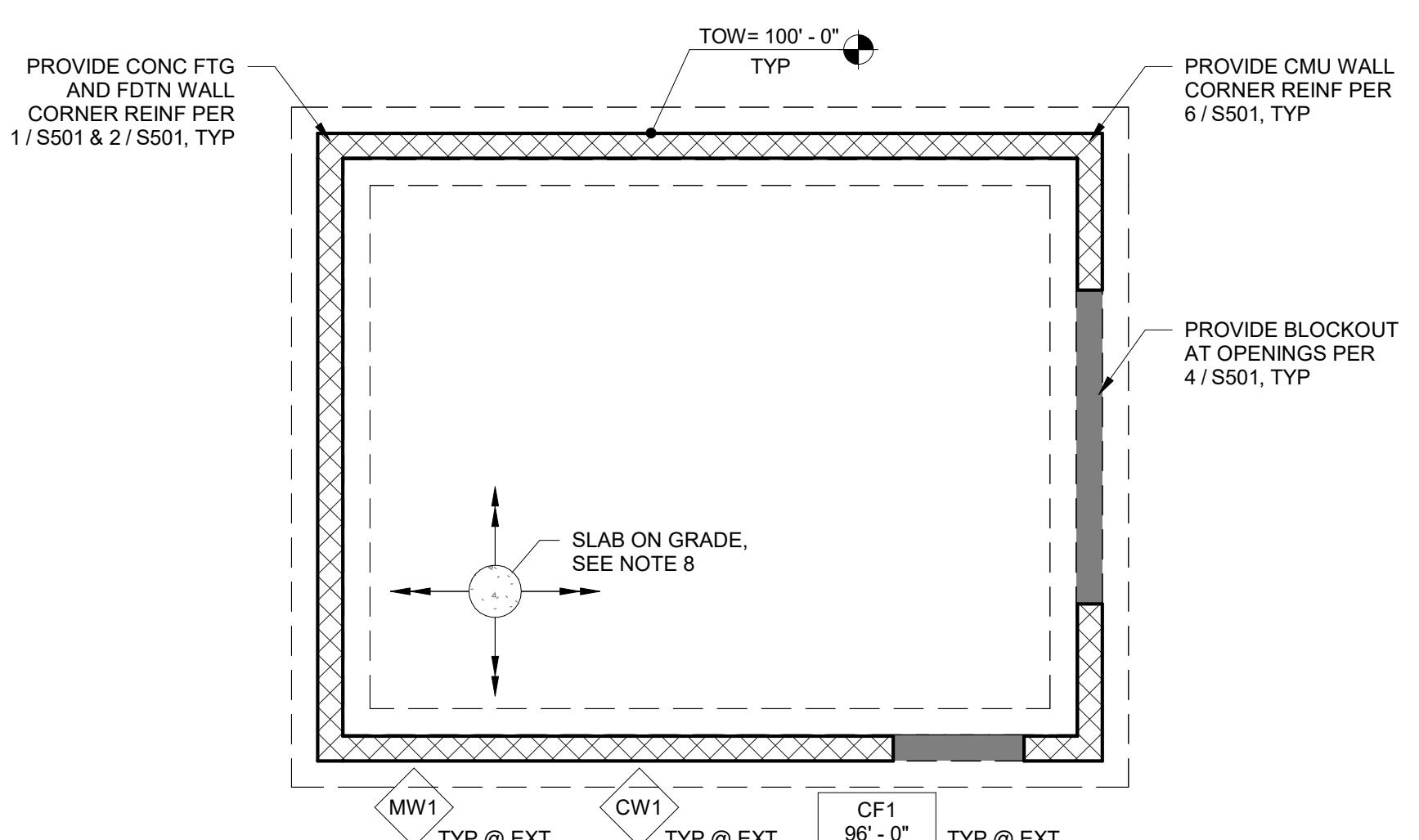
SYMBOL/ANNOTATION	DESCRIPTION	SYMBOL/ANNOTATION	DESCRIPTION	SYMBOL/ANNOTATION	DESCRIPTION
	CONCRETE SPREAD FOOTING MARK (SEE SCHEDULE) & TOP OF FOOTING ELEVATION (IF INDICATED)		EARTH/SOIL HATCH		SAWN LUMBER COLUMN
	CONCRETE CONTINUOUS FOOTING MARK (SEE SCHEDULE)		GRANULAR FILL/GRAVEL HATCH		SAWN LUMBER BEAM
	CONCRETE WALL MARK (SEE SCHEDULE)		MASONRY HATCH		GLULAM BEAM
P#	CONCRETE PIER MARK (SEE SCHEDULE)		WOOD STRUCTURAL PANEL HATCH		WOOD BLOCKING
	WOOD OR COLD-FORMED STEEL SHEARWALL MARK (SEE SCHEDULE)		NORTH ARROW		WOOD STRUCTURAL PANEL DECK
	HOLD-DOWN MARK (SEE SCHEDULE)		DETAIL CALLOUT (90 DEGREE ORIENTATION TO CURRENT VIEW) VIEW ORIENTED TOWARD ARROW		BEAM/TRUSS SYSTEM CALLOUT
	ELEVATION CALLOUT		DETAIL CALLOUT (MATCHES ORIENTATION OF CURRENT VIEW) ENLARGED VIEW		SNOW DRIFT LOAD 'Pd' - MAXIMUM DRIFT SURCHARGE 'Wd' - WIDTH OF SNOW DRIFT
	SECTION CALLOUT		FOOTING ELEVATION STEP		BLOCKOUT AT TOP OF WALL OR DOOR OPENING
	COMPONENT ELEVATION		TOP OF WALL ELEVATION STEP		

SYMBOLS & ANNOTATIONS

ABV	ABOVE	J	JOIST
ADDL	ADDITIONAL	LAM	LAMINATED
AA	ADHESIVE ANCHOR	LVL	LAMINATED VENEER LUMBER
AD	ADHESIVE DOWEL	LF	LINER/FLASH
ALT	ALTERNATE	LL	LIVE LOAD
ACI	AMERICAN CONCRETE INSTITUTE	LLH	LONG LEG HORIZONTAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LLV	LONG LEG VERTICAL
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MFR	MANUFACTURER
APA	AMERICAN PLYWOOD ASSOCIATION	M	MASONRY
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	ML	MASONRY LINTEL
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	MP	MASONRY PIER
AB	ANCHOR BOLT	MAT	MATERIAL
AR	ANCHOR ROD	MAX	MAXIMUM
L	ANGLE	MCH	Mechanical
ARCH	ARCHITECT	MNR	MEMBER
B PL	BASE PLATE	MTL	METAL
BSMT	BASEMENT	MD	METAL DECK
BM	BEAM	MEZZ	MEZZANINE
BRG	BEARING	MIN	MINIMUM
BLW	BELLOW	MISC	MISCELLANEOUS
BTWN	BETWEEN	NLB	NONLOAD BEARING
BLKG	BLOCKING	N	NORTH
BOT	BOTTOM	NA	NOT APPLICABLE
BC	BOTTOM CHORD	NTS	NOT TO SCALE
BLDG	BUILDING	NO	NUMBER
BU	BUILT UP	OC	ON CENTER
CANTIL	CANTILEVER	OPNG	OPENING
CB	CARRIAGE BOLT	OWJ	OPEN WEB JOIST
CIP	CAST IN PLACE	OPP	OPPOSITE
CTR	CENTER	PAR	PARALLEL
CTR'D	CENTERED	PERP	PERPENDICULAR
CL	CENTERLINE	PREFAB	PREFABRICATE
C	CHANNEL	PH	PHASE
CLR	COLD FORMED METAL FRAMING	PC	PIER CAP/CONCRETE PILE
COL	COLUMN	PL	PLATE
CONC	CONCRETE	PLYWD	PLYWOOD
CC	CONCRETE COLUMN	POUN	POUND
CMU	CONCRETE MASONRY UNIT	PLF	POUNDS PER LINEAR FOOT
CONN	CONNECTION	PSF	POUNDS PER SQUARE FOOT
CD	CONSTRUCTION DOCUMENTS	PSI	POUNDS PER SQUARE INCH
CJ	CONSTRUCTION JOINT	PAF	POWER-ACTUATED FASTENERS
CONT	CONTINUOUS/CONTINUED	PT	PRESSURE TREATED
CF	CONTINUOUS CONCRETE FOOTING	QA	QUALITY ASSURANCE
CONTR	CONTRACTOR	R	RADIUS
CJ	CONTROL JOINT	REF	REFERENCE
COORD	COORDINATE	REFR	REINFORCE, REINFORCING
X BRACE	CROSS BRACE	REBAR	REINFORCING STEEL BARS
D	PENNY (NAIL) OR DEPTH	REQ	REQUIREMENT
DL	DEAD LOAD	REV	REVISION
DEG	DEGREE	RT	RIGHT
DEMO	DEMOLITION	RGD INS	RIGID INSULATION
DET	DETAIL	RD	ROUND
DIM	DIMENSION	SCHED	SCHEDULE
DIST	DISTANCE	SA	SCREW ANCHOR
DOUG FIR	DOUGLAS FIR	SHTHG	SHETHING
DWL	DOWEL	SIM	SIMILAR
DWG	DRAWING	SCJ	STRUCTURE CONTRACTION JOINT
		SQ	SQUARE
EA	EACH	SI	SQUARE FEET
EW	EACH WAY	SPEC	SPECIFICATION
ELEV	ELEVATOR	STD	STANDARD
ENGR	ENGINEER	STL	STEEL
EQ	EQUAL/ EQUALY	SD	STEEL DECK
EQUIP	EQUIPMENT	STL JST	STEEL JOIST
EXST	EXISTING	STIF	STIFFENER
EXP	EXPANSION	STRUCT	STRUCTURAL
EXP BT	EXPANSION BOLT	SIP	STRUCTURAL INSULATED PANEL
EXT	EXTERIOR	SUBFLR	SUBFLOOR
FO	FACE OF	SUB	SUBSTITUTE
FSTNR	FASTENER	KIP	THOUSAND POUNDS
FT	FEET	TB	THROUGH BOLT
FLR	FLOOR	TMBR	TIMBER
FDTN	FOUNDATION	T&G	TONGUE AND GROOVE
FTG	FOOTING	T&B	TOP AND BOTTOM
FS	FOOTING STEP	TOB	TOP OF BEAM
GALV	GALVANIZED	TOC	TOP OF CONCRETE
GA	GAUGE	TOD	TOP OF DECK/SHEATHING
GC	GENERAL CONTRACTOR	TOF	TOP OF FOOTING
GL	GLUE LAMINATED	TOM	TOP OF MASONRY
GLB	GLUE LAMINATED BEAM	TOS	TOP OF STEEL
GR	GRADE	TOW	TOP OF WALL
GR BM	GRADE BEAM	TJI	TRUSS JOIST
GT	GROUT	TYP	TYPICAL
GYP	GYPSUM	UNO	UNLESS NOTED OTHERWISE
HGR	HANGER	VIF	VERIFY IN FIELD
HSA	HEADED STUD ANCHOR	VERT	VERTICAL
HDR	HEADER	WLD	WELD/WELDED
HT	HEIGHT	WWF	WELDED WIRE FABRIC
H	HIGH	WIDE	WIDE
HD	HOLD-DOWN	WF	WIDE FLANGE
HSS	HOLLOW STRUCTURAL SECTION	WL	WIND LOAD
HK	HOOK	W/	WITH
HORIZ	HORIZONTAL	W/O	WITHOUT
INFO	INFORMATION	WD	WOOD
INT	INTERIOR	HG	WOOD BEAM HANGER
IBC	INTERNATIONAL BUILDING CODE	WSP	WOOD STRUCTURAL PANEL
		WP	WORKING POINT

STRUCTURAL ABBREVIATIONS

PLAN NOTES	
<p>1. PROJECT DATUM ELEVATION = 100.00 AT TOP OF SLAB ON GRADE (SEE CIVIL DRAWINGS FOR ABSOLUTE ELEVATION). ALL SPOT ELEVATIONS ARE IN REFERENCE TO THE DATUM ELEVATION.</p> <p>2. REFER TO THE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.</p> <p>3. REFER TO THE DRAWING ANNOTATIONS & SYMBOLS FOR EXPLANATION OF DRAWING CONVENTIONS.</p> <p>4. REFER TO THE SD SERIES OF DRAWINGS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE NOT NECESSARILY REFERENCED BY CALLOUTS ON PLAN; IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE REQUIREMENTS OF THE DETAILS AT THE LOCATION AT WHICH THEY OCCUR.</p> <p>5. COORDINATE THE FOLLOWING ITEMS WITH DRAWINGS OF OTHER DISPLACEMENTS:</p> <ul style="list-style-type: none"> • SURFACE PREPARATION REQUIREMENTS BELOW FOOTINGS AND SLABS ON GRADE AND BACKFILL REQUIREMENTS BEHIND BASEMENT AND RETAINING WALLS; SEE THE PROJECT GEOTECHNICAL REPORT. • SIZES AND LOCATIONS OF OPENINGS AND PENETRATIONS THROUGH WALLS AND FLOORS; SEE ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS. • EXTERIOR CONCRETE, INCLUDING SLABS AND SITE RETAINING WALLS; SEE ARCHITECTURAL, CIVIL, AND LANDSCAPE DRAWINGS. • LOCATION, SIZE, AND ANCHORAGE OF ELECTRICAL, MECHANICAL, AND PLUMBING EQUIPMENT; SEE ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS. • EXTENT OF AND REQUIREMENTS FOR MASONRY VENEER; SEE ARCHITECTURAL DRAWINGS. • WINDOW AND DOOR LOCATIONS AND ROUGH OPENING SIZES IN WALLS; SEE ARCHITECTURAL DRAWINGS. • ROUTING OF DUCTS AND UTILITIES THROUGH WEBS OF TRUSSES OR JOISTS; SEE MECHANICAL AND PLUMBING DRAWINGS. <p>6. EXTERIOR GRIDLINES ARE ALIGNED TO THE FACE OF FOUNDATION WALL AND INTERIOR GRIDLINES ARE ALIGNED TO THE CENTER OF COLUMN OR WALL, UNLESS NOTED OTHERWISE.</p> <p>7. CONSTRUCTION JOINT LOCATIONS FOR CONCRETE WORK ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR REVIEW AND APPROVAL.</p> <p>8. SLAB ON GRADE SHALL BE 6" THICK AND REINFORCED WITH #4 @ 12" ON CENTER IN EACH DIRECTION.</p> <p>9. LOCATIONS OF SLAB ON GRADE CONTROL JOINTS ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT A DETAILED LAYOUT OF PROPOSED JOINT LOCATIONS AT LEAST (7) DAYS PRIOR TO SLAB PLACEMENT FOR REVIEW AND APPROVAL.</p> <p>10. UNLESS NOTED OTHERWISE, BEAMS AND/OR JOISTS ARE EQUALLY SPACED BETWEEN COLUMNS.</p> <p>11. THE DESIGN OF PREFABRICATED WOOD TRUSSES IS DEFERRED TO THE TRUSS SUPPLIER. TRUSSES ARE TO BE DESIGNED FOR THE CRITERIA DEFINED IN THE GENERAL STRUCTURAL NOTES.</p> <p>12. ROOF SHEATHING SHALL BE 5/8" THICK, 40/20 SPAN RATING, APA RATED SHEATHING WITH 8d NAILS AT 6" ON CENTER AT PANEL EDGES AND 8d NAILS AT 12" ON CENTER AT INTERIOR PANEL SUPPORTS.</p>	

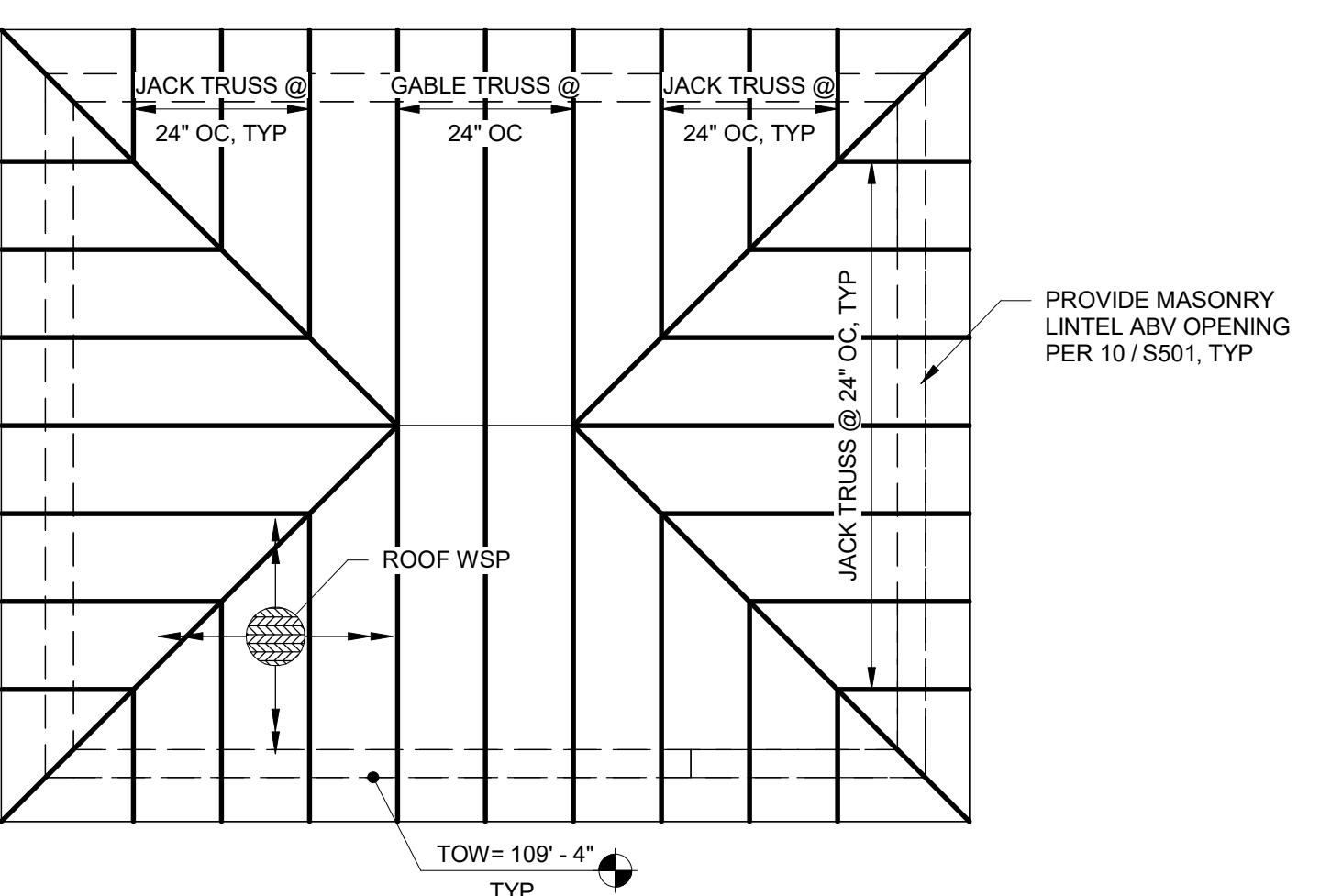


1 OUTBUILDING 1 FOUNDATION PLAN
1/4" = 1'-0"

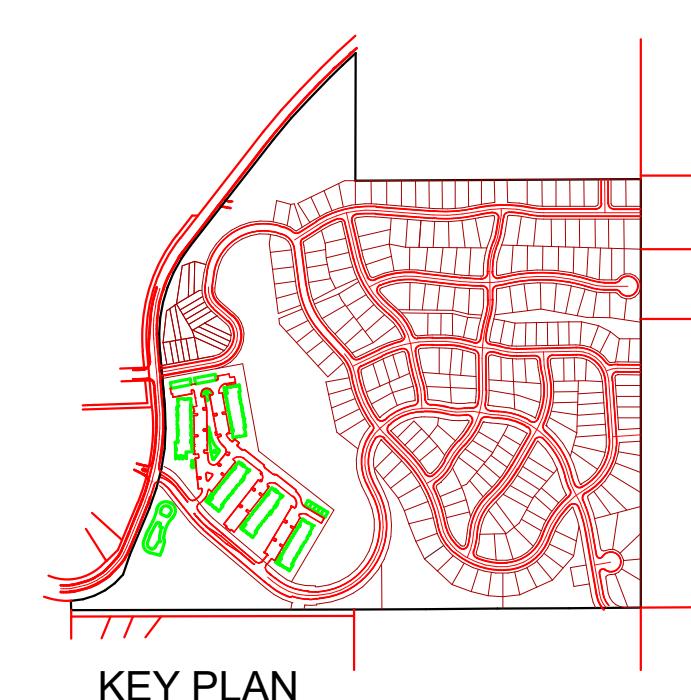
CONTINUOUS FOOTINGS - SCHEDULE					
MARK	WIDTH	THICKNESS	# OF REINF MATS	TRANS REINF	LONG REINF
CF1	2'-0"	1'-0"	1	#5 @ 12" OC	(3) #5

CONCRETE WALL - SCHEDULE			
MARK	THICKNESS	HORIZONTAL REINFORCEMENT	VERTICAL REINFORCEMENT
CW1	8"	#5 @ 12" OC	#5 @ 16" OC

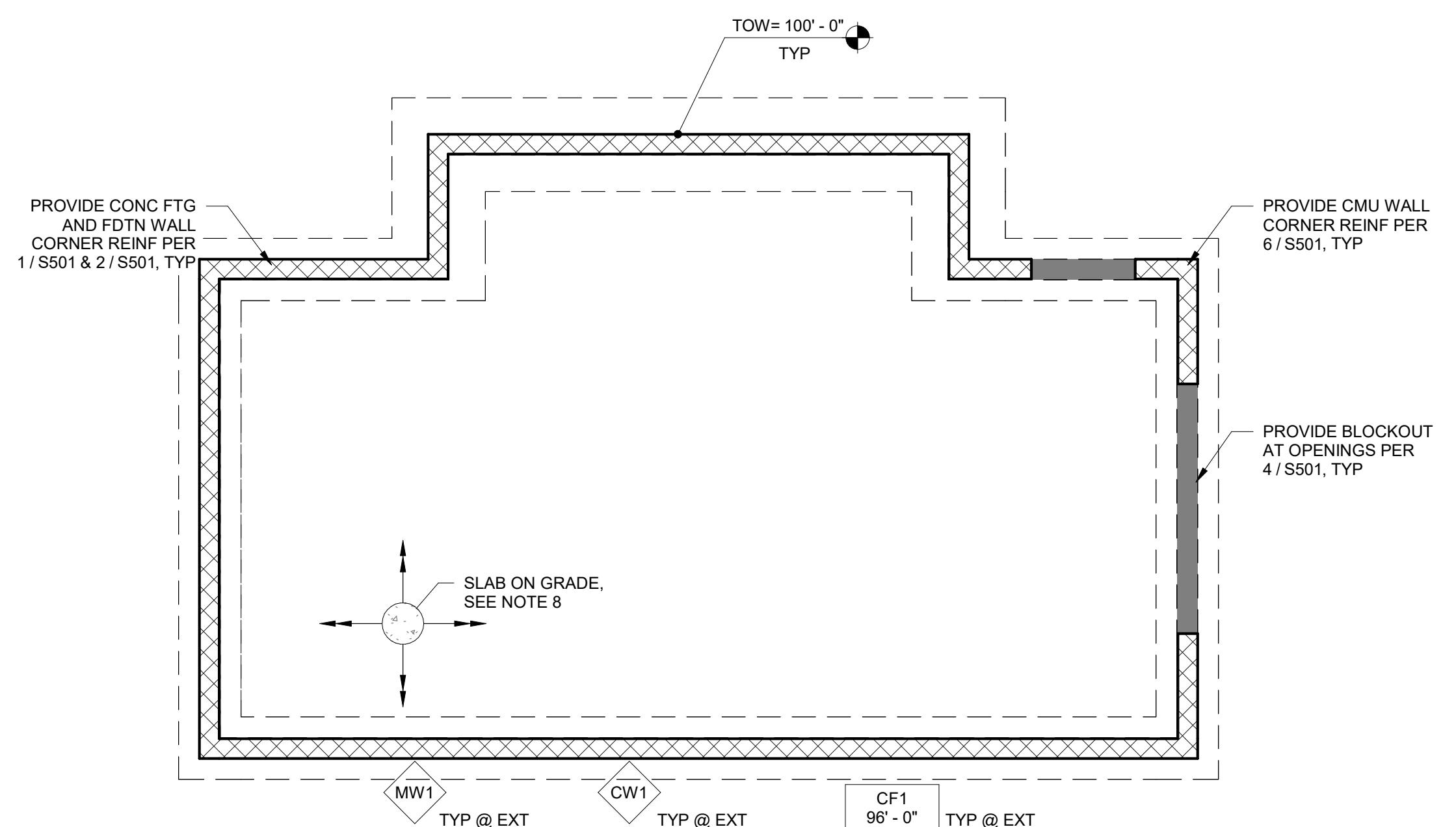
CMU WALL - SCHEDULE					
MARK	THICKNESS	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	GROUTING	COMMENTS
MW1	8"	#5 @ 32" OC	(2) #4 @ 48" OC	FULLY GROUTED	



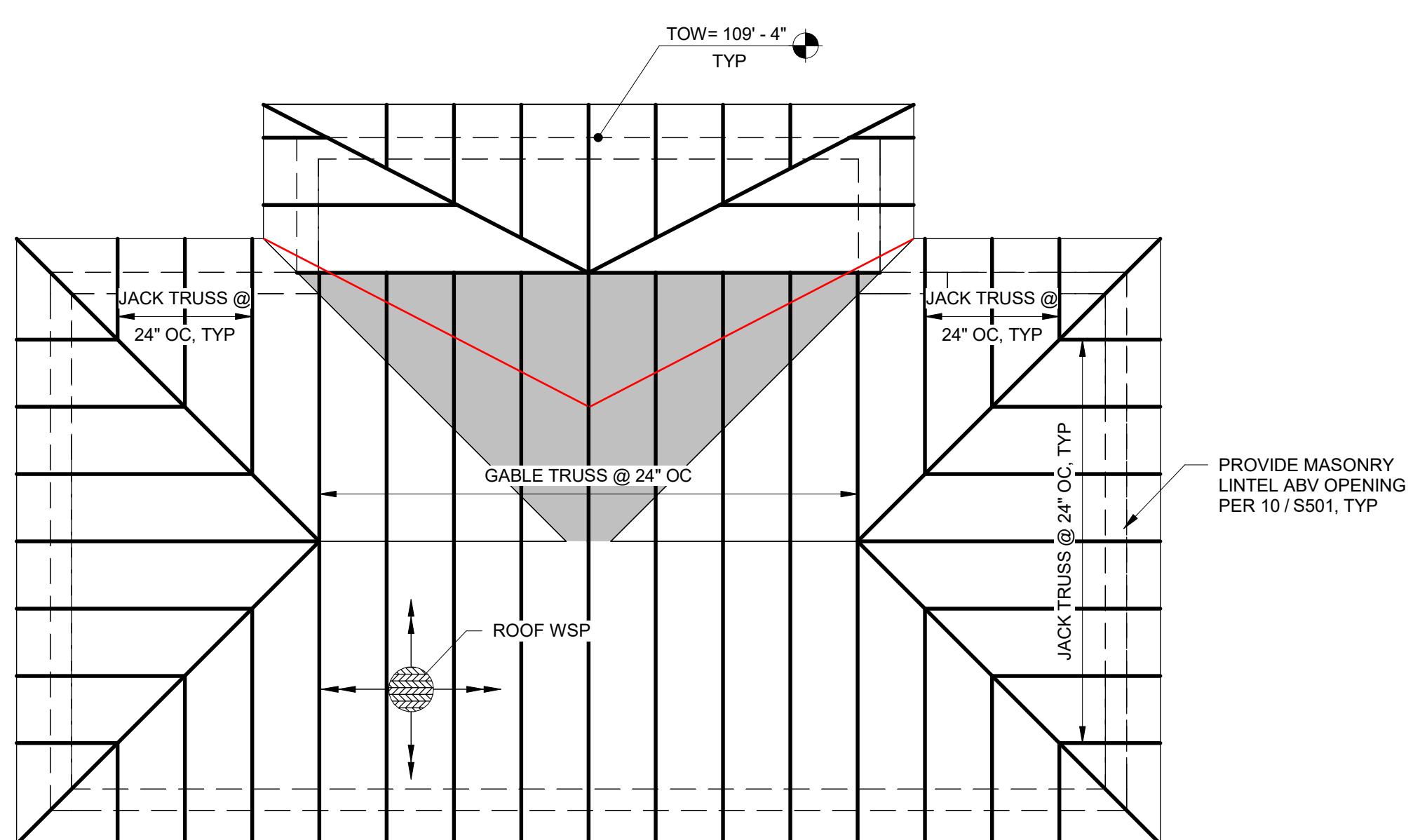
2 OUTBUILDING 1 ROOF STRUCTURAL PLAN
1/4" = 1'-0"



PLAN NOTES	
<p>1. PROJECT DATUM ELEVATION = 100.00 AT TOP OF SLAB ON GRADE (SEE CIVIL DRAWINGS FOR ABSOLUTE ELEVATION). ALL SPOT ELEVATIONS ARE IN REFERENCE TO THE DATUM ELEVATION.</p> <p>2. REFER TO THE GENERAL NOTES FOR ADDITIONAL REQUIREMENTS.</p> <p>3. REFER TO THE DRAWING ANNOTATIONS & SYMBOLS FOR EXPLANATION OF DRAWING CONVENTIONS.</p> <p>4. REFER TO THE SD SERIES OF DRAWINGS FOR TYPICAL DETAILS. TYPICAL DETAILS ARE NOT NECESSARILY REFERENCED BY CALLOUTS ON PLAN; IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW THE REQUIREMENTS OF THE DETAILS AT THE LOCATION AT WHICH THEY OCCUR.</p> <p>5. COORDINATE THE FOLLOWING ITEMS WITH DRAWINGS OF OTHER DISPLACEMENTS:</p> <ul style="list-style-type: none"> • SURFACE PREPARATION REQUIREMENTS BELOW FOOTINGS AND SLABS ON GRADE AND BACKFILL REQUIREMENTS BEHIND BASEMENT AND RETAINING WALLS; SEE THE PROJECT GEOTECHNICAL REPORT. • SIZES AND LOCATIONS OF OPENINGS AND PENETRATIONS THROUGH WALLS AND FLOORS; SEE ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS. • EXTERIOR CONCRETE, INCLUDING SLABS AND SITE RETAINING WALLS; SEE ARCHITECTURAL, CIVIL, AND LANDSCAPE DRAWINGS. • LOCATION, SIZE AND ANCHORAGE OF ELECTRICAL, MECHANICAL, AND PLUMBING EQUIPMENT; SEE ELECTRICAL, MECHANICAL, AND PLUMBING DRAWINGS. • EXTENT OF AND REQUIREMENTS FOR MASONRY VENEER; SEE ARCHITECTURAL DRAWINGS. • WINDOW AND DOOR LOCATIONS AND ROUGH OPENING SIZES IN WALLS; SEE ARCHITECTURAL DRAWINGS. • ROUTING OF DUCTS AND UTILITIES THROUGH WEBS OF TRUSSES OR JOISTS; SEE MECHANICAL AND PLUMBING DRAWINGS. <p>6. EXTERIOR GRIDLINES ARE ALIGNED TO THE FACE OF FOUNDATION WALL AND INTERIOR GRIDLINES ARE ALIGNED TO THE CENTER OF COLUMN OR WALL, UNLESS NOTED OTHERWISE.</p> <p>7. CONSTRUCTION JOINT LOCATIONS FOR CONCRETE WORK ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR REVIEW AND APPROVAL.</p> <p>8. SLAB ON GRADE SHALL BE 6" THICK AND REINFORCED WITH #4 @ 12" ON CENTER IN EACH DIRECTION.</p> <p>9. LOCATIONS OF SLAB ON GRADE CONTROL JOINTS ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT A DETAILED LAYOUT OF PROPOSED JOINT LOCATIONS AT LEAST (7) DAYS PRIOR TO SLAB PLACEMENT FOR REVIEW AND APPROVAL.</p> <p>10. UNLESS NOTED OTHERWISE, BEAMS AND/OR JOISTS ARE EQUALLY SPACED BETWEEN COLUMNS.</p> <p>11. THE DESIGN OF PREFABRICATED WOOD TRUSSES IS DEFERRED TO THE TRUSS SUPPLIER. TRUSSES ARE TO BE DESIGNED FOR THE CRITERIA DEFINED IN THE GENERAL STRUCTURAL NOTES.</p> <p>12. ROOF SHEATHING SHALL BE 5/8" THICK, 40/20 SPAN RATING, APA RATED SHEATHING WITH 8d NAILS AT 6" ON CENTER AT PANEL EDGES AND 8d NAILS AT 12" ON CENTER AT INTERIOR PANEL SUPPORTS.</p>	



1 OUTBUILDING 2 FOUNDATION PLAN
1/4" = 1'-0"

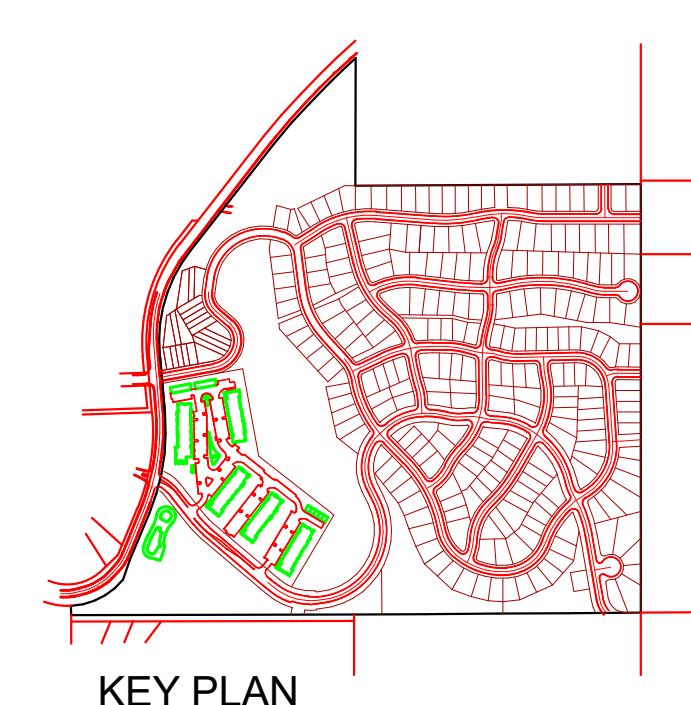


2 OUTBUILDING 2 ROOF STRUCTURAL PLAN
1/4" = 1'-0"

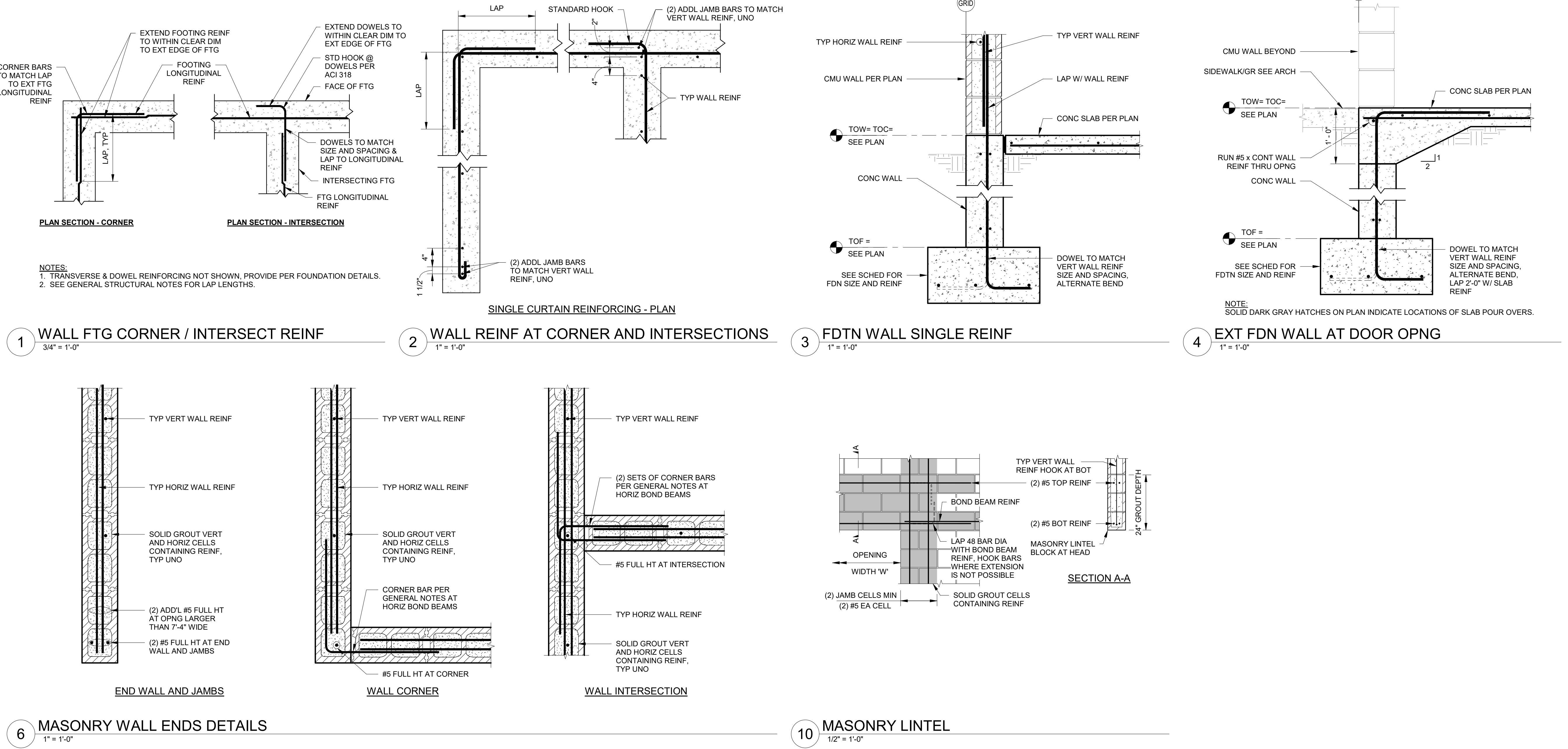
CONTINUOUS FOOTINGS - SCHEDULE					
MARK	WIDTH	THICKNESS	# OF REINF MATS	TRANS REINF	LONG REINF
CF1	2' - 0"	1' - 0"	1	#5 @ 12" OC	(3) #5

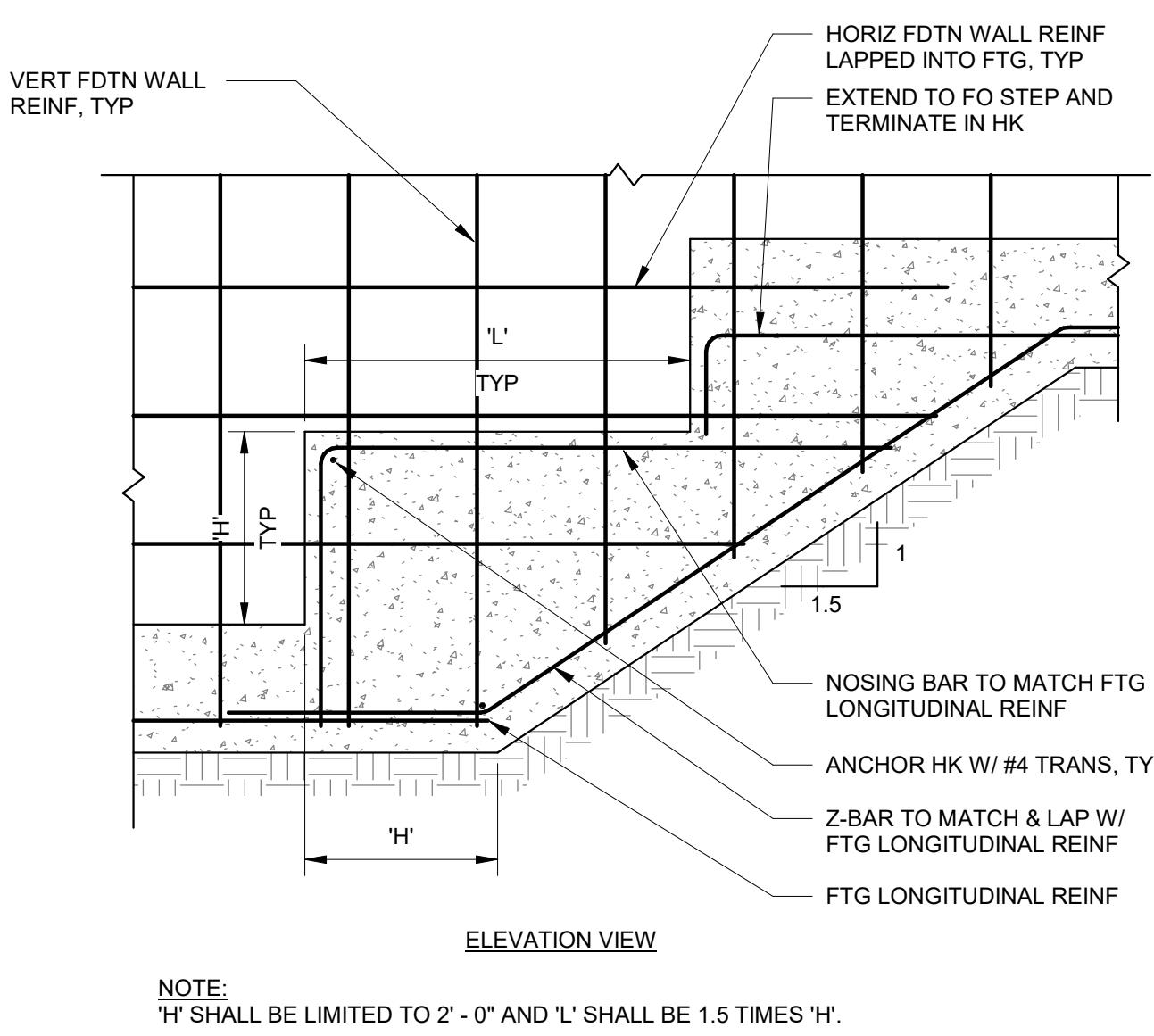
CONCRETE WALL - SCHEDULE			
MARK	THICKNESS	HORIZONTAL REINFORCEMENT	VERTICAL REINFORCEMENT
CW1	8"	#5 @ 12" OC	#5 @ 16" OC

CMU WALL - SCHEDULE					
MARK	THICKNESS	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	GROUTING	COMMENTS
MW1	8"	#5 @ 32" OC	(2) #4 @ 48" OC	FULLY GROUTED	

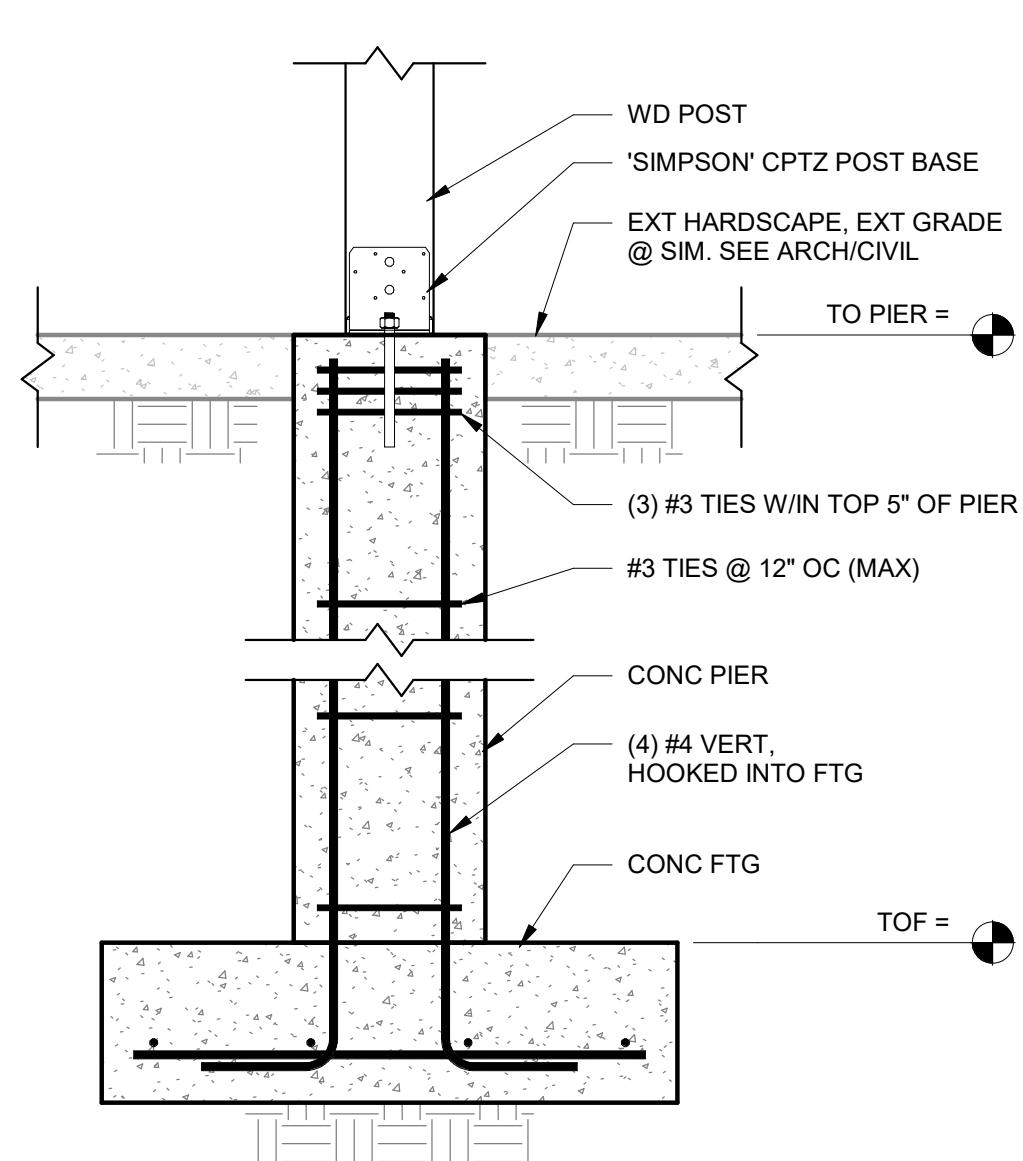


KEY PLAN

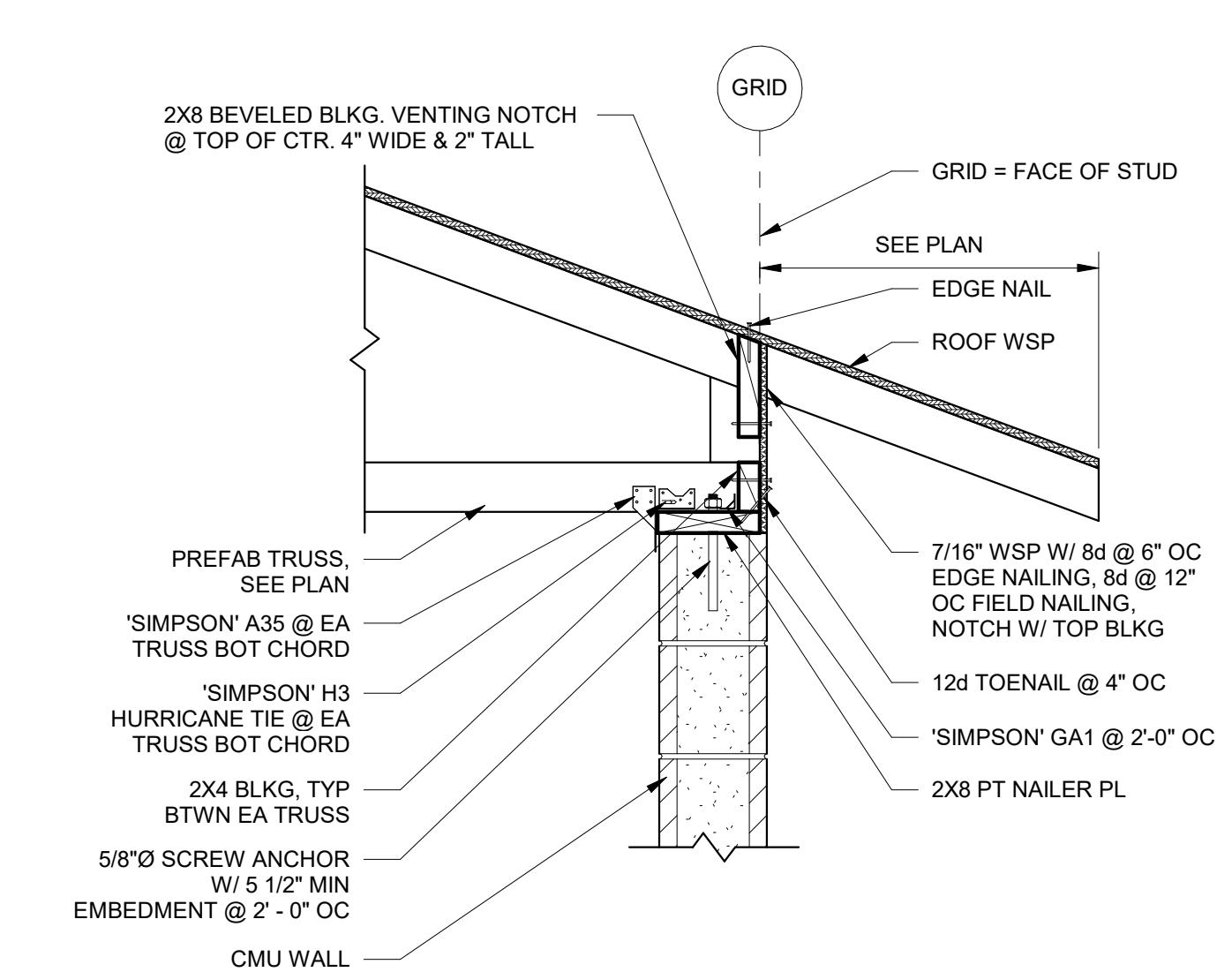




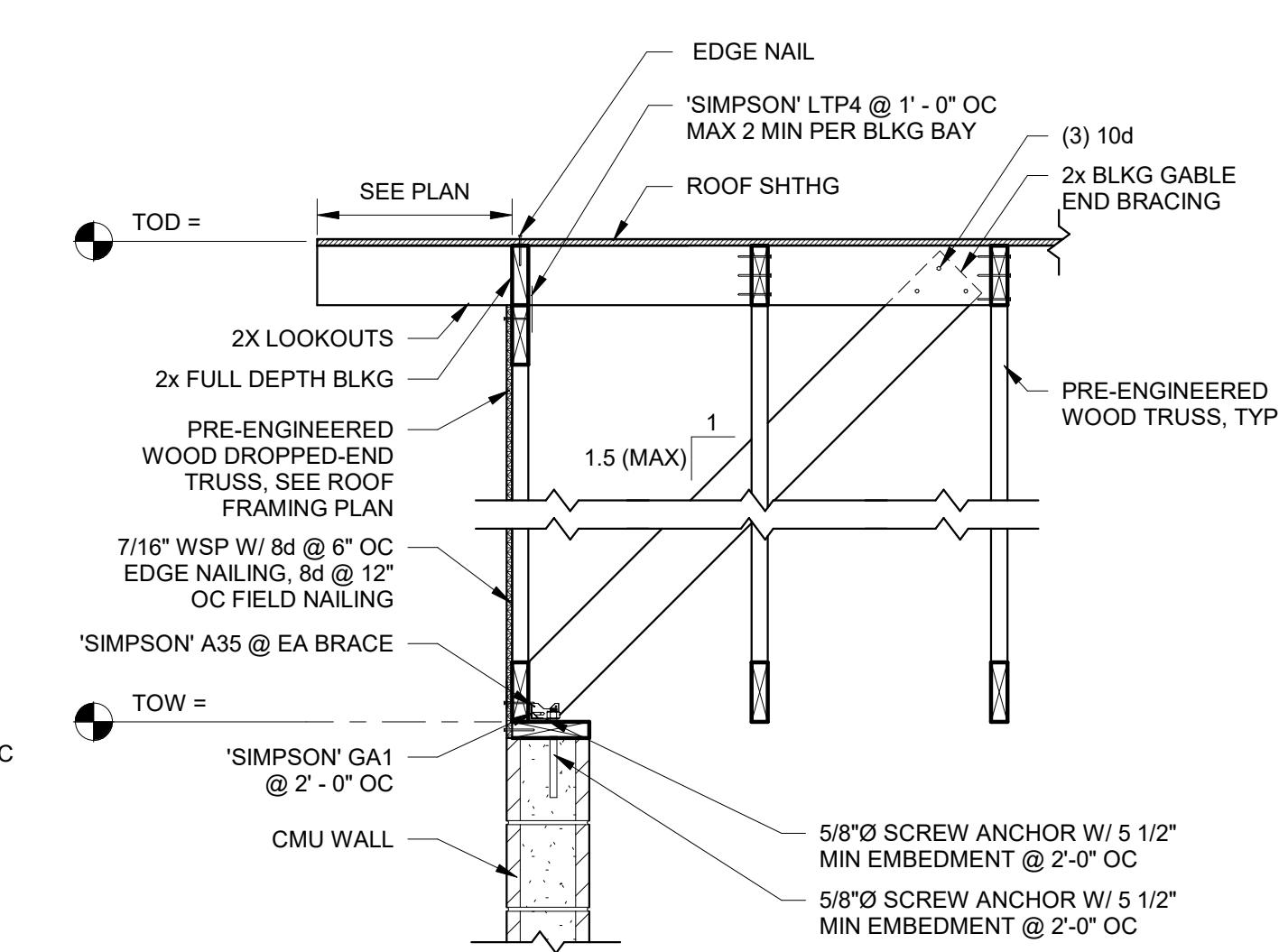
1 TYPICAL CONTINUOUS FTG STEP
3/4" = 1'-0"



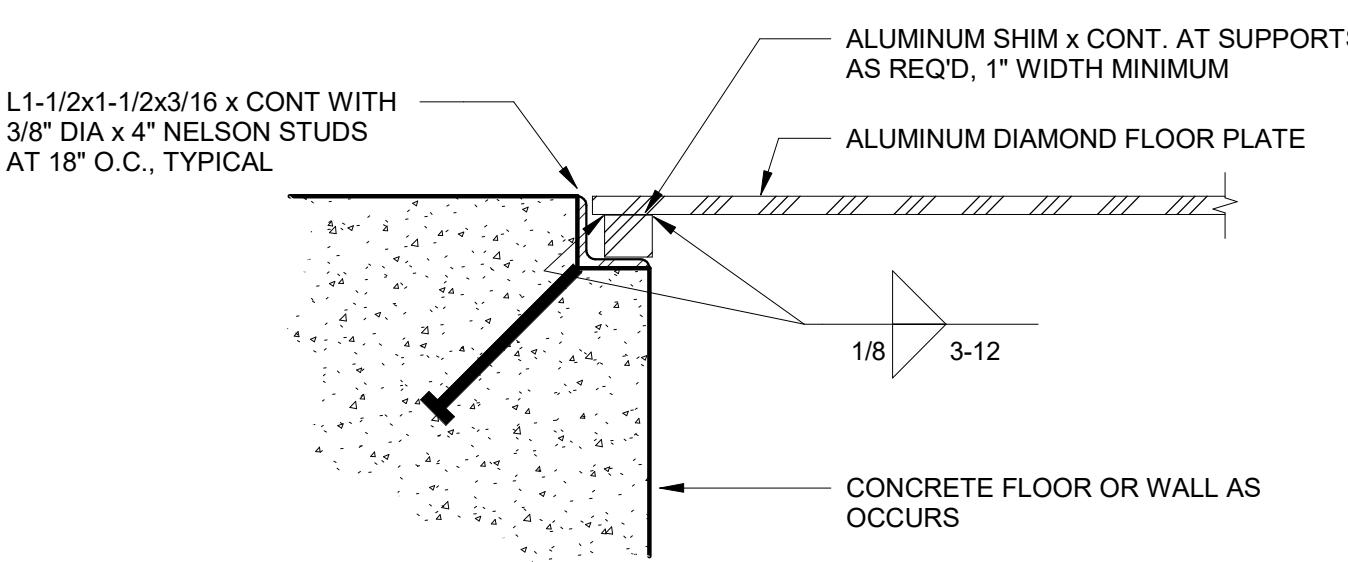
2 CONC PIER TO WD POST CONN
1" = 1'-0"



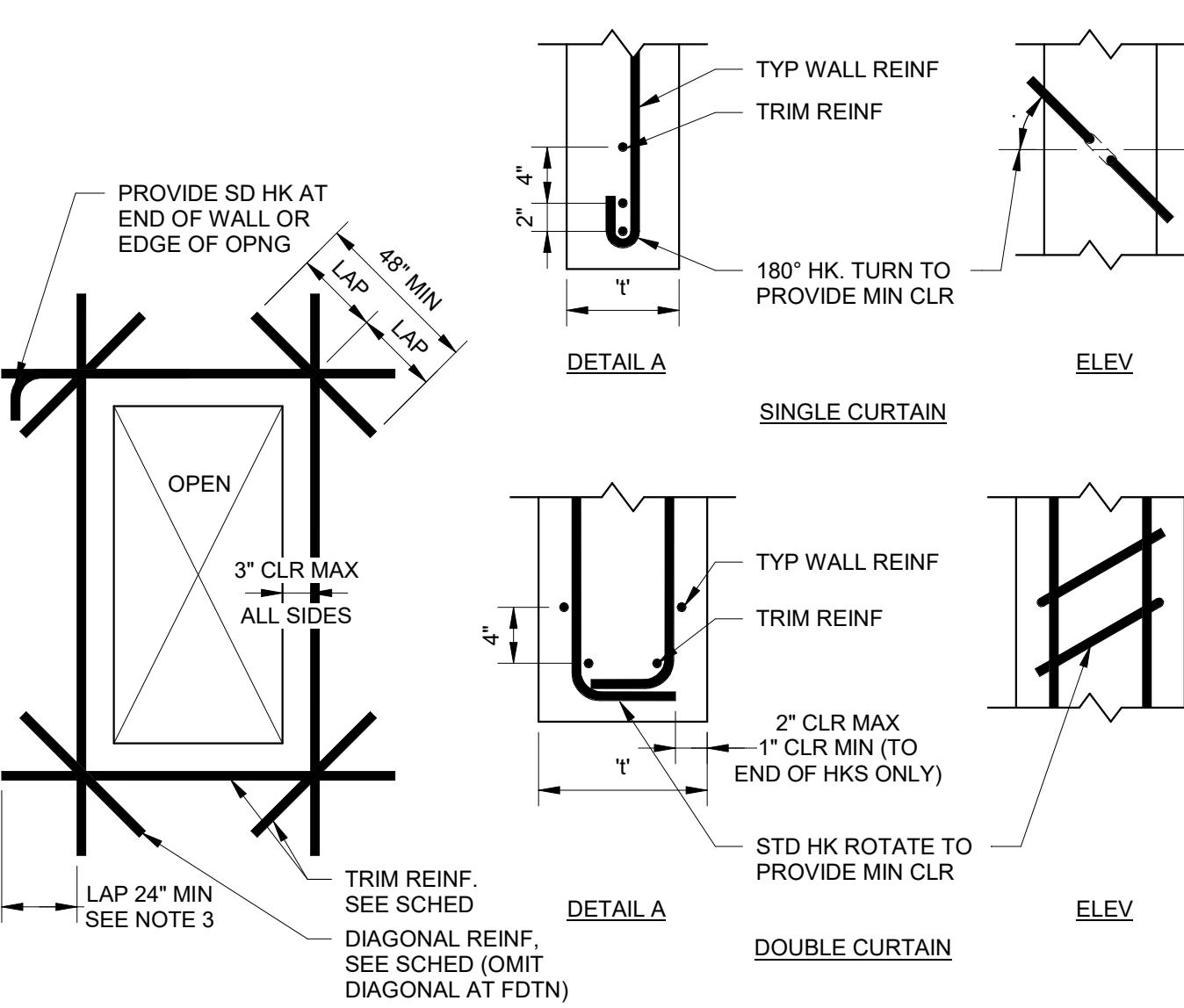
3 TYP ROOF CONN @ EXT WALL - TRUSS PERP
1" = 1'-0"



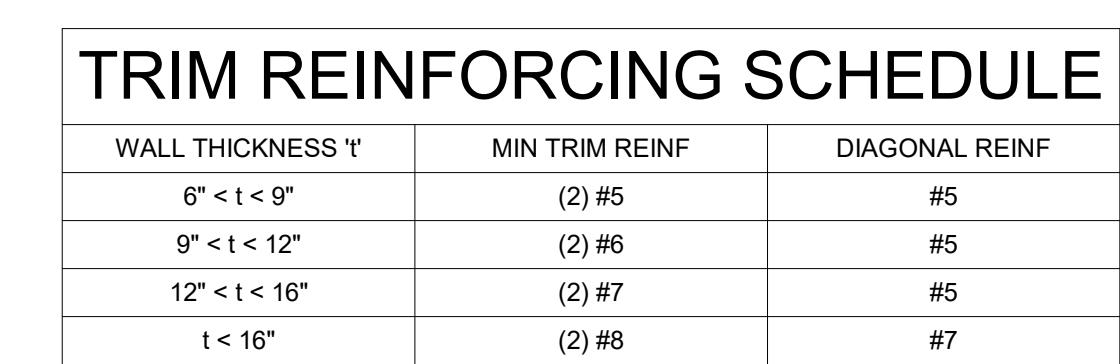
4 TYP ROOF CONN @ EXT WALL - TRUSSES PARALLEL
3/4" = 1'-0"



5 TYP COVER PLATE SUPPORT
NTS
1" = 1'-0"

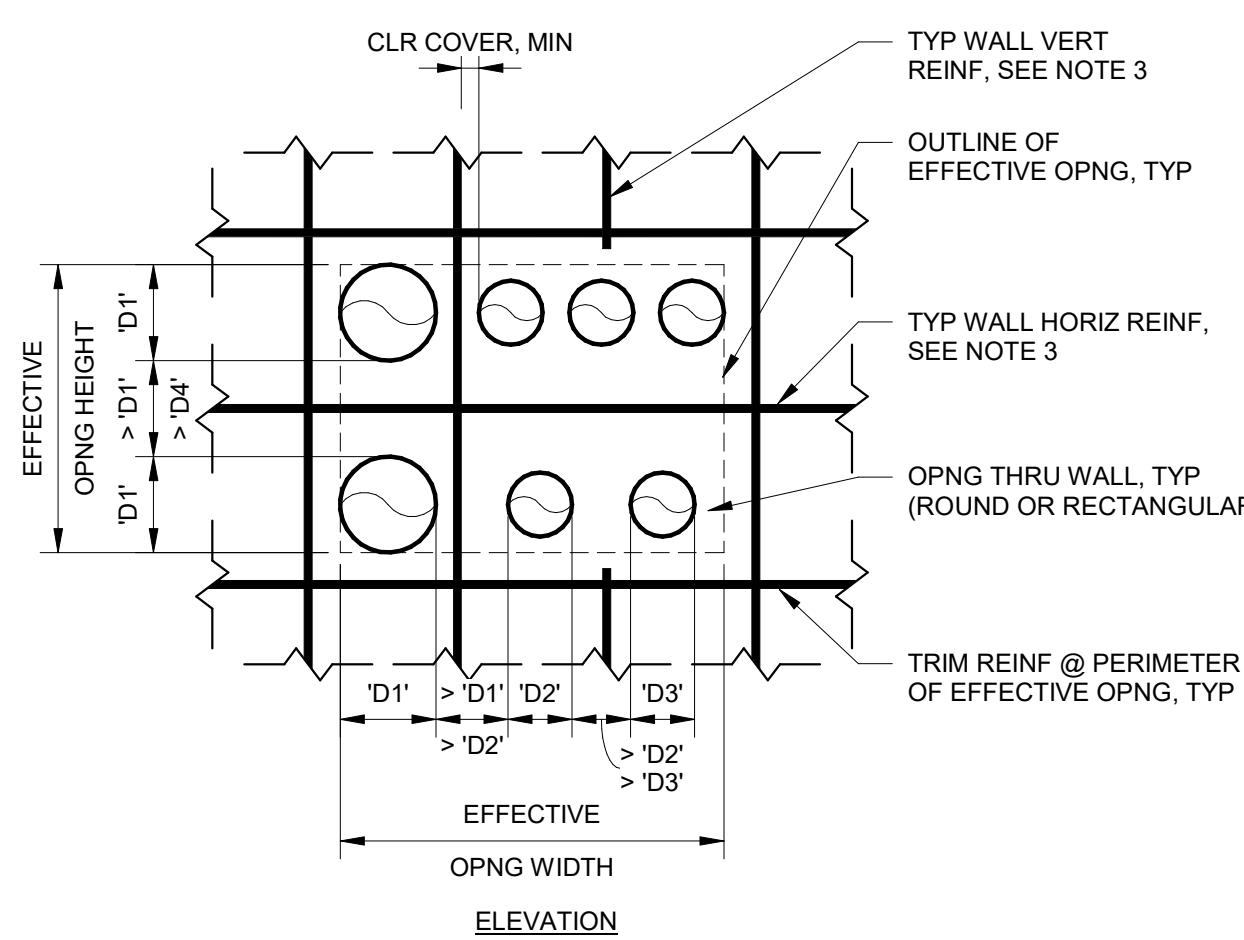


1 TYP WALL REINF AT OPENINGS
1" = 1'-0"

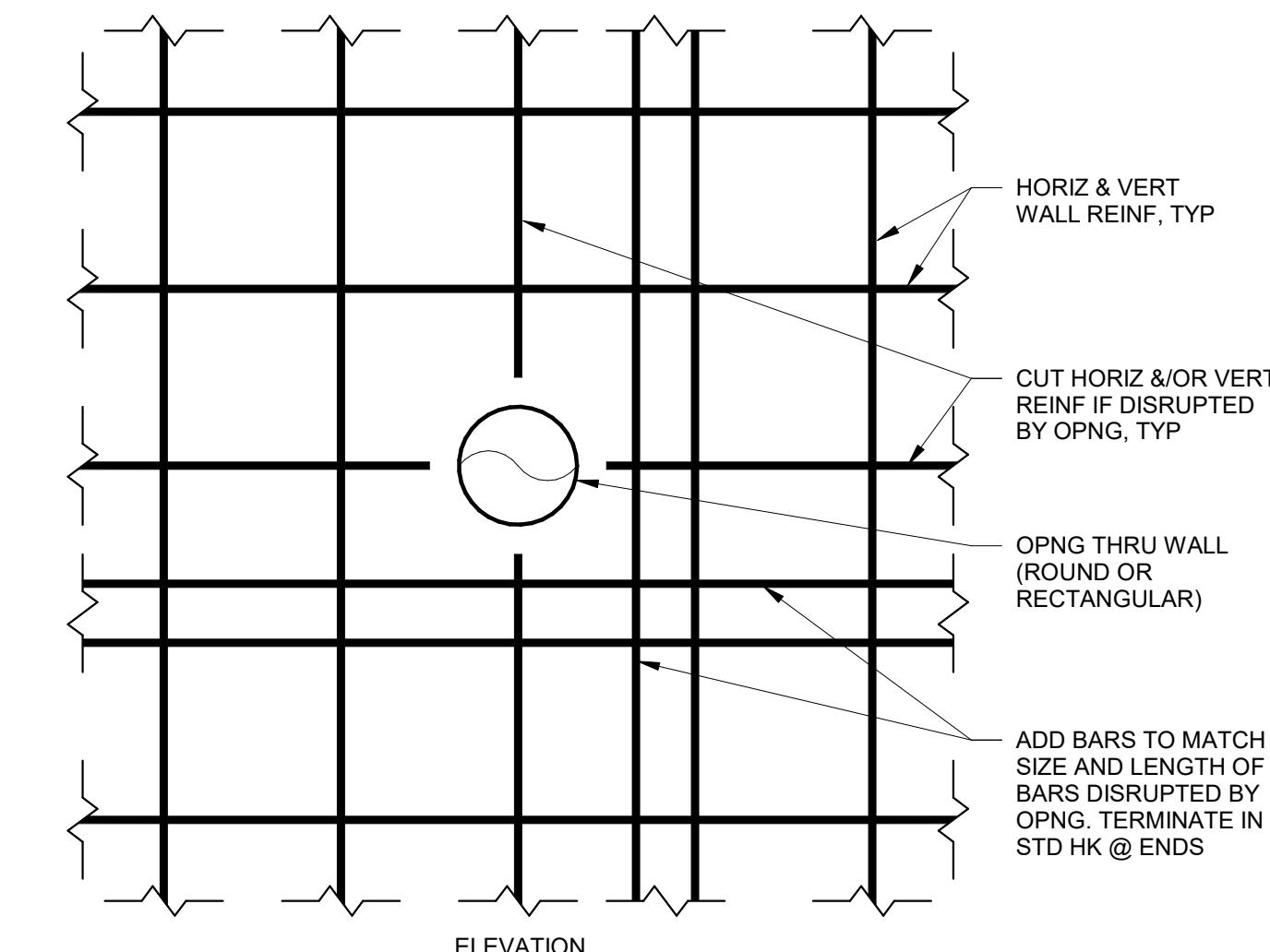


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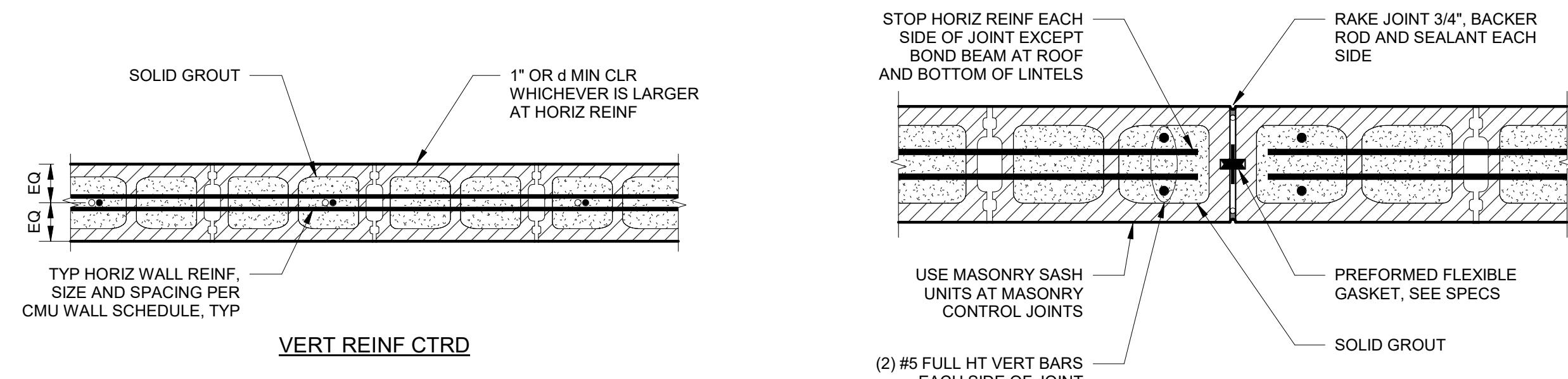
1. SCHED REINF APPLIES TO ALL OPNGS, UNLESS OTHERWISE SHOWN.
2. MIN TRIM REINF TO BE LARGER OF TYP WALL REINF OR SIZE SHOWN IN SCHED.
3. A SERIES OF OPENINGS IN A PIER OR SPANDEL IS NARROWER THAN THREE TIMES THE CLEAR SPAN, TRIM REINF IS NOT DET. 2 / S701.
4. MAY OMIT DIAGONALS IF THE LARGEST OPNG DIMENSION IS LESS THAN 3'-0".
5. DETAIL IS NOT RECD FOR OPNGS SMALLER THAN THE WALL THICKNESS OR 12", WHICHEVER IS SMALLER. SEE DET. 3 / S701.
6. COORDINATE OPNG LOCATIONS AND SIZES W/ OTHER TRADES INCLUDING BUT NOT LIMITED TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING.



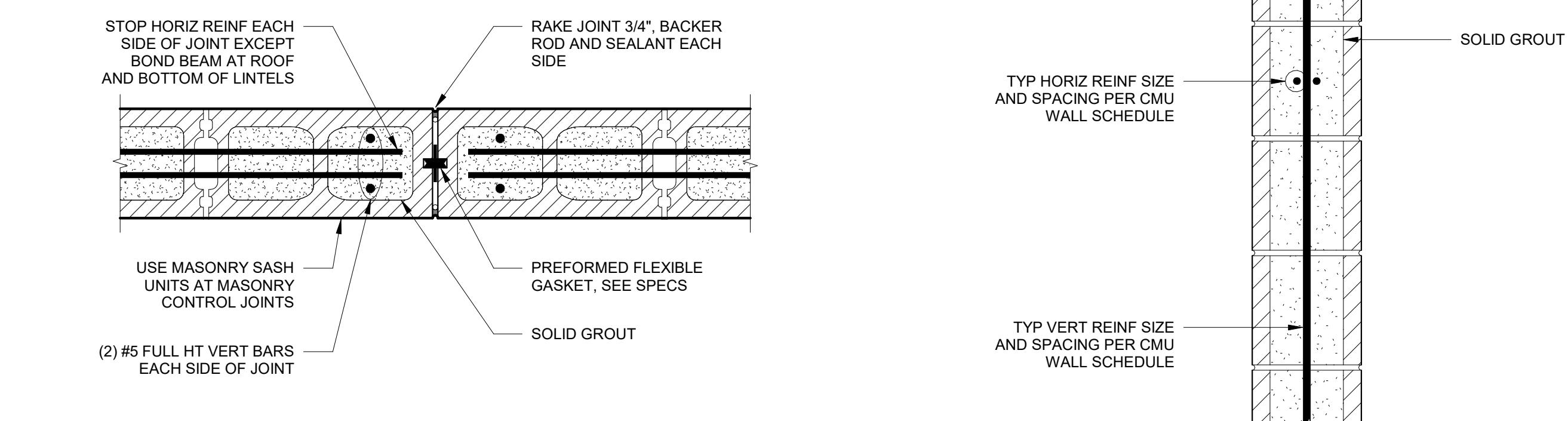
2 TYP WALL/SLAB REINF AT SERIES OF OPNGS
1" = 1'-0"



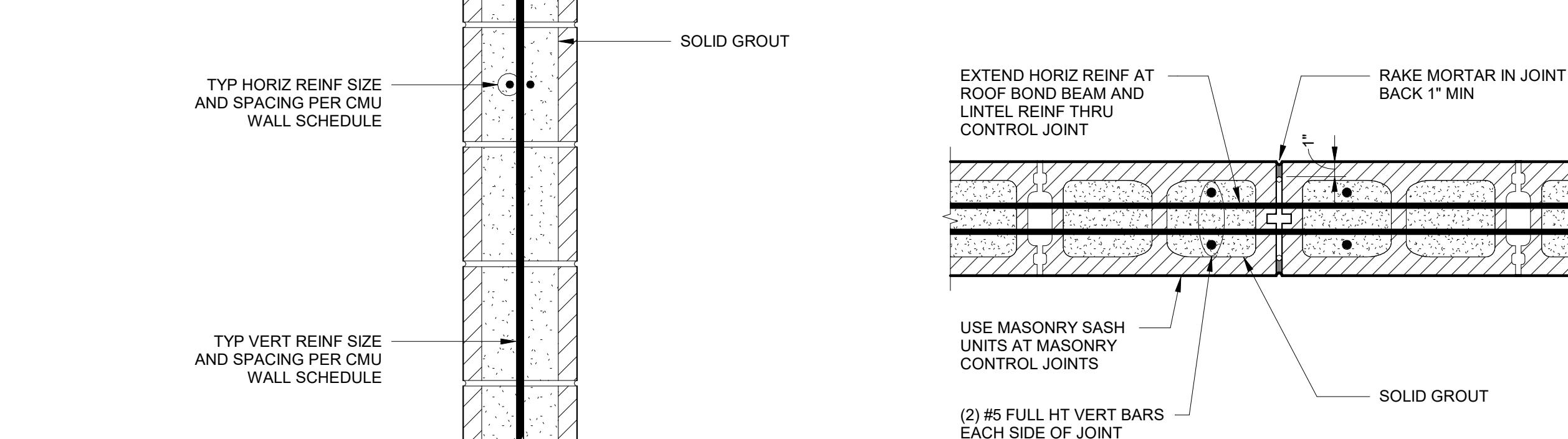
3 TYP WALL/SLAB REINF AT SMALL OPNGS
1" = 1'-0"



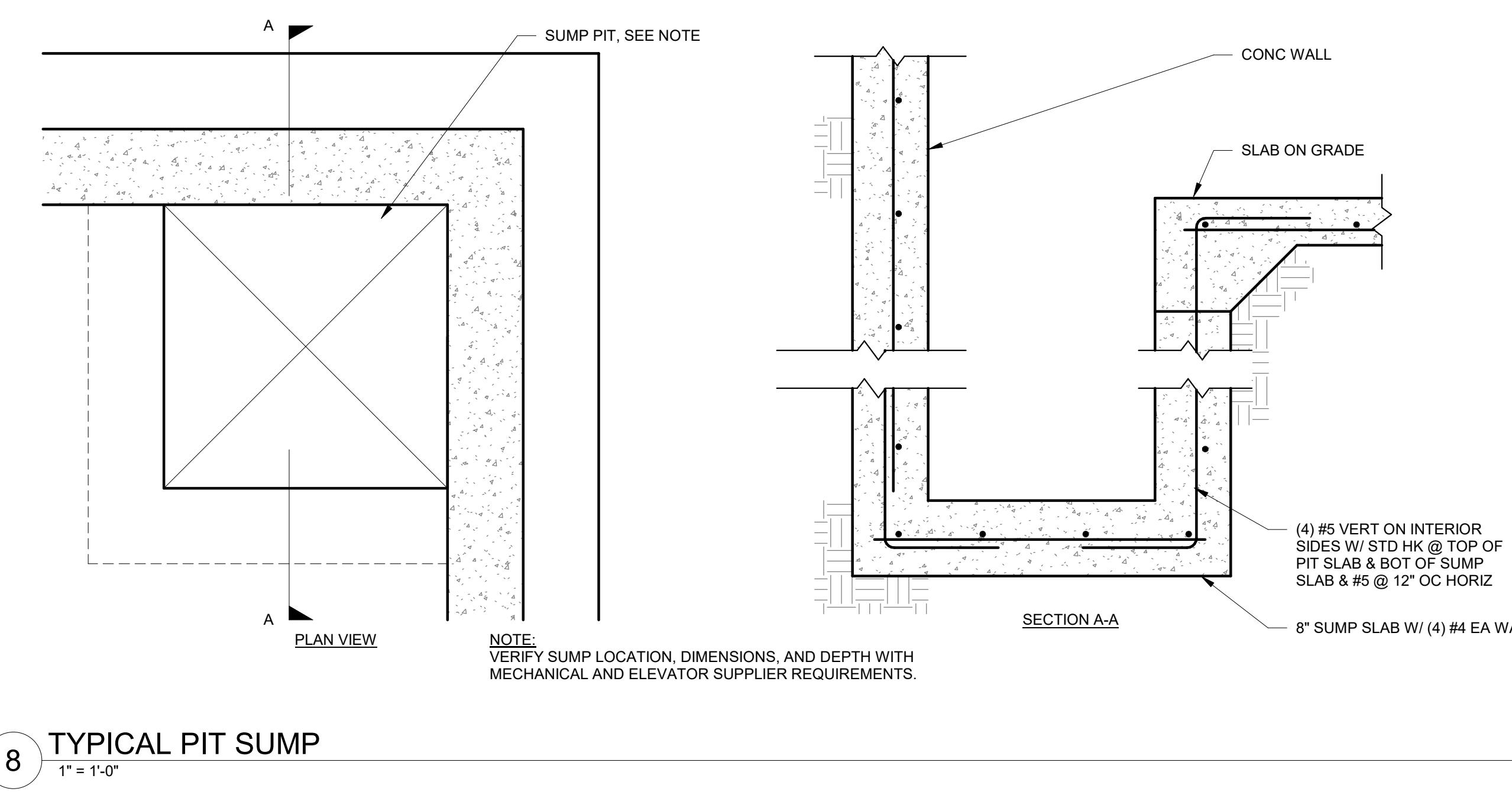
4 MASONRY WALL REINF PLACEMENT
1" = 1'-0"



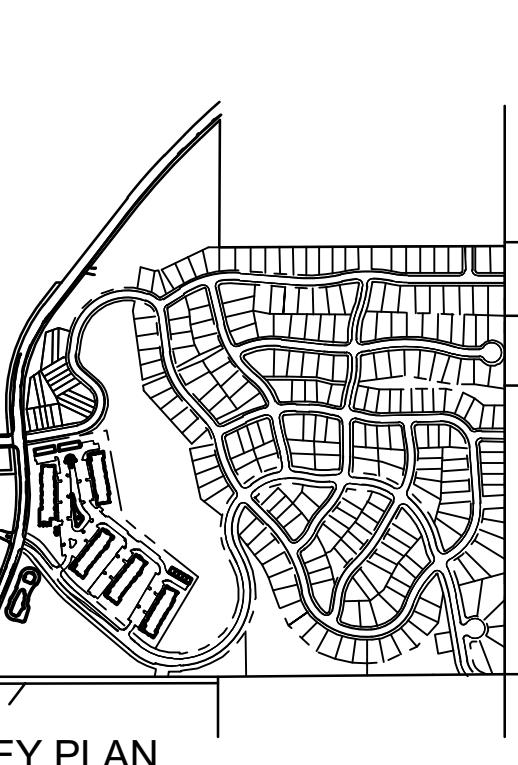
5 MASONRY CONTROL JOINT
1 1/2" = 1'-0"



6 MASONRY BOND BEAM
1 1/2" = 1'-0"



8 TYPICAL PIT SUMP
1" = 1'-0"



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10.13.2023
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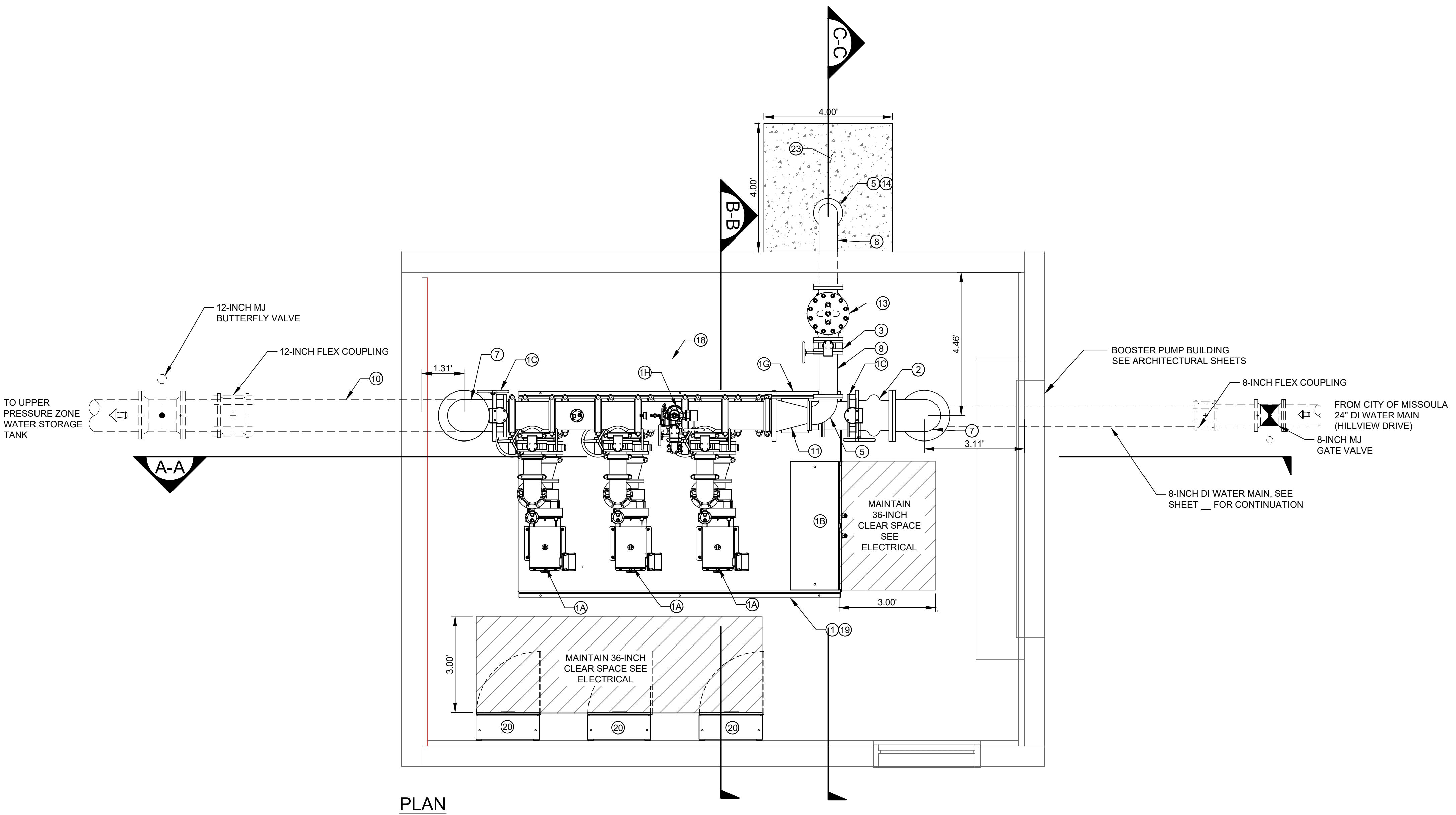
PUMP HOUSE MECHANICAL
PIPELINE PLAN: LOWER PUMP
HOUSE

M101

BOOSTER PUMP SPECIFICATIONS			
SITE CONDITIONS			
ELECTRICAL INPUT			480V, 3 PH, 60Hz
STATION PERFORMANCE			
NORMAL DUTY			500-750 GPM @ 60 PSI BOOST
HIGH FLOW			1500 GPM @ 60 PSI BOOST
PUMP DESIGN CRITERIA			
TYPE			END SUCTION CENTRIFUGAL
MOTOR STARTING			VARIABLE FREQUENCY DRIVE
MOTOR NAMEPLATE (HP)			40 HP / ODP
MOTOR NOMINAL SPEED			3600 RPM
DESIGN PERFORMANCE			750 GPM @ 140 FT TDH
MIN. PUMP EFFICIENCY			75%
QUANTITY			3

BOOSTER PUMP HOUSE NOTES			
NOTE	DESCRIPTION	QTY	UNIT
1	PACKAGE BOOSTER PUMPING STATION, 500-1500 GPM FLOW RANGE*** (480V, 3 PH)	1	LS
1A	40 HP / 750 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (750 GPM @ 140 FT TDH)	3	EA
1B	CONTROL PANEL (VFD) ***	1	EA
1C	12-INCH FL BUTTERFLY VALVE***	2	EA
1D	8-INCH FL BUTTERFLY VALVE***	3	EA
1E	6-INCH FL BUTTERFLY VALVE***	3	EA
1F	3-INCH AUTOMATIC AIR RELEASE VALVE ***	5	EA
1G	12-INCH MAGNETIC FLOW METER, BADGER M2000 SERIES OR APPROVED EQUAL ***	1	EA
1H	3-INCH PRESSURE RELIEF CONTROL VALVE, WATTS LLF115 OR APPROVED EQUAL***	1	EA
2	12-INCH EXPANSION JOINT, GENERAL RUBBER MAXI-JOINT SERIES 1015, OR APPROVED EQUAL	2	EA
3	6-INCH FL BUTTERFLY VALVE	1	EA
4	8-INCH MJ GATE VALVE		EA
5	6-INCH 90-DEG BEND	2	EA
6	8-INCH 90-DEG BEND	1	EA
7	12-INCH 90-DEG FL BEND	4	EA
8	6-INCH CL 350 DI FL PIPE	1	LS
9	8-INCH CL 350 DI FL PIPE	1	LS
10	12-INCH CL 350 DI FL PIPE	1	LS
11	6-INCH X 12-INCH FL REDUCER	1	EA
12	8-INCH X 12-INCH FL REDUCER	1	EA
13	6-INCH SURGE ANTICIPATING GLOBE VALVE, CAL-VAL 52-01 OR APPROVED EQUAL	1	EA
14	# 24 STAINLESS STEEL WIRE MESH ON DISCHARGE TURNDOWN	1	EA
15	PRESSURE TRANSDUCER	1	EA
16	MANUAL PRESSURE GAUGE	1	EA
17	SMOOTH NOSE SAMPLE TAP	1	EA
18	FLOOR DRAIN, SEE MECHANICAL PLUMBING PLAN FOR CONTINUATION	3	EA
19	CONCRETE MECHANICAL PAD SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
20	BUILDING ELECTRICAL/SCADA/ATS PANEL, SEE ELECTRICAL PLAN FOR COORDINATION	1	LS
21	BOOSTER PUMP BUILDING, SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
22	PIPE STAND	1	LS
23	48-INCH SQUARE CONCRETE SPLASH BLOCK	1	LS

*** DENOTES EQUIPMENT PROVIDED AS PART OF BOOSTER PUMP PACKAGE SKID



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MISSOULA, MONTANA

HILLVIEW

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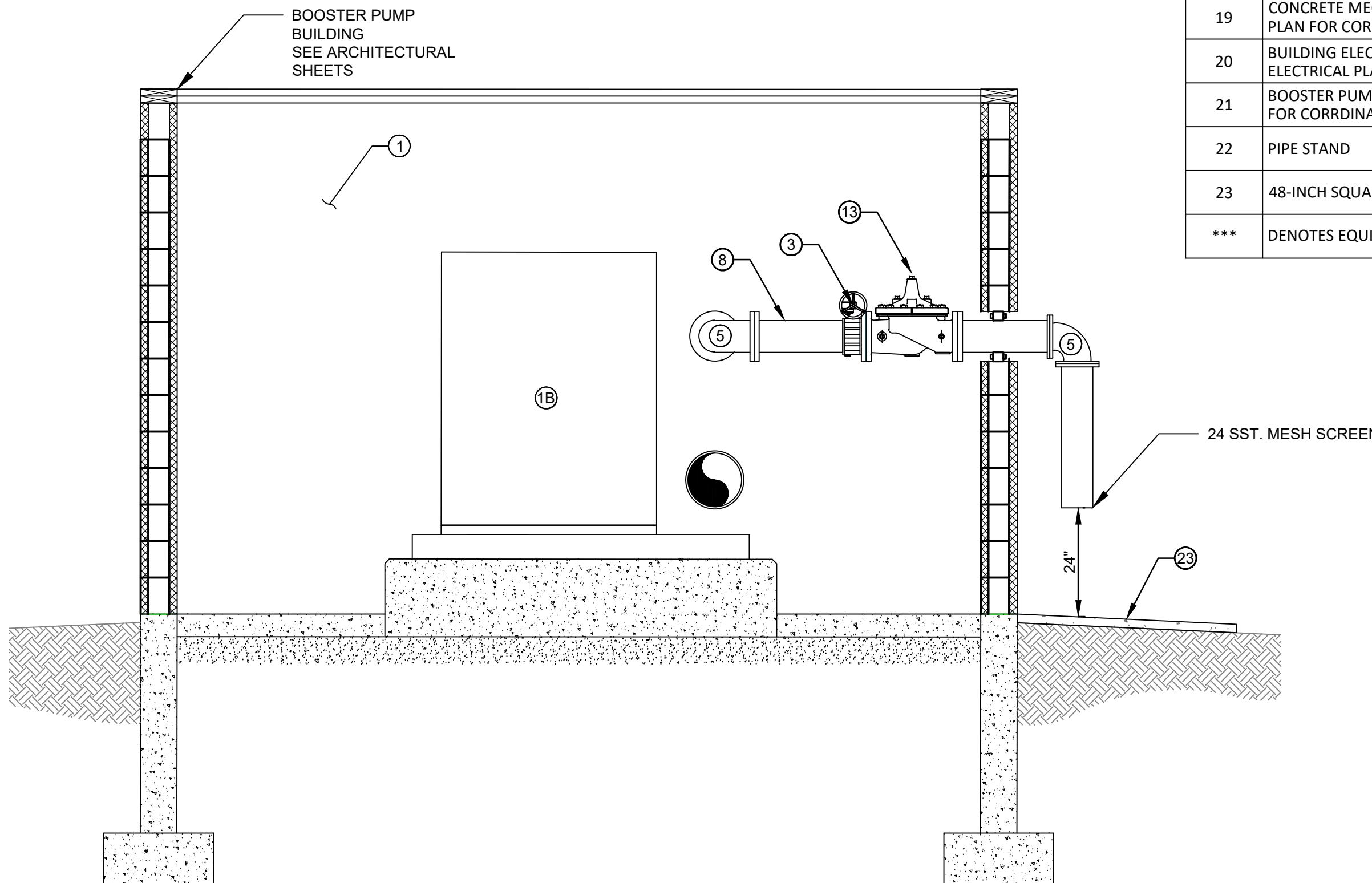
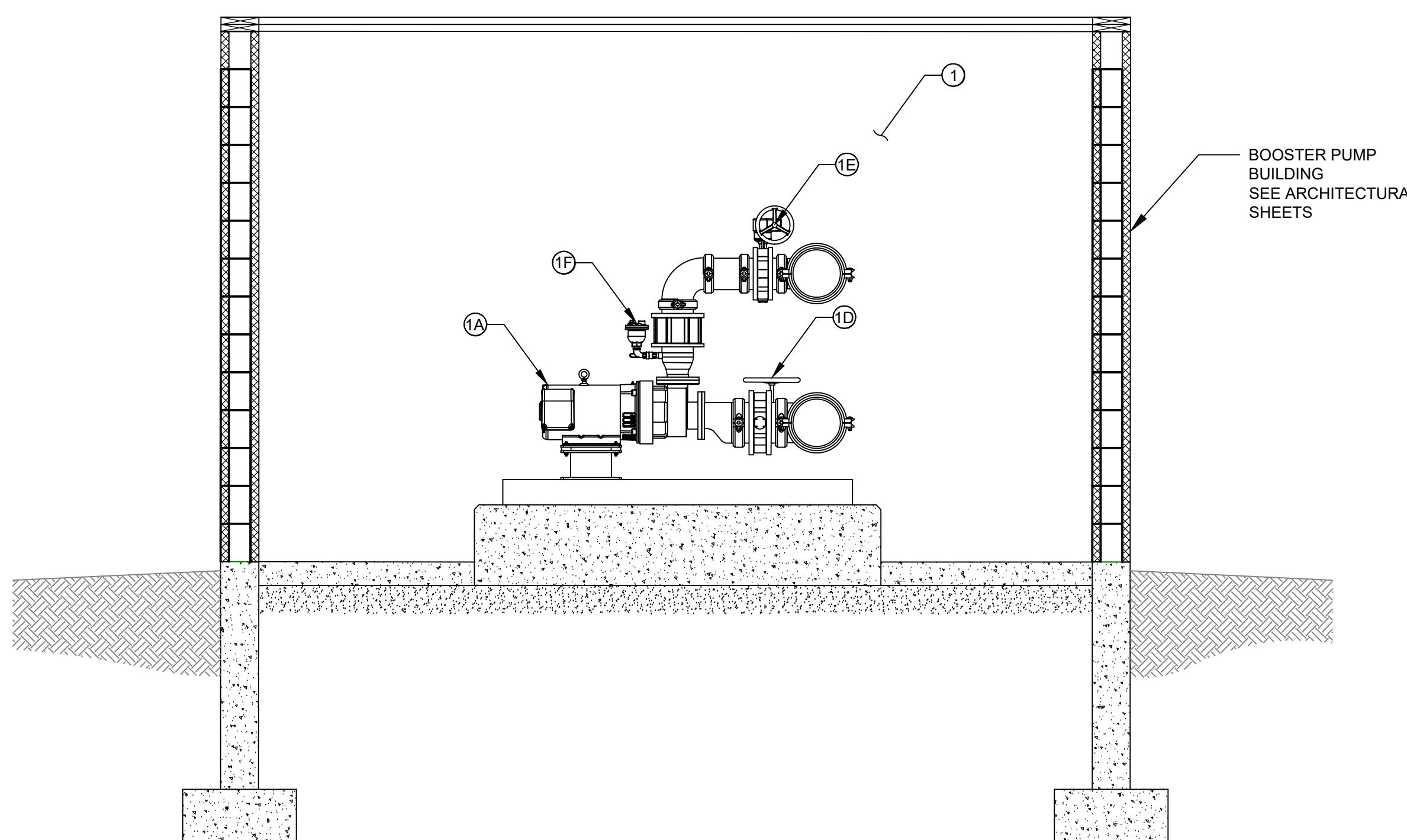
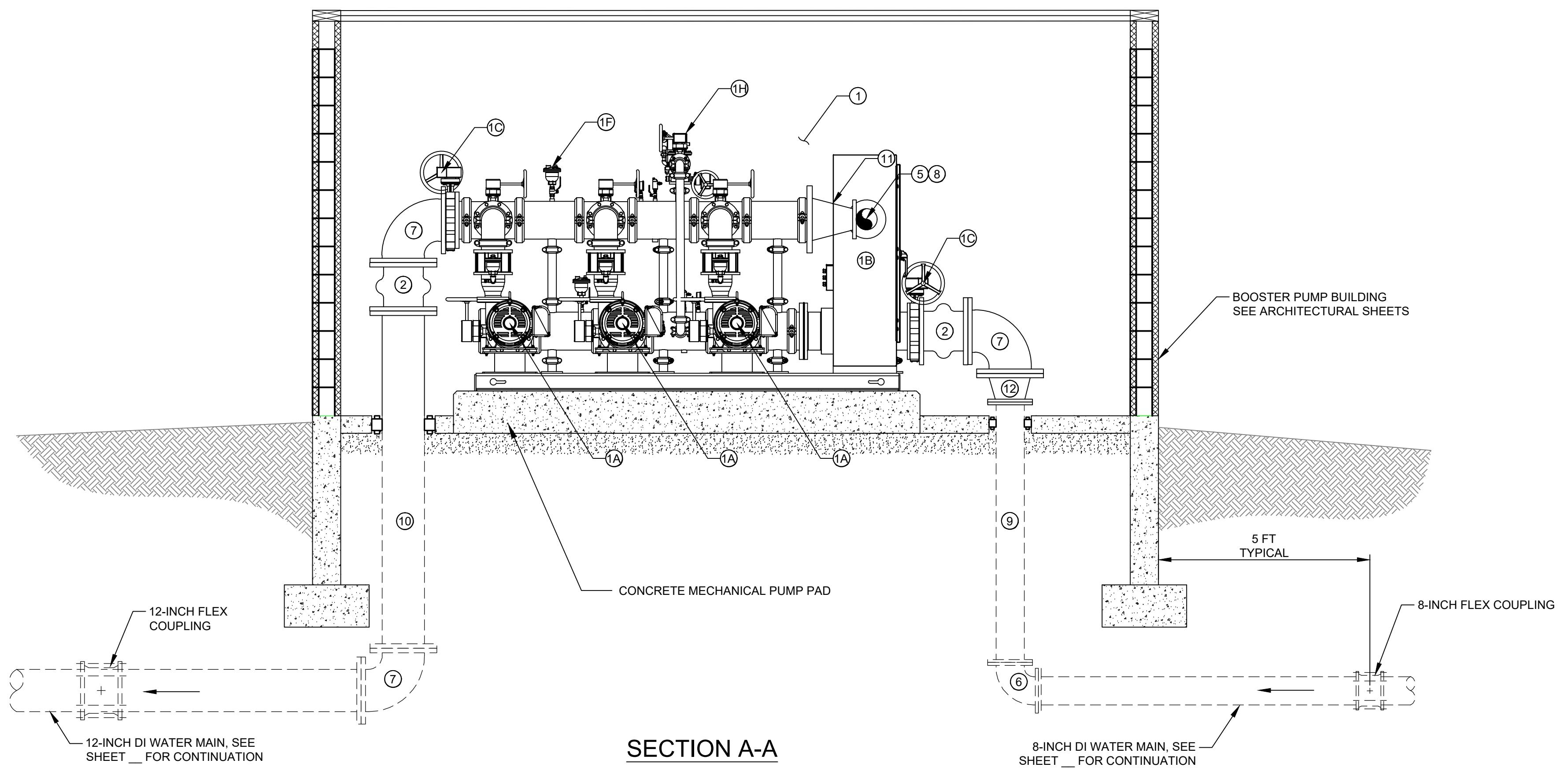
PRELIMINARY PLAT

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KEY PLAN



BOOSTER PUMP HOUSE NOTES			
NOTE	DESCRIPTION	QTY	UNIT
1	PACKAGE BOOSTER PUMPING STATION, 500-1500 GPM FLOW RANGE*** (480V, 3 PH)	1	LS
1A	40 HP / 750 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (750 GPM @ 140 FT TDH)	3	EA
1B	CONTROL PANEL (VFD) ***	1	EA
1C	12-INCH FL BUTTERFLY VALVE***	2	EA
1D	8-INCH FL BUTTERFLY VALVE***	3	EA
1E	6-INCH FL BUTTERFLY VALVE***	3	EA
1F	3-INCH AUTOMATIC AIR RELEASE VALVE ***	5	EA
1G	12-INCH MAGNETIC FLOW METER, BADGER M2000 SERIES OR APPROVED EQUAL ***	1	EA
1H	3-INCH PRESSURE RELIEF CONTROL VALVE, WATTS LLF115 OR APPROVED EQUAL***	1	EA
2	12-INCH EXPANSION JOINT, GENERAL RUBBER MAXI-JOINT SERIES 1015, OR APPROVED EQUAL	2	EA
3	6-INCH FL BUTTERFLY VALVE	1	EA
4	8-INCH MJ GATE VALVE		EA
5	6-INCH 90-DEG BEND	2	EA
6	8-INCH 90-DEG BEND	1	EA
7	12-INCH 90-DEG FL BEND	4	EA
8	6-INCH CL 350 DI FL PIPE	1	LS
9	8-INCH CL 350 DI FL PIPE	1	LS
10	12-INCH CL 350 DI FL PIPE	1	LS
11	6-INCH X 12-INCH FL REDUCER	1	EA
12	8-INCH X 12-INCH FL REDUCER	1	EA
13	6-INCH SURGE ANTICIPATING GLOBE VALVE, CAL-VAL 52-01 OR APPROVED EQUAL	1	EA
14	# 24 STAINLESS STEEL WIRE MESH ON DISCHARGE TURNDOWN	1	EA
15	PRESSURE TRANSDUCER	1	EA
16	MANUAL PRESSURE GAUGE	1	EA
17	SMOOTH NOSE SAMPLE TAP	1	EA
18	FLOOR DRAIN, SEE MECHANICAL PLUMBING PLAN FOR CONTINUATION	3	EA
19	CONCRETE MECHANICAL PAD SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
20	BUILDING ELECTRICAL/SCADA/ATS PANEL, SEE ELECTRICAL PLAN FOR COORDINATION	1	LS
21	BOOSTER PUMP BUILDING, SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
22	PIPE STAND	1	LS
23	48-INCH SQUARE CONCRETE SPLASH BLOCK	1	LS
*** DENOTES EQUIPMENT PROVIDED AS PART OF BOOSTER PUMP PACKAGE SKID			

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MISSOULA, MONTANA

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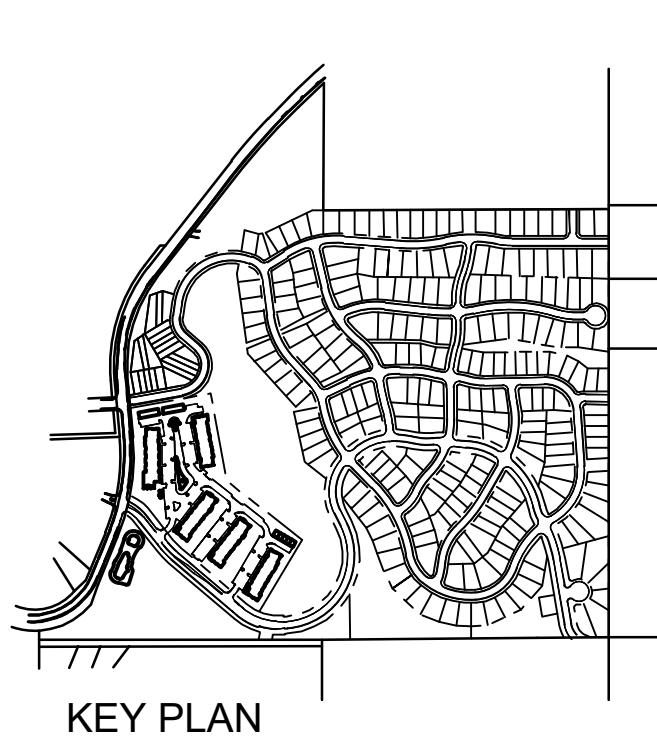
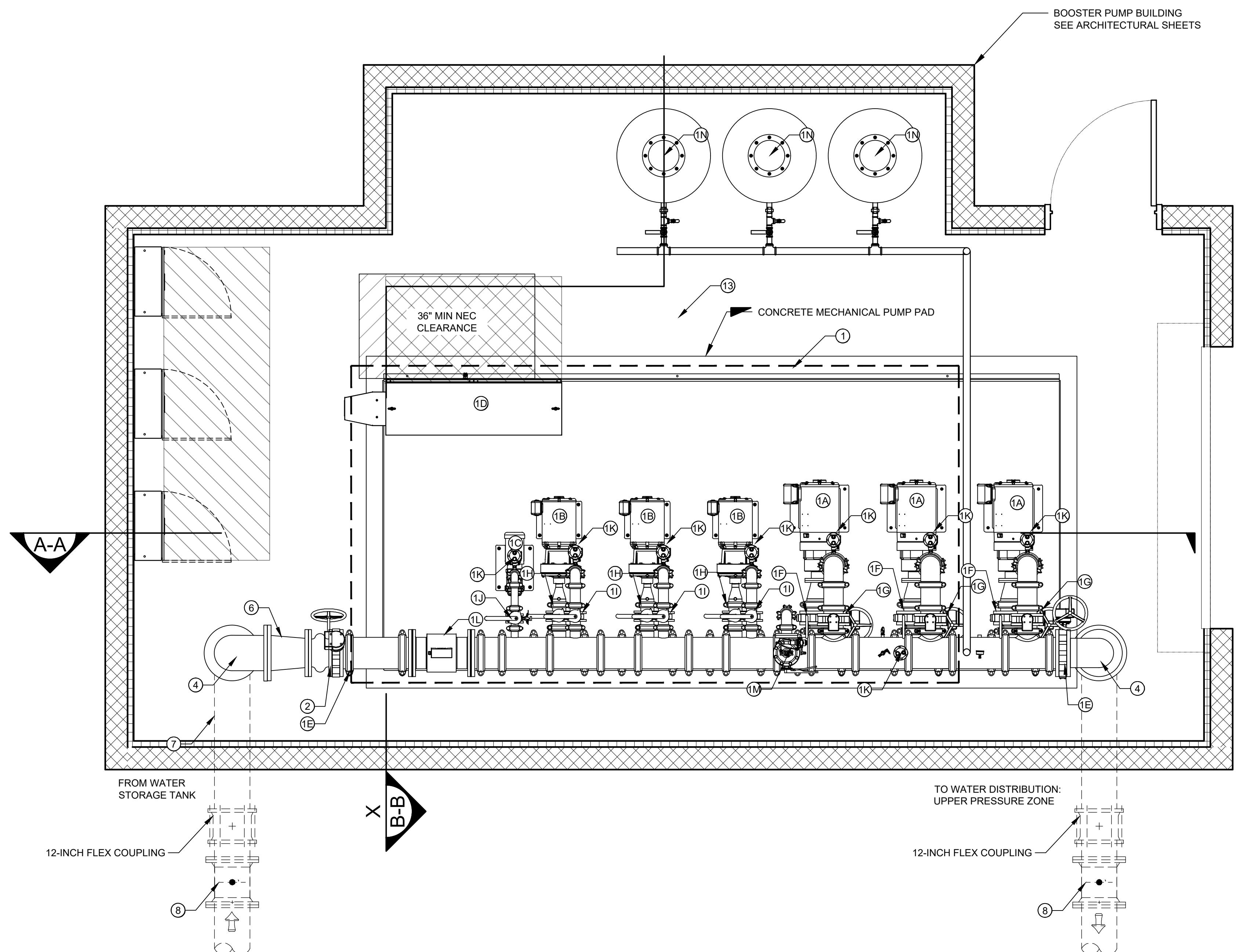
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REVISIONS

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M201

BOOSTER PUMP SPECIFICATIONS			
SITE CONDITIONS			
ELECTRICAL INPUT	480V, 3 PH, 60Hz		
STATION PERFORMANCE			
NORMAL DUTY	35-1,990 GPM @ 75 PSI BOOST		
HIGH FLOW	890-1500 GPM @ 75 PSI BOOST		
PUMP DESIGN CRITERIA: JOCKEY PUMP			
TYPE	END SUCTION CENTRIFUGAL		
MOTOR STARTING	VARIABLE FREQUENCY DRIVE		
MOTOR NAMEPLATE (HP)	3 HP / ODP		
MOTOR NOMINAL SPEED	3600 RPM		
DESIGN PERFORMANCE	35 GPM @ 180 FT TDH		
MIN. PUMP EFFICIENCY	75%		
QUANTITY	1		
PUMP DESIGN CRITERIA: DUTY PUMP			
TYPE	END SUCTION CENTRIFUGAL		
MOTOR STARTING	VARIABLE FREQUENCY DRIVE		
MOTOR NAMEPLATE (HP)	30 HP / ODP		
MOTOR NOMINAL SPEED	3600 RPM		
DESIGN PERFORMANCE	300 GPM @ 180 FT TDH		
MIN. PUMP EFFICIENCY	75%		
QUANTITY	3		
PUMP DESIGN CRITERIA: HIGH FLOW PUMP			
TYPE	END SUCTION CENTRIFUGAL		
MOTOR STARTING	VARIABLE FREQUENCY DRIVE		
MOTOR NAMEPLATE (HP)	50 HP / ODP		
MOTOR NOMINAL SPEED	3600 RPM		
DESIGN PERFORMANCE	750 GPM @ 180 FT TDH		
MIN. PUMP EFFICIENCY	75%		
QUANTITY	3		

BOOSTER PUMP HOUSE NOTES			
NOTE	DESCRIPTION	QTY	UNIT
1	PACKAGE BOOSTER PUMPING STATION, 15-1990 GPM FLOW RANGE*** (480V, 3 PH)	1	LS
1A	50 HP / 750 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (750 GPM @ 180 FT TDH)	3	EA
1B	30 HP / 300 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (300 GPM @ 180 FT TDH)	3	EA
1C	3 HP / 35 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (35 GPM @ 180 FT TDH)	1	EA
1D	CONTROL PANEL (VFD) ***	1	EA
1E	10-INCH LUG BUTTERFLY VALVE***	2	EA
1F	8-INCH LUG BUTTERFLY VALVE***	3	EA
1G	6-INCH LUG BUTTERFLY VALVE***	3	EA
1H	4-INCH LUG BUTTERFLY VALVE***	2	EA
1I	3-INCH LUG BUTTERFLY VALVE***	3	EA
1J	2-INCH LUG BUTTERFLY VALVE***	2	EA
1K	AUTOMATIC AIR RELEASE VALVE ***	5	EA
1L	10-INCH MAGNETIC FLOW METER, BADGER M2000 SERIES OR APPROVED EQUAL ***	1	EA
1M	3-INCH PRESSURE RELIEF CONTROL VALVE, WATTS LFL115 OR APPROVED EQUAL***	1	EA
1N	PRESSURE TANK ASSEMBLY, BELL & GOSSETT WTA-452 WITH UNION, SAMPLING PORT AND 2-INCH GATE VALVE	3	EA
2	10-INCH EXPANSION JOINT, GENERAL RUBBER MAXI-JOINT SERIES 1015, OR APPROVED EQUAL	2	EA
3	12-INCH 90-DEG FL BEND	3	EA
4	10-INCH 90-DEG FL BEND	2	EA
5	12-INCH FL TEE	0	EA
6	12-INCH x 10-INCH FL DI REDUCER	2	EA
7	12-INCH CL 350 DI FL PIPE	1	LS
8	12-INCH LUG BUTTERFLY VALVE***	0	EA
9	12-INCH FL DISMANTLING COUPLER	0	EA
10	PRESSURE TRANSDUCER	1	EA
11	MANUAL PRESSURE GAUGE	1	EA
12	SMOOTH NOSE SAMPLE TAP	1	EA
13	FLOOR DRAIN, SEE MECHANICAL PLUMBING PLAN FOR CONTINUATION	3	EA
14	CONCRETE MECHANICAL PAD SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
15	BUILDING ELECTRICAL PANEL, SEE ELECTRICAL PLAN FOR COORDINATION	1	LS
16	BOOSTER PUMP BUILDING, SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
17	PIPE STAND	1	LS
18	2-INCH GALVANIZED STEEL PIPE	1	LS
19	1-INCH AUTOMATIC AIR RELEASE VALVE, CLA-VAL 3410-AR116.3	1	EA
*** DENOTES EQUIPMENT PROVIDED AS PART OF BOOSTER PUMP PACKAGE SKID			

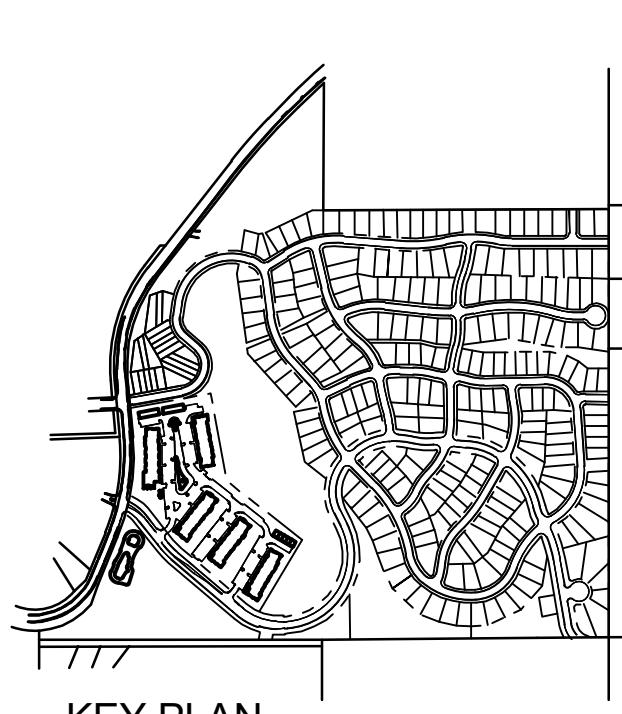


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MISSOULA, MONTANA

HILLVIEW

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KEY PLAN

PUMP HOUSE MECHANICAL
PIPELINE PLAN: UPPER PUMP
HOUSE

10.13.2023

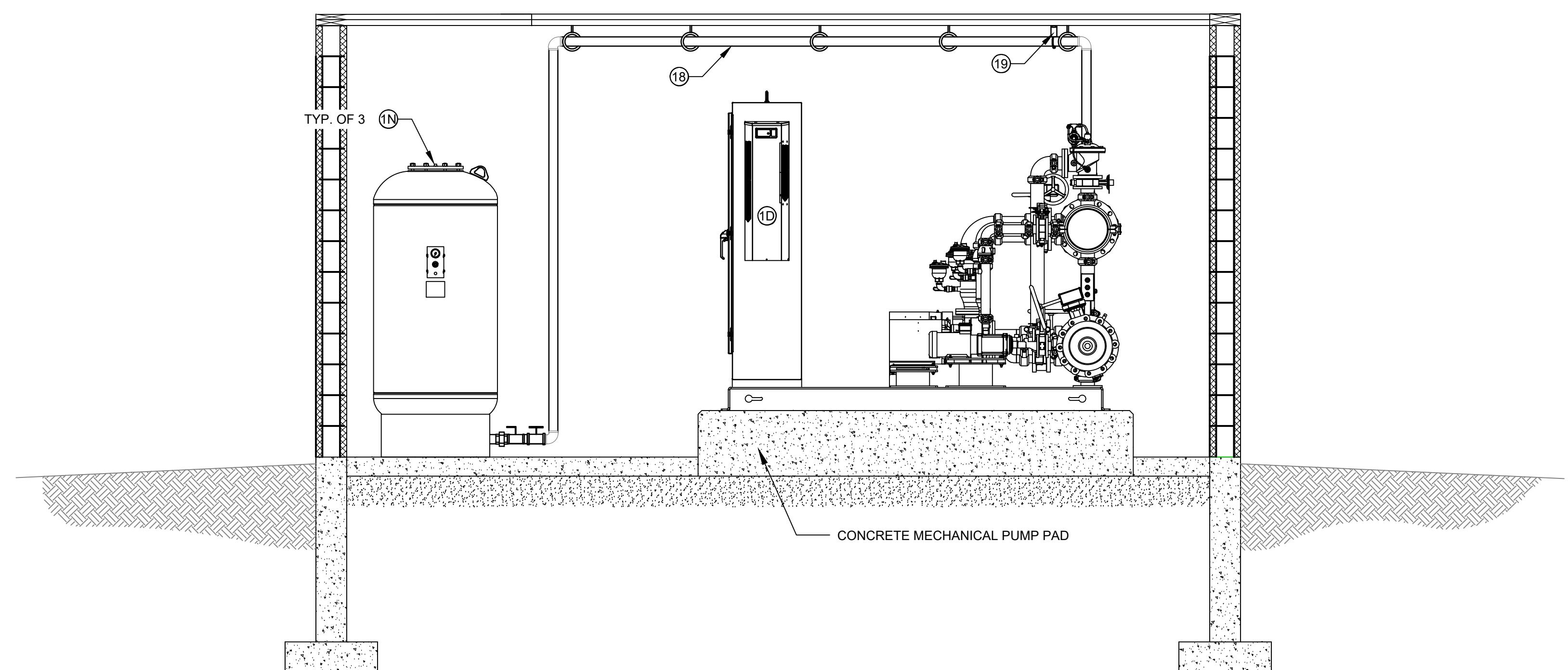
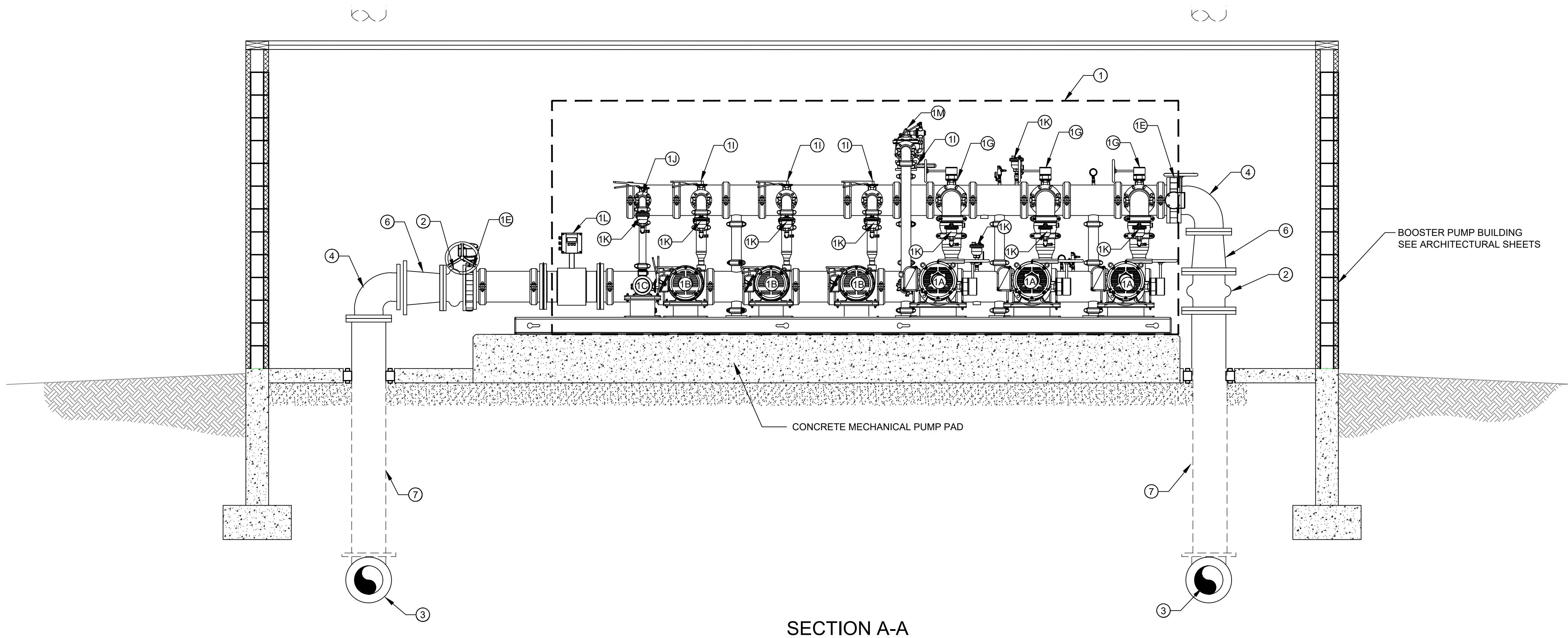
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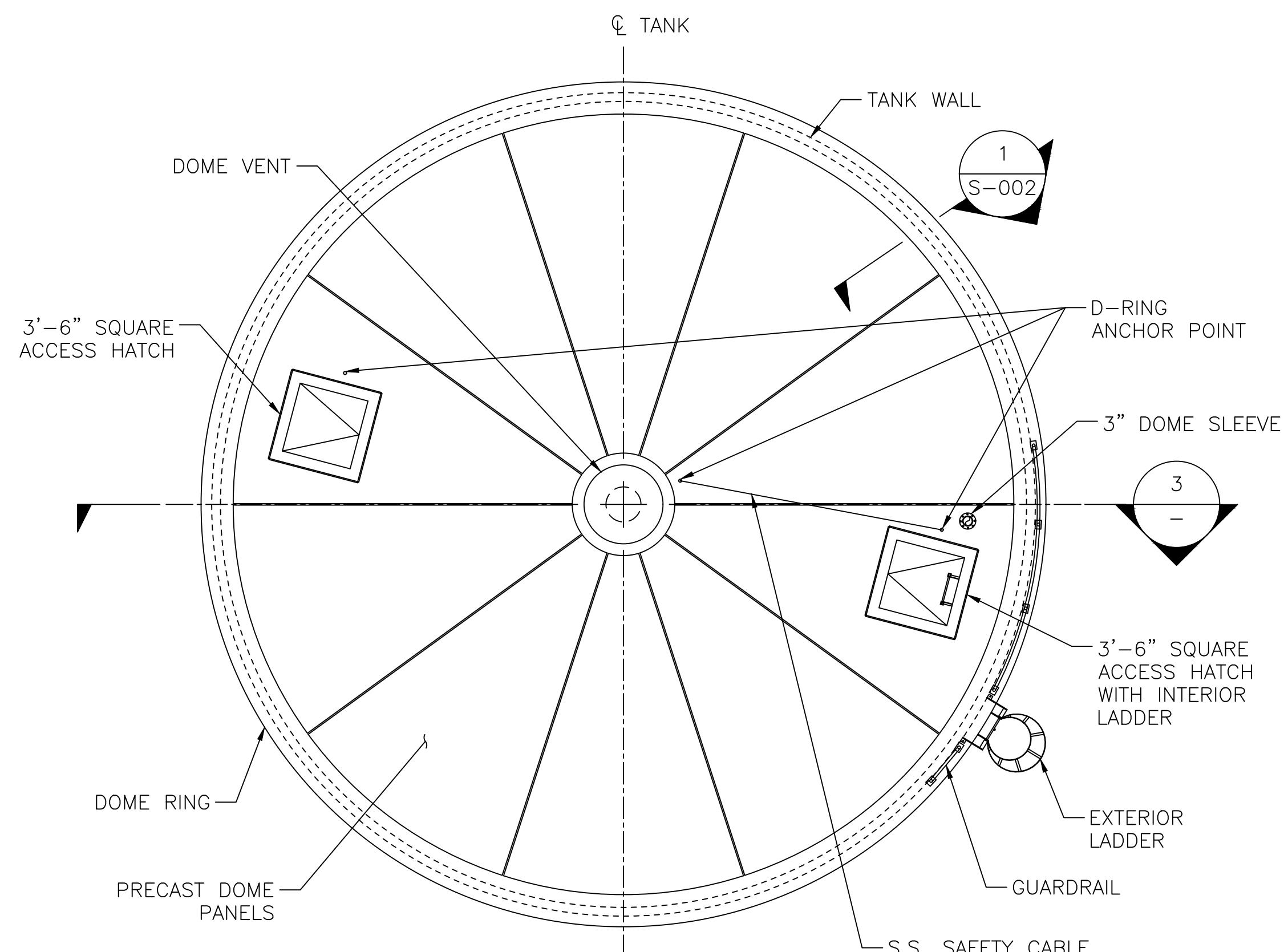
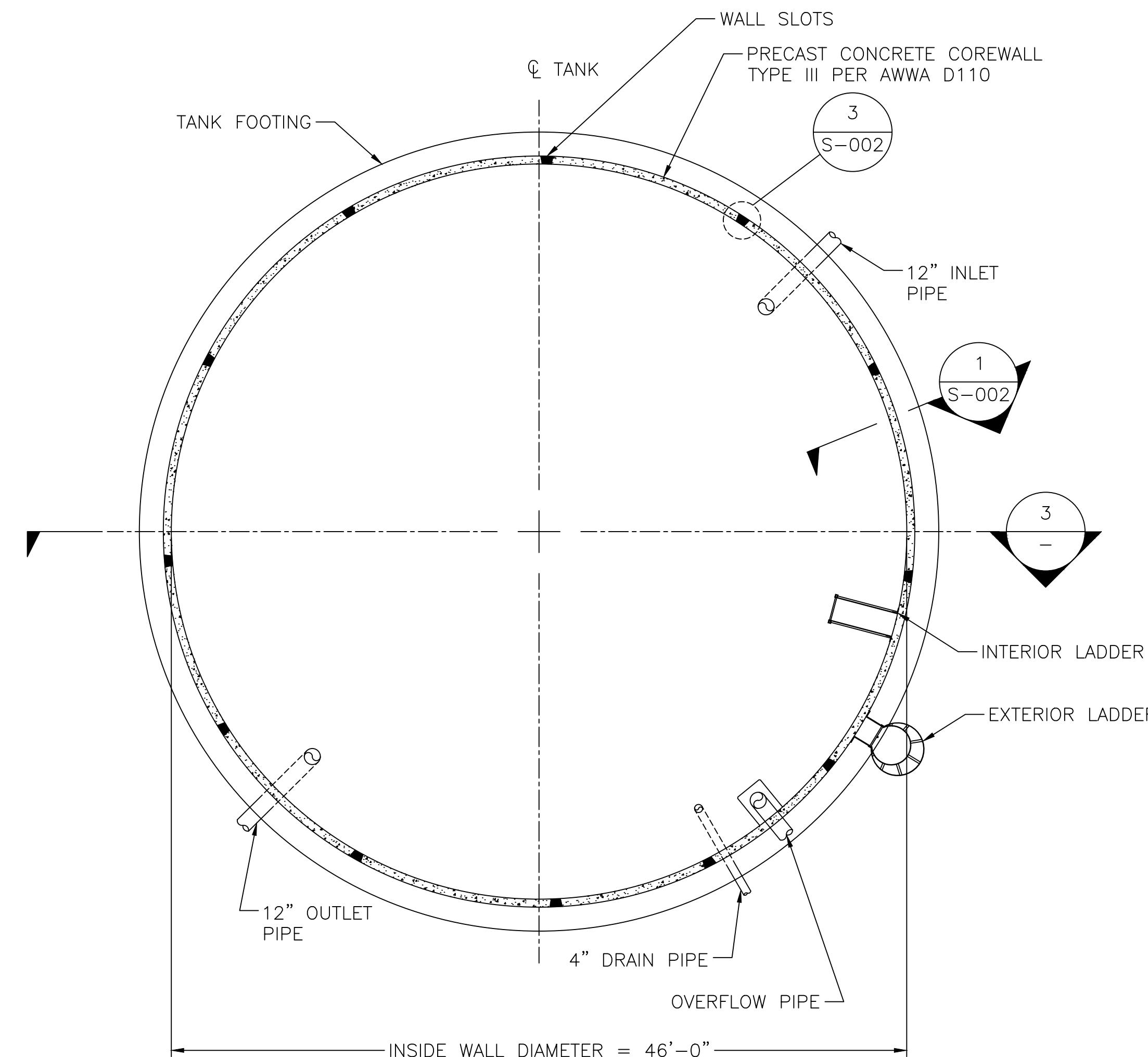
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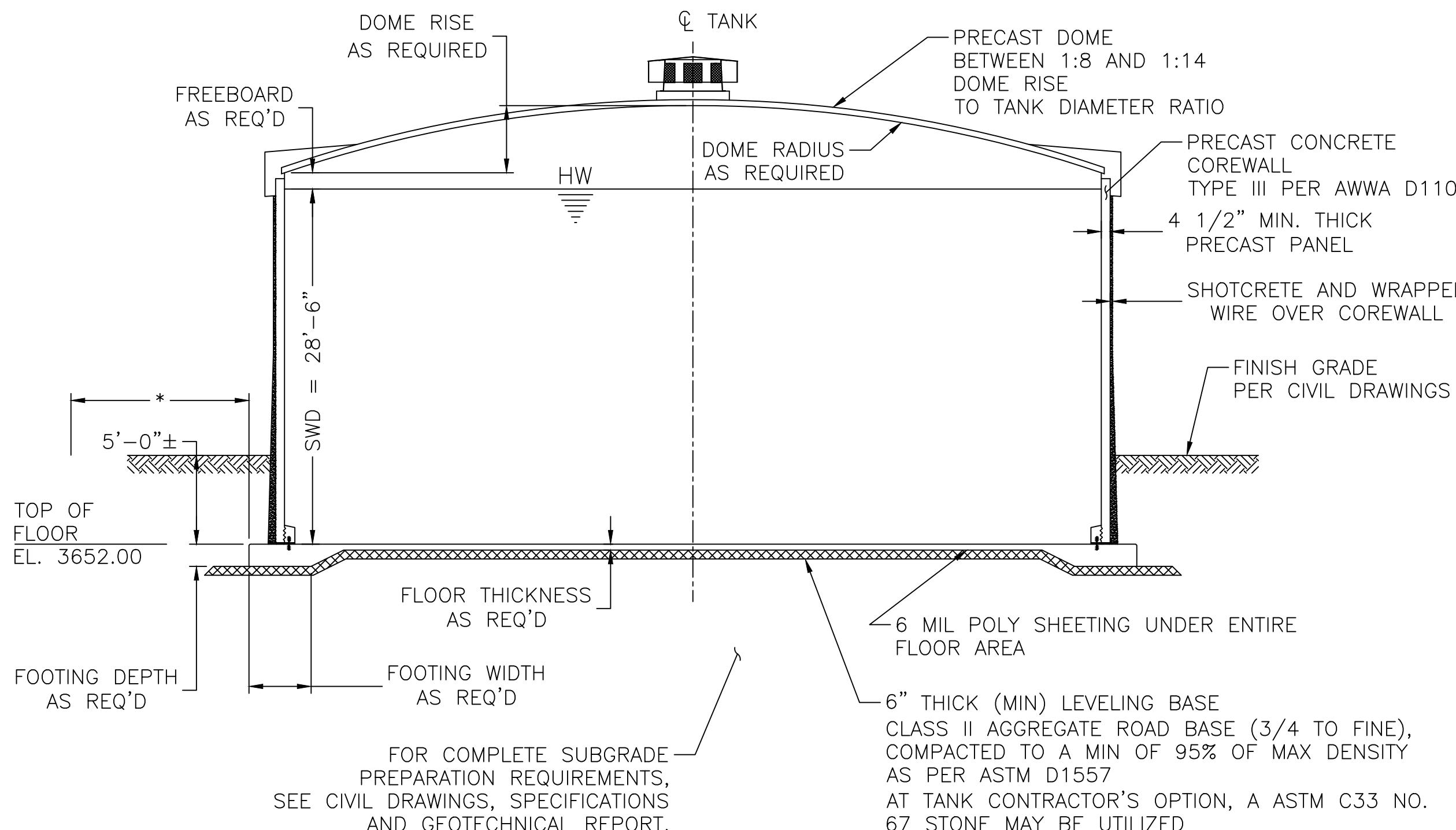
PRELIMINARY PLAT

BOOSTER PUMP HOUSE NOTES			
NOTE	DESCRIPTION	QTY	UNIT
1	PACKAGE BOOSTER PUMPING STATION, 15-1990 GPM FLOW RANGE*** (480V, 3 PH)	1	LS
1A	50 HP / 750 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (750 GPM @ 180 FT TDH)	3	EA
1B	30 HP / 300 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (300 GPM @ 180 FT TDH)	3	EA
1C	3 HP / 35 GPM CENTRIFUGAL HIGH FLOW DUTY PUMP *** (35 GPM @ 180 FT TDH)	1	EA
1D	CONTROL PANEL (VFD) ***	1	EA
1E	10-INCH LUG BUTTERFLY VALVE***	2	EA
1F	8-INCH LUG BUTTERFLY VALVE***	3	EA
1G	6-INCH LUG BUTTERFLY VALVE***	3	EA
1H	4-INCH LUG BUTTERFLY VALVE***	2	EA
1I	3-INCH LUG BUTTERFLY VALVE***	3	EA
1J	2-INCH LUG BUTTERFLY VALVE***	2	EA
1K	AUTOMATIC AIR RELEASE VALVE ***	5	EA
1L	10-INCH MAGNETIC FLOW METER, BADGER M2000 SERIES OR APPROVED EQUAL ***	1	EA
1M	3-INCH PRESSURE RELIEF CONTROL VALVE, WATTS LLF115 OR APPROVED EQUAL***	1	EA
1N	PRESSURE TANK ASSEMBLY, BELL & GOSSETT WTA-452 WITH UNION, SAMPLING PORT AND 2-INCH GATE VALVE	3	EA
2	10-INCH EXPANSION JOINT, GENERAL RUBBER MAXI-JOINT SERIES 1015, OR APPROVED EQUAL	2	EA
3	12-INCH 90-DEG FL BEND	3	EA
4	10-INCH 90-DEG FL BEND	2	EA
5	12-INCH FL TEE	0	EA
6	12-INCH x 10-INCH FL DI REDUCER	2	EA
7	12-INCH CL 350 DI FL PIPE	1	LS
8	12-INCH LUG BUTTERFLY VALVE***	0	EA
9	12-INCH FL DISMANTLING COUPLER	0	EA
10	PRESSURE TRANSDUCER	1	EA
11	MANUAL PRESSURE GAUGE	1	EA
12	SMOOTH NOSE SAMPLE TAP	1	EA
13	FLOOR DRAIN, SEE MECHANICAL PLUMBING PLAN FOR CONTINUATION	3	EA
14	CONCRETE MECHANICAL PAD SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
15	BUILDING ELECTRICAL PANEL, SEE ELECTRICAL PLAN FOR COORDINATION	1	LS
16	BOOSTER PUMP BUILDING, SEE ARCHITECTURAL PLAN FOR COORDINATION	1	LS
17	PIPE STAND	1	LS
18	2-INCH GALVANIZED STEEL PIPE	1	LS
19	1-INCH AUTOMATIC AIR RELEASE VALVE, CLA-VAL 3410-AR116.3	1	EA
***	DENOTES EQUIPMENT PROVIDED AS PART OF BOOSTER PUMP PACKAGE SKID		





FLOOR PLAN



TANK SECTION

DOME PLAN

GENERAL NOTES:

*ALL DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS. TANK CONTRACTOR, AS DEFINED IN THE SPECIFICATIONS, TO VERIFY DIMENSIONS WITH STRUCTURAL CALCULATIONS.

A. DESIGN LOADS

1. ROOF LOAD : 20.0 PSF LIVE; SNOW
2. LIQUID (WATER) : 62.4PCF
3. R_i , IMPULSIVE STRUCTURAL RESPONSE COEFFICIENT : 3.25 (ASCE 7 WITH CABLES) 1.50 (ASCE 7 W/O CABLES)
4. R_c , CONVECTIVE STRUCTURAL RESPONSE COEFFICIENT : 3.50 (AWWA WITH CABLES) 1.50 (AWWA W/O CABLES)
5. ANALYSIS PROCEDURE USED : 1.0

: EQUIVALENT LATERAL FORCE ANALYSIS BASED ON AWWA D110 AND ACI 350.3

B. CONCRETE AND SHOTCRETE

1. FLOOR, AND FOOTINGS : 4000 PSI
2. DOME, DOME RING AND DOME SLOTS : 4000 PSI
3. PRECAST WALL : 4000 PSI
4. SHOTCRETE FOR WIRE COVER (1C:3S) AND COVER COAT (1C:4S) : 4500 PSI
5. SEE TECHNICAL SPECIFICATION FOR COMPLETE MIX DESIGN INFORMATION INCLUDING MINIMUM CEMENT CONTENT, MAXIMUM WATER-CEMENT RATIO, AGGREGATE SIZE AND ACCEPTABLE ADMIXTURES.
6. SEE TECHNICAL SPECIFICATION FOR CONCRETE PLACING AND FORMING PROCEDURES.

C. METALS

1. ALL STAINLESS STEEL (SST) TO BE 304L UNLESS OTHERWISE NOTED.

D. REINFORCING STEEL

1. ALL REINFORCING IN TANK SHALL CONFORM TO ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
2. REINFORCING STEEL CALLED OUT AS GALVANIZED SHALL HAVE A CLASS 1 COATING IN ACCORDANCE WITH ASTM A767, WITHOUT CHROMATE.

E. EARTHWORK REQUIREMENTS

1. MINIMUM COMPACTION OF CRUSHED ROCK AND SUBGRADE UNDER AND AROUND PIPE BLOCKS AND UNDER FLOOR AND FOOTINGS SHALL EQUAL 95% RELATIVE COMPACTION AS DETERMINED IN ACCORDANCE WITH ASTM D1557.
2. COMPACTION OF BACKFILL AROUND TANK SHALL EQUAL 90% RELATIVE COMPACTION AS DETERMINED IN ACCORDANCE WITH ASTM D1557. USE ONLY HAND HELD COMPACTION EQUIPMENT WITHIN 5' OF TANK WALL AND LIGHTWEIGHT EQUIPMENT (15,600 LBS MAX) BEYOND THE 5' AND WITHIN 15' OF THE TANK SO AS NOT TO DAMAGE THE WALL. BRING UP THE BACKFILL AROUND THE TANK IN UNIFORM LIFTS WHEN POSSIBLE. DIFFERENCE IN BACKFILL HEIGHTS DURING INSTALLATION SHALL NEVER EXCEED THE FINAL DIFFERENCE IN BACKFILL HEIGHTS.

0.35 MG WATER STORAGE TANK

MISSOULA, MT
ENGR.: CUSHING TERRELL
MISSOULA, MT

DNW: CYATES
REV: DATE
CHK: YLUO
DATE: 09/14/23
DESIGNER
DESCRIPTION

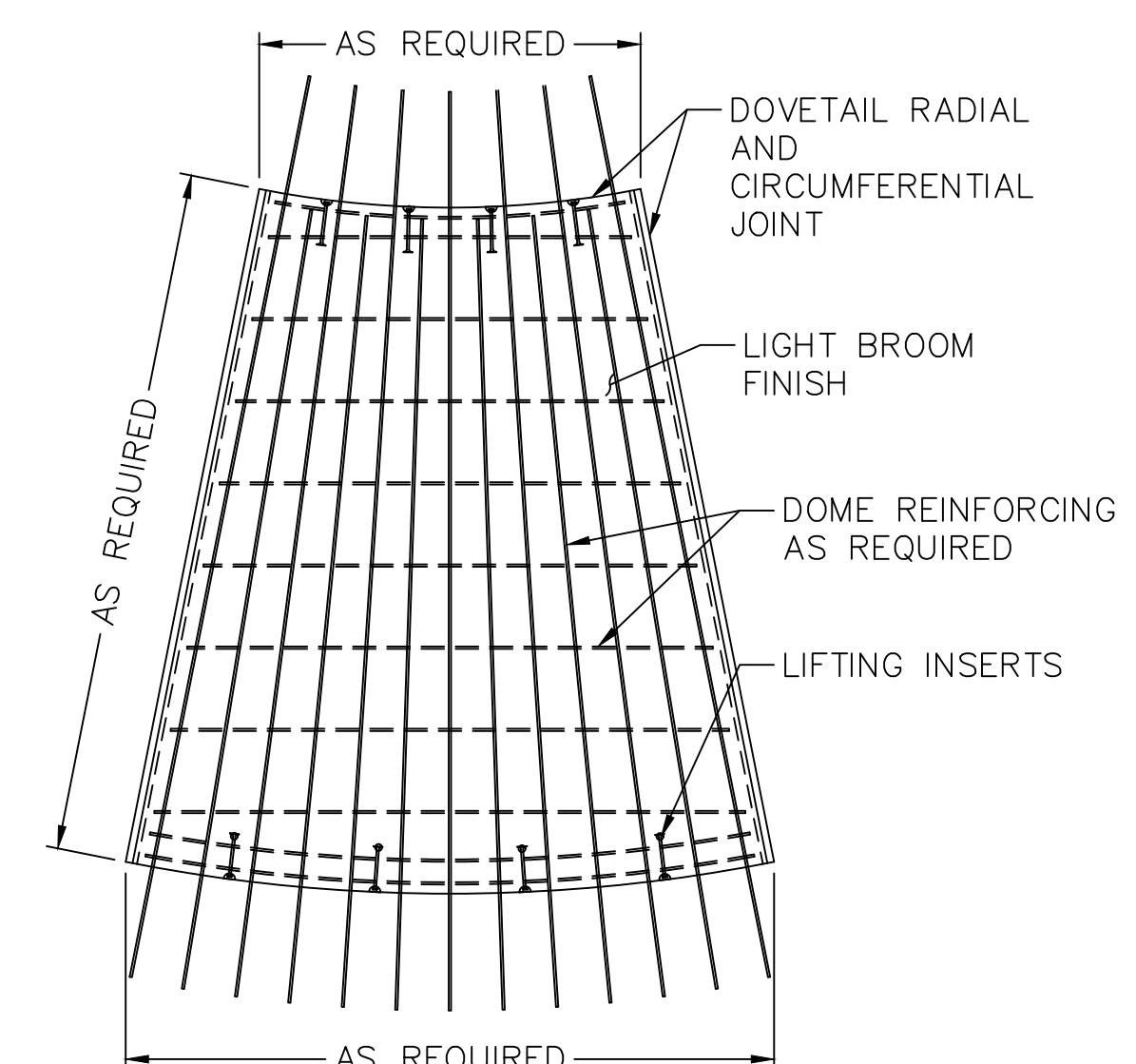
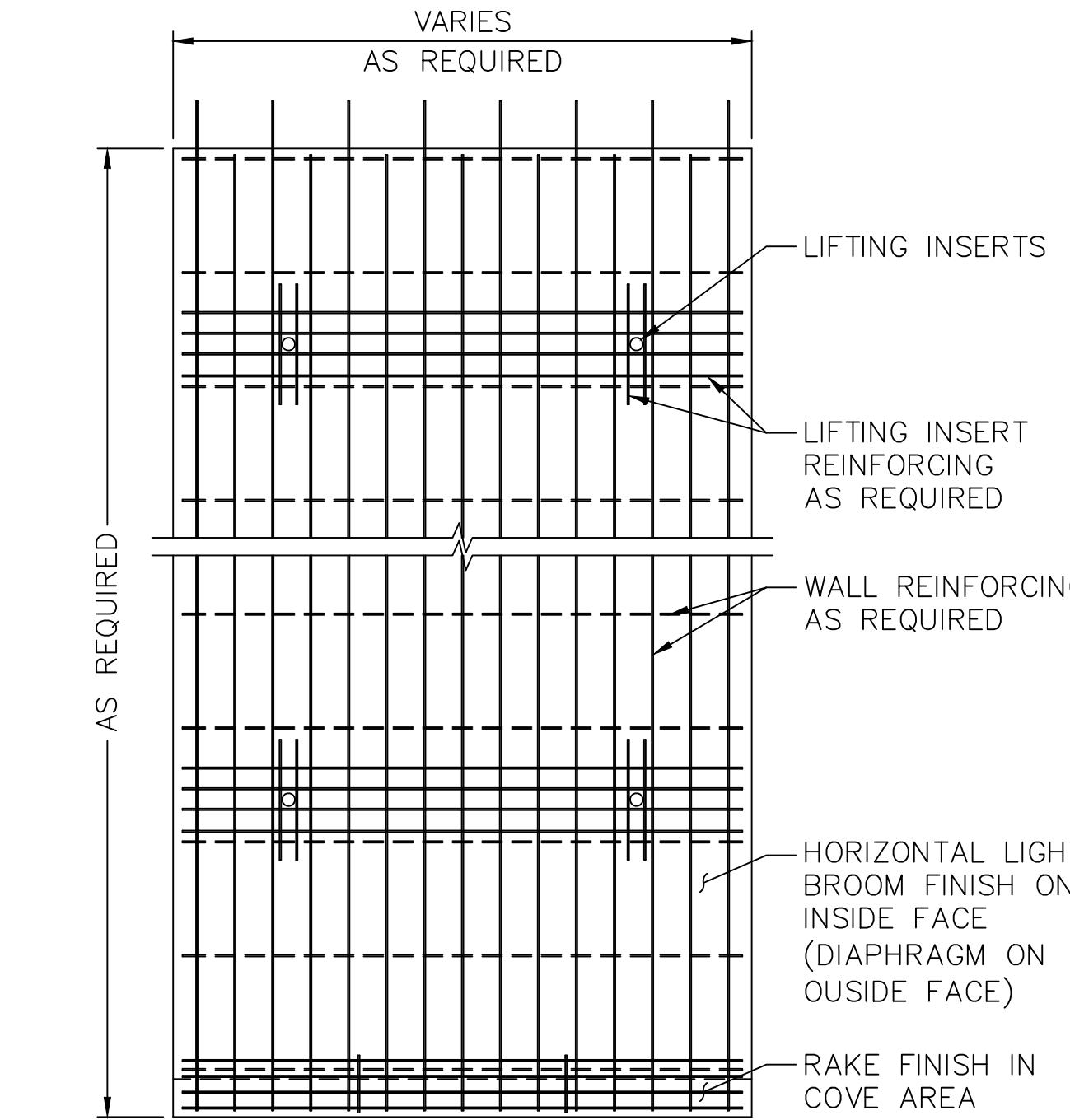
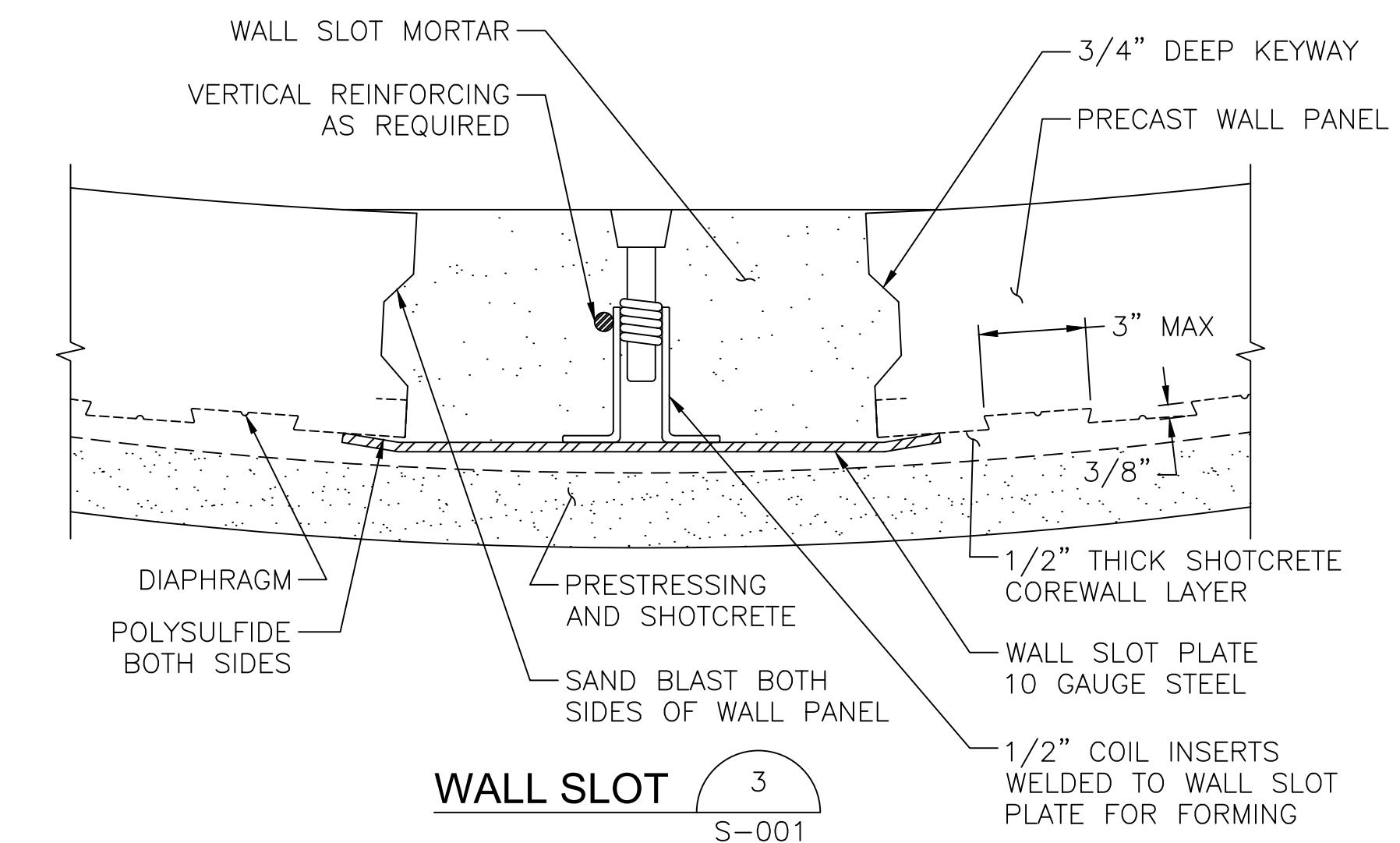
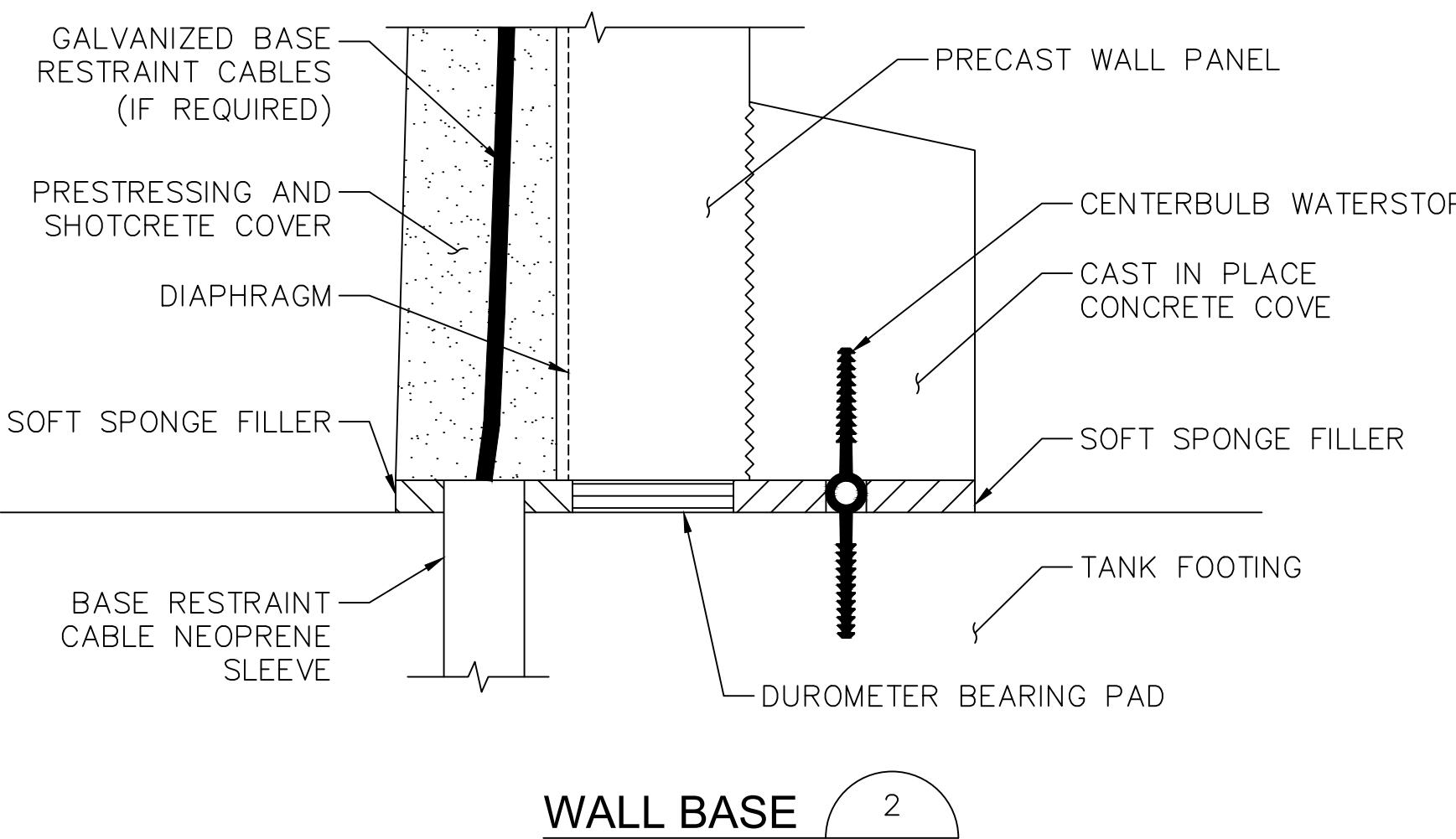
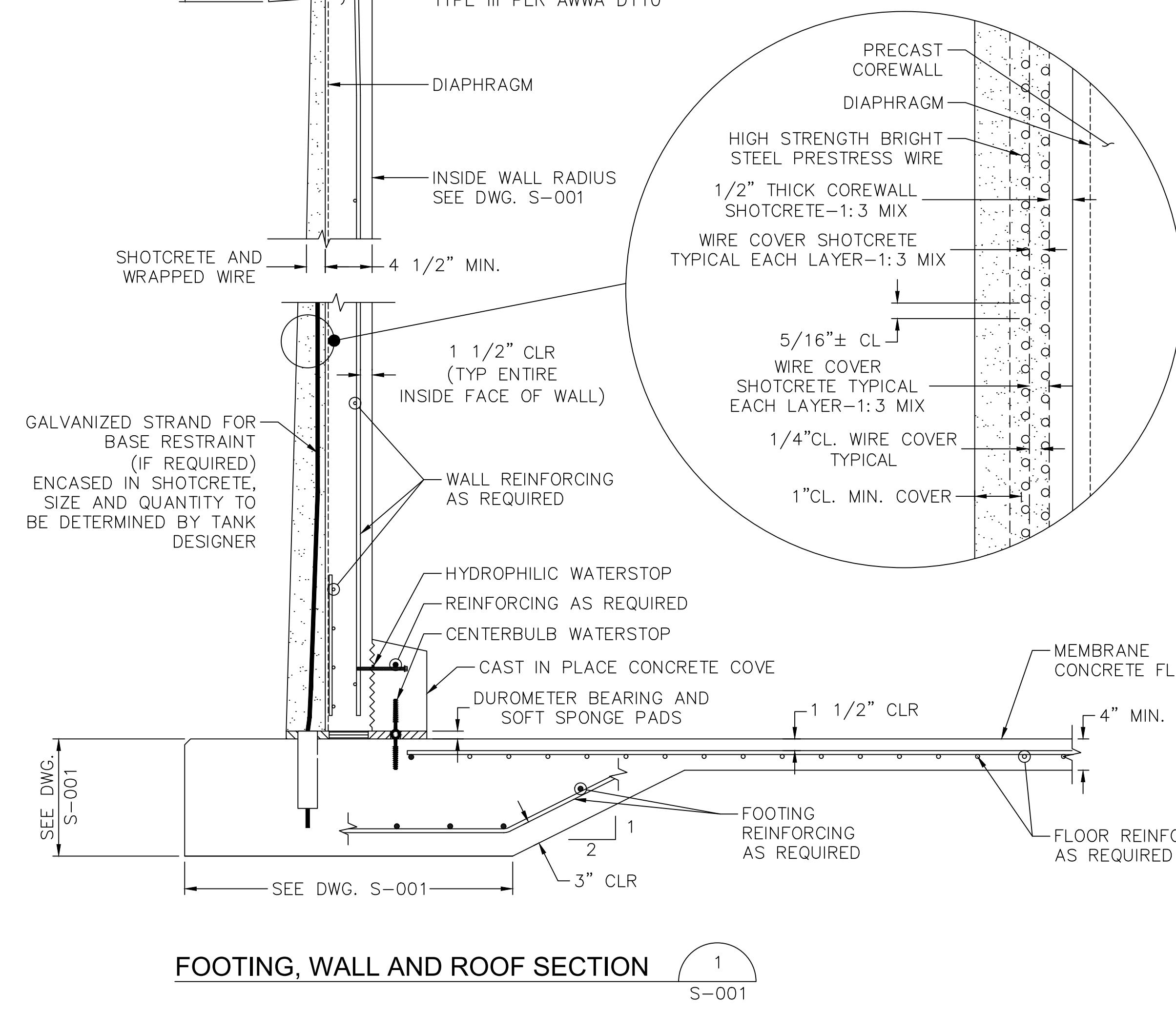
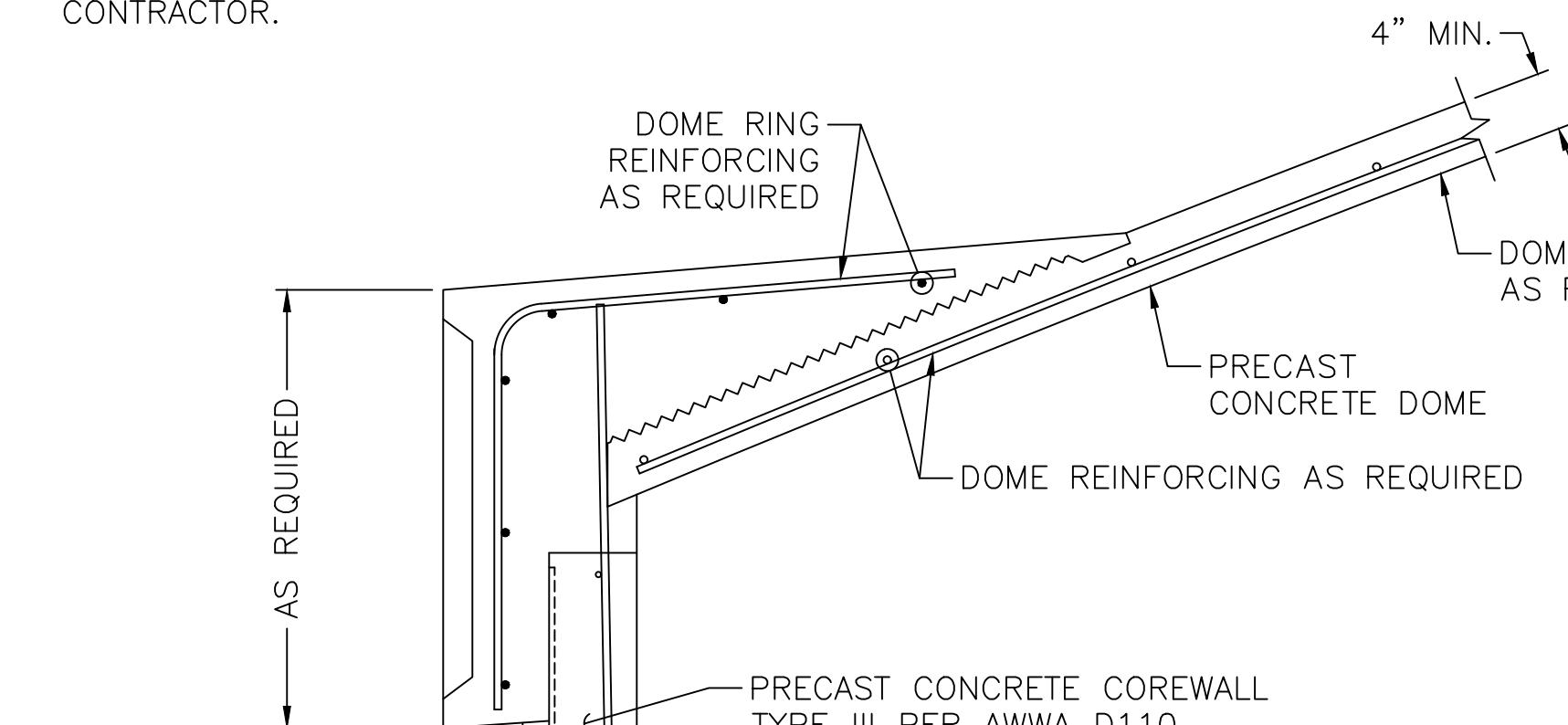
AWWA D110
TYPE III
PRECAST
CONCRETE
STORAGE
TANK

TANK PLANS
AND SECTION

DRAWING NUMBER
S-001

NOTES:

- 1) FOOTING AND FLOOR TO BE FINISHED PER SPECIFICATIONS.
- 2) MAINTAIN CLEARANCE BETWEEN THE INDIVIDUAL STRANDS IN THE BASE RESTRAINT CABLE SETS (DO NOT BUNDLE). CABLES MAY TOUCH WITHIN 2' OF THE BOOT.
- 3) THE COMBINED FLOOR AND WALL FOOTING SHALL BE POURED MONOLITHICALLY UNLESS APPROVED BY THE ENGINEER.
- 4) BASE RESTRAINT CABLES MAY BE BENT PRIOR TO INSTALLATION.
- 5) BASE RESTRAINT CABLE DESIGN REQUIREMENTS TO BE DETERMINED BY TANK CONTRACTOR.

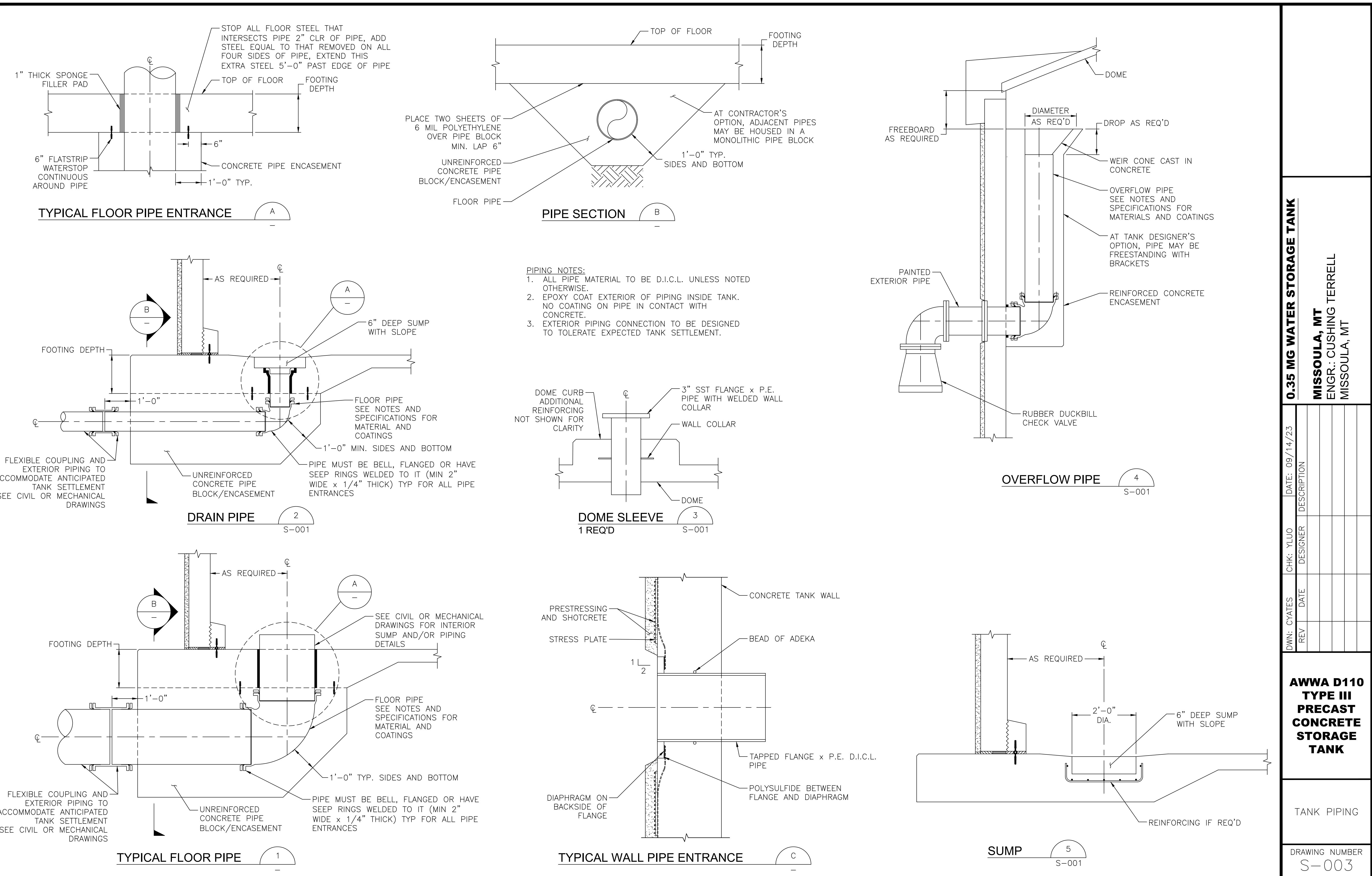


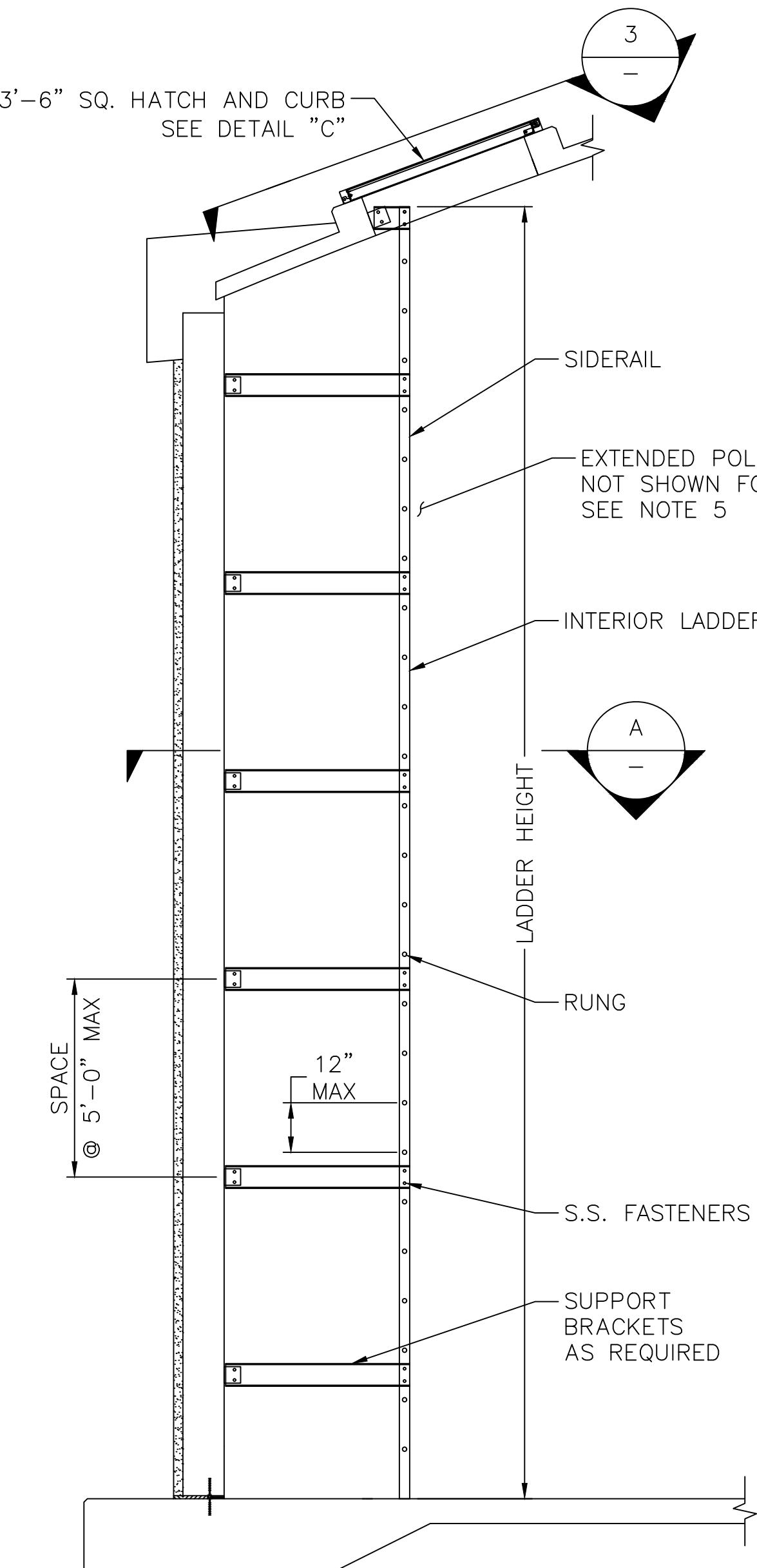
MISSOULA, MT
ENGR.: CUSHING TERRELL
MISSOULA, MT

AWWA D110 TYPE III PRECAST CONCRETE STORAGE TANK

ROOF, WALL AND FOOTING

RAWING NUMBER
S-002

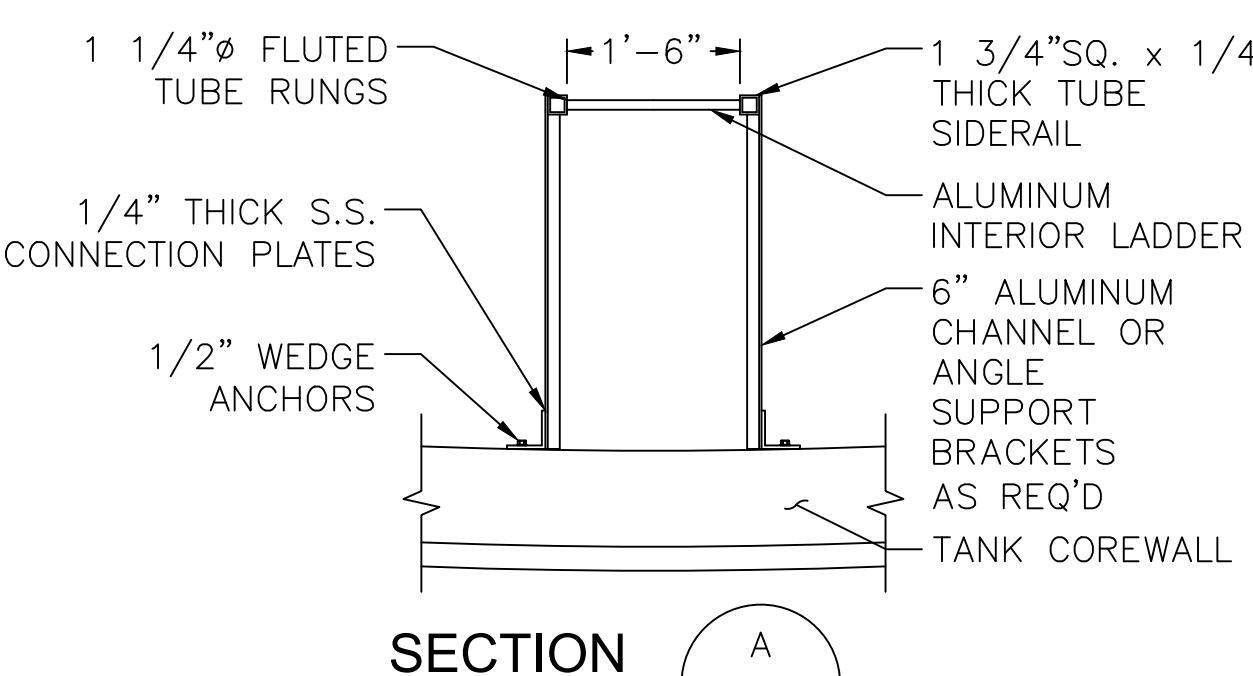




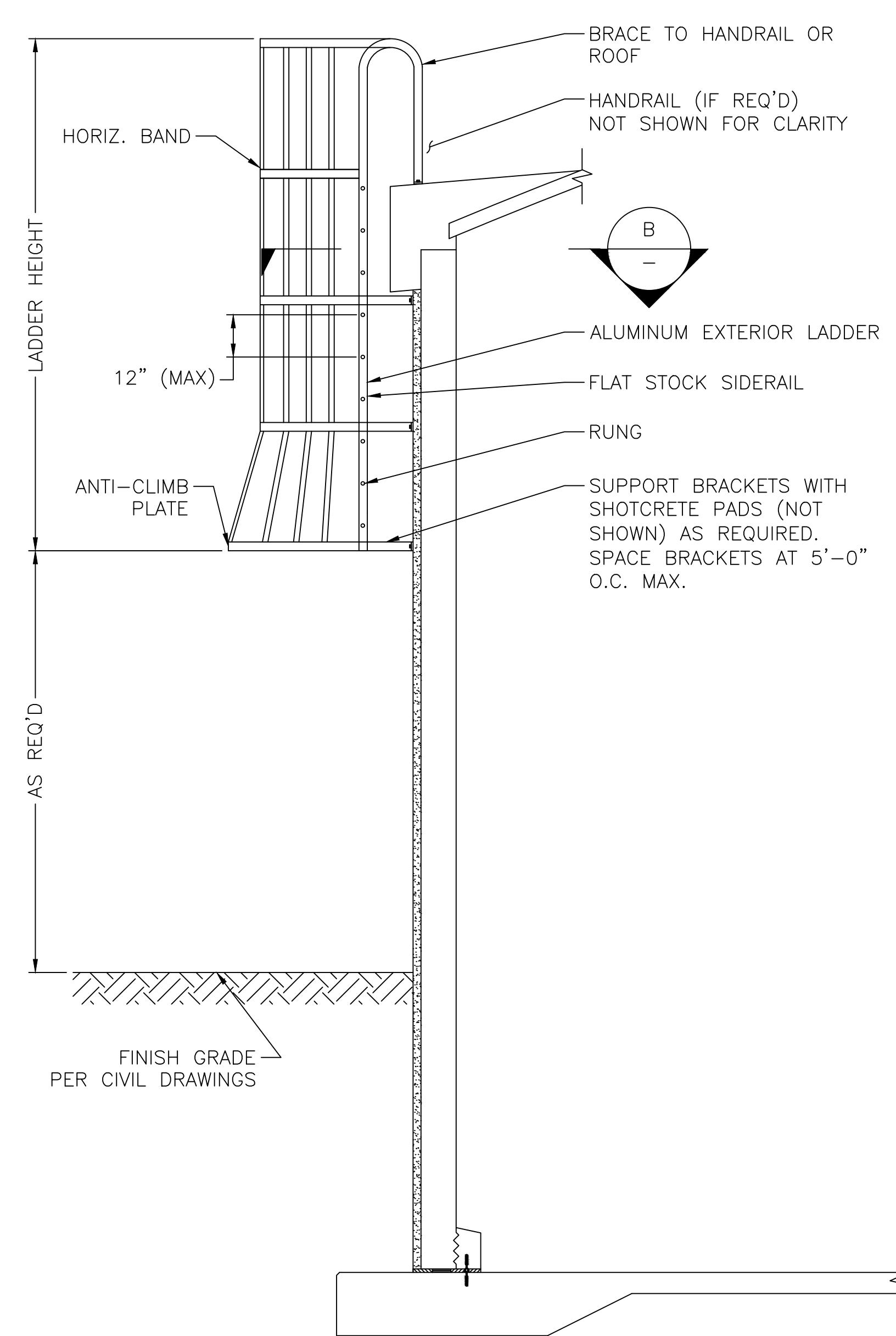
INTERIOR LADDER 1
1 REQ'D S-001

INTERIOR LADDER NOTES:

- 1) LADDER MATERIAL SHALL BE ALUMINUM.
- 2) OSHA COMPLIANT FALL PREVENTION DEVICE SHALL BE INSTALLED (SST).
- 3) LADDER RUNGS TO BE SOLID BARS AND FLUTED.
- 4) USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.
- 5) ALU. LADDER EXTENDED PIPE REQ'D.



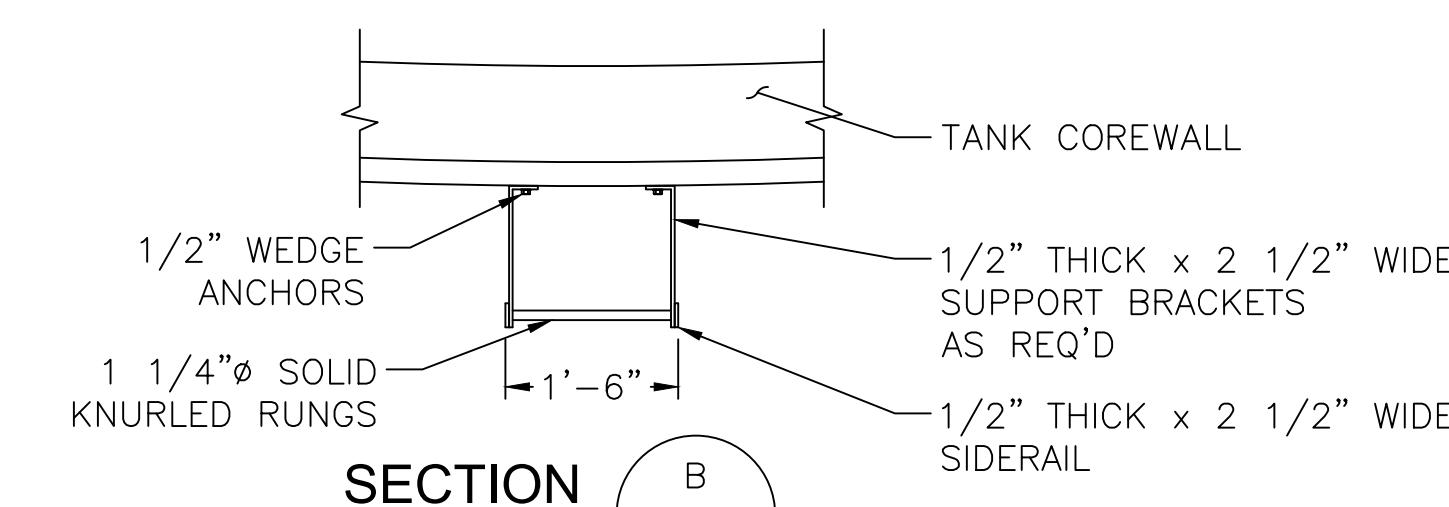
SECTION A



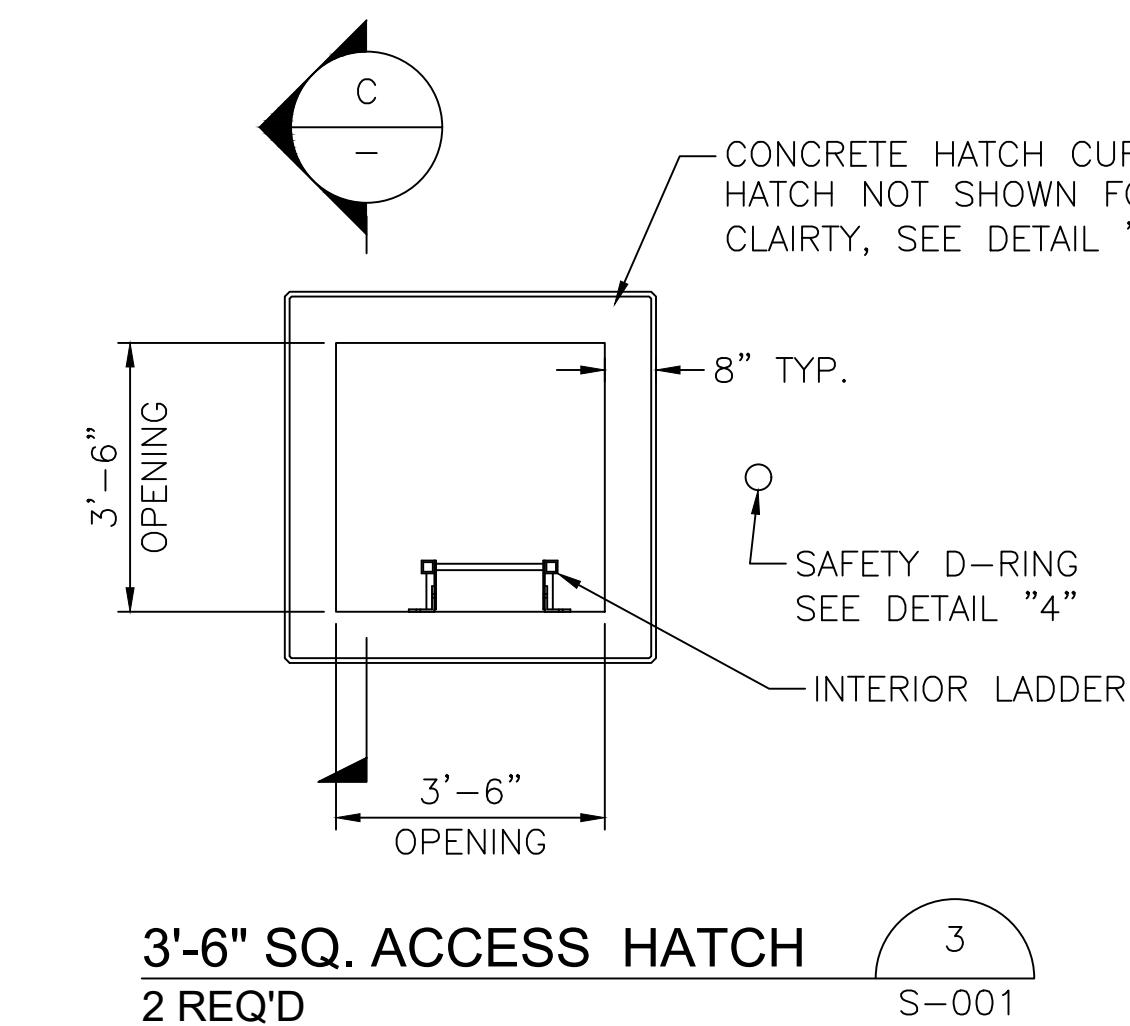
EXTERIOR LADDER 2
1 REQ'D S-001

EXTERIOR LADDER NOTES:

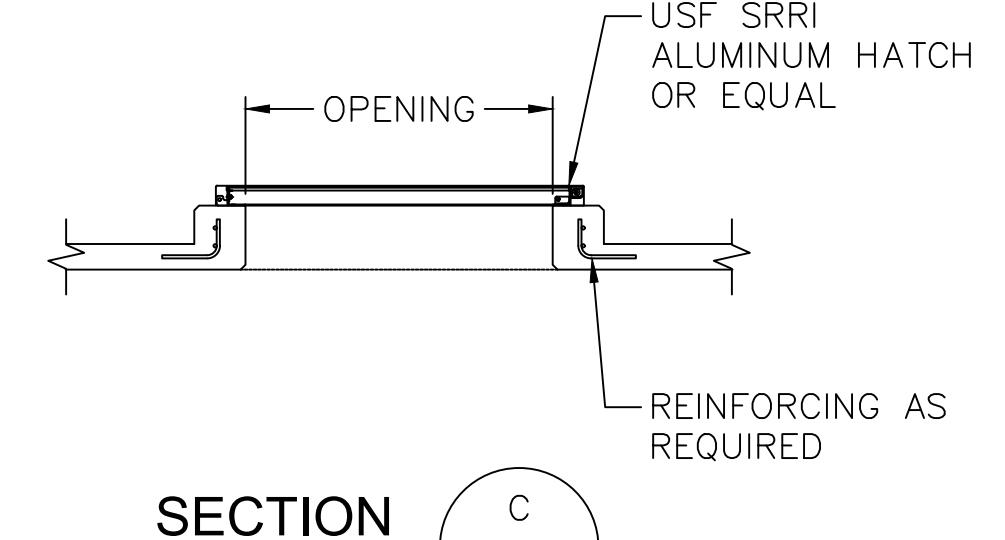
- 1) ALL MATERIAL FOR EXTERIOR LADDER, SIDERAILS, RUNGS AND BRACKETS TO BE 6061-T6 ALUMINUM.
- 2) OSHA COMPLIANT FALL PREVENTION DEVICE SHALL BE INSTALLED (SST).
- 3) LADDER RUNGS TO BE SOLID BARS AND KNURED.
- 4) ALL WELDS TO BE 3/16" MINIMUM.
- 5) ALL ALUMINUM IN CONTACT WITH CONCRETE MUST BE COATED WITH A HEAVY BITUMASTIC COATING, EPOXY PAINT OR SHIMMED USING PVC.
- 6) USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.
- 7) WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTRICALLY ISOLATE THE BOLTS.



SECTION B

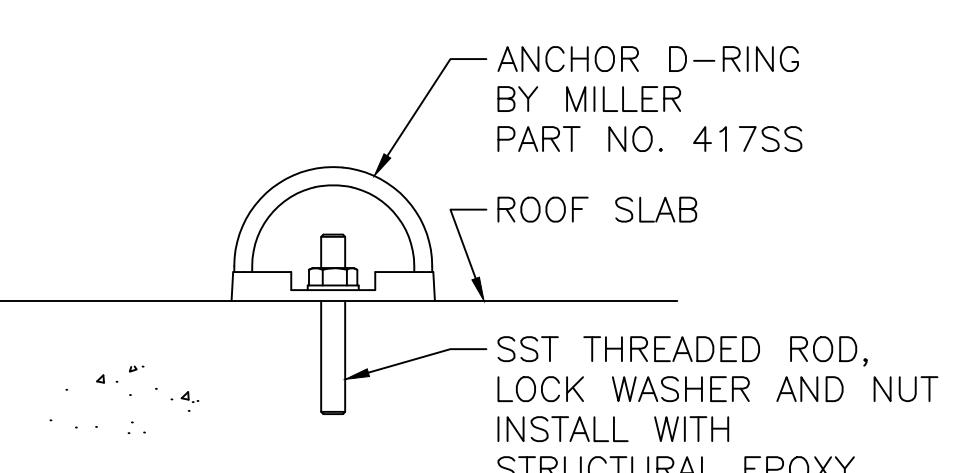


3'-6" SQ. ACCESS HATCH 3
2 REQ'D S-001

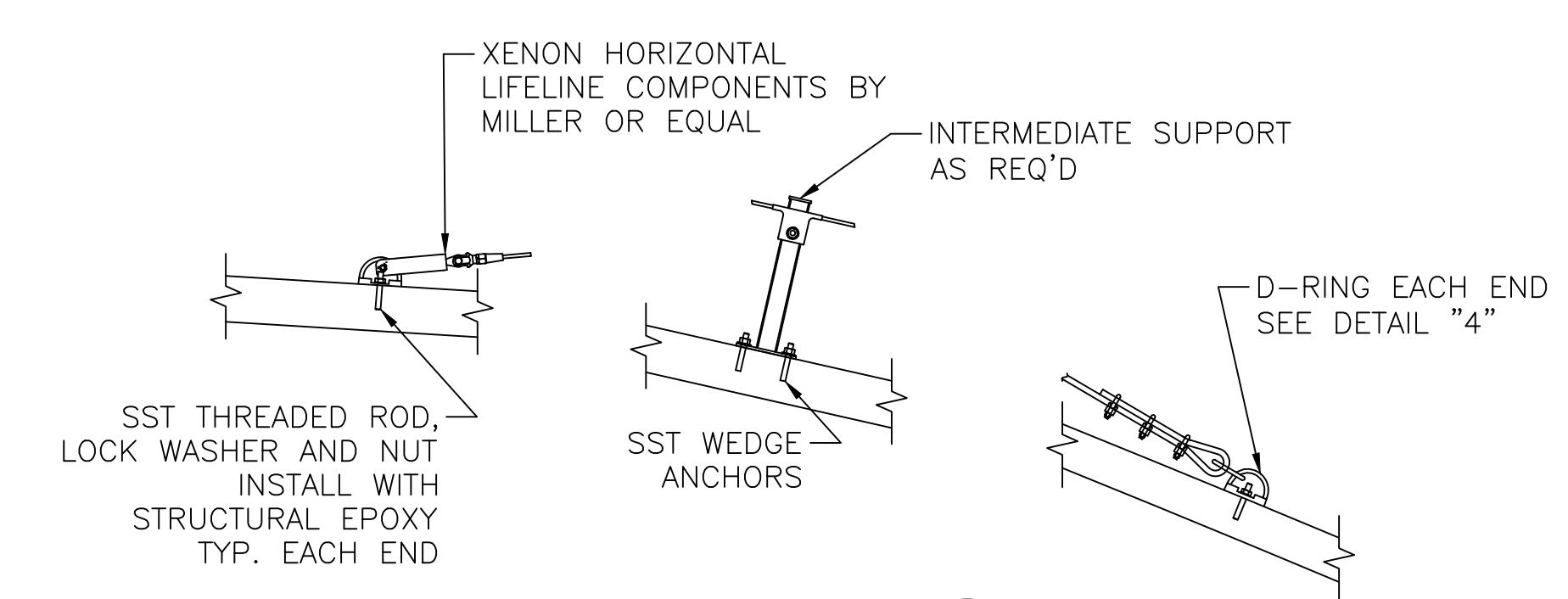


ROOF HATCHES NOTES:

- 1) HATCHES TO BE SINGLE LEAF USF SRRI ALUMINUM HATCHES OR EQUAL.
- 2) ALL ALUMINUM IN CONTACT WITH CONCRETE MUST BE COATED WITH A HEAVY BITUMASTIC COATING, EPOXY PAINT OR SHIMMED USING PVC.
- 3) USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.
- 4) WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTRICALLY ISOLATE THE BOLTS.



SAFETY D-RING 4
AS REQ'D



SAFETY CABLE D

MISSOULA, MT
ENGR.: CUSHING TERRILL
MISSOULA, MT

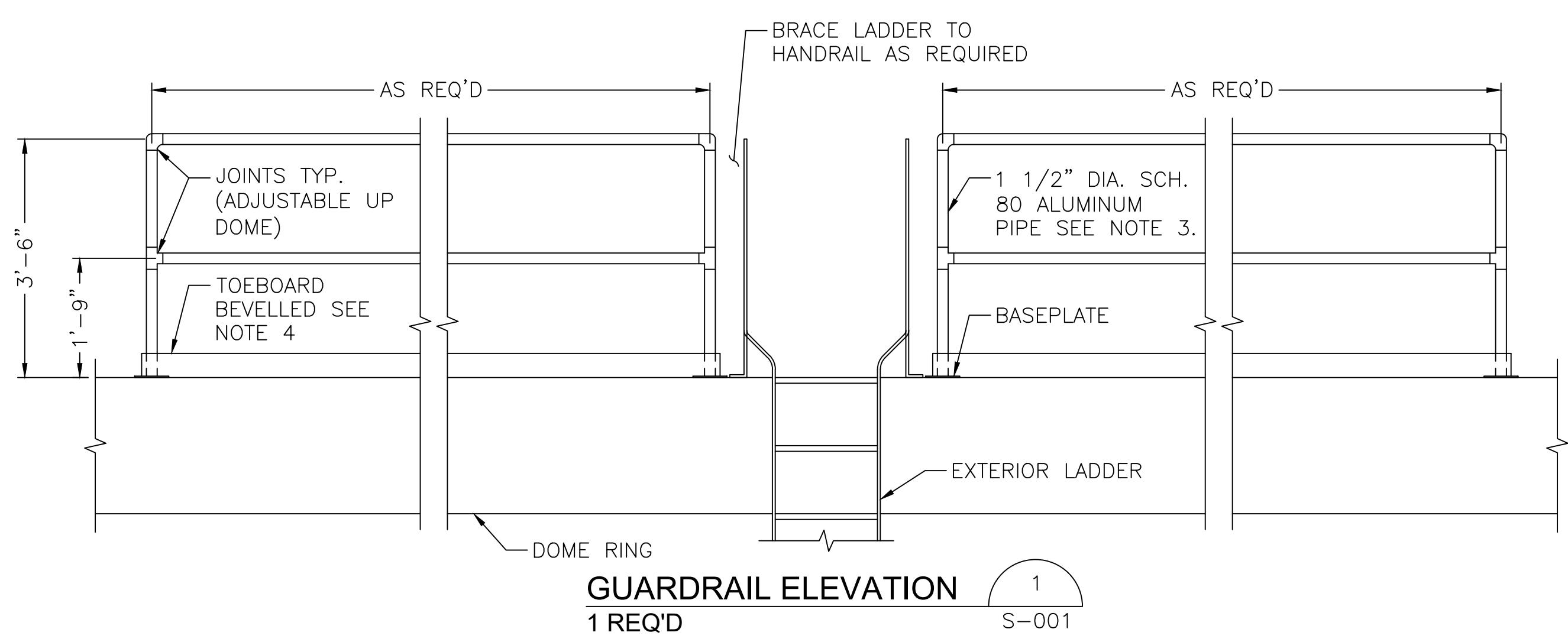
0.35 MG WATER STORAGE TANK

AWWA D110
TYPE III
PRECAST
CONCRETE
STORAGE
TANK

TANK LADDERS AND HATCHES

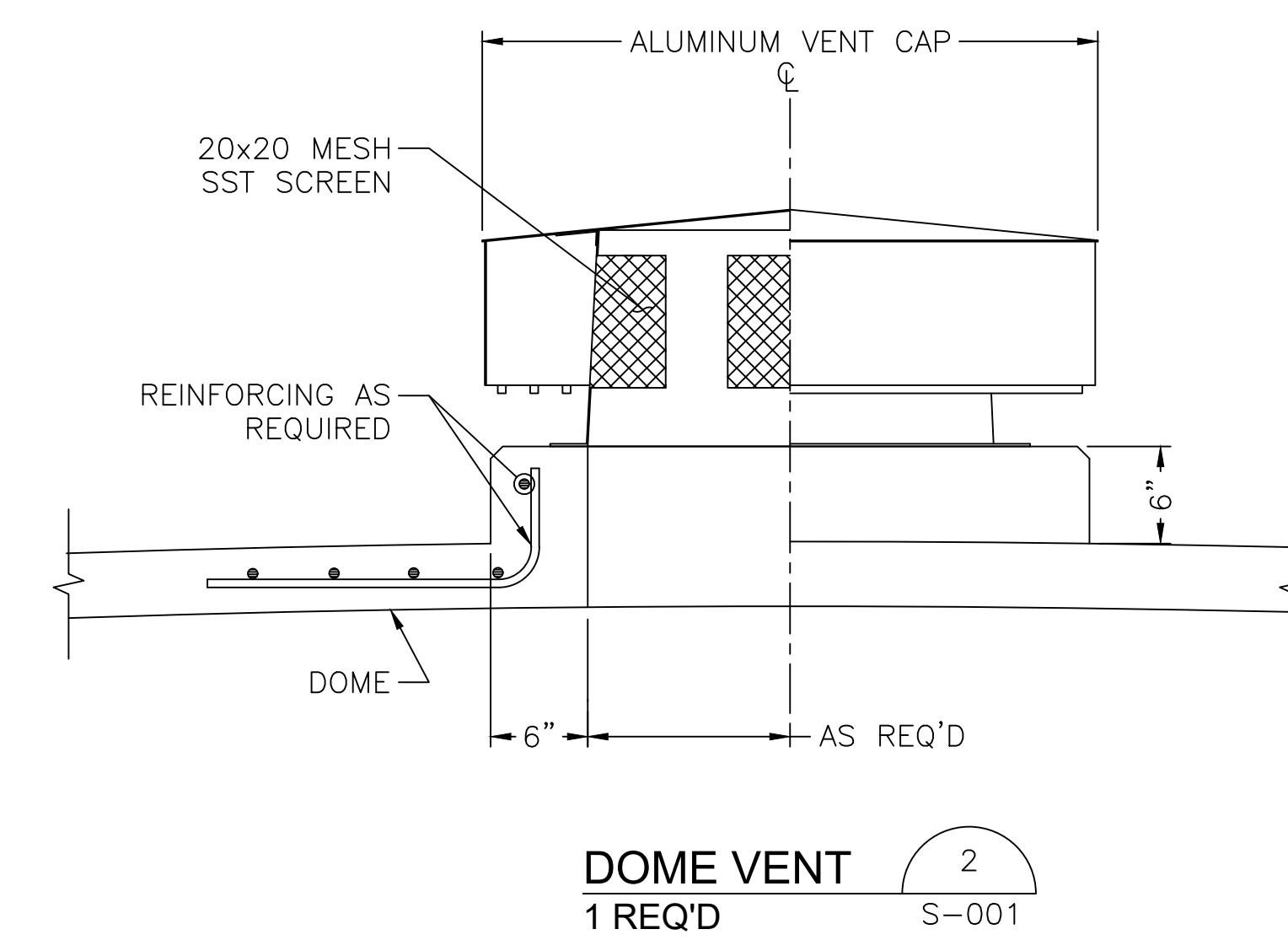
DRAWING NUMBER
S-004

DN#:	CYATES	CHK: YLUO	DATE: 09/14/23
REV:	DATE	DESIGNER	DESCRIPTION



GUARDRAIL NOTES

- 1) ALL MATERIAL FOR RAILS AND POSTS TO BE 6061-T6 ALUMINUM.
- 2) HANDRAIL FITTINGS SHALL BE SPEEDRAIL BY HOLLAENDER, INC OR EQUAL.
- 3) HORIZONTAL RAILS AND POSTS TO BE 1 1/2" SCH 80 PIPE.
- 4) HOLLAENDER BEVELED TOE BOARD SHALL BE ATTACHED TO FRONT RAIL.
- 5) USE SST FOR ALL BOLTS UNLESS NOTED OTHERWISE.
- 6) USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.



ROOF VENT NOTES:

- 1) VENT TO BE ALUMINUM.
- 2) SIZE PER PROJECT VENTING RATES.
- 3) USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.

MISSOULA, MT

ENGR.: CUSHING TERRELL
MISSOULA, MT

AWWA D110 TYPE III PRECAST CONCRETE STORAGE TANK

MISCELLANEOUS APPURTENANCES

DRAWING NUMBER
S-005