

HERRIMAN CITY - ARCHES PARK RESTROOM BUILDING

BASE BID SCHEDULE A
12101 SOUTH TOWER ARCH LANE
HERRIMAN, UT

Project Narrative

THE PROPOSED PROJECT IS A 302 SF STAND-ALONE SINGLE STORY BUILDING CONSISTING OF TWO SINGLE-OCCUPANT RESTROOMS AND AN ASSOCIATED UTILITY ROOM. CONSTRUCTION SHALL INCLUDE UNIT MASONRY (STRUCTURAL AND FACING), ROUGH CARPENTRY, METAL ROOF SYSTEMS AND ACCESSORIES, DOORS AND HARDWARE, PAINTING AND SPECIAL COATINGS, TOILET ROOM ACCESSORIES, PLUMBING AND PLUMBING FIXTURES, MINIMAL MECHANICAL SYSTEMS, ELECTRICAL (POWER AND LIGHTING), AND EXTERIOR IMPROVEMENTS, SUCH AS CONCRETE SIDEWALKS.

Project Team

OWNER
Herriman City
5355 West Herriman Main Street
Herriman, Utah 84096

ARCHITECT
SH Architecture
868 S. McClelland St., #2
Salt Lake City, Utah 84102
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STRUCTURAL
Reaveley Engineers
675 East 500 South, Suite 400
Salt Lake City, Utah 84102
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MECHANICAL
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14 East 2700 South
Salt Lake City, Utah 84115
801-486-4646

ELECTRICAL
BNA Consulting
635 South State Street
Salt Lake City, Utah 84111
801-532-2196

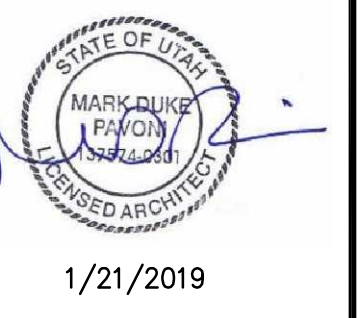
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Location



NO.	REVISION DESCRIPTION	DATE



CONSTRUCTION	DATE

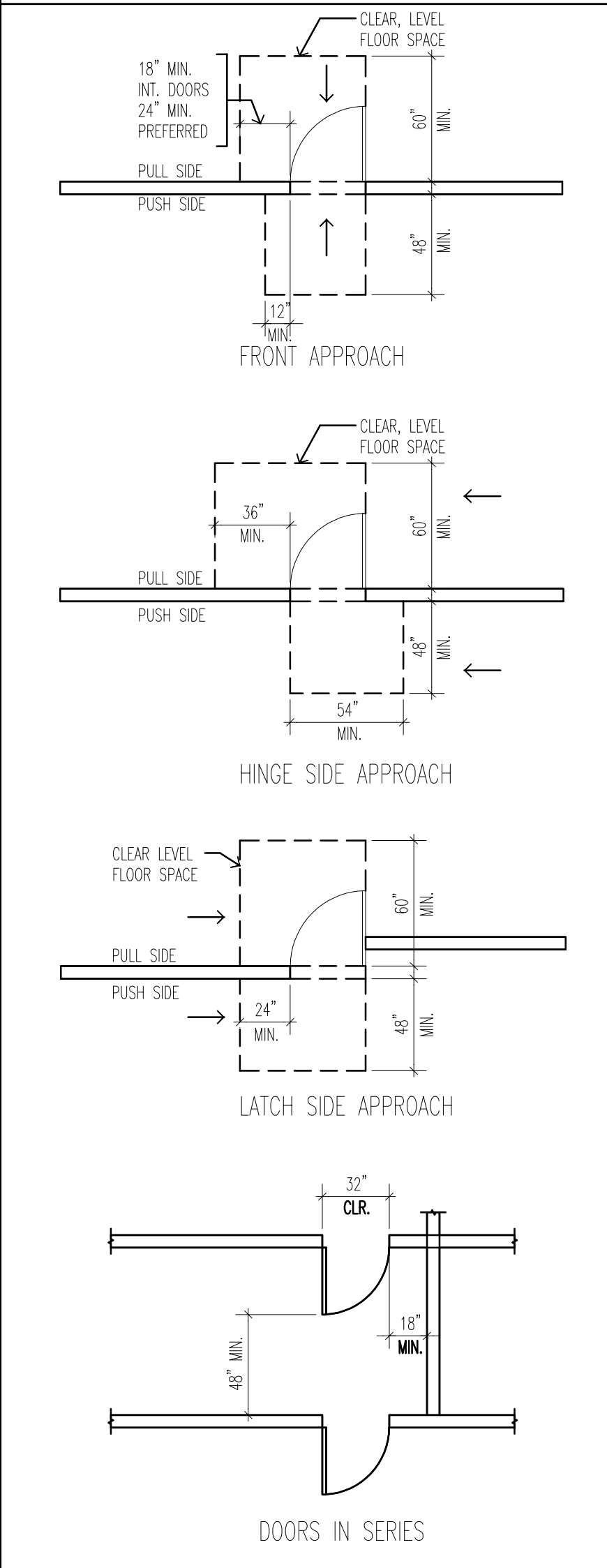
CALL BLUESTAKES
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LEAST 48 HOURS PRIOR
TO THE COMMENCEMENT
OF ANY CONSTRUCTION.
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING



HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE
COVER SHEET

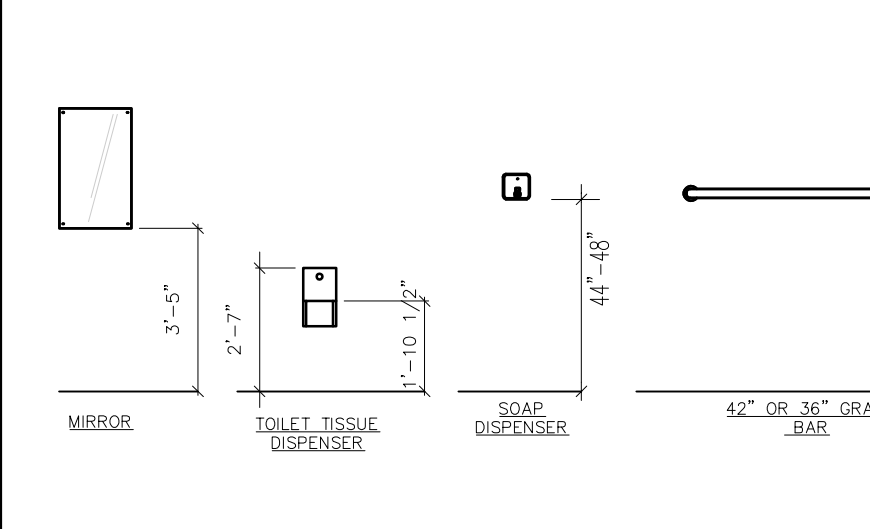
GI001

ACCESSIBILITY DIAGRAMS FOR COMMERCIAL / PUBLIC SPACES

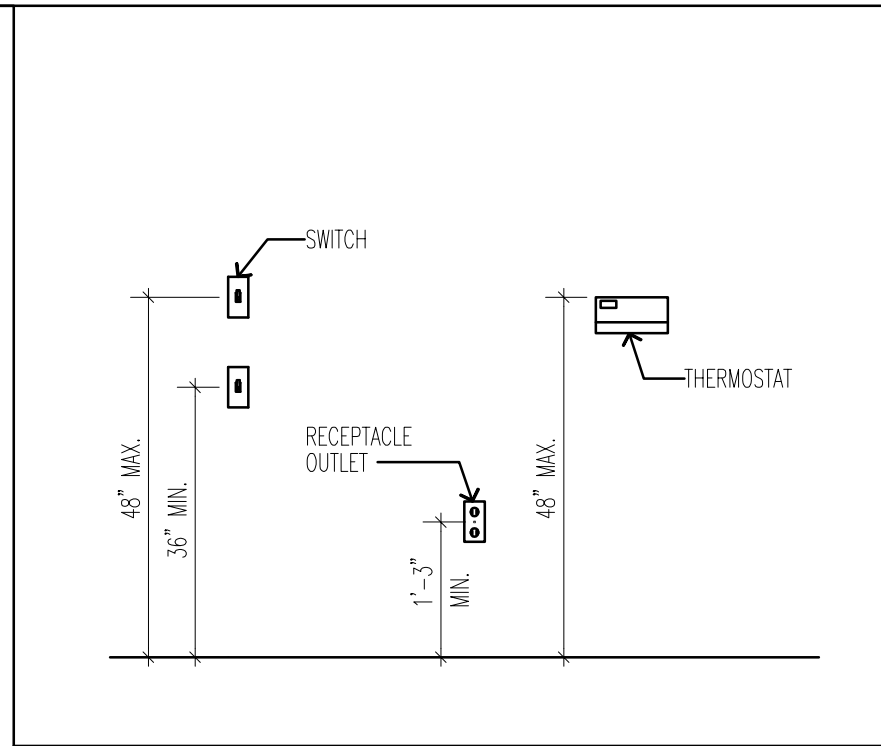


DOOR CLEARANCES

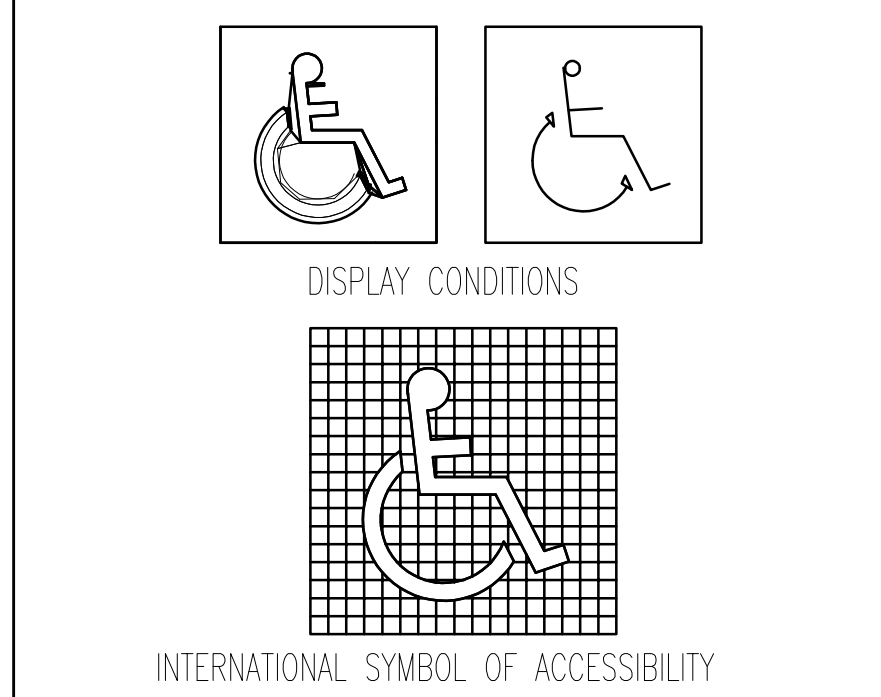
NOTE: VERIFY ALL ACCESSORY SIZE AND MOUNTING WITH MANUFACTURERS APPROVED CUT SHEETS
 TRAPS AND HOT WATER PIPES AT LAVS OR SINKS SET IN COUNTERS TO BE INSULATED.
 NOT ALL FIXTURES OR ACCESSORIES SHOWN ARE APPLICABLE TO THIS PROJECT - REFER TO PLANS ON SHEET AE101 AND INT. ELEVATIONS ON SHEET AE201 FOR SPECIFIC ITEMS, LOCATIONS AND SPECIAL CONDITIONS.



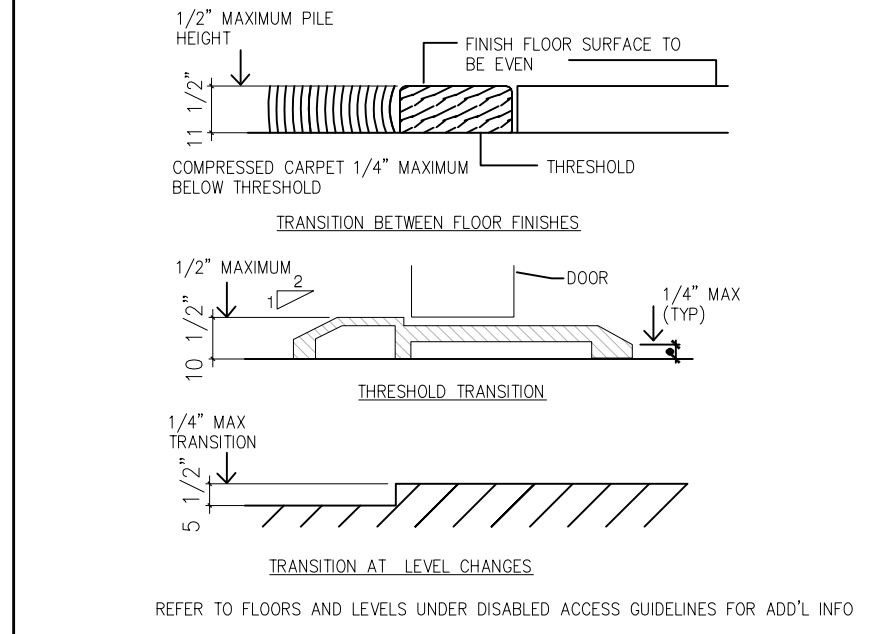
ACCESSORY MOUNTING HEIGHTS



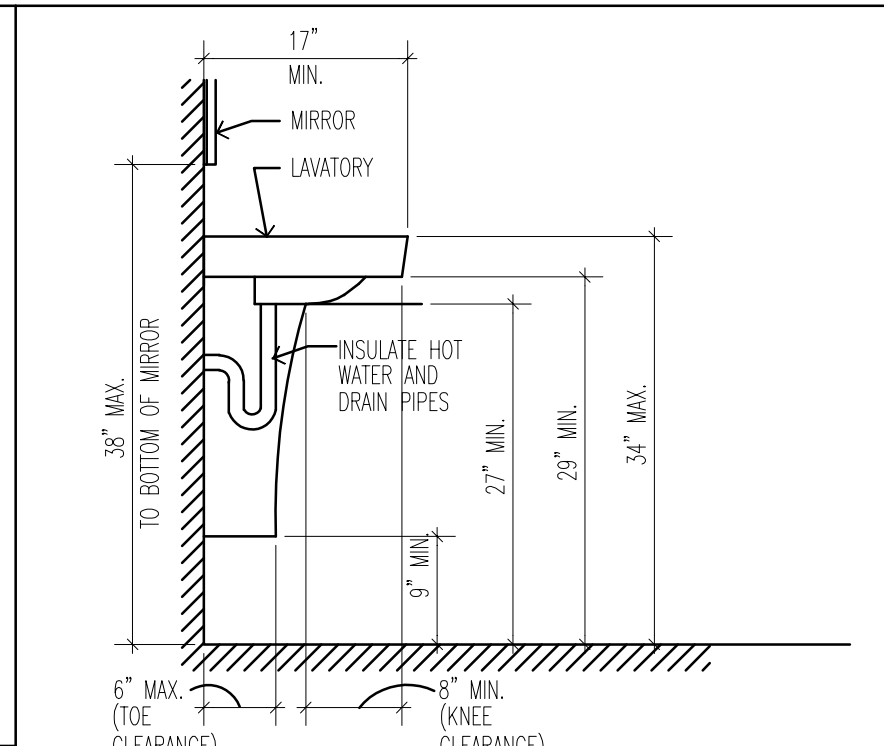
RECEPTACLES / SWITCHES



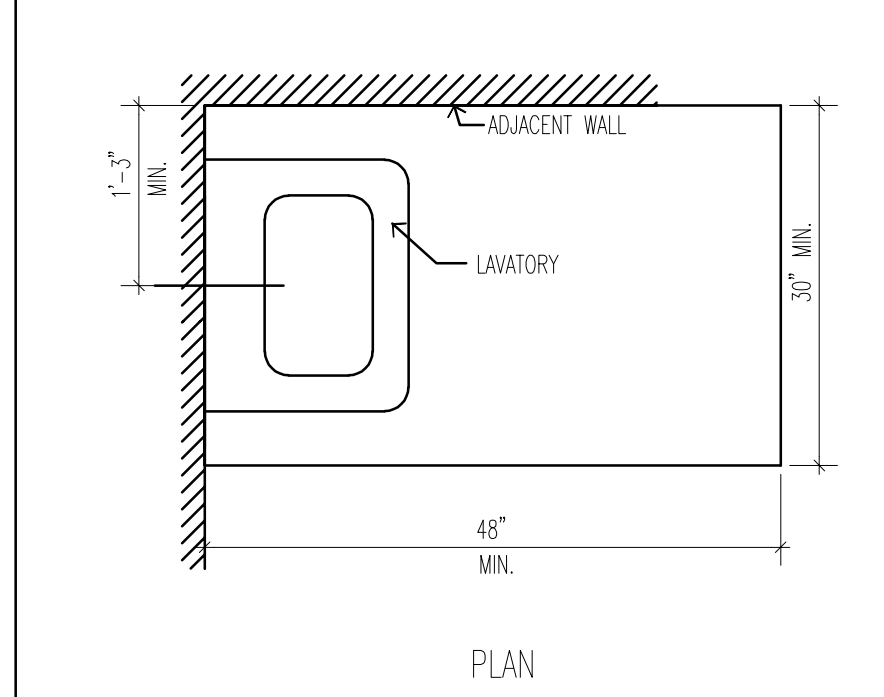
ACCESSIBILITY SYMBOL



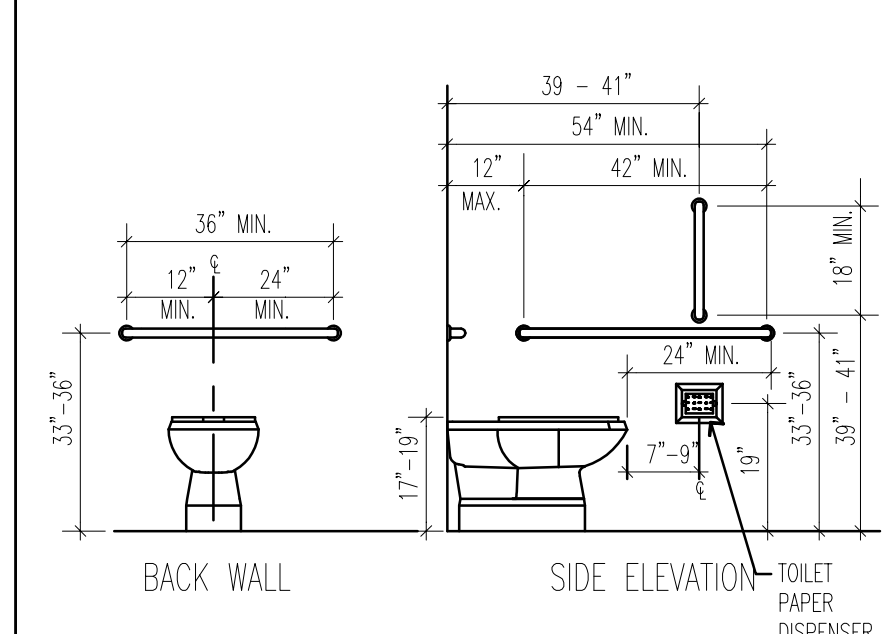
THRESHOLD / TRANSITIONS



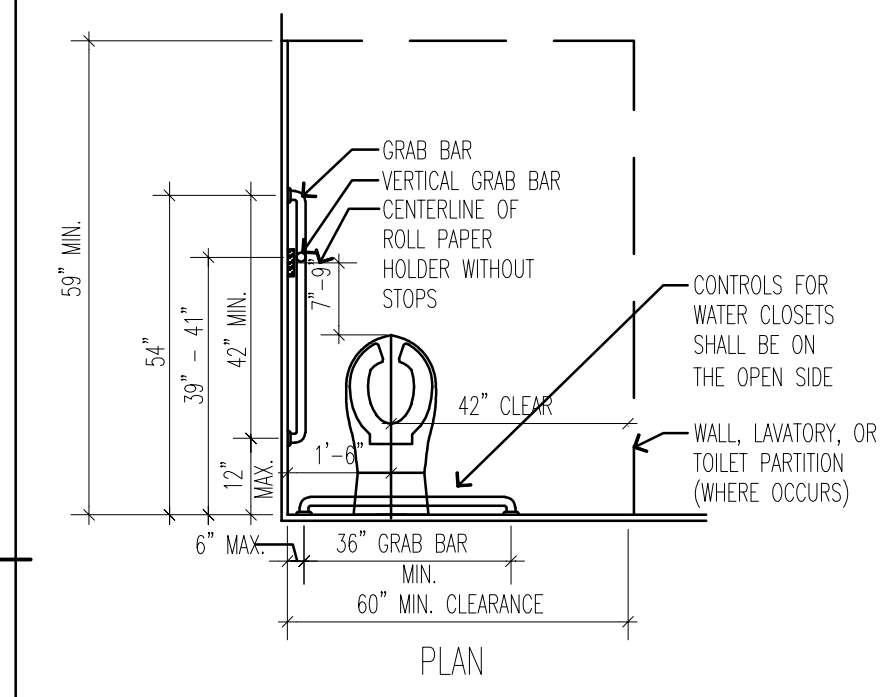
LAVATORY CLEARANCES



TOILET STALL CLEARANCES



TOILET STALL CLEARANCES



ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
B.O.	BOTTOM OF
C.L.	CENTER LINE
CLNG.	CEILING
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
COORD.	COORDINATE
CORRUG.	CORRUGATED
DEMO	DEMOLISH
DN.	DOWN
DTL.	DETAIL
EA.	EACH
ELEC.	ELECTRICAL
ELECT.	ELECTRICAL
ELEV.	ELEVATION
EXIST.	EXISTING
F.F.	FINISH FLOOR
FIN.	FINISH
FP	FLOOR PLAN
F.R.P.	FIBER REINFORCED PLASTIC
FT.	FEET
GYP. BD.	GYPSUM BOARD
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
INCL.	INCLUDED
LTG.	LIGHTING
MANUF.	MANUFACTURER
MECH.	MECHANICAL
MEZZ.	MEZZANINE
MFR.	MANUFACTURER
MIN.	MINIMUM
MTL.	METAL
N.I.C.	NOT IN CONTRACT
O.C.	ON CENTER
OPP.	OPPOSITE
PWR.	POWER
RCP	REFLECTED CEILING PLAN
REINF.	REINFORCED
REQ'D.	REQUIRED
SCHED.	SCHEDULE
SIM.	SIMILAR
S.S.	STAINLESS STEEL
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURE
T.O.	TOP OF
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UL	UNDERWRITERS LABORATORIES
UTIL.	UTILITY / UTILITIES
V.I.F.	VERIFY IN FIELD

SYMBOL LEGEND

	DATUM POINT
100	DOOR NUMBER
	WINDOW TAG
101	ROOM NUMBER
	ACCESSORY TAG
	EQUIPMENT TAG
	KEYNOTE
	NORTH ARROW
NORTH	NORTH
12 / 5	PITCH
	CEILING TAG
	FLOORING TAG
	ELEVATION TAG
0	GRID BUBBLE AND LINE
0	EXISTING GRID BUBBLE AND LINE
0	MATCH BUBBLE AND LINE
1 Ref	INTERIOR ELEVATION TAG
1 Ref	EXTERIOR ELEVATION TAG
1	REVISION TAG
1	BUILDING SECTION TAG
1	WALL SECTION TAG

MATERIAL LEGEND

	CONCRETE		MASONRY
	SAND		WOOD
	EARTH		ALUMINUM
	STEEL		RIGID INSULATION
	GRAVEL TYPE - I		BATT INSULATION
	GRAVEL TYPE - II		PLYWOOD

DATE	
REVISION DESCRIPTION	
NO.	
1/21/2019	
CONSTRUCTION	
SUBMITTAL	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	1/21/2019
RELEASE:	1/11/19
PLOT DATE:	
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HERRIMAN CITY ENGINEERING DEPARTMENT ARCHES PARK RESTROOM BUILDING 12101 SOUTH TOWER ARCH LANE GENERAL NOTES & ADA GUIDE LINES	
G1002	

CODE INFORMATION

PROJECT INFORMATION:
 The proposed project is a 302 SF stand-alone single story building consisting of two single occupant restrooms, an associated utility room. Construction shall include unit masonry (structural and facing), rough carpentry, metal roof systems and accessories, doors and hardware, painting and special coatings, toilet room accessories, plumbing and plumbing fixtures, mechanical systems, electrical (power and lighting), and exterior improvements, such as concrete sidewalks.

Applicable Codes	Year	Year	
International Building Code	2015	International Mechanical Code	2015
International Existing Building Code	2015	International Plumbing Code	2015
International Fire Code	2015	Energy Code IECC	2015
ADA Accessibility Guidelines		NEC Electrical Code	2014
IBC Chapter 11	2015		
A.N.S.I. Standard A117.1	2009		

A. Occupancy and Group U occupancy
 Change In Use Yes _____ No X Mixed Occupancy Yes _____ No X

B. Type of Construction I I II II III III IV V V
 A B A B A B H.T. A B

C. Sprinklered None Existing

D. Location of Property F.R. Ext. Walls (Hrs.) 10' < 0 HR < 30' Ext. Wall Opening (s) Protection (Hrs.) 30' > UP.

E. Occupancy Separation Required (Hrs) None

F. Areas and Heights:
 Occupancy U
 Sprinklered Yes or (No)
 Actual Number of Stories/Height 1 Stories / 15.25 feet
 Tabular Building Height (Table 504.3) 55 feet
 Tabular Number of Stories (Table 504.4) 2
 Actual Area of Building (Combined Total) 302 S.F.
 Largest Floor Footprint (Main Floor) 302 S.F.
 Tabular Area per Floor (Table 506.2) 9,000 SF

G. Fire Resistive Requirements (Hrs)
 Exterior Bearing Walls 0 HR Floors - Ceiling Floors 0 HR
 Interior Bearing Walls 0 HR Roofs - Ceiling Roofs 0 HR
 Exterior Non-Bearing Walls 10' < 0 HR < 30' Exterior Doors and Windows AS REQ'D BY SECT. 7
 Structural Frame 0 HR Shaft Enclosures 2 HR
 Non Bearing Interior Walls 0 HR.

BUILDING AND FLOOR AREAS	
FLOOR	SQ. FT (GROSS)
MAIN LEVEL	302 sf
BUILDING TOTAL	302 sf

NO.	REVISION DESCRIPTION	DATE



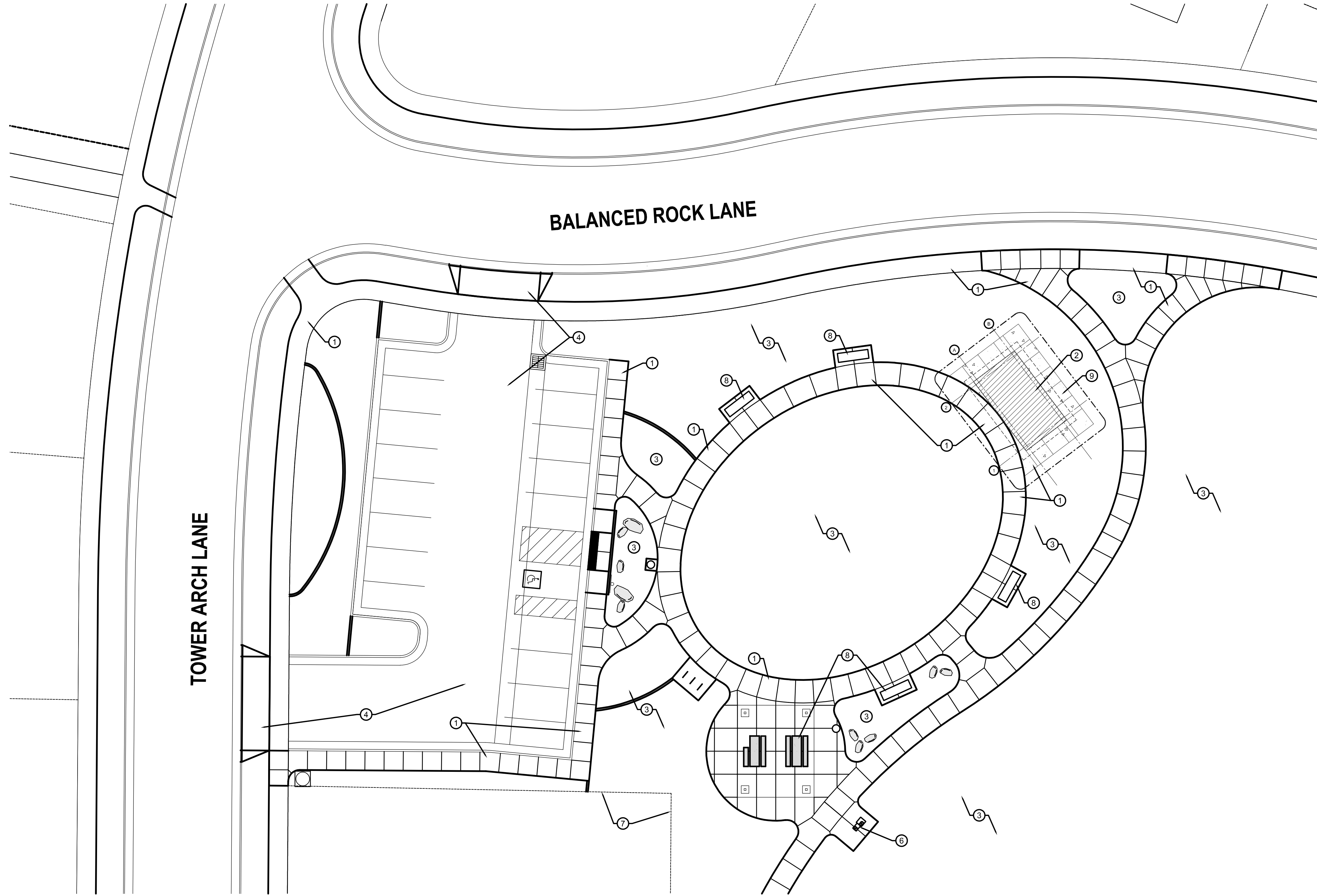
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HERRIMAN CITY
ENGINEERING DEPARTMENT
 ARCHES PARK RESTROOM BUILDING
 12101 SOUTH TOWER ARCH LANE
CODE INFORMATION

G1003



GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF FINISHED FACE OR CENTER LINE OF GRIDS UNLESS NOTED OTHERWISE. ALL CLEAR DIMENSIONS ARE FROM FACE OF FINISH.
2. PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING BUT NOT LIMITED TO DIMENSIONS, UTILITY LOCATIONS AND UTILITY SIZES.
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4. ALTHOUGH NOTES MAY BE GIVEN ONLY ONCE, MANY NOTES ARE TYPICAL FOR SIMILAR DETAILS AND CONDITIONS.
5. SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.

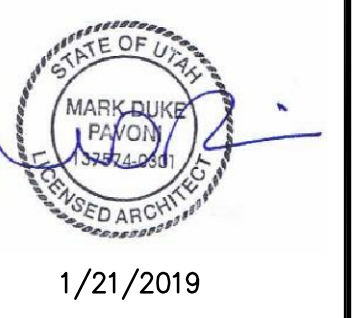
REFERENCE NOTES

1. CONCRETE WALK, COORD. W/ CIVIL (BY OTHERS).
2. NEW RESTROOM BUILDING, COORD. LOCATION AND ORIENTATION W/ CIVIL.
3. LANDSCAPING, BY OTHERS.
4. PARKING LOT AND DRIVE, BY OTHERS.
5. EXISTING ROADWAY AND CURB & GUTTER.
6. DRINKING FOUNTAIN, BY OTHERS.
7. ADJACENT PROPERTY LINE, COORD. W/ CIVIL.
8. SITE FURNITURE, BY OTHERS.
9. NEW 4" CONCRETE SIDEWALK ON 4" WASHED GRAVEL, COORD. W/ CIVIL.

LEGEND

- PROJECT LIMIT LINE
- NEW 4" CONCRETE SIDEWALK ON 4" WASHED GRAVEL, COORD. W/ CIVIL

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 12101 SOUTH TOWER ARCH LANE
ARCHITECTURAL SITE PLAN

AS101



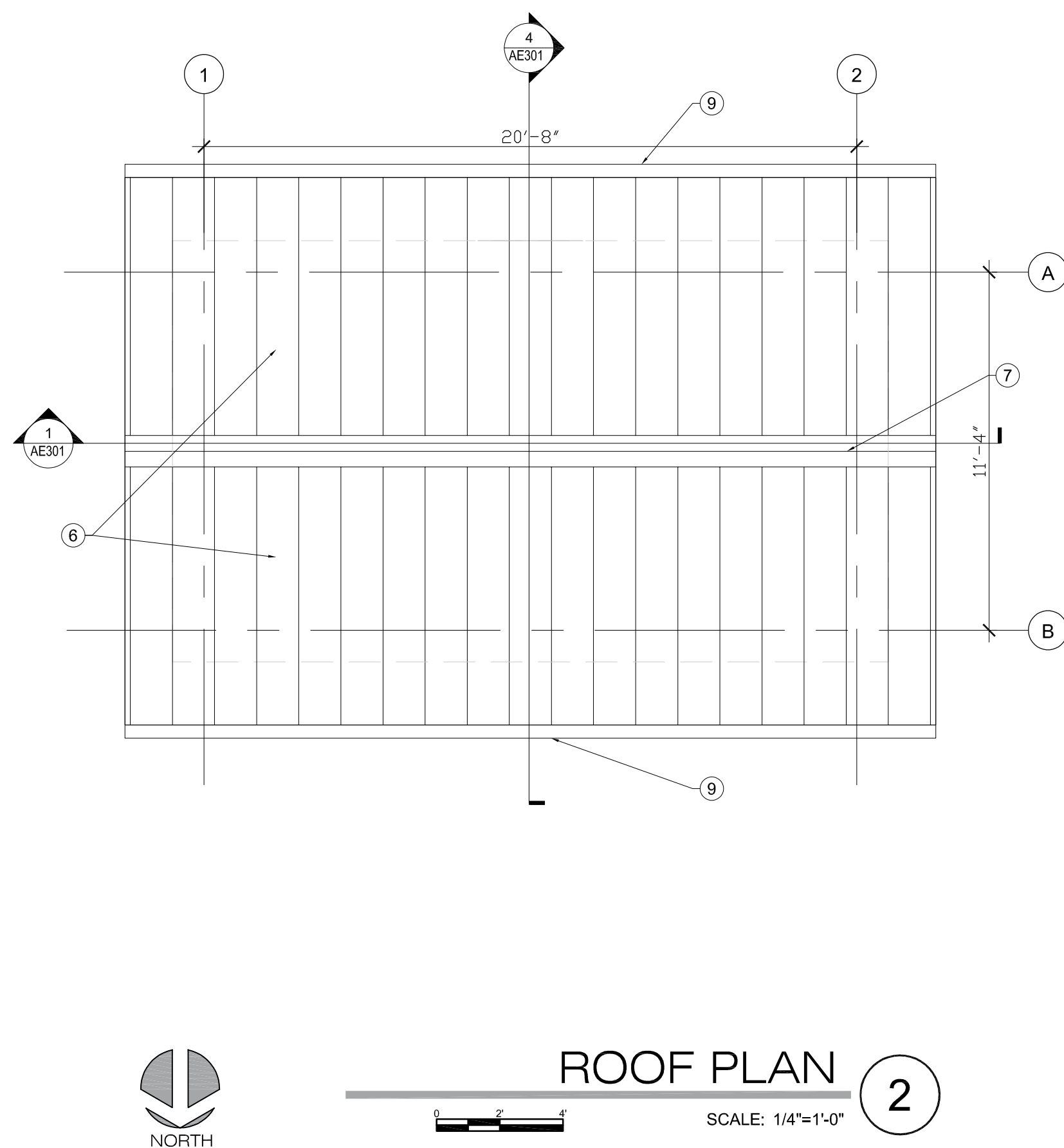
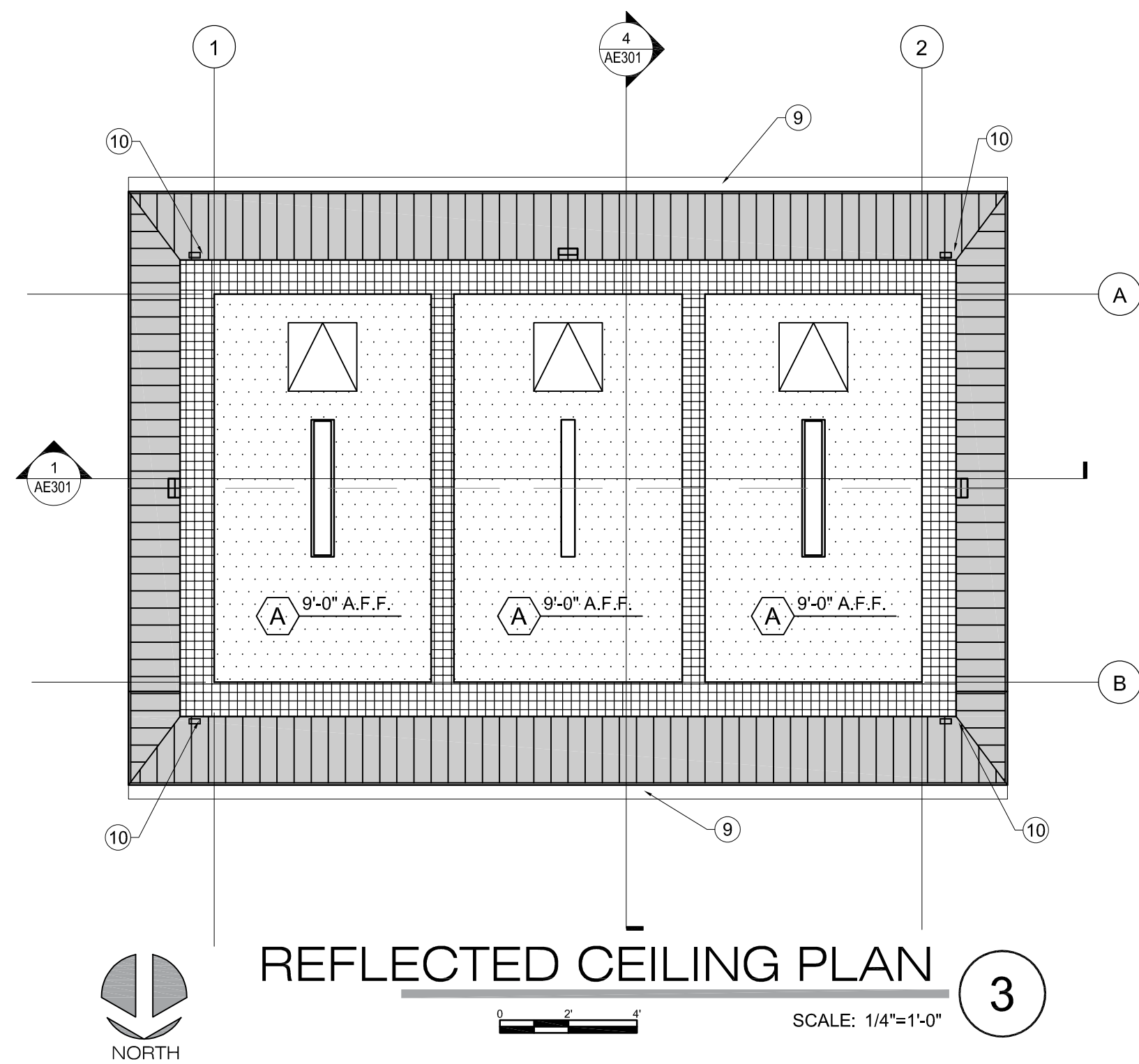
ARCHITECTURAL SITE PLAN



SCALE: 1/16"=1'-0"

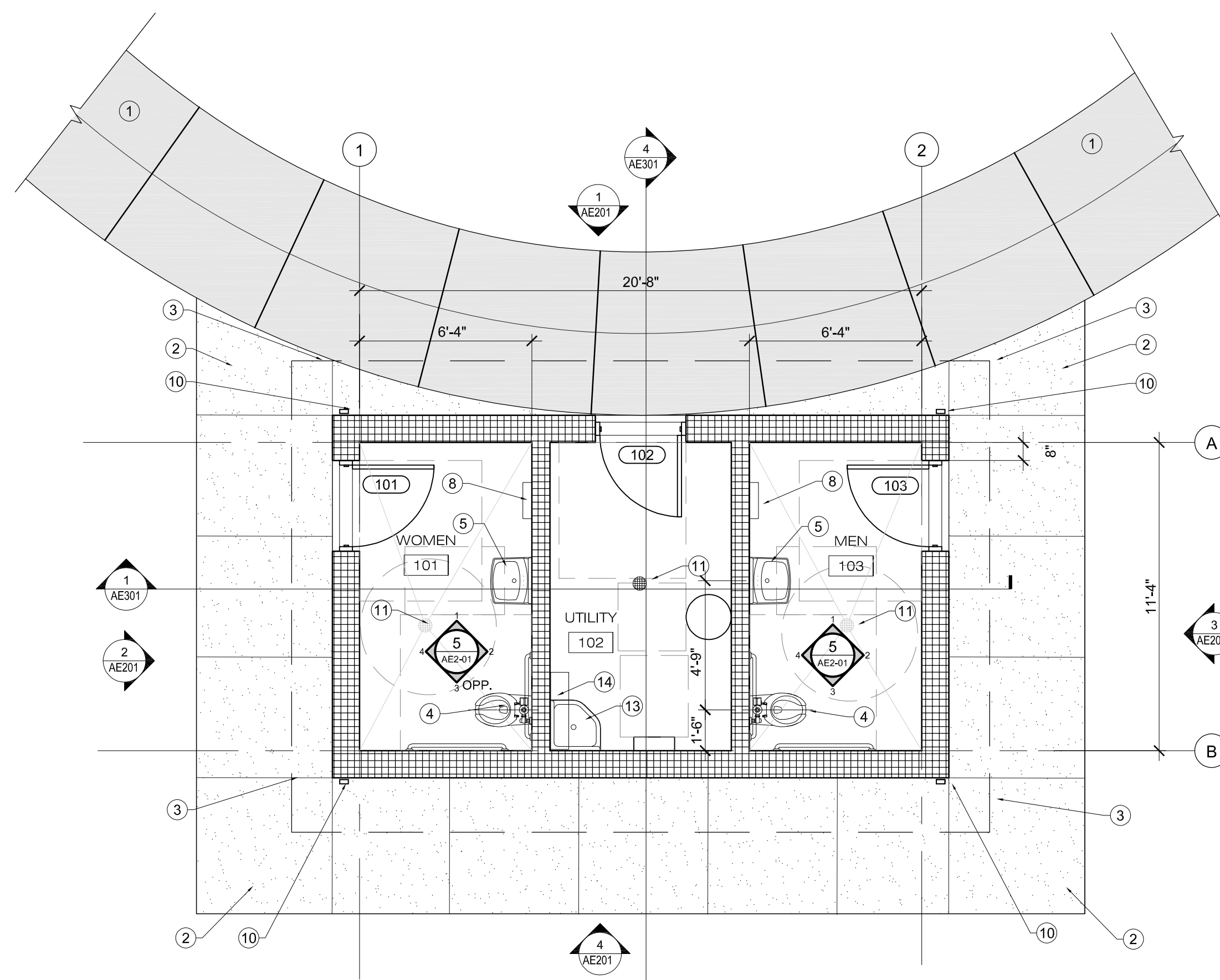
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FINISH SCHEDULE									
No.	ROOM	FLOOR	BASE	WALLS				CEILING	NOTES
				NORTH	EAST	SOUTH	WEST		
101	WOMEN	F-02	F-02	P-01	P-01	P-01	P-01	C-01	DOORS & FRAMES TO BE P-02
102	UTILITY	F-01	F-01	P-01	P-01	P-01	P-01	C-01	DOORS & FRAMES TO BE P-02
103	MEN	F-02	F-02	P-01	P-01	P-01	P-01	C-01	DOORS & FRAMES TO BE P-02

FINISH KEY						
KEY	ITEM	MANUFACTURER	SIZE	PRODUCT #	COLOR NAME	COMMENT
F-01	CONCRETE, SEALED	KELLY-MOORE PAINTS	-	98 MULTI SEAL	ACRYLIC SEALER	2-COAT SYSTEM (PRIMER & FINISH)
F-02	EPOXY FLOOR SYSTEM	GENERAL POLYMERS	-	CERAMIC CARPET	TBD	1/8" SYSTEM - FULL RANGE OF MFR. COLORS
P-01	CMU, SEALED	KELLY-MOORE PAINTS	-	98 MULTI SEAL	ACRYLIC SEALER	2-COAT SYSTEM (PRIMER & FINISH)
P-02	PAINT	SHERWIN WILLIAMS	-	TBD	TBD	-
C-01	CEILING	SHERWIN WILLIAMS	-	TBD	TBD	-



GENERAL NOTES

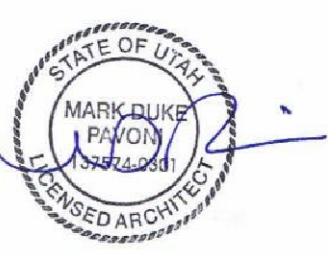

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- ALTHOUGH NOTES MAY BE GIVEN ONLY ONCE, MANY NOTES ARE TYPICAL FOR SIMILAR DETAILS AND CONDITIONS.
- SEE STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.

REFERENCE NOTES

- CONCRETE WALK BY OTHERS, COORD. WITH CIVIL.
- NEW 6" CONCRETE SIDEWALK ON 6" UNTREATED BASE (PER HERRIMAN CITY STANDARD DETAIL RD-08)
- ROOF EAVE ABOVE
- WATER CLOSET, COORD. WITH PLUMBING.
- LAVATORY, COORD. WITH PLUMBING.
- PRE - FINISHED METAL STANDING SEAM ROOFING SYSTEM ON CONT. SELF ADHERENT UNDERLAYMENT
- PRE - FINISHED METAL RIDGE VENT.
- HAND DRYER, COORD. WITH ELECTRICAL.
- PRE - FINISHED METAL GUTTER.
- PRE - FINISHED METAL DOWN SPOUT.
- FLOOR DRAIN, COORD. WITH PLUMBING.
- TYPE 'X' GYPSUM BOARD ON TREATED 2x4 FRAMING @ 16" O.C., PAINT.
- CUSTODIAL SINK, COORD. W/ PLUMBING.
- UTILITY SHELF W/ MOP HOLDER, BOBRICK, B-239.

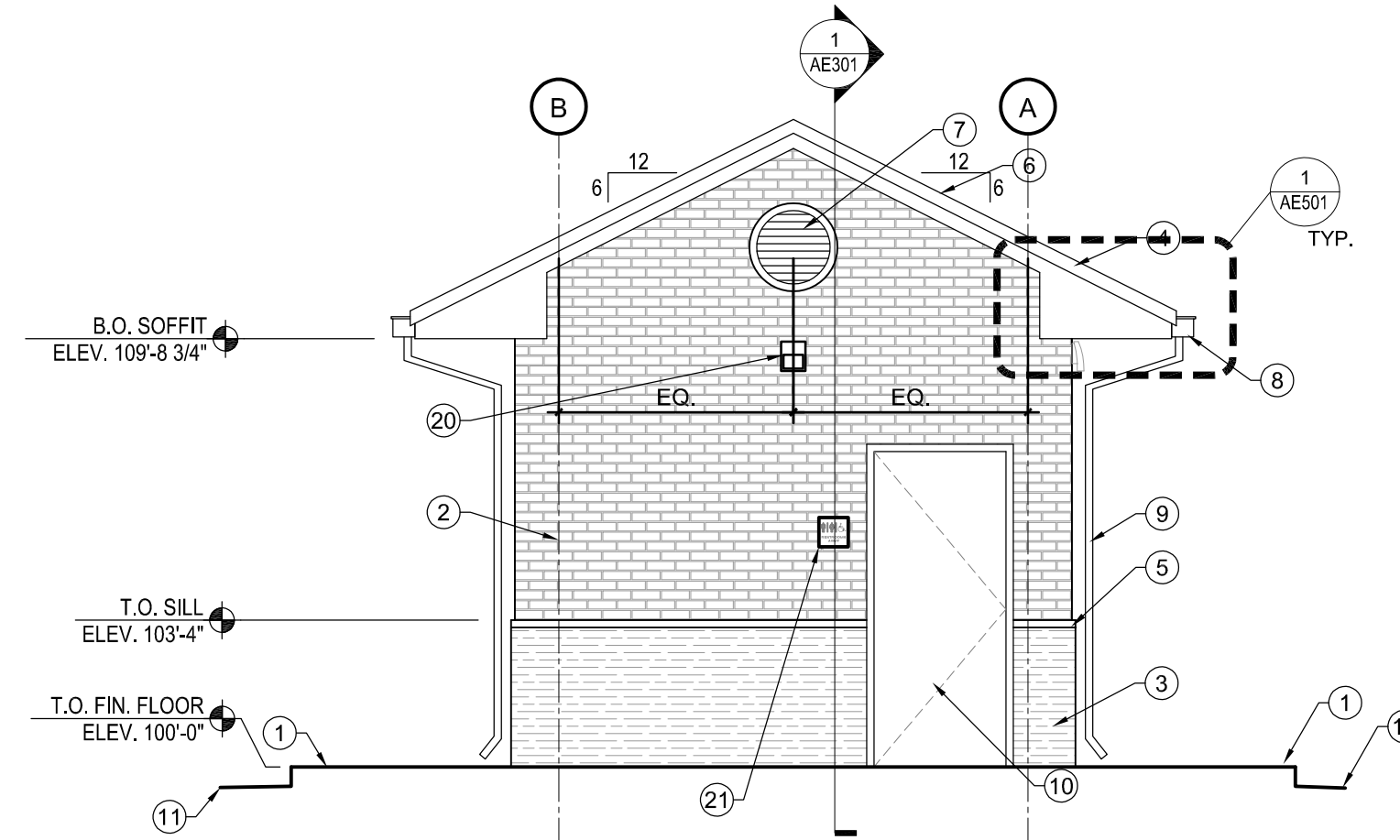
LEGEND

- MASONRY WALL W/ VENEER, COORD. W/ STRUCTURAL
- NEW 4" CONCRETE SIDE WALK ON 4" WASHED GRAVEL COORD WITH CIVIL
- PAINTED 5/8" TYPE 'X' GYPSUM BOARD
- CONCRETE WALK BY OTHERS. COORD W/ CIVIL
- 24" X 24" CEILING ACCESS PANEL, PAINT COORDINATE FINAL LOCATION WITH OWNER
- HEIGHT CEILING TAG

DATE									
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 1/21/2019									
SUBMITTAL	CONSTRUCTION								
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HERRIMAN CITY ENGINEERING DEPARTMENT ARCHES PARK RESTROOM BUILDING 12101 SOUTH TOWER ARCH LANE FLOOR PLAN & ROOF PLAN									
AE101									

GENERAL NOTES

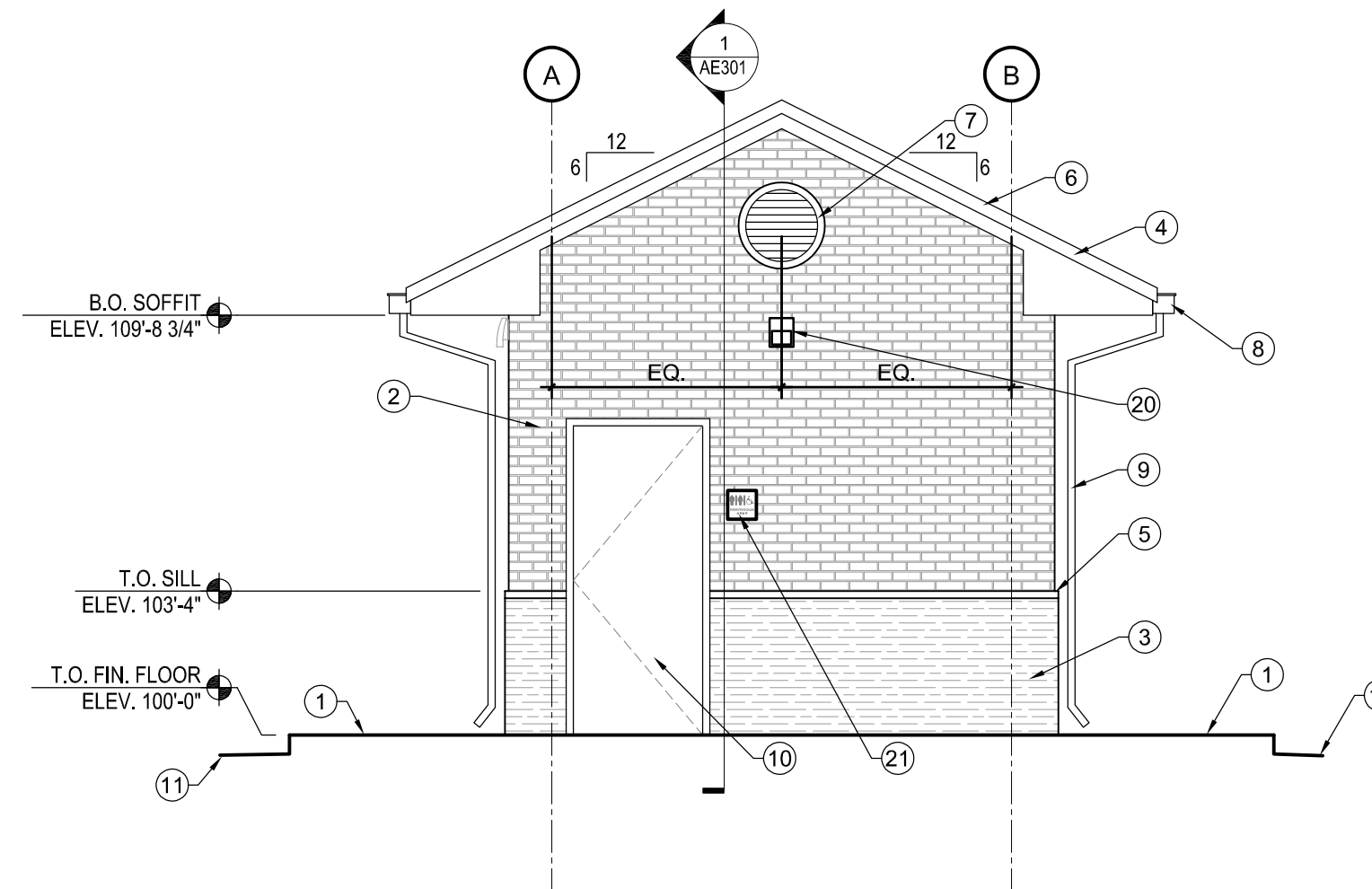
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ELEVATION - WEST

SCALE: 1/4"=1'-0"

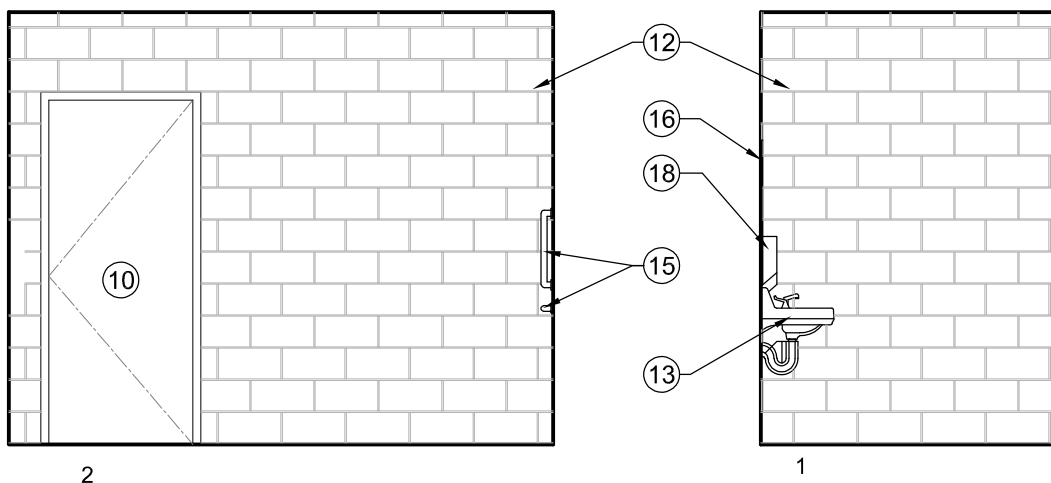
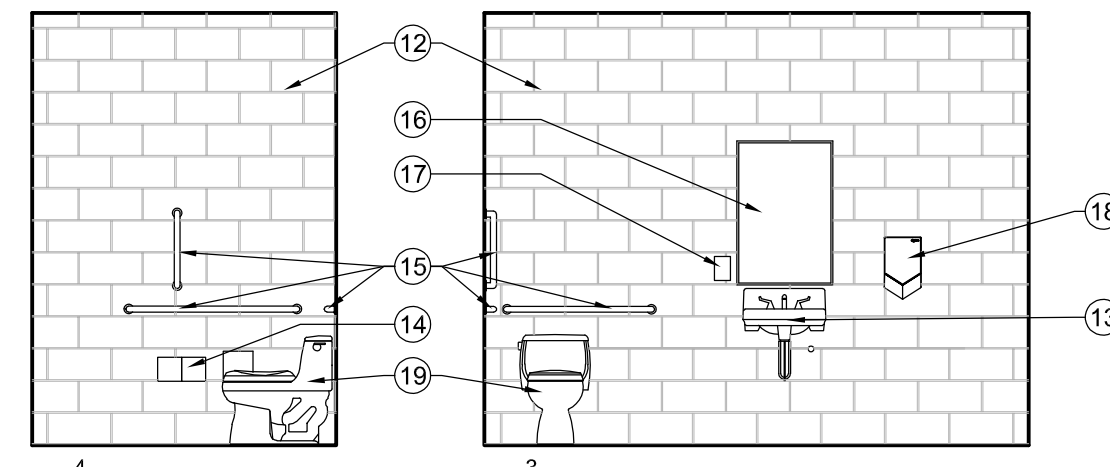
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ELEVATION - EAST

SCALE: 1/4"=1'-0"

2



INTERIOR ELEVATIONS - TYP.

SCALE: 1/4"=1'-0"

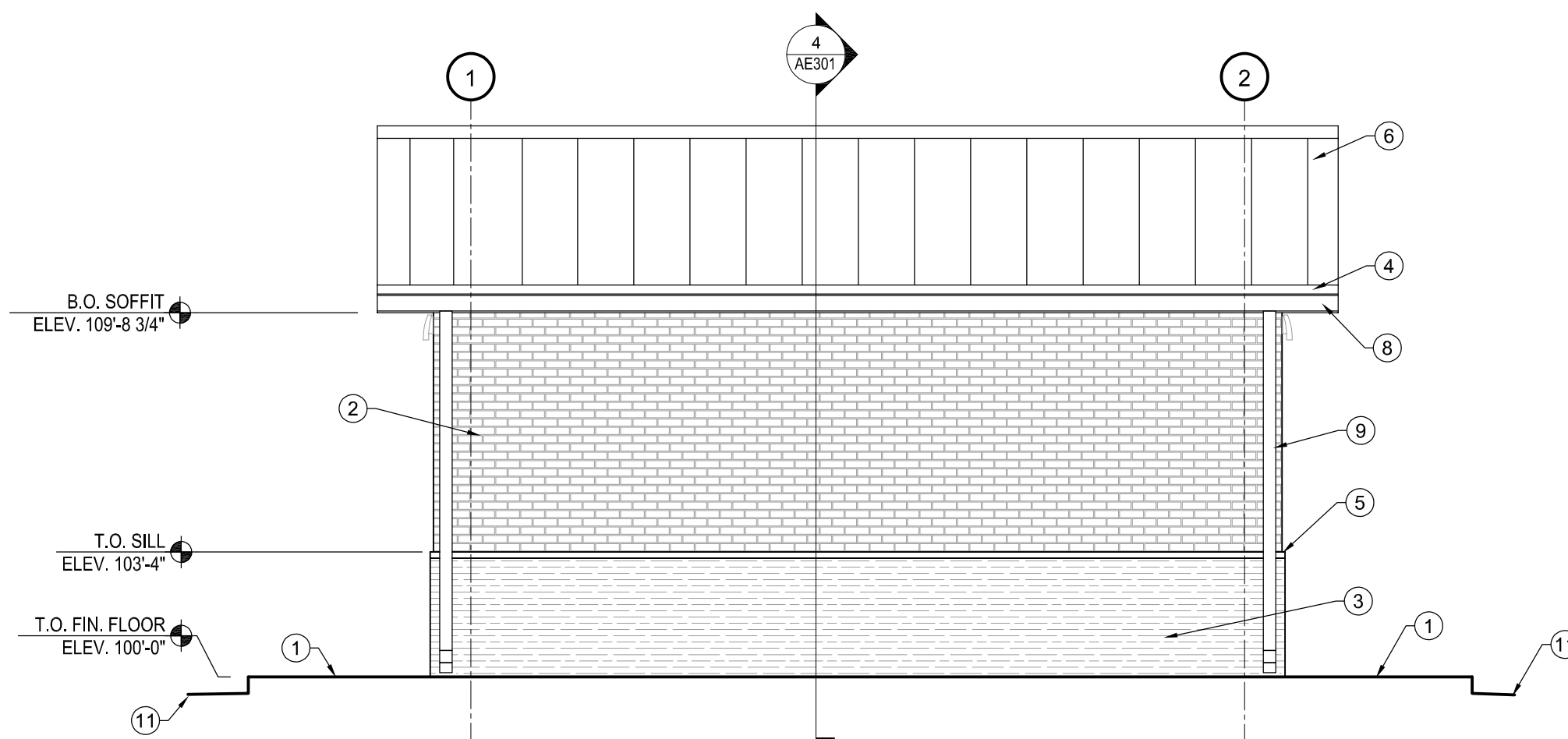
5

REFERENCE NOTES

1. CONCRETE SIDEWALK.
2. BRICK VENEER
3. CULTURED STONE VENEER SYSTEM.
4. PRE FINISH METAL FASCIA.
5. PRECAST SILL.
6. PRE FINISH METAL STANDING SEAM ROOFING SYSTEM.
7. PRE - FINISHED METAL LOUVER. SEE DETAIL 6/AE601
8. PRE - FINISHED METAL GUTTER.
9. PRE - FINISHED METAL DOWNSPOUT.
10. DOOR AS SCHEDULED.
11. GRADE , COORDINATE WITH CIVIL.
12. HONED/COLORED CMU, SEALED.
13. LAVATORY W/ UNDER SINK PIPING PROTECTION.
14. TOILET PAPER DISPENSER, BOBRICK B-2892.
15. GRAB BAR, BOBRICK B-6806
16. MIRROR, BOBRICK B-1556, 24" X 36".
17. SOAP DISPENSER, BOBRICK B-2111.
18. ELECTRIC HAND DRYER, BOBRICK B-7128.
19. WATER CLOSET
20. EXTERIOR LIGHT FIXTURE '0A' COORDINATE WITH ELECTRICAL
21. ADA ACCESSIBILITY SIGN, SEE DETAIL 1/AE601

LEGEND

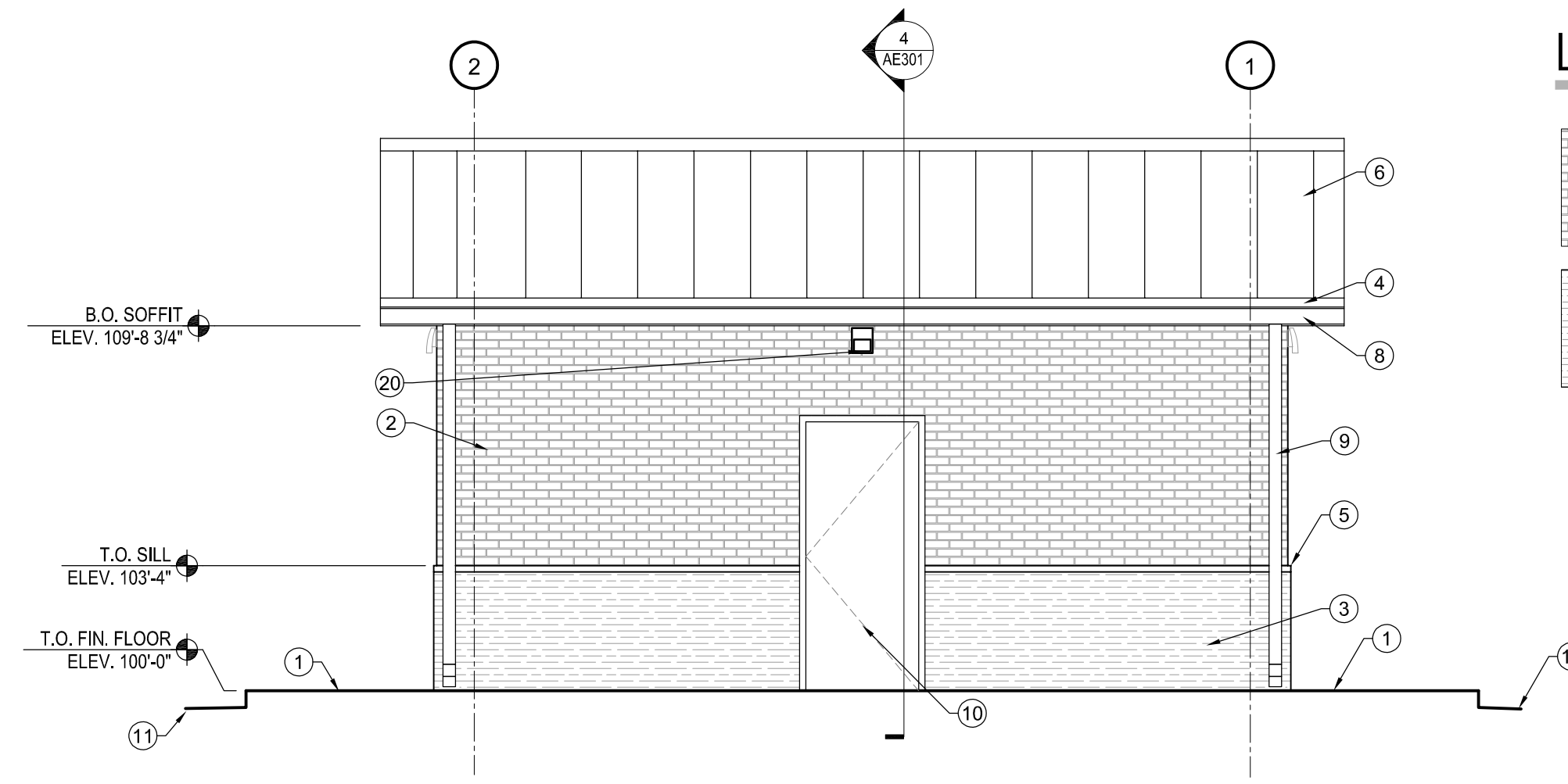
- MASONRY VENEER
- CULTURED STONE VENEER



ELEVATION - NORTH

SCALE: 1/4"=1'-0"

4



ELEVATION - SOUTH

SCALE: 1/4"=1'-0"

1

NO.	REVISION DESCRIPTION	DATE



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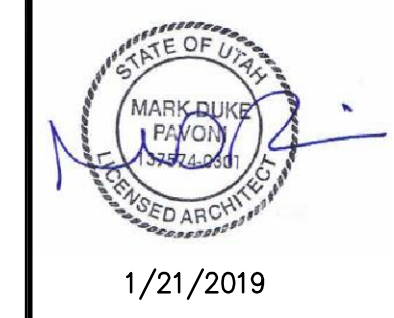
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 ARCHES PARK RESTROOM BUILDING
 12101 SOUTH TOWER ARCH LANE
 BUILDING EXTERIOR AND INTERIOR ELEVATIONS

AE201

REFERENCE NOTES

1. GRADE, COORDINATE W/ CIVIL.
2. CONCRETE FOOTING, COORD. W/ STRUCTURAL.
3. ROOF SHEATHING, COORD. W/ STRUCTURAL.
4. CONC. SLAB, COORD. W/ STRUCTURAL.
5. ROOF TRUSS SYSTEM, COORD. W/ STRUCTURAL.
6. PRE-FINISHED METAL STANDING SEAM ROOFING SYSTEM W/ CONT. SELF-ADHERENT UNDERLAYMENT.
7. MASONRY VENEER.
8. CONT. 1" AIR GAP.
9. PRECAST CONCRETE SILL.
10. CONCRETE MASONRY UNIT, COORD. W/ STRUCTURAL.
11. CULTURED STONE VENEER.
12. COMPACTED GRAVEL, COORD. W/ STRUCTURAL.
13. 5/8" TYPE 'X' GYP. ON TREATED 2x4 FRAMING @ 16" O.C..
14. PRE-FINISHED METAL LOUVER.
15. DOOR - SEE DOOR SCHEDULE.
16. PRE-FINISHED METAL DOWN SPOUT, RECTANGULAR.
17. CONCRETE SIDEWALK.
18. 2x FRAMING @ 16" O.C.
19. NOT USED
20. LAVATORY W/ UNDER SINK PIPING PROTECTION, COORD. W/ PLUMBING.
21. EPOXY FLOOR & BASE FINISH.
22. CONT. BITUMINOUS DAMP PROOFING

NO.	REVISION DESCRIPTION	DATE



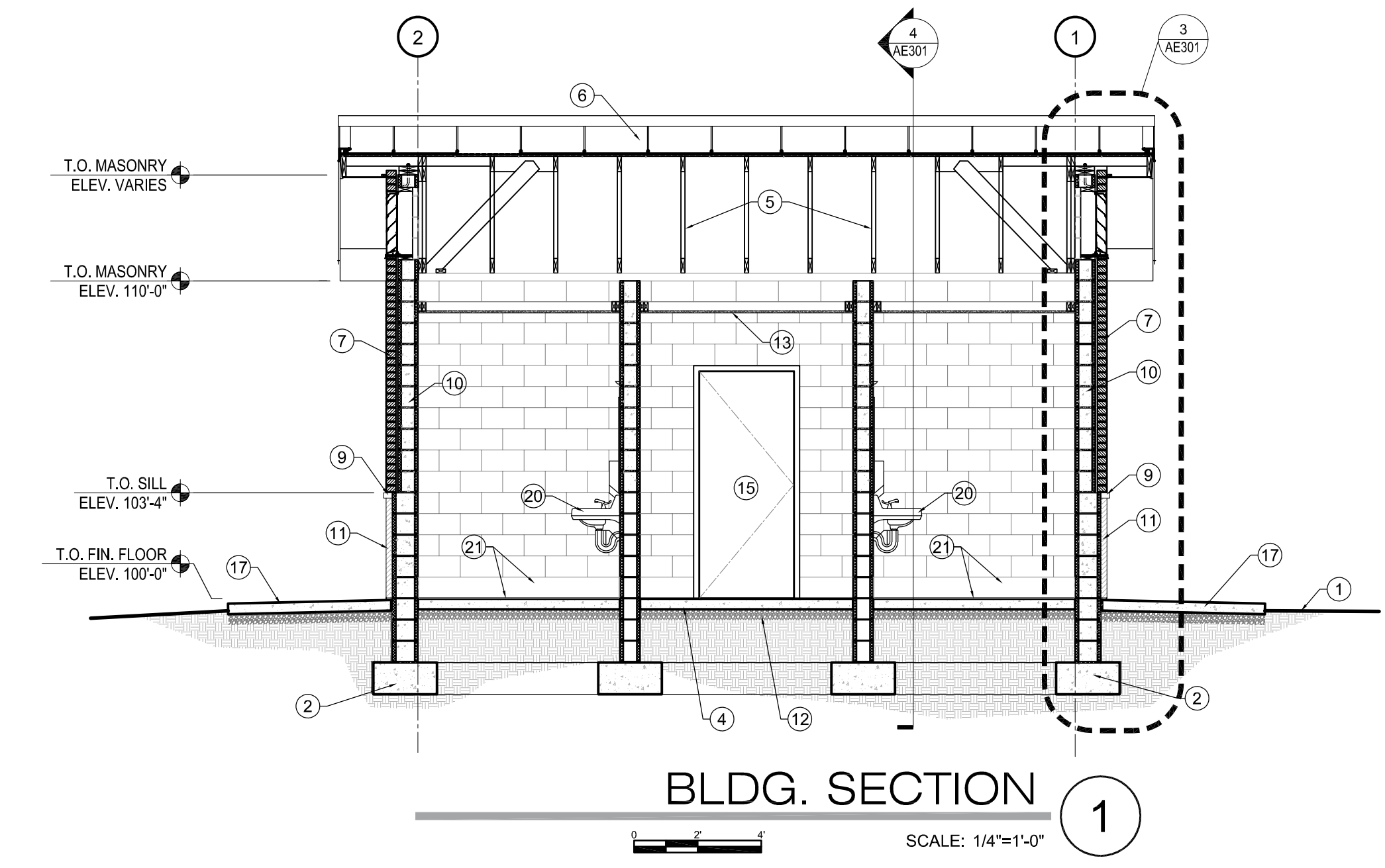
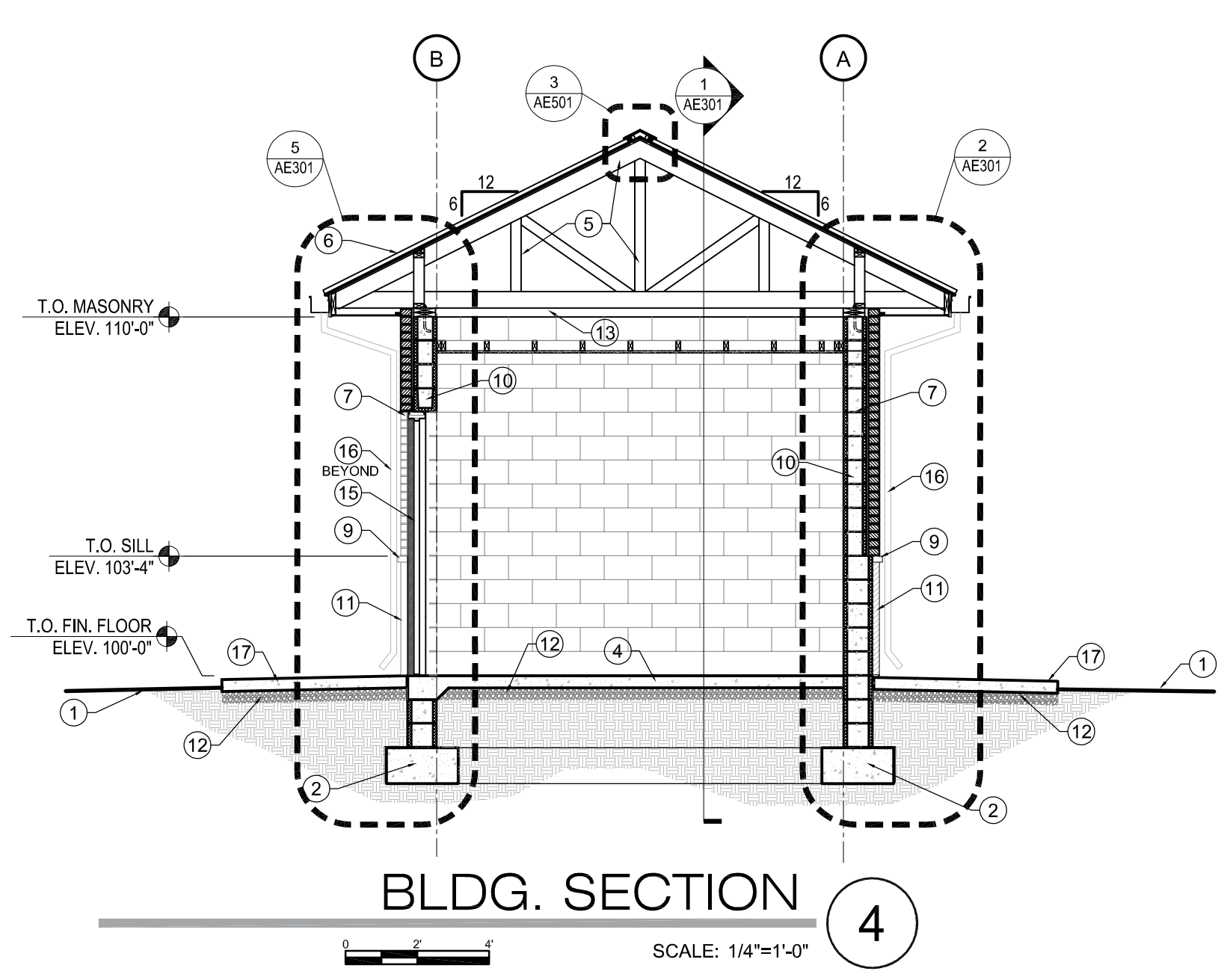
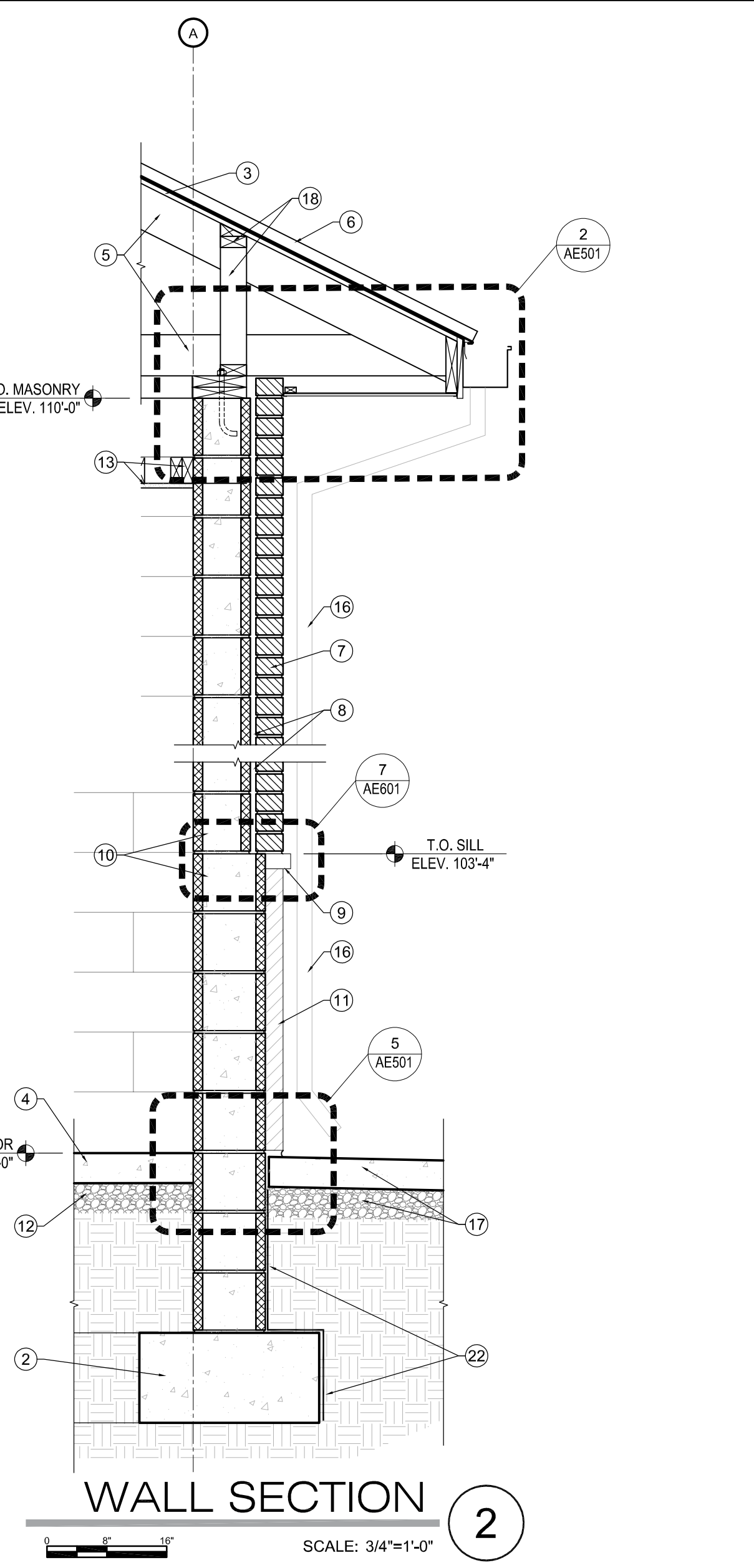
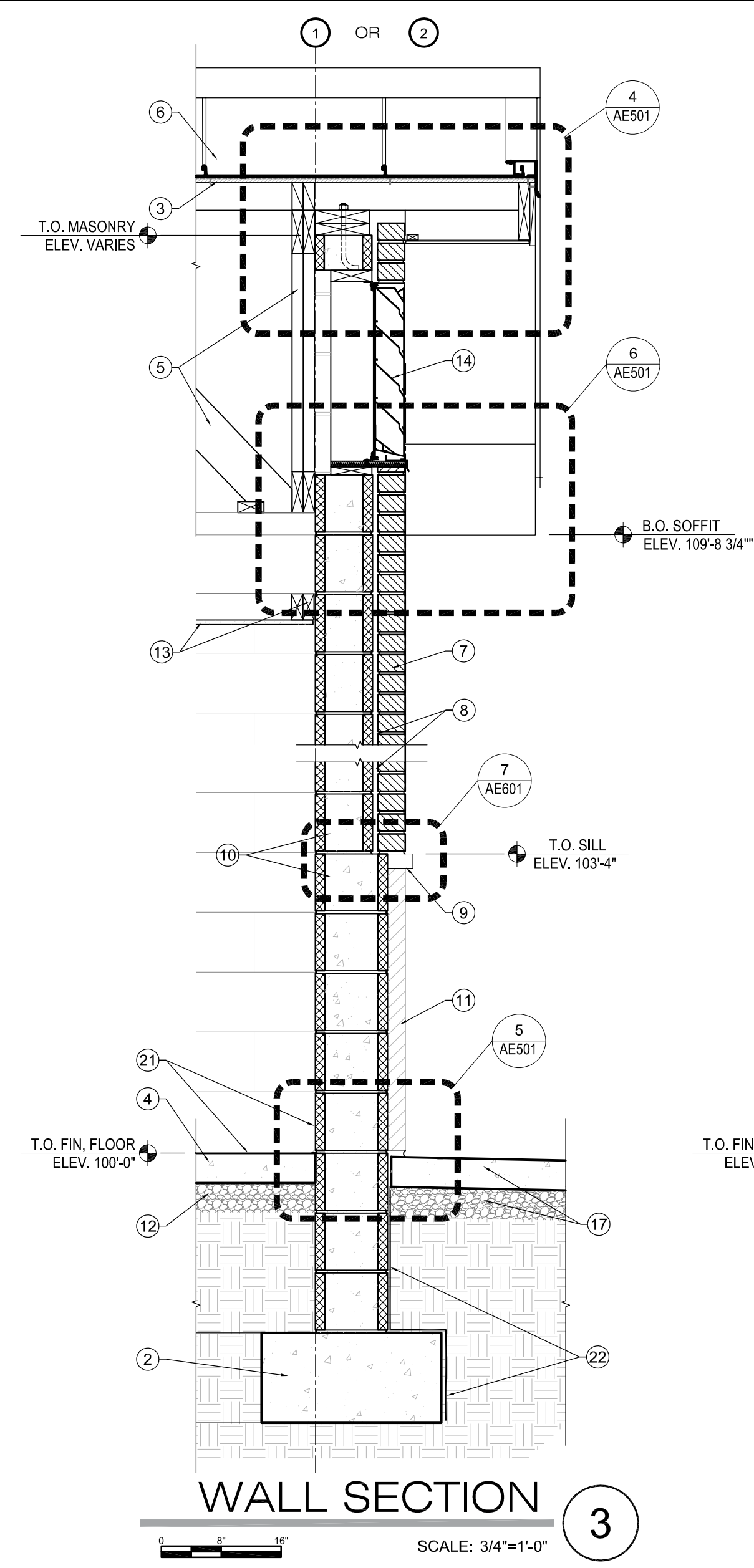
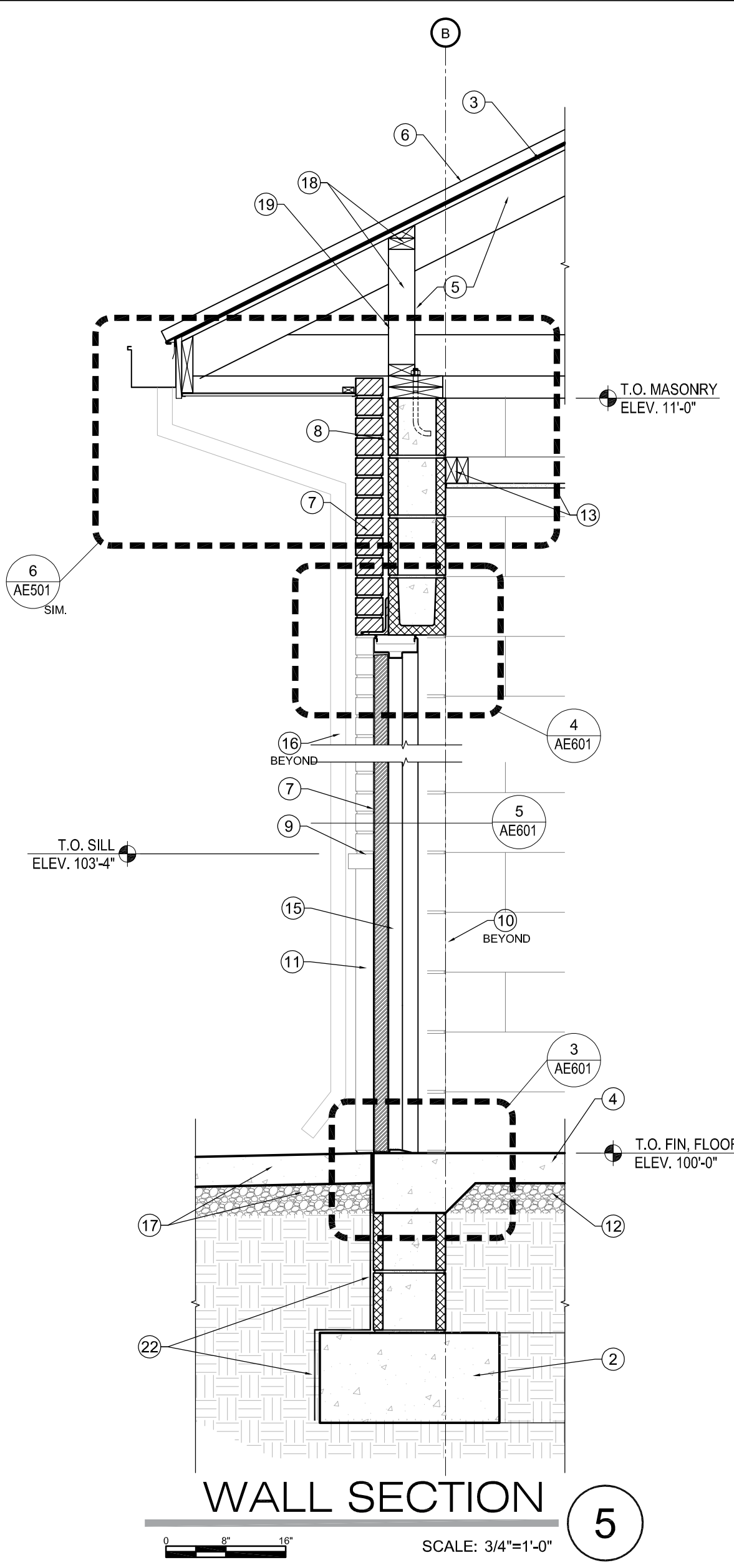
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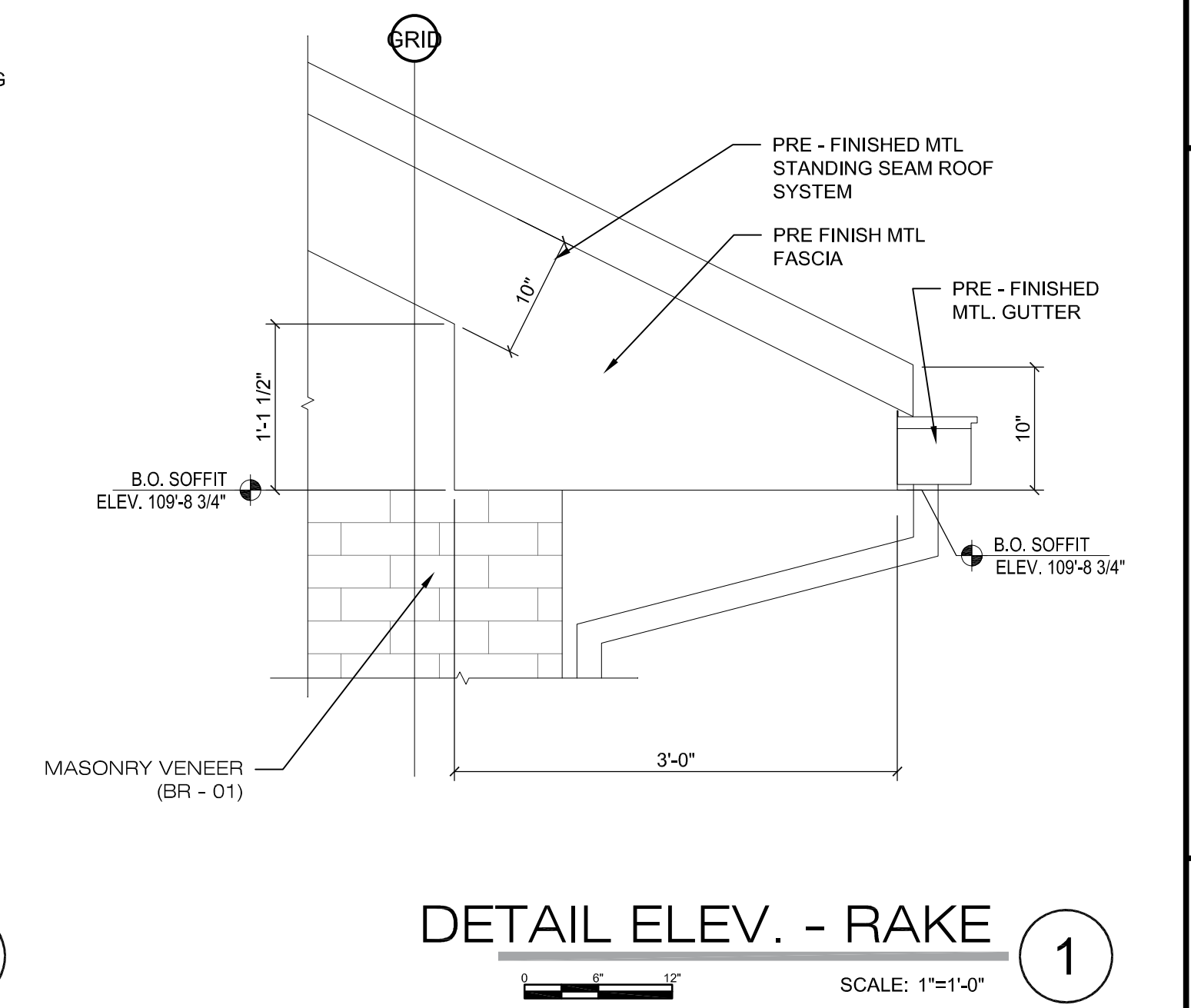
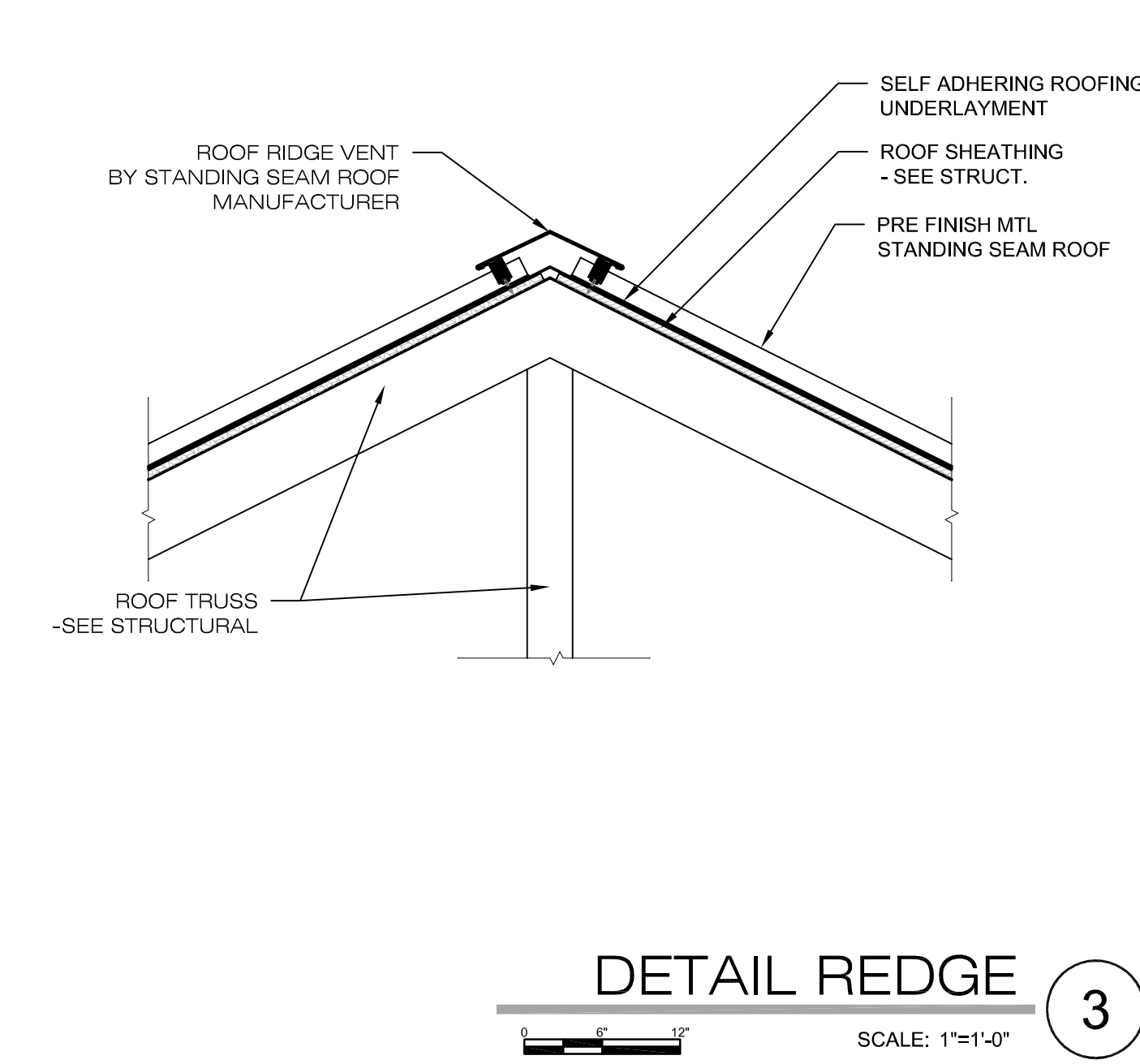
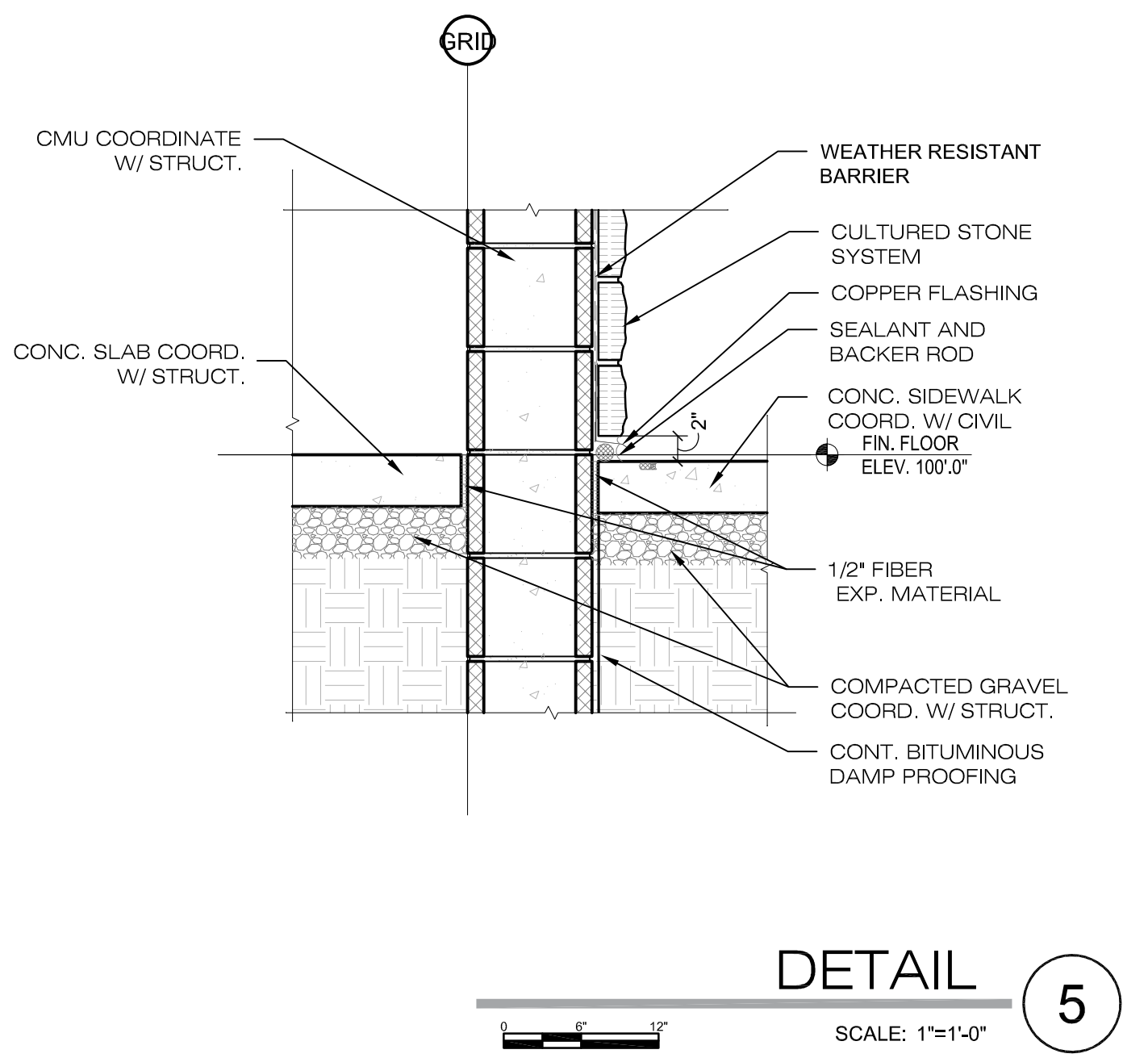
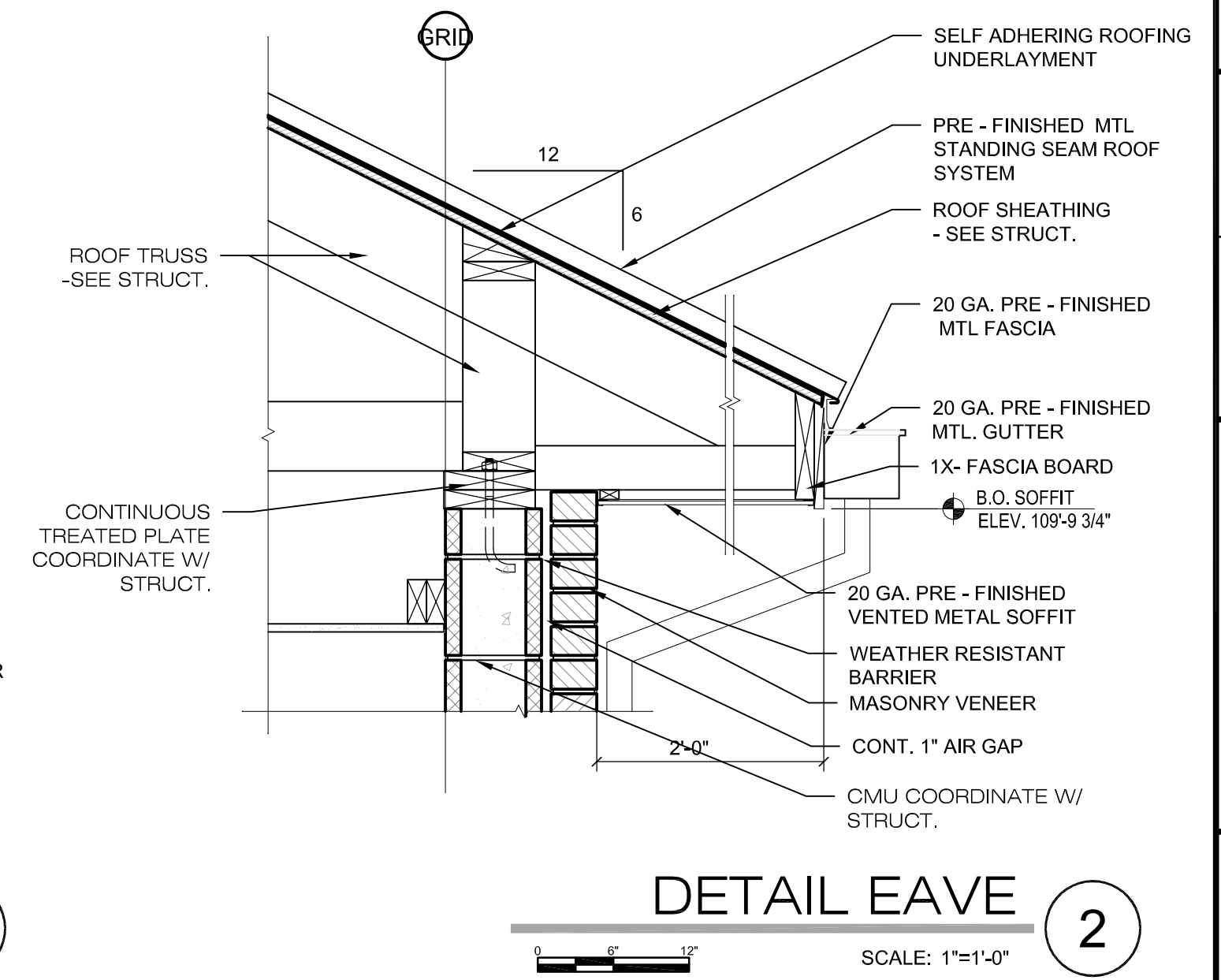
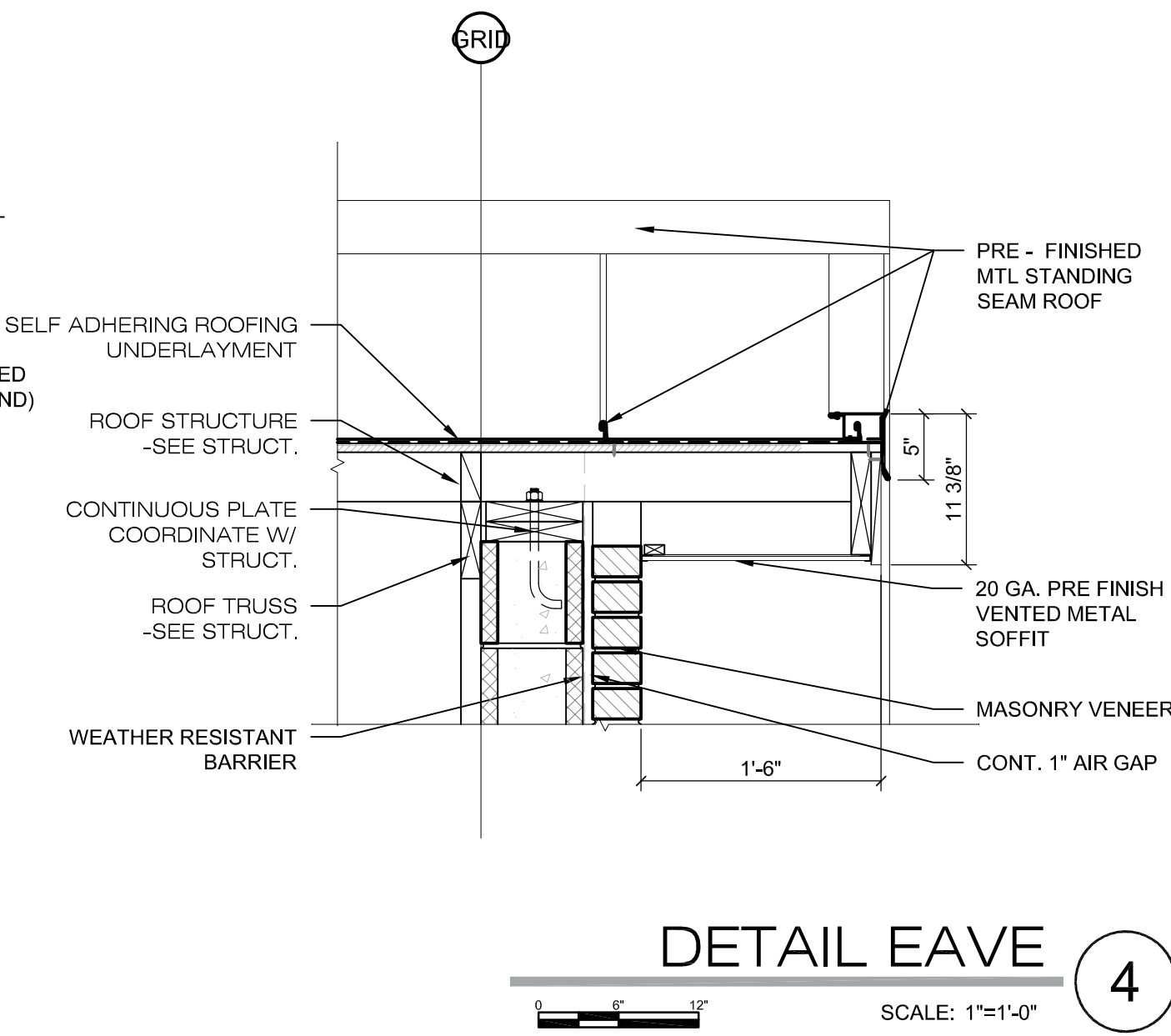
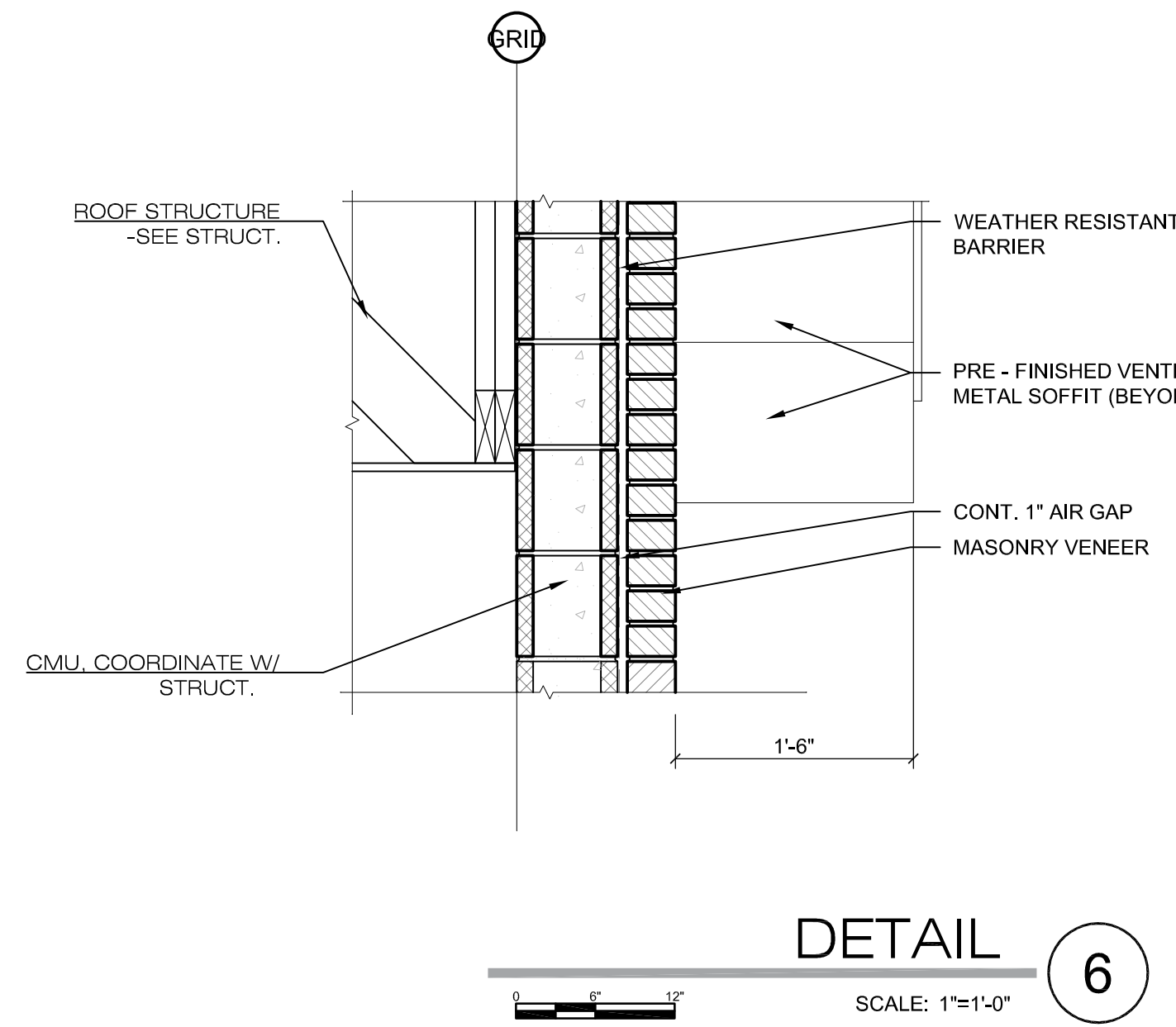
CALL BLUESTAKES
 @ 1-800-662-4111 AT
 LEAST 48 HOURS PRIOR
 TO THE COMMENCEMENT
 OF ANY CONSTRUCTION.
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING



HERRIMAN CITY
ENGINEERING DEPARTMENT
 ARCHES PARK RESTROOM BUILDING
 12101 SOUTH TOWER ARCH LANE
 BUILDING SECTIONS & WALL SECTION

AE301





NO.	REVISION DESCRIPTION	DATE



1/21/2019

CONSTRUCTION	DATE

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HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE

AE501

5/14/2018 5:42 PM L:\180144 HERRIMAN CITY - ARCHES PARK RESTROOMS\EXECUTION DRAWINGS\ARCHITECTURAL\SHEETS\AE601 DOOR SCHED.DWG

DOOR SCHEDULE

NO.	TYPE	DOOR				FRAME						REMARKS	NO.		
		SIZE		GLASS	MATERIAL	FINISH	FRAME TYPE	DETAIL			MATERIAL			FINISH	
		WIDTH	HEIGHT*					HEAD	JAMB	SILL					
101	D1	3'-0"	7'-2"	-	GALV. H.M.	PT.	F1	4/AE601	5/AE601	3/AE601	GALV. H.M.	PT.	HW-01		101
102	D1	3'-0"	7'-2"	-	GALV. H.M.	PT.	F1	4/AE601	5/AE601	3/AE601	GALV. H.M.	PT.	HW-01		102
103	D1	3'-0"	7'-2"	-	GALV. H.M.	PT.	F1	4/AE601	5/AE601	3/AE601	GALV. H.M.	PT.	HW-01		103

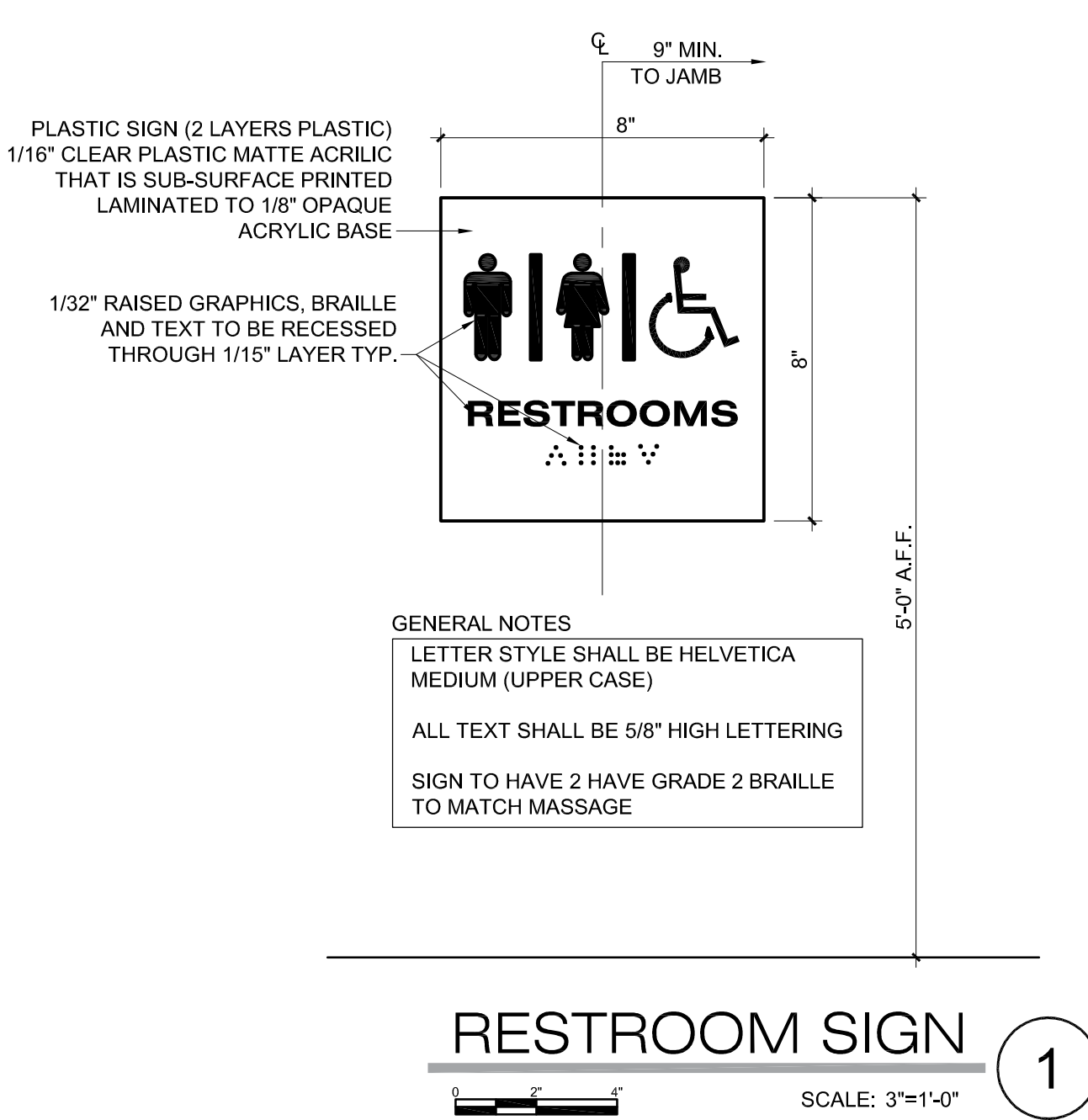
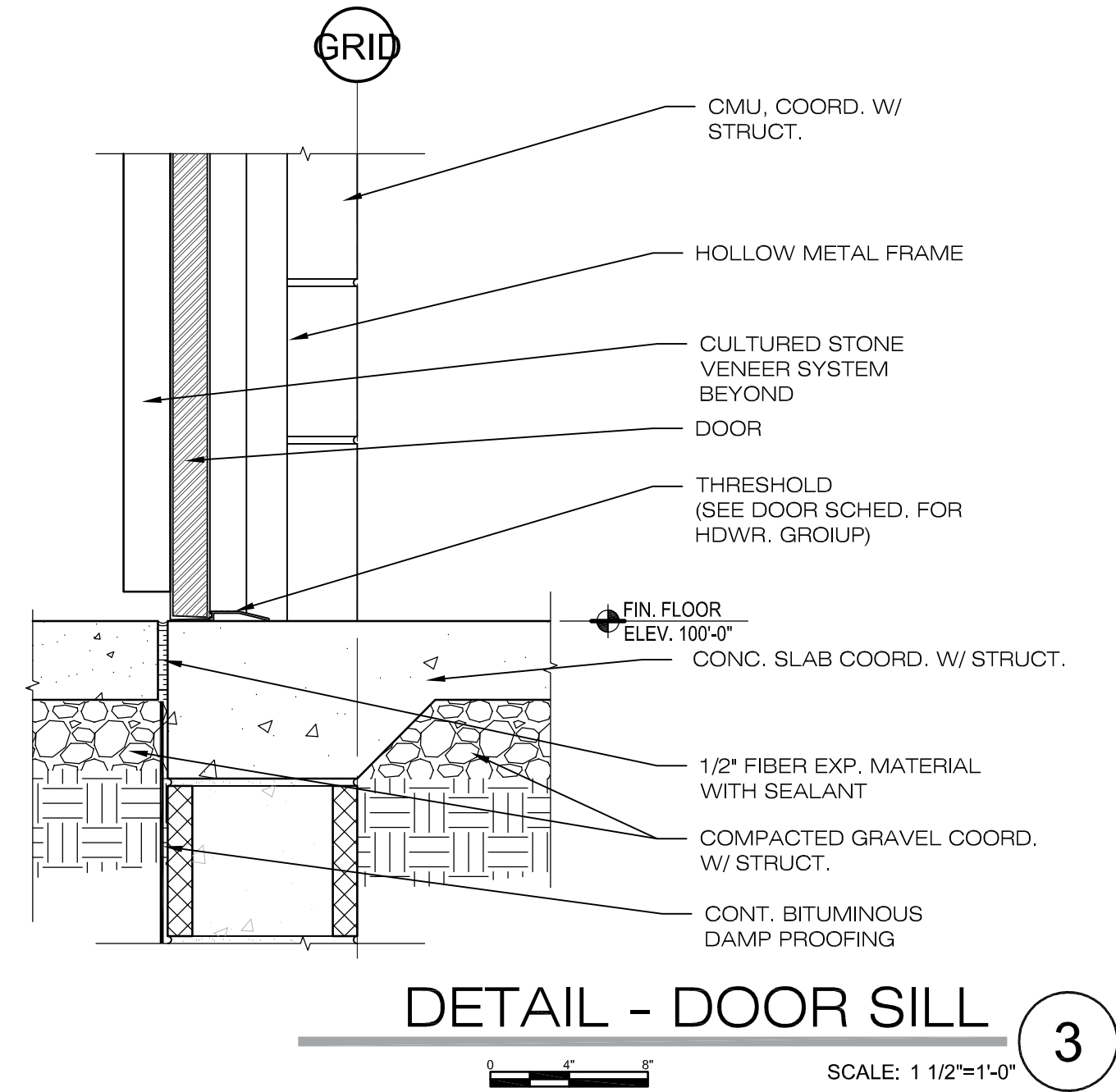
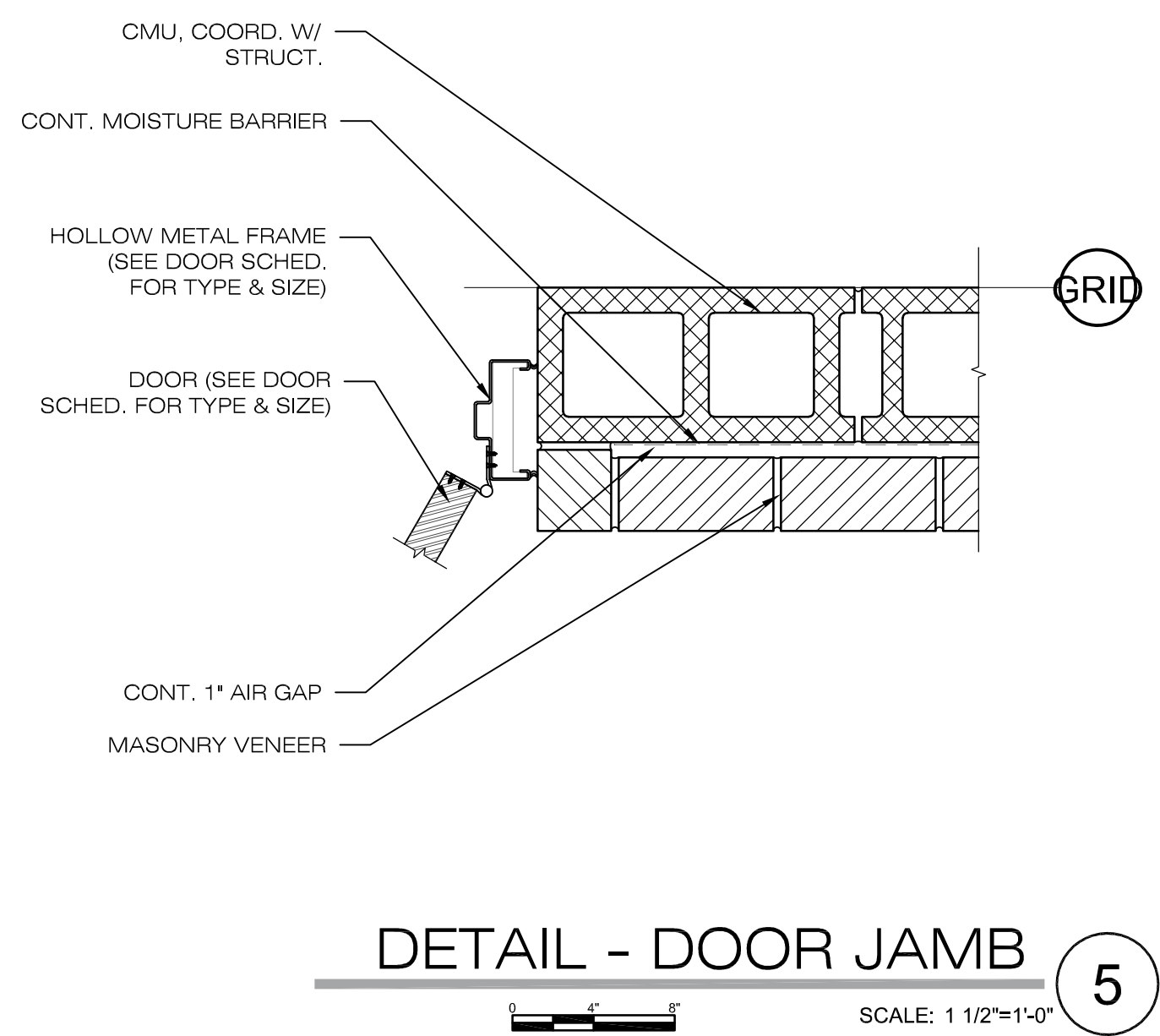
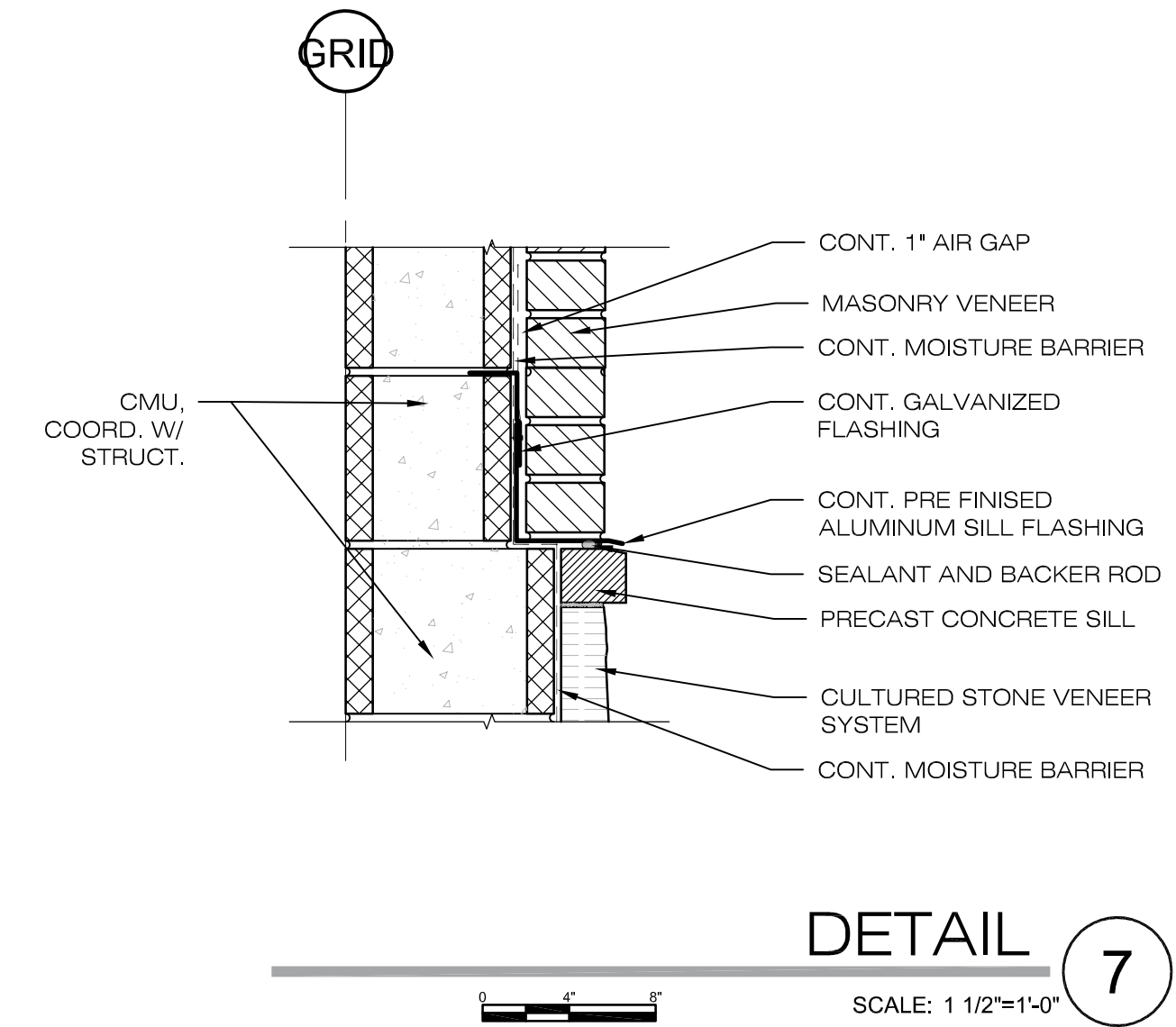
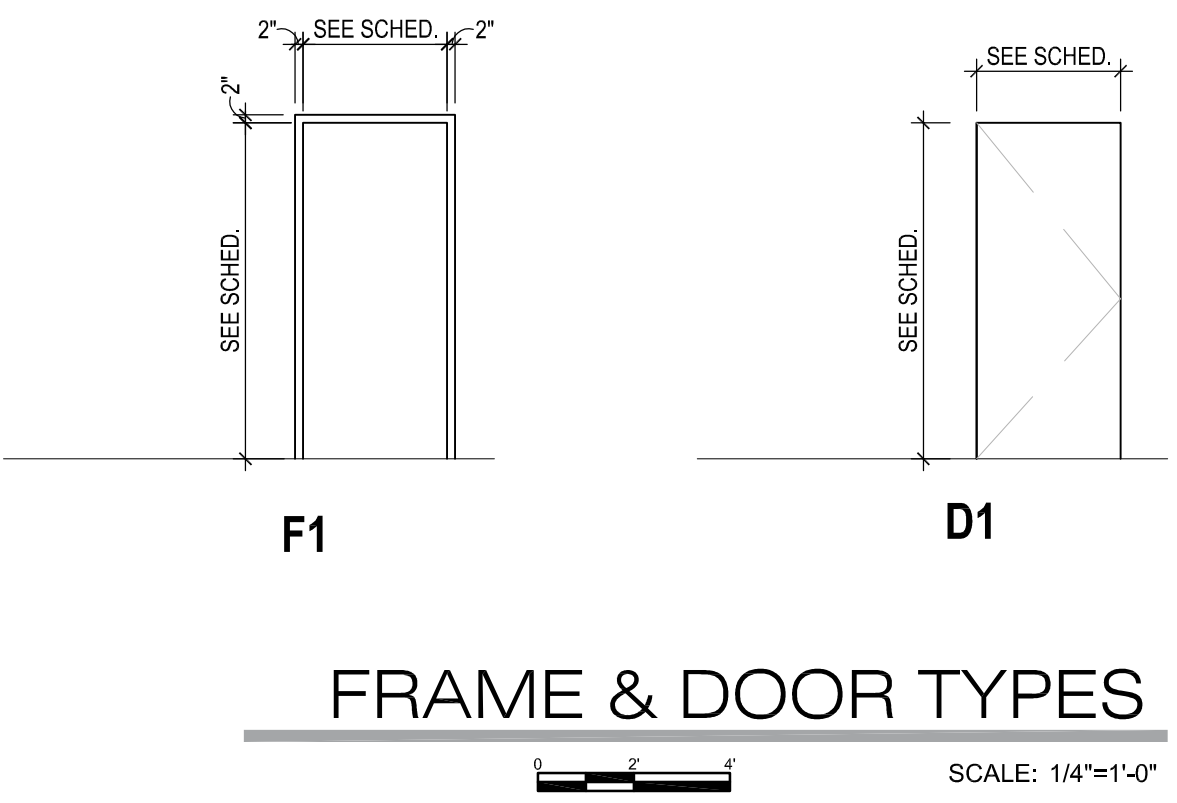
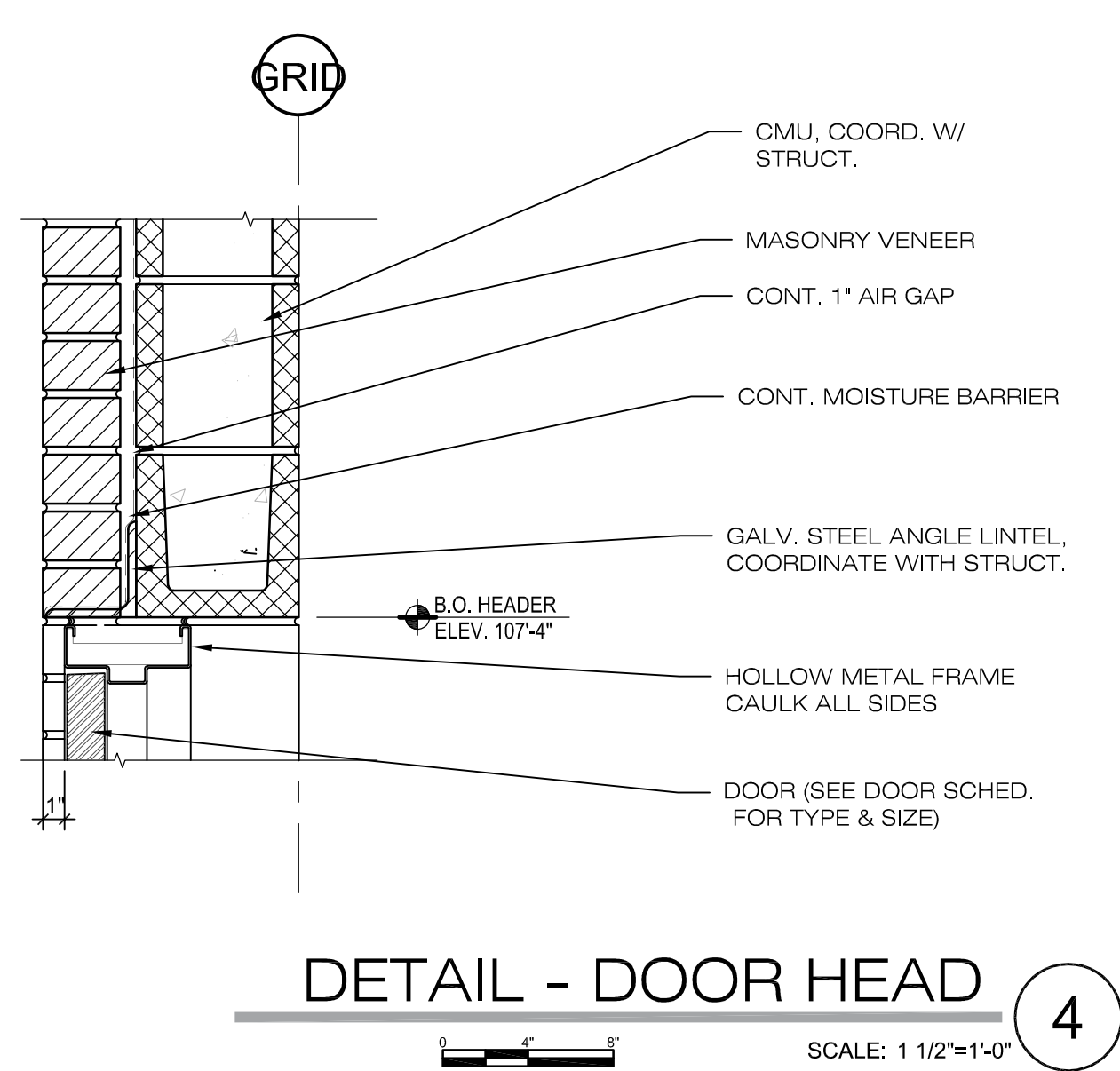
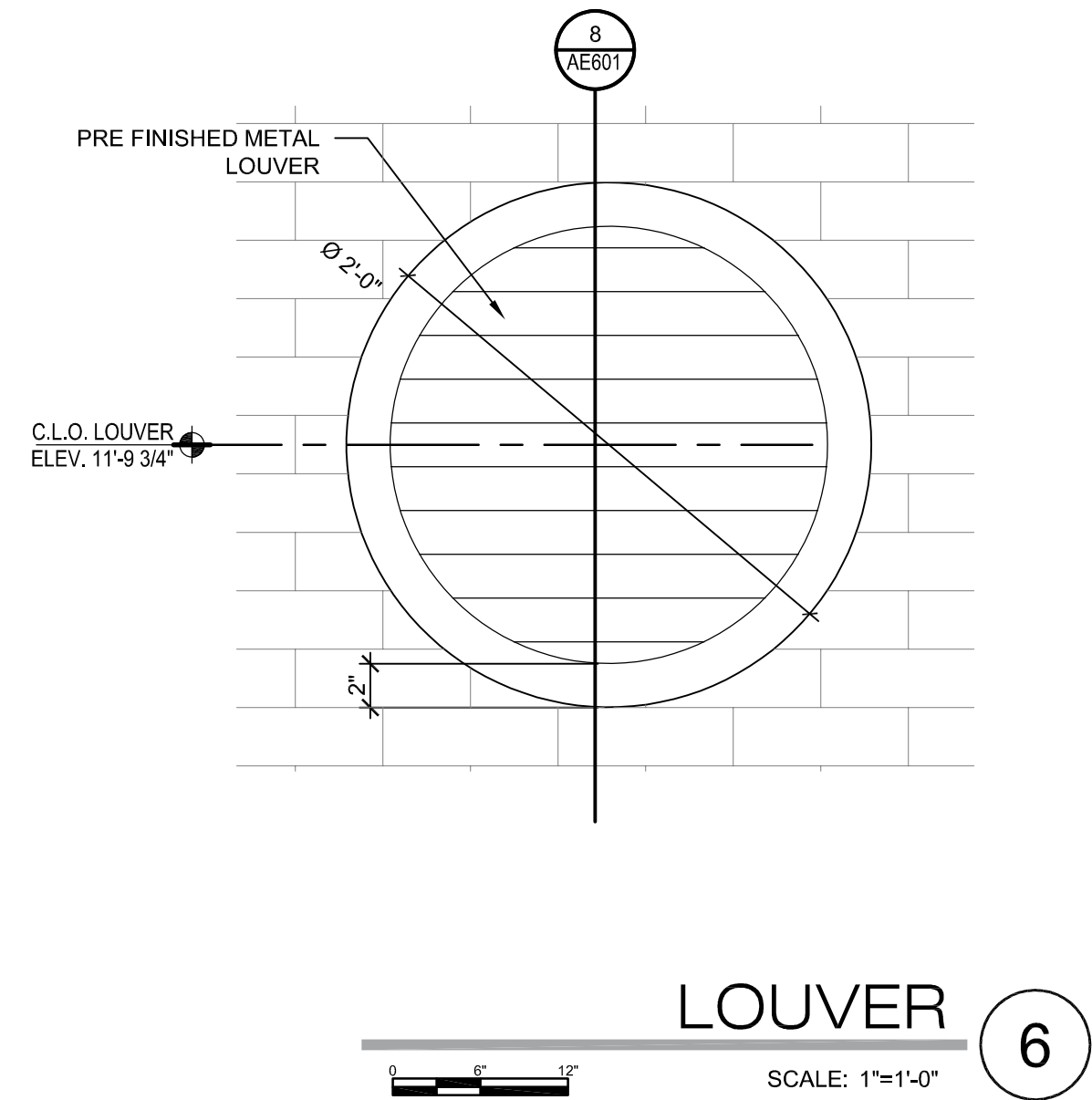
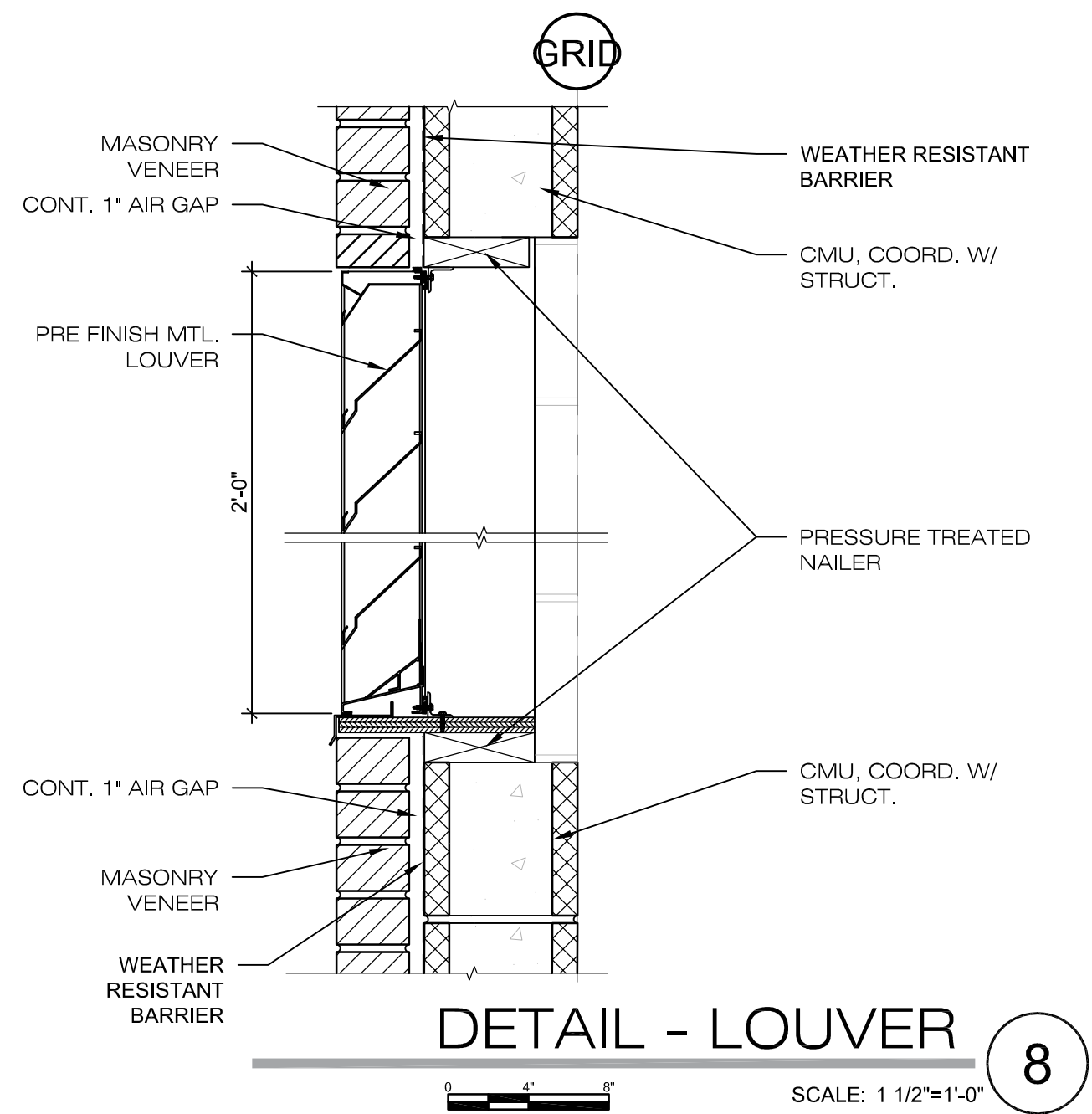
* VERIFY DOOR HEIGHTS IN FIELD

DOOR HARDWARE

HW SET: 01 (Doors 101, 102 & 103)					
3 EA HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE		
1 EA LOCK SET	NDE80 RHO SERIES (CYL PREP AS REQ'D) ON 'ENGAGE' PLATFORM	626	SCHLAGE		
1 EA CYLINDER / CORE	MATCH OWNER KEY SYST.	626	SCHLAGE		
1 EA SURFACE CLOSER	4040XP SCUSH TBWMS	689	LCN		
1 EA RAIN DRIP	142 SERIES	628	ZERO		
1 SET PERIMETER GASKET	429 SERIES (HEAD & JAMBS)	628	ZERO		
1 EA KICK PLATE	6400 10" X 2" LDW	630	IVE		
1 EA DOOR SWEEP	39 SERIES	628	ZERO		
1 EA SADDLE THRESHOLD	656 SERIES X 223	719	ZERO		

ABBREVIATIONS

H.M.	HOLLOW METAL
PT.	PAINTED
GALV H.M.	GALVANIZED HOLLOW METAL (INSULATED @ DOORS)



NO.	REVISION DESCRIPTION	DATE

STATE OF UTAH
MARK DUKE
REGISTERED ARCHITECT
1/21/2019

CONSTRUCTION	
SUBMITTAL	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
RELEASE:	1/21/2019
PLOT DATE:	1/11/19

CALL BLUESTAKES
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HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE
DOOR SCHEDULE & DOOR TYPE & DETAILS

AE601

1. Design Criteria

- 1.1. Governing Building Code2015 International Building Code (IBC)
A. Risk Category.....II
1.2. Roof Live Loading
A. Roof Live Load20 psf
B. Roof Snow Load32 psf + Drift per IBC
1. Ground Snow Load, Pg48 psf
2. Snow Exposure Factor, Ce1.0
3. Importance Factor, Is1.0
4. Thermal Factor, Ct1.2
1.3. Earthquake
A. Seismic Design Category.....D
B. Spectral Response Accelerations
Ss = 1.207 g Sos = 0.818 g
S1 = 0.401 g S01 = 0.427 g
C. Soil Site ClassD
Fa = 1.017 Fv = 1.599
D. Basic Seismic-Force-Resisting SystemSpecial Reinforced Masonry Shear Walls
R = 5 Omega = 2.5 Cd = 3.5
E. Importance Factor, Ie1.0
F. Redundancy Factor, Rp1.0
G. Analysis ProcedureEquivalent Lateral Force (Static)
H. Design Base Shear6.0 kips

- 1.4. Wind
A. Ultimate Design Wind Speed Vult115 mph
B. ExposureB
C. Internal Pressure Coefficient, GCpi0.18
D. Topographic Factor, Kzt1.0
E. Components and Cladding Design Pressure

Table with 3 columns: Location, Tributary Area (ft²), and Design Wind Pressure (psf). Rows include Walls (Within 3 ft of building corner, All other areas) and Roof (Within 3 ft of building edge, All other areas).

- 1.5. Foundation
A. Subsurface Conditions: Soils bearing values are taken from IBC table 1806.2 Presumptive Load Bearing values..
B. Soil Bearing Pressure:1500 psf,
C. Lateral Soil Pressure Fluid Equivalent Density.
1. Passive:100 pcF
D. Coefficient of Friction:0.25

2. Earthwork

- 2.1. Clearing: The entire building area shall be scraped to remove the top 4 inches of soil, including all vegetation and debris.
2.2. Proof rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Remove all soft spots and replace with compacted structural fill.
2.3. Compacted structural fill: All fill material shall be a well-graded granular material with a maximum size less than 4 inches and with not more than 10 percent passing a No. 200 sieve. It shall be compacted to 95 percent of the maximum laboratory density as determined by ASTM D1557. All fill shall be tested (See Specifications and the Quality Assurance section of the GSN).

3. Concrete

- 3.1. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-14, "Building Code Requirements for Structural Concrete."
A. Concrete mix design requirements shall be as follows:
Table with 5 columns: Location, fc at 28 days (psi), Max W/C Ratio, Air Content (%), Max Aggregate Size, and Exposure Classes* (F, S, C, CO).
B. Cementitious Materials:
1. Portland Cement (ASTM C150):
a. Type I or II for exposure class S0.
2. Fly Ash (ASTM C618, Class C or F): maximum fly ash content as a percentage of total weight of cementitious materials shall be 25 percent.
C. Concrete Density (Maximum Air Dry Weight):
1. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot. Aggregate shall be ASTM C33.
D. Steel Reinforcement:
1. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise.
E. Wire Reinforcement:
1. Welded wire fabric (WWF): ASTM A1064.
F. Admixtures:
1. Air-entraining admixtures, comply with ASTM C 260 (when used).
a. Tolerance on air content as delivered shall be +/- 1.5%.
b. When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and blistering to occur. When this situation is present, the contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-15 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
2. The use of super plasticizers and water reducers is allowed, but not required.
3. Calcium chloride or admixtures containing calcium chloride shall not be added to the concrete mix.
G. Chloride Ion: Maximum water soluble chloride ion concentrations in hardened concrete at age between 28 and 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed a maximum, by weight of cement, of 1.00% for concrete with exposure class C0, 0.30% for concrete with exposure class C1, and 0.15% for concrete with exposure class C2.
H. Slump Limit: 4 inches, maximum for all concrete prior to the addition of plasticizers and water reducing admixtures. The concrete supplier shall indicate the final slump of each concrete mix in the submitted mix design.
I. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.040 percent tested in accordance with ASTM C157. Drying shrinkage test results shall be submitted with mix designs.
J. Only one grade or type of concrete shall be poured on the site at any given time.
3.2. Formwork shall comply with ACI Standards Publication 347 and the project specifications. The contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.

- 3.3. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
A. Cast-in-place Concrete: Specified Cover
1. Cast against and permanently exposed to earth:3"
2. Formed concrete exposed to earth or weather: #5 and smaller bars1.1/2"
3.4. Construction Joints and Control Joints:
A. Provide a surface intentionally roughened to 1/4" amplitude in all wall footings. A continuous keyway shall not be used for concrete shear wall to footing connections, unless specifically indicated. Refer to project plans, schedules and details for the shear wall to footing connection requirements.
B. All horizontal and vertical construction joints shall have a surface intentionally roughened to 1/4" amplitude. A continuous 2 X 4 keyway may be used on elements other than shear walls.
C. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints and wall to footing connections of concrete shear walls, refer to specific project plans, schedules, and details.
D. Construction joints in suspended concrete pours shall be made at the center of spans.
E. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction.
F. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. See typical details for joint configuration.
G. Control joints in visually exposed walls, unless noted otherwise: (Joints shall line up with masonry and architectural joints, see drawings.)
1. Vertical control joints at 10'-0" on center.
2. Reinforcing shall be continuous through control and construction joints, unless noted otherwise.
3. Control joints in concrete foundation walls shall line up with masonry control joints.
3.5. Detailing: All reinforcing, including welded wire fabric, shall be detailed, bolstered & supported to comply with ACI 315. "Details and Detailing of Concrete Reinforcement" and the Concrete Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.
A. Lap splice lengths shall be detailed to comply with the CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE SCHEDULE.
B. All embedded elements and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
C. Use chairs or other support devices recommended by CRSI to support and tie reinforcement bars and welded wire fabric prior to placing concrete. Welded wire fabric shall be continuously supported at 36" o.c. maximum.
D. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
E. All reinforcement shall be bent cold, and shall be bent only once at the same location. All reinforcement shall be shop bent, unless otherwise permitted by the engineer.
3.6. No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.
3.7. Unless otherwise noted, all slabs on grade shall be 4" thick.

4. Masonry

- 4.1. Materials shall comply with the Standards specified in TMS 402-13/ACI 530-13/ASCE 5-13 and TMS 602-13/ACI 530-13/ASCE 6-13, "Building Code Requirements and Specification for Masonry Structures."
A. Materials, unless noted otherwise:
1. Concrete Masonry 8" Blocks to be ASTM C 90, Medium Weight. 10" Blocks to be ASTM C 90, Normal Weight.
2. Material Strength: The Prism Test Method or the Unit Strength Method according to TMS 602-13/ACI 530-13/ASCE 6-13 Section 1.4B may be used to determine the compressive strength of masonry assemblies. The contractor shall select the desired method and meet the required material strengths as follows:
a. Prism Test Method, TMS 602-13/ACI 530-13/ASCE 6-13 Section 1.4B.3:
1) Concrete Masonry Unit Assembly, fm = 2000 psi.
b. Unit Strength Method, TMS 602-13/ACI 530-13/ASCE 6-13 Section 1.4B.2:
1) Concrete Masonry Units, minimum unit strength of 2000 psi average or better. (fm = 2000 psi)
3. Mortar: Use Type "S" according to ASTM C270, proportion specification. Admixtures shall not be added to the mortar mix.
4. Grout: For masonry assemblies with fm > 2,000 psi shall meet the following requirements: Meet the material requirements of ASTM C476, obtain a minimum compressive strength of fm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, and a slump of 8 in. to 11 in. as determined by ASTM C143.
a. Self-Consolidating Grout: Conform to the material requirements of ASTM C476, obtain a minimum compressive strength of fm or 2,000 psi, whichever is larger, at 28 days tested according to ASTM C1019, obtain a slump flow of 24 in. to 30 in. as determined by ASTM C1611, and shall have a Visual Stability Index less than or equal to 1 as determined in accordance with ASTM C1611 Appendix X.1. Field addition of admixtures is not permitted.
5. Reinforcing: Grade 60 reinforcing steel shall comply with ASTM A615. Wire joint reinforcing shall comply with ASTM A951.
6. Deformed Bar Anchors (DBA): All DBAs shall comply with ASTM A496.
7. Anchor Bolts (AB): ASTM A307 with ASTM A563 heavy hex nuts and hardened washers, Grade A, unless noted otherwise.
8. Headed Stud Anchors (HSA): Manufacture all HSAs in conformance with ASTM A108 with dimensions complying with AISC specifications.
4.2. Construction Requirements:
A. Mortar Joints: Joints shall be "concave", "V-joint" or "weathered raked" for structural members unless noted otherwise on architectural drawings.
B. Masonry walls, beams and columns shall be constructed with running bond, unless noted otherwise.
C. Grouting Requirements: Comply with IBC Section 2104 and ACI 530.1/ASCE 6/TMS 602 Section 3.5. Grout shall be mechanically consolidated and mechanically reconsolidated according to TMS 602/ACI 530.1/ASCE 6 Section 3.5 E.
1. Grout Pour Heights that exceed 4 feet shall meet the following requirements:
a. Provide cleanouts in the bottom course of masonry for each grout pour in accordance with ACI530.1/ASCE 6/TMS 602 Section 3.2 F.
b. For grout other than Self Consolidating Grout a demonstration panel representative of the proposed wall construction and construction procedures shall be provided and approved by the Architect. The demonstration panel may be a part of the completed construction as mix.
c. For Self Consolidating Grout placed in masonry that has cured for at least 4 hours, place in lifts not exceeding the Maximum Grout Pour Height in listed in ACI 530.1/ASCE 6/TMS 602 Table 7.
2. When grouting, form grout keys between grout pours. Form grout keys between grout lifts when the first lift is permitted to set prior to placement of the subsequent lift.
a. Form a grout key by terminating the grout a minimum of 1.1/2 in. below a mortar joint.
b. Do not form grout keys within beams.
c. At beams or lintels laid with closed bottom units, terminate the grout pour at the bottom of the beam or lintel without forming a grout key.
D. Reinforcing Bars shall not be welded unless specifically shown on drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for DBAs or HSAs.
E. Control Joints: Spacing shall not exceed 40'-0" or 2.5 times the wall height, whichever is less. Joints shall not be located over masonry openings, and shall be a minimum of the schedule masonry column width away from masonry openings. See architectural drawings for locations.
F. Grout all beam and joist pockets solid after installation of beams and joists.

- G. Masonry Veneer Attachment and Reinforcing:
1. Joint reinforcement: Veneer shall have continuous galvanized wire joint reinforcement of wire size W1.7 (#9 gauge) spaced at 18" o.c. maximum. Mechanically attach veneer anchors to the joint reinforcing with Hohmann & Barnard Seismiclip Interlock System (or engineer approved equivalent).
2. To steel stud and wood stud walls: Veneer shall be attached to the studs with Hohmann & Barnard DW-10HS seismic veneer anchors (or engineer approved equivalent) spaced at maximum 18" o.c. horizontally and 18" o.c. vertically. Veneer anchors shall be attached to studs with #10 corrosion resistant self-drilling screws.
3. To concrete walls: 22 gauge galvanized dovetail slots shall be installed vertical in concrete at maximum 18" o.c. horizontal spacing. Attach the veneer to dovetail slots with Hohmann & Barnard #315 BT Flexible Brick Tie at maximum 18" o.c. vertically. Dovetail slots and anchor ties shall be galvanized.
4. To reinforced masonry walls: Veneer shall be attached with tri-rod laddur type reinforcement spaced at a maximum of 16" o.c. vertically consisting of 3 - W1.7 (#9 gauge), galvanized, corrugated, continuous wires. Cross wires shall be W1.7 (#9 gauge) galvanized wires welded to the longitudinal wires and spaced at a maximum of 16" o.c. horizontally. Veneer may also be attached with Hohmann & Barnard 285 Grip-Lok Ladder (or engineer approved equivalent) spaced at maximum 18" o.c. horizontally and 18" o.c. vertically. Where the joints in the veneer and masonry back up walls do not align, attach veneer with Hohmann & Barnard 364 SV Seismic-Notch Gripstay Channel Slot Anchor seismic veneer anchors (or engineer approved equivalent).
5. Other methods of attachment may be used after written acceptance by the architect and structural engineer.
6. Steel Lintels: Provide steel angle lintels at all openings through the masonry veneer. Provide one inch of bearing for each foot of width of opening, with a minimum bearing of six inches. See the Steel Angle Lintel Schedule for size.
4.3. Detailing Requirements:
A. Standards: Reinforcing detailing shall comply with American Concrete Institute (ACI) Standard 315, "Details and Detailing of Concrete Reinforcement."
B. Reinforcement Protection (cover):
1. Joint reinforcement shall have not less than 5/8" mortar coverage from the exposed face.
2. Other reinforcement shall have a minimum coverage of one bar diameter over all the bars, but not less than 3/4". When masonry is exposed to soil, minimum coverage shall be 1.5".
C. Vertical steel reinforcement shall be placed and secured against displacement prior to grouting by wire positioners or other suitable devices: at intervals not exceeding 112 bar diameters, at the grout lift heights, or at bar splice locations, whichever is less. Vertical reinforcing shall be located at the center of the wall, unless noted otherwise.
D. Lap Splice Lengths: Lap all masonry reinforcing bars per the "Masonry Reinforcing Bar Lap Splice Schedule." Joint reinforcement shall lap a minimum of 6".
E. Corner Bars: Horizontal reinforcement shall be continuous at all corners and at intersecting walls. Provide corner bars with the required lap splice length.
F. Dowels: All vertical reinforcing shall be doweled to the foundation wall, footing (structure below) and to the structure above with the same size dowel, spacing (and in the same core) as the vertical wall reinforcing unless noted otherwise.
G. Wall Openings 24" wide and wider: Provide reinforced masonry lintels per Masonry Lintel Schedule over the top of, and 2 - #5 bars, in grouted spaces, on all sides and adjacent to every unscheduled opening, unless noted otherwise. Bars for all openings shall extend a minimum of 48 bar diameters beyond the corners of the opening. Vertical bars shall extend from floor level below to the floor, or roof, level above. Where a 48 bar diameter extension is not possible, extend bars as far beyond the opening as possible and terminate them with a 90 degree standard ACI hook.
H. Horizontal wall reinforcing shall be continuous through joining concrete walls, masonry walls, columns, and plasters. Provide a key between the wall and the column or plaster. Horizontal wall reinforcing shall be placed inside the column vertical reinforcing.
I. Anchor bolts and headed stud anchors shall be set in a grouted cell. Anchor bolts and headed stud anchors shall have 1" grout surrounding the shank at its penetration. Grout shall be flush with the face or top of the masonry.
J. The exposed face of all embed plates shall be set flush with the face of masonry wall or column.
4.4. Minimum Reinforcing:
All masonry walls shall be reinforced as follows, unless shown otherwise on the drawings. Reinforcing shall be placed in grouted cells.
Table with 3 columns: Wall Thickness, Horizontal Reinforcing, Vertical Reinforcing.
5. Structural Steel
5.1. Material:
A. All Other Shapes and Plates: ASTM A36 (Fy = 36 ksi), except as noted otherwise
B. Deformed Bar Anchors (DBA): ASTM A496 or ASTMA1064, 70 ksi minimum yield strength.
C. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications
D. Anchor Rods: ASTM F1554, Grade 36, unless noted otherwise, with ASTM A563 heavy hex nuts and ASTM F436 hardened washers
5.2. Structural shapes and plates shall be fabricated from newly rolled (milled) one-piece sections without splices, unless specifically noted otherwise on the structural drawings. Connections for structural steel shall comply with the structural drawings, unless written approval is given by the structural engineer.
5.3. Welding:
A. It is recommended the steel erection contractor and steel fabricator contact the Quality Assurance Agency prior to beginning any welds. A program of joint preparation and welding procedures should be worked out between the two parties before the welding is started so that correct welds will be made from the beginning.
B. Certification of Welders: All shop and field welding shall be executed by AWS certified welders who have been specifically certified for the process of welding being performed. The welder's certification will be considered as being current unless the welder is not engaged in the process of welding being performed for a period exceeding six months or there is a specific reason to question a welder's ability as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the architect prior to beginning work.
C. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and roof decks.
D. Minimum Welds: All intersecting steel shapes that are not bolted shall be connected by a fillet weld all around, unless noted otherwise. Fillet weld sizes that are not shown shall be 1/16" less than the thinnest of the connected parts for thicknesses 1/4" and larger. Fillet welds on plates less than 1/4" shall be of the same size as the thinnest of the connected parts.
E. Reinforcing Bars: Do not weld rebar except as specifically detailed in the drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for deformed bar anchors (DBAs), machine bolts, or headed stud anchors (HSAs).
F. Bolts: Do not apply any welds, including "tack" welds to bolts, including anchor bolts, except as specifically detailed in the drawings.
G. Headed Stud Anchor (HSA) welding and Deformed Bar Anchor (DBA) welding shall conform to the manufacturer's specifications. Welding shall comply with AWS D1.1 Section 7.6 through 7.9 and Annex G.
5.4. Steel Lintels
A. Provide steel angle lintels at all openings through the masonry veneer. Provide one inch of bearing for each foot of width of opening, with a minimum bearing of six inches. See the Steel Angle Lintel Schedule for size.

Vertical sidebar containing: DATE, REVISION DESCRIPTION, NO., CALL BLUESTAKES, HERRIMAN CITY logo, HERRIMAN CITY ENGINEERING DEPARTMENT, and SE001.

6. Wood

- 6.1. Fabrication and construction shall comply with the following Codes and Standards:
 - A. American Wood Council National Design Specification for Wood Construction 2015 Edition and Supplement (NDS and NDS Supplement)
 - B. American Wood Council Special Design Provisions for Wind and Seismic 2015 Edition (SDPWS)
 - C. Truss Plate Institute National Design Standard for Metal-plate-connected Wood Truss Construction 2014 Edition (TPI 1)
- 6.2. Materials:
 - A. Sawn Lumber: Members shall be identified by the grade mark and shall conform to the requirements of DOC PS 20.
 - 1. Dimension Lumber: Members shall be Number 2 Douglas Fir-Larch or better or as noted otherwise.
 - 2. Heavy Timber: Timbers larger than 5"x5" shall be Douglas-Fir Larch Number 1 or better or as noted otherwise, as graded by VWPA.
 - C. Wood Structural Panel Sheathing: All panels shall be rated by the American Plywood Association (APA). Panels shall bear the stamp of an approved testing and grading agency. Panels shall be grade DOC PS 1 or PS 2 with exterior glue with the following panel span rating, unless noted otherwise.

Area to be sheathed	Span Rating	Minimum Thickness (in)
Roofs	40/20	19/32

- D. Nails as referenced in these documents shall meet the tolerances in ASTM F1667 and have the following properties:

Nail Size	Length	Minimum Penetration	Common		Galvanized Box	
			Shank Diameter	Dowel Bending Yield Strength (psi)	Shank Diameter	Dowel Bending Yield Strength (psi)
6d	2"	1.1/8"	0.113"	100,000	0.099"	100,000
8d	2.1/2"	1.3/8"	0.131"	100,000	0.113"	100,000
10d	3"	1.1/2"	0.148"	90,000	0.128"	100,000
16d	3.1/2"	1.5/8"	0.162"	90,000	0.135"	100,000
20d	4"	2"	0.192"	80,000	0.148"	90,000

When used to attach structural sheathing nails shall be common or galvanized box type nails. All other nails shall be common type nails.

- E. Bolts for connections: ASTM A307 with ASTM A563 heavy hex nuts and standard washers unless noted otherwise.
- F. Lag screws for connections: SAE J429 Grade 1 or ASTM A307 Grade A with dimensions per ANSI/ASME B18.2.1. Minimum dowel bending yield strength to be 45,000 psi.

6.3. Special Treatments:

- A. Preservative Treatment:
 - 1. The following conditions require that wood members be either naturally durable or preservative treated:
 - a. All wood in contact with concrete or masonry which is less than 8 in from exposed earth or below grade.
 - b. Any wood member exposed to the weather without covering or protection to prevent water or moisture accumulation.
 - 2. Preservative-treated wood shall meet the requirements in IBC Section 2303.1.9. Preservative-treated wood shall be treated to meet the requirements of AWPA Standard U1 and M4 according to species, use, and preservative. Preservatives used shall be listed in AWPA U1, Section 4. Preservative-treated wood shall be identified by the mark of an accredited inspection agency. Preservative treated wood shall have a moisture content of less than 19% prior to being enclosed or covered.
- B. Fasteners, including nuts and washers, in contact with treated wood shall meet the following criteria as per IBC Section 2304.10.5:
 - 1. Fasteners in contact with preservative-treated wood shall be hot-dipped galvanized steel, stainless steel, silicon bronze or copper. Fasteners other than nails, wood screws, timber rivets, and lag screws may be mechanically-deposited zinc-coated steel with coatings meeting ASTM B 695, Class 55 minimum. Fasteners used in exterior applications shall be per fastener manufacturer's recommendations.

6.4. General Framing and Carpentry

- A. Minimum Nailing Requirements (See drawings for areas with greater requirements):
 - 1. Roof: Use two pliclips between each support for spans of 48" o.c. and one pliclip between each support for lesser spans at all unsupported panel edges. Provide 1/8" gap between panels. Nail all sheathing panels to common framing with 10d common nails at 6" o.c. at all supported edges and at 12" o.c. at all intermediate supports.
- B. Connect all items as per the "Minimum Nailing Schedule" contained within the contract drawings and IBC Table 2304.10.1, "Fastening Schedule", unless noted otherwise.
- C. All blocking shall, unless noted otherwise, be nominally 2 in thick minimum and fit tight against adjacent framing members.
 - 1. Full-depth blocking shall match the depth of adjacent framing member depths. Full-depth blocking shall be shaped to match diaphragm slope. Full-depth blocking cut from I-joist material of the same depth as the I-joists used in floor/roof construction may be used for flat floors or roofs.
- D. Provide full-depth shaped blocking at joist supports and where indicated.
- E. Full-depth blocking between joists shall be nailed to the wood plate at the top of masonry walls with one Simpson "A35" framing anchor per each piece of blocking, unless noted otherwise.
- F. Coordinate size and locations of middle or end notching for roof ventilation with architectural drawings.
- G. All required bridging and bracing for prefabricated wood I-joists shall be provided by joist manufacturer and installed by contractor. All penetrations through the joists shall be done per manufacturers' recommendations and requirements.
- H. Lateral support of non-bearing walls shall be provided per TYPICAL WOOD NON-BEARING WALL BRACING DETAIL. Framing members shall not bear on non-bearing walls.

6.5. Framing Connections

- A. Simpson Strong Tie Connectors are used as the basis of design. Alternate connectors are permitted with approval of the engineer. The Contractor shall submit the proposed product data and code evaluation report demonstrating the connector is equivalent or exceeds the capacity of the specified connector.
- B. Framing connections not indicated shall be connected in a manner similar to typical details in the drawings and the engineer shall be notified prior to the procurement of connector materials.
- C. Where framing connection type is specified without reference to a specific model no. the highest capacity model hanger of that type which is compatible with the member to be supported shall be used unless noted otherwise in the drawings.
- D. All framing connectors supporting roof members where additional uplift capacity is available shall be fastened to achieve such.
- E. Fill holes in the framing anchors per manufacturer's requirements, unless noted otherwise.

6.3. Pre-Fabricated Steel Plate Wood Trusses (Trusses):

- A. Trusses shall be designed in accordance with IBC Section 2303.4 and TPI 1.
- B. Design Loading: The truss manufacturer is responsible for design and fabrication of the trusses. They shall be designed to support the concentrated and other distributed loads as shown in the drawings. In addition to loads shown, the truss designer shall coordinate and incorporate any additional loads from mechanical equipment, fire sprinkling systems, architectural elements, and hanging walls supported by the trusses. Provide extra trusses where required. As a minimum, the truss bottom chord shall be designed for a 4 psf dead load.
- C. Unless properly coordinated with the truss designer, truss bottom chords shall not be permitted to support mechanical or electrical equipment, plumbing, fire sprinklers, or hanging wall.
- D. Deflection of floor trusses due to live load shall be limited to L/480 and L/360 due to live load and total dead + live load respectively.
- E. Minimum specific gravity of wood truss members shall be G=0.5.
- F. Submittals:
 - 1. The Truss submittal package shall include design drawings and calculations for each unique truss, a truss placement diagram for each individual truss and details for permanent truss restraint/bracing.
 - a. Truss Design Drawings shall meet the requirements of IBC Section 2303.4.1.1

- b. Truss design drawings must bear the seal and signature of a design professional registered to practice in the jurisdiction of the project location.
- c. Truss placement diagrams shall meet the requirements of IBC Section 2303.4.2
- G. Steel Connector Plates: Use only galvanized steel connector plates that comply with the Truss Plate Institute publication, TPI 1, latest edition. All steel connector plates must be approved by the ICC Evaluation Services. Submit a copy of the ICC Code Evaluation Report for the connector plate used. Values established by this committee must be indicated on the shop drawings.
 - 1. Plates shall be pressed or rolled into member to obtain full penetration without crushing the outer surfaces of wood.
 - 2. Steel plates at compression web members shall be designed to resist 100% of the compression force without considering wood to wood bearing.
- H. Wood Members: All wood members of the truss shall be constructed of kiln dried lumber. The trusses shall be handled and stored in a manner to prevent moisture from being absorbed by the wood. Grade stamps shall be visible on framing members.
- I. Lateral Bracing/Restraint: Permanent lateral bracing/restraint and bridging shall be installed by the General Contractor as required by the truss designer and specified on the pre-fabricated wood roof truss design drawings
 - 1. The truss installer shall follow the BCSI recommendations for handling of trusses and for both permanent and temporary bracing.
- J. Prior to the fabrication of the pre-fabricated wood trusses, the contractor shall submit, in writing, proof of compliance of in-plant inspection by an ICC approved independent inspection agency. The in-plant inspections shall comply with section 1704.2 of the International Building Code.
- K. The truss manufacturer's identification stamp shall be clearly visible.
- L. Truss members and connections shall not be cut, notched, drilled, spliced or otherwise altered (including additional loads) in any way without prior written approval of the engineer.

7. Miscellaneous

7.1. Post-Installed Anchors in Concrete and Masonry

- A. Anchorage to hardened concrete and grout-filled masonry shall include all mechanical and adhesive anchors and epoxy doweled reinforcing bars of size, quantity, spacing, and embedment as shown on the drawings. Additional anchors shall not be used without approval from the Engineer prior to installation.
- B. Special inspection is required during the installation of all post-installed anchors. Refer to applicable code evaluation reports and the Quality Assurance and Statement of Special Inspections sections of the General Structural Notes.
- C. Anchorage to Concrete:
 - 1. All post-installed anchors into hardened concrete shall be selected from the following pre-approved products, unless noted otherwise.

Steel Screw Anchor	Evaluation Report
Hilti KWIK HUS-EZ	ICC ESR-3027
DeWalt Screw-Bolt+	ICC ESR-3889
Simpson Titen HD	ICC ESR-2713

Steel Expansion/Wedge Anchor	Evaluation Report
Hilti KWIK Bolt TZ	ICC ESR-1917
ITW Red Head Trubolt+	ICC ESR-2427
DeWalt Power-Stud+ SD2	ICC ESR-2502
Simpson Strong-Bolt 2	ICC ESR-3037

Adhesive Anchor System	Evaluation Report
Hilti HIT-HY 200	ICC ESR-3187
Hilti HIT-RE 500-V3	ICC ESR-2322
DeWalt AC208+	ICC ESR-4027
DeWalt Pure 110+	ICC ESR-3298
Simpson SET-XP	ICC ESR-2508

- 2. Adhesive anchors shall be installed into concrete having a minimum age of 21 days. For installations sooner than 21 days, consult the adhesive manufacturer.
- D. Anchorage to Masonry:
 - 1. All post-installed anchors into grout-filled masonry shall be selected from the following pre-approved products, unless noted otherwise:

Steel Screw Anchor	Evaluation Report
Hilti KWIK HUS-EZ	ICC ESR-3056
DeWalt Screw-Bolt+	ICC ESR-4042
Simpson Titen HD	ICC ESR-1056

Steel Expansion/Wedge Anchor	Evaluation Report
Hilti KWIK Bolt 3	ICC ESR-1385
DeWalt Power-Stud+ SD1	ICC ESR-2966
Simpson Wedge-All	ICC ESR-1396

Adhesive Anchor System	Evaluation Report
Hilti HIT-HY 270	ICC ESR-2682
DeWalt AC100+ Gold	ICC ESR-3200

- E. Alternate anchors or adhesives are permitted with approval of the engineer. The Contractor shall submit the proposed anchor product data and code evaluation report demonstrating the anchor is equivalent or exceeds the capacity of the specified anchor.
- F. Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by an applicable certification program. Certification shall include written and performance tests in accordance with the ACI/CRSI Adhesive Anchor Installer Certification program, or equivalent. Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation.
- G. Anchors shall be installed according to the Manufacturer's Printed Installation Instructions and applicable code evaluation reports including:
 - 1. Hole diameter, depth, and cleaning procedure
 - 2. Adhesive mixing, preparation, and placement
 - 3. Installation torque
- H. Locate all existing reinforcement and embedded items prior to drilling into concrete or masonry elements. Do not damage rebar or embeds while drilling or installing anchors.
- I. Grout all defective or abandoned holes with non-shrink grout or an injectable epoxy adhesive matching the surrounding concrete compressive strength. Consult the Architect for additional requirements at architecturally exposed concrete.
- J. Drilled anchors are not allowed in post-tensioned concrete without approval of the architect and engineer.
- K. Carbon steel anchors are limited to use in dry, interior locations.

8. Special Instructions

- 8.1. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and typical details.
- 8.2. The architectural drawings are the prime contract drawings. Consultant drawings by other disciplines are supplementary to the architectural drawings. All omissions or conflicts, including dimensions, between the various elements of the consultants' drawings and/or specifications shall be brought to the attention of the Architect before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the owner. Any work done by the contractor after discovery of such discrepancy shall be done at the contractor's risk.
- 8.3. The structural drawings shall be used in conjunction with the architectural drawings. Primary structural elements and overall structural layout are indicated within the structural plans and details. Some secondary elements, architectural layouts, alcoves, elevations, slopes, depressions, curbs, mechanical equipment and electrical equipment, are not indicated within the structural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings.

8.4. Shoring and Bracing Requirements:

- A. Roof Structures -- The General Contractor is responsible for the method and sequence of all structural erection. He shall provide temporary shoring and bracing as his method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall not be considered stable until all connections are complete.
- B. Foundation walls must be braced until the complete floor or roof systems is completed. Do not backfill until floor or roof systems are in place.
- C. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self-supporting.

- 8.5. Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the contractor of the responsibility of completing the project according to the contract documents. The general contractor shall review and mark all shop drawings prior to submitting them to the Architect for his review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.

- 8.6. Project Coordination: It shall be the responsibility of the general contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the general contractor and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the general contractor. It is the contractor's obligation to provide all items necessary for his chosen procedure.

- 8.7. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, contractor shall notify architect/engineer prior to fabrication or construction within that area.

- 8.8. Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Revealey Engineers and Associates, Inc., All Rights reserved. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Revealey Engineers and Associates, Inc.'s reserved rights. The documents defining the structure are instruments of service prepared by Revealey Engineers and Associates, Inc. for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the contractor or his subcontractors for preparation of shop drawings or other submittals.

9. Quality Assurance

- 9.1. Quality Assurance Agency Requirements:
 - A. The Owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. The QAA shall provide all information necessary for the building official to determine that the agency meets the applicable requirements
 - 1. The QAA shall be objective, competent and independent from the contractor responsible for the work being inspected. The agency shall also disclose possible conflicts of interest to confirm objectivity.
 - 2. The QAA shall have adequate equipment to perform required tests.
 - 3. The QAA shall employ experienced personnel educated in conducting, supervising and evaluating tests and/or inspections. Experience or training shall be considered relevant when the documented experience or training is related in complexity to the same type of special inspection activities for projects of similar complexity and material qualities.

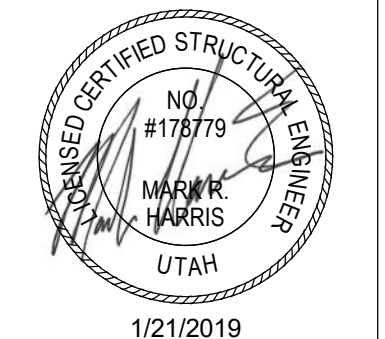
- 4. Prior to the start of construction, the QAA shall submit to the building official, the owner, architect and engineer copies of the following:
 - a. Current calibration records for all equipment to be used for the work being inspected and/or tested.
 - b. Current certification and training records for each individual performing the inspections and/or testing.
 - c. Sample inspection and testing reports and the distribution list for the records.
 - d. Proposed inspection procedures and frequency for each inspection required by the work.
 - e. Proposed testing methods and frequency of testing required by the work.
- 5. The QAA shall send copies of all inspection and testing reports to the building official, owner, architect, engineer and contractor. Reports shall indicate that the work inspected was or was not completed in conformance to the approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the building official, architect and engineer.
- 6. The QAA shall submit a final report documenting required special inspections and correction of any discrepancies noted in the inspections. The final report shall be distributed to the building official, owner, architect and engineer in a timely manner prior to the completion of the project.

- 9.2. Contractor Responsibilities:
 - A. Each contractor responsible for the construction of a system or component requiring special inspections or testing shall submit a written statement of responsibility to the building official, owner, architect and engineer prior to the commencement of the work. The contractor's statement of responsibility shall contain the following:
 - 1. Acknowledgement of awareness of the special requirements defined in the statement of special inspections.
 - 2. Acknowledgement that control will be exercised in order to obtain conformance to the approved construction documents.
 - 3. Contractor's internal quality control procedures, methods and measures to be used in order to obtain conformance to the approved construction documents. Include copies of quality control reports, frequency of reporting and distribution of reports.
 - 4. Identification and qualifications of the person(s) responsible for quality control and their position(s) within the organization.
 - B. Notification of Engineer: The contractor shall notify the engineer twenty-four hours prior to the items listed in the Structural Observations by the Engineer of Record section.
 - C. Notification of QAA: The contractor shall notify the QAA in a timely manner so that inspection and testing may be performed as outlined in the statement of special inspections.

9.3. Structural Observations by the Engineer of Record.

- A. The Engineer of Record will perform a structural observations once prior to the completion of the project. Copies of the engineer's report will be distributed to the architect, contractor, owner, and building official.
- B. Observation visits to the site by the Engineer's field representatives shall not be construed as inspection or approval of construction.

NO.	REVISION DESCRIPTION	DATE



CONSTRUCTION	JT/ARE+A	RCG/RE+A	1/21/2019	...
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SUBMITTAL	DRAWN BY:	CHECKED BY:	APPROVED BY:	RELEASE:	PLOT DATE:
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CALL BLUESTAKES @ 1-800-662-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.



HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE
GENERAL STRUCTURAL NOTES

SE002

10. Statement of Special Inspections

- 10.1. The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).
- 10.2. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases, periodic inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task.

Concrete Construction per IBC Sections 1705.3 & 1705.12

Item	Frequency	Detailed Instructions
Reinforcing steel	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	Periodic	Verify weldability of reinforcing steel other than A706. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
Cast-in bolts & embeds	Periodic	
Post-installed adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	Continuous	All post-installed anchors/dowels shall be special inspected in accordance with the approved code evaluation report and with ACI Section 17.8.2.
Post-installed mechanical anchors and adhesive anchors not defined above	Periodic	
Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents, ACI 318: Ch. 19, 26.4.3-26.4.4; and IBC 1904.1, 1908.2, 1908.3.
Concrete sampling for strength tests, slump, air content, and temperature	Continuous	Samples for strength tests shall be taken in accordance with ASTM C172, cured per ASTM C31 and tested in accordance with ASTM C39 by a testing agency complying with ASTM C1077. Acceptance criteria for strength tests shall be per ACI 318 Section 26.12.3. For each mix placed, samples shall be taken not less than once a day, nor less than once for each 150 yd ³ of concrete, nor less than once for each 5000 ft ² of surface area for slabs or walls. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.
Concrete & shotcrete placement	Continuous	
Curing temperature and techniques	Periodic	Verify that concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 7 days after placement. Verify that high-early-strength concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 3 days after placement. Accelerated curing methods may be used (see ACI 318: 26.5.3.2(c)). Shotcrete shall be maintained at a temperature of at least 40°F for the same period of time as noted for concrete and kept in the moist condition during curing periods in accordance to IBC 1906.9 All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
Formwork	Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.
Welding of Reinforcing Steel (IBC Table 1705.3):		
Verification of weldability	Periodic	Verify weldability of reinforcing steel other than A706 based upon carbon equivalent and in accordance with AWS D1.4. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
Other reinforcing steel	Periodic	Visually inspect all welds in accordance with AWS D1.4.
Single-pass fillet welds, 5/16" max	Periodic	
All other welds	Continuous	

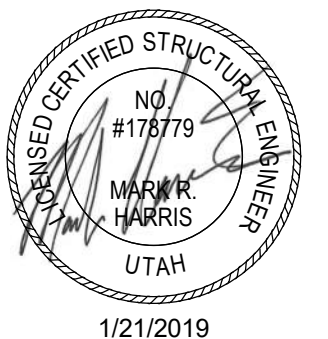

Masonry Construction per IBC Section 1705.4

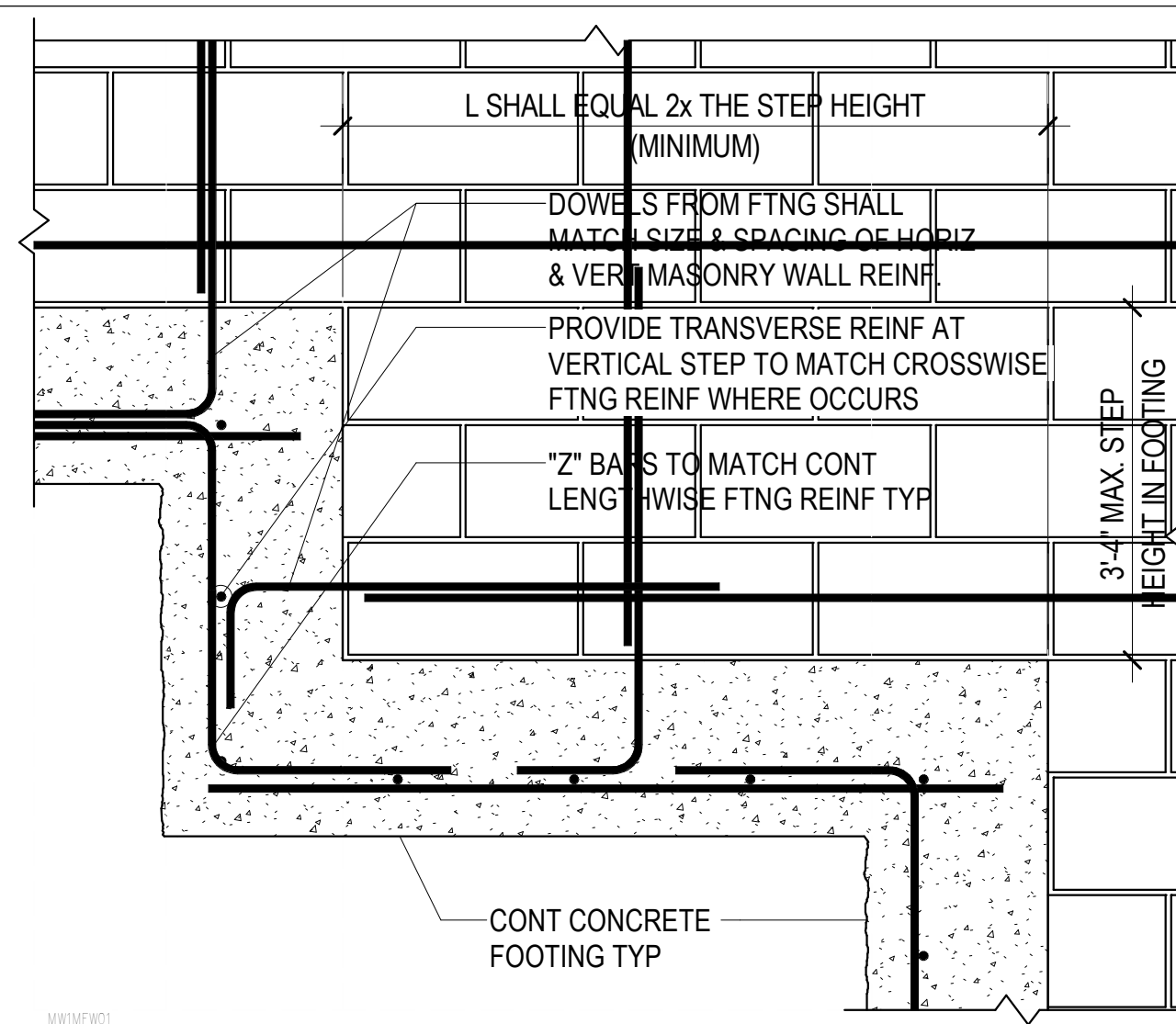
Item	Frequency	Detailed Instructions
Prior to Construction (Article 3.1.1, TMS-402/ACI 530.1-13):		
Review material certificates, mix designs, test results and construction procedures	Periodic	Verify that materials conform to the requirements of the approved construction documents. Mix design, test results, material certificates, and construction procedures should be submitted for review. Mortar mix designs shall conform to ASTM C 270 while grout shall comply with the proportion or strength requirements of ASTM C 476 or be based upon compressive strength tests in accordance with ASTM C1019. Material certificates shall be provided for the following: reinforcement, anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed.

Verify f_m prior to construction	Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Section 1.4B of ACI 530.1-13 prior to construction.
Proportions of site-prepared mortar	Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602/ACI 530.1-13.
Construction of mortar joints	Periodic	Verify that mortar joints comply with Article 3.3 B of TMS-602/ACI 530.1-13.
Preparation of required grout specimens, mortar specimens and/or prisms shall be observed	Periodic	If the prism test method is used a minimum of three prisms shall be constructed in accordance with ASTM C1314. If the unit strength method is selected the compressive strength of the grout shall be determined per ASTM C1019 (not required if grout complies with ASTM C476).
Prior to Grouting (Table 3.1.2, TMS-402/ACI 530-13):		
Grout space	Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602/ACI 530.1-13.
Grade, type, and size of reinforcement and anchor bolts	Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.6 of TMS 402/ACI 530-13.
Placement of reinforcement and connectors	Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602/ACI 530.1-13.
Proportions of site-prepared grout	Periodic	Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.8 B and 2.4 G.1.b of TMS 602/ACI 530.1-13)
Placement of masonry units and construction of mortar joints	Periodic	Verify that face shells and head joints are fully mortared and that vertical cells are aligned and unobstructed openings for grout are provided. All units are to be clean and placed while mortar is soft and plastic. Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602/ACI 530.1-13.
During Masonry Construction (Table 3.1.2, TMS-402/ACI530-13):		
Size and location of structural elements	Periodic	Verify that structural elements are placed in locations specified on the approved construction documents and to the tolerances noted in Section 3.3F of TMS 602/ACI 530.1-13.
Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Periodic	Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402/ACI 530-13. Verify that structural elements are placed in locations specified on the approved construction documents. Headed or bent bar anchor bolts shall be embedded in grout.
Welding of reinforcement	Continuous	
Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F)	Periodic	Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602/ACI 530.1-13 and hot weather construction per Article 1.8 D of TMS 602/ACI 530.1-13.
Placement of grout	Continuous	
Self-consolidating grout	Continuous	
Placement of AAC masonry units and construction of thin-bed mortar joints	Periodic	Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602/ACI 530.1-13.
Observation of grout specimens, mortar specimens, and/or prisms	Periodic	Confirm that specimens/prisms are performed as required by Article 1.4 of TMS-602/ACI 530.1-13.
Minimum Testing:		
Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout	Periodic	Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI.
Verification of f_m and f_{AAC}	Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602/ACI 530.1-13 prior to construction.
Post-installed anchors or dowels		All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report.

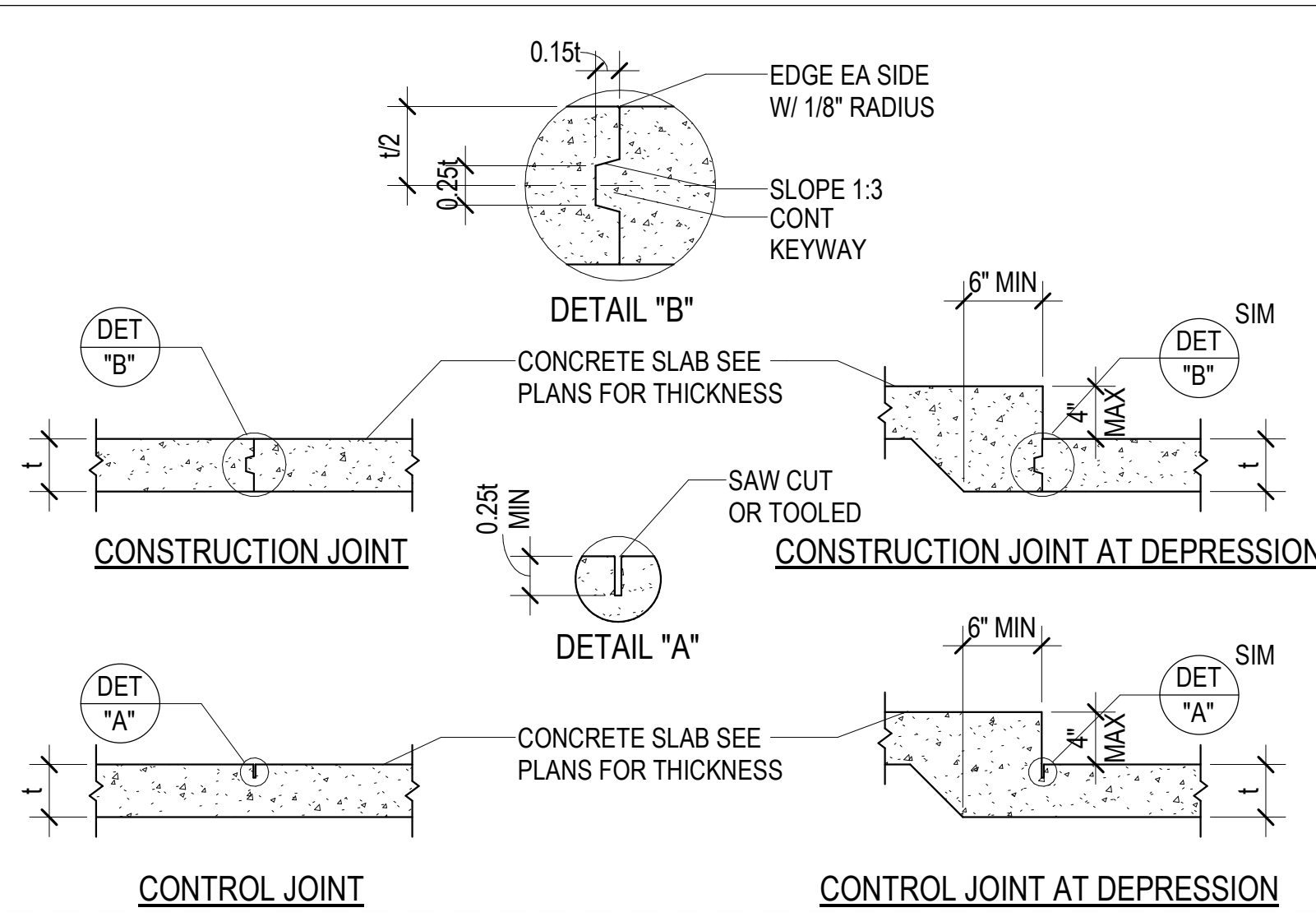
Soils per IBC Section 1705.6

Item	Frequency	Detailed Instructions
Verify subgrade is adequate to achieve design bearing capacity	Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft ² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	Continuous	

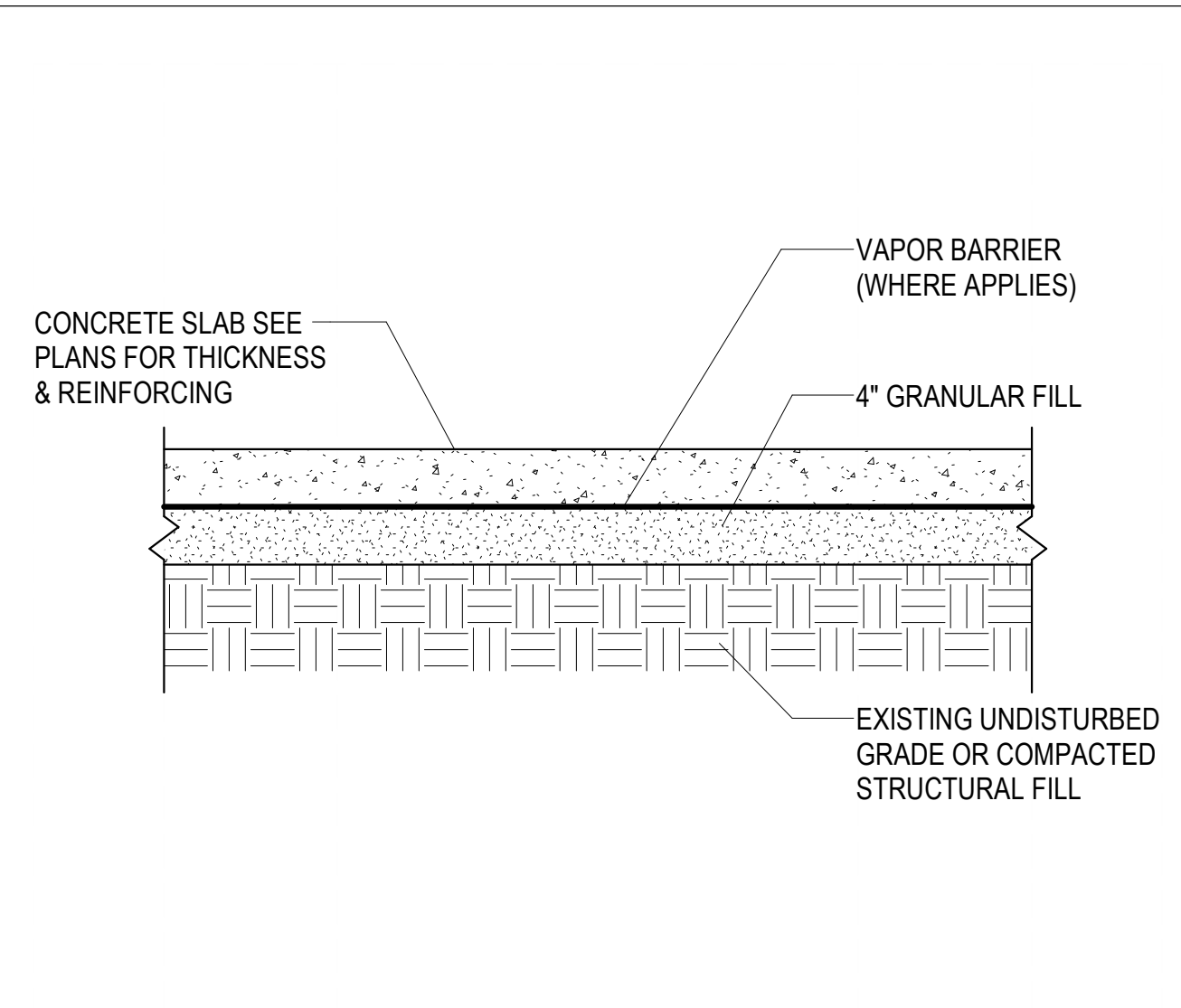
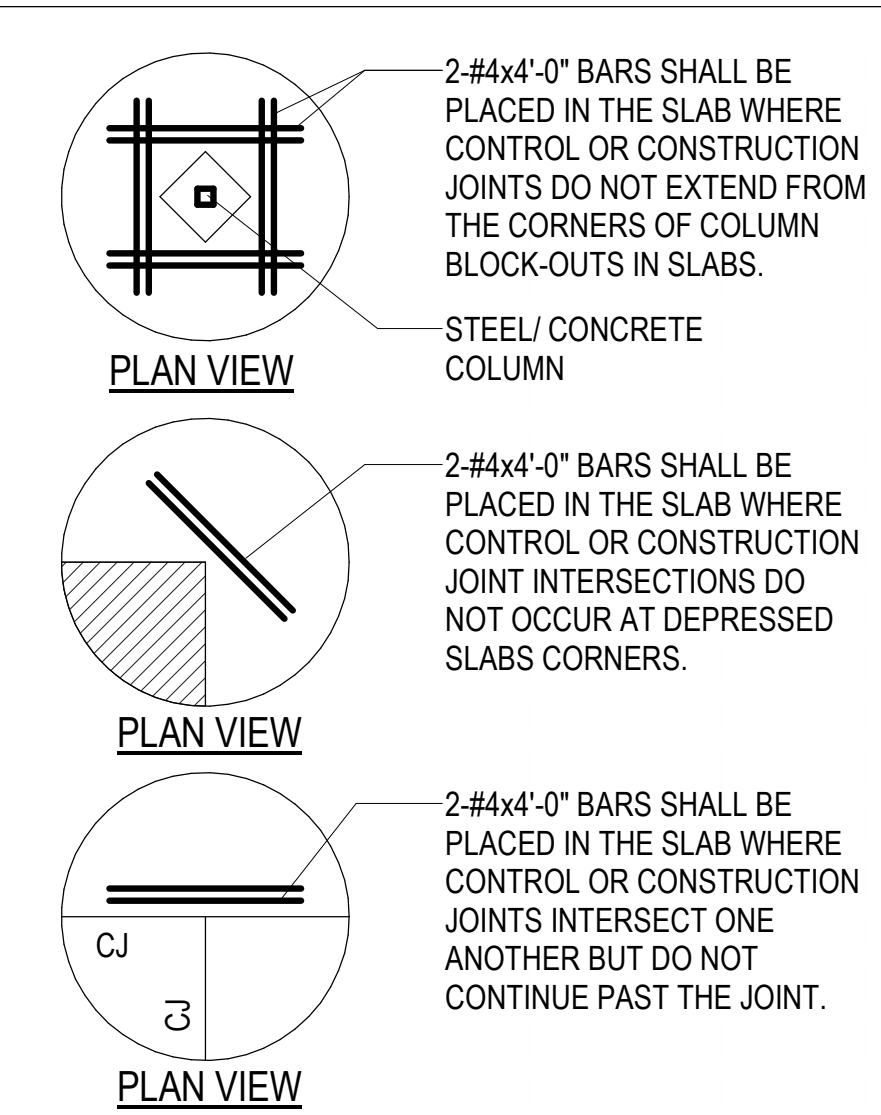
DATE	REVISION DESCRIPTION	NO.	CONSTRUCTION	SUBMITTAL	CALL BLUESTAKES
			JT/ARE+A	DRAWN BY:	@ 1-800-862-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
			RCG/RE+A	CHECKED BY:	VERIFY SCALE
				APPROVED BY:	BAR IS ONE INCH ON ORIGINAL DRAWING
				RELEASE:	
			1/21/2019	PLOT DATE:	
					
					
HERRIMAN CITY ENGINEERING DEPARTMENT ARCHES PARK RESTROOM BUILDING 12101 SOUTH TOWER ARCH LANE GENERAL STRUCTURAL NOTES					
SE003					



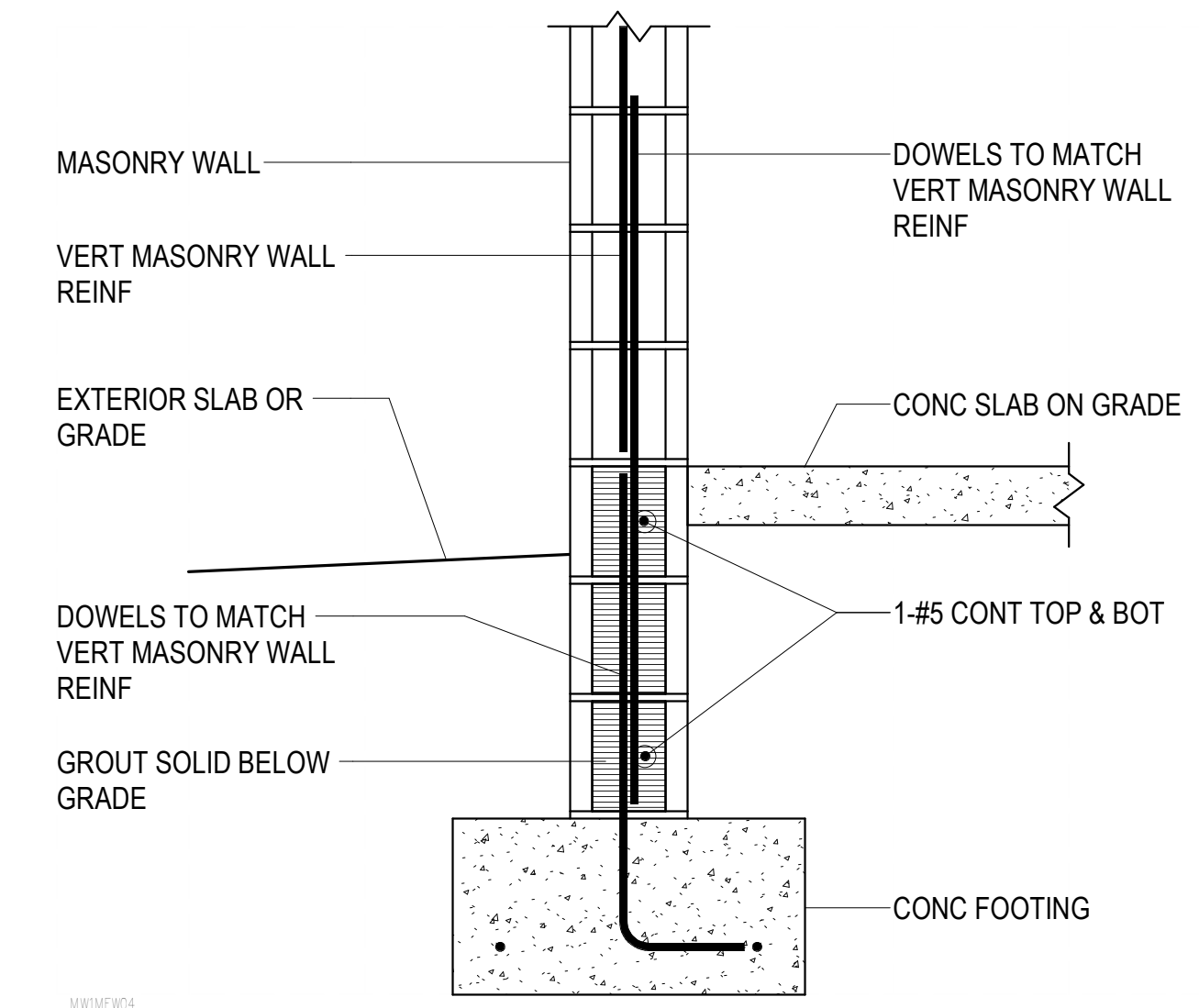
C1 TYPICAL STEP IN FOOTING DETAIL AT MASONRY FOUNDATION WALL
 SB501 NO SCALE



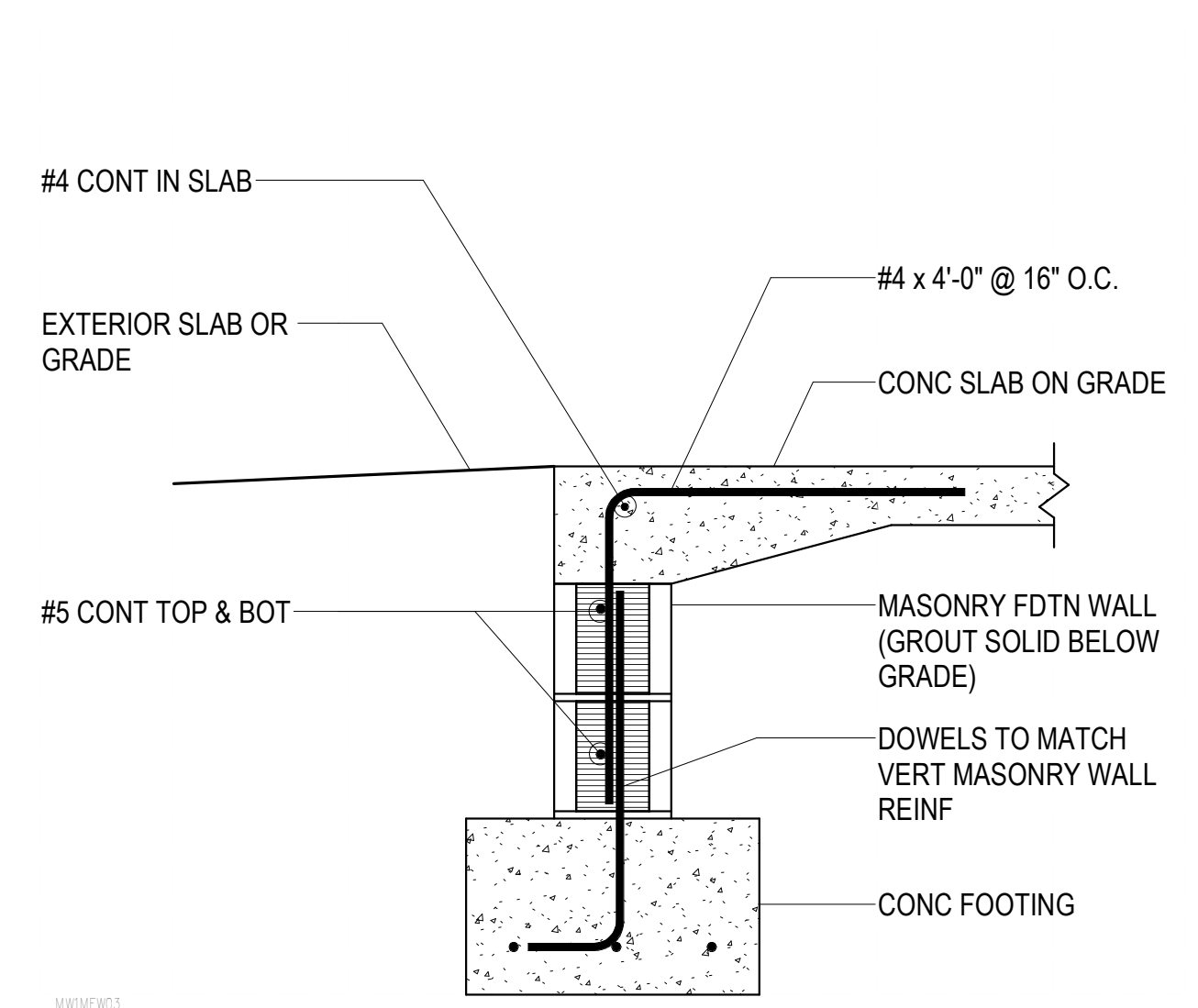
C2 TYPICAL CONCRETE SLAB ON GRADE DETAILS
 SB501 NO SCALE



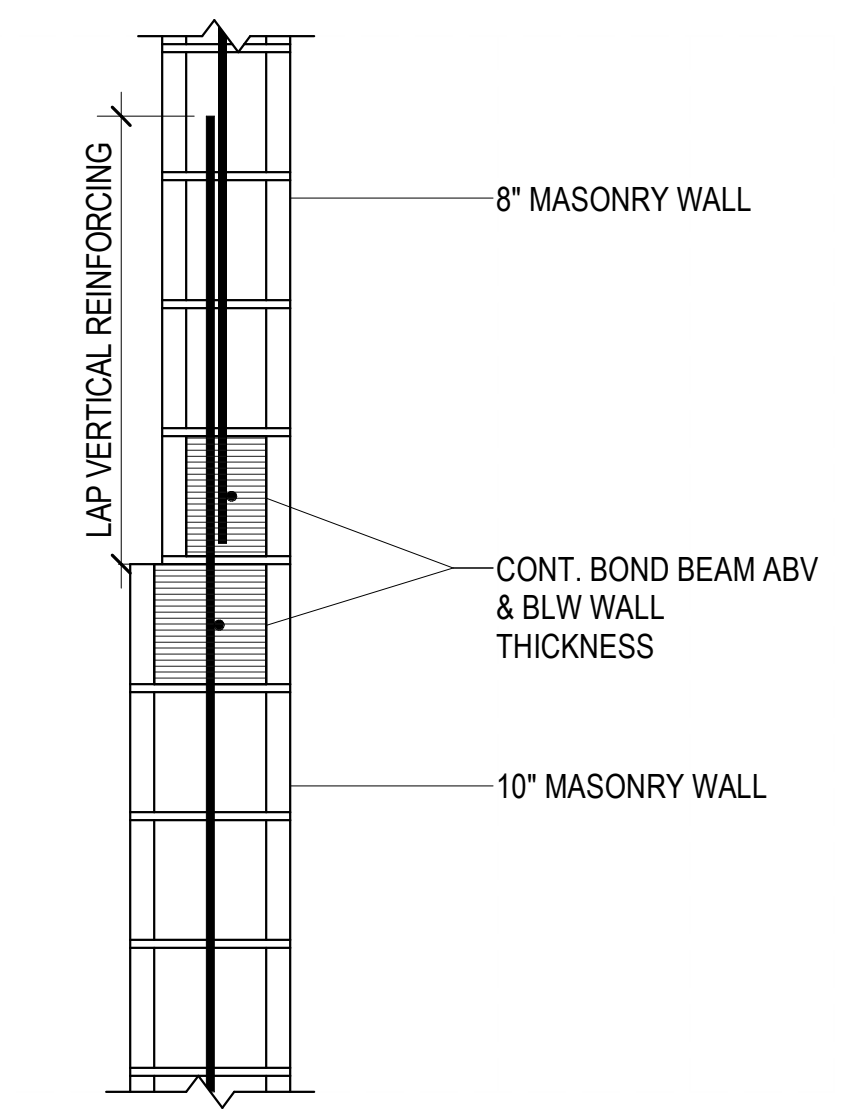
C4 TYPICAL CONCRETE SLAB ON GRADE PROFILE
 SB501 NO SCALE



B3 TYPICAL MASONRY WALL WITH MASONRY FOUNDATION
 SB501 NO SCALE



B4 TYPICAL MASONRY FOUNDATION WALL
 SB501 NO SCALE



A5 STEP IN MASONRY WALL THICKNESS
 SB501 NO SCALE

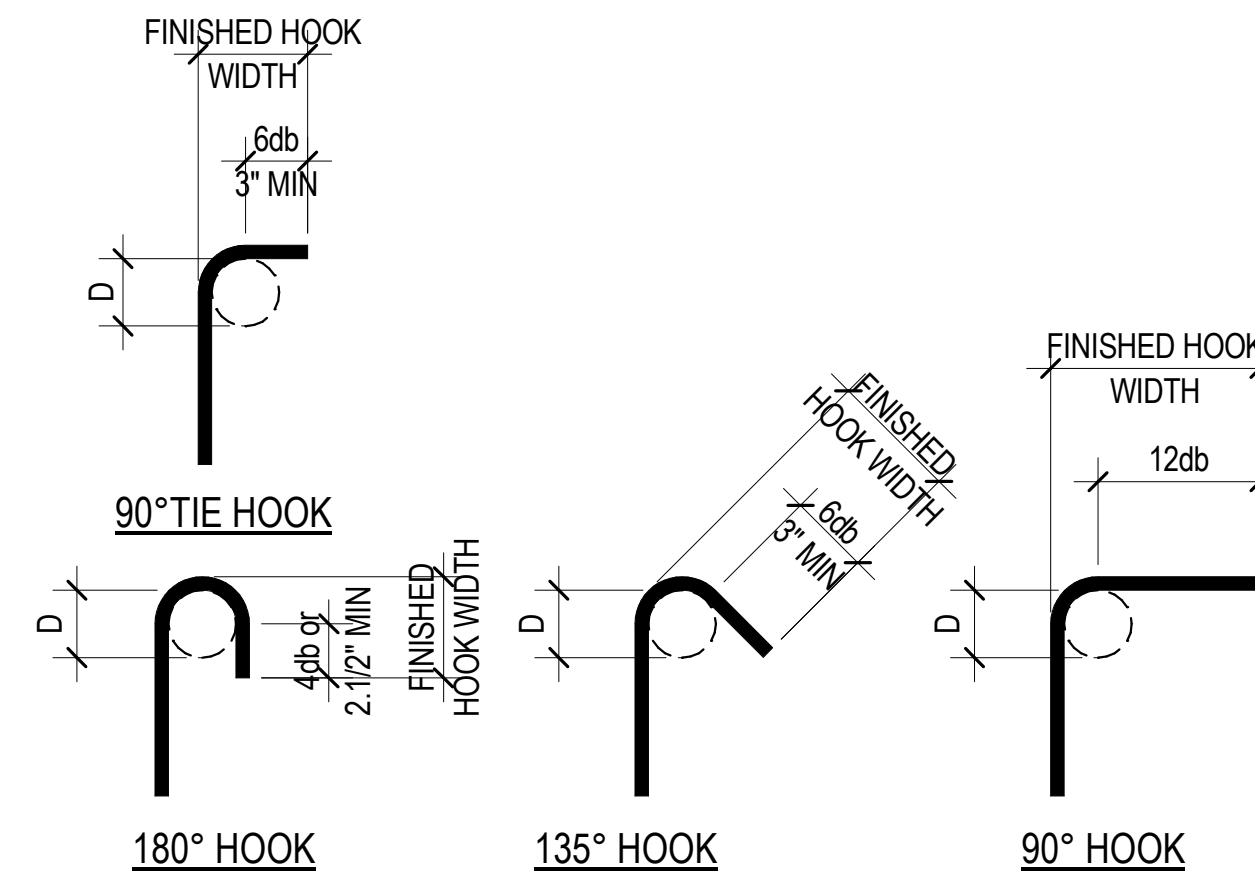
NO.	REVISION DESCRIPTION	DATE

CONSTRUCTION	JT/ARE+A	RCG/RE+A	1/21/2019	...
SUBMITTAL	DRAWN BY:	CHECKED BY:	APPROVED BY:	RELEASE:
CALL BLUESTAKES @ 1-800-662-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.	VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING		

HERRIMAN CITY
 ENGINEERING DEPARTMENT
 ARCHES PARK RESTROOM BUILDING
 12101 SOUTH TOWER ARCH LANE

TYPICAL FOOTING & FOUNDATION DETAILS

SB501



END HOOK SCHEDULE					
BAR SIZE	D	FINISHED HOOK WIDTH			
		180° HOOK	135° HOOK	90° HOOK	90° TIE HOOK
#3	2.1/4"	3"	4.1/4"	6"	4"
#4	3"	4"	4.1/2"	8"	4.1/2"
#5	3.1/4"	5"	5.1/2"	10"	6"
#6	4.1/2"	6"	8"	12"	--
#7	5.1/4"	7"	9"	14"	--
#8	6"	8"	10.1/2"	16"	--
#9	9.1/2"	11.3/4"	--	19"	--
#10	10.3/4"	13.1/4"	--	22"	--
#11	12"	14.3/4"	--	24"	--
#14	18.1/4"	21.3/4"	--	31"	--
#18	24"	28.1/2"	--	41"	--

B2 REINFORCEMENT END HOOK SCHEDULE
SB601 NO SCALE

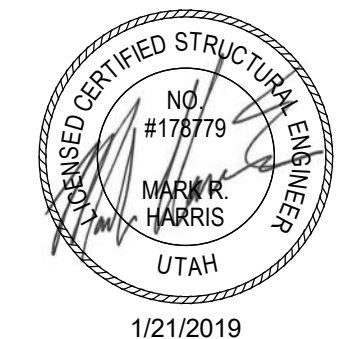
CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE																						
BAR SIZE	f _c = 3000 PSI				f _c = 4000 PSI				f _c = 4500 PSI				f _c = 5000 PSI				f _c = 6000 PSI			f _c = ALL		
	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ldc	Lsc
#3	17"	22"	22"	28"	15"	19"	19"	25"	14"	18"	18"	23"	13"	17"	17"	22"	12"	16"	16"	20"	8"	12"
#4	22"	29"	29"	38"	19"	25"	25"	33"	18"	24"	24"	31"	17"	23"	23"	29"	16"	21"	21"	27"	10"	15"
#5	28"	36"	36"	47"	24"	31"	31"	41"	23"	30"	30"	38"	22"	28"	28"	36"	20"	26"	26"	33"	12"	19"
#6	33"	43"	43"	56"	29"	37"	37"	49"	27"	35"	35"	46"	26"	34"	34"	44"	24"	31"	31"	40"	15"	23"
#7	48"	63"	63"	81"	42"	54"	54"	71"	40"	51"	51"	67"	38"	49"	49"	63"	34"	45"	45"	58"	17"	27"
#8	55"	72"	72"	93"	48"	62"	62"	81"	45"	59"	59"	76"	43"	56"	56"	72"	39"	51"	51"	66"	19"	30"
#9	62"	81"	81"	105"	54"	70"	70"	91"	51"	66"	66"	86"	48"	63"	63"	81"	44"	57"	57"	74"	22"	34"
#10	70"	91"	91"	118"	61"	79"	79"	102"	57"	74"	74"	96"	54"	71"	71"	92"	50"	64"	64"	84"	24"	39"
#11	78"	101"	101"	131"	67"	87"	87"	114"	64"	82"	82"	107"	60"	78"	78"	102"	55"	71"	71"	93"	27"	43"
#14	93"	121"	NA	NA	81"	105"	NA	NA	76"	99"	NA	NA	72"	94"	NA	NA	66"	86"	NA	NA	33"	NA
#18	124"	161"	NA	NA	108"	140"	NA	NA	101"	132"	NA	NA	96"	125"	NA	NA	88"	114"	NA	NA	43"	NA

- NOTES:
- DEFINITIONS:
 - Ld: TENSION DEVELOPMENT LENGTH FOR REINFORCEMENT SATISFYING THE FOLLOWING CONDITIONS:
 - SLABS AND WALLS: CLEAR SPACING > 2db AND CONCRETE CLEAR COVER > db
 - BEAMS AND COLUMNS: CLEAR COVER SPACING > db AND CONCRETE CLEAR COVER > db
 - Lt: DEVELOPMENT LENGTH FOR TOP BARS IN TENSION
 - Lsb: TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS (CLASS B)
 - Lsbt: TENSION LAP SPLICE LENGTH OF TOP BARS.
 - Ldc: DEVELOPMENT LENGTH FOR BARS IN COMPRESSION
 - Lsc: TIED COLUMN LAP SPLICE IN COMPRESSION
 - db: NOMINAL BAR DIAMETER (INCHES)
 - TOP BARS: HORIZONTAL BEAM REINFORCEMENT WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW
 - MULTIPLY VALUES IN SCHEDULE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET REQUIREMENTS FOR Ld IN NOTE 1.
 - MULTIPLY VALUES IN SCHEDULE BY 1.3 FOR USE IN LIGHTWEIGHT AGGREGATE CONCRETE.
 - FOR EPOXY COATED BAR: MULTIPLY VALUES IN SCHEDULE BY 1.5 FOR BARS WITH CLEAR COVER < 3db OR CLEAR SPACING < 6db. OTHERWISE MULTIPLY VALUES BY 1.2.
 - a. FOR BUNDLED BARS OF THREE OR LESS MULTIPLY LENGTHS BY 1.2.
 - b. FOR BUNDLED BARS OF FOUR OR MORE MULTIPLY LENGTHS BY 1.33.
 - c. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
 - SCHEDULE LENGTHS ARE FOR f_y=60ksi REINFORCING, MULTIPLY LENGTHS BY 1.25 FOR f_y=75ksi REINFORCING.
 - LAP SPLICES ARE NOT PERMITTED FOR #14 & #18 BARS. USE BAR COUPLERS PER G.S.N.

CONCRETE FOOTING SCHEDULE												
MARK	WIDTH	LENGTH	THICK	CROSSWISE REINFORCING				LENGTHWISE REINFORCING				REMARKS
				NO.	SIZE	LENGTH	SPACE	NO.	SIZE	LENGTH	SPACE	
FC2.0	2'-0"	CONT.	1'-0"	--	NONE	REQ'D	--	2	#5	CONT.	18"	

- PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNLESS NOTED OTHERWISE.
- TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" CLEAR CONCRETE COVER.
- SPOT FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS, UNLESS NOTED OTHERWISE.
- ALL FOOTINGS SHALL BE FORMED. FOOTINGS SHALL NOT BE EARTH FORMED OR OVERSIZED WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.

NO.	REVISION DESCRIPTION	DATE



CONSTRUCTION	DATE	BY
JT/ARE+A	1/21/2019	...
RCG/RE+A		
APPROVED BY:		
RELEASE		
PLOT DATE:		

CALL BLUESTAKES @ 1-800-862-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. VERIFY SCALE. BAR IS ONE INCH ON ORIGINAL DRAWING.



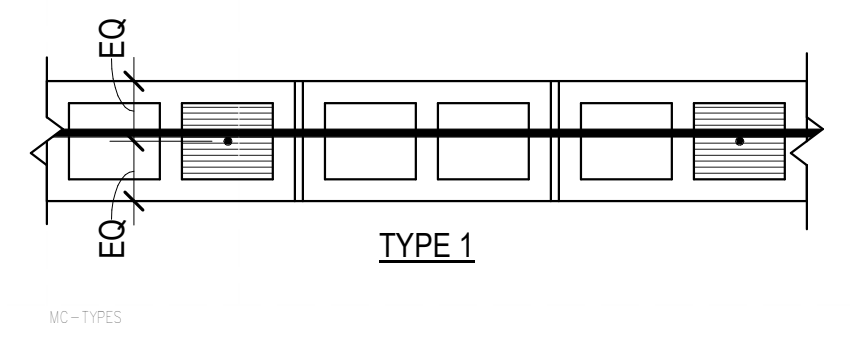
HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE
CONCRETE SCHEDULES

SB601

MASONRY WALL SCHEDULE						
MARK	WIDTH	MATERIAL	REINFORCING			REMARKS
			VERTICAL	HORIZONTAL	TYPE	
MW-1	8"	CMU	#5 @ 32" O.C.	#5 @ 32" O.C.	TYPE 1	
MW-2	10"	CMU	#5 @ 32" O.C.	#5 @ 32" O.C.	TYPE 1	

NOTES

- SEE PLANS, DETAILS AND GENERAL STRUCTURAL NOTES FOR ADDITIONAL REINFORCING REQUIREMENTS.
- GROUT SOLID ALL CELLS BELOW GRADE, CELLS CONTAINING EMBEDS (HSA'S, DBA'S, ANCHOR BOLTS, ETC.), AND CELLS CONTAINING REINFORCING. CONSOLIDATE GROUT AS PER THE GENERAL STRUCTURAL NOTES.
- HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.



C3 TYPICAL MASONRY WALL TYPES - PLAN VIEW
NO SCALE

MASONRY REINFORCING BAR LAP SPLICE SCHEDULE						
BAR SIZE	f _m = 2000 psi					
	6" CMU		8" CMU		10" CMU	
	CLASS	CLASS	CLASS	CLASS	CLASS	CLASS
#3	12"	12"	12"	12"	12"	
#4	18"	13"	21"	12"	20"	
#5	28"	20"	35"	16"	32"	
#6	**	38"	54"	29"	54"	
#7	-	52"	**	40"	**	
#8	-	**	-	61"	**	
#9	-	-	-	79"	-	

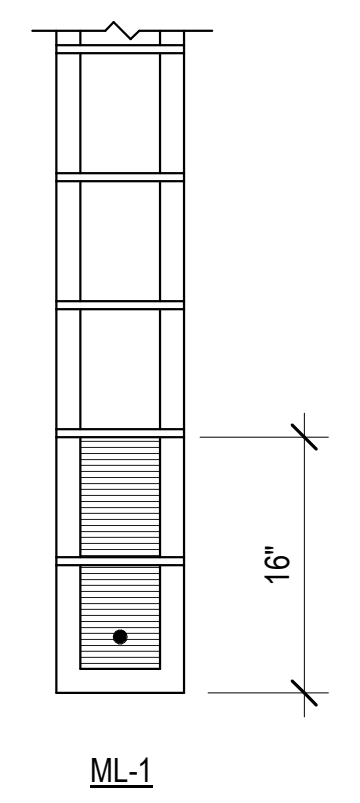
NOTES:

- CLASS A SPLICES MAY BE USED WHEN ONLY ONE BAR IS CONTINUOUS IN THE MASONRY CELL OR COURSE.
- CLASS B SPLICES SHALL BE USED WHEN TWO BARS ARE CONTINUOUS IN THE MASONRY CELL OR COURSE.
- ** INDICATES THAT A LAP SPLICE IS NOT ALLOWED AND MECHANICAL BAR COUPLERS ARE REQUIRED FOR THE BAR SPLICES. SPLICES SHALL BE OFFSET 2'-0" TO AVOID CONGESTION.
- WHERE VERTICAL BARS HAVE A REQUIRED LAP SPLICE GREATER THAN THE HEIGHT OF THE GROUT POUR, THE BAR SPLICE SHALL BE MADE WITH A MECHANICAL BAR COUPLER. WHERE THE HEIGHT OF THE GROUT POUR EXCEEDS 60 INCHES, HIGH LIFT GROUTING PROCEDURES SHALL BE FOLLOWED.
- WHERE MECHANICAL BAR COUPLERS ARE USED, THE CONNECTOR SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR IN TENSION AND COMPRESSION.

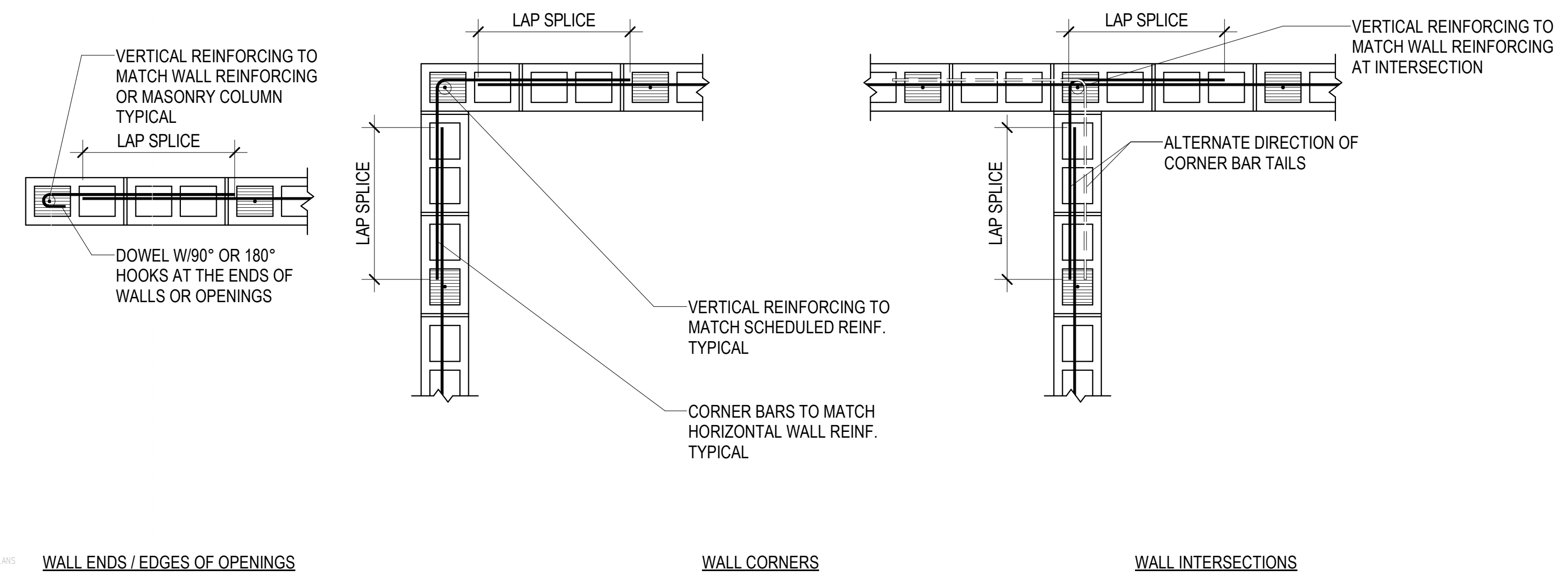
MASONRY LINTEL SCHEDULE						
MARK	DIMENSIONS		REINFORCING		MAXIMUM SPAN	REMARKS
	DEPTH	WIDTH	HORIZONTAL	STIRRUPS		
ML-1	16"	6", 8", 10" OR 12"	1- #5 CONT. BOTTOM	--	3'-4"	

NOTES:

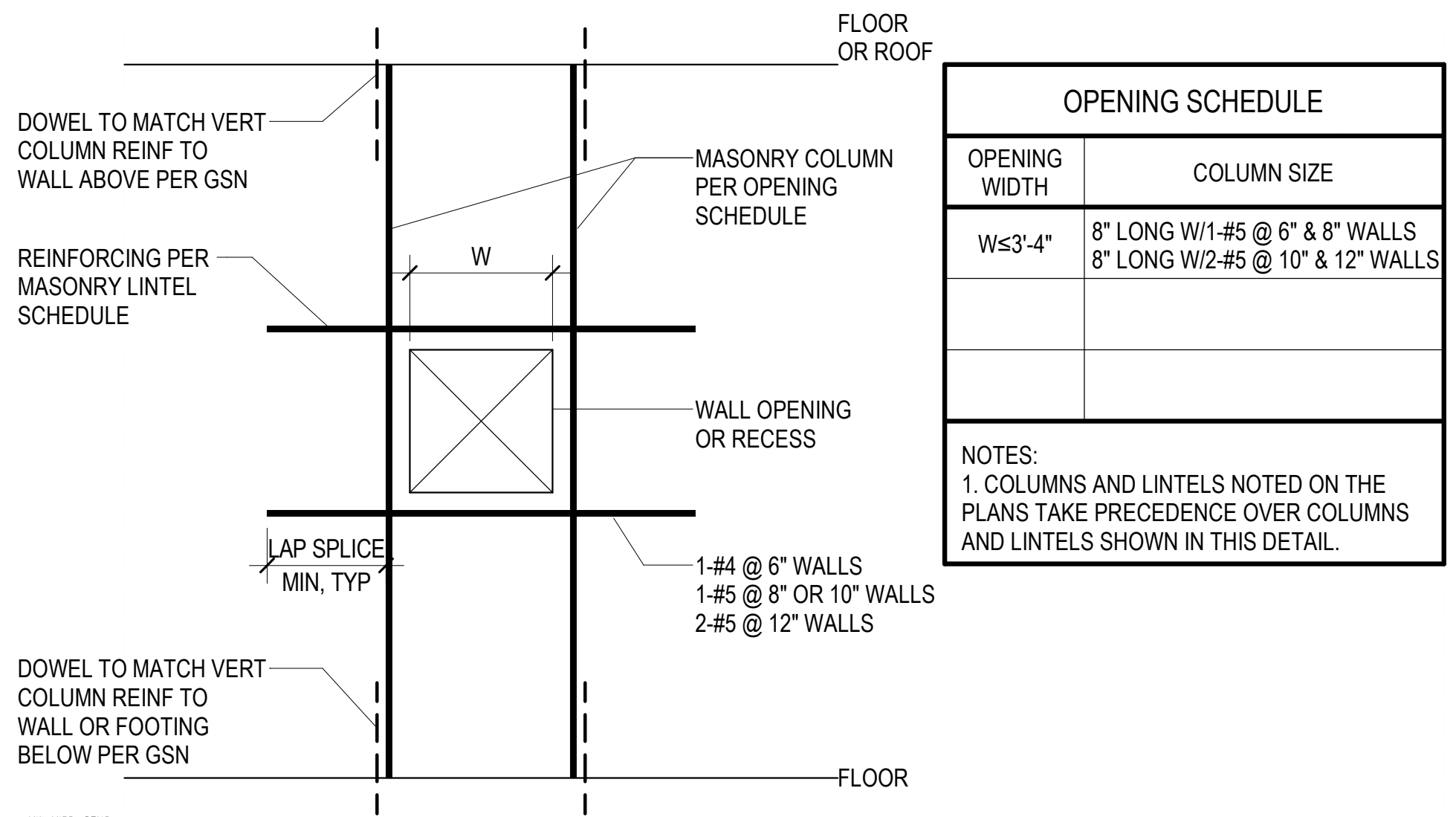
- EXTEND ALL HORIZONTAL REINFORCING 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING. IF HORIZONTAL REINFORCING CANNOT BE EXTENDED 48 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING, PROVIDE 90 DEGREE STANDARD HOOK.
- GROUT MASONRY LINTELS MONOLITHICALLY WITH THE SUPPORT WALL OR COLUMN AT EACH END.
- SPLICE TOP BARS AT MIDSPAN OF LINTEL ONLY.
- SPLICE BOTTOM BARS OVER SUPPORTS ONLY.
- FOR WALL ABOVE LINTEL, DOWEL VERTICAL REINFORCING INTO FULL DEPTH OF THE LINTEL OR 48 BAR DIAMETERS, WHICHEVER IS LESS.
- HORIZONTAL WALL REINFORCING SHALL CONTINUE THROUGH MASONRY LINTELS. WHERE BOTH HORIZONTAL WALL REINFORCING AND LINTEL REINFORCING WOULD OCCUR IN THE SAME COURSE, THE LARGER BARS ARE TO REPLACE THE SMALLER BARS.



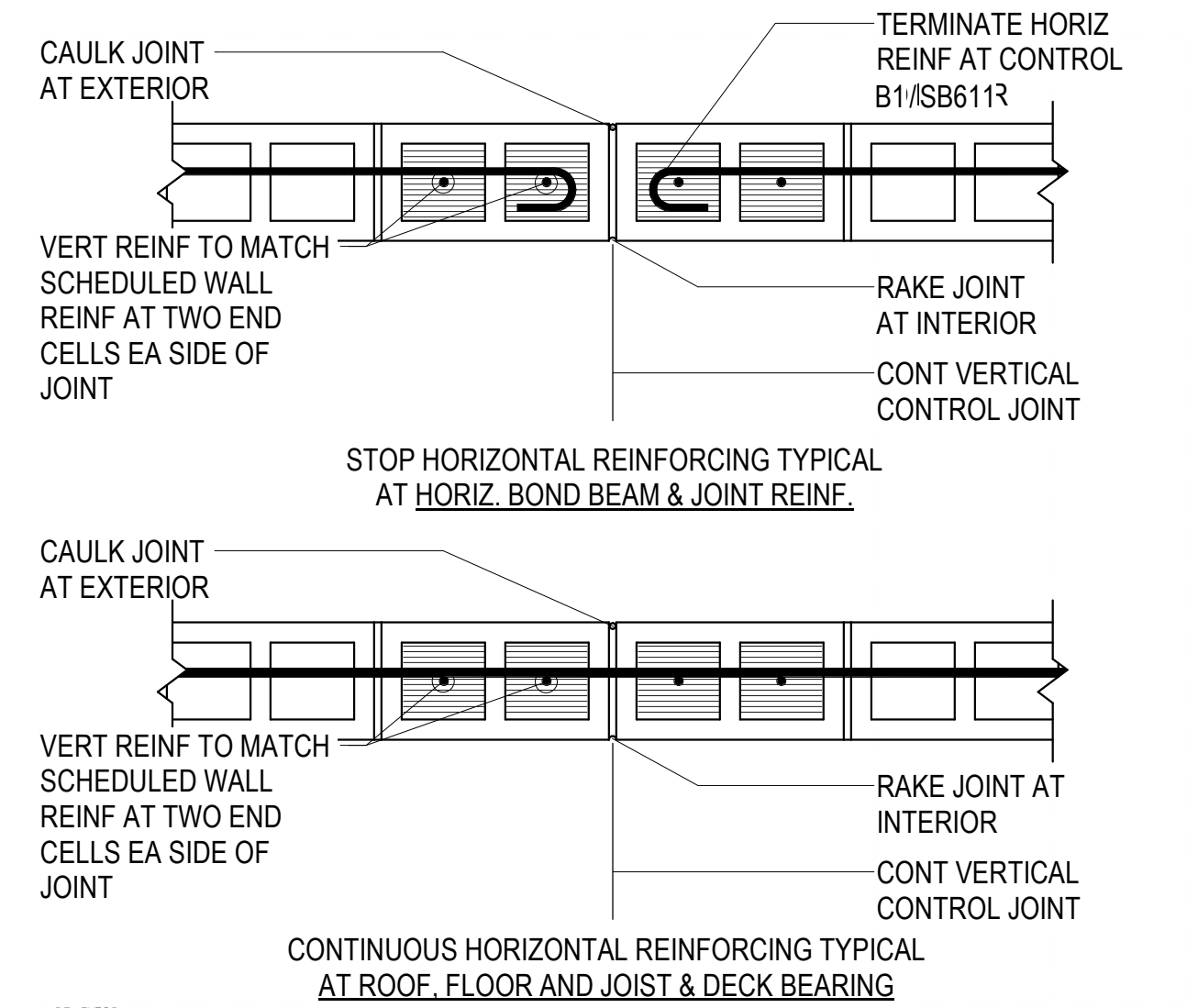
A4 TYPICAL MASONRY LINTEL DETAILS
NO SCALE



B1 TYPICAL MASONRY WALL END, CORNER AND INTERSECTION DETAILS
NO SCALE



A2 TYPICAL REINFORCING AROUND MISCELLANEOUS OR RECESSED MASONRY OPENINGS
NO SCALE



A1 TYPICAL CONTROL JOINTS IN MASONRY WALLS
NO SCALE

DATE	REVISION DESCRIPTION	NO.

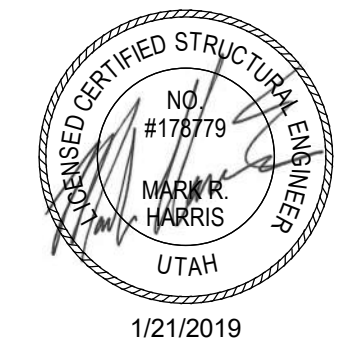
CONSTRUCTION: JTA/RE+A, RCG/RE+A, APPROVED BY: 1/21/2019, RELEASE: 1/21/2019, PLOT DATE: ...

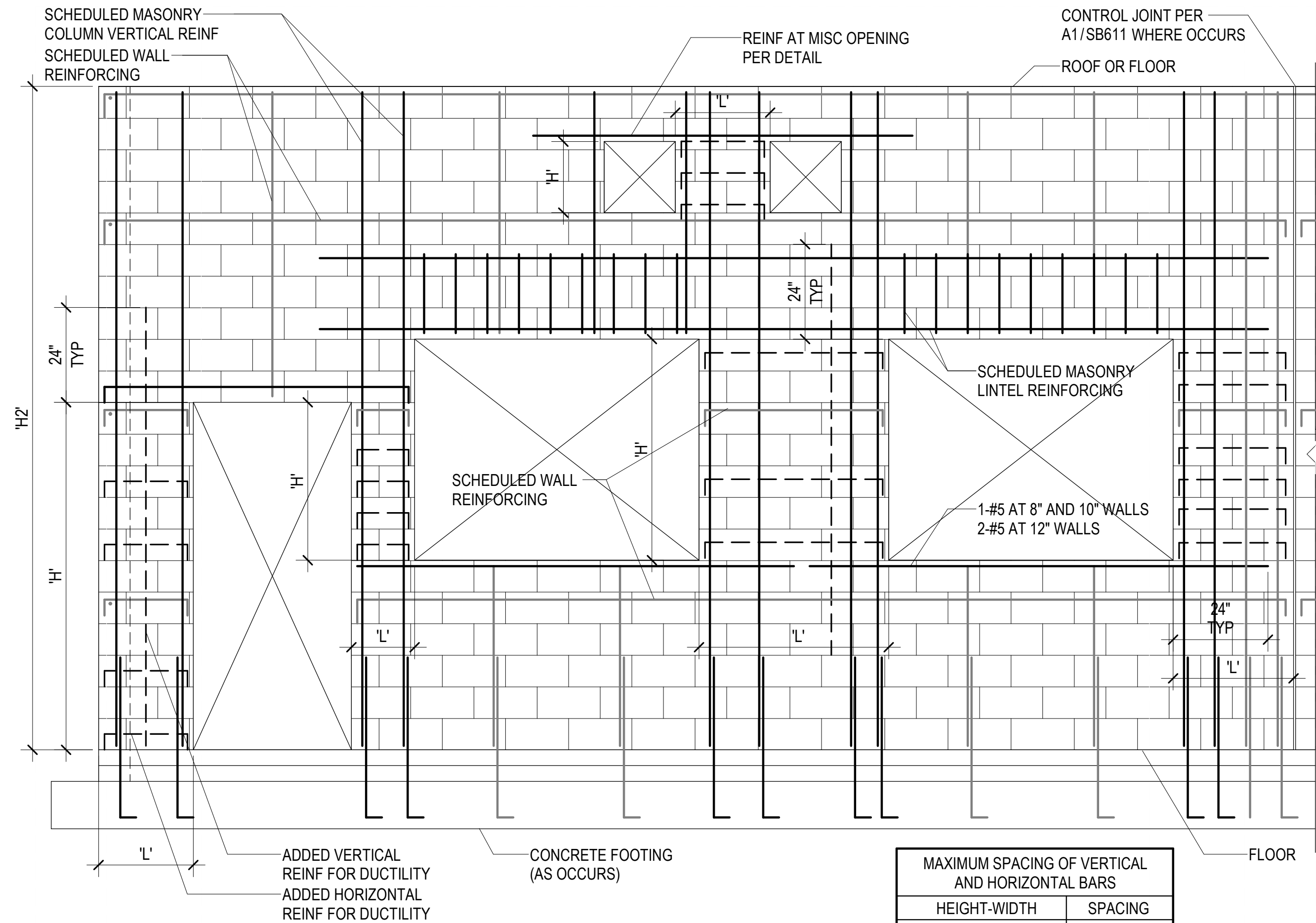
CALL BLUESTAKES @ 1-800-862-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.

HERRIMAN CITY
ENGINEERING DEPARTMENT
ARCHES PARK RESTROOM BUILDING
12101 SOUTH TOWER ARCH LANE

MASONRY SCHEDULES

SB611





- NOTES:
1. ADDED BAR SIZE SHALL BE 1-#4 MINIMUM.
 2. ALL ADDED BARS SHALL BE EMBEDDED IN GROUT.
 3. ALL ADDED HORIZONTAL REINFORCING SHALL BE TERMINATED WITH A 90° OR 180° STANDARD HOOK AROUND THE VERTICAL REINFORCING.
 4. FOR WALLS WITH 'H2' AND 'L' ≥ 12'-0" OR LARGER ADDITIONAL REINFORCING FOR DUCTILITY IS NOT REQUIRED.

WALL REINFORCING LEGEND

- SCHEDULED WALL REINF
- SCHEDULED OPENING REINF
- - - ADDED REINF FOR DUCTILITY

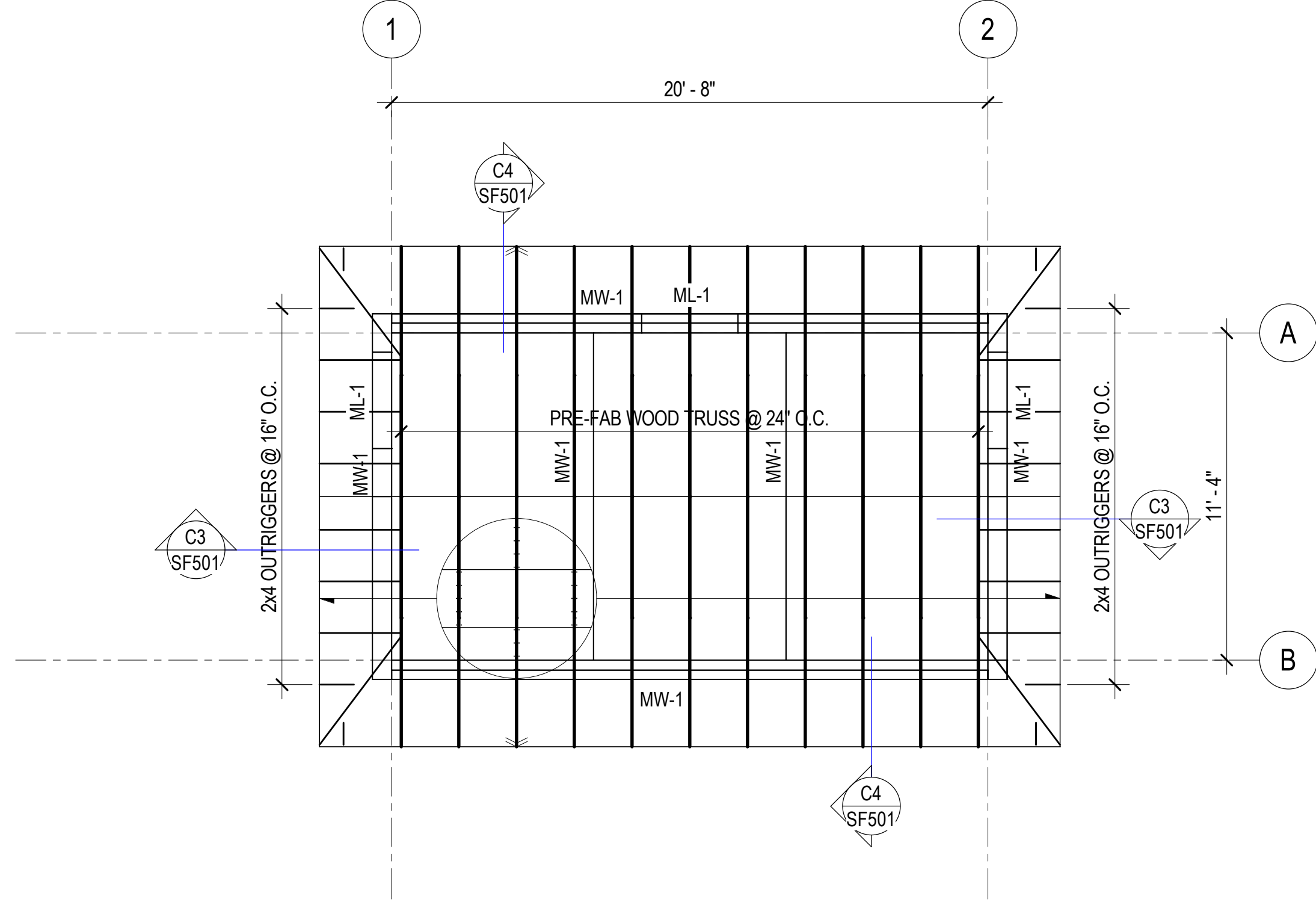
MAXIMUM SPACING OF VERTICAL AND HORIZONTAL BARS	
HEIGHT-WIDTH	SPACING
(H or L) < 4'-0"	8" O.C.
4'-0" ≤ (H or L) < 6'-0"	16" O.C.
6'-0" ≤ (H or L) < 8'-0"	24" O.C.
8'-0" ≤ (H or L) < 10'-0"	32" O.C.
10'-0" ≤ (H or L) < 12'-0"	40" O.C.
12'-0" ≤ (H or L)	48" O.C.

B3 TYPICAL MASONRY WALL OPENINGS WITH ADDITIONAL DUCTILITY REINFORCMENT FOR MASONRY SHEAR WALLS
SB612 NO SCALE

DATE							
REVISION DESCRIPTION							
NO.							
CONSTRUCTION	JT/ARE+A	RCG/RE+A					
SUBMITTAL	DRAWN BY:	CHECKED BY:	APPROVED BY:	RELEASE	1/21/2019		
				PLOT DATE:			
CALL BLUESTAKES @ 1-800-862-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.				VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING			
HERRIMAN CITY ENGINEERING DEPARTMENT ARCHES PARK RESTROOM BUILDING 12101 SOUTH TOWER ARCH LANE MASONRY SCHEDULES							
SB612							

ROOF FRAMING PLAN NOTES

- SEE A3/SF501 FOR TRUSS LOADING DIAGRAMS.
- TYPICAL ROOF FRAMING IS WOOD SHEATHING OVER PREFAB METAL PLATE WOOD TRUSSES.



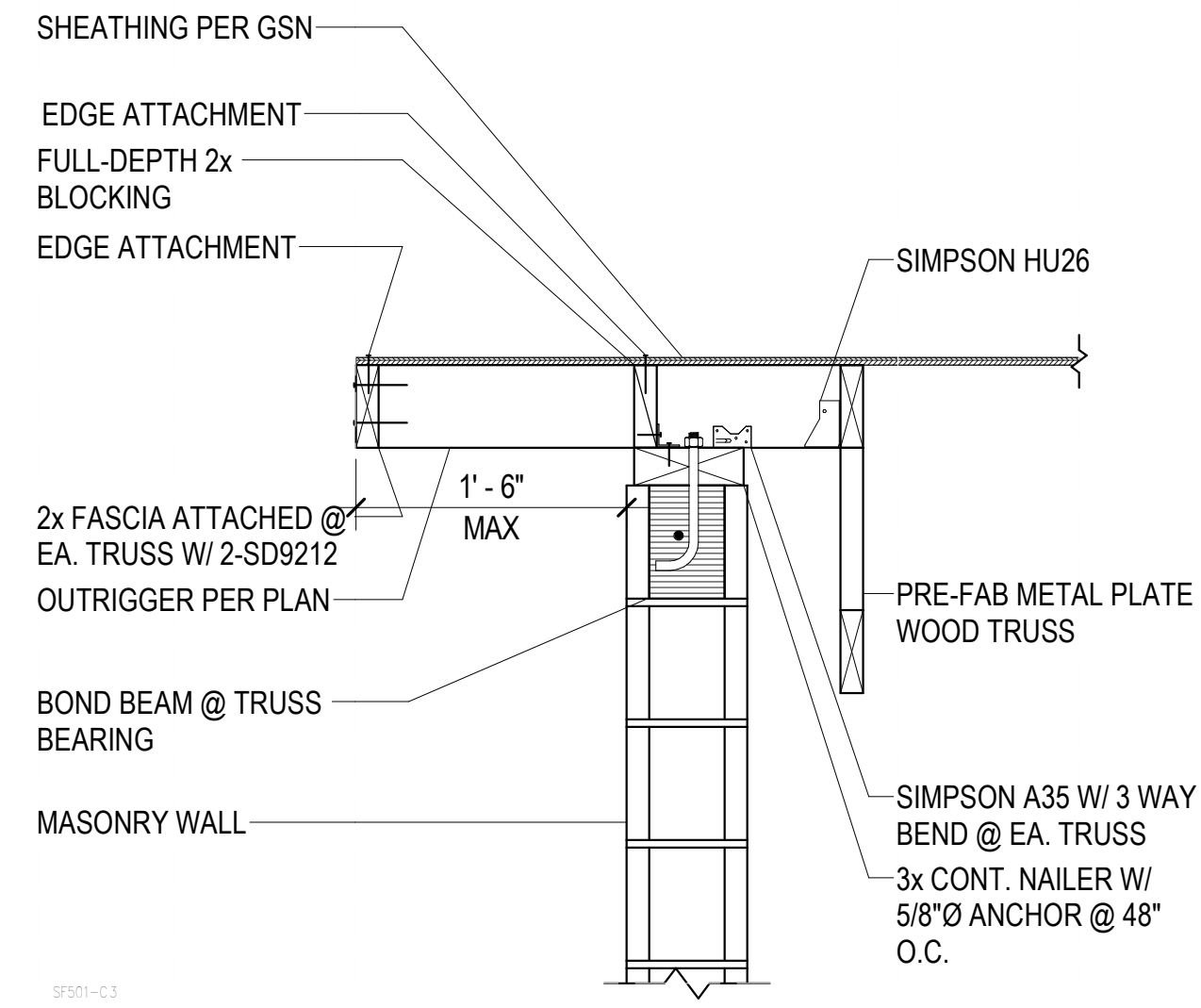
A3 ROOF FRAMING PLAN
SF101 SCALE: 1/4" = 1'-0"

NO.	REVISION DESCRIPTION	DATE

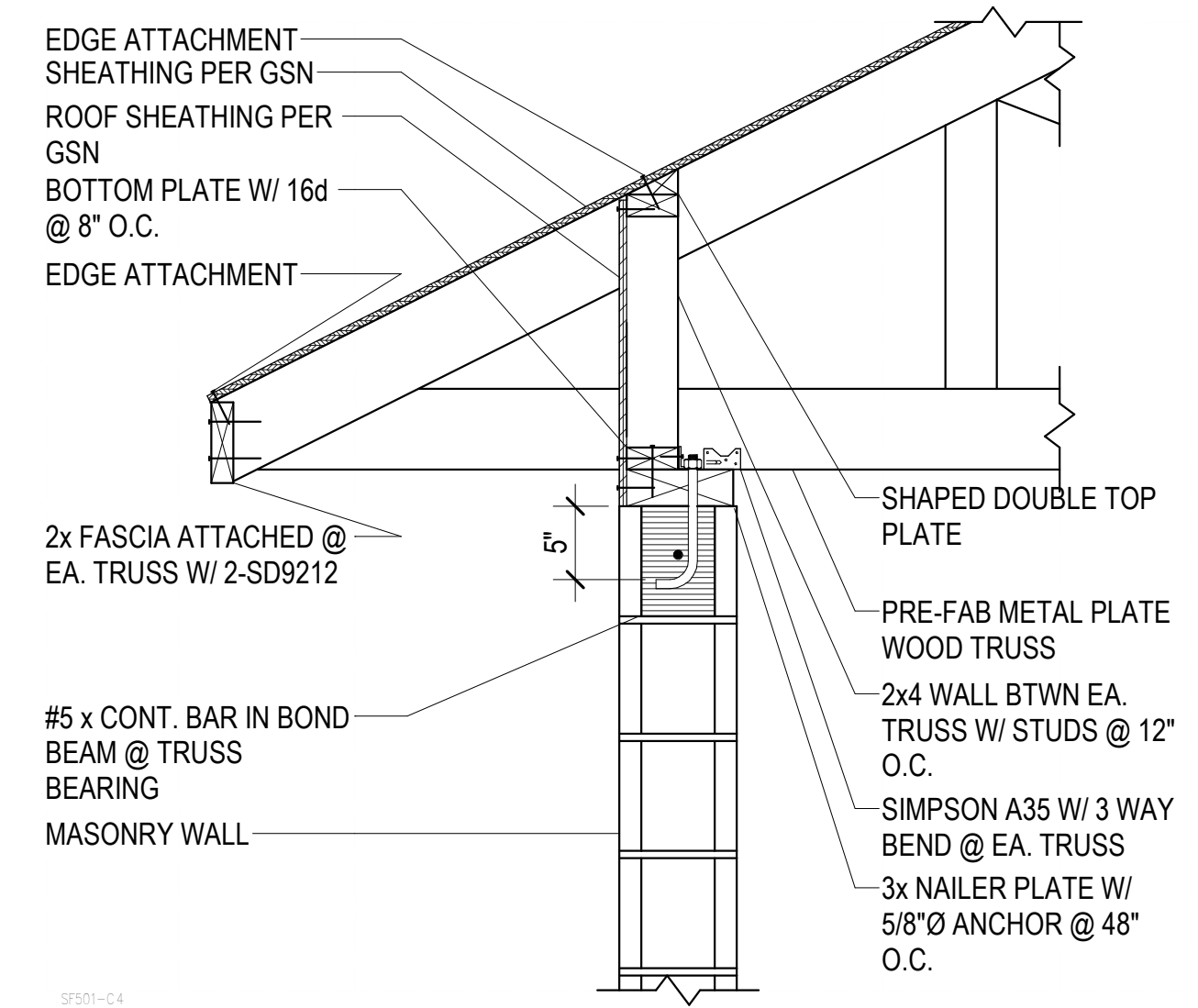
	CONSTRUCTION JTA/RE+A RCG/RE+A
SUBMITTAL DRAWN BY: CHECKED BY: APPROVED BY: RELEASE PLOT DATE:	 1/21/2019

CALL BLUESTAKES @ 1-800-862-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.	VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING
	HERRIMAN CITY ENGINEERING DEPARTMENT ARCHES PARK RESTROOM BUILDING 12101 SOUTH TOWER ARCH LANE ROOF FRAMING PLAN

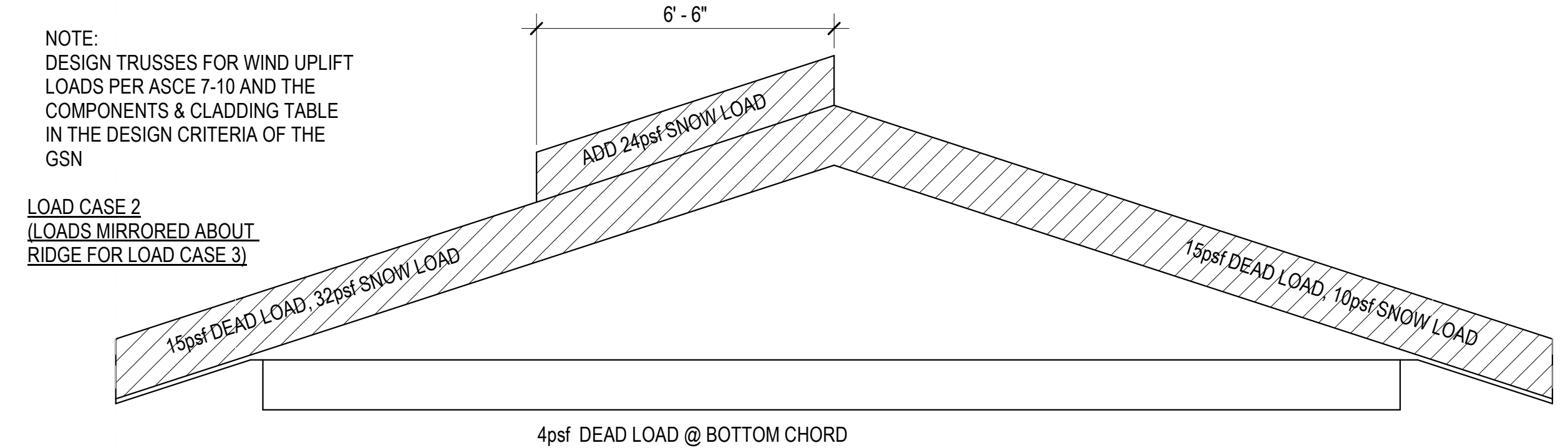
SF101



SF501-C3
C3 WOOD OUTRIGGER OVER MASONRY AT GABLE END
 SF501 NO SCALE

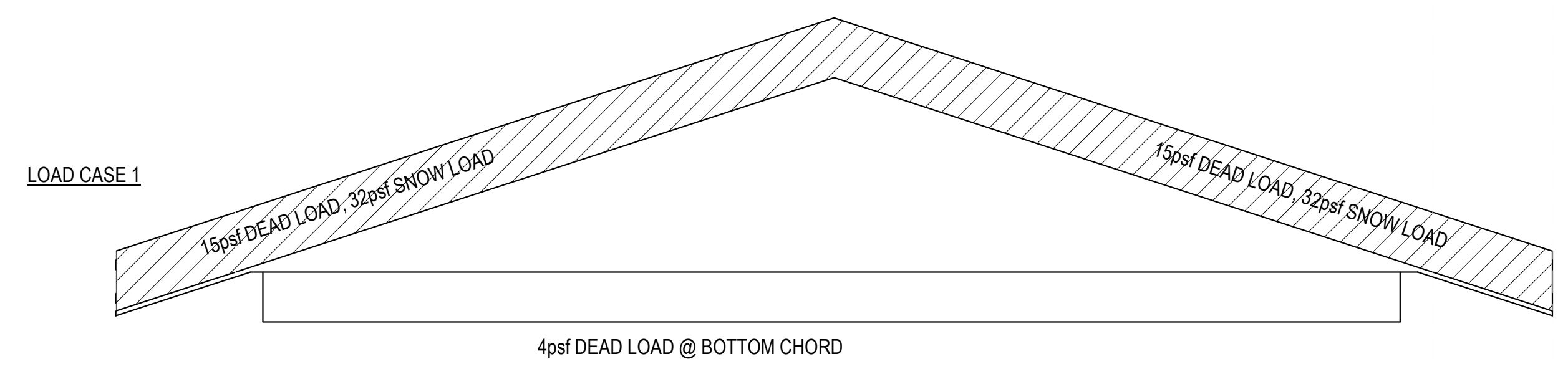


SF501-C4
C4 WOOD TRUSS AT MASONRY WALL
 SF501 NO SCALE



NOTE:
 DESIGN TRUSSES FOR WIND UPLIFT LOADS PER ASCE 7-10 AND THE COMPONENTS & CLADDING TABLE IN THE DESIGN CRITERIA OF THE GSN

LOAD CASE 2
 (LOADS MIRRORED ABOUT RIDGE FOR LOAD CASE 3)



LOAD CASE 1

A3 TRUSS LOADING
 SF501 NO SCALE

NO.	REVISION DESCRIPTION	DATE

1/21/2019

CONSTRUCTION	JT/AE+A	RC/GRE+A	1/21/2019
SUBMITTAL	DRAWN BY:	CHECKED BY:	APPROVED BY:	RELEASE
				PLOT DATE:

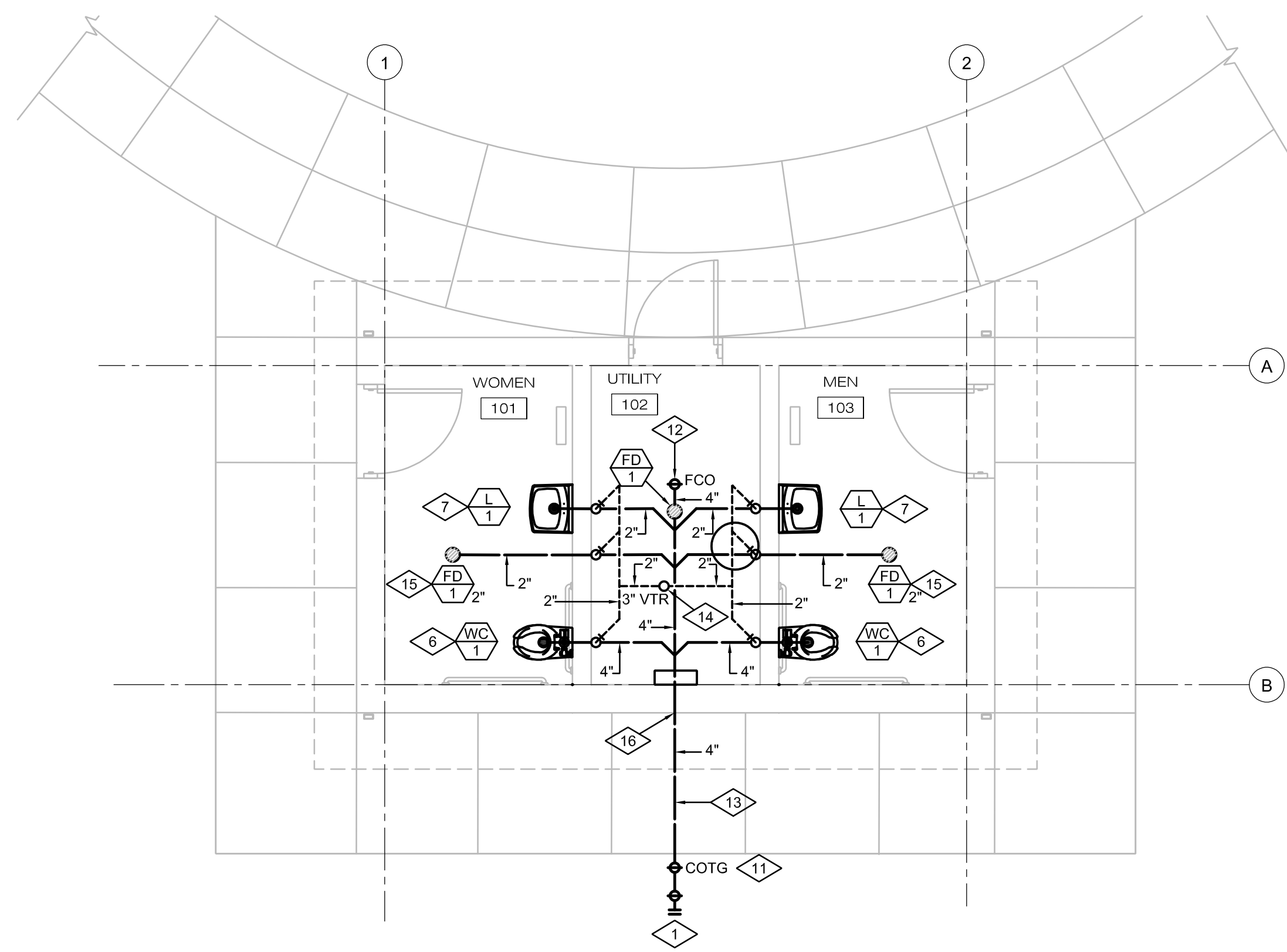
CALL BLUESTAKES @ 1-800-662-4111 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY

HERRIMAN CITY
 ENGINEERING DEPARTMENT
 ARCHES PARK RESTROOM BUILDING
 12101 SOUTH TOWER ARCH LANE
 ROOF FRAMING DETAILS

SF501

5/14/2018 5:42 PM T:\18097 -- ARCHES PAVILLION RESTROOMS\DRAWINGS\P101.DWG



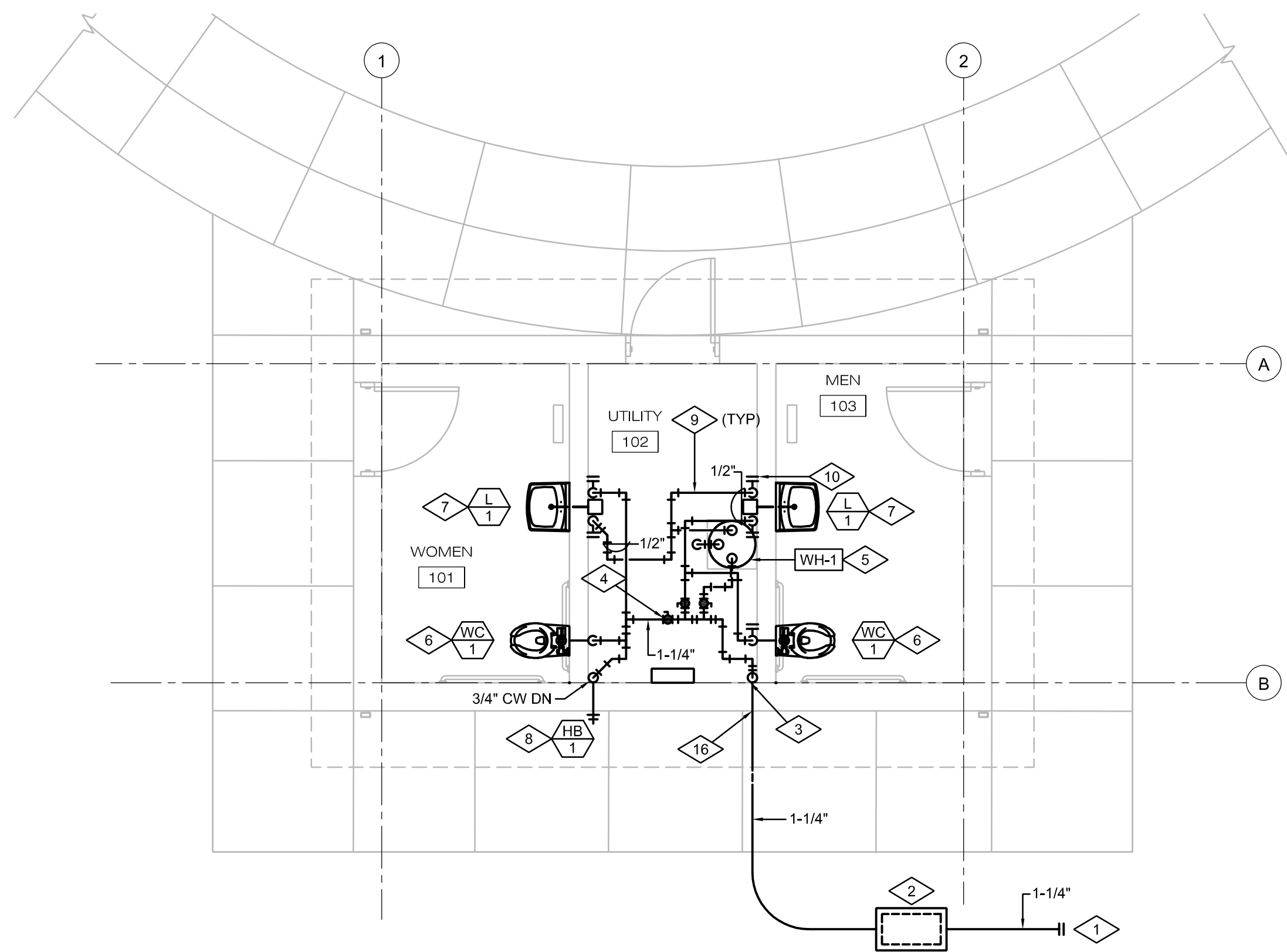
PLUMBING FLOOR PLAN - WASTE & VENT



48 0 24 48

SCALE: 1/4"=1'-0"

1



PLUMBING FLOOR PLAN - GAS & WATER



48 0 24 48

SCALE: 1/4"=1'-0"

2

REFERENCE NOTES

- 1 POINT OF CONNECTION (P.O.C.) CONNECT TO SITE UTILITY PIPING IN THIS LOCATION. MATCH PIPING SIZE AND MATERIAL OR PROVIDE COMPATIBLE TRANSITION.
- 2 WATER VALVE BOX WITH DRAIN FITTING. INSTALL WATER VALVE BOX WITH CURB STOP VALVES AND DRAINAGE FITTING. SEE DETAIL 6/P501.
- 3 BUILDING DOMESTIC WATER SERVICE ENTRANCE. SEE DETAIL 1/P502.
- 4 INSTALL ISOLATION BALL VALVES TO ISOLATE SERVICE TO EACH RESTROOM AND TO THE WATER HEATER. (TYP)
- 5 INSTALL ELECTRIC WATER HEATER ON WALL IN THIS LOCATION. PROVIDE SUPPORTING WALL SHELF AND BRACKETS. SEE DETAIL 3/P502.
- 6 INSTALL ADA COMPLIANT WALL MOUNTED STAINLESS STEEL WATER CLOSET IN THIS LOCATION. PROVIDE CONCEALED CHAIR CARRIER AND FLUSH VALVE IN UTILITY ROOM. PIPE 4" WASTE AND 2" VENT LINES FROM WATER CLOSET AND CONNECT TO MAIN WASTE AND VENT LINES AS INDICATED. PIPE 1-1/4" CW LINE DOWN AND CONNECT TO CONCEALED FLUSH VALVE IN UTILITY ROOM. MAKE ALL REQUIRED PIPING CONNECTIONS FOR A COMPLETE INSTALLATION. SEE ARCHITECTURAL DRAWINGS FOR PREFERRED MOUNTING HEIGHT OF WATER CLOSET.
- 7 INSTALL ADA COMPLIANT WALL MOUNTED STAINLESS STEEL LAVATORY IN THIS LOCATION. PROVIDE CONCEALED ARMS CARRIER AND MIXING VALVE IN UTILITY ROOM. PIPE 1-1/2" WASTE AND 1-1/2" VENT LINES FROM LAVATORY AND CONNECT TO MAIN WASTE AND VENT LINES AS INDICATED. PIPE 1/2" CW AND 1/2" HW TO CONCEALED MIXING VALVE IN UTILITY ROOM. PIPE 1/2" TEMPERED WATER LINE THROUGH WALL TO LAVATORY FAUCET. MAKE ALL REQUIRED PIPING CONNECTIONS FOR A COMPLETE INSTALLATION. SEE ARCHITECTURAL DRAWINGS FOR PREFERRED MOUNTING HEIGHT.
- 8 PIPE 3/4" CW LINE DOWN TO NON-FREEZE HOSE BIBB. MOUNT HOSE BIBB 18" ABOVE FINISHED GRADE.
- 9 PIPING TO RUN HIGH NEAR STRUCTURE. COORDINATE LOCATION WITH MECHANICAL, STRUCTURAL, AND ELECTRICAL TRADES.
- 10 PROVIDE "T" FITTINGS WITH BALL VALVES AT EACH PLUMBING FIXTURE WATER SUPPLY LINE TO THOROUGHLY DRAIN AND WINTERIZE ALL WATER LINES SERVING THE RESTROOM FIXTURES. SEE DETAIL 1/P501.
- 11 CLEANOUT TO GRADE (COTG). SEE DETAIL 5/P501.
- 12 FLOOR CLEANOUT (FCO). SEE DETAIL 4/P502.
- 13 WASTE PIPING TO RUN 30" BELOW FLOOR SLAB OR GRADE LINE. SLOPE PIPING AT 2%.
- 14 VENT THRU ROOF (VTR). TERMINATE 18" A.F.R. (TYP) COORDINATE ROOF PENETRATION WITH MECHANICAL EXHAUST FAN AND ARCHITECT. SEE DETAIL 5/P502.
- 15 LOCATE FLOOR DRAIN IN THIS LOCATION. COORDINATE FLOOR DRAIN LOCATION WITH ARCHITECT.
- 16 COORDINATE LOCATION OF PIPING WITH STRUCTURAL FOOTINGS. COORDINATE WITH GENERAL CONTRACTOR AND STRUCTURAL ENGINEER FOR PIPE SLEEVES THROUGH FOUNDATION WALLS.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	WASTE	VENT	C.W.	H.W.	T.W.	NOTES
WC 1	WATER CLOSET	4"	2"	1-1/4"	-	-	ADA, WALL MTD, SIPHON JET 1.6 GPF, STAINLESS STEEL CONCEALED FLUSH VALVE, WHITE IN COLOR ACORN 2105-W-1-1.6-FVBO-EGE
L 1	LAVATORY - ADA	1 1/2"	1 1/2"	-	-	1/2"	ADA, WALL MTD, 18" x 22" STAINLESS STEEL BASIN, CONCEALED MIXING VALVE, AIR CONTROLLED VALVE, SINGLE HOLE PUNCH. ACORN 1953-1-DMS-9-MH-EGE
MV 1	MIXING VALVE	-	-	1/2"	1/2"	1/2"	ACORN ST70-LEAD FREE, ASSE 1070 SET @ 105° F
FD 1	FLOOR DRAIN	2"	2"	-	-	-	J.R. SMITH 2005, NICKEL BRONZE STRAINER W/ DEEP SEAL P-TRAP AND PROSET TRAP GUARD
HB 1	HOSE BIBB FREEZE PROOF	-	-	3/4"	-	-	J.R. SMITH 5609QT, FREEZE PROOF, QUARTER TURN, LOOSE KEY, WALL CLAMP, INTEGRAL VACUUM BREAKER
HB 2	HOSE BIBB	-	-	1/2"	-	-	CHICAGO 387-E27CP

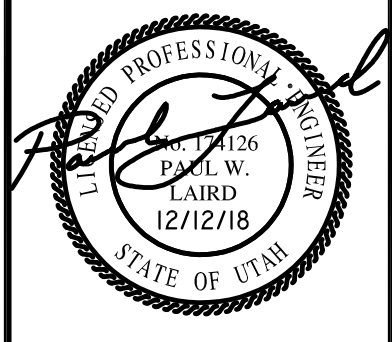
PLUMBING EQUIPMENT SCHEDULE

- WH-1 ELECTRIC WATER HEATER, POINT OF USE, 6 GALLON STORAGE CAP, 3/4" INLET AND OUTLET., T&P VALVE, 2000 WATT HEATING ELEMENT, HIGH TEMP SAFETY CUT-OUT, 120 VOLT 1 PHASE POWER, FURNISH W/ WALL BRACKET AND SHELF, 1/4" TURN BALL VALVE DRAIN, MOUNT 48" ABOVE FINISHED FLOOR.
MANUFACTURER: RHEEM
MODEL: 81VP6S
ELECTRICAL: 2000 WATT, 120 VOLT / 1 PHASE
SIZE: 16" DIA X 16" TALL
WEIGHT: 50 LBS
- ET-1 DOMESTIC WATER EXPANSION TANK, 2 GALLON TOTAL VOLUME, 0.9 GALLON ACCEPTANCE VOLUME, PRE-CHARGED DIAPHRAGM, MAXIMUM WORKING PRESSURE 150 PSI, NSF 61, 200 DEG F MAX TEMP. MOUNT ON WALL NEAR WATER HEATER. CONFIGURE INSTALLATION TO PROVIDE FOR FULL DRAINAGE AND WINTERIZATION.
MANUFACTURER: AMTROL
MODEL: ST-5
SIZE: 8" DIA X 13" TALL
WEIGHT: 5 LBS

PLUMBING PIPING LEGEND

COLD WATER	_____
HOT WATER	_____
WASTE	_____
VENT	_____

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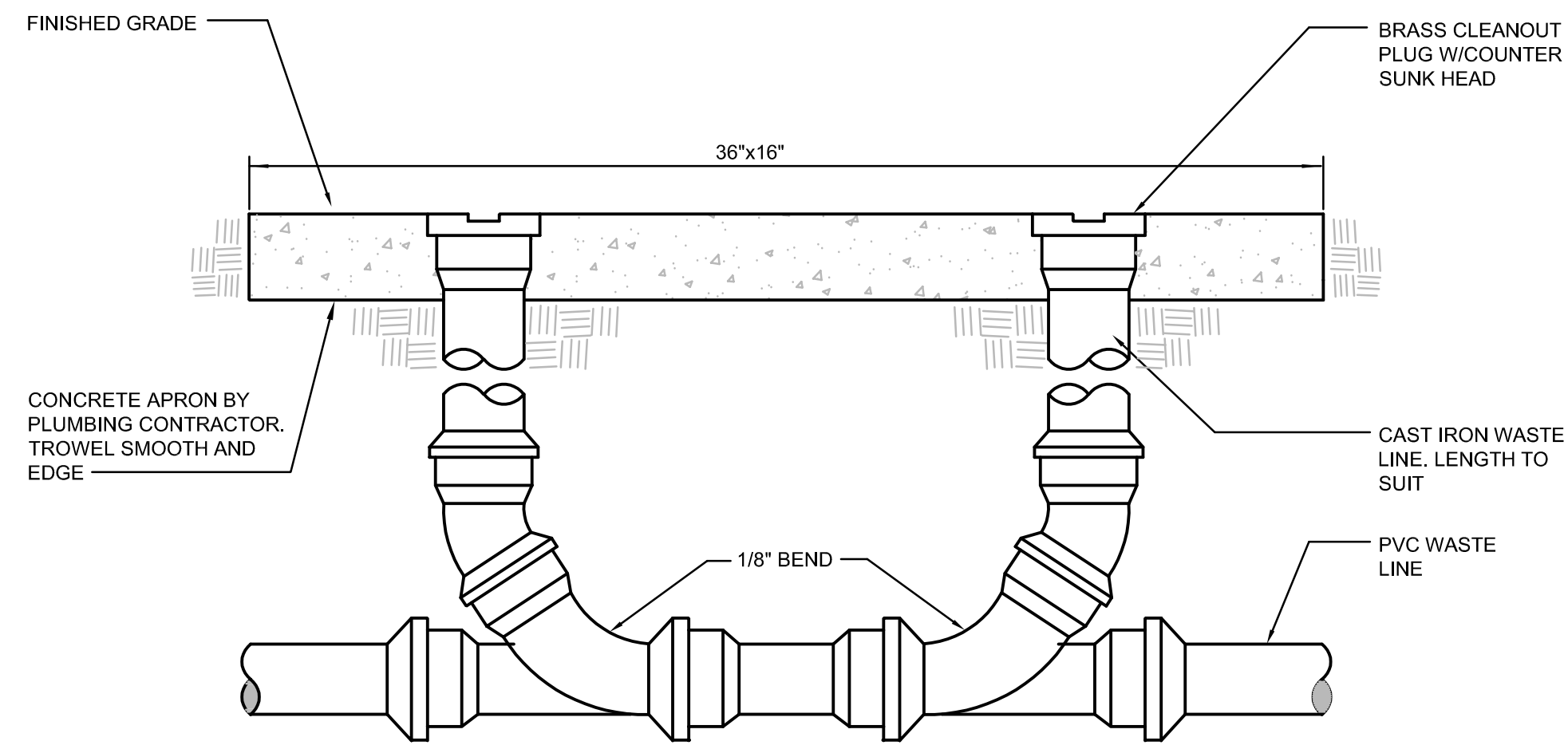


CONSTRUCTION	STAFF	PWL	PWL	12/12/18	12/11/18
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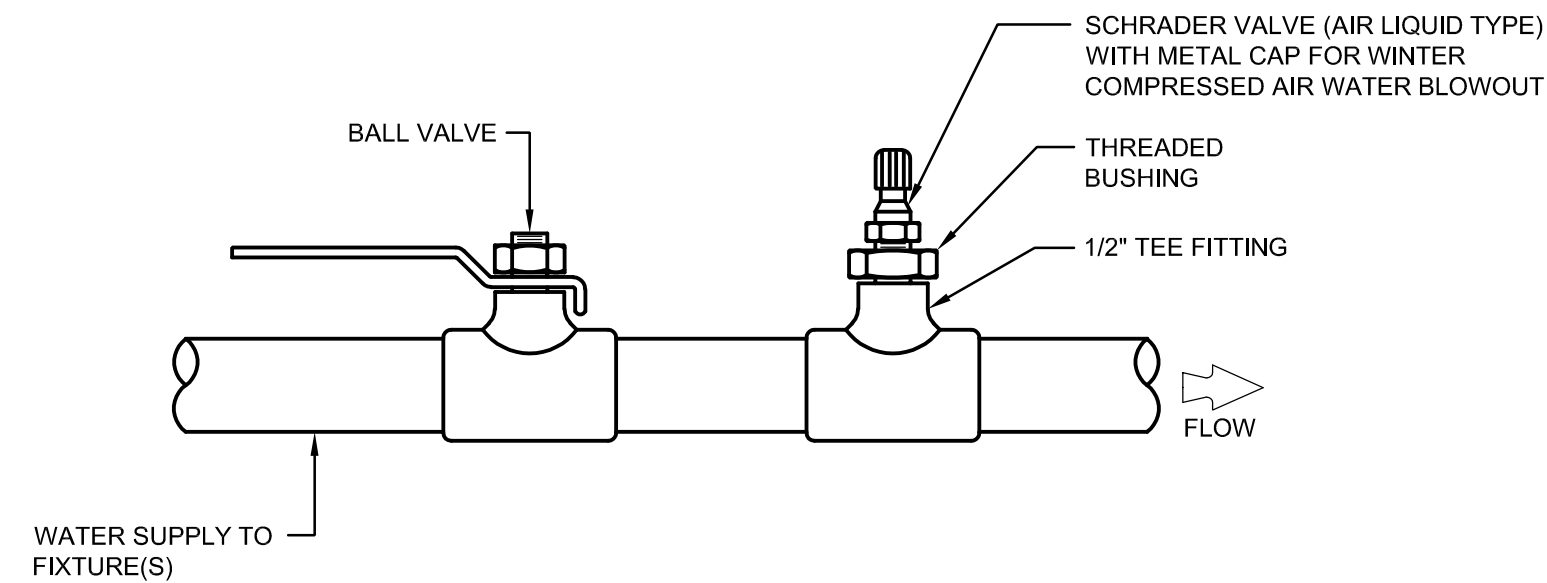
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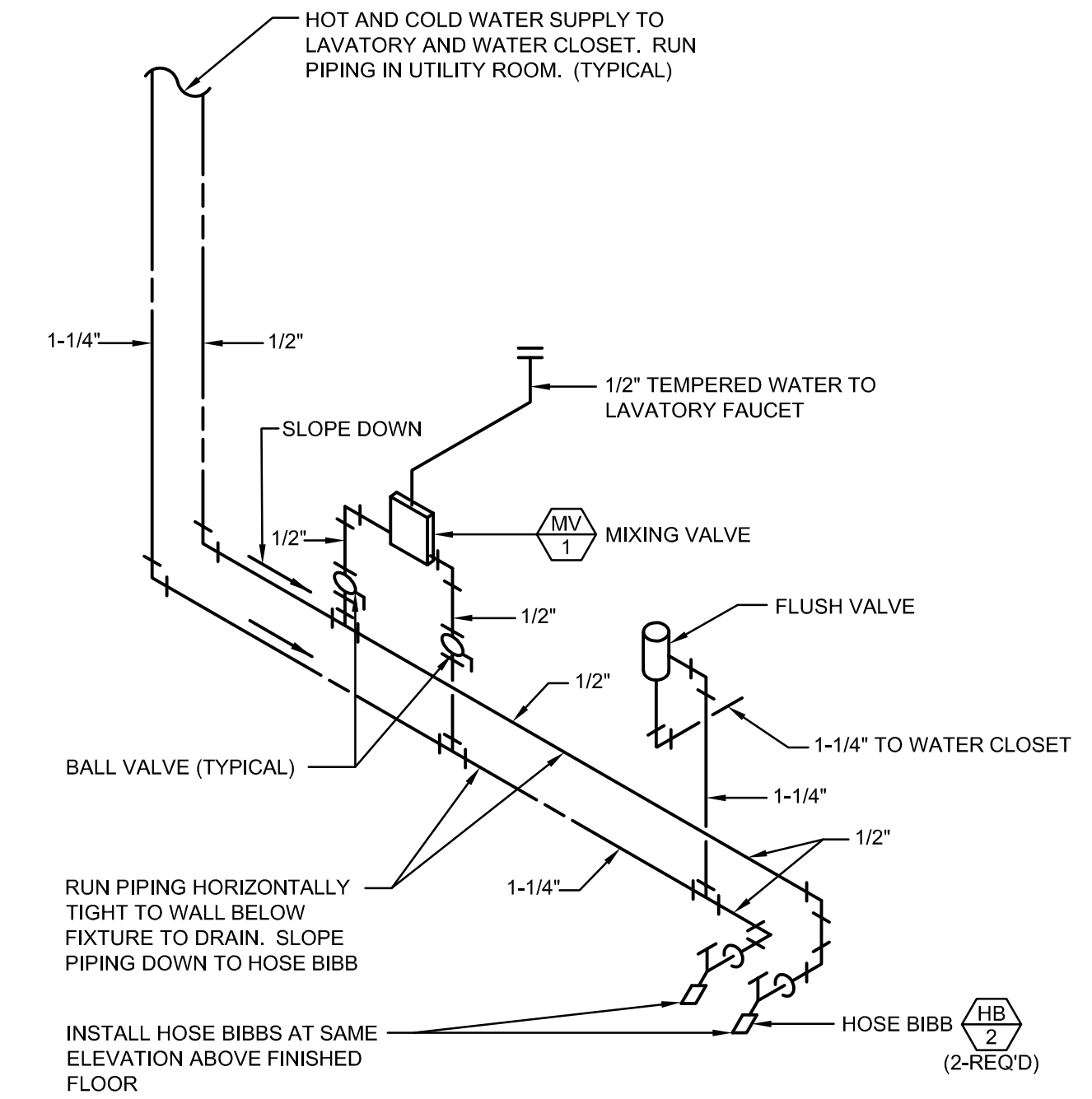
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PLUMBING FLOOR PLANS



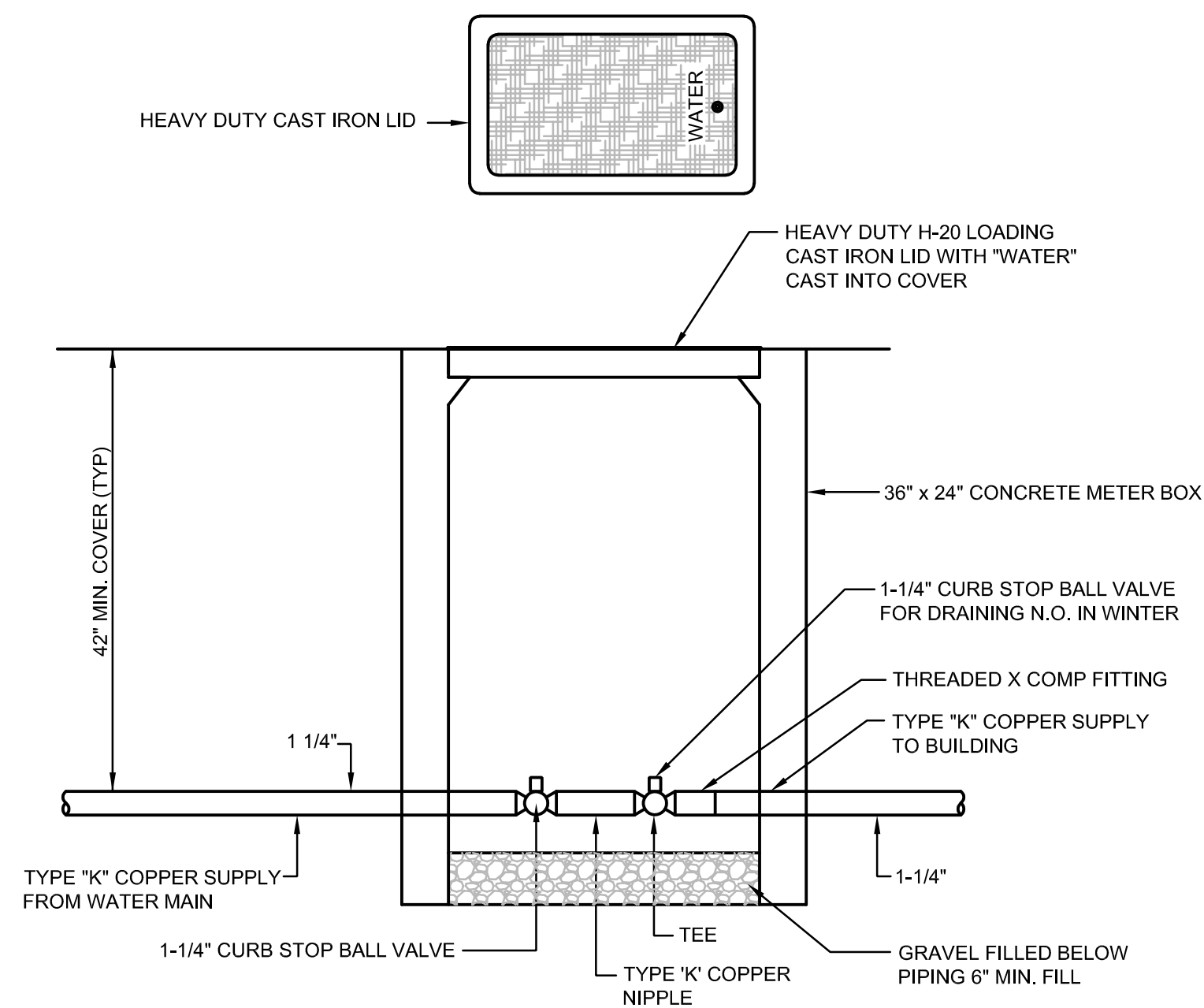
DOUBLE CLEANOUT TO GRADE DETAIL 5
NOT TO SCALE P501



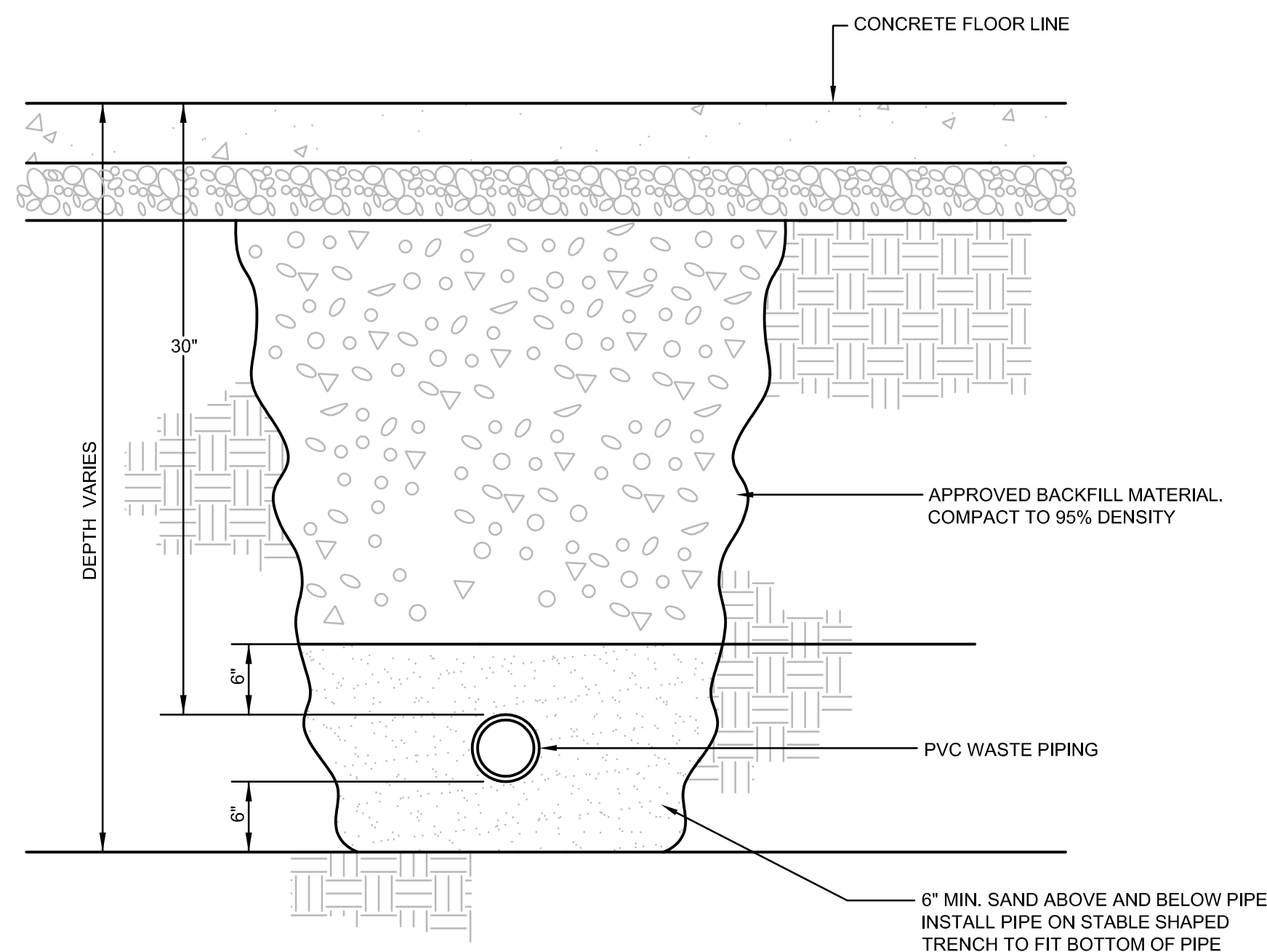
COMPRESSED AIR WATER BLOWOUT VALVE DETAIL 3
NOT TO SCALE P501



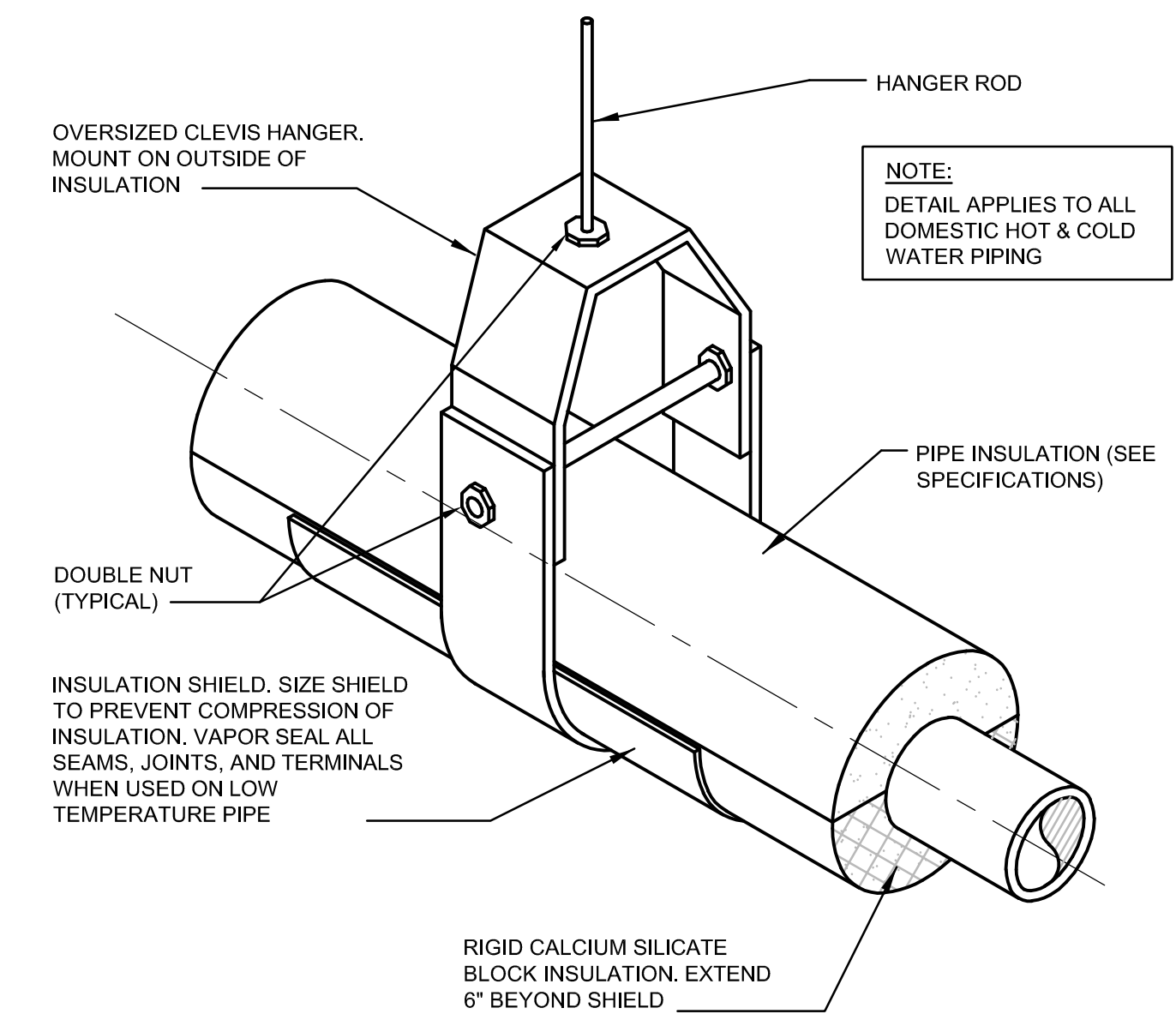
RESTROOM LAVATORY PIPING SCHEMATIC 1
NOT TO SCALE P501



BUILDING SHUT-OFF AND BLOWOUT DETAIL 6
NOT TO SCALE P501

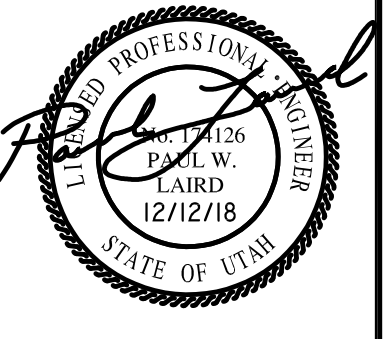


TYPICAL WASTE TRENCH DETAIL 4
NOT TO SCALE P501



PIPE SUPPORT DETAIL 2
NOT TO SCALE P501

NO.	REVISION DESCRIPTION	DATE

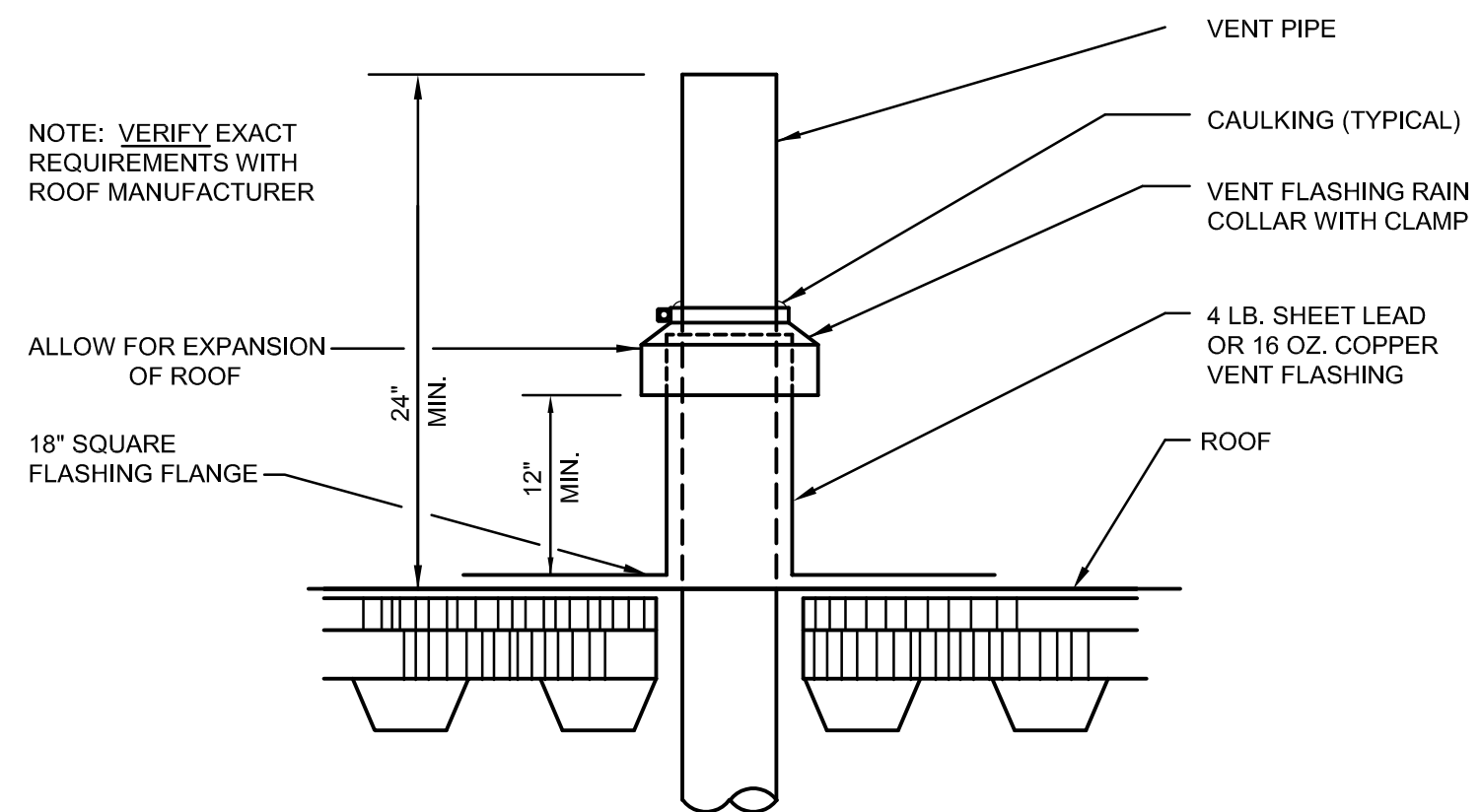


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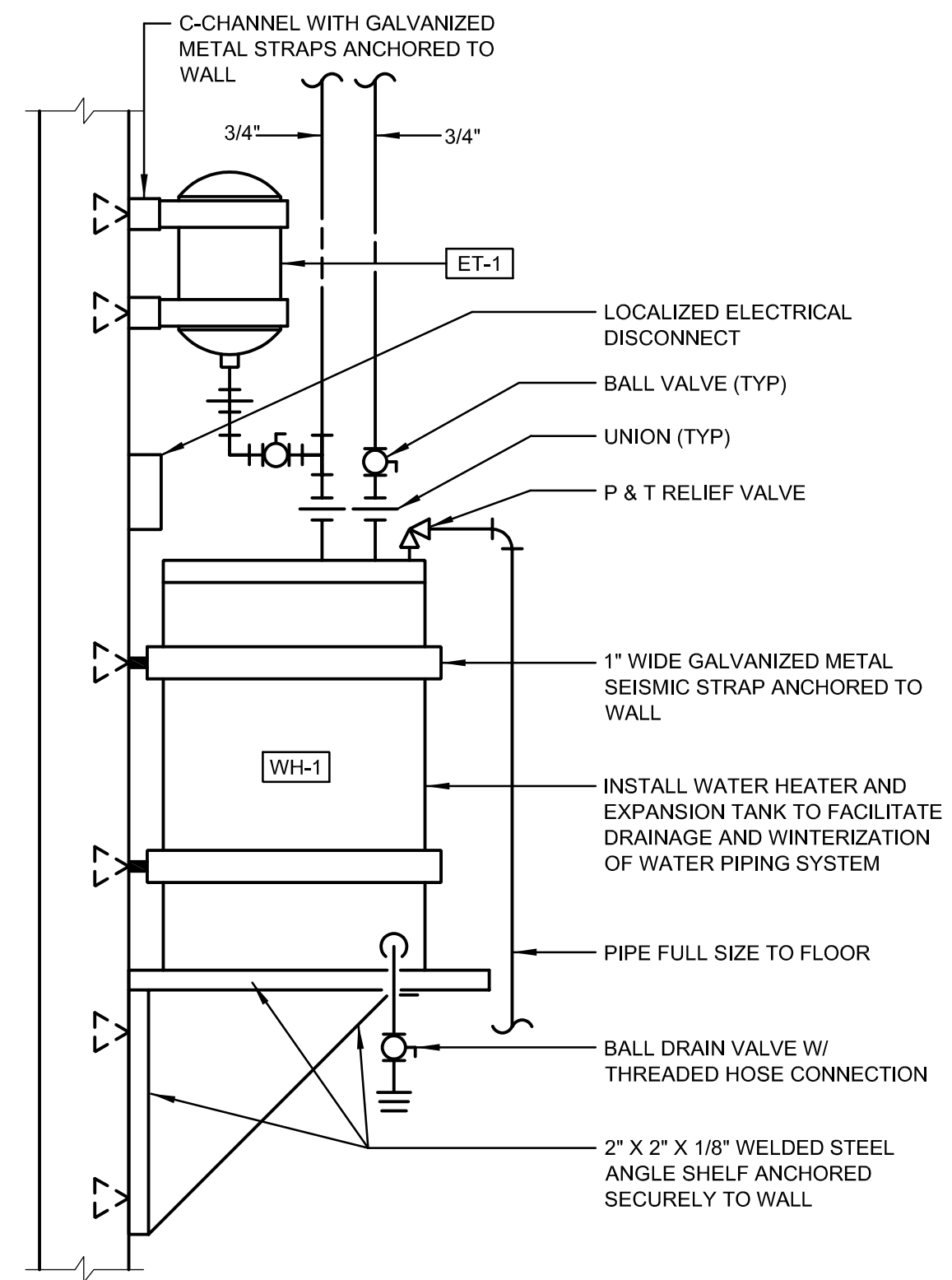
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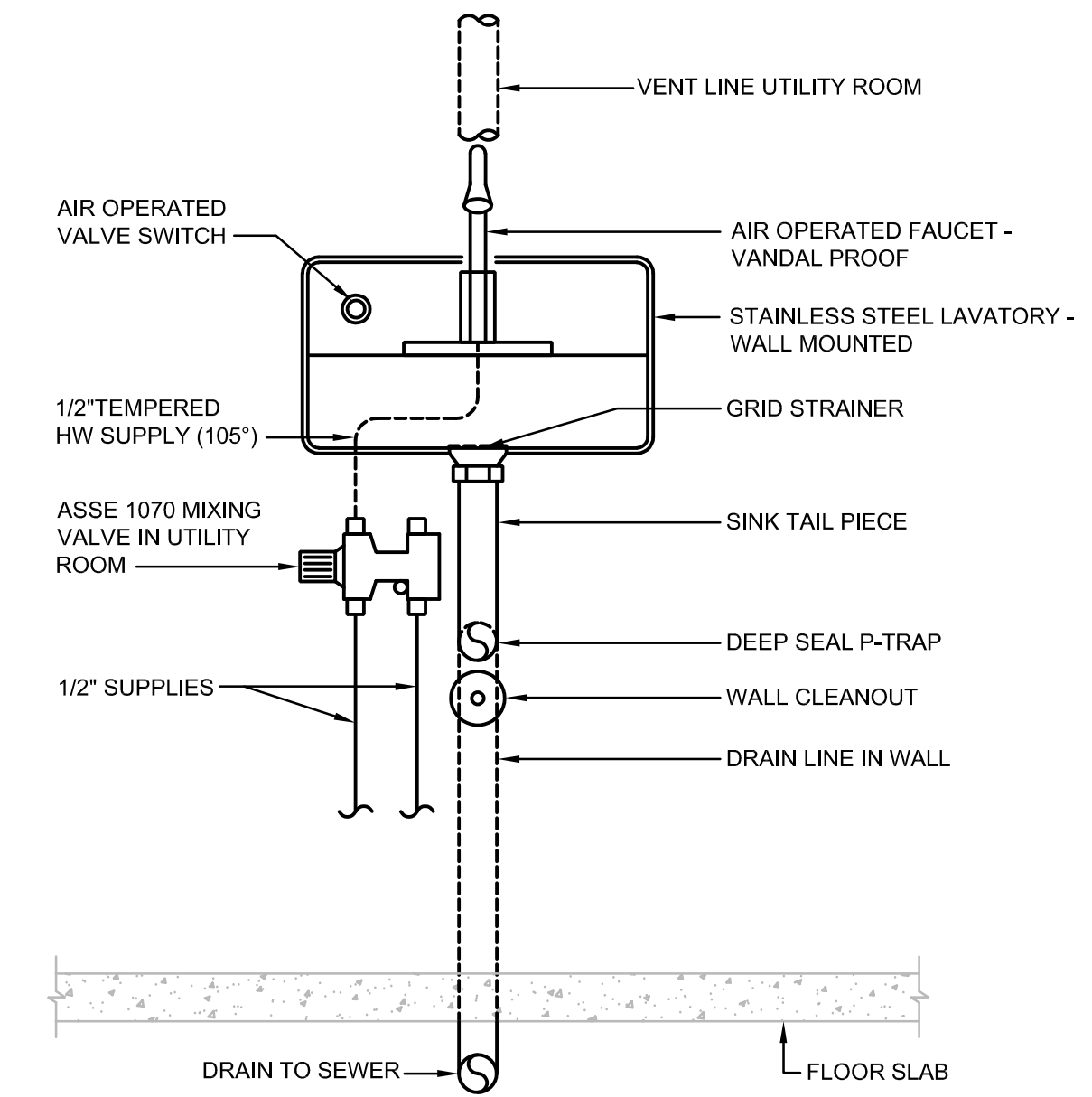
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PLUMBING DETAILS



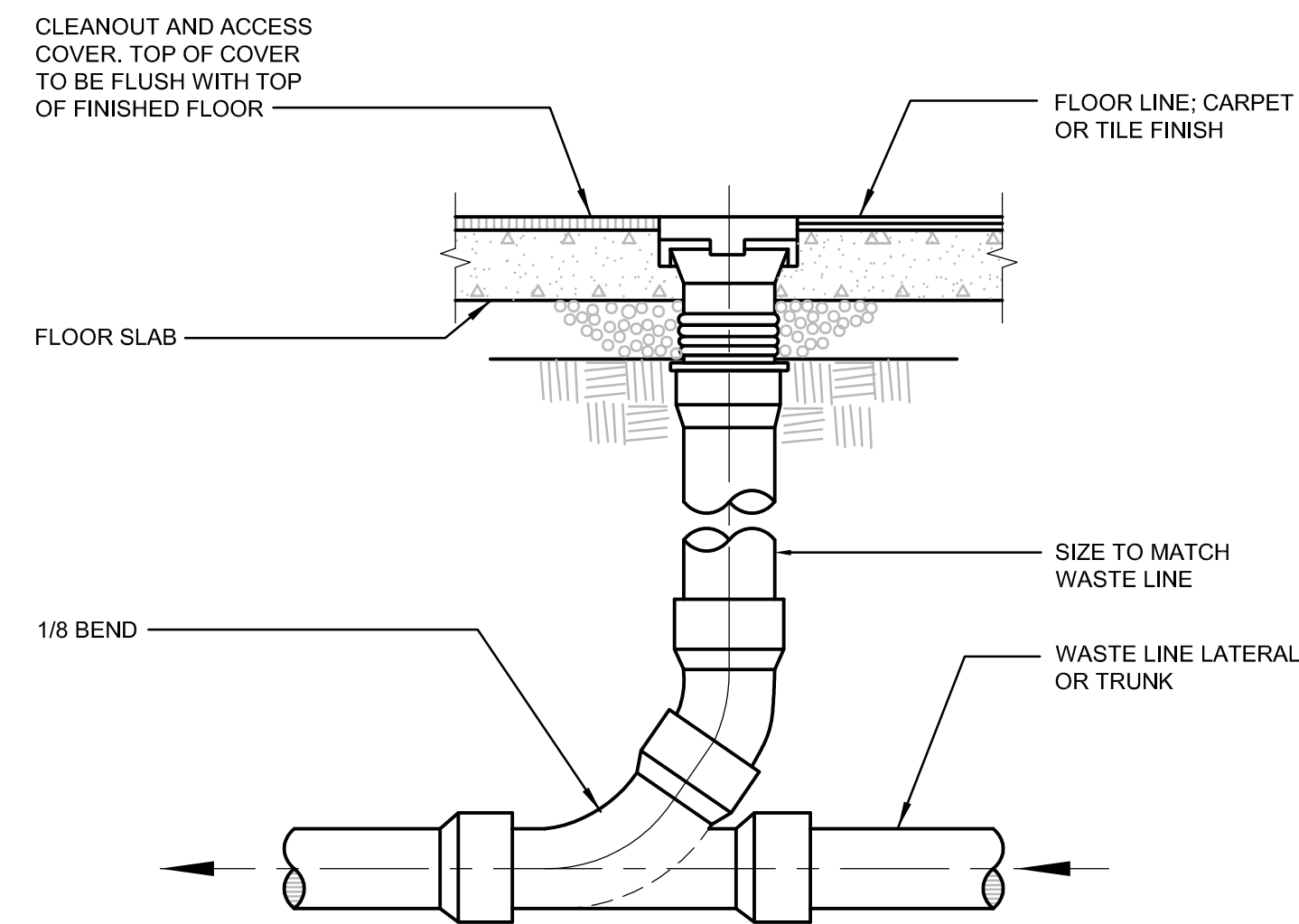
VENT THRU ROOF DETAIL 5
NOT TO SCALE P502



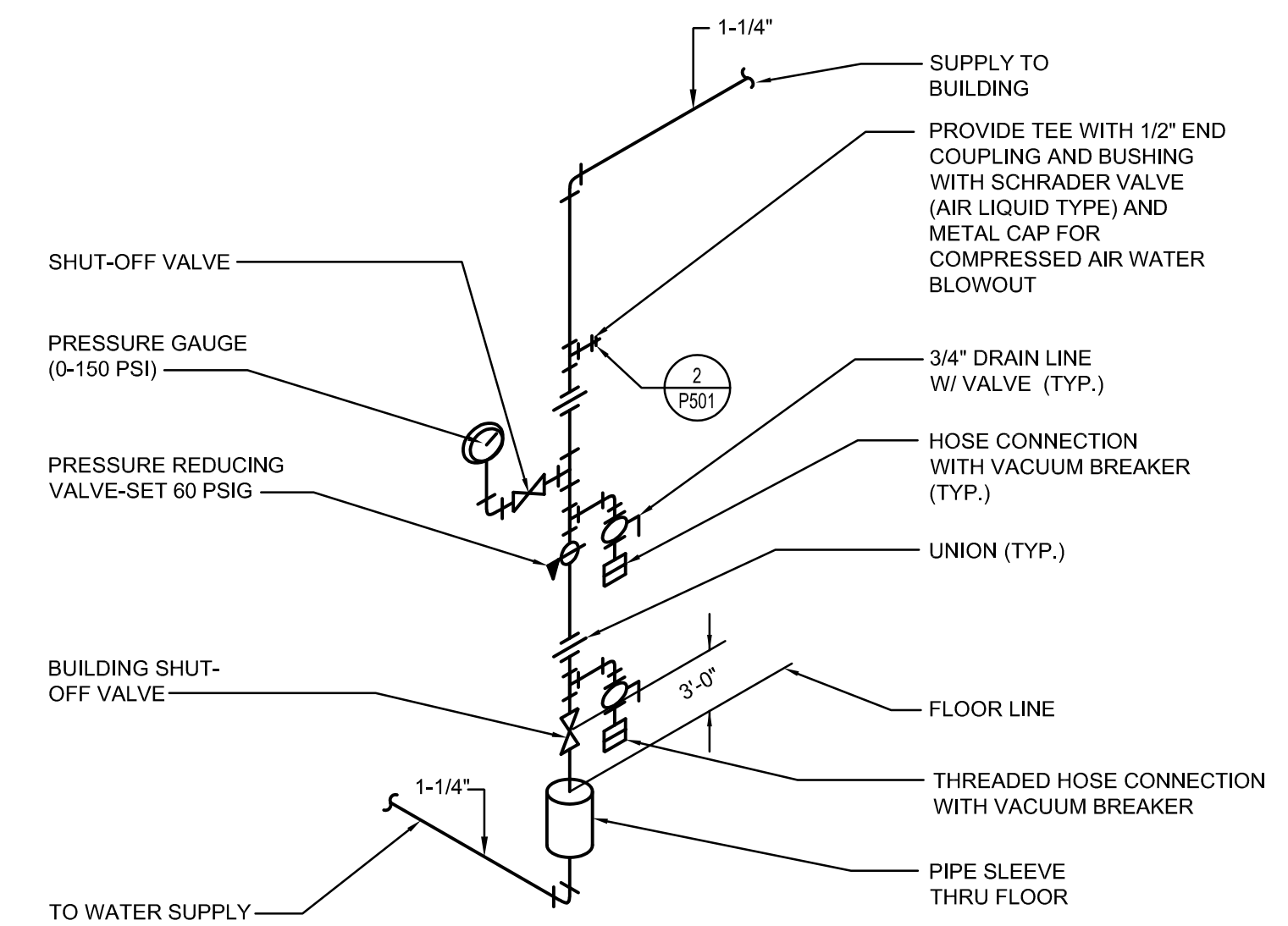
WATER HEATER DETAIL 3
NOT TO SCALE P502



LAVATORY INSTALLATION DETAIL 1
NOT TO SCALE P502

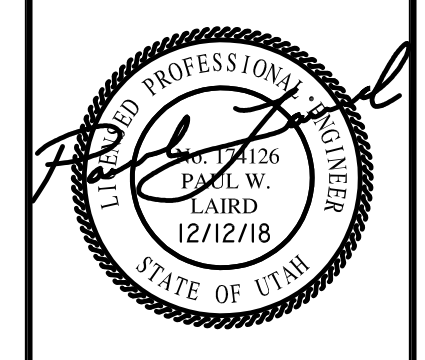


FLOOR CLEANOUT DETAIL 4
NOT TO SCALE P502



BUILDING WATER CONTROL VALVE 2
NOT TO SCALE P502

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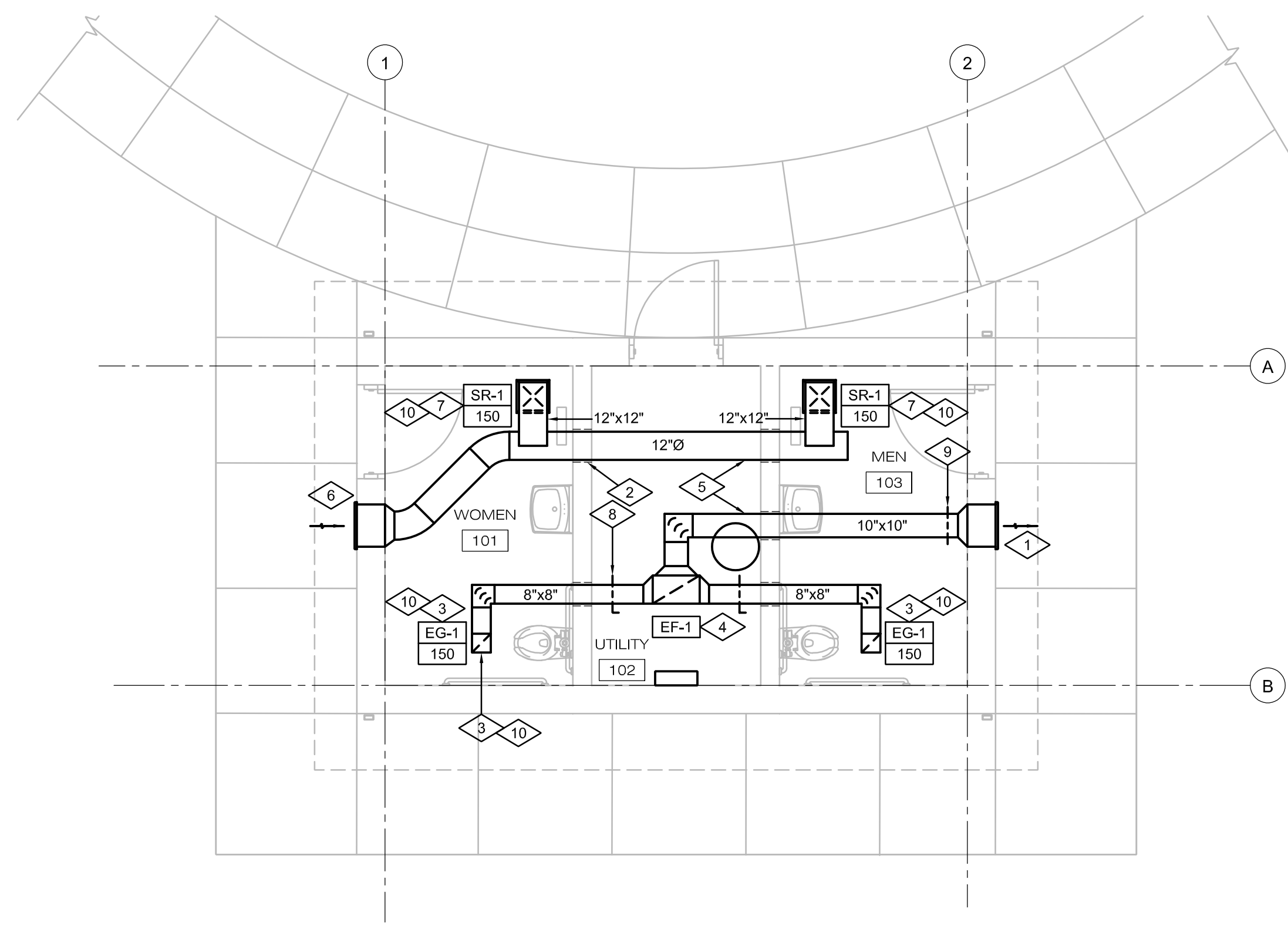
CONSTRUCTION	STAFF	PWL	PWL	12/12/18	12/11/18

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12101 SOUTH TOWER ARCH LANE
PLUMBING DETAILS

P502



MECHANICAL FLOOR PLAN



SCALE: 1/4"=1'-0"

1

REFERENCE NOTES

- 1 CONNECT EXHAUST DUCTWORK TO EXTERIOR LOUVER IN THIS LOCATION. EXTERIOR LOUVER FURNISHED BY OTHERS. TRANSITION DUCTWORK TO MATCH LOUVER DIAMETER. SEAL AIR TIGHT AROUND DUCT-WALL PENETRATION.
- 2 CORE DRILL, FRAME OR SLEEVE DUCT AT WALL PENETRATION. SEAL AIR TIGHT AROUND DUCT. COORDINATE REOD WALL OPENINGS WITH GENERAL CONTRACTOR. (TYP)
- 3 INSTALL CEILING EXHAUST GRILLE IN THIS LOCATION. CONNECT EXHAUST GRILLE TO EXHAUST DUCT. TRANSITION EXHAUST DUCT AS NEEDED TO MATCH GRILLE SIZE. BALANCE EXHAUST GRILLE TO CFM INDICATED.
- 4 INSTALL IN-LINE EXHAUST FAN IN THIS LOCATION. SUPPORT EXHAUST FAN FROM OVERHEAD STRUCTURE. PROVIDE VIBRATION ISOLATION KIT. MAKE ALL REQUIRED INLET AND OUTLET DUCT CONNECTIONS PER MANUFACTURER'S INSTRUCTIONS. SEE INSTALLATION DETAIL 2/M501.
- 5 RUN DUCTWORK HIGH ABOVE CEILINGS AND CLOSE TO STRUCTURE. COORDINATE LOCATION OF DUCTWORK WITH STRUCTURE, PLUMBING AND ELECTRICAL TRADES.
- 6 CONNECT MAKE-UP AIR DUCTWORK TO EXTERIOR LOUVER IN THIS LOCATION. EXTERIOR LOUVER FURNISHED BY OTHERS. TRANSITION DUCTWORK TO MATCH LOUVER DIAMETER. SEAL AIR TIGHT AROUND DUCT-WALL PENETRATION.
- 7 INSTALL CEILING MAKE UP AIR REGISTER IN THIS LOCATION. CONNECT REGISTER TO MAKE-UP AIR DUCT. TRANSITION MAKE-UP AIR DUCT AS NEEDED TO MATCH REGISTER SIZE. BALANCE REGISTER TO CFM INDICATED.
- 8 VOLUME DAMPER (TYP)
- 9 INSTALL GRAVITY BACKDRAFT DAMPER ON EXHAUST DUCT NEAR WALL PENETRATION.
- 10 INSTALL REGISTERS AND GRILLES AS INDICATED. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION. (TYP)

REGISTER & GRILLE SCHEDULE

SYMBOL	SIZE	LOCATION	TYPE	MAKE & MODEL
EG-1 CFM	8" x 8"	CEILING	EXHAUST AIR	PRICE 535 (1)(2)
SR-1 CFM	12" x 12"	CEILING	MAKE-UP AIR	PRICE 535 (1)(2)

- NOTES:
- (1) FURNISH WITH BRIGHT WHITE FINISH.
 - (2) PROVIDE FRAME FOR MOUNTING IN GYP BOARD OR LAY-IN CEILING.

EXHAUST FAN SCHEDULE

SYMBOL	SERVES	TYPE	C.F.M	S.P.	R.P.M.	MOTOR	DRIVE	MAKE & MODEL	NOTES
EF-1	RESTROOMS	IN-LINE	300	0.375	1600	100 WATTS 120/1/60	DIRECT	COOK GN-542	(1)

- NOTES:
- (1) FAN TO BE COMPLETE WITH SPRING VIBRATION ISOLATION KIT, BACKDRAFT DAMPER, INTEGRAL WIRED FAN SPEED CONTROLLER AND DIRECT DRIVE MOTOR.

NO.	REVISION DESCRIPTION	DATE

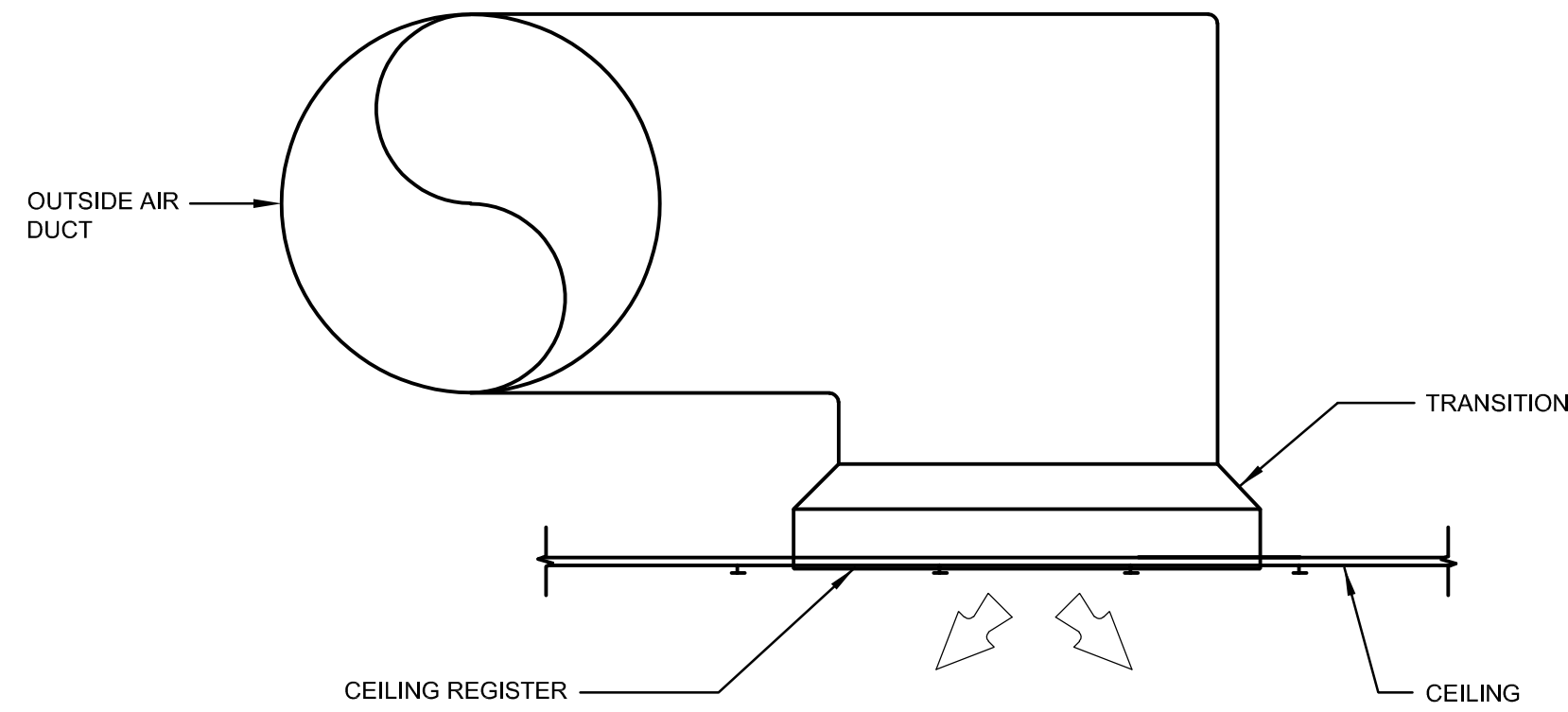


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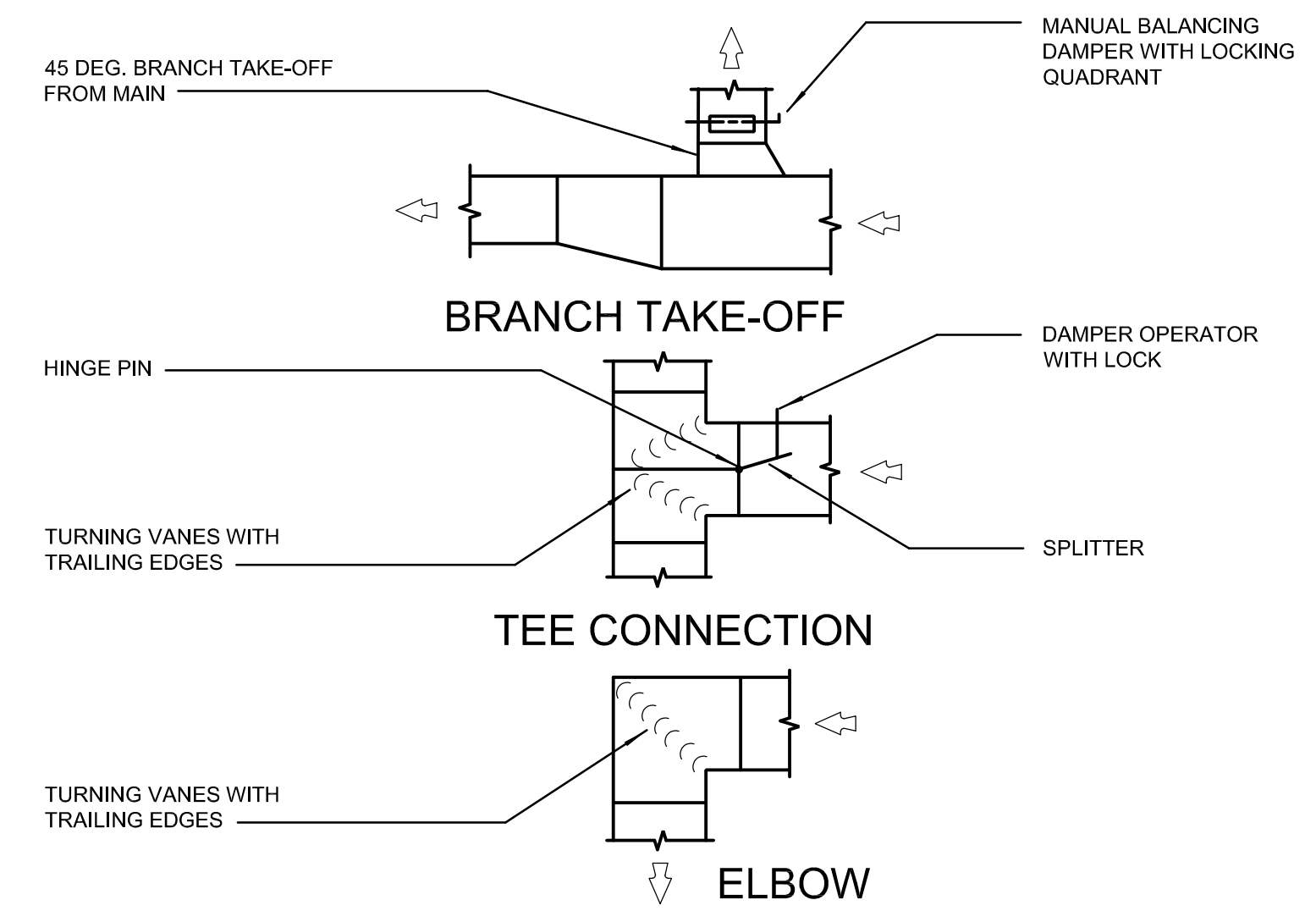
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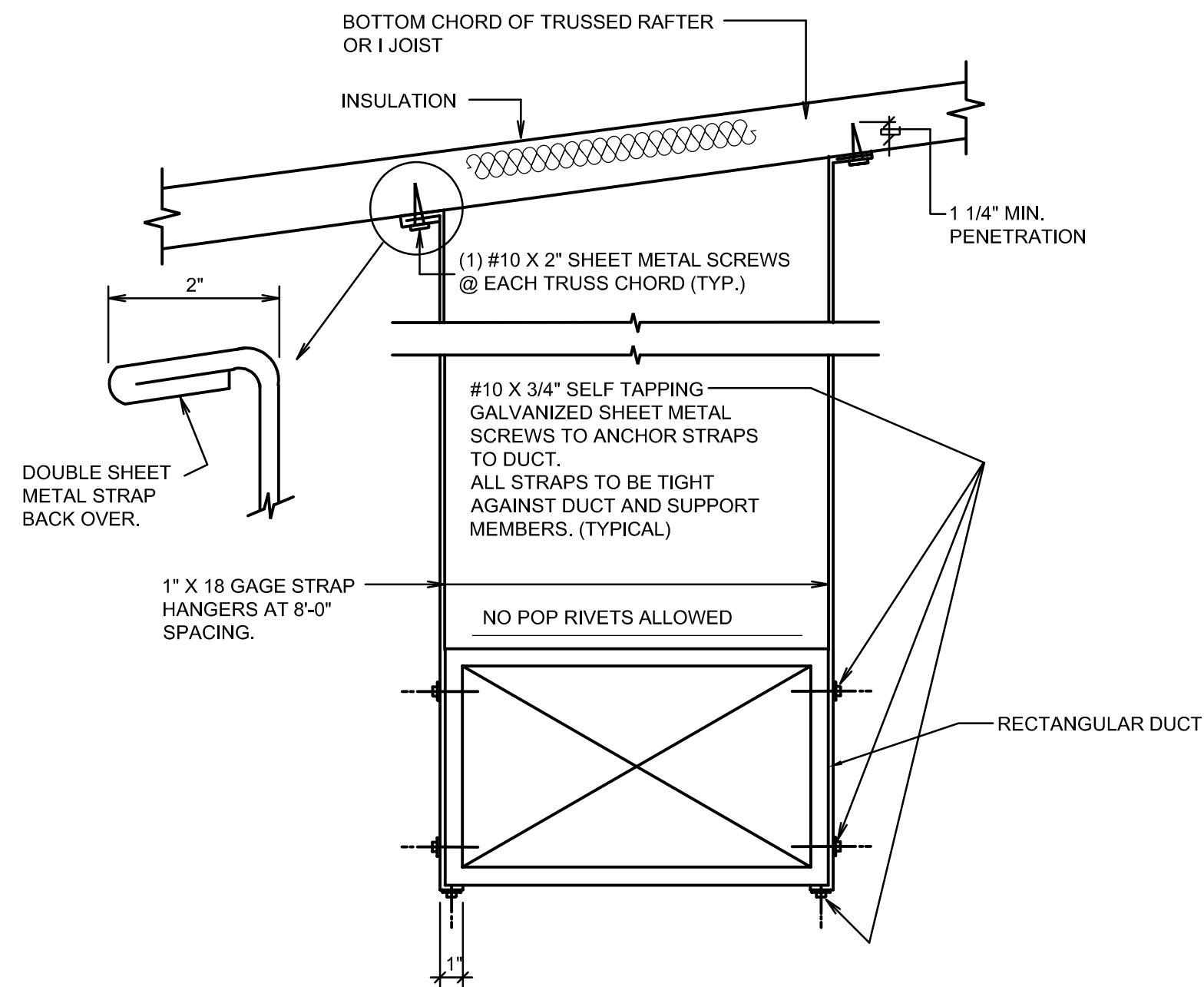
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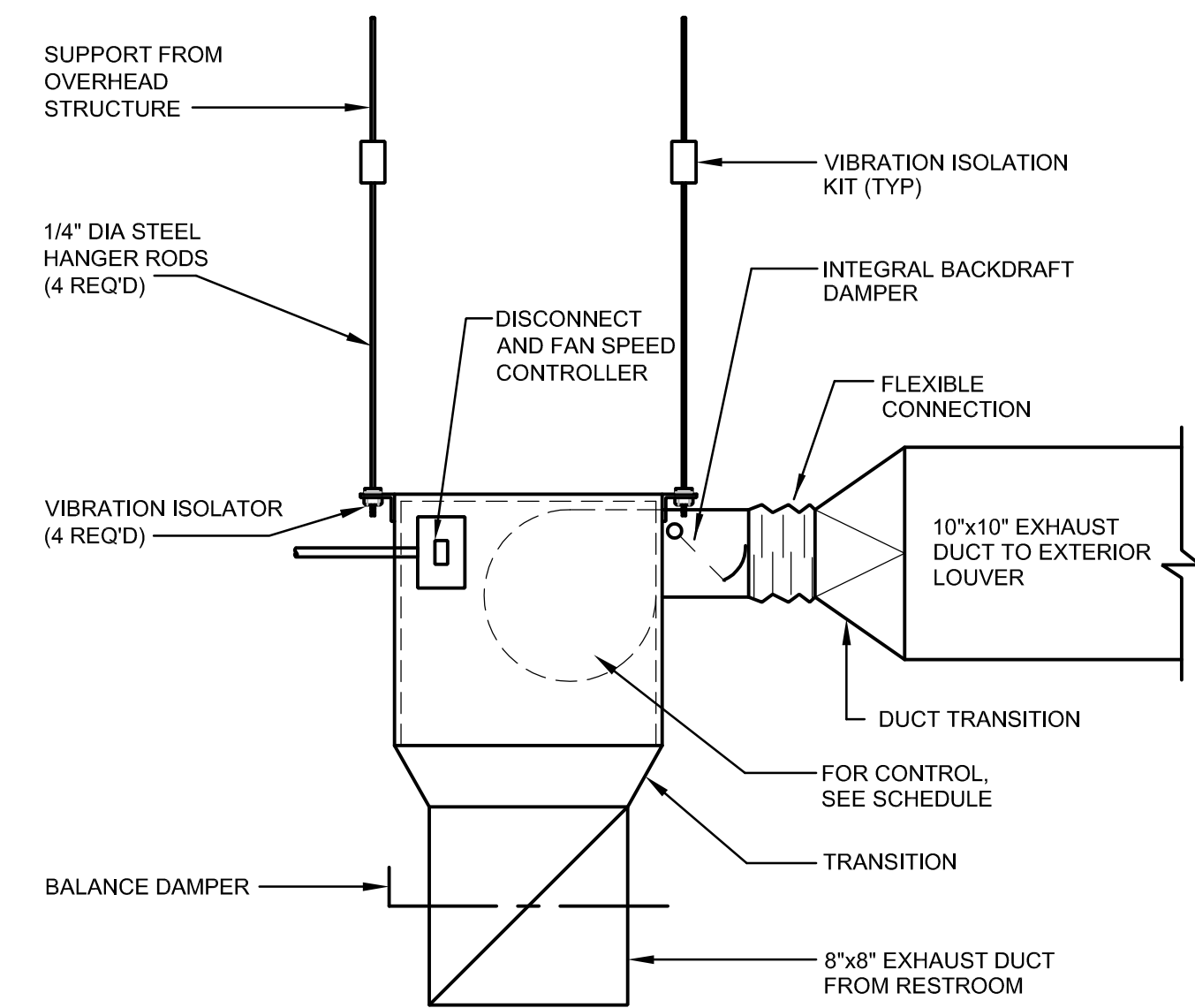
CEILING REGISTER DETAIL 3
NOT TO SCALE M501



LOW PRESSURE DUCT DETAILS 1
NOT TO SCALE M501

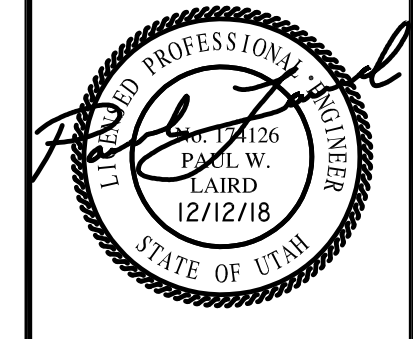


DUCT STRAP HANGER DETAIL 4
SCALE: NONE M501



CEILING EXHAUST FAN DETAIL 2
NOT TO SCALE M501

NO.	REVISION DESCRIPTION	DATE



CONSTRUCTION	STAFF	PWL	PWL	12/12/18	12/11/18
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MECHANICAL DETAILS

M501

GENERAL NOTES

1. CONSULT ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES.
2. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER DIVISION 23 (15) WITH APPROVED MECHANICAL SHOP DRAWINGS BEFORE BEGINNING ROUGH IN.
4. SEE SECTION 265100 (16510) OF THE SPECIFICATION REQUIRED COORDINATION MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.
5. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC. WHERE APPLICABLE MOUNT ALL WIRING DEVICES ABOVE BACK SPLASH EXCEPT THOSE SERVING UNDER COUNTER EQUIPMENT.
6. SEE SPECIFICATION FOR ENERGY SAVING LAMP AND BALLAST REQUIREMENTS.
7. FINISHES OF ALL LIGHT FIXTURES SHALL BE AS SELECTED BY ARCHITECT.
8. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
9. ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN BRICK WALLS OR IN GROUDED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.
10. ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.
11. CIRCUITS EXTENDING OVER 70' FOR 120 VOLT AND 115' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH CONDUCTORS PER TABLE BELOW.

20 AMP MINIMUM BRANCH CIRCUIT CONDUCTOR SIZING		
MAXIMUM LENGTH	BRANCH CIRCUIT VOLTAGE	
CONDUCTOR LENGTH (FT)	120 VOLT	277 VOLT
<70	MIN. #12 AWG	MIN. #12 AWG
70 - 115	MIN. #10 AWG	MIN. #12 AWG
115 - 170	MIN. #8 AWG	MIN. #10 AWG
170 - 270	MIN. #6 AWG	MIN. #8 AWG
271 - 380	NOTE B	MIN. #8 AWG
>380	NOTE B	NOTE B

- A. THESE ARE BASED ON MAXIMUM LENGTH OF CIRCUIT.
- B. PERFORM VOLTAGE DROP CALCULATIONS AND PROVIDE CONDUCTOR SIZE TO KEEP BRANCH CIRCUIT VOLTAGE DROP LESS THAN 3% WITH A 15 AMP LOAD.
- C. CONTRACTOR SHALL ENSURE THAT THE INSTALLATION OF EACH BRANCH CIRCUIT STAYS WITHIN 3% VOLTAGE DROP FOR A 15 AMP LOAD. IF NECESSARY, CONTRACTOR SHALL INCREASE WIRE AND CONDUIT SIZE TO MEET THE STANDARD AT NO ADDITIONAL COST TO OWNER.

ELECTRICAL SYMBOL SCHEDULE

1. SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE.
2. HEIGHT MEASURED TO CENTER LINE OF THE BOX FROM THE FINISH FLOOR.
3. REFER TO DRAWINGS FOR DIRECTIONAL ARROWS.
4. SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED.
5. NEMA TYPE 'ND' NON-FUSED UNLESS NOTED 'F' (FUSED). USE 'HD' 480 V.
6. HEIGHT MEASURED TO TOP OF THE BOX FROM FINISHED FLOOR.
7. PROVIDE H.O.A. AND S.S. PUSHBUTTONS AS REQUIRED.
8. DOUBLE ARROWS DENOTE A DOUBLE FACE UNIT.
9. COORDINATE WITH MILLWORK SHOP DRAWINGS AND ELEVATIONS FOR HEIGHT.
10. SUBSCRIPT DENOTES NEMA CONFIGURATION.
11. HEIGHT MEASURED TO BOTTOM OF THE BOX FROM FINISH FLOOR.
12. COORDINATE WITH DOOR HARDWARE SUPPLIER.

* TYPICAL SYMBOL SCHEDULE. SOME SYMBOLS MAY NOT BE USED IN THIS SET OF DRAWINGS.

STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS			
SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
	ONE CIRCUIT, HOME RUN TO PANEL		
	TWO CIRCUIT, HOME RUN TO PANEL		
	THREE CIRCUIT, HOME RUN TO PANEL		
	CONDUIT RUN CONCEALED IN WALL OR CEILING		
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND		
	CONDUIT UP		
	CONDUIT DOWN		
	CONDUIT STUB LOCATION	CAP CONDUIT	
	CONDUIT/CIRCUIT CONTINUATION		
	CABLE TRAY	AS NOTED	
	CEILING LIGHT FIXTURE	CEILING	1.
	WALL LIGHT FIXTURE	AS NOTED	1.
	RECESSED DOWNLIGHT FIXTURE	CEILING	1.
	RECESSED WALL-WASH FIXTURE	CEILING	1.
	LIGHT FIXTURE	AS NOTED	1
	EGRESS LIGHT FIXTURE	AS NOTED	UNSWITCHED
	AREA LIGHT POLE AND FIXTURE	CONCRETE BASE	SEE DIAGRAM
	FLOOD OR TRACK FIXTURE	AS NOTED	
	CEILING/WALL MOUNTED EXIT LIGHT	CEILING/ AS NOTED	1. 3. 8.
	SINGLE POLE SWITCH	+4'-0"	4. 6.
	THREE-WAY SWITCH	+4'-0"	6.
	FOUR-WAY SWITCH	+4'-0"	6.
	KEY OPERATED SWITCH	+4'-0"	6.
	TIMER SWITCH	+4'-0"	6.
	LOW VOLTAGE WALL STATION (SUBSCRIPT INDICATES CONFIGURATION & CONTROL SEQUENCE) SEE DIAGRAM	+4'-0"	6.
	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR (PROVIDE WITH ALL ROOM CONTROLLERS)	CEILING	SEE DIAGRAM, SPEC.
	DUAL TECHNOLOGY WALL MOUNTED OCCUPANCY SENSOR (SUBSCRIPT D=DIMMING AND DAY-LIGHT CONTROL)	+4'-0"	SEE DIAGRAM, SPEC.
	POWER PACK	ABOVE CEILING	SEE DIAGRAM, SPEC.
	DIGITAL ROOM CONTROLLER (SUBSCRIPT INDICATES NUMBER OF RELAYS, #E INDICATES EM ENABLED RO)	ABOVE CEILING	SEE DIAGRAM, SPEC.
	EMERGENCY LIGHTING CONTROL UNIT	ABOVE CEILING	SEE DIAGRAM, SPEC.
	RECEPTACLE SWITCH PACK	ABOVE CEILING	SPEC.
	AUTOMATIC RELAY PACK	ABOVE CEILING	SEE DIAGRAM, SPEC.
	LOW VOLTAGE TRANSFORMER		
	PHOTO-ELECTRIC CONTROL	AS NOTED	TORK 2000A
	DIGITAL DAYLIGHT SENSOR	CEILING	SEE DIAGRAM SPECIFICATION
	TIME CLOCK	+5'-0"	2.
	DUPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.
	DUPLEX RECEPTACLE WITH USB OUTLET	+16" OR AS NOTED	9. 11.
	DUPLEX RECEPTACLE WITH CONTROL	+16" OR AS NOTED	9. 11.
	DUPLEX RECEPTACLE		9.
	ELECTRIC WATER COOLER RECEPTACLE		SEE DIAGRAM
	WEATHERPROOF RECEPTACLE	+24" OR AS NOTED	2. 9.
	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.
	FOURPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.
	GROUND FAULT INTERRUPTER FOURPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.
	SPECIAL PURPOSE OUTLET	+16" OR AS NOTED	10. WITH CAP. 11.
	DATA OUTLET W/(1) CABLE (SEE SPECIFICATION)	+16" OR AS NOTED	9. 11.
	DATA OUTLET W/(2) CABLES (SEE SPECIFICATION)	+16" OR AS NOTED	9. 11.
	DATA OUTLET W/(3) CABLES (SEE SPECIFICATION)	+16" OR AS NOTED	9. 11.
	DATA OUTLET W/MORE THAN (3) CABLES (SEE SPEC)	+16" OR AS NOTED	9. 11.
	WIRELESS ACCESS POINT, W/(2) CABLES (SEE SPEC)	CEILING	
	JUNCTION BOX ("F" IN FLOOR)	AS NOTED	
	MOTOR OUTLET	TO SUIT EQUIP.	
	PUSHBUTTON	+4'-0"	6.
	NON-FUSED DISCONNECT SWITCH	+5'-0"	5.
	FUSED DISCONNECT SWITCH	+5'-0"	5.
	MANUAL STARTER THERMAL OVERLOAD SWITCH WITH PILOT LIGHT	+4'-0"	6.
	MAGNETIC STARTER	+5'-0"	7.
	MAGNETIC STARTER / DISCONNECT COMBINATION	+5'-0"	
	VARIABLE FREQUENCY DRIVE	+6'-6"	
	PANEL BOARD	TOP AT +6'-0"	
	MAIN DISTRIBUTION PANEL		
	TELEPHONE TERMINAL BOARD		
	GROUND BUS BAR		
	CHIME	+7'-6"	
	FIRE ALARM MANUAL STATION	+4'-0"	6.
	FIRE ALARM SIGNAL HORN/STROBE	+8'-0"	6.
	FIRE ALARM SIGNAL SPEAKER/STROBE	+8'-0"	6.
	FIRE ALARM STROBE	+8'-0"	6.
	FIRE ALARM SPEAKER ONLY	+8'-0"	6.
	FIRE ALARM SIGNAL STROBE WITH BLUE COLORED LENS (CO VISUAL ALARM)	+8'-0" / CEILING	MOUNT AS PER. MAN
	SMOKE DETECTOR	CEILING	
	CARBON MONOXIDE DETECTOR	CEILING	
	HEAT DETECTOR	CEILING	
	DUCT SMOKE DETECTOR		MTD. IN DUCT
	FIRE/SMOKE DAMPER		
	DOOR HOLDER	AS NOTED	
	FIRE ALARM RELAY OR SECURITY RELAY		
	FIRE ALARM CONTROL MODULE		
	FIRE ALARM MONITOR MODULE		
	DURESS PUSHBUTTON	+4'-0"	6.
	SECURITY SYSTEM DOOR SWITCH	DOOR JAMB	
	SECURITY SYSTEM OVERHEAD DOOR SWITCH	CEILING	MOUNT AS PER. MAN
	MAGNETIC SHEAR LOCK		
	SECURITY SYSTEM KEYED ACCESS SWITCH	+4'-0"	6.
	SECURITY SYSTEM KEYED PAD	+4'-0"	6.
	INFRARED SENSOR	AS NOTED	
	SECURITY MOTION DETECTOR		MOUNT AS PER. MAN
	SECURITY SYSTEM POP-IT		MOUNT AS PER. MAN
	GLASS BREAK DETECTOR	CEILING	
	ELECTRIC DOOR STRIKE		12.
	ELECTRIC DOOR LOCK		12.
	ACCESS CONTROL SYSTEM, REQUEST TO EXIT		
	ACCESS CONTROL CARD READER	+4'-0"	6.
	ACCESS CONTROL BIOMETRIC READER	+4'-0"	6.
	CAMERA - SEE SCHEDULE	AS NOTED	SEE DIAGRAM, SPEC.
	DOOR POSITION INDICATING SWITCH		
	LIGHT FIXTURE (LETTER DESIGNATES TYPE)		
	EQUIPMENT NUMBER		
	ARCHITECTURAL ROOM NUMBER		
	DEVICE/EQUIPMENT (TEXT DESIGNATES TYPE) SEE SCHEDULE		

INDEX OF ELECTRICAL DRAWINGS

- E001 SYMBOLS, SCHEDULES AND NOTES
- E002 SCHEDULES
- E101 ELECTRICAL SITE PLAN
- E201 LIGHTING AND POWER PLAN
- E401 ONE-LINE DIAGRAM AND PANEL BOARD SCHEDULES
- E501 ELECTRICAL DIAGRAMS

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E001									

LIGHT FIXTURE ABBREVIATION SCHEDULE			
NOTE: NOT ALL ABBREVIATIONS WILL NECESSARILY BE USED.			
A.F.F.	ABOVE FINISH FLOOR	SCBA	STANDARD PAINTED COLOR AS SELECTED BY THE ARCHITECT
WALL@CLG	WALL MOUNT AT CORNER OF WALL AND CEILING	CFBA	CUSTOM FINISH AS SELECTED BY THE ARCHITECT
CCBA	CUSTOM PAINTED COLOR AS SELECTED BY THE ARCHITECT	SFBA	STANDARD FINISH AS SELECTED BY THE ARCHITECT
		MOD	MODIFY STANDARD LIGHT FIXTURE AS INDICATED

- LIGHT FIXTURE GENERAL NOTES**
- REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO BIDDING.
 - REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS AND LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
 - REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE, FUSING, BALLAST, AND LAMP REQUIREMENTS AND ACCEPTABLE MANUFACTURERS.
 - CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.
 - REFER TO LIGHTING PLANS FOR ALL LINEAR FIXTURE LENGTHS. THE CATALOG NUMBER IS BASED ON THE FIXTURE SPECIFIED AND MAY NOT REFLECT THE QUANTITY OR OVERALL LENGTH OF LINEAR FIXTURES REQUIRED. CONTRACTOR TO NOTE THAT VARIOUS FIXTURE LENGTHS MAY BE REQUIRED TO ACHIEVE THE OVERALL RUN LENGTH.
 - REFER TO LIGHTING PLANS FOR ALL UNDERCABINET FIXTURE LENGTHS. THE CATALOG NUMBER IS BASED ON THE FIXTURE SPECIFIED AND MAY NOT REFLECT THE QUANTITY OR OVERALL LENGTH OF UNDERCABINET FIXTURES REQUIRED. CONTRACTOR TO NOTE THAT VARIOUS FIXTURE LENGTHS MAY BE REQUIRED TO ACHIEVE THE OVERALL RUN LENGTH OR TO FIT WITHIN THE MILLWORK. COORDINATE FIXTURE LAYOUT WITH MILLWORK SHOP DRAWINGS PRIOR TO LIGHTING SUBMITTALS.
 - WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.
 - PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) EIGHT WORKING DAYS BEFORE THE BID. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.
 - REFER TO SPECIFICATIONS 260500, 265100 & 265600 (16001, 16510 & 16551).
 - VALUE ENGINEERING CONDUCTED WITHOUT THE DESIGN TEAM IE; ARCHITECT, OWNER, ENGINEER & LIGHTING CONSULTANT/DESIGNER WILL NOT BE ALLOWED, REVIEWED OR APPROVED.

FIXTURE SCHEDULE							Project Manager: RICHARD WARDLE
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTS	TOTAL WATTS	LAMPS	
A	4 FOOT LED SURFACE WRAP FIXTURE WITH 5,072 LUMENS, PEARLESCENT POLY CARBONATE LENS, ELECTRONIC DRIVER AND EMERGENCY BATTERY PACK	KENALL	MLHA8-48-R-MW-PP-45L40K-DCC-120-LEL	120	49	INCLUDED	
B	4 FOOT LE STRIP FIXTURE WITH 4436 LUMENS, FULL FROST LENS AND ELECTRONIC DRIVER	METALUX	4SWLED-44HL-LW-LINV-L840-CD1-U	120	40	INCLUDED	
OA	LED WALL SCONCE WITH 4000 LUMENS, PHOTOCELL, ELECTRONIC DRIVER	LUMARK	XTOR4B-Y-SCBA-PC1	120	38	INCLUDED	

EQUIPMENT SCHEDULE															
UNIT #	FUNCTION	LOAD	VOLT	PHASE	FULL LOAD AMPS	CONDUIT SIZE	WIRES				OCPD		REF. NOTES	REMARKS	
							NO. SETS	NO.	SIZE	EQUIP. GND ⁽¹⁾	TYPE	AMPS			STARTER
EF-1	EXHAUST FAN	100 VA	120	1	0.83	3/4"	1	2	12	12	CB	15	4A		
WH-1	WATER HEATER	2000 VA	120	1	16.67	3/4"	1	2	10	10	CB	25		1A	

NOTES:

1. NON-FUSED DISCONNECT SWITCH	A. FURNISHED, INSTALLED, AND CONNECTED UNDER DIVISION 26
2. FUSED DISCONNECT SWITCH	B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTION UNDER DIVISION 26.
3. BREAKER IN ENCLOSURE	C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26.
4. MANUAL STARTER WITH THERMAL OVERLOAD	D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION.
5. MAGNETIC STARTER	
6. MAGNETIC STARTER/NON-FUSED DISCONNECT COMBINATION	
7. MAGNETIC STARTER/FUSED DISCONNECT COMBINATION	
8. MAGNETIC STARTER/BREAKER COMBINATION	CB = CIRCUIT BREAKER - THERMAL MAGNETIC
9. VARIABLE FREQUENCY DRIVE	CKW = CHILLER KILOWATTS
10. REDUCED VOLTAGE STARTER	
11. DIRECT CONNECTION	
12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC.	NOTE 1: PER 250.122(A), EQUIPMENT GROUND IS NOT REQUIRED TO BE LARGER THAN PHASE CONDUCTOR.
13. TWO-SPEED STARTER, COORDINATE WITH MOTOR TYPE	
14. SOLID STATE SOFT STARTER	

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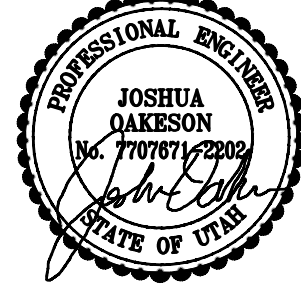
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SHEET KEYNOTES	
(S1)	EXISTING ROCKY MOUNTAIN POWER CONNECTION BOX.
(S2)	(1) 3" CONDUIT FOR POWER SERVICE. SEE ONE-LINE DIAGRAM SHEET E401.
(E1)	FEED THRU METER BASE. SEE ONE-LINE DIAGRAM SHEET E401 FOR ADDITIONAL SERVICES.

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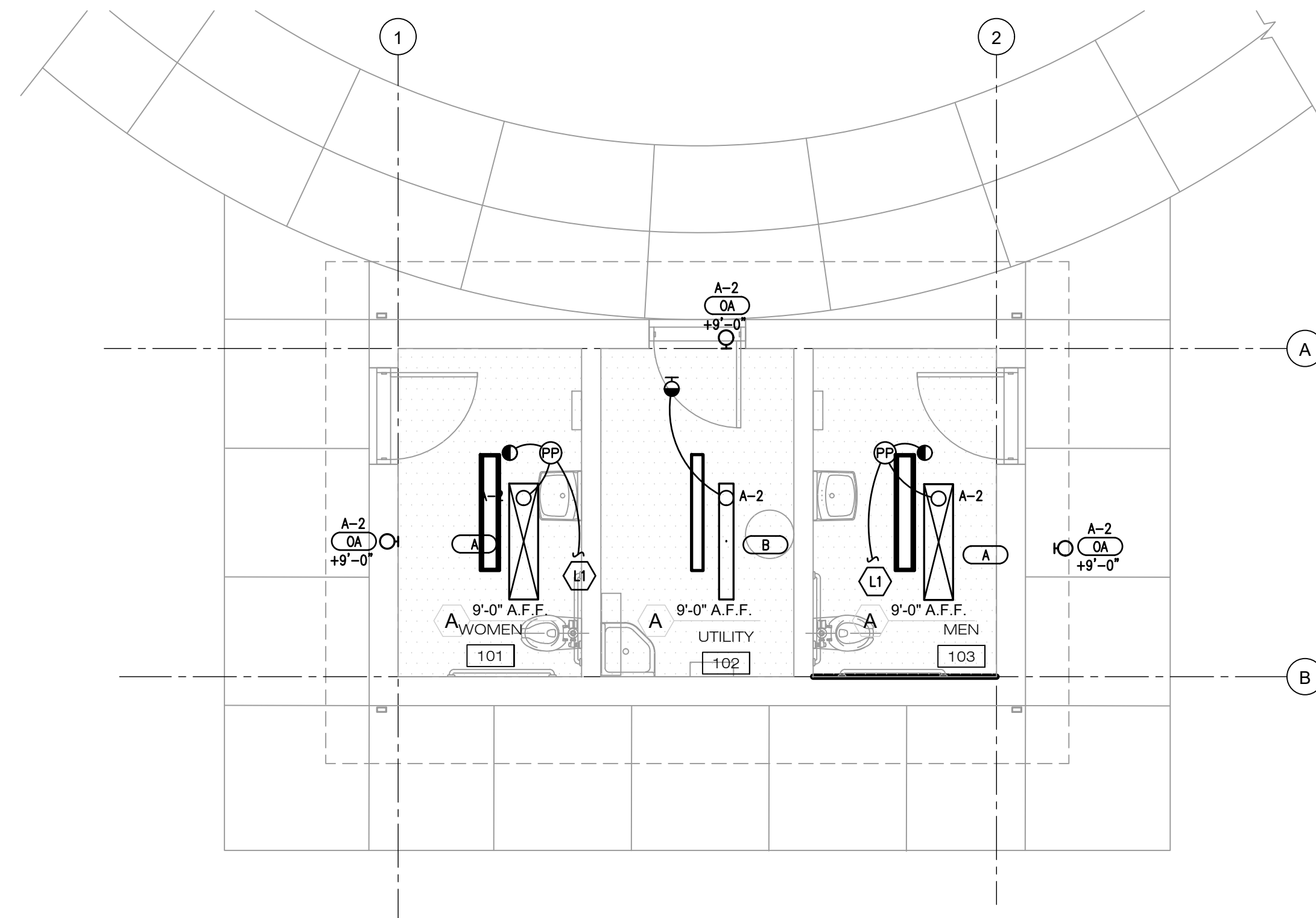
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 ELECTRICAL SITE PLAN

E101

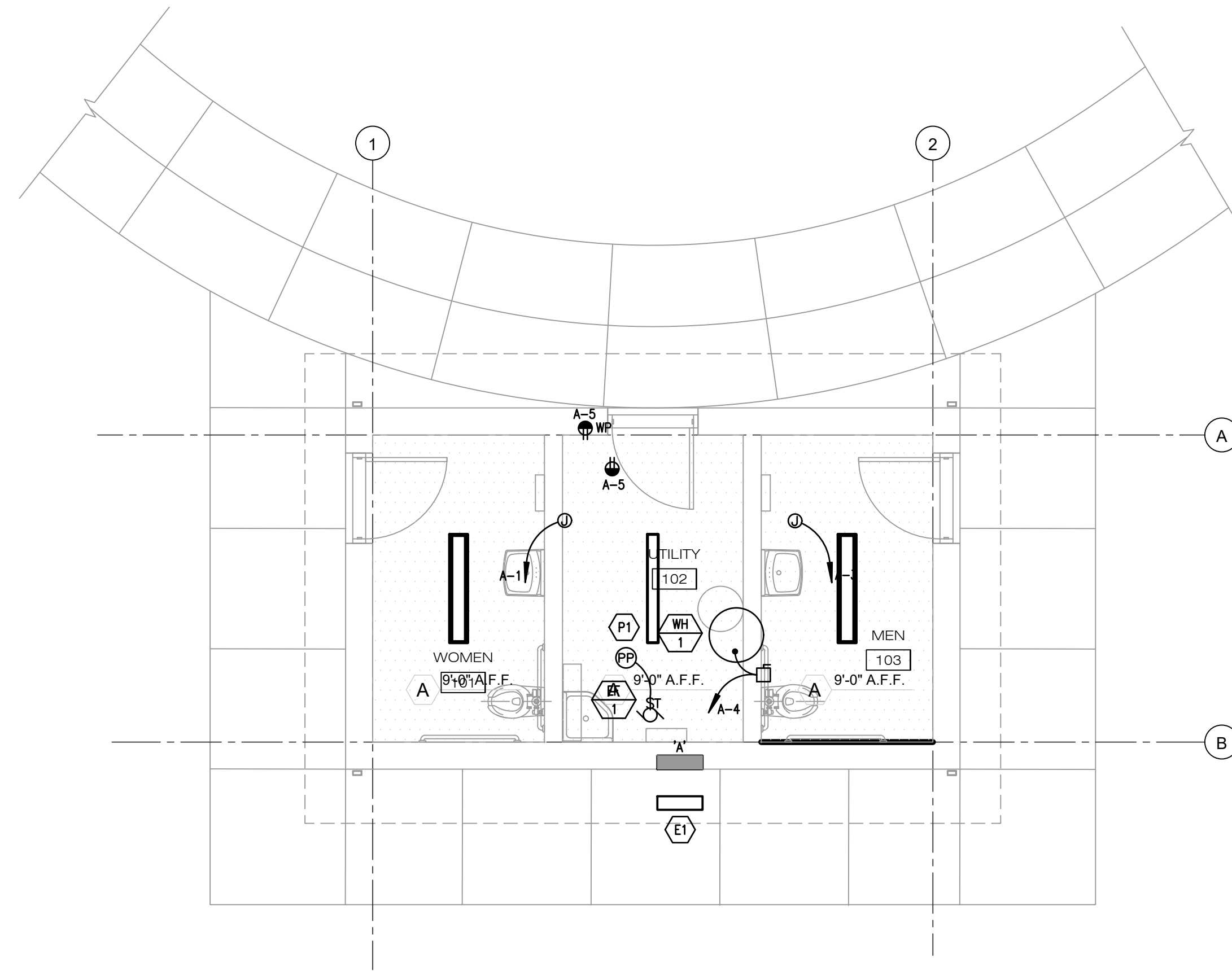
PLAN NORTH
 ELECTRICAL SITE PLAN
 1" = 30'-0"
 0 15' 30' 60'

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PLAN NORTH
 LIGHTING PLAN
 1/4" = 1'-0"



PLAN NORTH
 POWER PLAN
 1/4" = 1'-0"

SHEET KEYNOTES

- (E1) FEED THRU METER BASE. SEE ONE-LINE DIAGRAM SHEET E401 FOR ADDITIONAL REQUIREMENTS.
- (P1) WIRE EXHAUST FAN TO OCCUPANCY SENSOR IN RESTROOMS.
- (L1) PROVIDE WIRING TO POWER PACK TO CONTROL EXHAUST FAN.

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Short-Circuit Evaluation

1- Is the available fault current known?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
INPUT AVAILABLE FAULT CURRENT	22000 AMPS	Minimum XFRM Impedances: XFRM Size Minimum Z% 0-75 kVA 4% 112.5 - 225 kVA 6% > 300 kVA 8%
2- Select voltage and phase of system?	120/240, 1 phase	
INPUT VOLTAGE (V-L-L)	120 Volts	

DISTRIBUTION PANELBOARD	
PANEL	Meter Base
Ita =	kVA x 1000 V(L-L) AMPS
Ica =	Ita x 1.00 XFRM Z% x (D)
Ita	22000
Ica	22000
Length of conductor	L = 300 ft
Maximum Fault Current	Ica = 22000 Amps
Number of conductors / phase	N = 3
Phase Conductor constant	C = 11.174
Line Voltage	V(L-L) = 120 Volts
Neutral Conductor constant	C = 11.174
Line-to-neutral voltage	V(L-N) = 69 Volts
I _{sc} = 2 x I _{ca} Ica C x B x V(L-L)	T FACTOR Note: Use 3 and V(L-N) for 3-wire
M = 1 1 + f	MULTIPLIER
I _{sc} = Ica x M	Available fault current at equipment
I _{sc} = Ica x M	Available fault current at equipment
VD = 2 * K * L * I _{sc} C	% Voltage Drop
	VD = 2.65
	% Drop = 2.21%

BRANCH PANELS	
Branch Panel Runway Type	A
Panel Length(ft)	5
Phase Const	1
Dist Cond	1
Ica @ DP	2,029
Conduct	3,806
V(L-N)	69
I _{sc}	0,038
I _{sc}	0,077
M _{sc}	0,963
I _{sc}	0,929
I _{sc}	1,954
I _{sc}	1,884

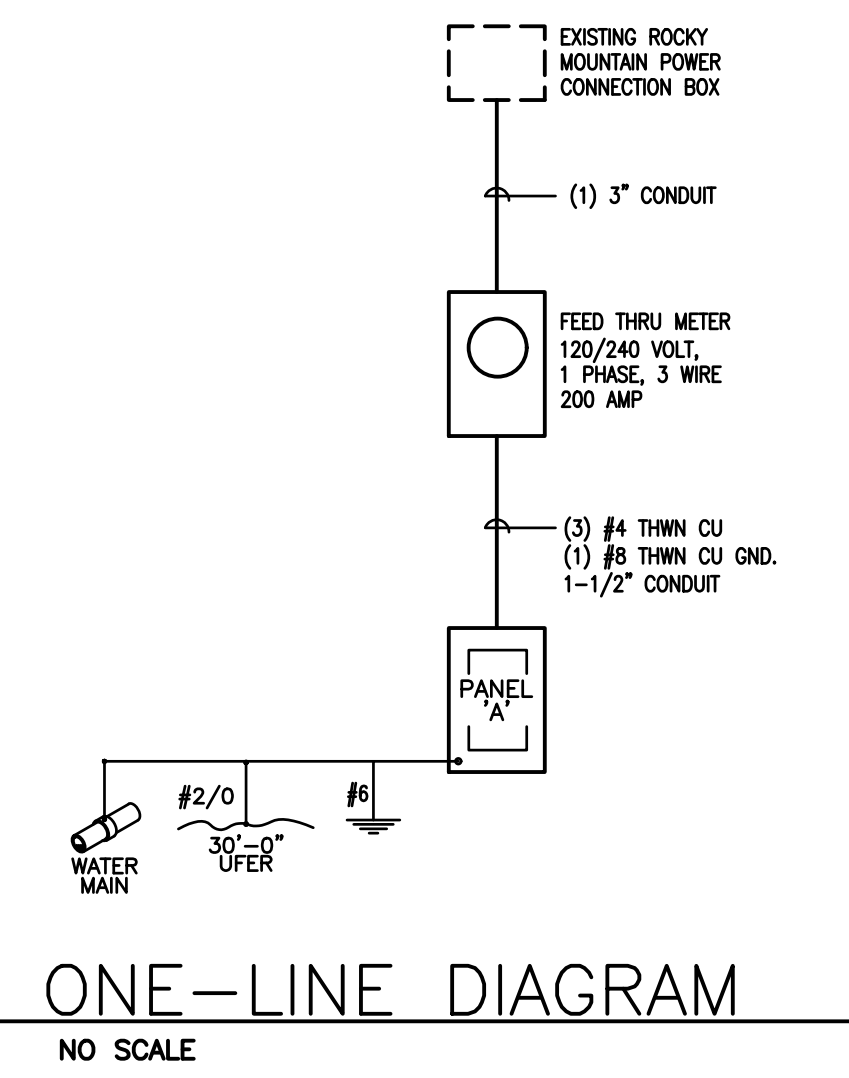
PANELBOARD SCHEDULE

PANEL A TYPE NQOB 120/240 VOLTS 1 PH 3 W

MOUNTING FLUSH DIMENSIONS 14 W 5 D (in.) H LOCATION UTILITY 102 MAINS X LUGS X BREAKER X SUBFEED LUGS X ISO GROUND X 200% NEUTRAL SPD

ITEM	AMPS	POLE	WIRE CIR.		PHASE LOAD		PHASE LOAD		CIR.	WIRE	ITEM		
			L	R	A	B	A	B					
HAND DRYER	20	1	12	1	2400		352		2	20	1	12	LIGHTING
HAND DRYER	20	1	12	3		2400		2000	4	20	1	12	WATER HEATER
RECEPTACLES	20	1	12	6	360				6				SPACE ONLY
SPACE ONLY				7					8				SPACE ONLY
SPACE ONLY				9					10				SPACE ONLY
SPACE ONLY				11					12				SPACE ONLY
SPACE ONLY				13					14				SPACE ONLY
SPACE ONLY				15					16				SPACE ONLY
SPACE ONLY				17					18				SPACE ONLY
SPACE ONLY				19					20				SPACE ONLY
SPACE ONLY				21					22				SPACE ONLY
SPACE ONLY				23					24				SPACE ONLY
SPACE ONLY				25					26				SPACE ONLY
SPACE ONLY				27					28				SPACE ONLY
SPACE ONLY				29					30				SPACE ONLY
SPACE ONLY				31					32				SPACE ONLY
SPACE ONLY				33					34				SPACE ONLY
SPACE ONLY				35					36				SPACE ONLY
SPACE ONLY				37					38				SPACE ONLY
SPACE ONLY				39					40				SPACE ONLY
SPACE ONLY				41					42				SPACE ONLY
					2760	2400	352	2000					CONNECTED LOAD TOTAL
					3112	4400	TOTAL						7512 W
					26	37	AMPS/PHASE						EQUIP RATING 10,000 AMPS RMS SYM.

* Provide 5 mA GFCI Circuit Breaker



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PROFESSIONAL ENGINEER
JOSHUA OAKERSON
 License No. 7707872202
 STATE OF UTAH

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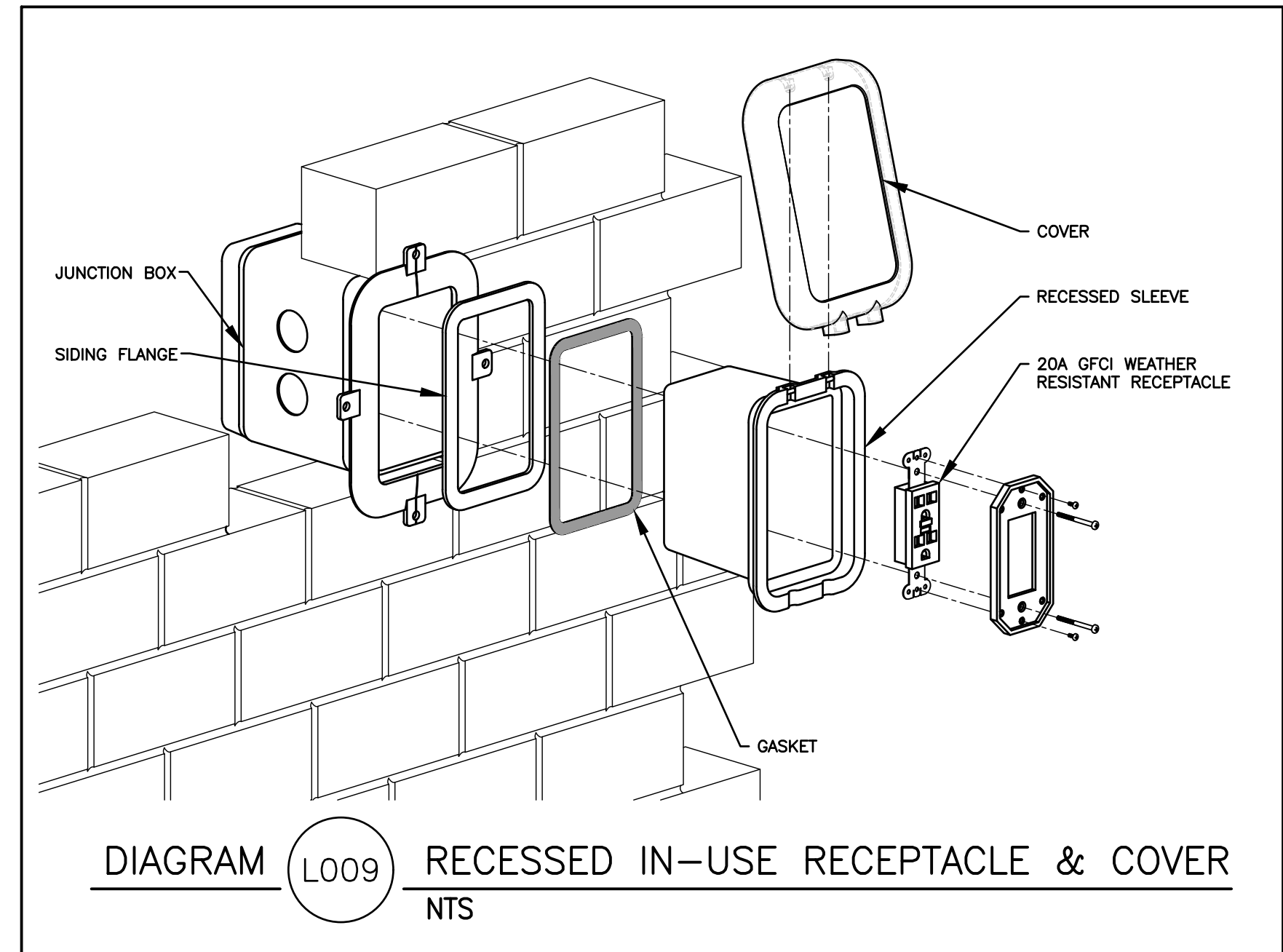
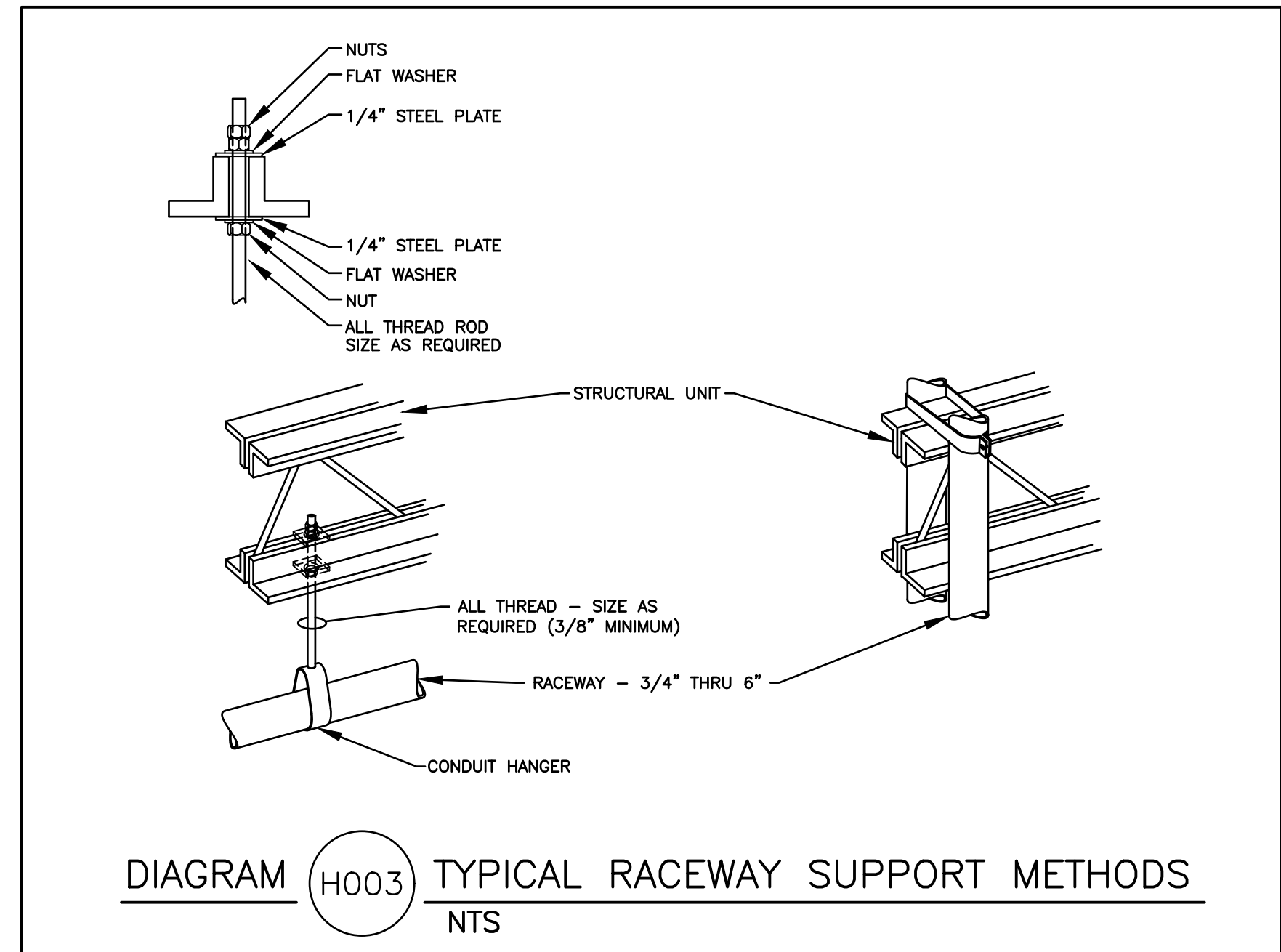
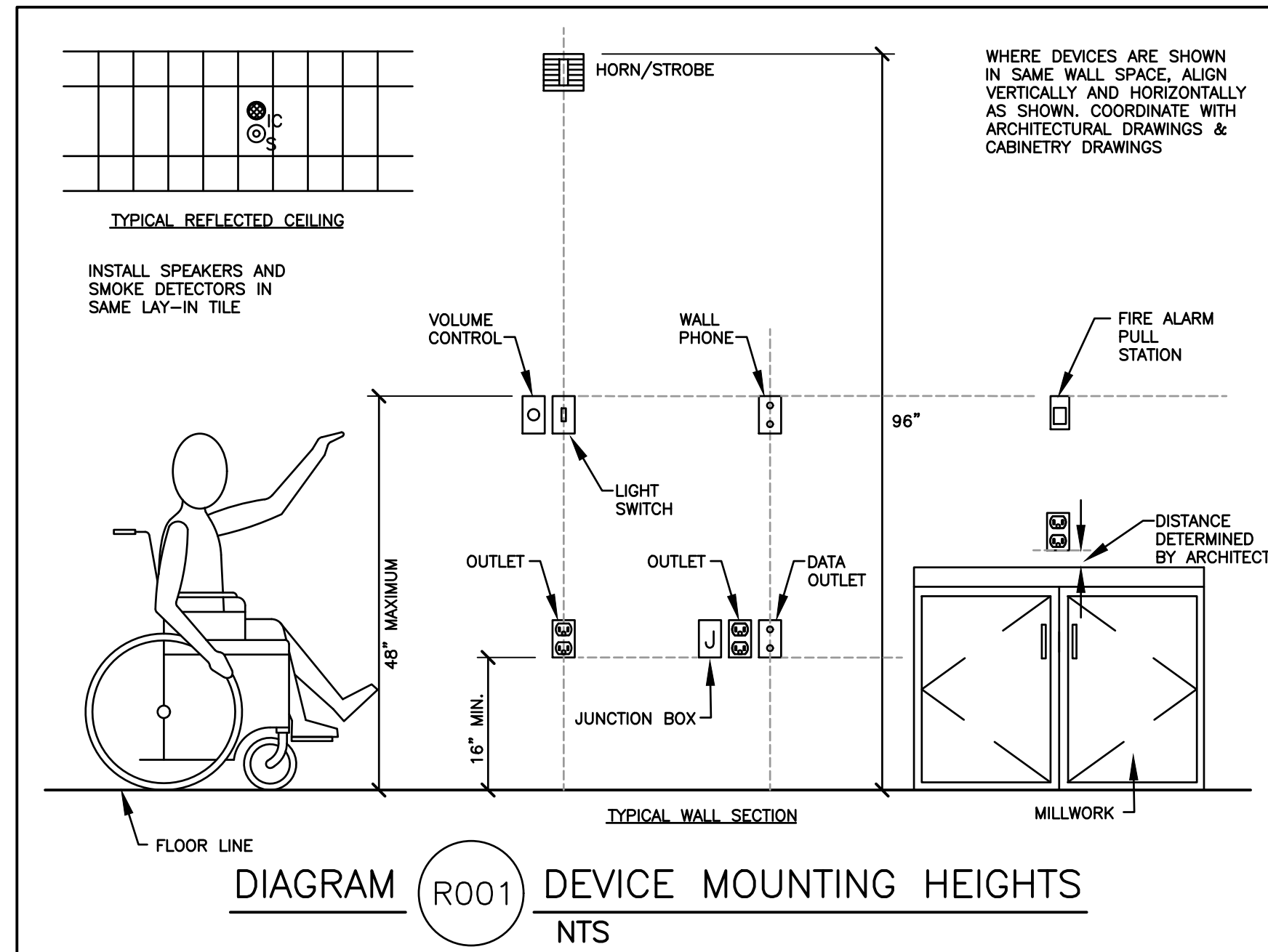
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 ONE-LINE DIAGRAM & PANELBOARD SCHEDULES

E401

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