

# RENOVATE ARMORY - TAYLOR

12450 BEECH DALY ROAD, TAYLOR, MI 48180

MICHIGAN DEPARTMENT OF MILITARY AND VETERANS AFFAIRS  
PROJECT NO. 26C6722008

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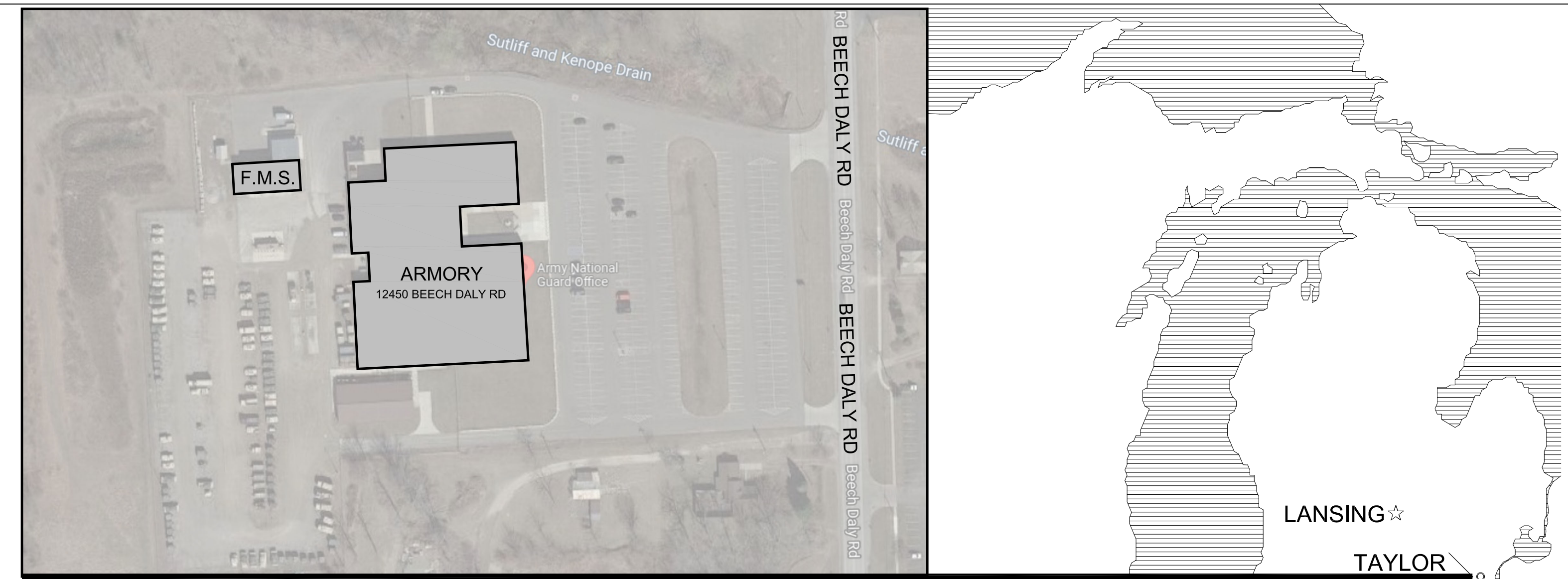
## GENERAL NOTES

- BIDS FOR CONSTRUCTION OF ALL WORK SHOWN ON THE PLANS ARE SOLICITED ON A LUMP SUM BASIS. NO SEPARATE PAYMENT OR ADJUSTMENTS TO THE LUMP SUM BID WILL BE MADE UNLESS SPECIFICALLY INDICATED ON THE PLANS AND IN THE PROPOSAL OR WHEN ADDITIONAL WORK IS AUTHORIZED IN WRITING BY THE ENGINEER.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND SHALL IMMEDIATELY NOTIFY THE DMVA ARCHITECT AND INSPECTOR OF ANY DEVIATION FROM THESE DRAWINGS.
- THE CONTRACTOR AND HIS SUBCONTRACTORS AND/OR SUPPLIERS ARE RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS.
- THE CONTRACTOR SHALL HAVE A KNOWLEDGEABLE REPRESENTATIVE ON SITE AT ALL TIMES DURING WORK UNDER THIS CONTRACT. THIS REPRESENTATIVE SHALL HAVE ON SITE, HIS OWN COPY OF THE CONTRACT SPECIFICATIONS, DRAWINGS AND DMVA APPROVED SHOP DRAWINGS.
- PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR TO VERIFY CONDITION OF EXISTING CONSTRUCTION. DOCUMENT ANY EXISTING CONDITION THAT COULD BE MISCONSTRUED AS DAMAGED DURING NEW CONSTRUCTION. NOTIFY DMVA OF EXISTING CONDITIONS IN WRITING PRIOR TO THE COMMENCEMENT OF WORK.
- WHERE NEW CONSTRUCTION ADJUTS EXISTING CONSTRUCTION AND APPEARS TO ALIGN FLUSH WITH EXISTING CONSTRUCTION, THE NEW CONSTRUCTION SHALL ALIGN AND BE FLUSH WITH NO VISIBLE JOINT, UNLESS THE MATERIALS OR SUBSTRATES DIFFER; THEN AN EXPANSION JOINT SHALL BE INSTALLED.
- DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS.
- ALL WORK MUST COMPLY WITH THE DRAWINGS AND SPECIFICATIONS. ANY REVISIONS REQUIRED DUE TO FIELD CONDITIONS MUST BE REVIEWED AND APPROVED BY DMVA PROJECT DESIGNER AND DMVA INSPECTOR PRIOR TO CONSTRUCTION.
- DISCREPANCIES FOUND BETWEEN THE SPECIFICATIONS AND THE DRAWINGS SHALL BE SUBMITTED TO DMVA IN THE FORM OF AN RFI FOR CLARIFICATION PRIOR TO ANY WORK INVOLVING THE DISCREPANCY.

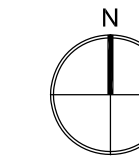
## CONTACT INFORMATION

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(517) 481-7547  
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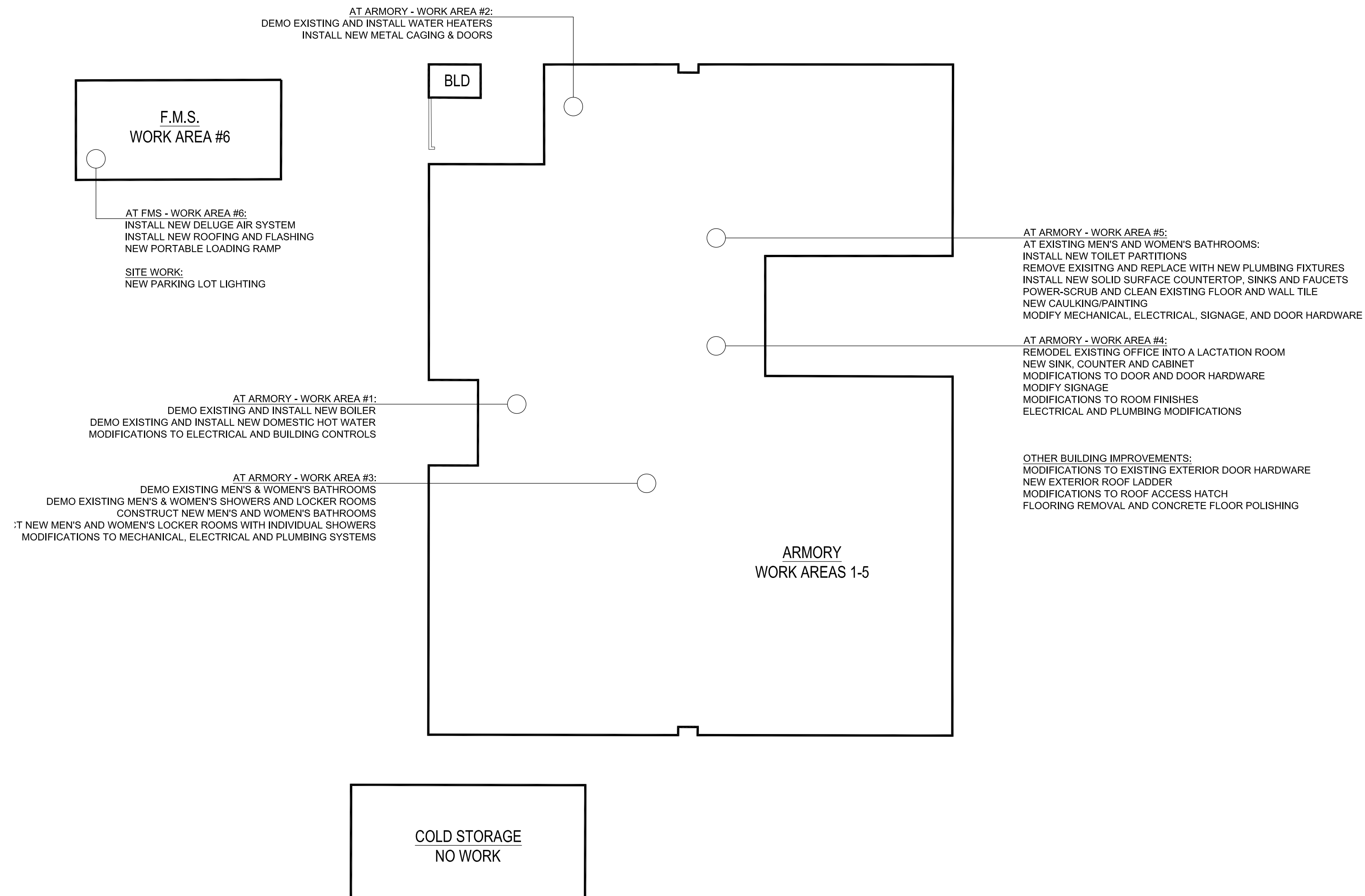
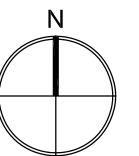
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AERIAL PHOTO OF PROJECT

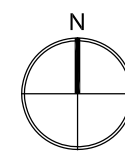


VICINITY MAP





1 SITE PLAN  
C1.0 SCALE: 1"=50'-0"



KNOW WHAT'S BELOW.  
CALL BEFORE YOU DIG.

**LEGEND:**

- EXISTING BUILDINGS
- PROPERTY LINE
- EXISTING FENCE LINE

**KEY NOTES:**

- 1 PROVIDE AND INSTALL A NEW EXTERIOR ROOF LADDER IN THIS APPROXIMATE LOCATION TO ALLOW ACCESS TO/FROM HIGH ROOF OF DRILL HALL TO LOWER ROOF. SEE DETAIL 1/A6.1 FOR ADD'L INFORMATION.

**GENERAL NOTES:**

1. SITE PLAN IS DIAGRAMMATIC. CONTRACTOR TO VERIFY LOCATIONS OF UTILITIES AND ALL OTHER EXISTING SITE CONDITIONS, INCLUDING AREA OF ASPHALT TO BE REMOVED, IN ORDER TO DEFINE THE EXTENT OF WORK REQUIRED TO COMPLETE THE PROJECT AS SHOWN IN THESE DRAWINGS.
2. CARE SHALL BE TAKEN NOT TO DISTURB UNDERGROUND UTILITIES. CONTRACTOR RESPONSIBLE TO COORDINATE WITH CAMP GRAYLING ENGINEERING STAFF ALL UTILITY LOCATIONS.

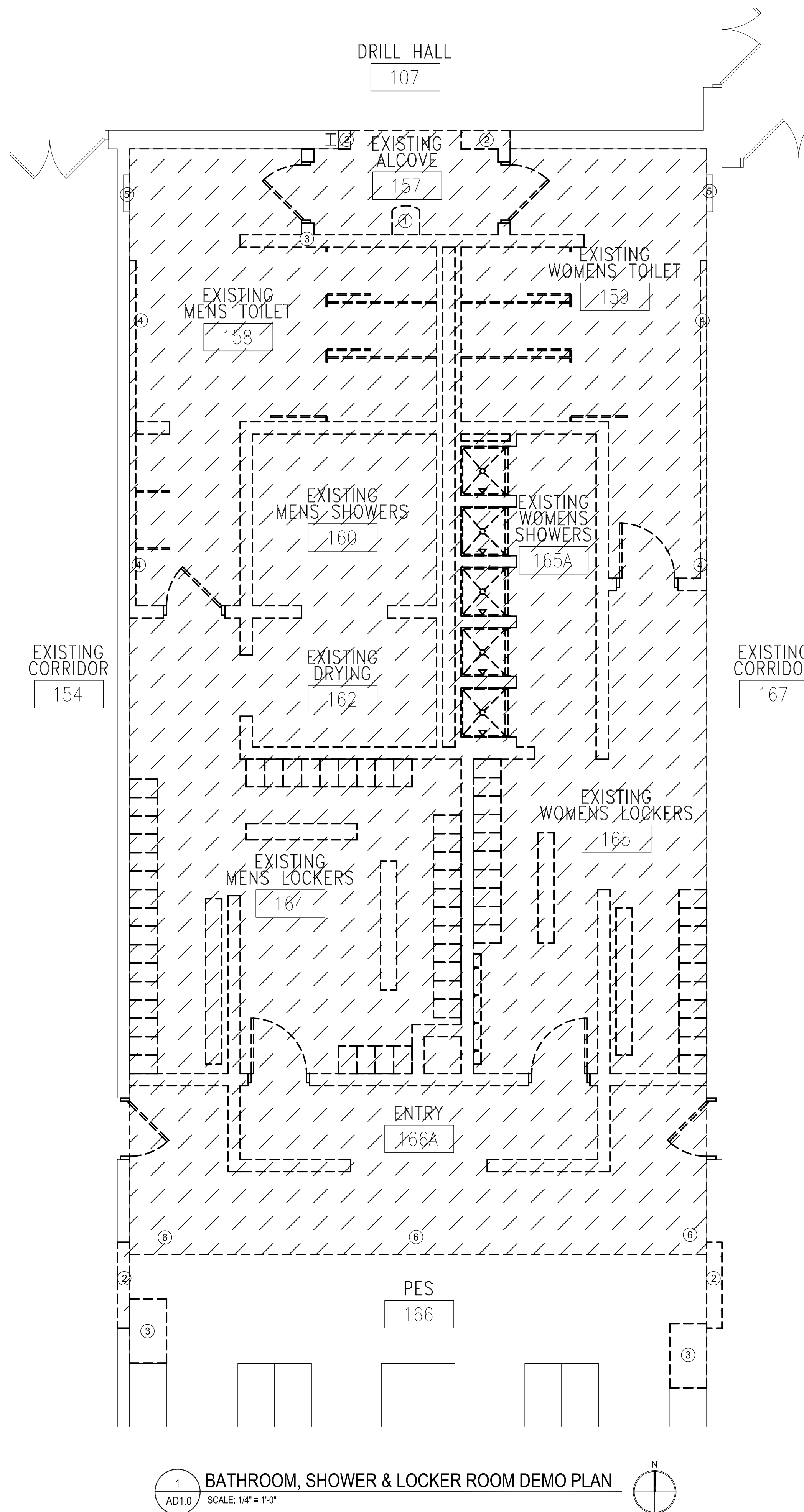
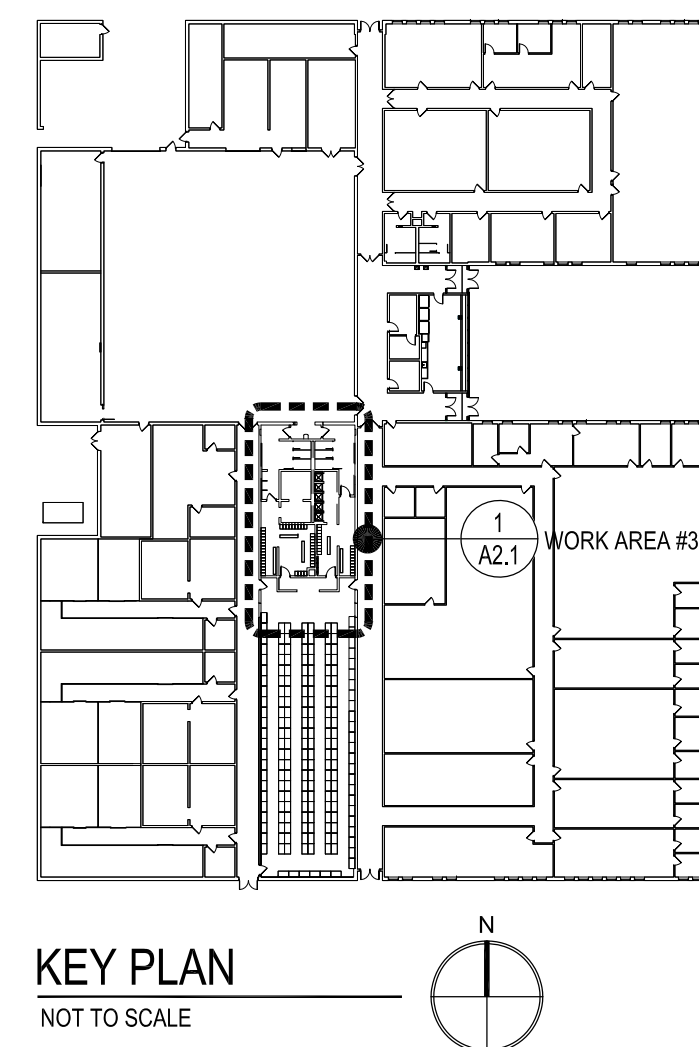
SHEET	IDENTIFICATION NO. PROJECT INDEX CODE	ISSUED FOR	DATE	DESIGNED	JDJ
		PRELIMINARY <input checked="" type="checkbox"/> CONSTRUCTION <input type="checkbox"/> FINAL RECORD <input type="checkbox"/>	29 JULY 2023	DRAWN	JDJ
C1.0				CHECKED	APPROVED

**DEMOLITION NOTES AT BATHROOMS:**

1. AT PERIMETER WALLS TO REMAIN, DEMO WALL TILE AND PREPARE WALLS FOR NEW TILE
2. WITHIN THE WORK AREA, DEMO ALL EXISTING PLUMBING FIXTURES, HANGERS AND SUPPORTS INCLUDING TOILET PARTITIONS, SOAP DISPENSERS, AIR FRESHENERS, TOILET PAPER HOLDERS, AND MIRRORS
3. REMOVE EXISTING PLUMBING PIPING AND VALVES, ABOVE AND BELOW FLOOR LINE, TO COMPLETE THE WORK
4. REMOVE ALL PLUMBING SEWER PIPING BELOW / INSIDE THE FLOOR AND ABOVE THE CEILING - INCLUDING ANY VENT AND RE-VENT PIPING THAT WON'T BE REUSED
5. WITHIN THE WORK AREA, DEMO ALL ELECTRICAL LIGHTING, SWITCHES, RECEPTACLES, EMERGENCY LIGHTING FIXTURES, AND ALL CONDUIT & WIRING TO ALLOW FOR THE NEW WORK TO BE COMPLETED. SEE ELECTRICAL FOR EXTENT OF WORK.
6. DEMO CEILING IN WORK AREA INCLUDING ALL LIGHTING, ACCESS PANELS AND MECHANICAL DIFFUSERS
7. WITHIN THE WORK AREA, DEMO INTERIOR DOORS, FRAMES AND DOOR HARDWARE. TURN OVER ANY DOOR CORES TO DMVA
8. WITHIN THE WORK AREA, DEMO CMU WALLS AND FOOTINGS AS REQUIRED TO COMPLETE THE WORK
9. WITHIN THE WORK AREA SAWCUT AND REMOVE THE ENTIRE CONCRETE FLOOR SLAB, INCLUDING PARTITION FOOTINGS
10. REMOVE MASONRY BLOCK AT NEW OPENINGS AS NEEDED. TOOTH IN NEW MASONRY WITH EXISTING ADJACENT TO THE DRILL HALL
11. EXCAVATE EXISTING SOILS AS NEEDED TO INSTALL THE NEW SANITARY, COMPACT AND INSTALL NEW CONCRETE FOOTING, SLAB AND FLOOR TILE THROUGHOUT THE WORK AREA

**DEMOLITION NOTES AT SHOWERS & LOCKER ROOMS:**

1. AT PERIMETER WALLS TO REMAIN, DEMO WALL TILE AND PREPARE WALLS FOR NEW TILE
2. WITHIN THE WORK AREA, DEMO ALL EXISTING SHOWER COMPARTMENTS, SHOWER HEADS, SHOWER CONTROLS & VALVES, SOAP DISPENSERS, AIR FRESHENERS, WALL HOOKS, MIRRORS, AND ANY OTHER ITEMS ON THE WALLS
3. DEMO BENCHES AND LOCKERS
4. REMOVE EXISTING PLUMBING PIPING, ABOVE AND BELOW FLOOR LINE
4. REMOVE ALL PLUMBING SEWER PIPING BELOW / INSIDE THE FLOOR AND ABOVE THE CEILING - INCLUDING ANY VENT AND REVENT PIPING THAT WON'T BE REUSED
4. WITHIN THE WORK AREA, DEMO ALL ELECTRICAL LIGHTING, SWITCHES, RECEPTACLES, EMERGENCY LIGHTING FIXTURES, AND ALL CONDUIT & WIRING TO ALLOW FOR THE NEW WORK TO BE COMPLETED. SEE ELECTRICAL FOR EXTENT OF NEW WORK.
5. DEMO CEILING IN WORK AREA INCLUDING ACCESS PANELS AND MECHANICAL DIFFUSERS
6. WITHIN THE WORK AREA, DEMO INTERIOR DOORS, FRAMES AND HARDWARE
7. WITHIN THE WORK AREA DEMO CMU WALLS AND FOOTINGS AS REQUIRED TO COMPLETE THE WORK
8. WITHIN THE WORK AREA SAWCUT AND REMOVE THE ENTIRE CONCRETE FLOOR SLAB, INCLUDING PARTITION FOOTINGS
9. REMOVE MASONRY BLOCK AT NEW OPENINGS AS NEEDED. TOOTH IN NEW MASONRY WITH EXISTING AT NEW WALL ADJACENT TO PES
10. EXCAVATE EXISTING SOILS AS NEEDED TO INSTALL THE NEW SANITARY, COMPACT AND INSTALL NEW CONCRETE FOOTING, SLAB AND FLOOR TILE THROUGHOUT THE WORK AREA



**1 BATHROOM, SHOWER & LOCKER ROOM DEMO PLAN**  
 AD1.0 SCALE: 1/4" = 1'-0"

**LEGEND:**

- AREA OF CONCRETE SLAB AND FOOTING TO BE REMOVED
- EXISTING WALLS & FOOTINGS TO BE DEMOLISHED

**KEYED NOTES:**

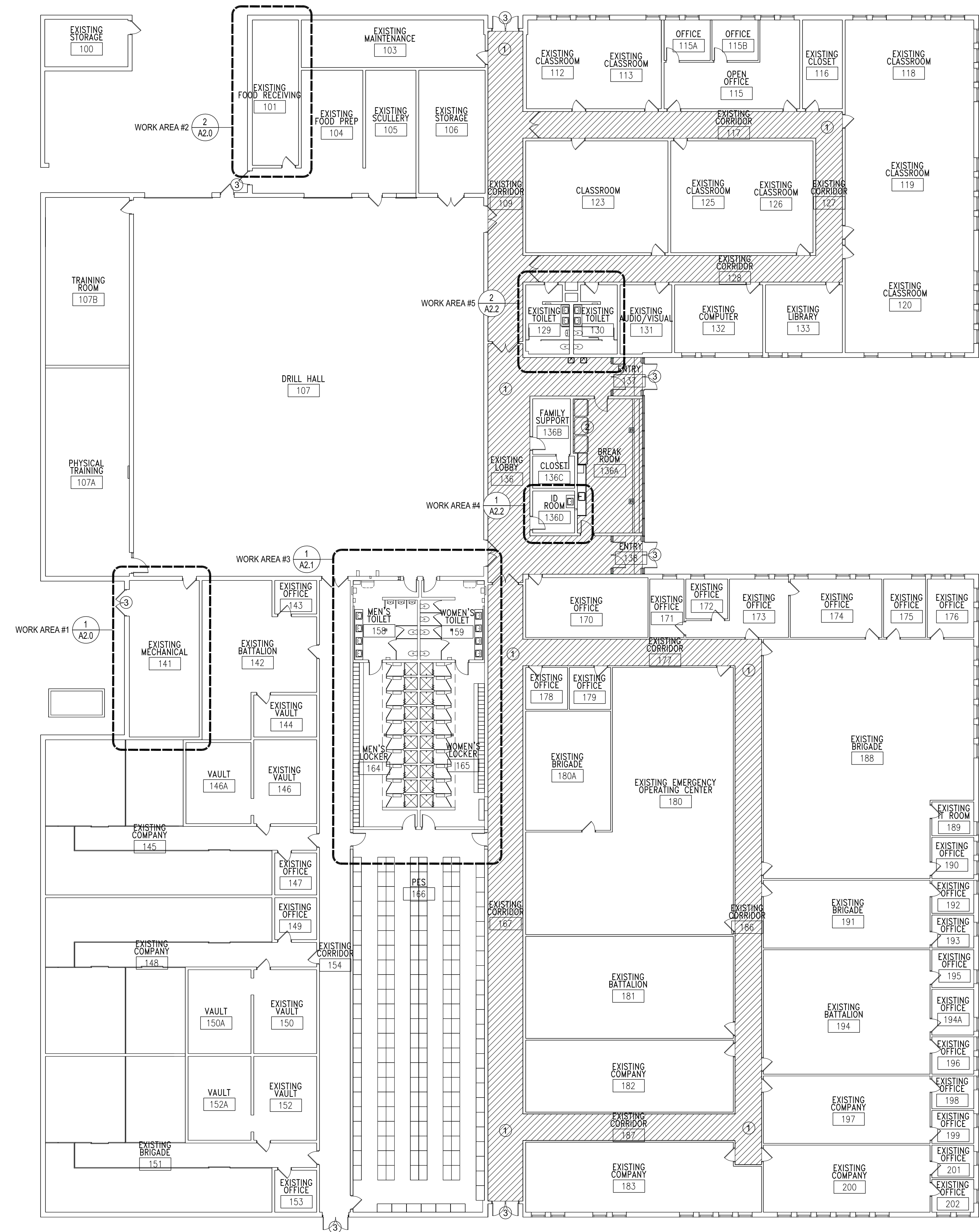
- 1 SALVAGE DRINKING FOUNTAIN
- 2 SEE SHEET A2.1 FOR LOCATIONS OF NEW OPENINGS IN EXISTING WALLS
- 3 SALVAGE & REMOVE PES LOCKERS THAT NEED TO BE MOVED TO MAKE ROOM FOR THE WORK. PROVIDE ANY PES LOCKERS TO DMVA THAT AREN'T RE-USED
- 4 THESE WALLS ARE ALREADY FURRED OUT. CONTRACTOR TO DEMO CONCRETE BLOCK AS NECESSARY TO COMPLETE THE WORK. SEE PLAN A2.1 FOR ADD'L INFO.
- 5 PROTECT EXISTING WALL UNIT HEATER. CONTRACTOR TO HAVE THE METAL COVER CLEANED & PAINTED TO MATCH NEW WALL TILE
- 6 SEE SHEET A2.1 TO DETERMINE EXTENT OF FLOOR REMOVAL

**SALVAGE NOTES:**

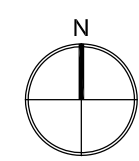
1. THE DRINKING FOUNTAIN IS TO BE SALVAGED AS WELL AS A COUPLE OF THE DOORS. SEE DOOR SCHEDULE FOR ADD'L INFO.
2. TAYLOR MAINTENANCE PERSONNEL WILL REMOVE LOOSE ITEMS THEY WISH TO KEEP IN ADVANCE OF THE CONTRACTOR BEING ONSITE. COORDINATE WITH DOUG SHILLING SPECIFIC ITEMS.
3. DMVA DOES NOT WANT ANY OF THE OTHER BUILDING MATERIALS BEING DEMOLISHED. THESE MATERIALS WILL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
4. CONTRACTOR TO REMOVE AND HAND OVER BATHROOM ACCESSORIES: PAPER TOWEL DISPENSERS & HAND SOAP DISPENSERS.
5. REMOVE AND SALVAGE BUILDING SIGNAGE. HAND OVER TO DMVA

**GENERAL NOTES:**

1. SEE SHEETS A1.0, A2.0-A2.3 FOR ADDITIONAL DEMO INFO. AT THE OTHER WORK AREAS
2. CONTRACTOR TO CHECK AND VERIFY EXISTING CONDITIONS AND PROMPTLY NOTIFY DMVA OF ANY DISCREPANCIES
3. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL ITEMS REMOVED.
4. CONTRACTOR SHALL MAINTAIN THE STRUCTURAL INTEGRITY OF THE BUILDING AT ALL TIMES.
5. CONTRACTOR TO KEEP EXITS AND EGRESS PATH OF TRAVEL CLEAR OF DEBRIS AT ALL TIMES.
6. FILL OPENINGS IN SURFACES THAT REMAIN. PATCH ALL REMAINING ADJACENT SURFACES TO MATCH EXISTING CONDITIONS.



1 ARMORY FLOOR PLAN  
 A1.0 SCALE: 1/16" = 1'-0"



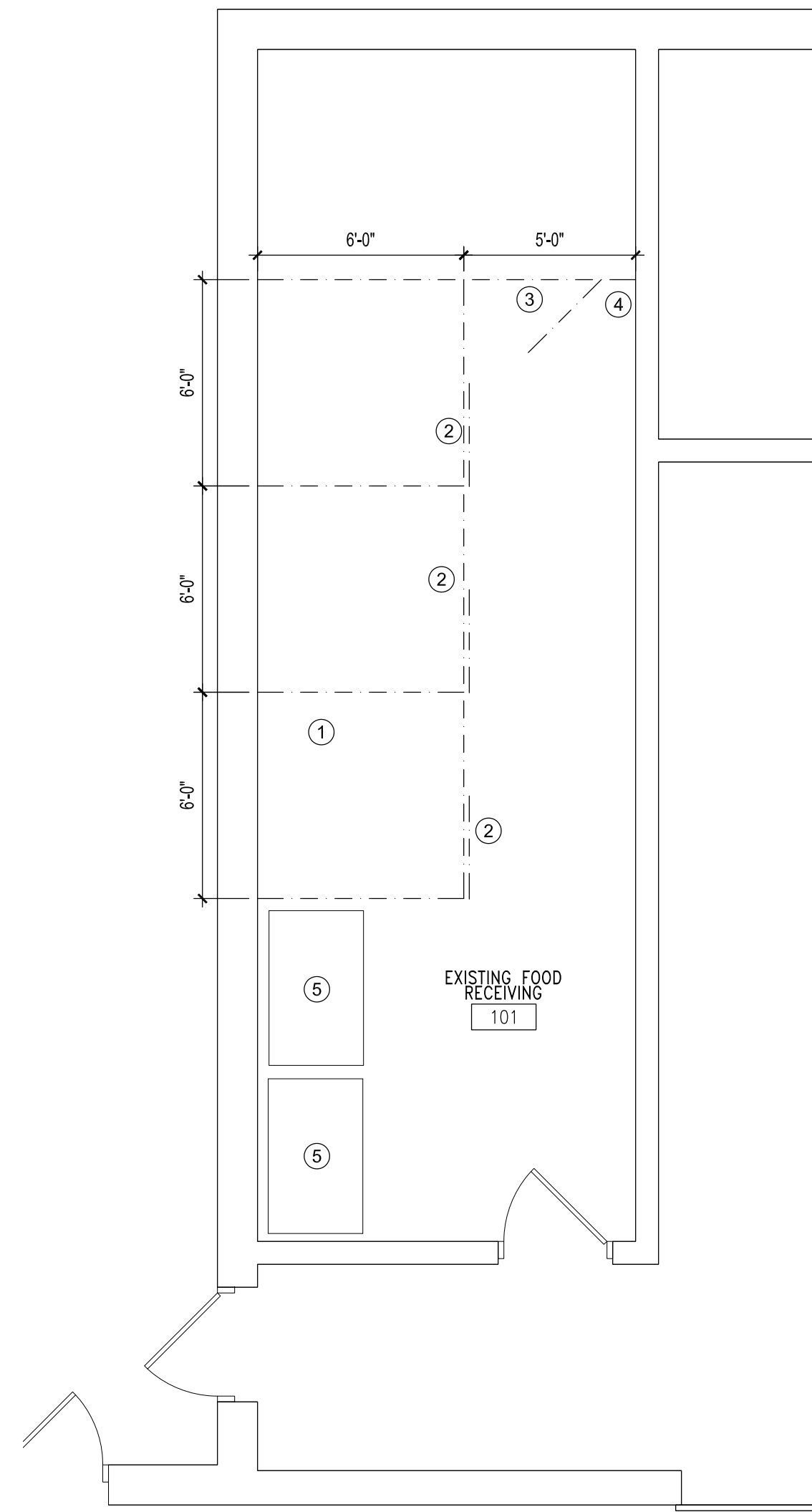
- LEGEND:**
- AREA OF LEVEL 3 CONCRETE POLISHING
  - KEYED NOTE

- FLOOR PLAN KEY NOTES:**
- 1 APPROXIMATELY 6,000SF OF CORRIDOR AREA TO HAVE VCT FLOOR TILE REMOVED AND THE CONCRETE SUBSTRATE POLISHED TO A LEVEL 3 FINISH. THE CONTRACTOR IS TO PROTECT THE UNAFFECTED AND OCCUPIED AREAS OF THE BUILDING FROM THE DUST. SEE SPECIFICATIONS FOR ADD'L INFORMATION.
  - 2 CONTRACTOR TO MOVE, SAFELY STORE, AND /REPLACE VENDING MACHINES, FRIDGE, FURNITURE AND OTHER ITEMS FOR FLOOR POLISHING.
  - 3 PROVIDE AND INSTALL NEW DOOR SEALS ON ALL EXISTING EXTERIOR DOORS



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 12450 BEECH DALY RD., TAYLOR, MI 48180

SHEET	PROJECT	DESIGNED	JDJ
	INDEX CODE	DRAWN	JDJ
A1.0	INDEX CODE	CHECKED	
	INDEX CODE	APPROVED	
ISSUED FOR	DATE	DATE	DATE
PRELIMINARY	28 JULY 2023		
CONSTRUCTION			
FINAL RECORD			
IDENTIFICATION NO.	26C672208		



**KEYED NOTES:**

- ① WIRE CAGING. SEE SPECIFICATIONS
- ② 3' SLIDING DOOR. PREPARE FOR PADLOCK
- ③ 3' HINGED DOOR. PREPARE FOR PADLOCK
- ④ MODIFY METAL CAGING PANEL TO ALLOW FOR VENTING AND PIPING AT WATER HEATER(S)
- ⑤ REFRIGERATORS (N.I.C.)

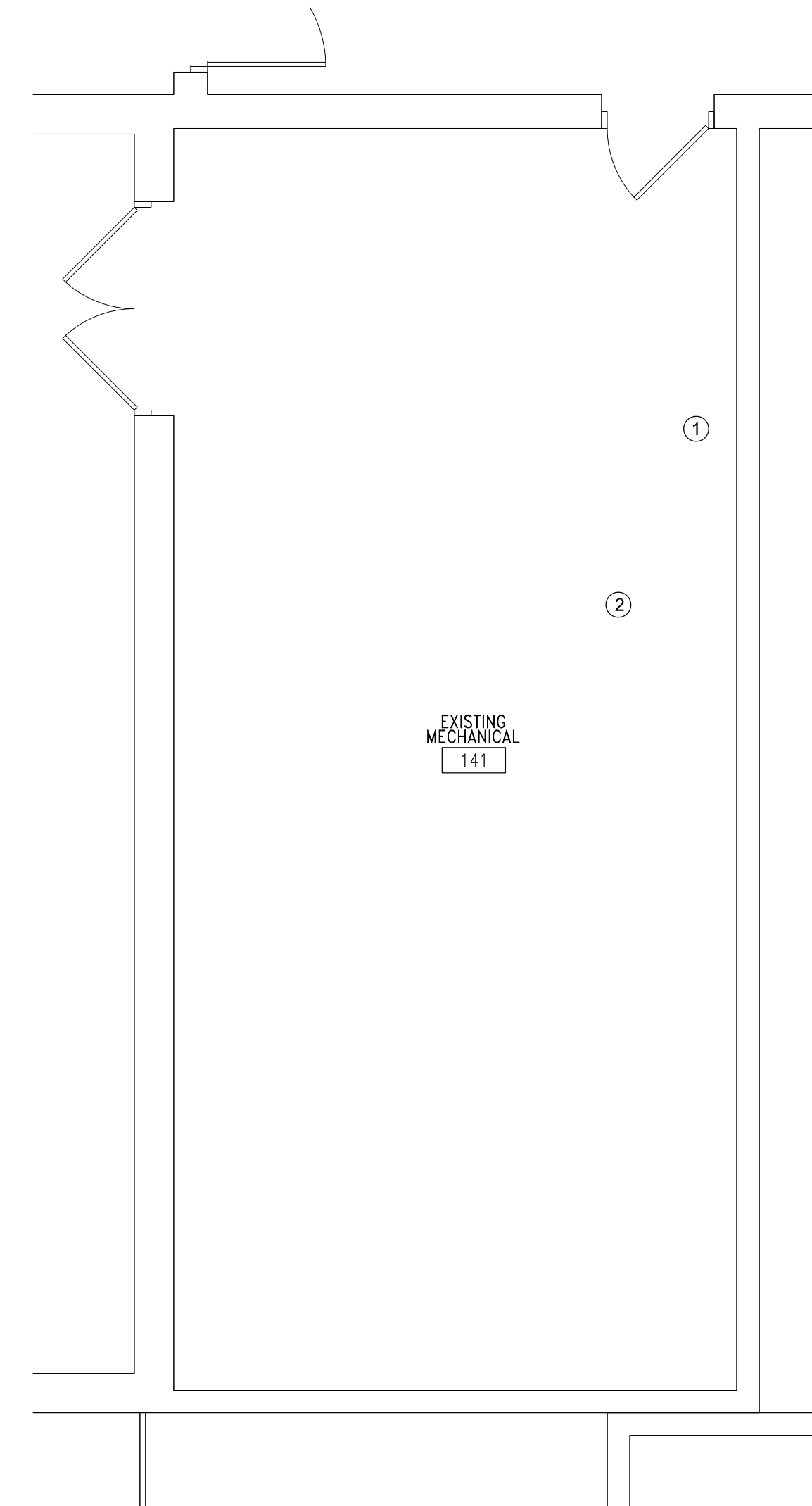
**2 FOOD RECEIVING ROOM PLAN**  
A2.0 SCALE: 1/4" = 1'-0"

**LEGEND:**

- - - METAL CAGING
- ① KEYED NOTE

**NOTES AT FOOD RECEIVING ROOM:**

- 1. SEE METAL CAGING TO EXTEND FLOOR-TO-CEILING WITH A MAX. GAP AT WALLS, FLOOR, AND CEILING NOT TO EXCEED 3"



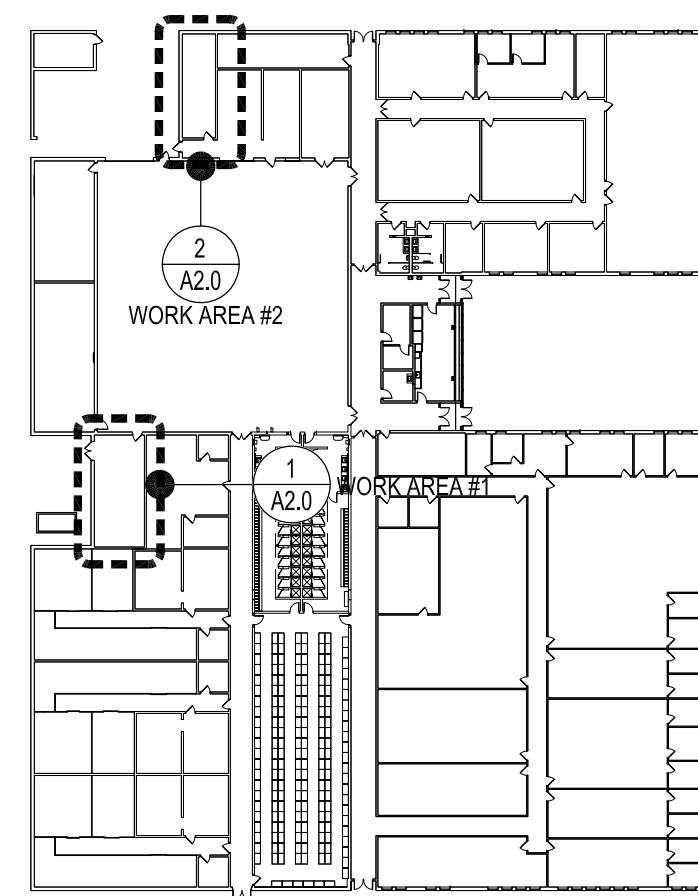
**KEYED NOTES:**

- ① CONTRACTOR TO PROVIDE AND INSTALL NEW FALL PROTECTION AT EXISTING ROOF HATCH
- ② SEE MECHANICAL AND ELECTRICAL FOR ADDITIONAL WORK

**1 MECHANICAL ROOM PLAN**  
A2.0 SCALE: 1/4" = 1'-0"

**NOTES AT MECHANICAL ROOM:**

- 1. EMPTY



**KEY PLAN**  
NOT TO SCALE

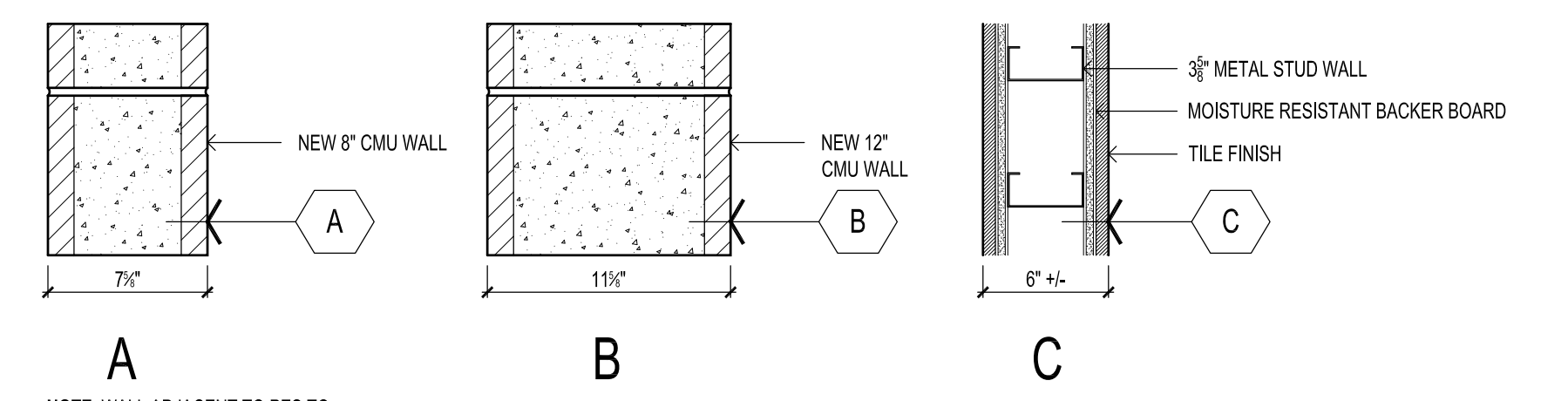
**KEYED NOTES:**

- 1 RELOCATED / SALVAGED DRINKING FOUNTAIN
- 2 VERTICAL CELLS ADJACENT TO OPENING SHALL BE GROUTED SOLID FROM FOUNDATION TO LINTEL, TYPICAL BOTH SIDES
- 3 NEW CONCRETE FLOOR AND FLOOR TILE THROUGHOUT BATHROOM, SHOWER & LOCKER ROOMS. SEE SPECIFICATIONS FOR ADD'L INFORMATION. SEE INTERIOR ELEVATIONS FOR EXTENT OF NEW WALL TILE
- 4 THESE WALLS ARE ALREADY FURRED OUT. CONTRACTOR TO REMOVE AND IN-FILL CONCRETE BLOCK AS NECESSARY TO COMPLETE THE WORK
- 5 CEILING HEIGHT CHANGES FROM 8' TO 9'. SEE INTERIOR ELEVATIONS FOR ADD'L INFO.
- 6 BATHROOM ACCESSORIES. SEE INTERIOR ELEVATIONS AND SPECIFICATIONS FOR ADD'L INFO.
- 7 EXISTING RECESSED HEATING UNIT. CONTRACTOR TO HAVE THE METAL COVER CLEANED & PAINTED TO MATCH ADJACENT WALL TILE
- 8 TOOTH IN NEW CMU WALL ADJACENT TO THE PES WITH EXISTING

**NOTES AT BATHROOMS, SHOWERS & LOCKER ROOM PLAN:**

1. SEE INTERIOR ELEVATIONS FOR ADDITIONAL DIMENSIONAL REQUIREMENTS / CLEARANCES AT PLUMBING FIXTURES
2. SEE DETAILS 1/A6.0 & 2/A6.0 FOR CEILING ASSEMBLY INFORMATION
3. PLAN DIMENSIONS ARE TO FACE OF CONCRETE MASONRY UNLESS OTHERWISE NOTED
4. SEE FINISH SCHEDULE, INTERIOR ELEVATIONS, AND DETAILS

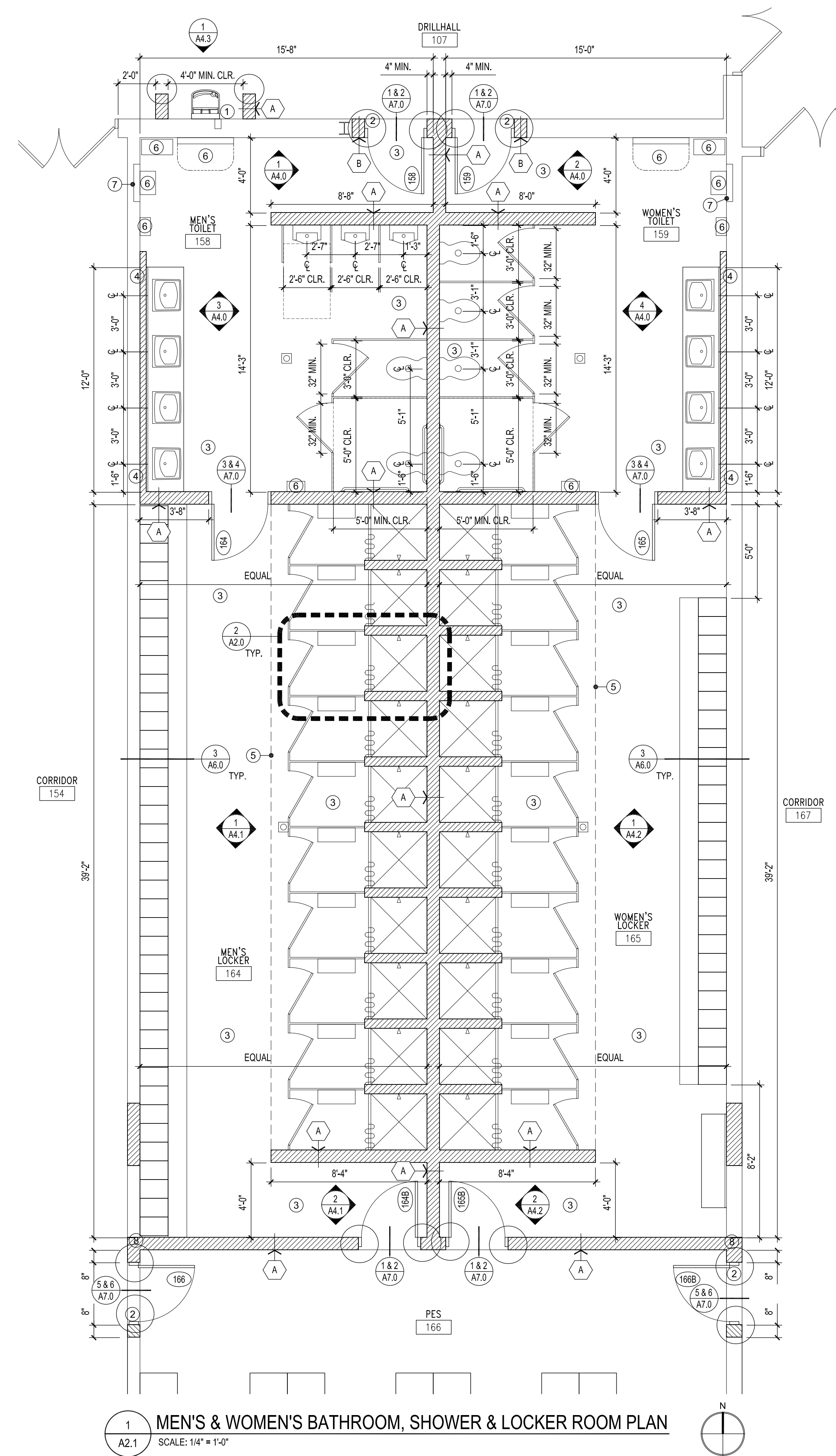
**WALL TYPES:**



**A**  
 NOTE: WALL ADJACENT TO PES TO BE CONSTRUCTED CONTINUOUS TO UNDERSIDE OF ROOF DECK. AT ALL OTHER LOCATIONS, TO ABOVE THE CEILING PLANE

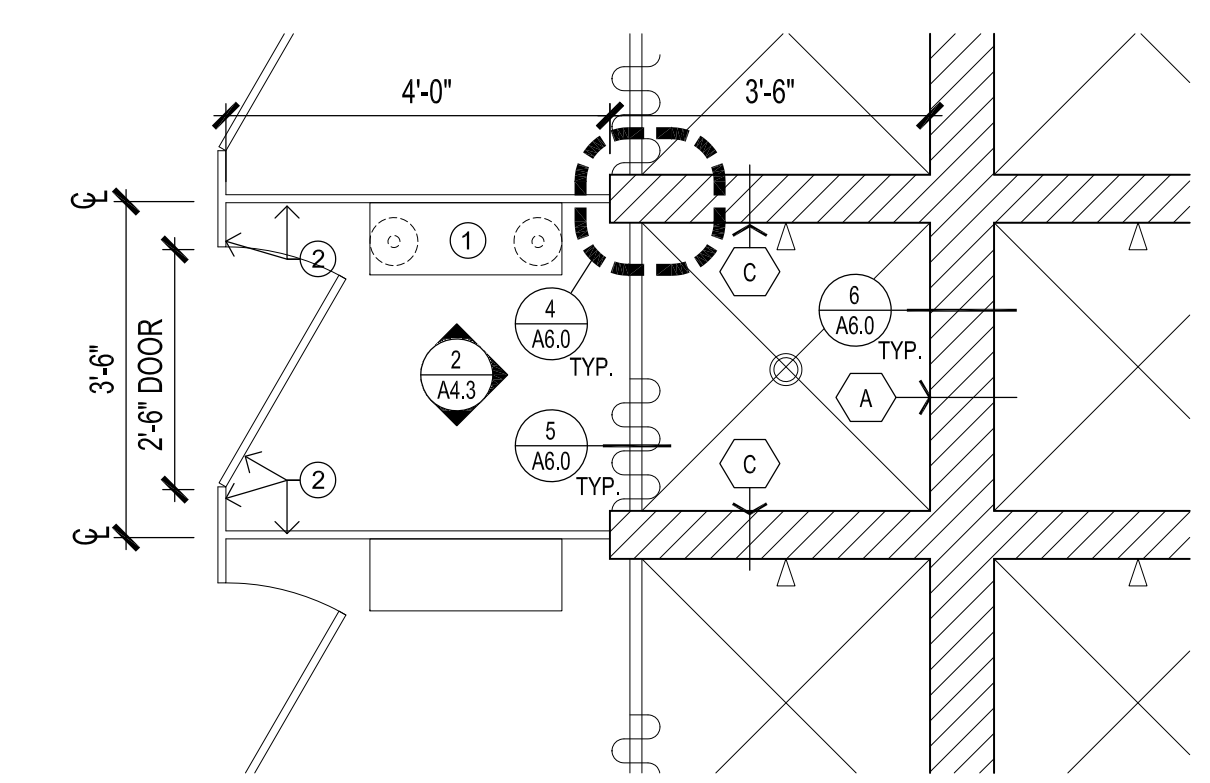
**LEGEND:**

- NEW WALLS. SEE WALL TYPES FOR ADD'L INFO.
- LOCATION OF BULLNOSE CMU AT INTERIOR OF BUILDING. SEE DOOR SCHEDULE (A7.0) FOR LOCATIONS
- DOOR TAG. SEE DOOR SCHEDULE SHEET A7.0
- LINE OF CEILING HEIGHT CHANGE OVERHEAD
- KEYED NOTE
- WALL TYPES



**1 MEN'S & WOMEN'S BATHROOM, SHOWER & LOCKER ROOM PLAN**  
 A2.1 SCALE: 1/4" = 1'-0"

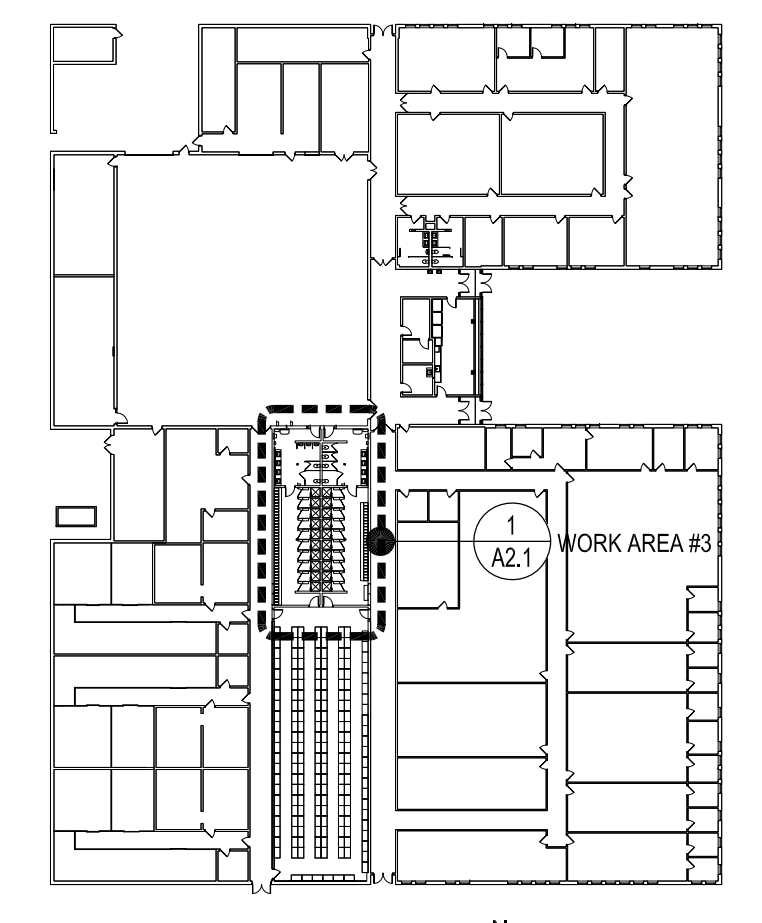
**FINISH SCHEDULE:**



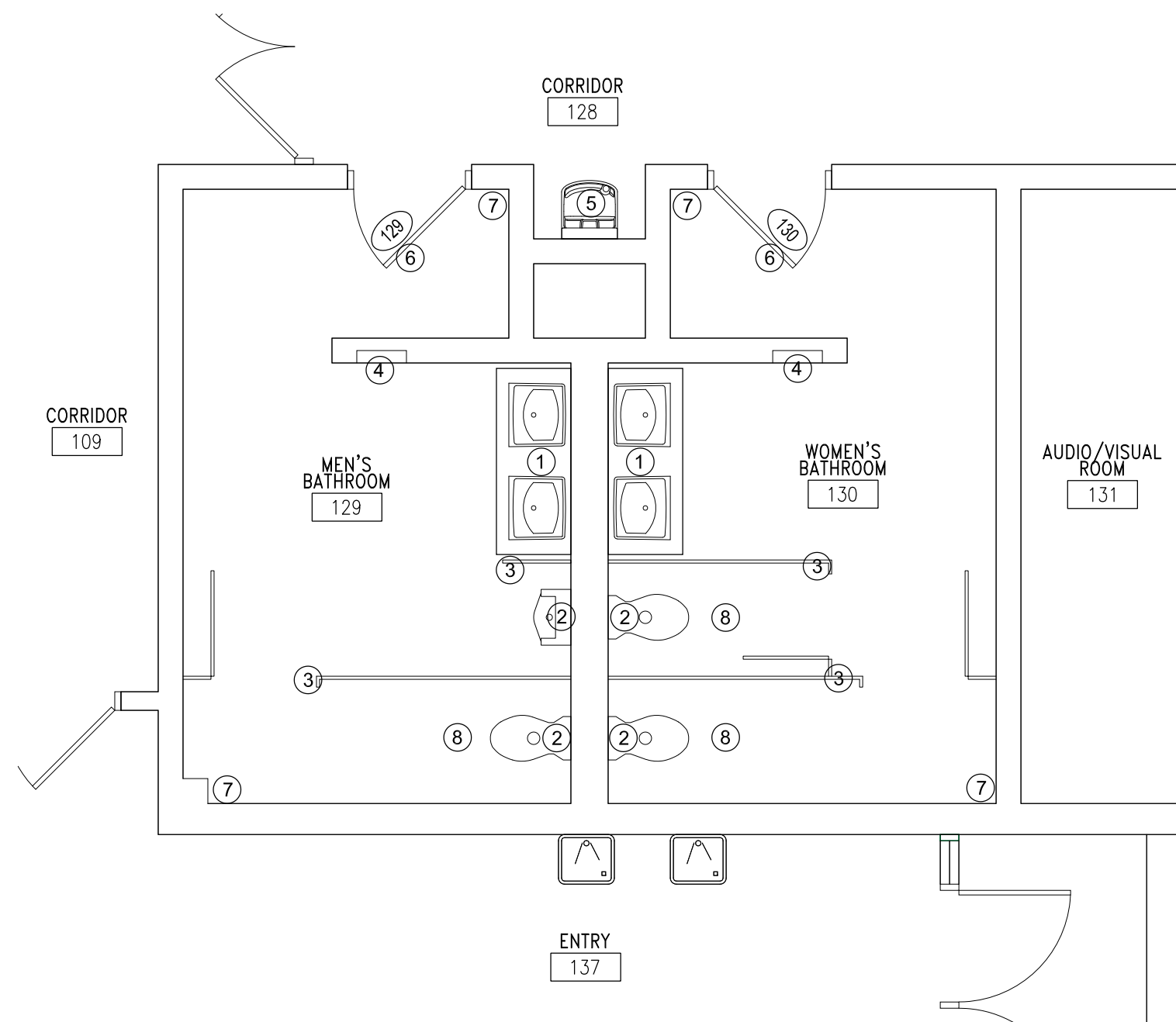
**2 TYPICAL SHOWER & CHANGING AREA PLAN**  
 A2.1 SCALE: 1/2" = 1'-0"

**KEYED NOTES:**

- 1 2' FLOOR MOUNTED BENCH, SEE SPECIFICATIONS
- 2 SHOWER PARTITION ENCLOSURE, SEE SPECIFICATIONS



**KEY PLAN**  
 NOT TO SCALE



2 MEN'S AND WOMEN'S BATHROOM 129 & 130  
A2.2 SCALE: 1/4" = 1'-0"

**LEGEND:**

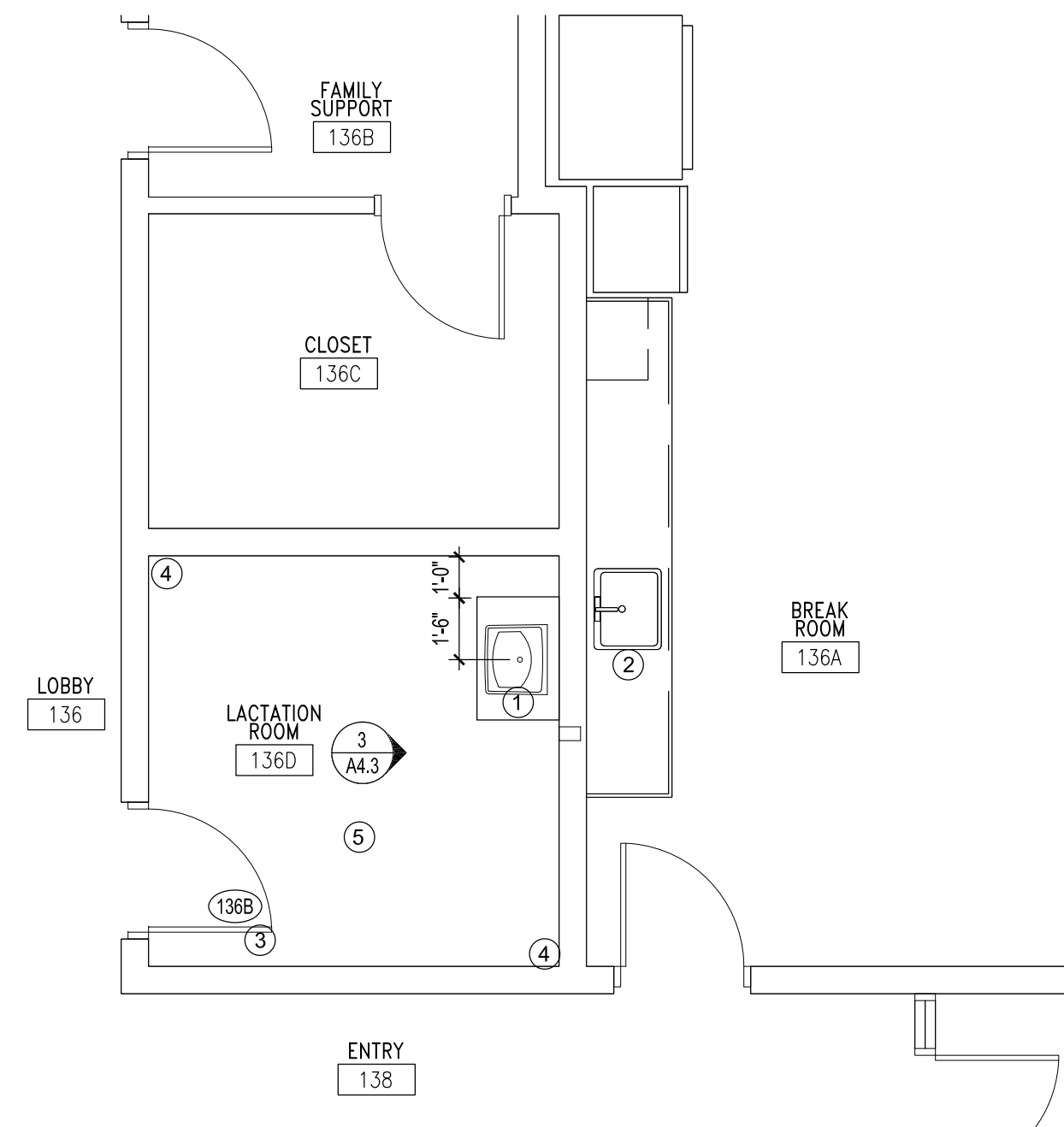
- ### DOOR TAG. SEE DOOR SCHEDULE SHEET A7.0
- # KEYED NOTE

**KEYED NOTES:**

- 1 NEW 5' COUNTERTOP WITH 2 INTEGRAL SINKS AND A BACK SPLASH. PROVIDE AND INSTALL NEW SINK VALVES/PIPING AND STEEL COUNTERTOP SUPPORTS. REPLACE MIRRORS WITH NEW MR-1 (18"x24"). S.S. SHELF TO REMAIN. PROVIDE AND INSTALL NEW PAPER TOWEL & SOAP DISPENSER.
- 2 NEW FLUSH VALVES AT EXISTING TO REMAIN PLUMBING FIXTURES
- 3 NEW TOILET PARTITIONS. SEE SPECIFICATIONS FOR ADD'L INFO.
- 4 PROVIDE AND INSTALL NEW 14 GAUGE S.S. PLATE APPROXIMATELY 13"x31" TO COVER ABANDONED WALL INSERT. FASTEN WITH S.S. FASTENERS
- 5 EXISTING DRINKING FOUNTAIN TO REMAIN
- 6 AT EXISTING DOORS (129) & (130) REMOVE THE ADA SIGNAGE. PROVIDE AND INSTALL KICK & PUSH PLATES. PATCH/PREP/PAINT DOORS & JAMBS TO MATCH EXISTING/ADJACENT
- 7 CAULK PERIMETER OF ROOM AT THE CEILING. PATCH/PREP/PAINT NON-TILED AREAS OF WALLS AND CEILING
- 8 SALVAGE AND REINSTALL TOILET COMPARTMENT S.S. GRAB BARS. PROVIDE AND INSTALL NEW TOILET PAPER HOLDERS AND TOILET SEATS ON EXISTING TOILETS

**NOTES AT MEN'S & WOMEN'S BATHROOMS 129 & 130:**

1. THE EXISTING FLOOR & WALL TILE IS TO BE POWER-SCRUBBED AND CLEANED. PATCH & REPAIR ANY DAMAGED TILE ON FLOORS & WALLS, TYPICAL
2. SEE ELECTRICAL & MECHANICAL FOR ADDITIONAL INFORMATION
3. CONTRACTOR TO PROTECT THE EXISTING TO REMAIN FIXTURES AND FINISHES DURING CONSTRUCTION



1 LACTATION ROOM 136D PLAN  
A2.2 SCALE: 1/4" = 1'-0"

**LEGEND:**

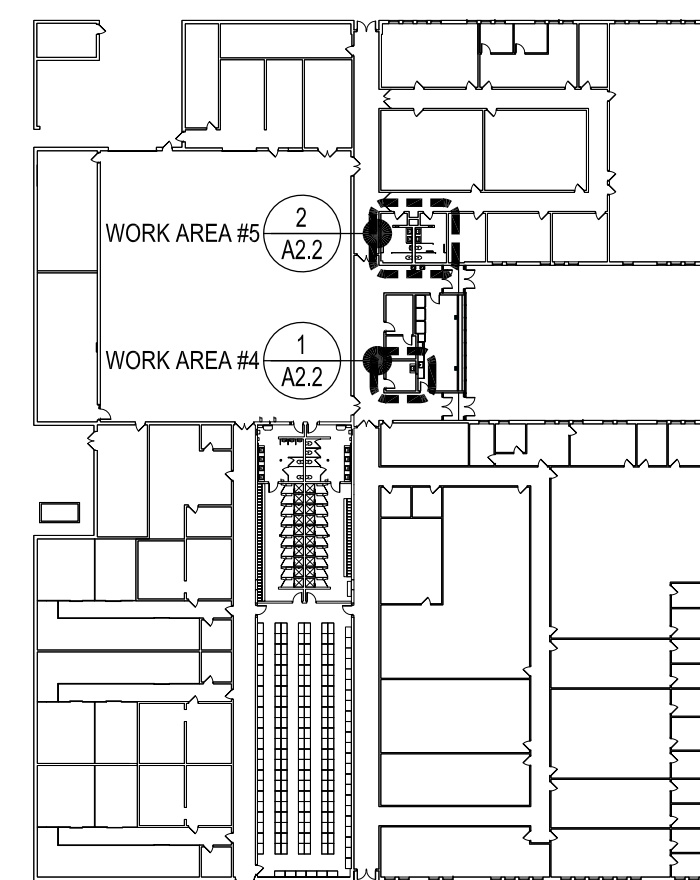
- ### DOOR TAG. SEE DOOR SCHEDULE SHEET A7.0
- # KEYED NOTE

**KEYED NOTES:**

- 1 NEW 3" BASE CABINET, COUNTERTOP AND SINK. SEE INTERIOR ELEVATION AND SPEC. FOR ADD'L INFO.
- 2 PLUMBING FOR NEW SINK TIED TO EXISTING PLUMBING. SEE PLUMBING SHEETS FOR ADD'L INFO.
- 3 AT EXISTING DOOR (136B), REMOVE & PATCH SLIDE LOCK, PROVIDE AND INSTALL WINDOW FILM, AND MODIFY DOOR HARDWARE TO INCLUDE AN OCCUPIED / UNOCCUPIED LOCKSET; SEE SPECIFICATIONS
- 4 PATCH/PREP/PAINT WALLS
- 5 CONTRACTOR TO PROTECT EXISTING CARPET AND CLEAN IT JUST BEFORE COMPLETION OF THE PROJECT

**NOTES AT LACTATION ROOM 136D:**

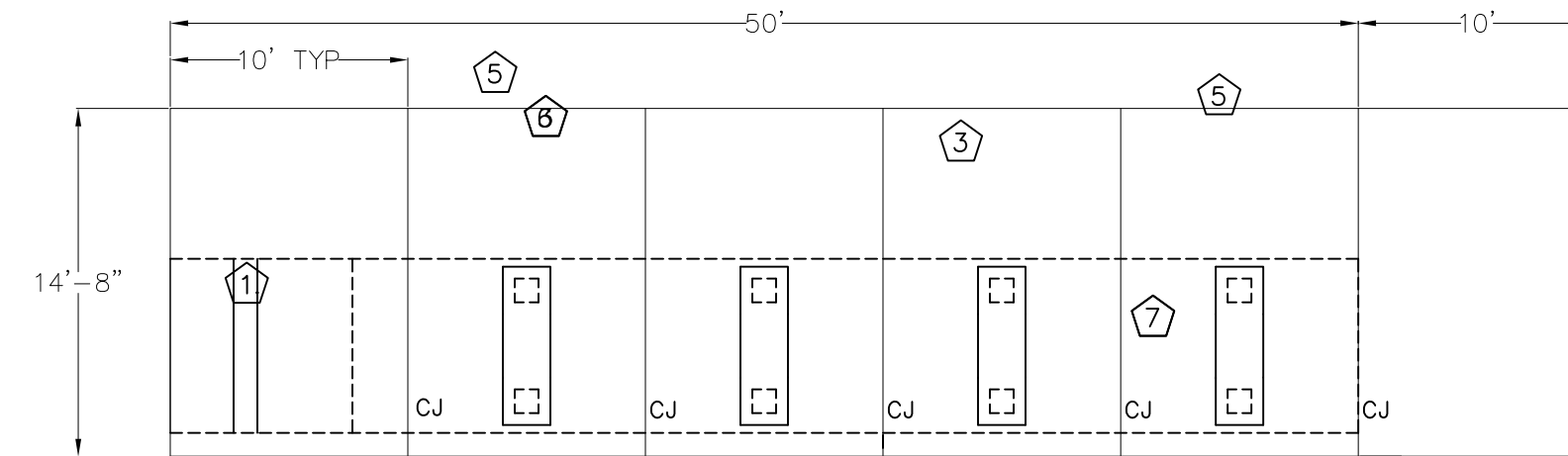
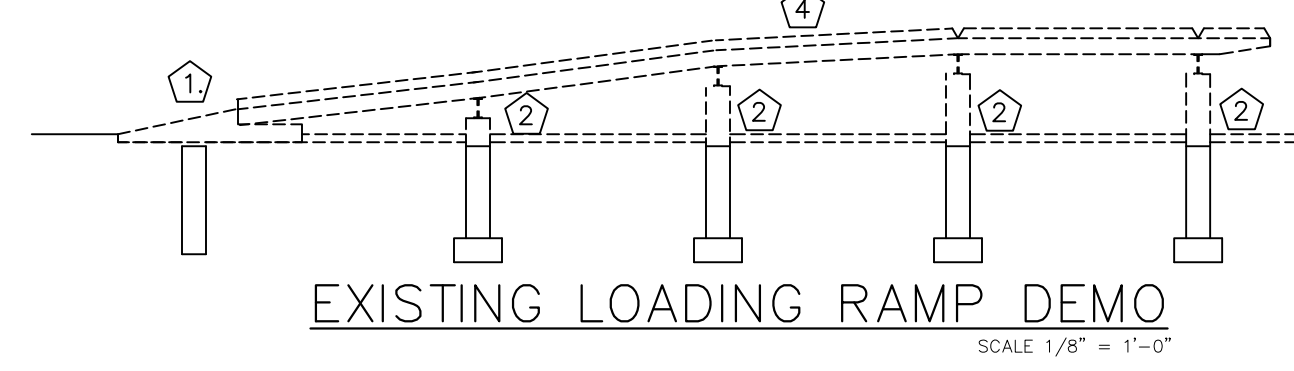
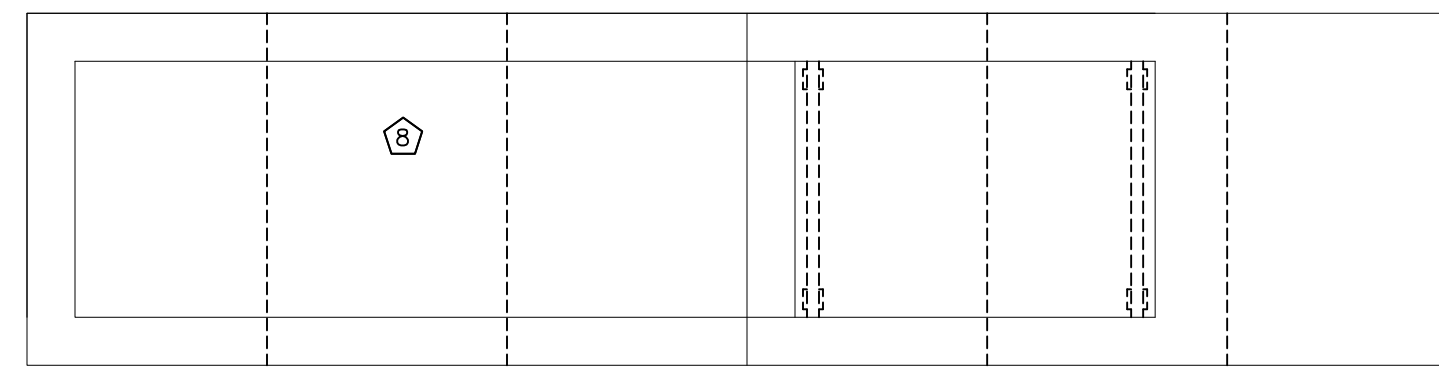
1. SEE INTERIOR ELEVATION FOR ADDITIONAL DIMENSIONAL REQUIREMENTS / CLEARANCES AT PLUMBING FIXTURES
2. SEE ELECTRICAL FOR ADDITIONAL INFORMATION



KEY PLAN  
NOT TO SCALE

### LOADING RAMP NOTES

- 1 REMOVE CONCRETE RAMP
- 2 REMOVE CONCRETE PIERS (8) TO BELOW NEW CONCRETE PAD LEVEL. EXISTING FOOTING AND PIERS BELOW SLAB CAN REMAIN
- 3 REMOVE AND DISPOSE OF EXISTING CONCRETE SLAB
- 4 REMOVE AND DISPOSE OF EXISTING LOADING RAMP
- 5 SAW CUT EXISTING BITUMINOUS FOR NEW SLAB INSTALLATION. CAULK BETWEEN BIT AND CONCRETE AT END OF PROJECT
- 6 EXCAVATE AS REQUIRED TO INSTALL 6" 22A BASE AND INSTALL NEW 14'-8" X 60'-0" X 8" CONCRETE PAD WITH W6X6X2.9X2.9 WWF MID SLAB
- 7 CONTROL JOINT-CAULK
- 8 FURNISH AND INSTALL NEW PORTABLE, ADJUSTABLE, 100,000# LOADING RAMP, SEE SPECIFICATIONS CENTER ON NEW CONCRETE SLAB



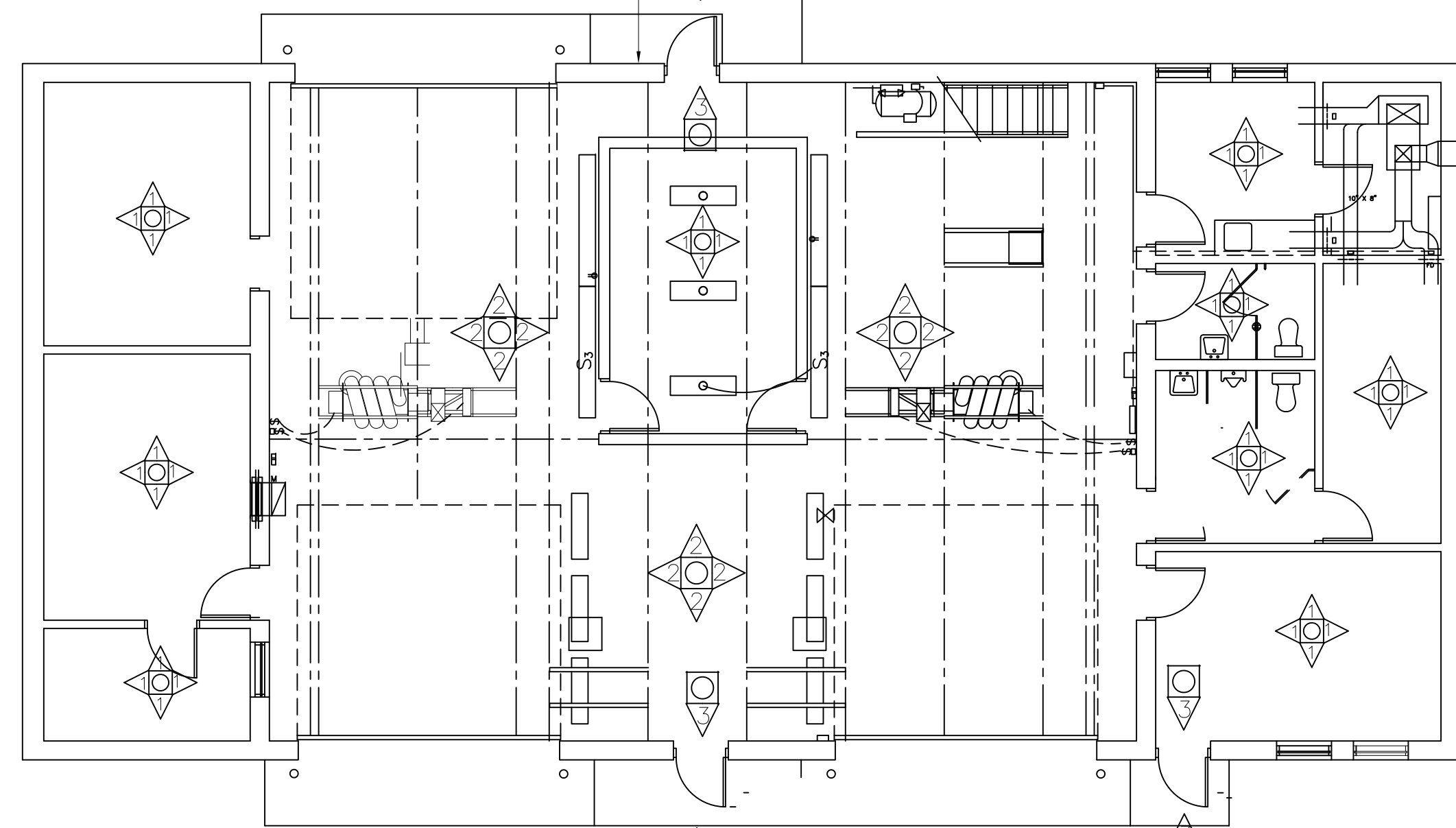
### LOADING RAMP LOCATION PLAN

EXISTING WASH RACK  
NO WORK REQUIRED

### FINISH NOTES—MAINTENANCE SHOP

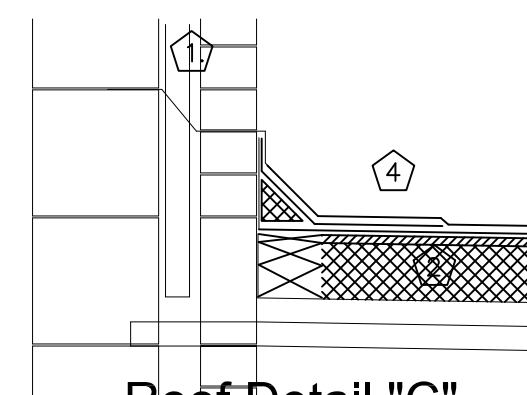
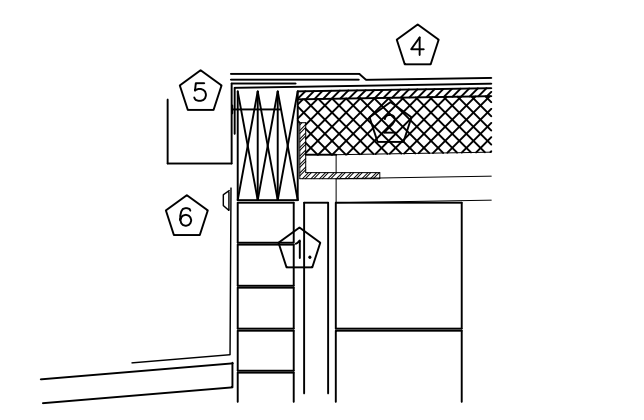
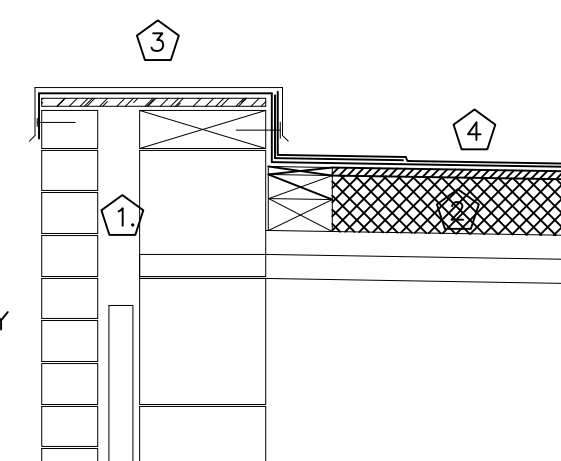
1. THE INTENT IS THAT ALL INTERIOR WALLS ARE PAINTED. THE EXISTING WALLS SHOULD BE PREPARED BY WASHING AND REMOVING LOOSE PAINT

FINISH	FINISH TYPE	COATS	PRODUCT	MFG
1	ACRYLIC LATEX	2	PROMAR 200	SHERWINN-WILLIAMS
2	CATALYZED EPOXY	2	WATER BASED	SHERWINN-WILLIAMS
3	EXTERIOR ACRYLIC LATEX	2	SUPERPAINT EXTERIOR	SHERWINN-WILLIAMS
4	CLEAR SEALER	2	LOXON CLEAR	SHERWINN-WILLIAMS



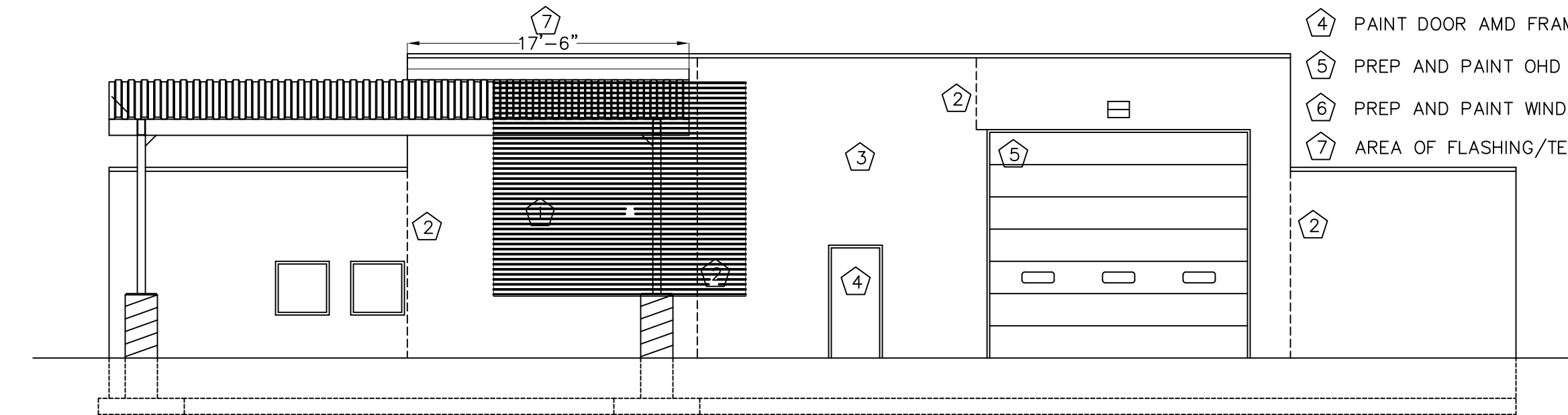
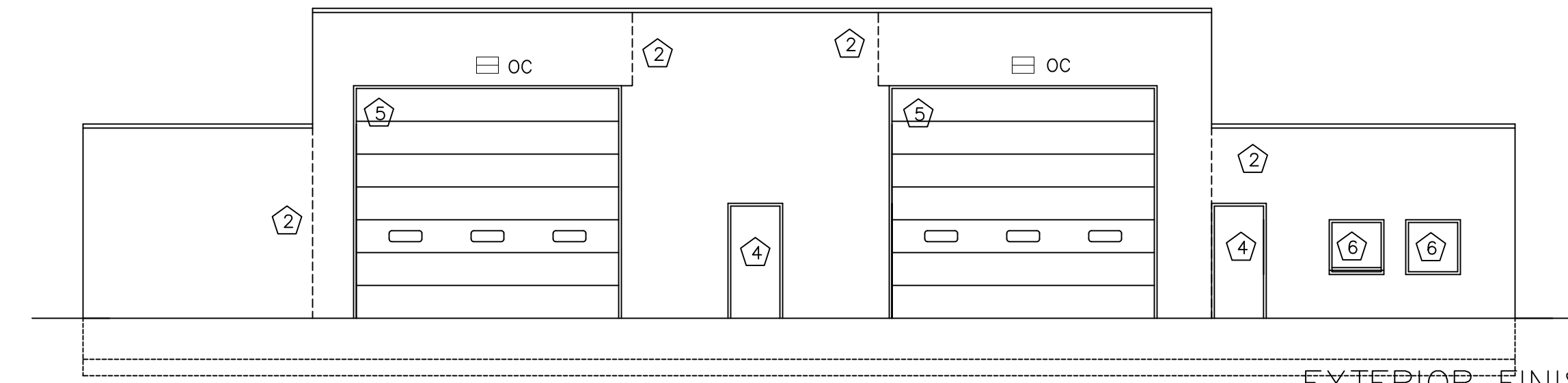
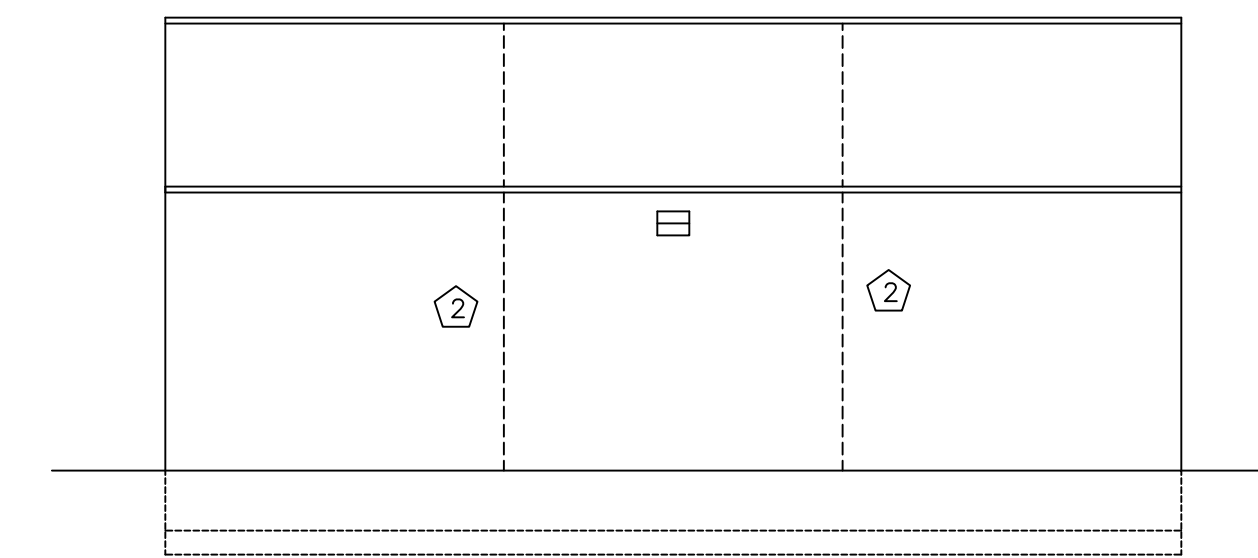
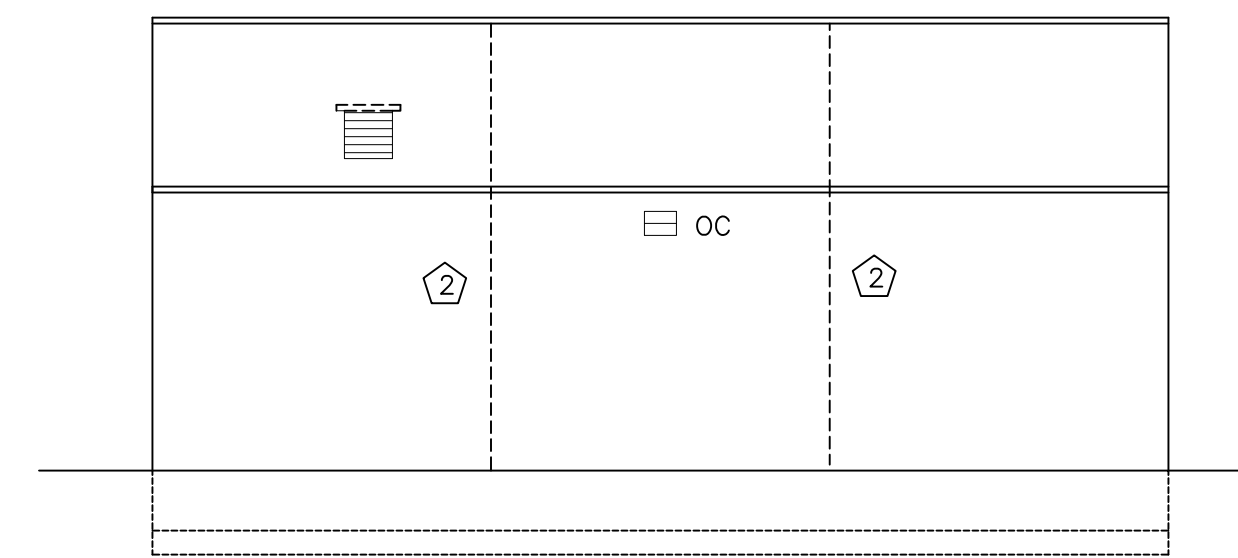
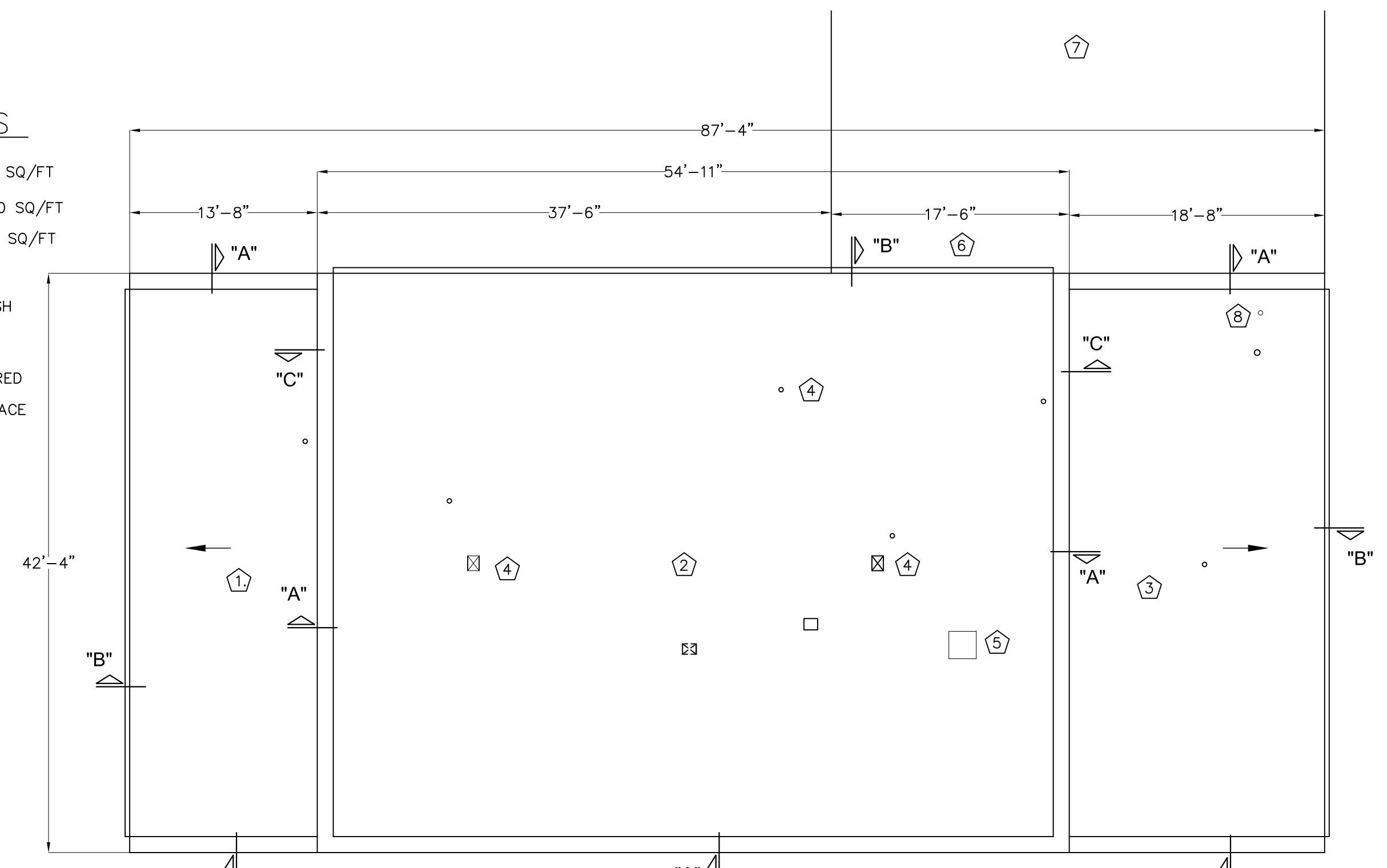
### ROOF DETAIL NOTES

- 1 EXISTING BRICK/BLOCK CAVITY WALL
- 2 EXISTING ROOF SYSTEM, STEEL TRUSS, METAL DECK RIGID INSULATION AND TPO MEMBRANE
- 3 EXISTING METAL COPING TO REMAIN REMOVE/REPLACE AS NECESSARY FOR ROOF WARRANTY
- 4 NEW ROOF COATING
- 5 EXISTING GUTTER SYSTEM TO REMAIN
- 6 INSTALL TERMINATION BAR AT TOP OF EXISTING FLASHING CAULK TOP OF TERMINATION BAR



### MAINT ROOF NOTES

- 1 LOW ROOF TO BE COATED, APPROX 546 SQ/FT
- 2 HIGH ROOF TO BE COATED, APPROX 2160 SQ/FT
- 3 LOW ROOF TO BE COATED, APPROX 744 SQ/FT
- 4 EXISTING ROOF PENETRATIONS (TYP)
- 5 NEW EXHAUST CURB PENETRATION, FLASH BEFORE COATING ROOF
- 6 AREA OF FLASHING REPAIR, SEE DETAIL
- 7 EXISTING METAL ROOF, NO WORK REQUIRED
- 8 NEW COMBINATION VENT FOR NEW FURNACE

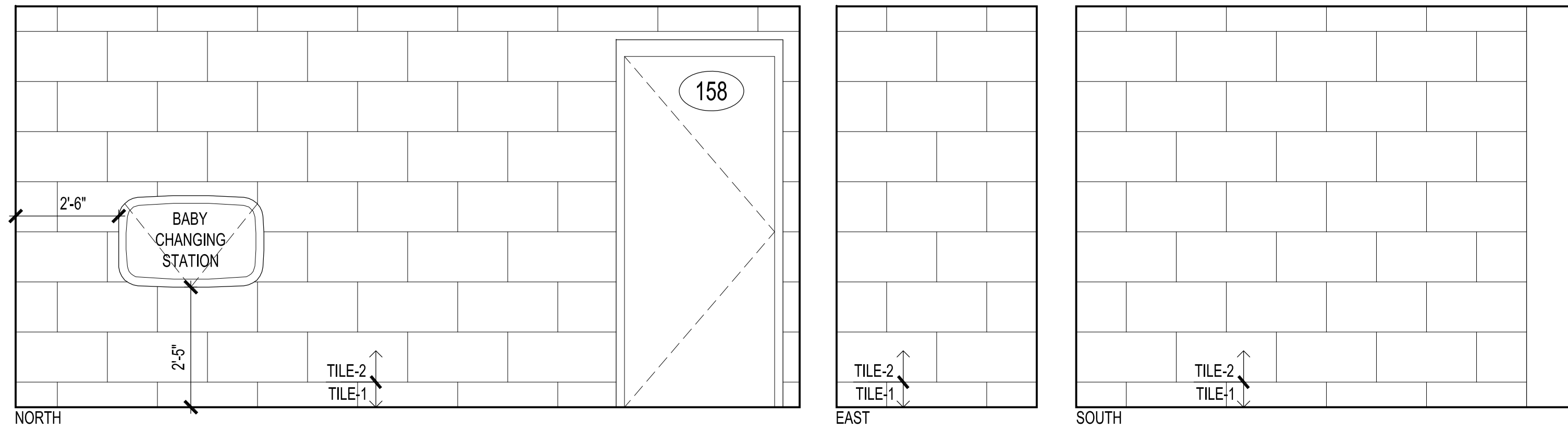


### MAINTENANCE SHOP EXTERIOR ELEVATIONS

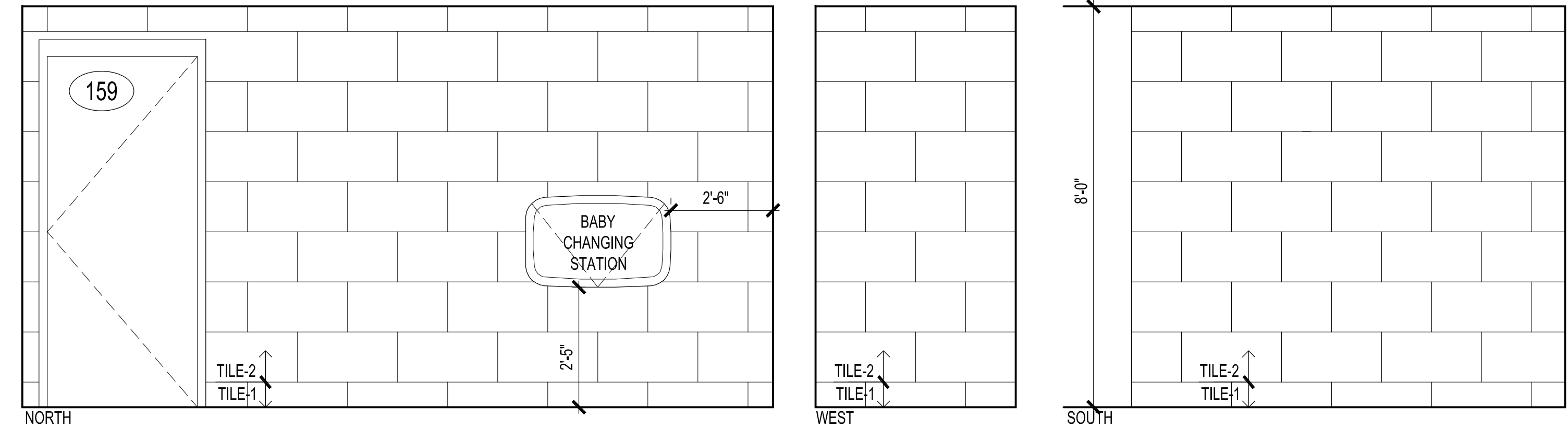
### EXTERIOR FINISH NOTES—MAINT

- 1 REPLACE 120 BRICK IN THIS AREA
- 2 ROUTE AND CAULK CONTROL JOINT
- 3 POWERWASH NORTH ELEVATION AND CLEAR SEAL
- 4 PAINT DOOR AND FRAME EXTERIOR AND INTERIOR
- 5 PREP AND PAINT OHD DOOR JAMBS AND HEAD
- 6 PREP AND PAINT WINDOW FRAMES
- 7 AREA OF FLASHING/TERMINATION REPAIRS

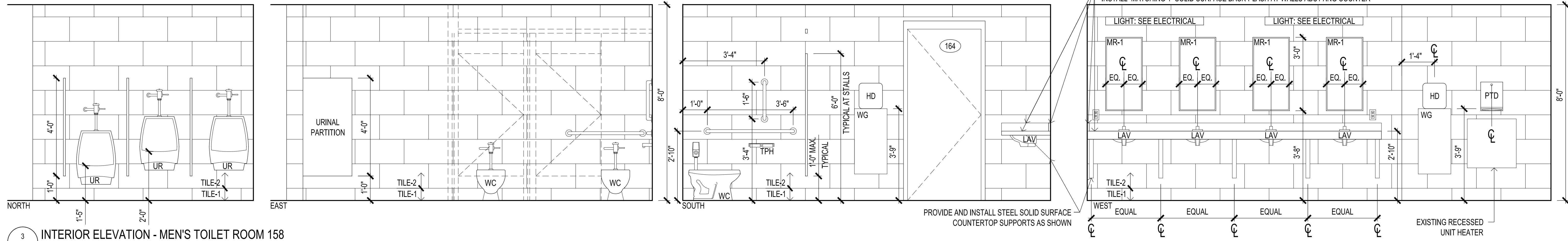




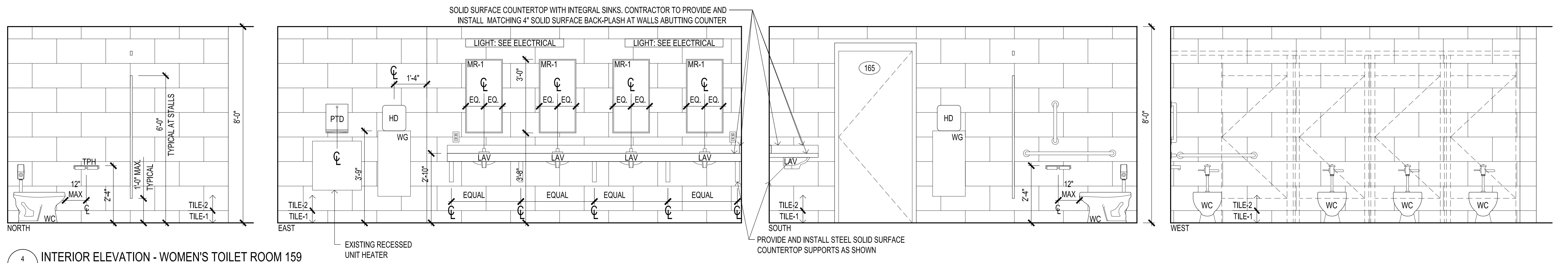
1 INTERIOR ELEVATION - MEN'S TOILET ROOM 158  
A4.0 SCALE: 1/2" = 1'-0"



2 INTERIOR ELEVATION - WOMEN'S TOILET RM 159  
A4.0 SCALE: 1/2" = 1'-0"



3 INTERIOR ELEVATION - MEN'S TOILET ROOM 158  
A4.0 SCALE: 1/2" = 1'-0"



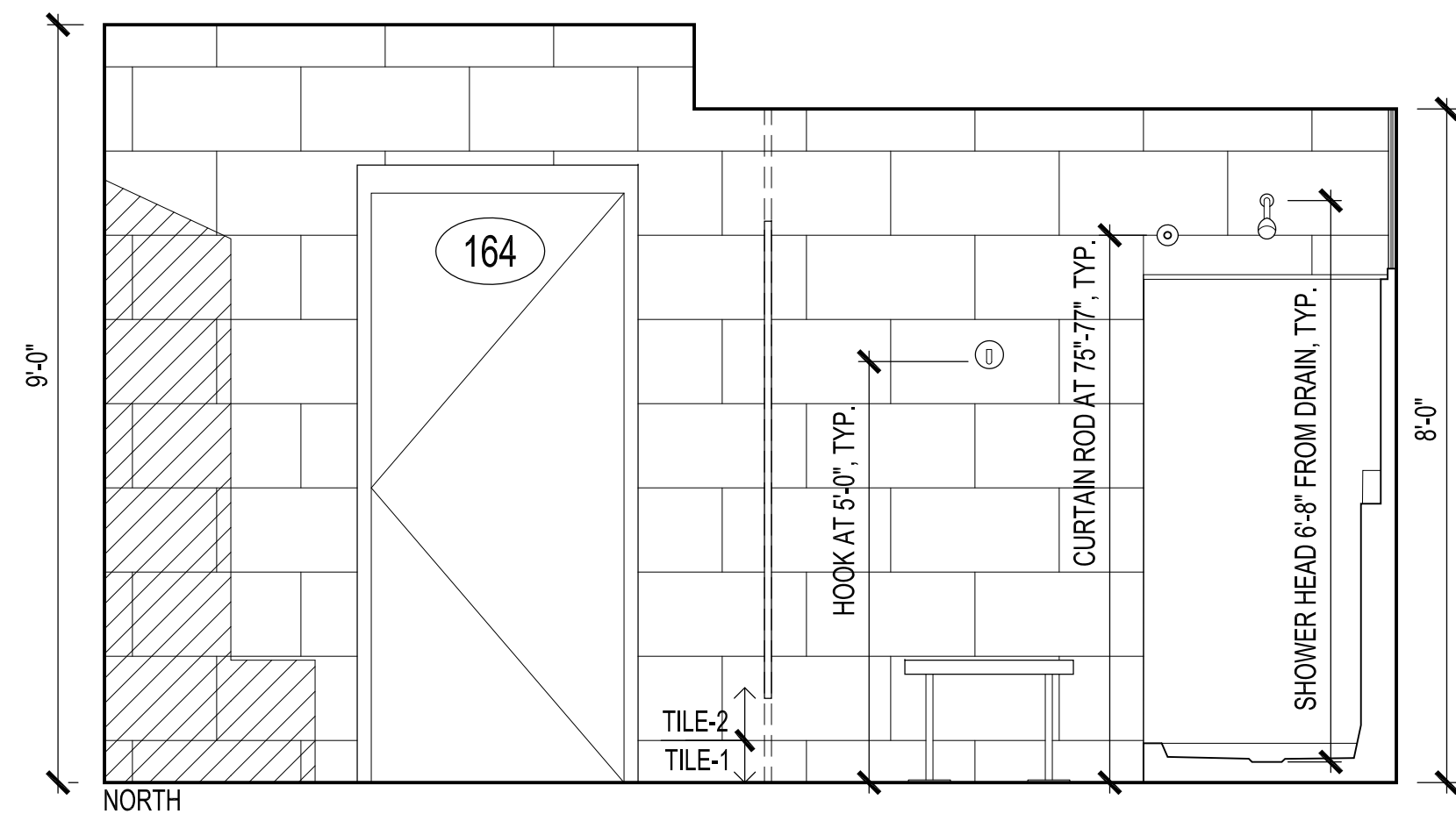
4 INTERIOR ELEVATION - WOMEN'S TOILET ROOM 159  
A4.0 SCALE: 1/2" = 1'-0"

**GENERAL NOTES:**

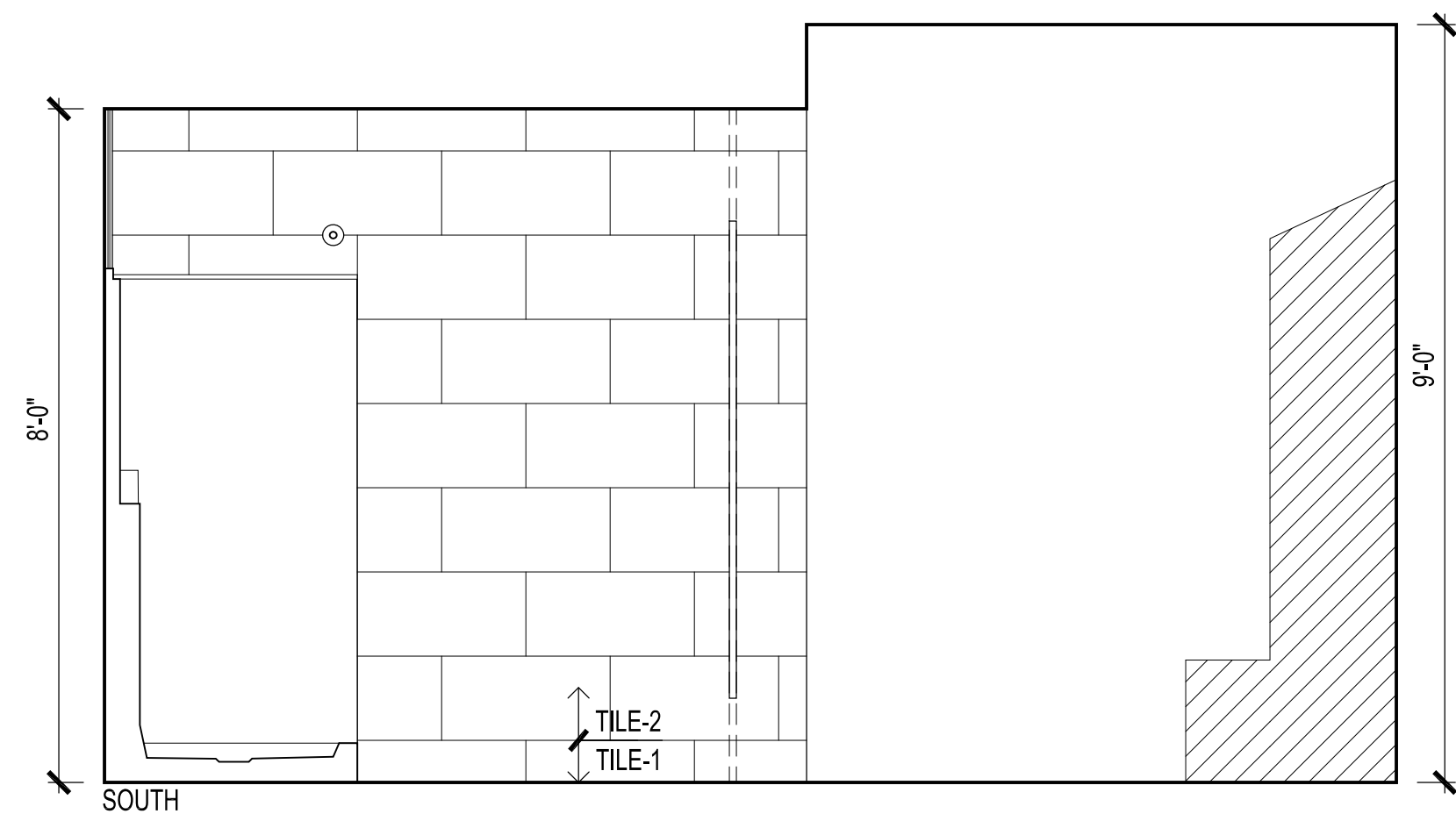
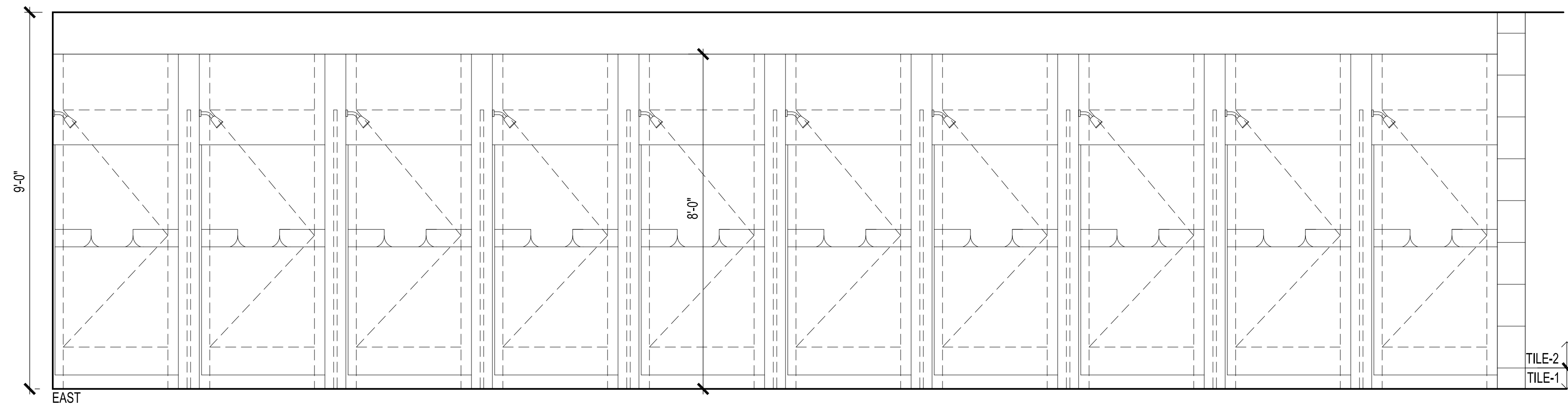
- SEE PLANS FOR ADDITIONAL DIMENSIONAL INFORMATION
- SEE ELECTRICAL DRAWINGS FOR POWER LAYOUT
- SEE PLUMBING FOR WATER SUPPLY/WASTE LAYOUT & REQUIREMENTS
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING/PURCHASING ANY KITCHEN EQUIPMENT

**LEGEND:**

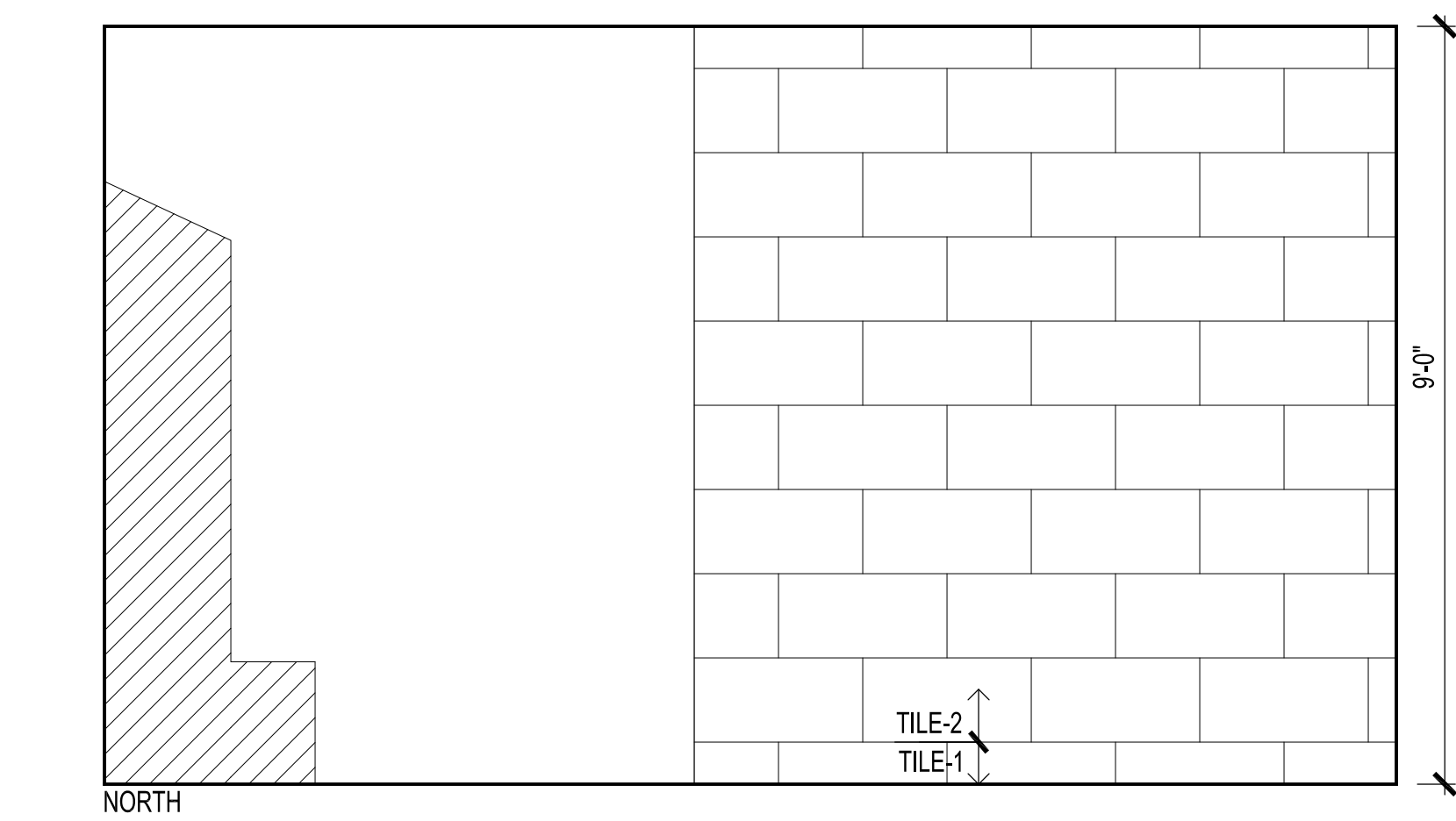
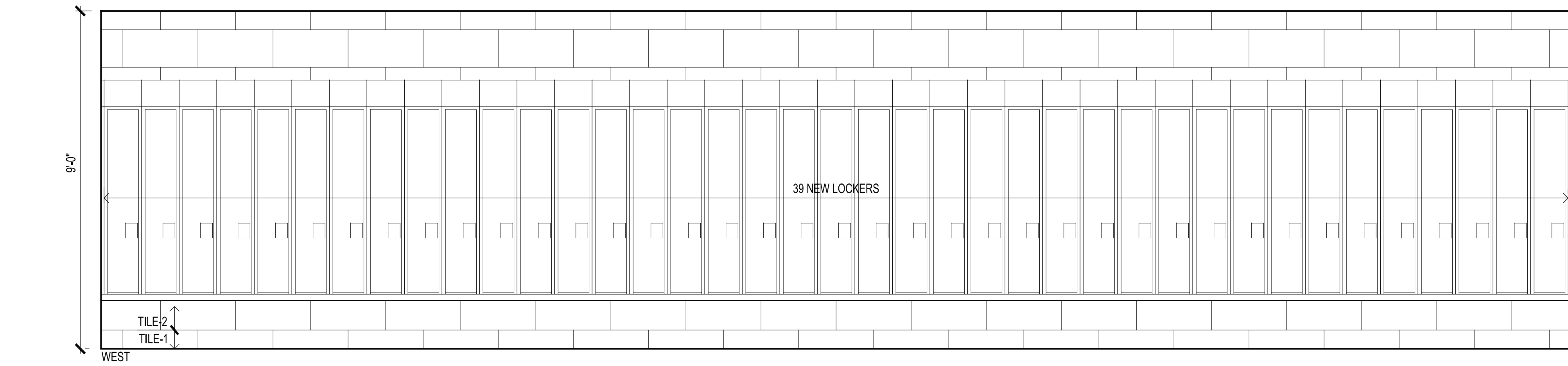
MIR-1	18"x36" MIRROR	HD	HAND DRYER
MIR-2	24"x36" MIRROR	WG	S.S. HAND DRYER WALL GUARD
LAV	LAVATORY (SINK)	PTD	PAPER TOWEL DISPENSER
UR	URINAL	TPH	TOILET PAPER HOLDER
WC	WATER CLOSET (TOILET)		
TILE-1	BASE TILE 6"x24"		
TILE-2	FIELD TILE 12"x24"		



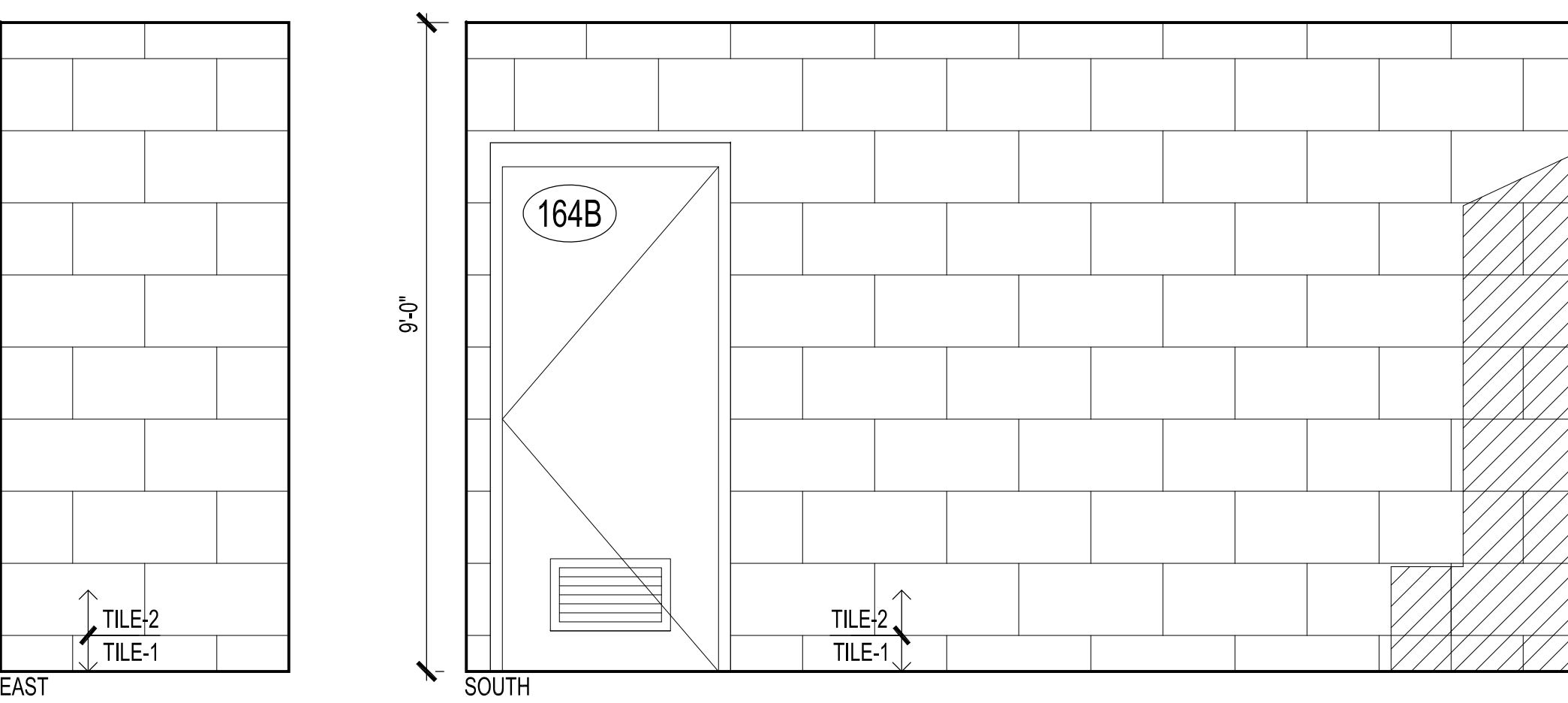
1 INTERIOR ELEVATION - MEN'S LOCKER 164  
A4.1 SCALE: 1/2" = 1'-0"



1 INTERIOR ELEVATION - MEN'S LOCKER 164  
A4.1 SCALE: 1/2" = 1'-0"



2 INTERIOR ELEVATION - MEN'S LOCKER 164  
A4.1 SCALE: 1/2" = 1'-0"

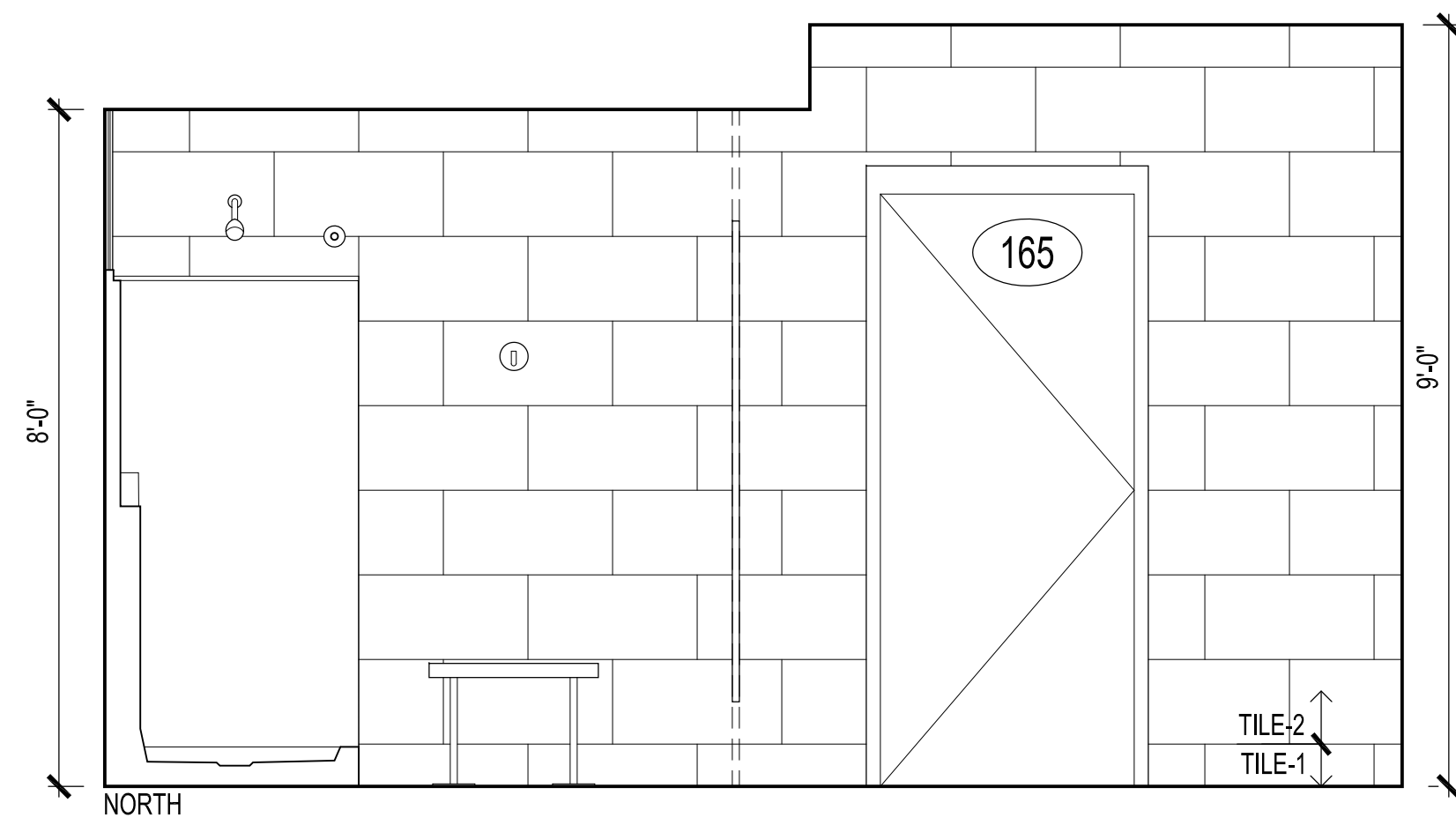


**GENERAL NOTES:**

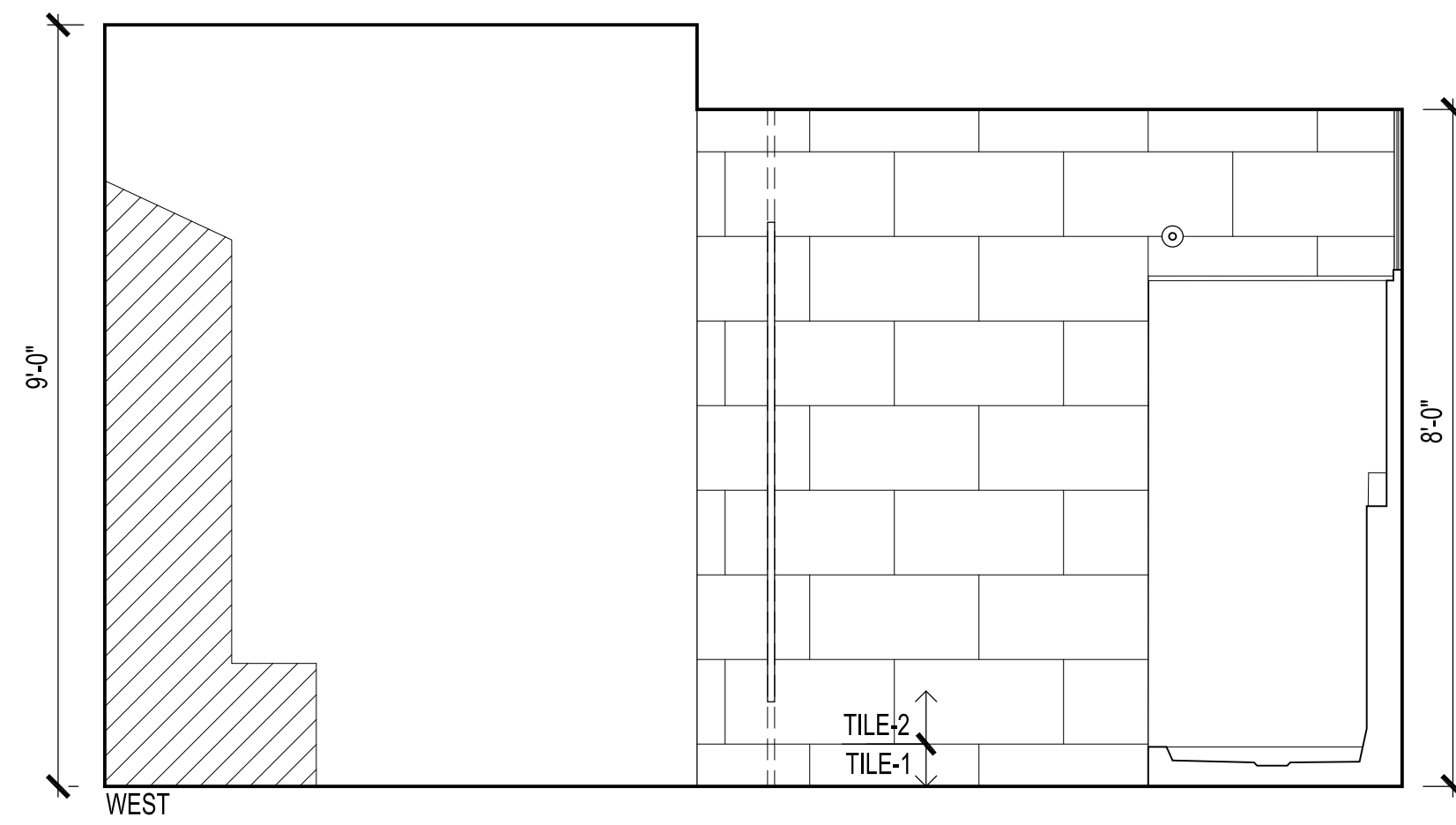
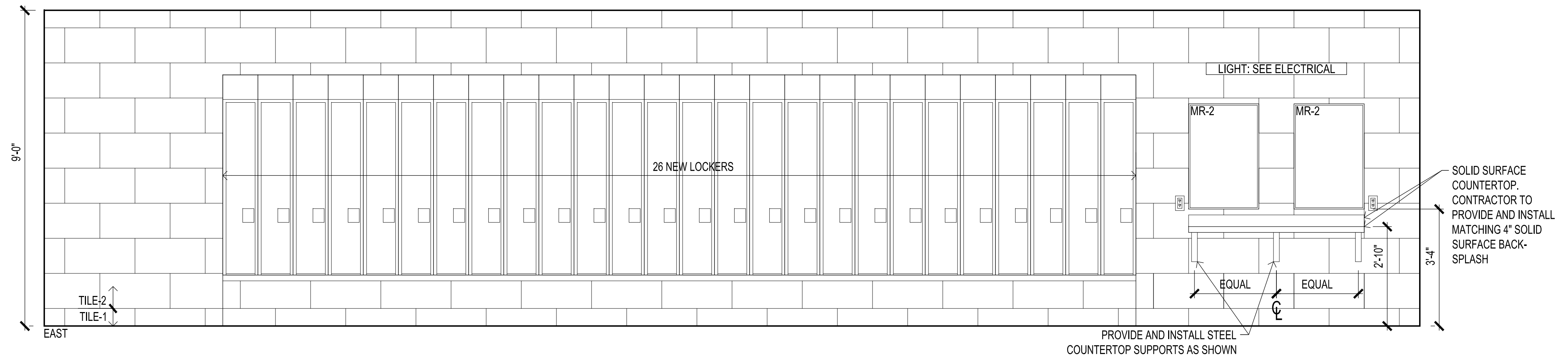
1. SEE PLANS FOR ADDITIONAL DIMENSIONAL INFORMATION
2. SEE ELECTRICAL DRAWINGS FOR POWER LAYOUT
3. SEE PLUMBING FOR WATER SUPPLY/WASTE LAYOUT & REQUIREMENTS
4. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING/PURCHASING ANY KITCHEN EQUIPMENT

**LEGEND:**

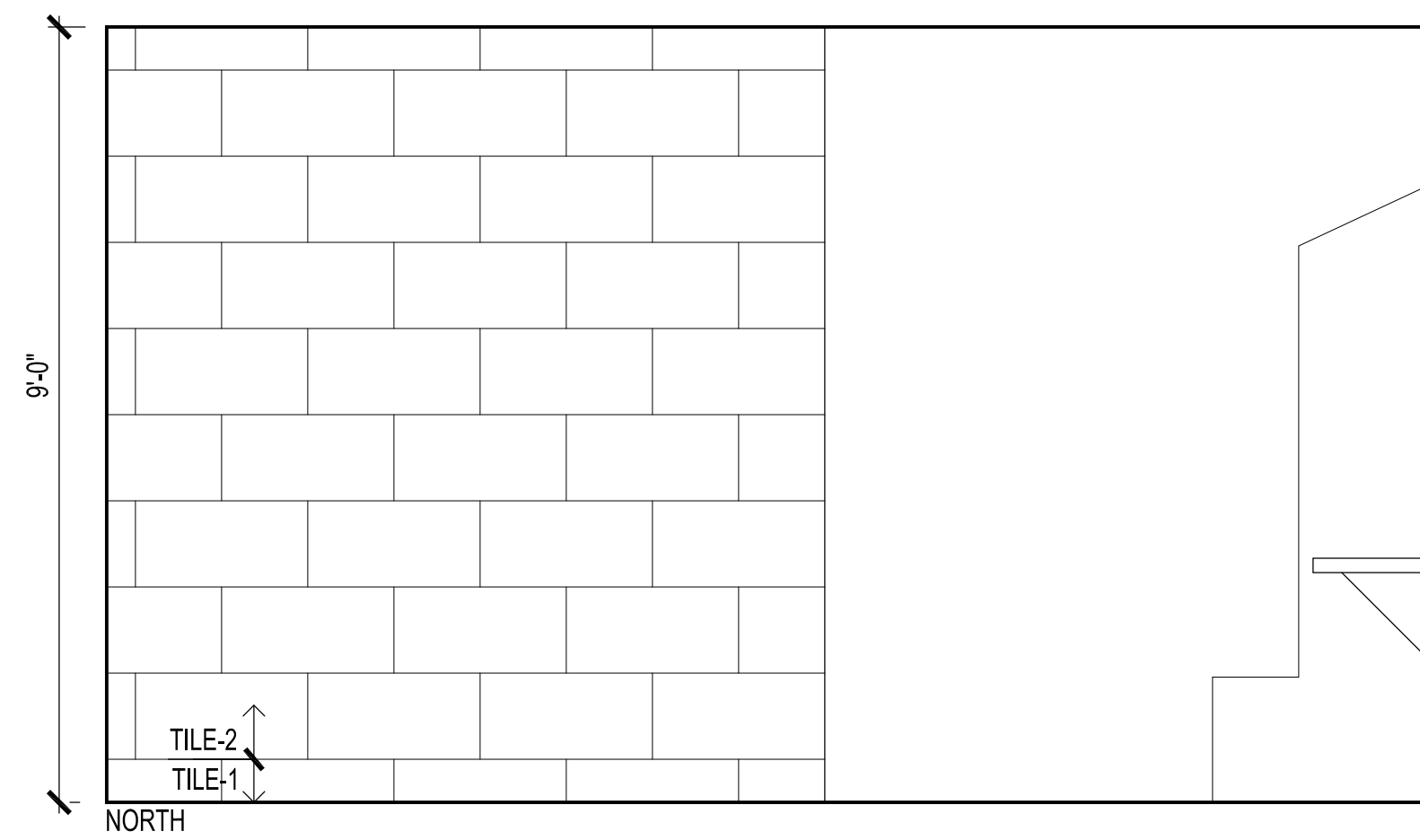
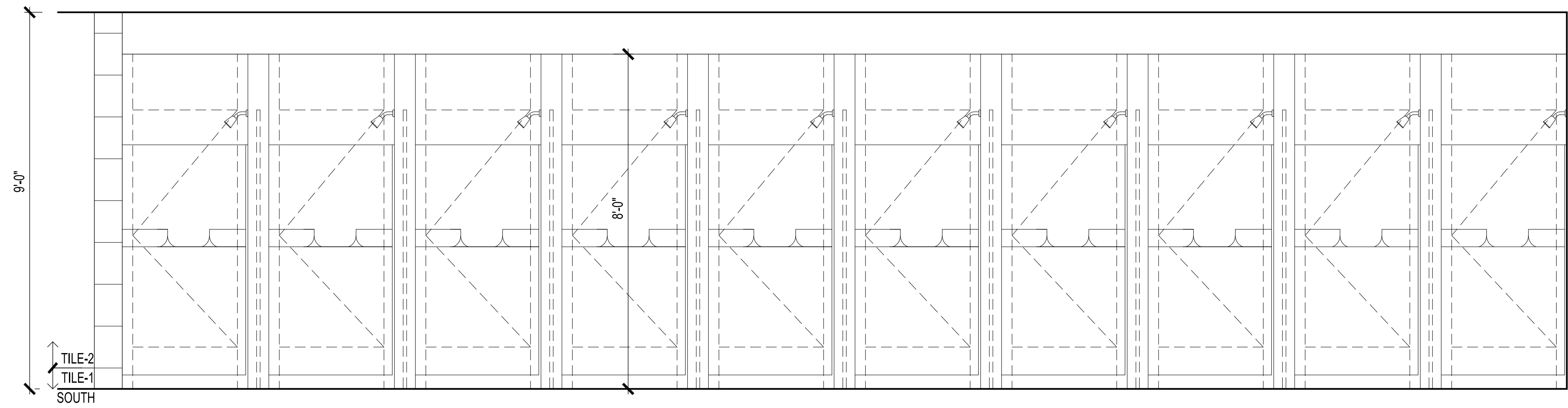
MIR-1	18"x36" MIRROR	HD	HAND DRYER
MIR-2	24"x36" MIRROR	WG	S.S. HAND DRYER WALL GUARD
LAV	LAVATORY (SINK)	PTD	PAPER TOWEL DISPENSER
UR	URINAL	TPH	TOILET PAPER HOLDER
WC	WATER CLOSET (TOILET)		
TILE-1	BASE TILE 6"x24"		
TILE-2	FIELD TILE 12"x24"		



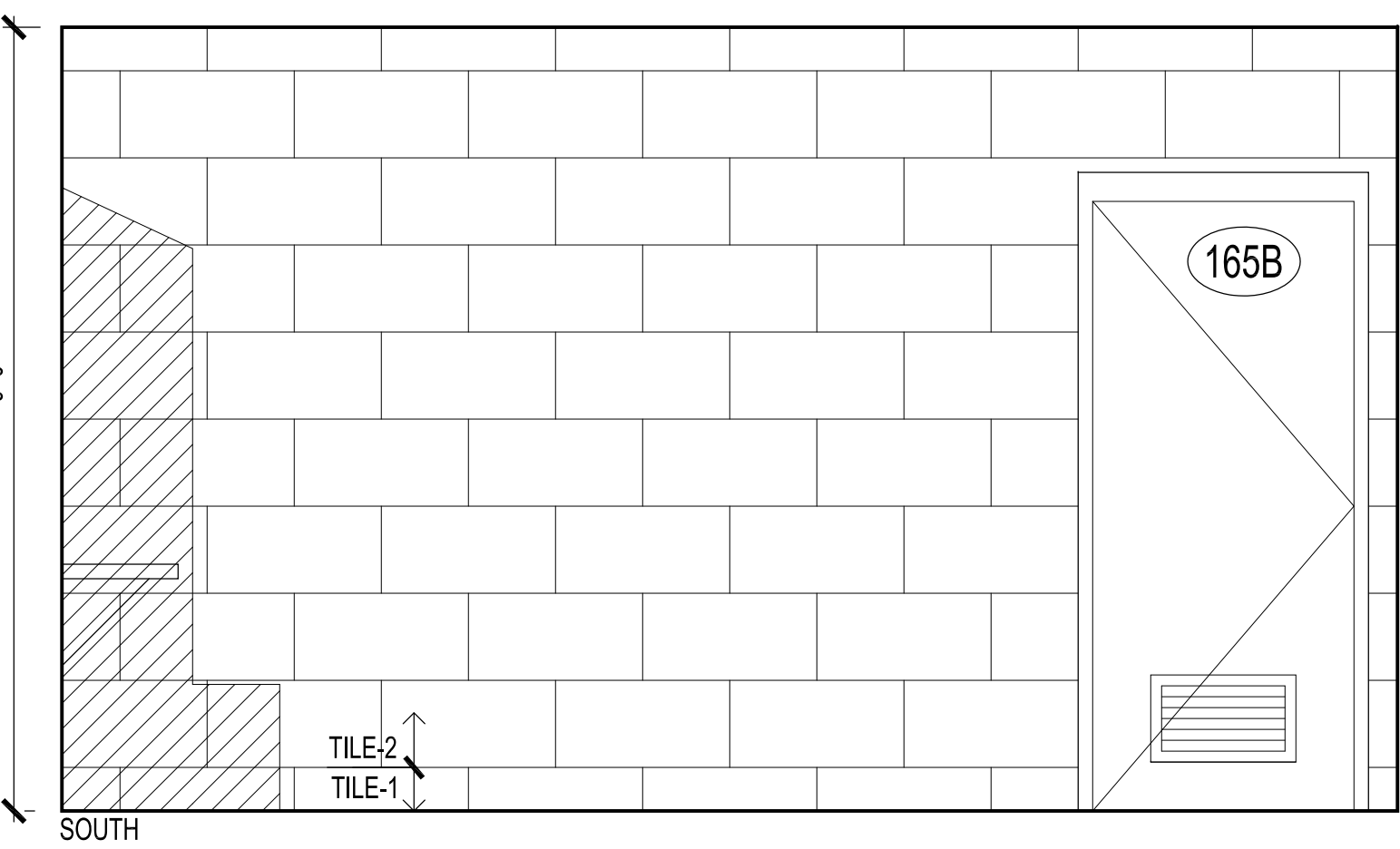
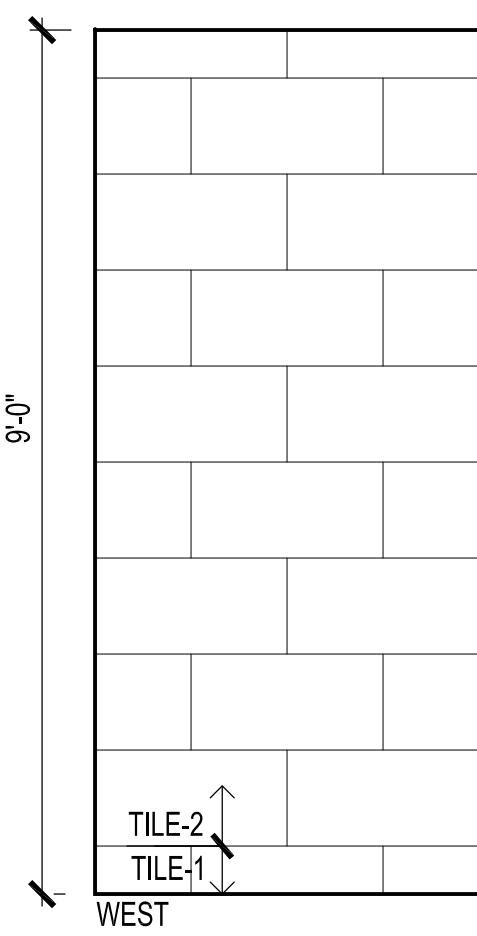
1 INTERIOR ELEVATION - WOMEN'S LOCKER 165  
A4.2 SCALE: 1/2" = 1'-0"



1 INTERIOR ELEVATION - WOMEN'S LOCKER 165  
A4.2 SCALE: 1/2" = 1'-0"



2 INTERIOR ELEVATION - WOMEN'S LOCKER 165  
A4.2 SCALE: 1/2" = 1'-0"



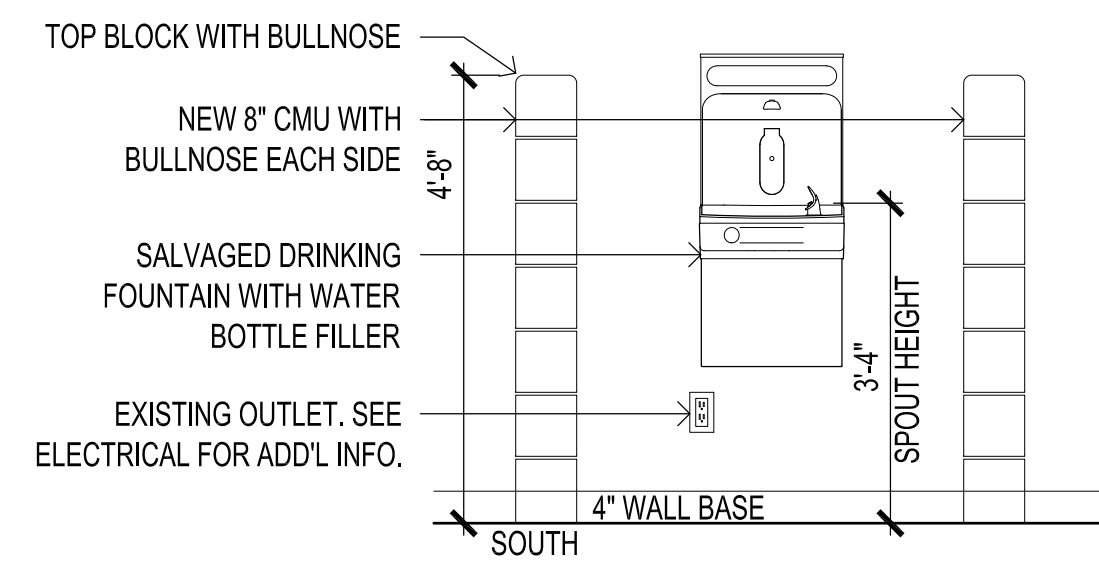
**GENERAL NOTES:**

- SEE PLANS FOR ADDITIONAL DIMENSIONAL INFORMATION
- SEE ELECTRICAL DRAWINGS FOR POWER LAYOUT
- SEE PLUMBING FOR WATER SUPPLY/WASTE LAYOUT & REQUIREMENTS
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING/PURCHASING ANY KITCHEN EQUIPMENT

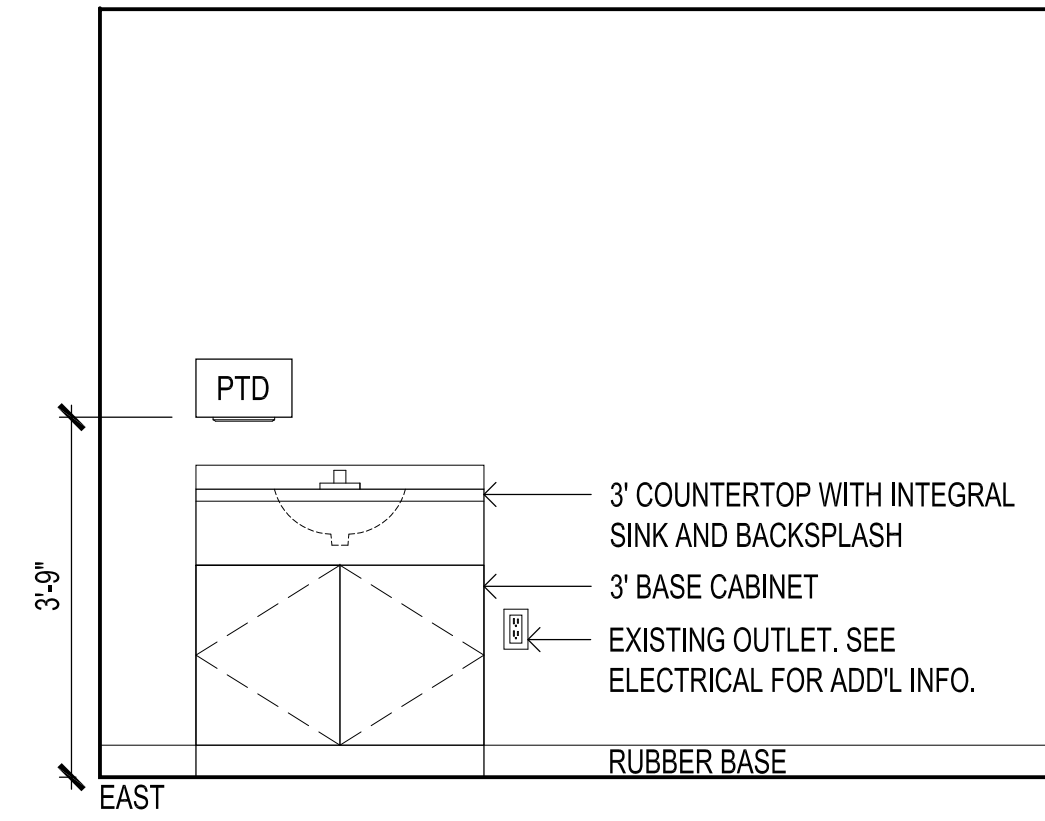
**LEGEND:**

MR-1	18"x36" MIRROR	HD	HAND DRYER
MR-2	24"x36" MIRROR	WG	S.S. HAND DRYER WALL GUARD
LAV	LAVATORY (SINK)	PTD	PAPER TOWEL DISPENSER
UR	URINAL	TPH	TOILET PAPER HOLDER
WC	WATER CLOSET (TOILET)		
TILE-1	BASE TILE 6"x24"		
TILE-2	FIELD TILE 12"x24"		

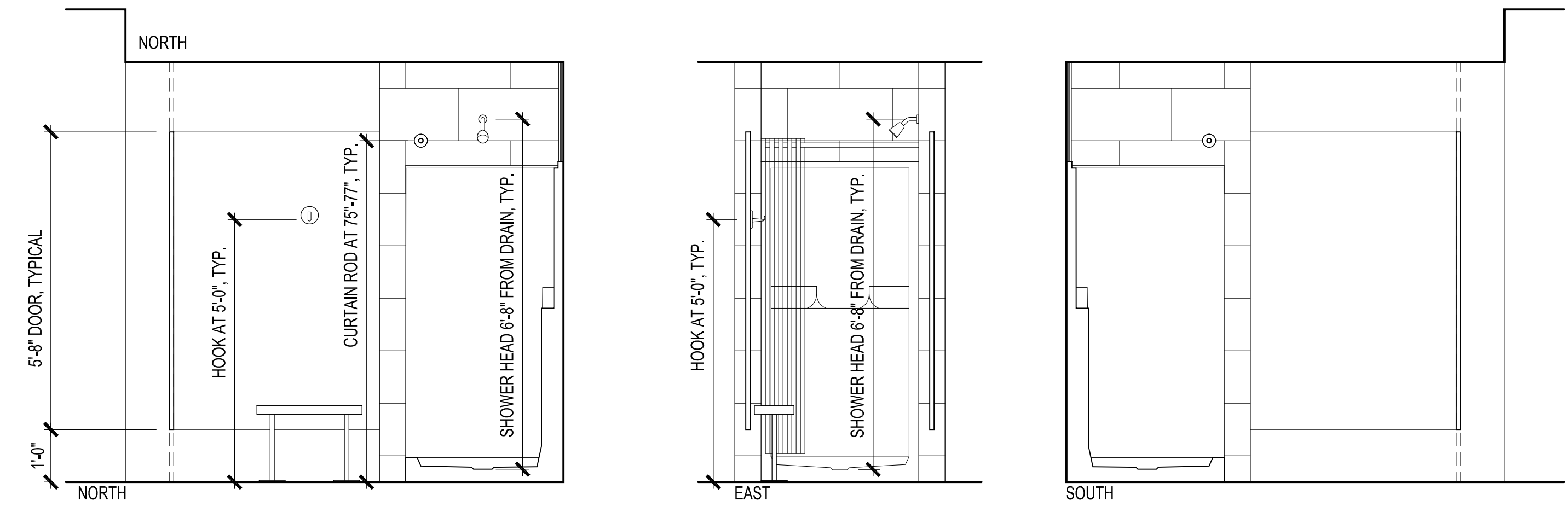
DESIGNED	JDJ
DRAWN	JDJ
CHECKED	
APPROVED	
DATE	29 JULY 2023
ISSUED FOR	<input checked="" type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> FINAL RECORD
IDENTIFICATION NO.	28C872008
PROJECT	INDEX CODE
SHEET	<b>A4.2</b>



1 INTERIOR ELEVATION - DRINKING FOUNTAIN  
A4.3 SCALE: 1/2" = 1'-0"



3 INTERIOR ELEVATION - LACTATION ROOM 136D  
A4.3 SCALE: 1/2" = 1'-0"



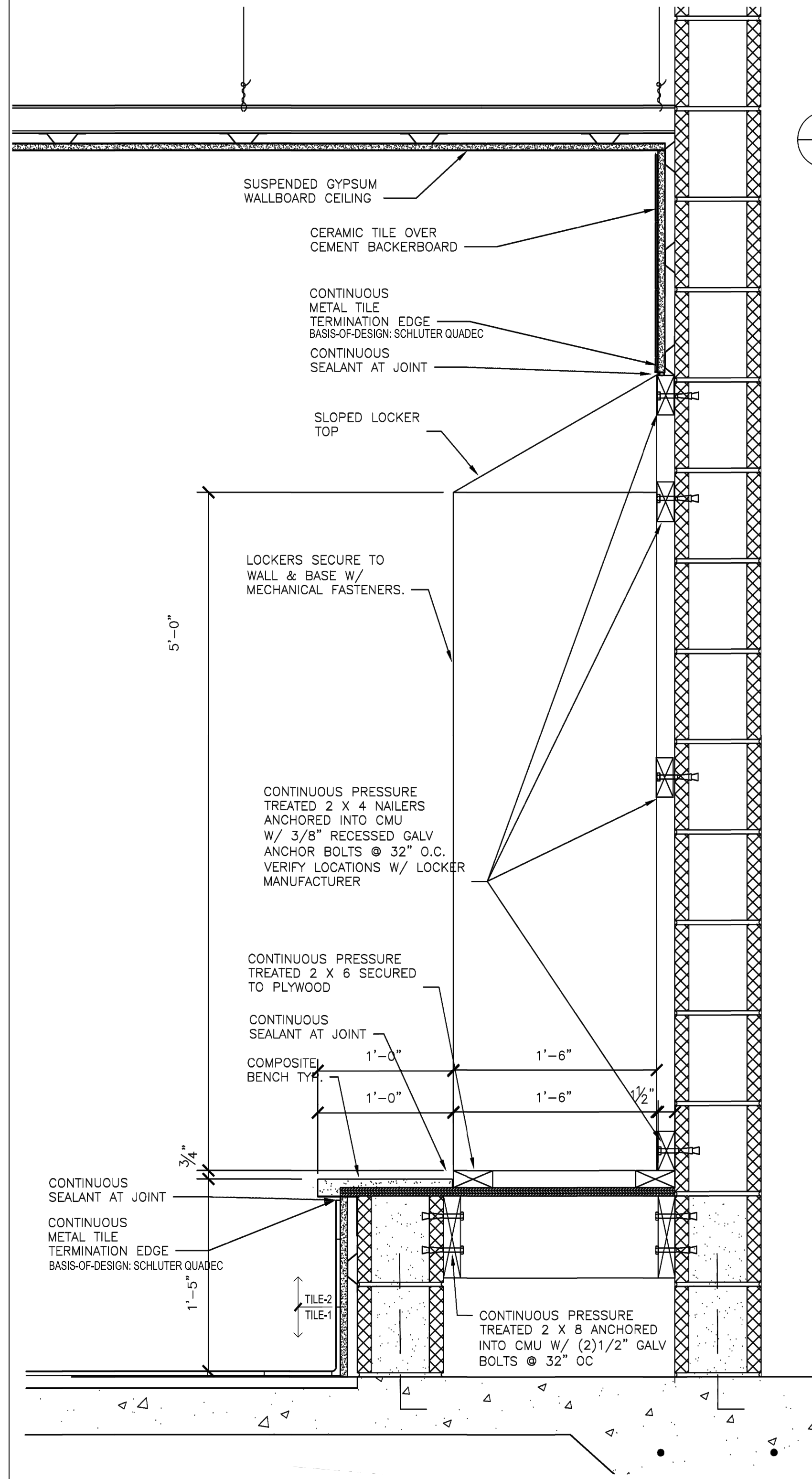
2 INTERIOR ELEVATION - TYPICAL SHOWER & CHANGING AREA  
A4.3 SCALE: 1/2" = 1'-0"

**GENERAL NOTES:**

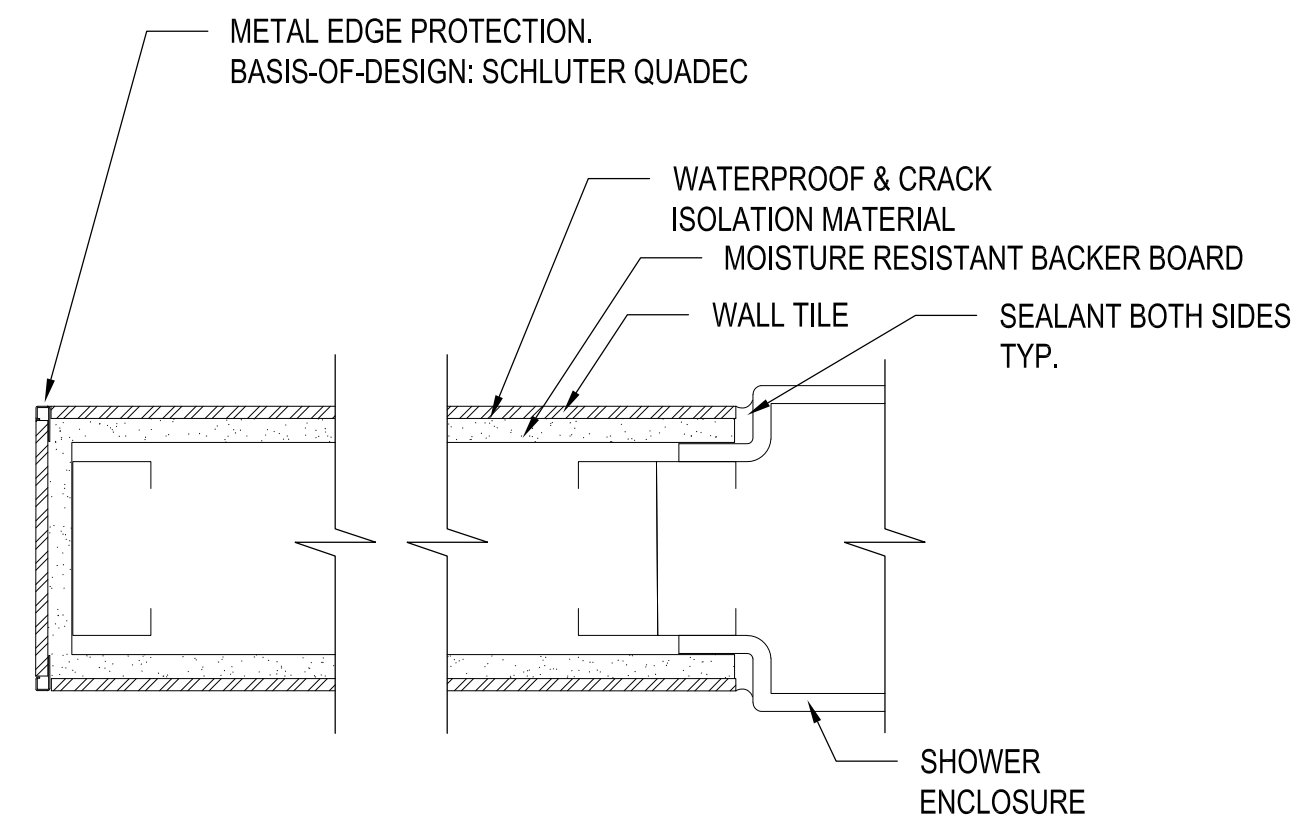
- SEE PLANS FOR ADDITIONAL DIMENSIONAL INFORMATION
- SEE ELECTRICAL DRAWINGS FOR POWER LAYOUT
- SEE PLUMBING FOR WATER SUPPLY/WASTE LAYOUT & REQUIREMENTS
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO SUBMITTING/PURCHASING ANY KITCHEN EQUIPMENT

**LEGEND:**

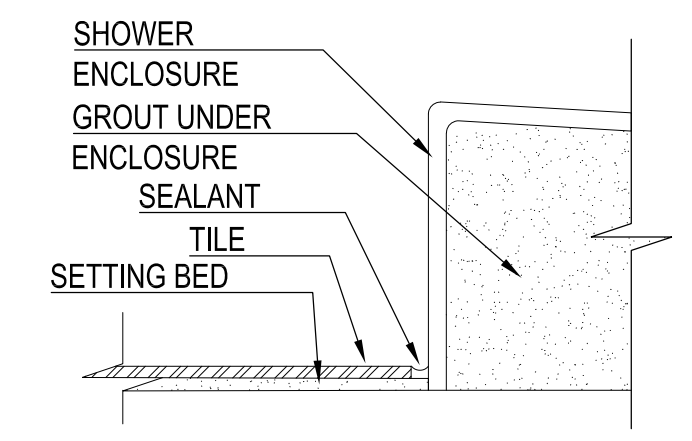
MIR-1	18"x36" MIRROR	HD	HAND DRYER
MIR-2	24"x36" MIRROR	WG	S.S. HAND DRYER WALL GUARD
LAV	LAVATORY (SINK)	PTD	PAPER TOWEL DISPENSER
UR	URINAL	TPH	TOILET PAPER HOLDER
WC	WATER CLOSET (TOILET)		
TILE-1	BASE TILE 6"x24"		
TILE-2	FIELD TILE 12"x24"		



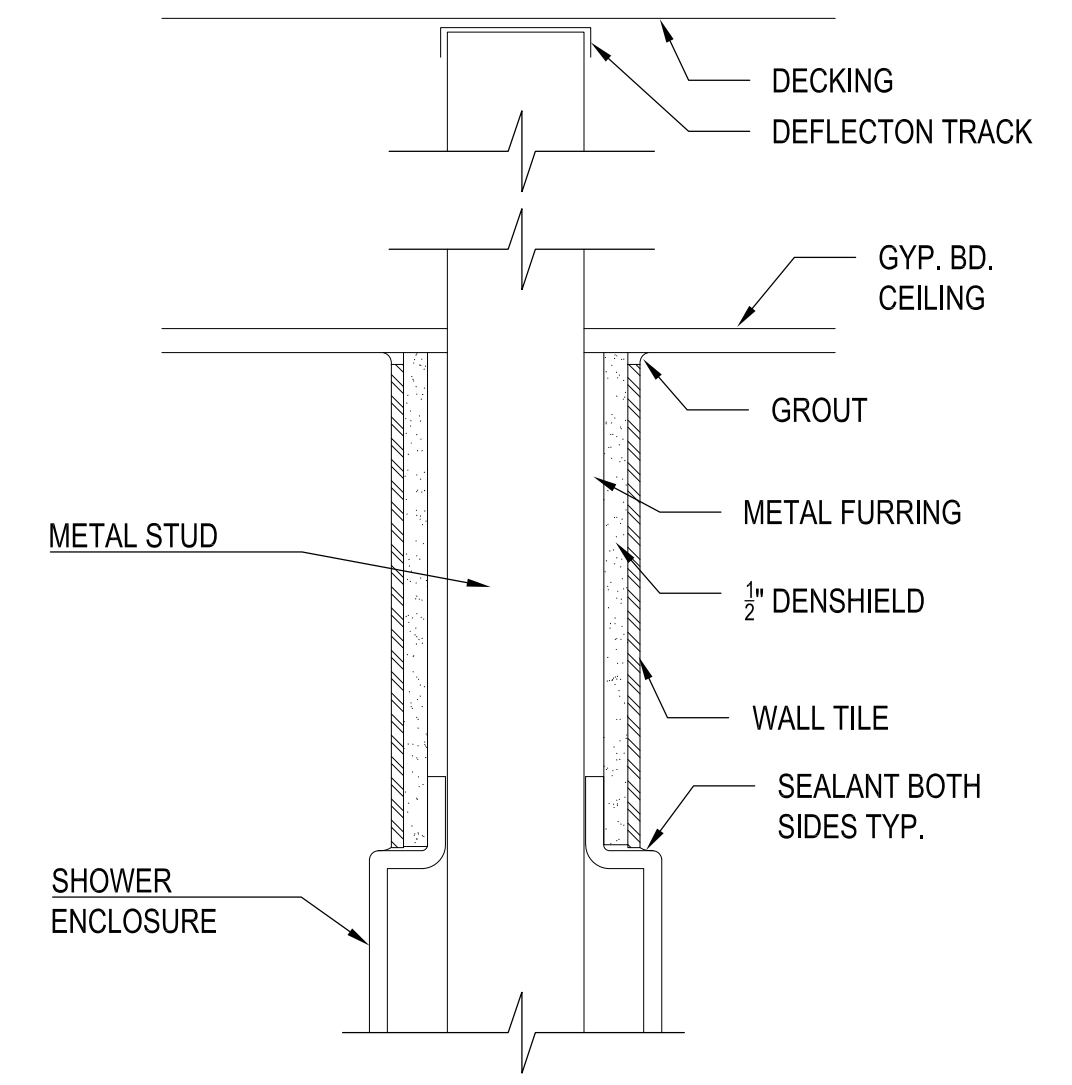
3 LOCKER ROOM SECTION DETAIL AT BENCH / LOCKER  
A6.0 SCALE: 1 1/2" = 1'-0" DTLS.DWG



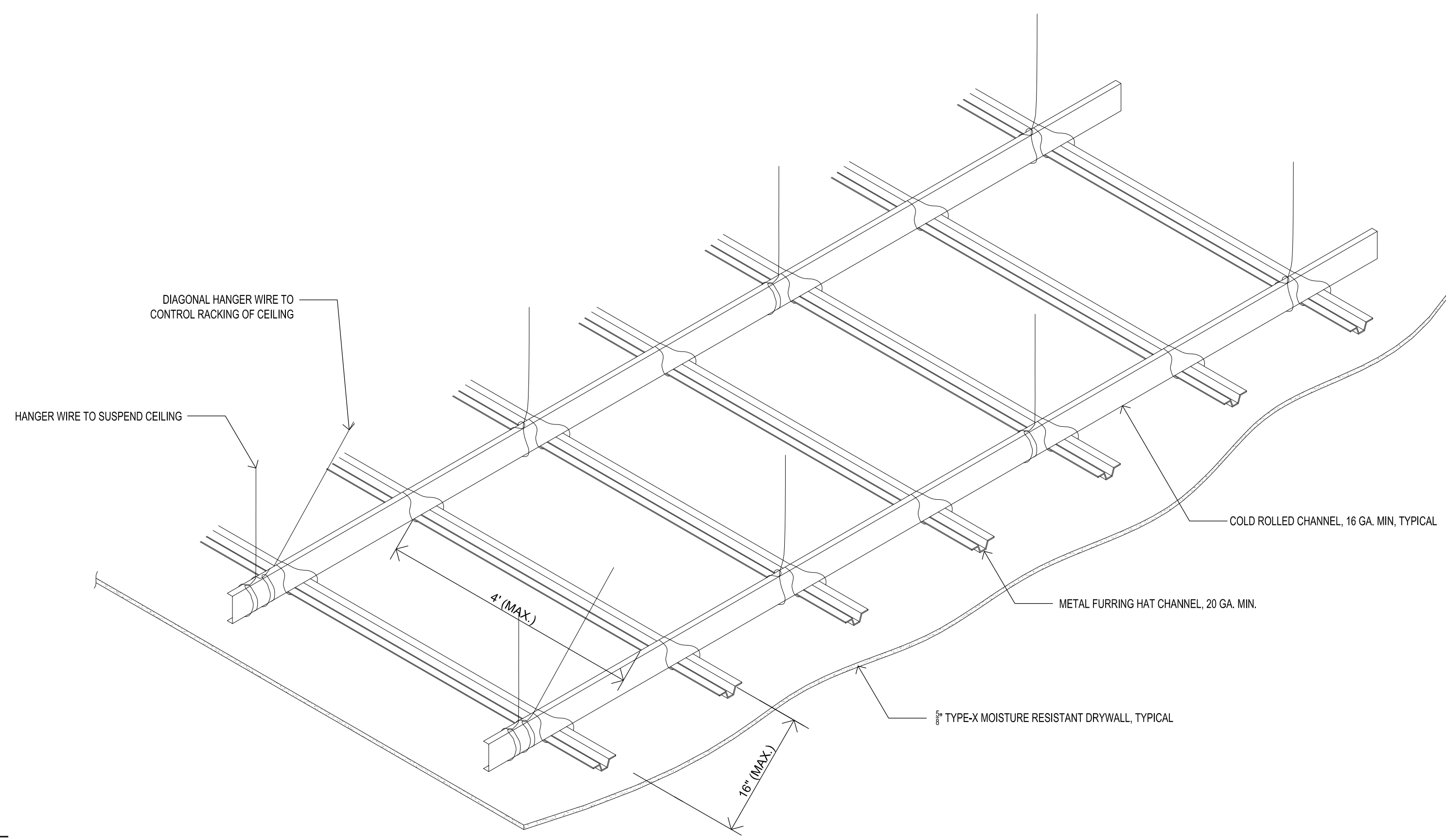
4 SHOWER ENCLOSURE: WALL DETAIL  
A6.0 SCALE: 3" = 1'-0"



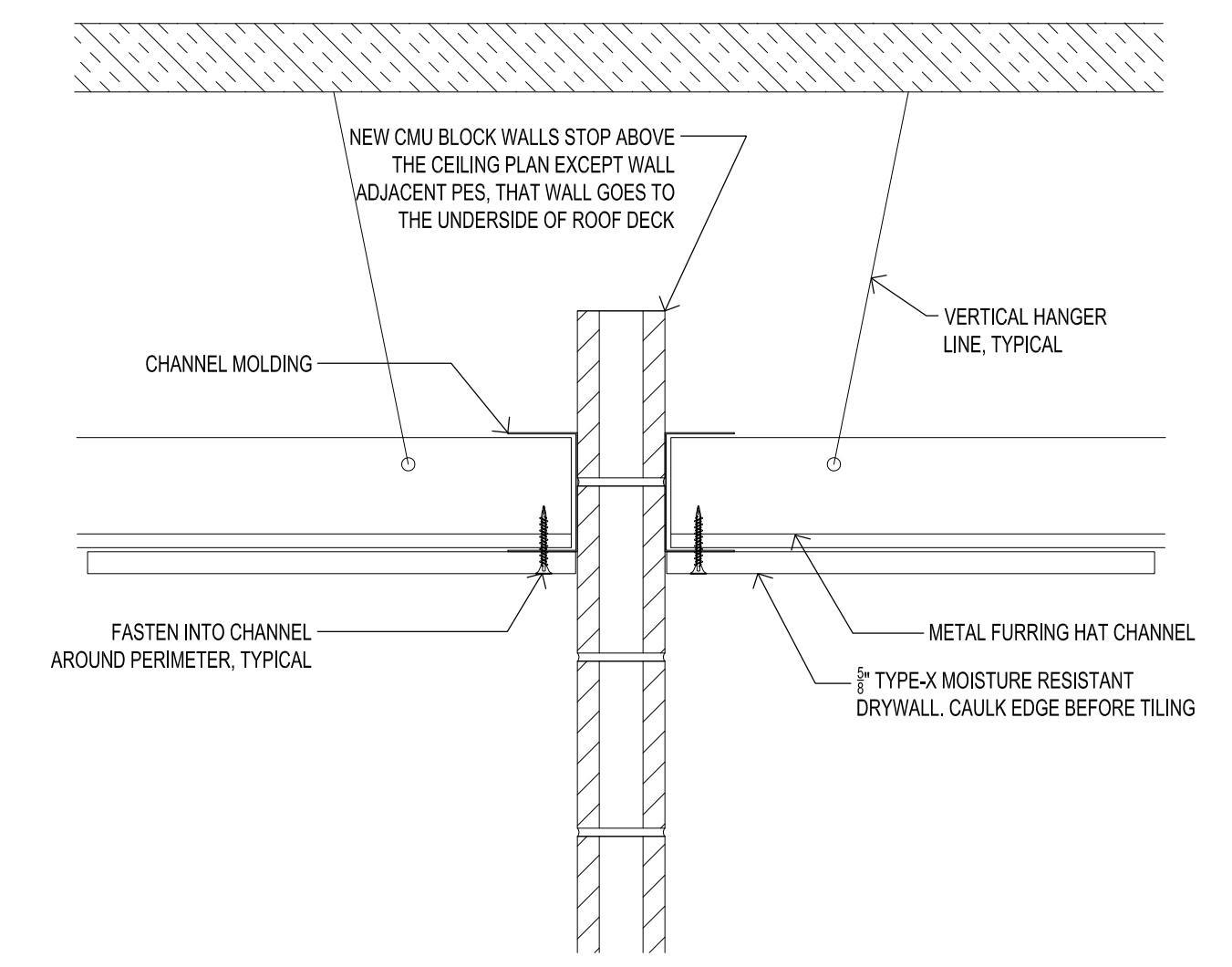
5 SHOWER ENCLOSURE: FLOOR DETAIL  
A6.0 SCALE: 3" = 1'-0"



6 SHOWER ENCLOSURE: FLOOR DETAIL  
A6.0 SCALE: 3" = 1'-0"

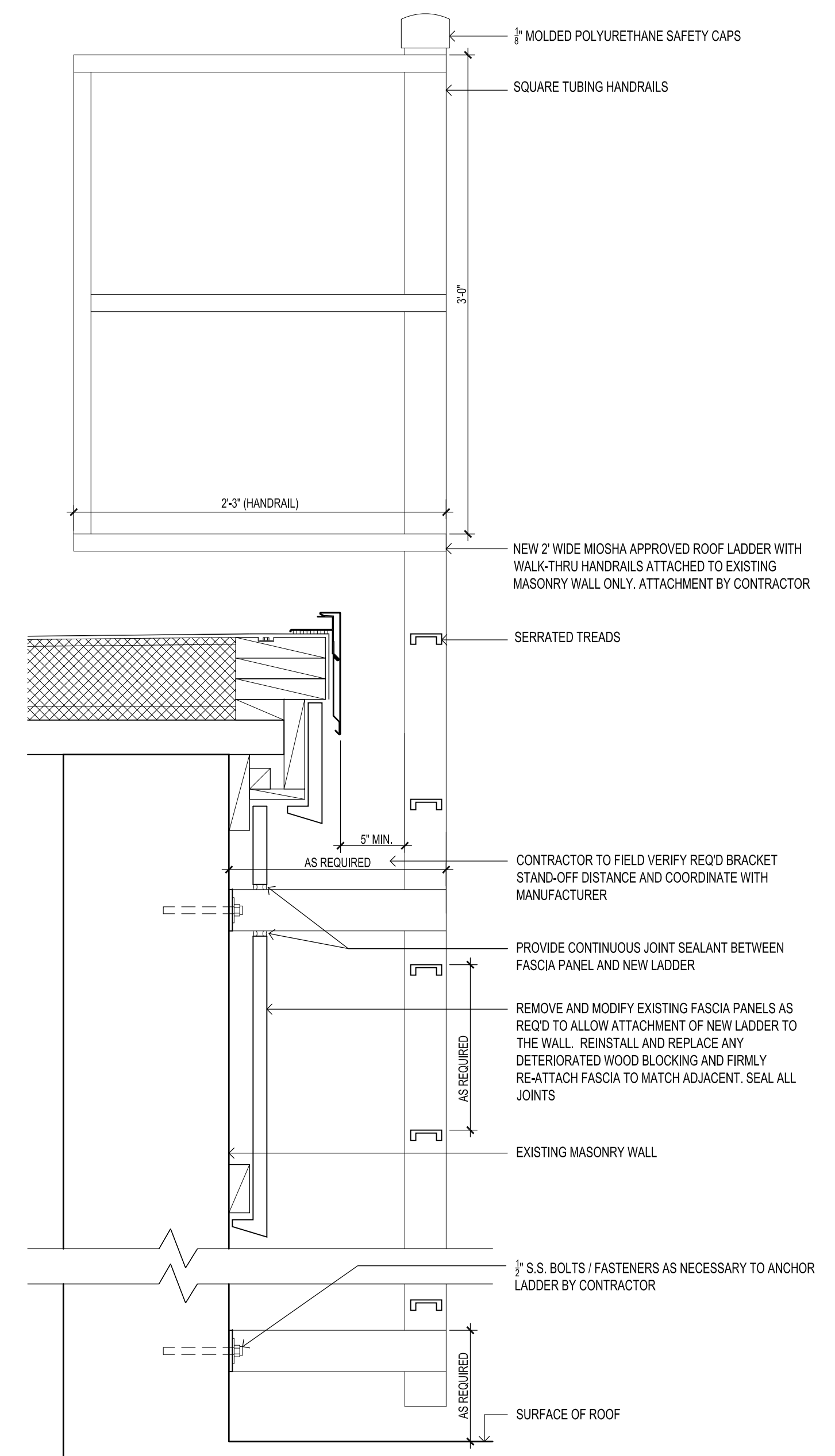


2 HARD CEILING DETAIL  
A6.0 SCALE: 1 1/2" = 1'-0" DTLS.DWG



1 HARD CEILING PERIMETER DETAIL  
A6.0 SCALE: 1 1/2" = 1'-0" DTLS.DWG

SHEET	IDENTIFICATION NO. PROJECT INDEX CODE INDEX CODE	ISSUED FOR PRELIMINARY CONSTRUCTION FINAL RECORD	DATE 28 JULY 2023	DESIGNED DRAWN CHECKED APPROVED	JDJ JDJ



1 SECTION DETAIL AT ROOF LADDER  
 A6.1 SCALE: 1/16" = 1'-0" DTLS.DWG

SHEET	IDENTIFICATION NO. PROJECT INDEX CODE	ISSUED FOR PRELIMINARY CONSTRUCTION FINAL RECORD	DATE 29 JULY 2023	DESIGNED	JDJ
				DRAWN	JDJ
A6.1				CHECKED	
				APPROVED	

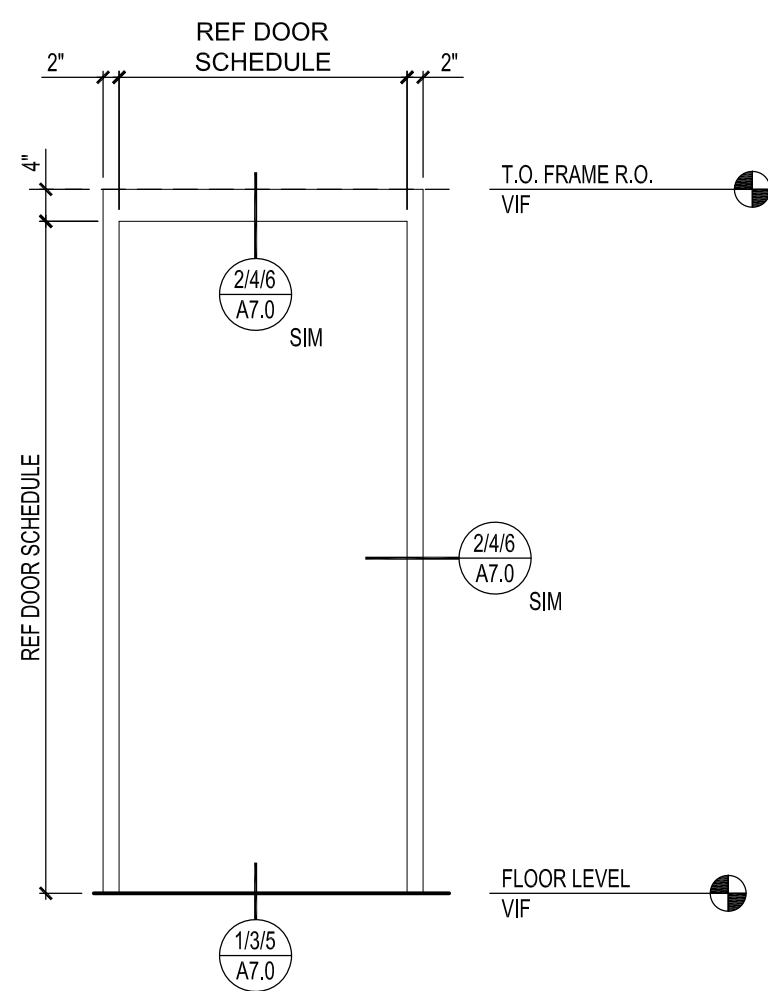
**DOOR SCHEDULE**

NUMBER	LOCATION		QTY.	HAND	LABEL	FRAMES			DETAILS			DOORS				HARDWARE			REMARKS		
	FROM	TO				GAUGE	ELEV	DEPTH	WALL TYPE	HEAD	JAMB	SILL	BAUGTYPE	SIZE	CORE	FINISH	HDWE. GRP	CORES		KEYS	
158	DRILL HALL	MENS BATHRM	1	L.H.	3/4HR	16	7'-4"	6"	CMU	2/A7.0	2/A7.0	1/A7.0	16	F	3'-0" X 7'-0"	SDC	PTD	1			
159	DRILL HALL	WOMENS BATHRM	1	R.H.	3/4HR	16	7'-4"	6"	CMU	2/A7.0	2/A7.0	1/A7.0	16	F	3'-0" X 7'-0"	SDC	PTD	1			
164	MENS BATHRM	MENS LOCKER	1	R.H.	-	16	7'-4"	7 3/4"	CMU	4/A7.0	4/A7.0	3/A7.0	16	F	3'-0" X 7'-0"	SDC	PTD	1			
164B	PES	MENS LOCKER	1	R.H.	-	16	7'-4"	6"	CMU	2/A7.0	2/A7.0	1/A7.0	16	L	3'-0" X 7'-0"	SDC	PTD	1			
165	WOMENS BATHRM	WOMENS LOCKER	1	L.H.	-	16	7'-4"	7 3/4"	CMU	4/A7.0	4/A7.0	3/A7.0	16	F	3'-0" X 7'-0"	SDC	PTD	1			
165B	PES	WOMENS LOCKER	1	L.H.	-	16	7'-4"	6"	CMU	2/A7.0	2/A7.0	1/A7.0	16	L	3'-0" X 7'-0"	SDC	PTD	1			
166	CORRIDOR	PES	1	L.H.	3/4HR	16	7'-4"	5 5/8"	CMU	6/A7.0	6/A7.0	5/A7.0	-	-	-	-	-	-	-	-	SALVAGE & REUSE METAL DOOR & HARDWARE
166B	CORRIDOR	PES	1	R.H.	3/4HR	16	7'-4"	5 5/8"	CMU	6/A7.0	6/A7.0	5/A7.0	-	-	-	-	-	-	-	-	SALVAGE & REUSE METAL DOOR & HARDWARE

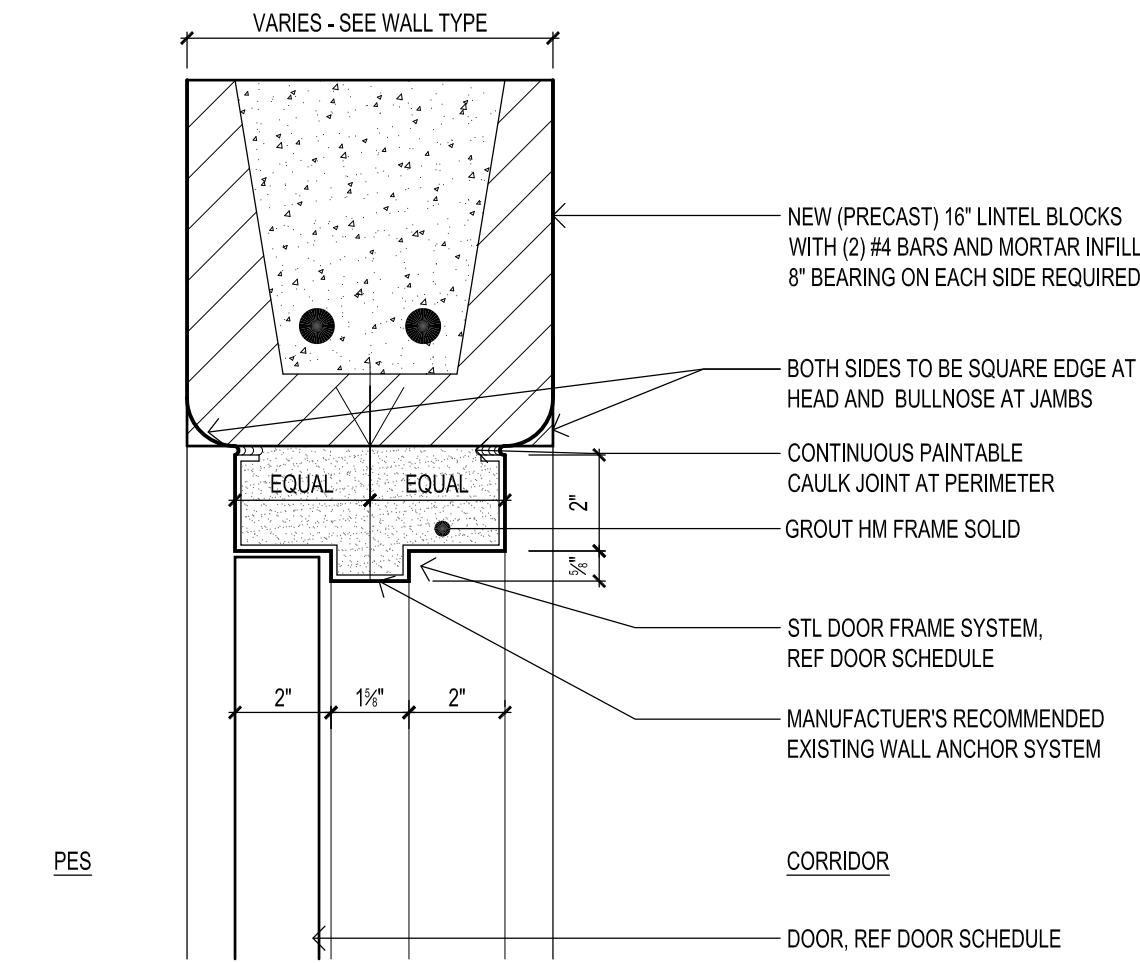
**LEGEND**  
 ALUM ALUMINUM  
 CLR CLEAR  
 PTD PAINT  
 STL STEEL  
 WD WOOD  
 GLASS GLASS  
 SDC SOUND DEADENING CORE  
 NA NOT APPLICABLE  
 SS STAINLESS STEEL  
 PR PAIR (DOUBLE DOOR)  
 HDWE. GR HARDWARE GROUP

**GENERAL NOTES**  
 1. DOOR UNDERCUTS TO BE 1/4" MINIMUM TO 1/2" MAXIMUM ABOVE SURFACE OF FINISH MATERIAL U.N.O., GENERAL CONTRACTOR TO COORDINATE

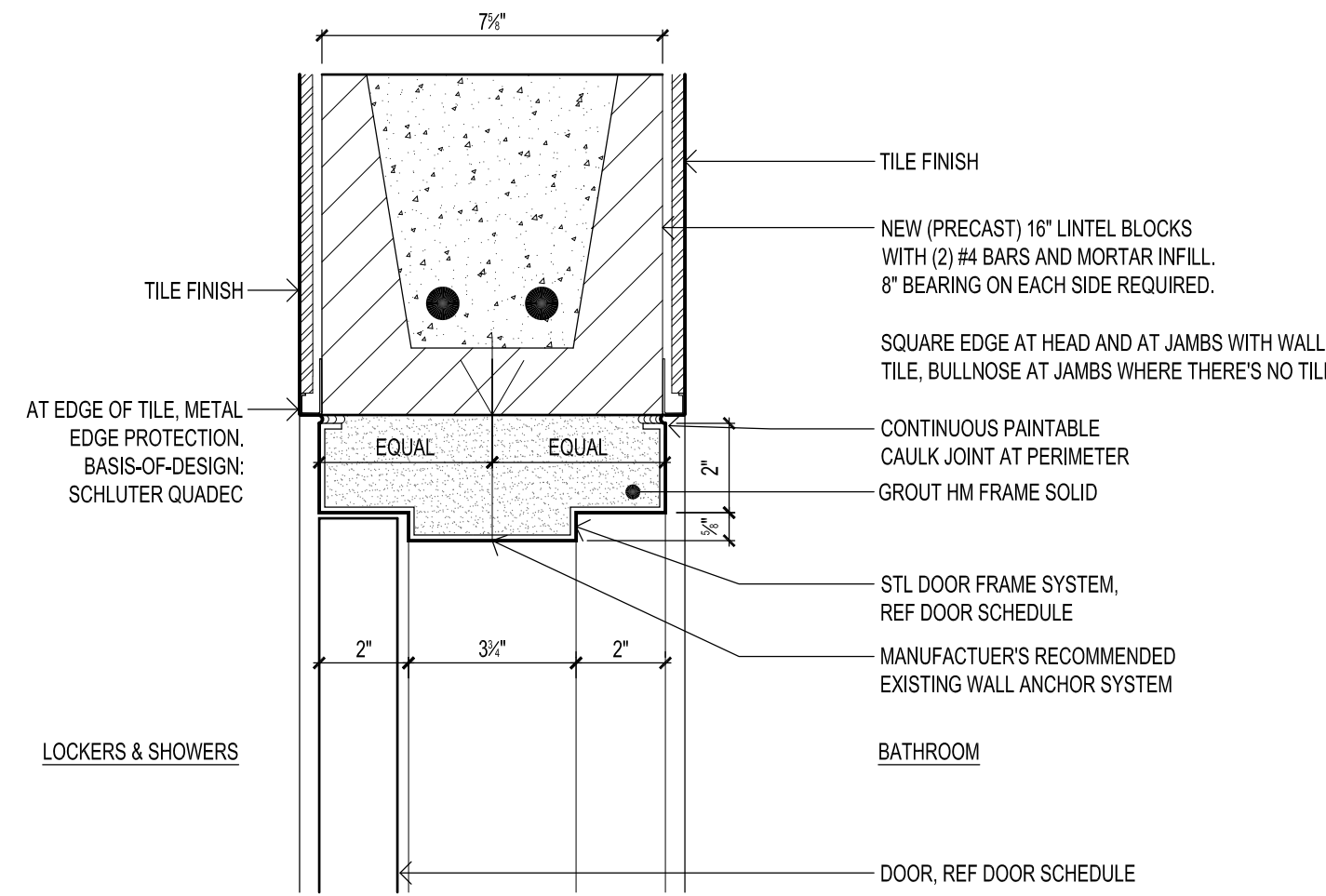
**DOOR FRAME TYPES**



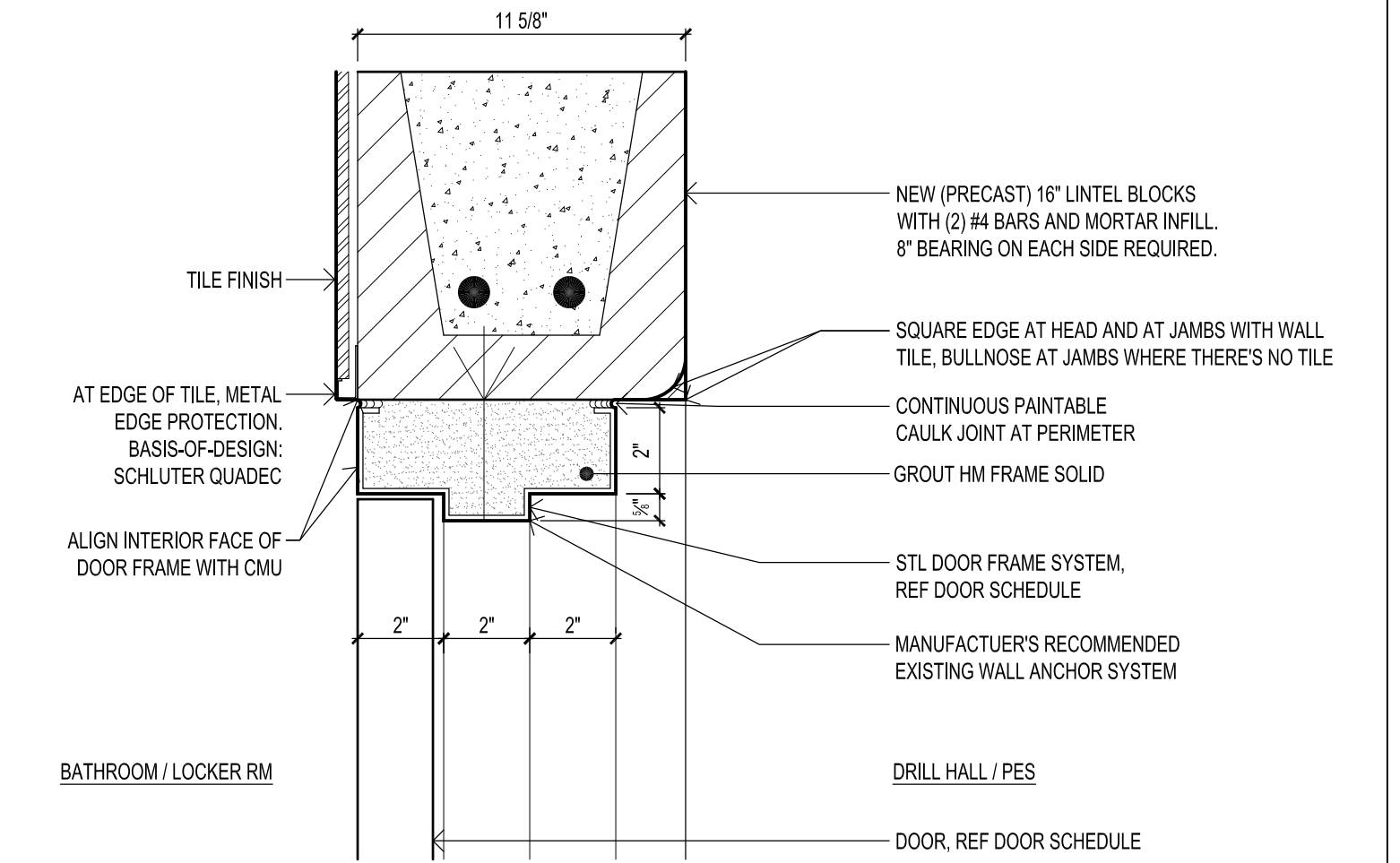
FA



6 INTERIOR SECTION DETAIL: LINTEL AT DOOR HEAD & JAMB  
 SCALE: 3" = 1'-0" DTLS.DWG

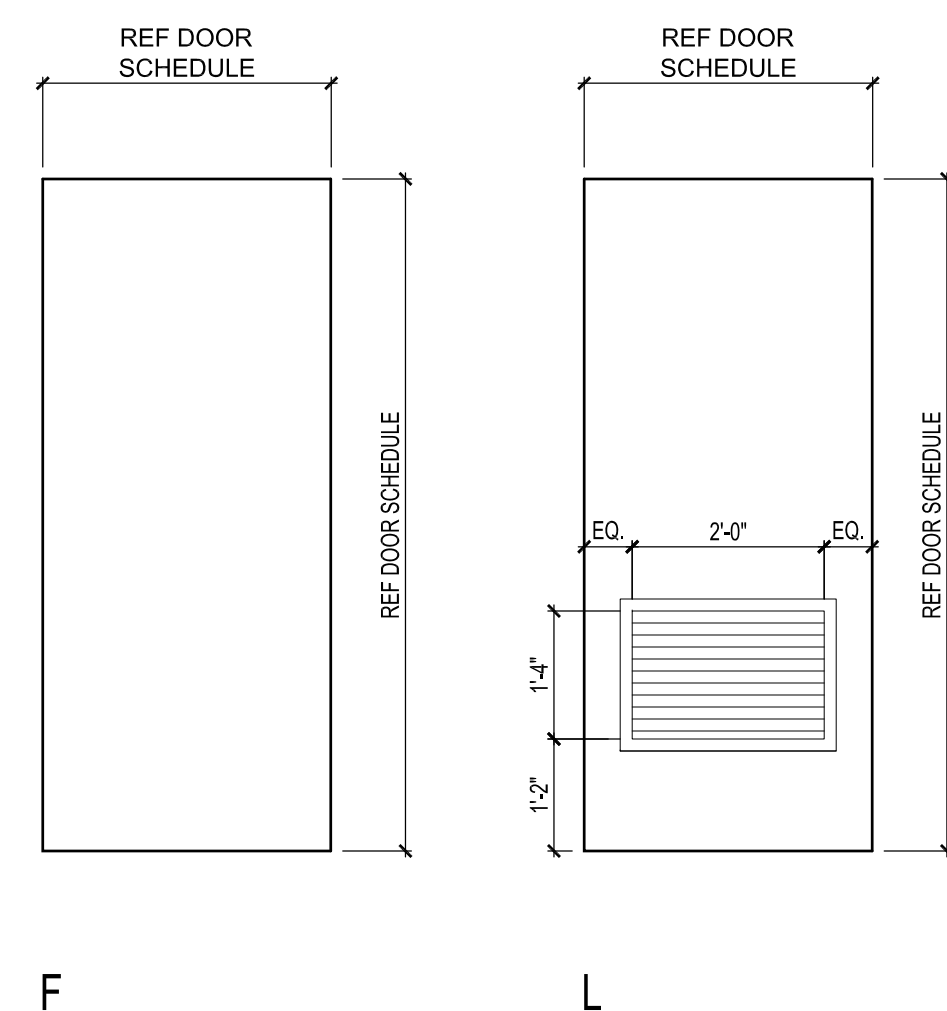


4 INTERIOR SECTION DETAIL: LINTEL AT DOOR HEAD & JAMB  
 SCALE: 3" = 1'-0" DTLS.DWG



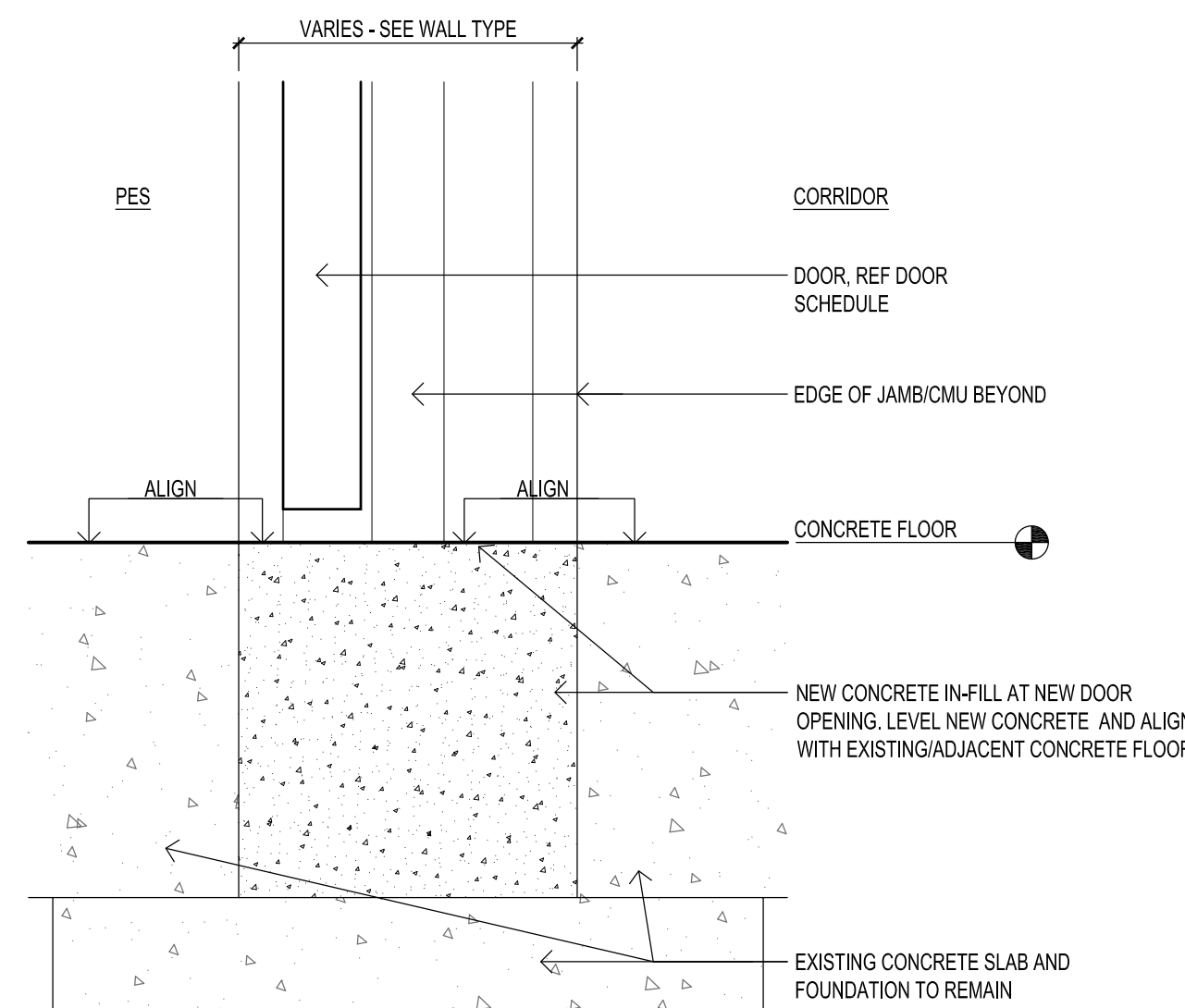
2 INTERIOR SECTION DETAIL: LINTEL AT DOOR HEAD & JAMB  
 SCALE: 3" = 1'-0" DTLS.DWG

**DOOR TYPES**

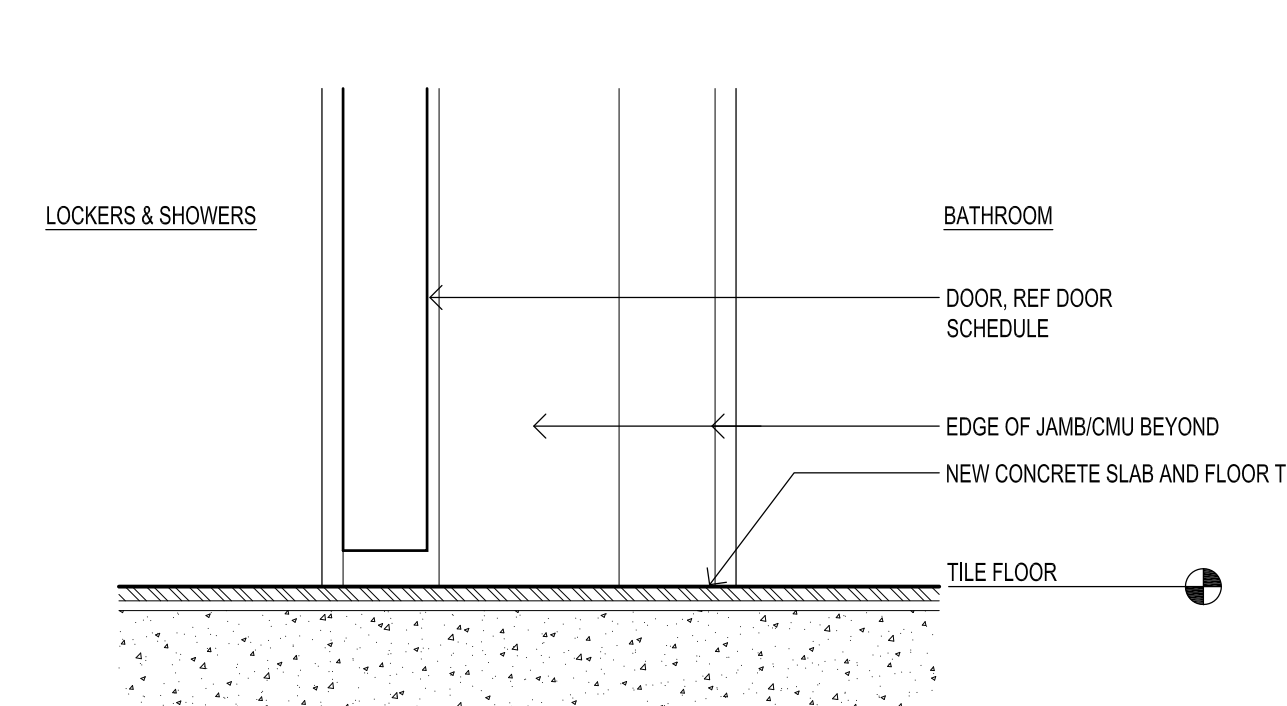


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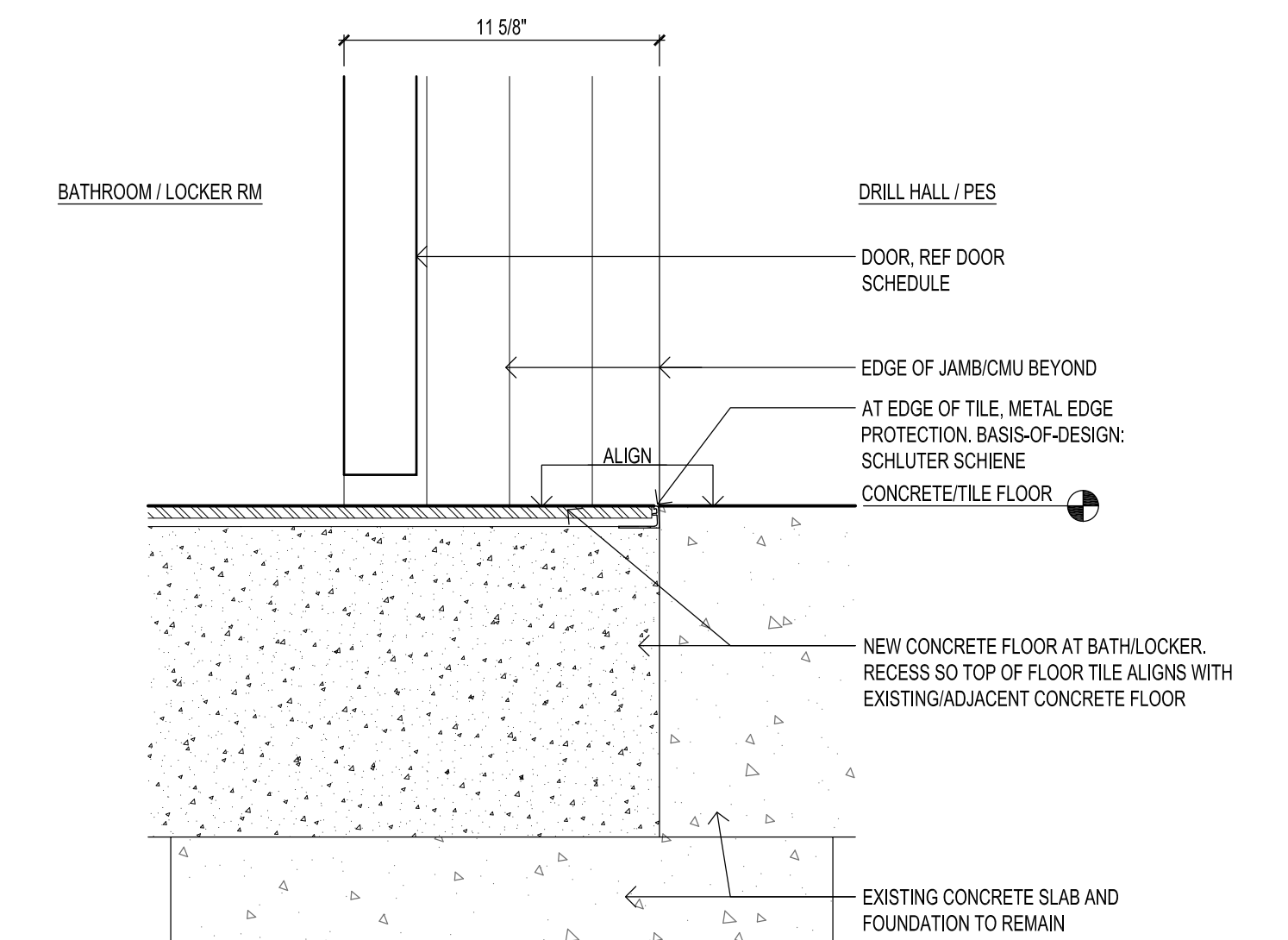
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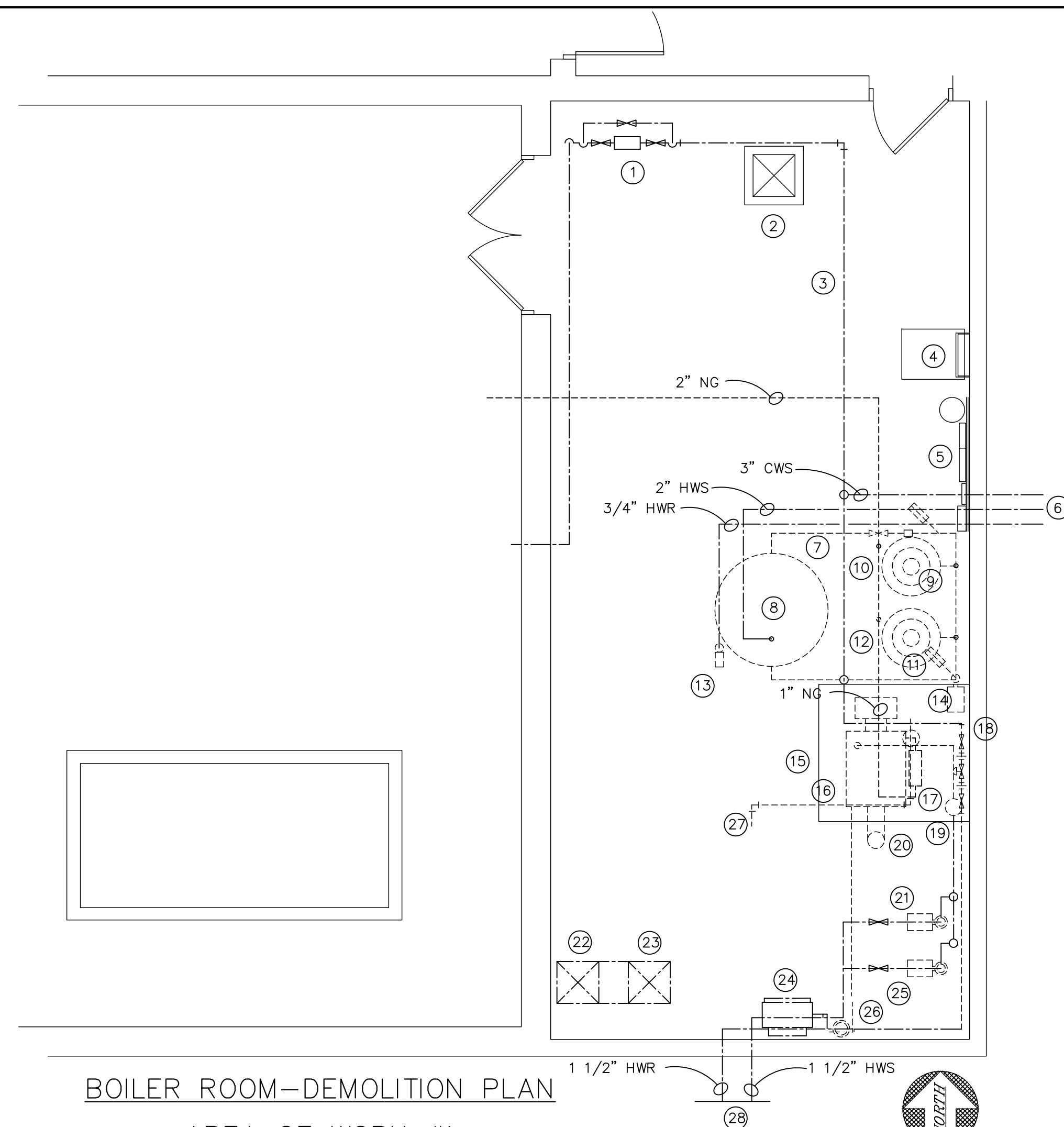
5 INTERIOR SECTION DETAIL AT DOOR THRESHOLD  
 SCALE: 3" = 1'-0" DTLS.DWG



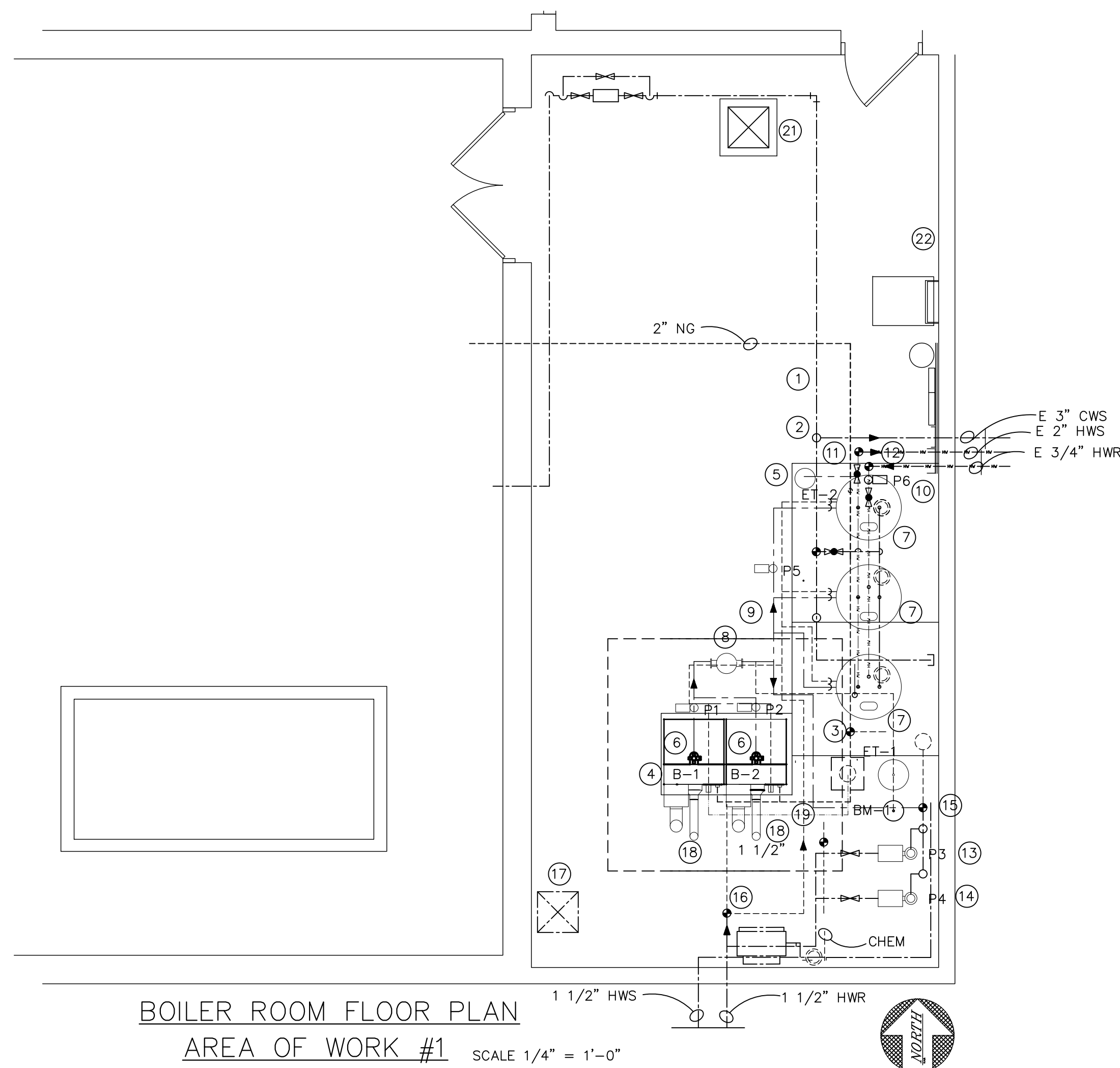
3 INTERIOR SECTION DETAIL AT DOOR THRESHOLD  
 SCALE: 3" = 1'-0" DTLS.DWG



1 INTERIOR SECTION DETAIL AT DOOR THRESHOLD  
 SCALE: 3" = 1'-0" DTLS.DWG



BOILER ROOM-DEMOLITION PLAN  
AREA OF WORK #1  
SCALE 1/4" = 1'-0"



BOILER ROOM FLOOR PLAN  
AREA OF WORK #1 SCALE 1/4" = 1'-0"

BOILER ROOM-DEMOLITION-NOTES  
AREA OF WORK #1

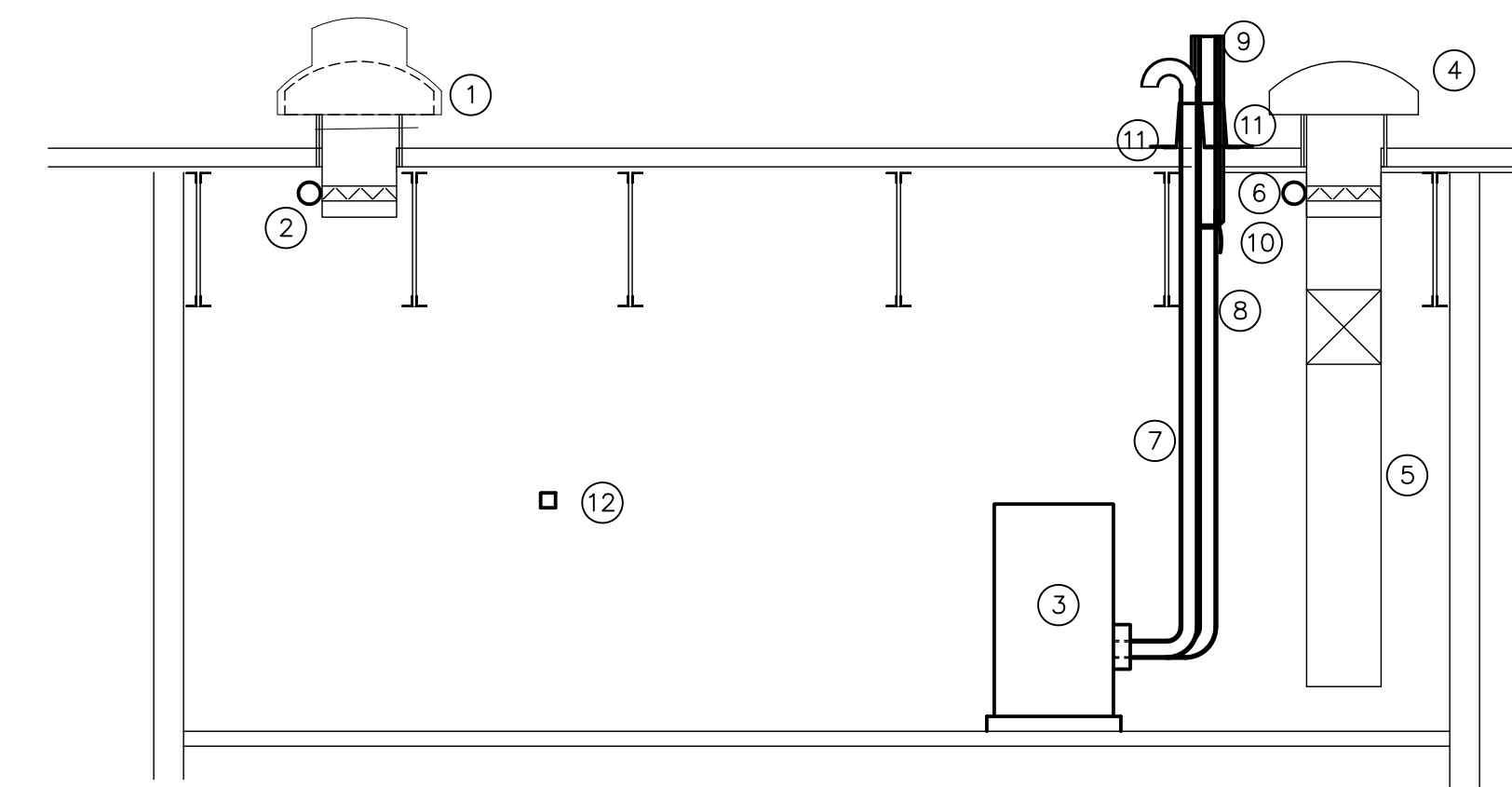
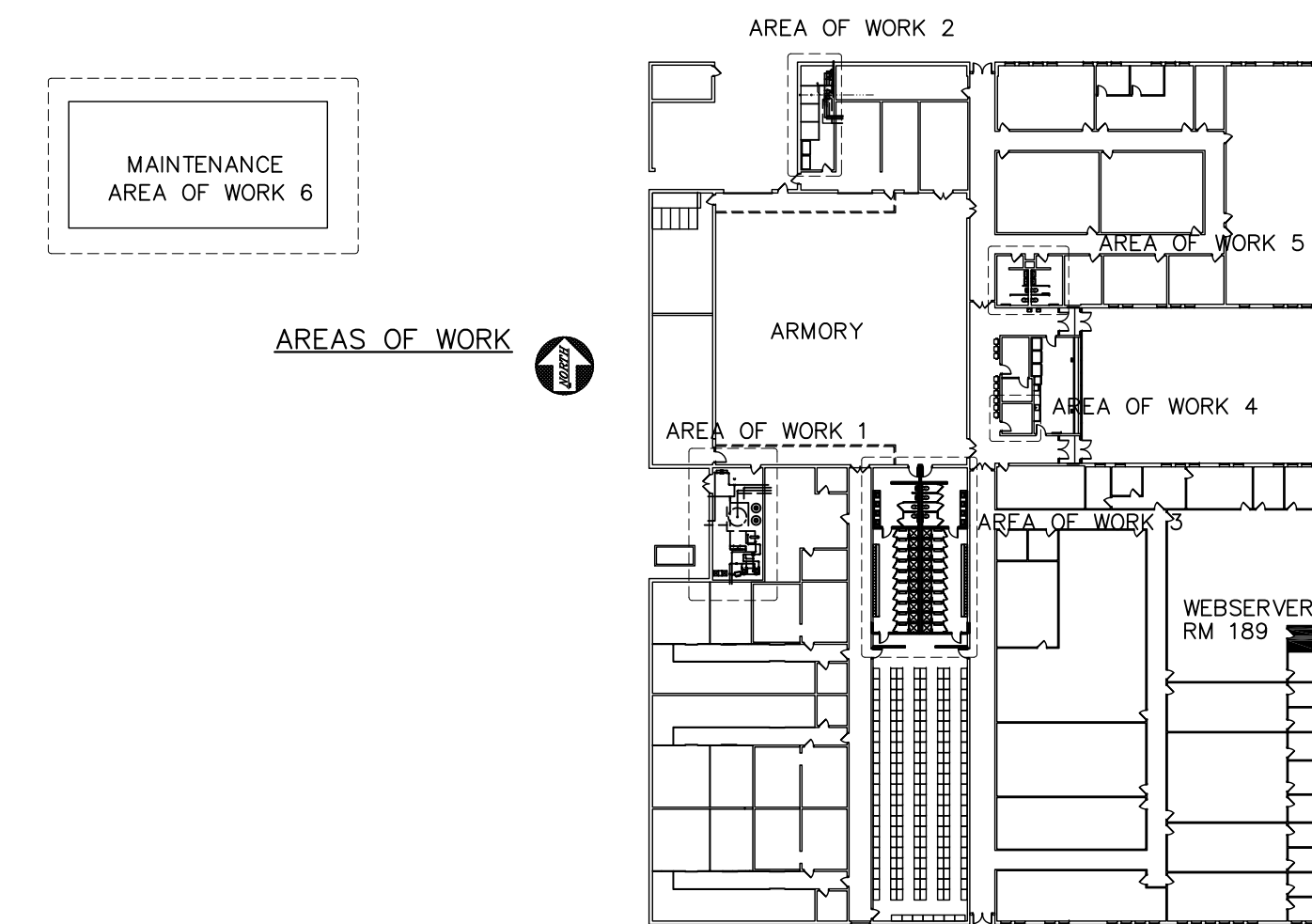
- 1 EXISTING BACKFLOW TO REMAIN
- 2 EXISTING RELIEF AIR HOOD (RAH-2), REMOVE FOR NEW EXHAUST FAN
- 3 EXISTING 3" COLD WATER
- 4 EXISTING ROOF HATCH TO REMAIN
- 5 EXISTING PHONE/COMM BOARD TO REMAIN
- 6 DOMESTIC COLD/HOT/RETURN PIPING TO LATRINES, RECONNECT NEW SYSTEM
- 7 REMOVE EXISTING PIPING BETWEEN STORAGE TANK AND WATER HEATERS
- 8 EXISTING 500 GALLON STORAGE TANK WITH BUNDLE, RECONNECT TO NEW BOILER
- 9 REMOVE FLUE THROUGH ROOF, PATCH ROOF, SEE DETAIL
- 10 REMOVE EXISTING 500,000 BTU DOMESTIC WATER HEATER, WH-1
- 11 REMOVE FLUE THROUGH ROOF, PATCH ROOF, SEE DETAIL
- 12 REMOVE EXISTING 500,000 BTU DOMESTIC WATER HEATER, WH-2
- 13 REPLACE RETURN PUMP, P4, SEE SCHEDULE
- 14 REPLACE CIRCULATION PUMP, P3, SEE SCHEDULE
- 15 EXISTING CONCRETE PAD TO REMAIN
- 16 REMOVE EXISTING BOILER, B1
- 17 REMOVE EXISTING 1" NATURAL GAS TRAIN TO 2", NEW GAS LINE 1.25"
- 18 CAP EXISTING BOILER MAKEUP, REMOVE PRESSURE REDUCER
- 19 CONNECTION FOR NEW HEATING PIPING
- 20 REMOVE EXISTING FLUE THROUGH ROOF. INSTALL NEW VENTING AND PATCH ROOF. RECERTIFY EXISTING WARRANTY
- 21 REMOVE EXISTING SYSTEM PUMP
- 22 AIR INTAKE TO REMAIN
- 23 DUCTING FOR COMBUSTION AIR TO REMAIN
- 24 EXISTING UNIT HEATER TO REMAIN
- 25 REMOVE EXISTING ZONE PUMP
- 26 EXISTING CHEMICAL FEED TO BE RECONNECTED
- 27 REMOVE EXISTING RETURN PIPING, TO EXISTING BOILER
- 28 TO EXISTING HEATING ZONES, NO WORK THESE AREAS
- 29 TO EXISTING HEATING ZONES, NO WORK THESE AREAS

AREA OF WORK #1

- 1 EXISTING 3" COLD WATER LINE
- 2 TEE TO EXISTING COLD WATER LINE FOR NEW STORAGE TANKS
- 3 CONNECT TO EXISTING 2" GAS PIPING FOR NEW BOILERS
- 4 INSTALL NEW 3'-4" X 5'-4" X 4" CONCRETE HOUSEKEEPING PAD
- 5 INSTALL NEW 6'-6" X 6'-0" X 4" CONCRETE HOUSEKEEPING PAD
- 6 INSTALL NEW BOILER B-1, B-2
- 7 INSTALL NEW WATER STORAGE TANK T-1
- 8 INSTALL NEW AIR/DIRT/EXPANSION TANK
- 9 INSTALL NEW BOILER/DOMESTIC TANK PUMP P5
- 10 INSTALL NEW DOMESTIC LOOP PUMP, P6
- 11 CONNECT NEW PIPING TO EXISTING 2" HOT WATER PIPING
- 12 CONNECT NEW PIPING TO EXISTING 3/4" HOT WATER RETURN PIPING
- 13 INSTALL NEW HOT WATER CIRCULATION PUMP P3
- 14 INSTALL NEW HOT WATER CIRCULATION PUMP P4
- 15 CONNECT NEW BOILER PIPING TO EXISTING HOT WATER SUPPLY LOOP
- 16 CONNECT NEW BOILER PIPING TO EXISTING HOT WATER RETURN LOOP
- 17 REPLACE EXISTING DAMPER ACTUATOR WITH NEW ACTUATOR
- 18 NEW 4" VENT THROUGH ROOF
- 19 1" PVC CONDENSATE TO FLOOR DRAIN
- 20 REMOVE EXISTING DAMPER AND RELIEF HOOD, INSTALL NEW EXHAUST FAN EF-1
- 21 REMOVE EXISTING RELIEF HOOD, INSTALL NEW EXHAUST FAN EF-21
- 22 WALL SENSOR FOR EXHAUST FAN OPERATION

LEGEND

- ITEMS TO BE DEMOLISHED
- EXISTING TO REMAIN
- NEW BOILER PIPING-RETURN
- NEW BOILER PIPING-SUPPLY
- NATURAL GAS
- DOMESTIC COLD WATER PIPING-NEW
- DOMESTIC HOT WATER PIPING-NEW
- NEW EQUIPMENT
- EQUIPMENT CLEARANCE
- DOMESTIC-COLD WATER-EXISTING
- DOMESTIC-HOT WATER-EXISTING
- BOILER DRAIN
- NEW EQUIPMENT PAD
- CAGING

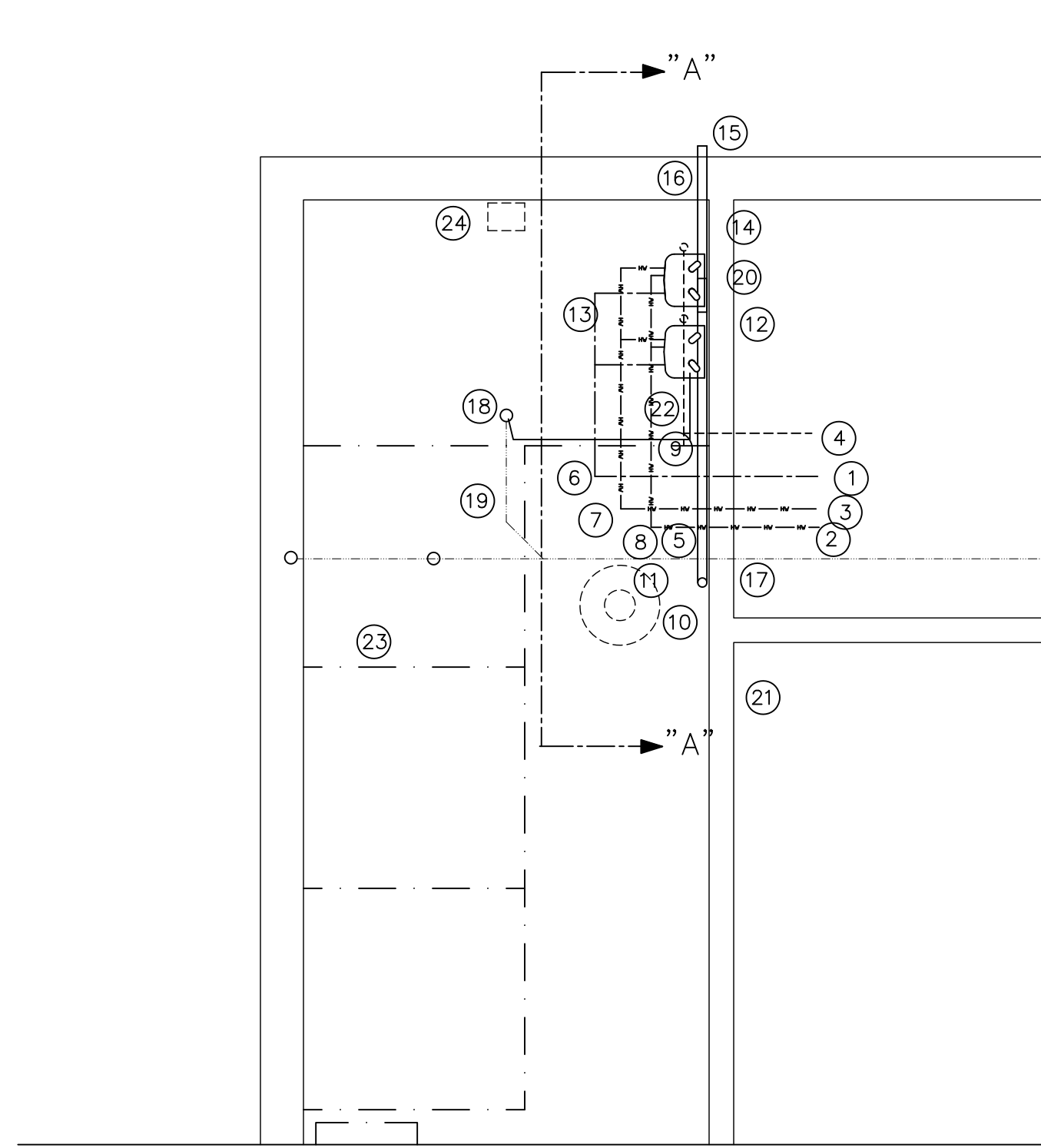


BOILER ROOM SECTION "A"- "A"  
SCALE 1/4" = 1'-0"

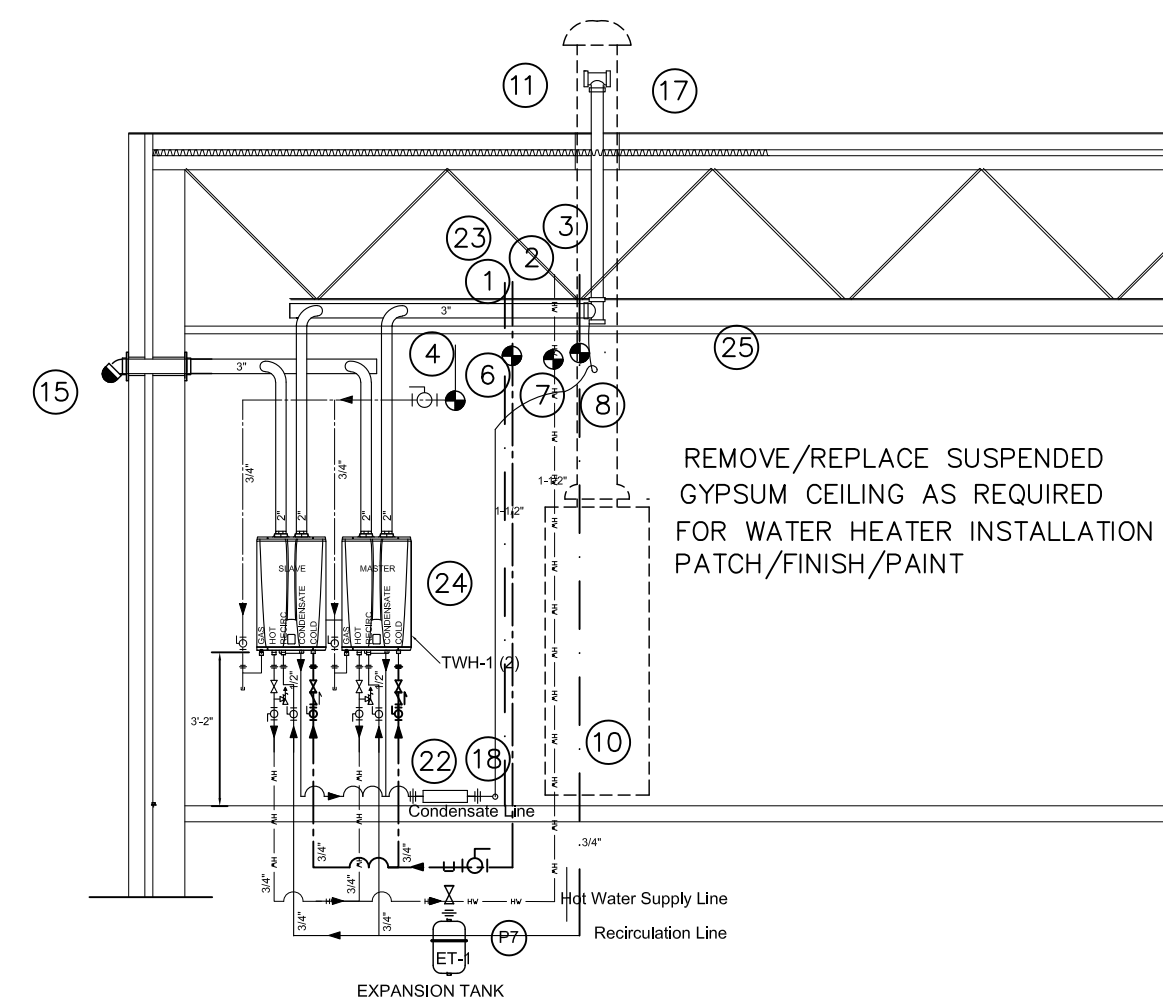
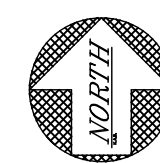
BOILER ROOM SECTION "A"- "A" NOTES

- 1 REMOVE EXISTING RELIEF AIR HOOD AND INSTALL NEW EXHAUST FAN, EF-20. MODIFY EXISTING CURB AS REQUIRED FOR NEW FAN..
- 2 REMOVE EXISTING ACTUATOR AND INSTALL NEW DAMPER ACTUATOR, DAMPER TO OPEN IF ROOM TEMP EXCEEDS 80 DEGREES (ADJUSTABLE)
- 3 NEW BOILER B1 AND B2
- 4 EXISTING AIR INTAKE TO REMAIN
- 5 EXISTING AIR INTAKE DUCT TO REMAIN
- 6 REPLACE EXISTING ACTUATOR WITH NEW ACTUATOR, INTERLOCK WITH EF-20 TO OPEN BY TEMPERATURE
- 7 NEW COMBUSTION AIR INTAKE, INSTALL TO 24" ABOVE ROOF
- 8 NEW BOILER VENTING
- 9 BOILER VENT THROUGH ROOF
- 10 CONDENSATE DRAIN
- 11 NEW ROOF FLASHING, EXISTING CARLISLE WARRANTY AB#1097653, ROOF WORK TO BE RECERTIFIED BY CARLISLE
- 12 NEW ROOF FLASHING, EXISTING CARLISLE WARRANTY AB#1097653, ROOF WORK TO BE RECERTIFIED BY CARLISLE





KITCHEN WATER HEATER REPLACEMENT  
AREA OF WORK #2  
SCALE 1/4" = 1'-0"



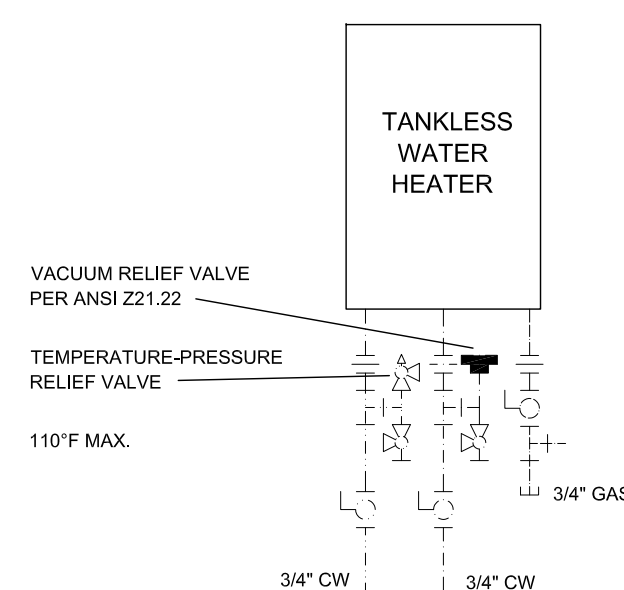
SECTION "A"-"A"  
KITCHEN WATER HEATER REPLACEMENT  
SCALE 1/4" = 1'-0"

KITCHEN DOMESTIC DEMO/INSTALL  
AREA OF WORK #2

- ① EXISTING 1 1/2" COLD WATER
- ② EXISTING 1 1/2" HOT WATER
- ③ EXISTING 3/4" HOT WATER RETURN
- ④ EXISTING 1 1/2" NATURAL GAS
- ⑤ REMOVE EXISTING NAT GAS LINE TO EXISTING HEATER, CAP AT MAIN
- ⑥ CONNECT NEW 1 1/2" DOMESTIC COLD WATER
- ⑦ CONNECT NEW 1 1/2" DOMESTIC HOT WATER
- ⑧ CONNECT TO EXISTING 3/4" DOMESTIC HOT WATER RETURN, PIPE TO MFG RECOMMENDATIONS
- ⑨ NEW 1 1/2" GAS LINE TO TOO EXISTING 1 1/2"
- ⑩ REMOVE/DISPOSE OF EXISTING DOMESTIC WATER HEATER
- ⑪ REMOVE 7" FLUE THROUGH ROOF, REUSE ROOF PENETRATION FOR NEW VENTING, PATCH/RECERTIFY ROOF WARRANTY
- ⑫ (2) INSTANTANIOUS WATER HEATERS, MOUNTED TO WALL
- ⑬ CONNECT TO WATER AND GAS FROM REMOVED TANK SEE ELEVATION DETAIL
- ⑭ NEW 3" PVC COMBUSTION AIR THROUGH SIDEWALL
- ⑮ NEW COMBUSTION AIR INTAKE SEE ELEVATION DETAIL  
45' PVC ELBOW, DIVERTER PLATE, AND INTAKE SCREEN. CAULK
- ⑯ CORE DRILL EXISTING MASONRY/BRICK WALL FOR COMBUSTION AIR INTAKE
- ⑰ THROUGH ROOF EXHAUST, USE EXISTING HOLE FROM DEMOLISHED WATER HEATER
- ⑱ 3/4" CONDENSATE TO DRAIN, FASTEN TO FLOOR
- ⑲ EXISTING SEWER
- ⑳ CASCADE CABLE
- ㉑ HOT BUTTON, FOR WATER HEATER SCHEDULING
- ㉒ CONDENSATE NEUTRALIZER
- ㉓ NEW CAGING, SEE CAGING DETAIL
- ㉔ REMOVE EXISTING COMBUSTION AIR INTAKE, INSTALL SHEET METAL CLOSURE AT CEILING
- ㉕ EXISTING METAL GRID AND DRYWALL CEILING AT 9'-10"

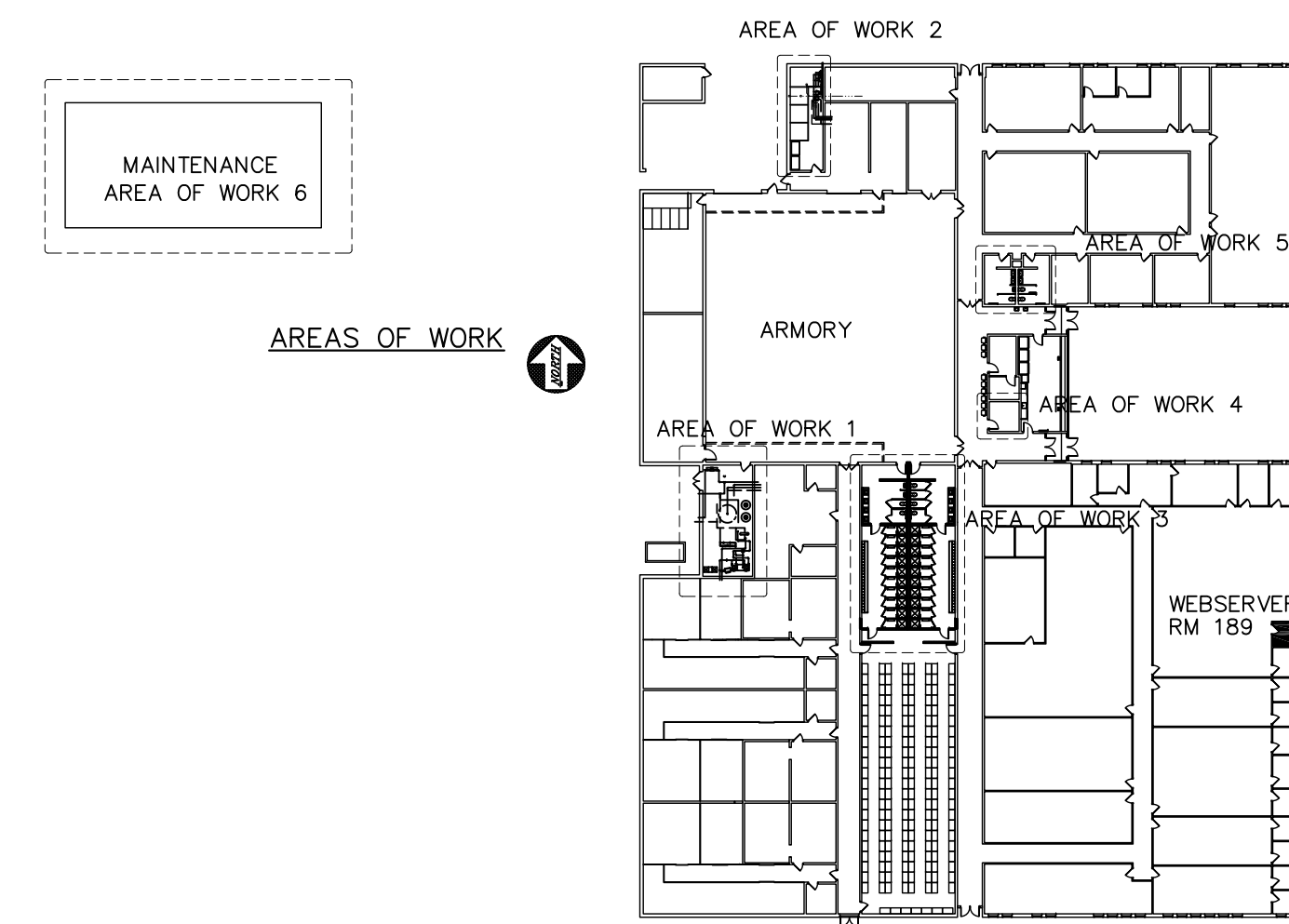
LEGEND

- ITEMS TO BE DEMOLISHED
- EXISTING TO REMAIN
- NEW BOILER PIPING-RETURN
- NEW BOILER PIPING-SUPPLY
- NATURAL GAS
- DOMESTIC COLD WATER PIPING-NEW
- DOMESTIC HOT WATER PIPING-NEW
- NEW EQUIPMENT
- EQUIPMENT CLEARANCE
- DOMESTIC-COLD WATER-EXISTING
- DOMESTIC-HOT WATER-EXISTING
- CAGING



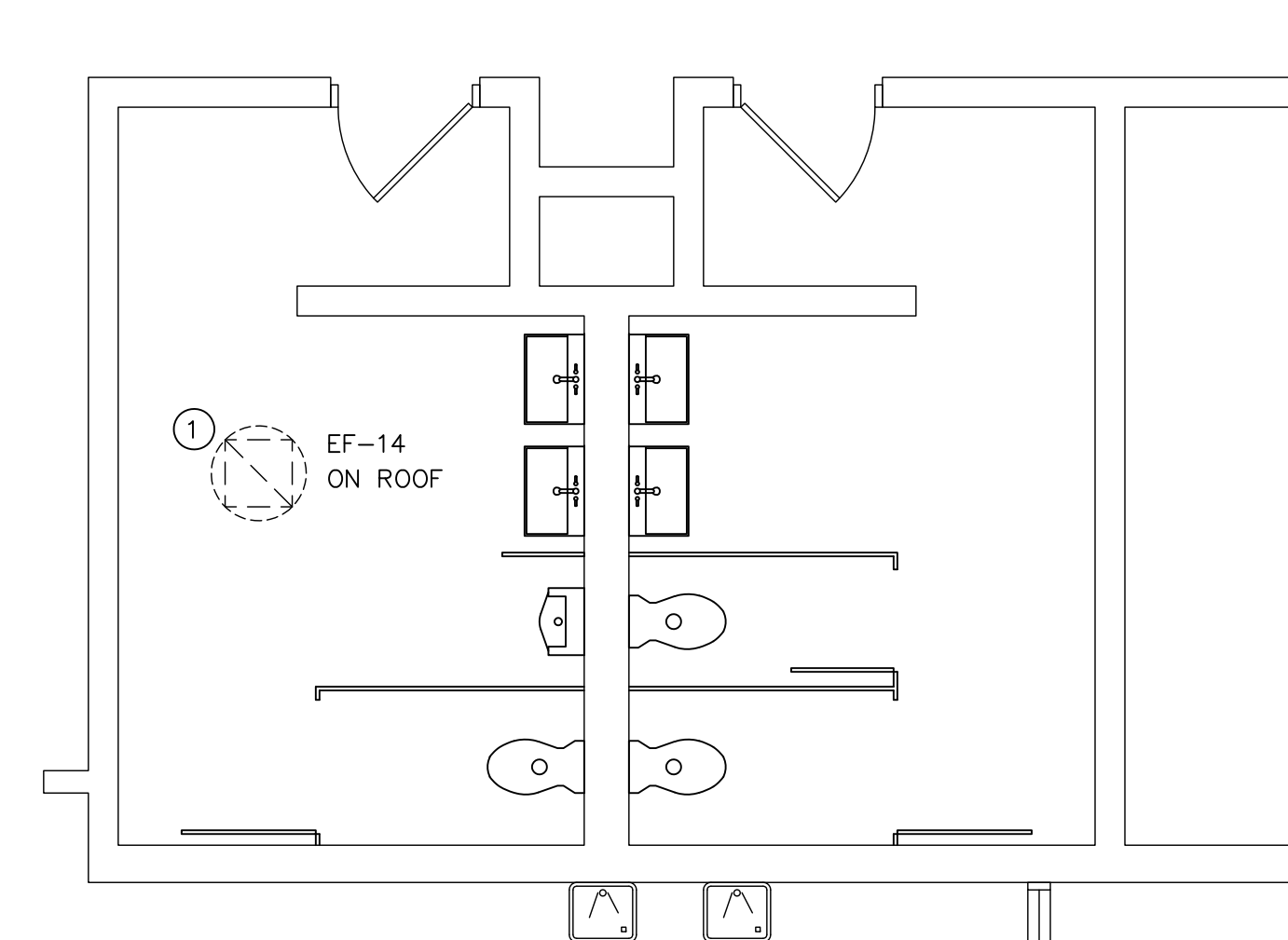
\*PIPING SHOWN FOLLOWS THE BASIS OF DESIGN - MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS  
INSTALL WH-D MANUFACTURER'S VENT KIT COMPLETE;  
VENT THROUGH ROOF AS DETAILED

WATER HEATER PIPING

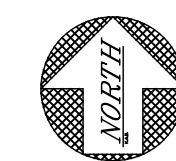


AREA OF WORK #5-MECHANICAL-NOTES

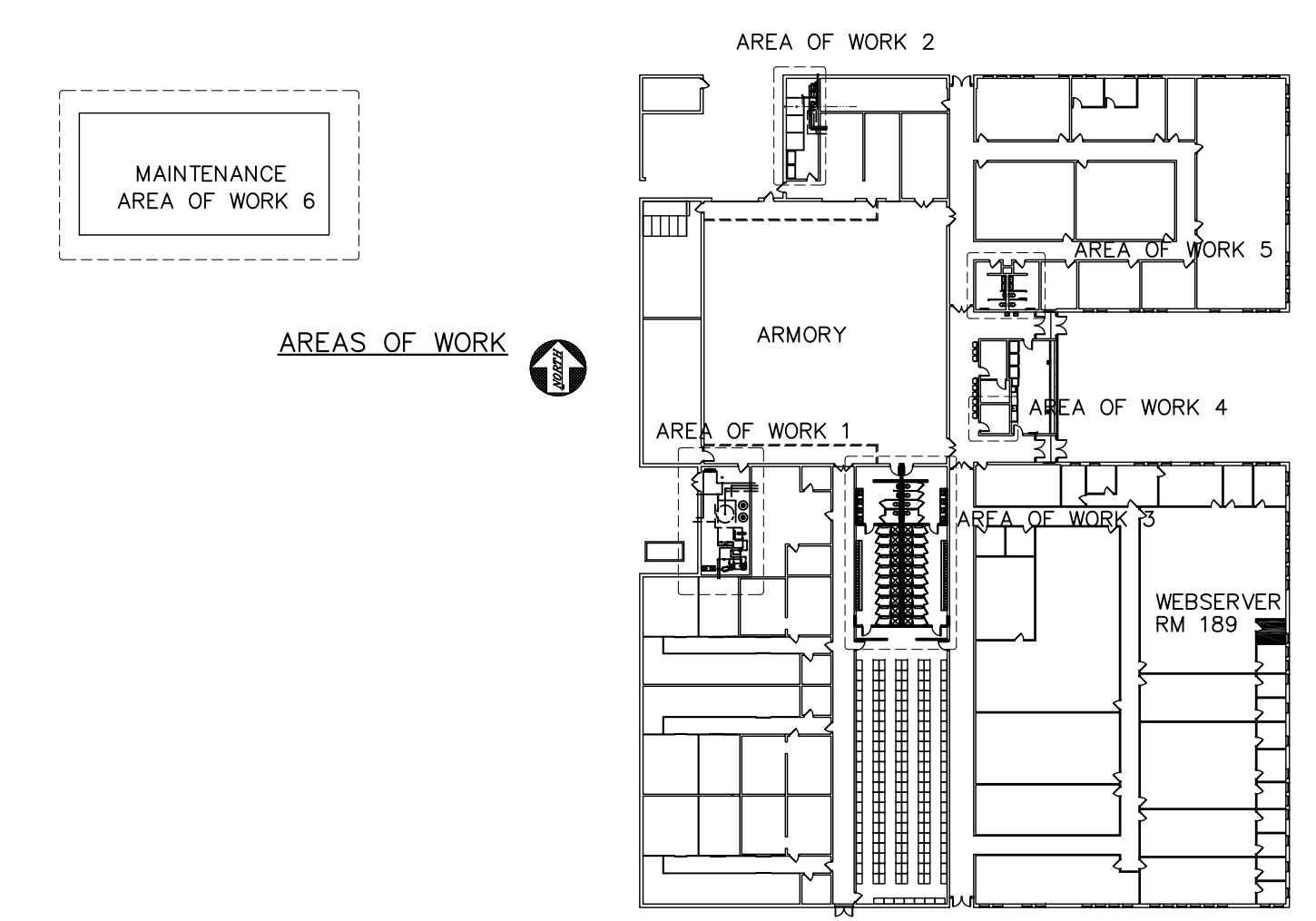
- ① REMOVE EXISTING EF-14, MODIFY CURB, AND INSTALL NEW EF-14  
REUSE MOTOR STARTER LOCATED IN MAINTENANCE ROOM, SEE THIS SHEET



NORTH LATRINE RENOVATION-MECHANICAL  
AREA OF WORK #5  
SCALE 1/4" = 1'-0"

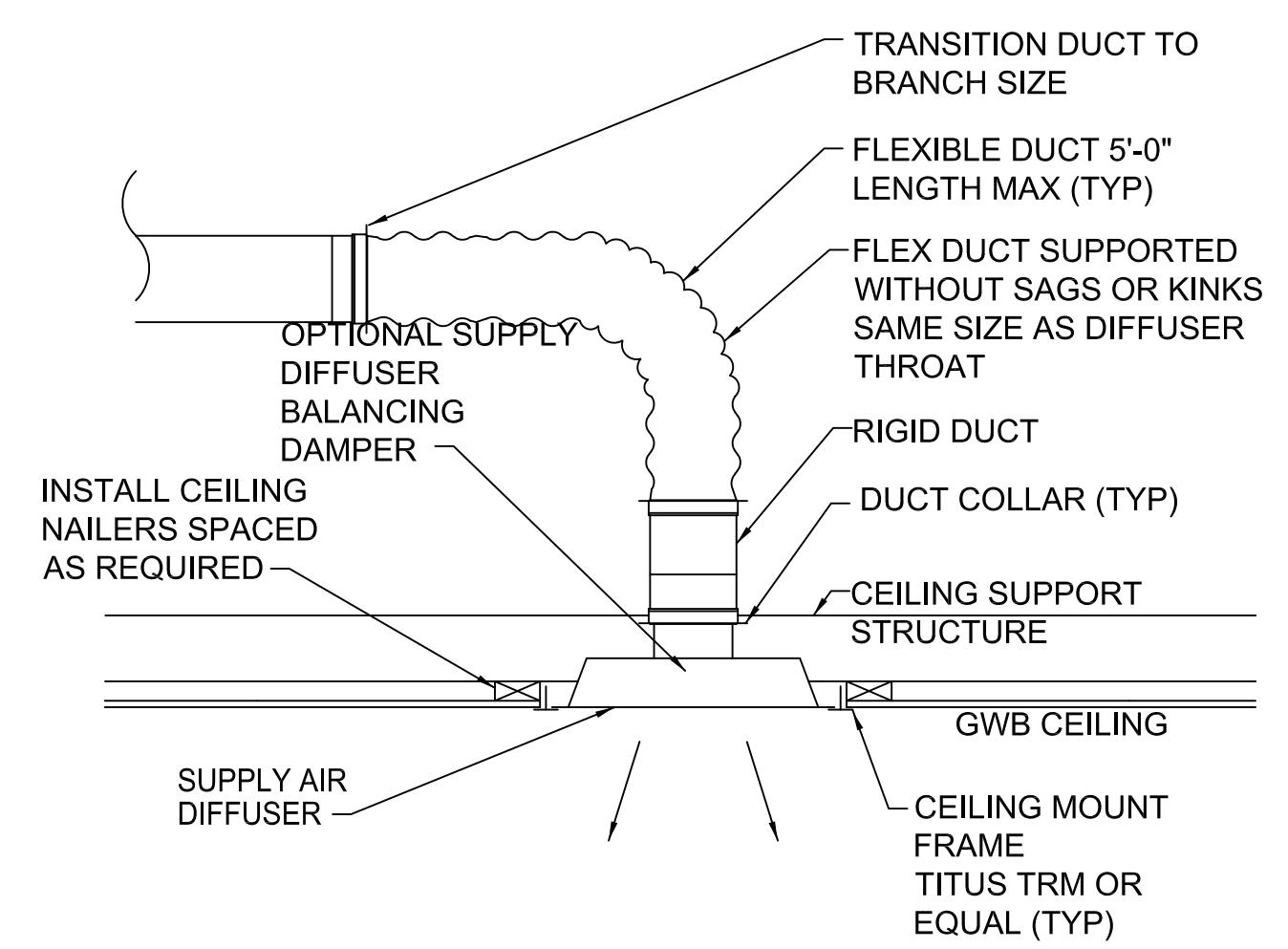


DESIGNED	BAB
DRAWN	BAB
CHECKED	KKM
APPROVED	KKM
DATE	7 JUNE 2023
ISSUED FOR	PRELIMINARY
ISSUED FOR	CONSTRUCTION
ISSUED FOR	FINAL RECORD
IDENTIFICATION NO.	260672008
PROJECT	
INDEX CODE	
INDEX CODE	



**AREA OF WORK #3-MECHANICAL DEMO**

- ① REMOVE EXISTING EF-15
- ② EXISTING MAU-3 TO BE REUSED FOR NEW EXHAUST SYSTEM
- ③ REMOVE EXISTING SUPPLY AIR DUCTING
- ④ REMOVE EXISTING EXHAUST DUCTING

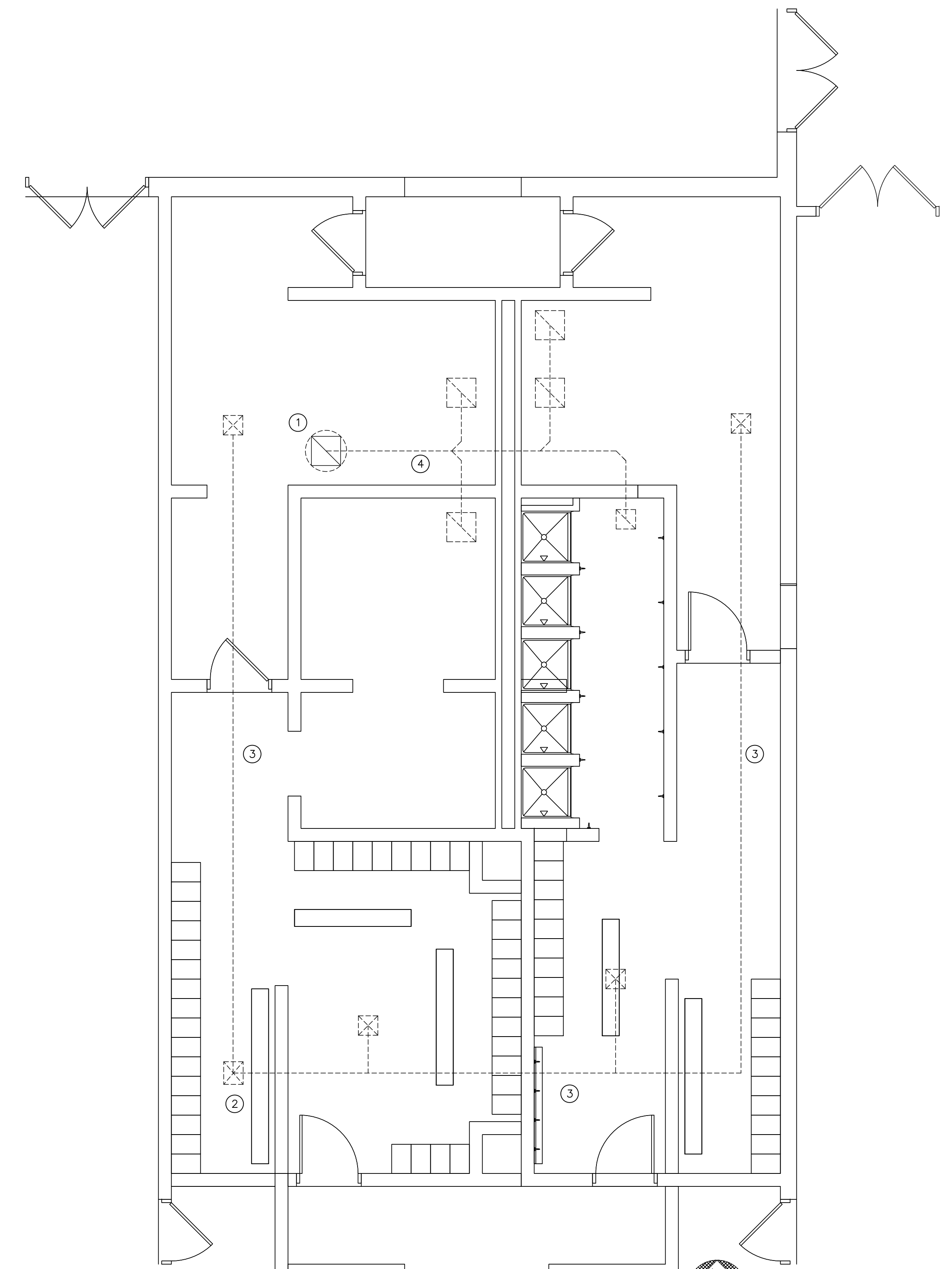


**CEILING DIFFUSER S1**  
NO SCALE

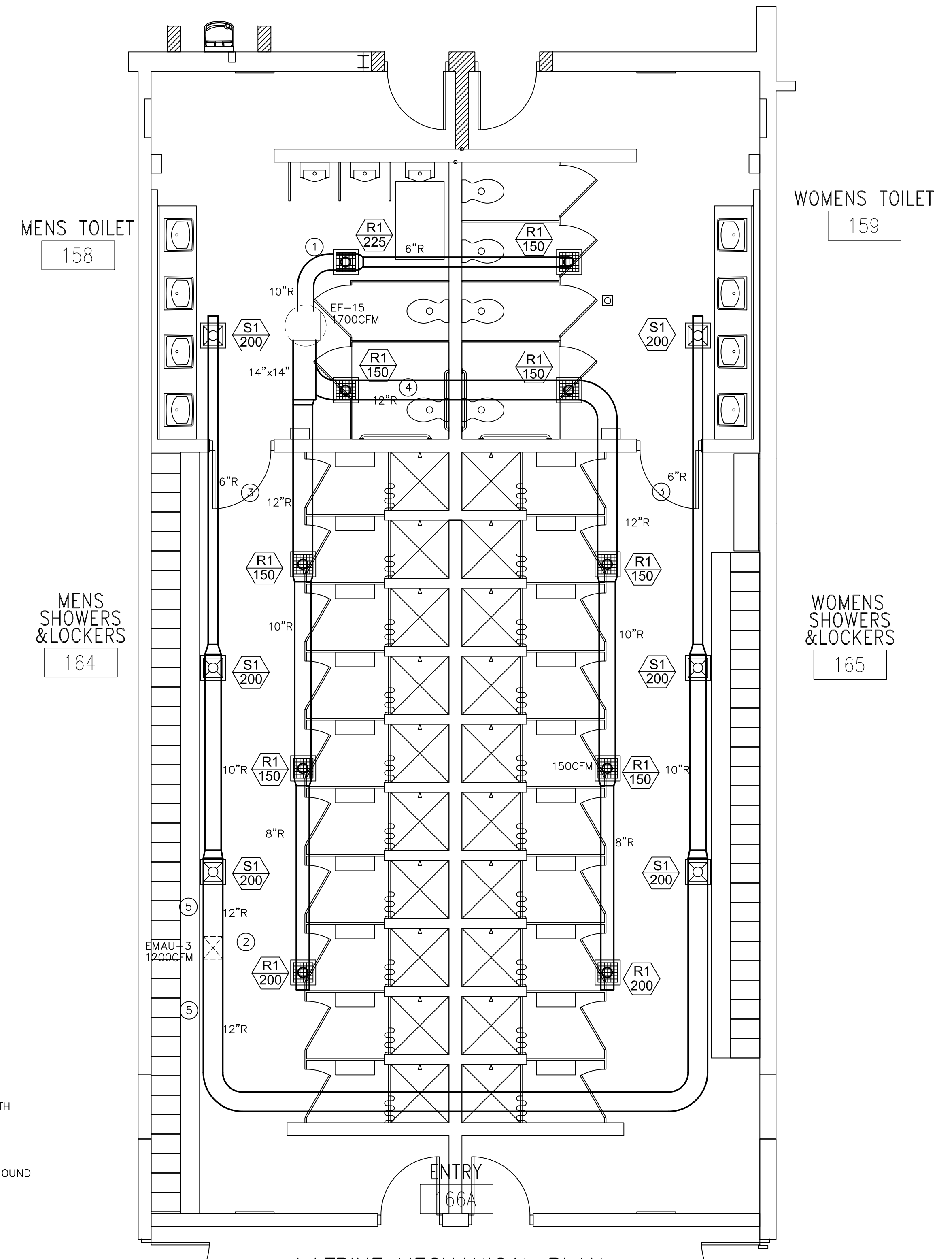
**AREA OF WORK #3-MECHANICAL**

- ① INSTALL NEW EF-15, MODIFY CURB AS REQUIRED
- ② EXISTING MAU-3 TO BE REUSED FOR NEW EXHAUST SYSTEM
- ③ NEW SUPPLY DUCT SIZING
- ④ NEW RETURN DUCT SIZING
- ⑤ INSTALL INSULATION WRAP FIRST 10' IN BOTH DIRECTIONS AT MAU-3

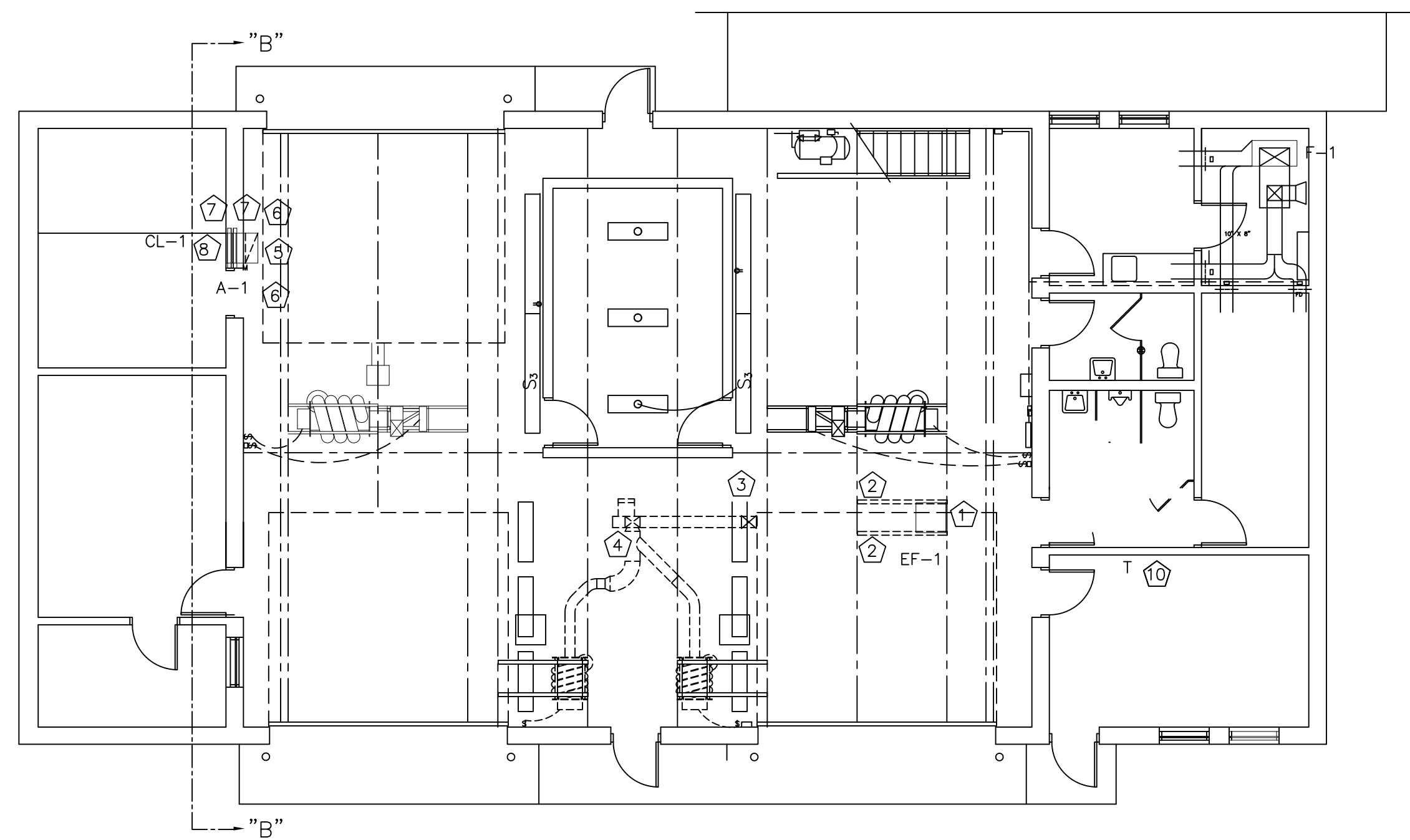
- S1**  
xxx NEW SUPPLY DIFFUSER, 12" X 12", 6" ROUND NECK, WHITE, ALUMINUM, WITH DAMPER AND DRYWALL FRAME. EQUAL TO TITUS TMS-AA  
SUPPLY QUANTITY IN CFM
- R1**  
xxx NEW RETURN GRILLE, 12" X 12" W/ 1/2"X1/2"X1/2" GRILLE, SQUARE TO ROUND ADAPTOR, WHITE, ALUMINUM. EQUAL TO TITUS 50F  
RETURN QUANTITY IN CFM



**LATRINE MECHANICAL DEMO**  
**AREA OF WORK #3**  
SCALE 1/4" = 1'-0"



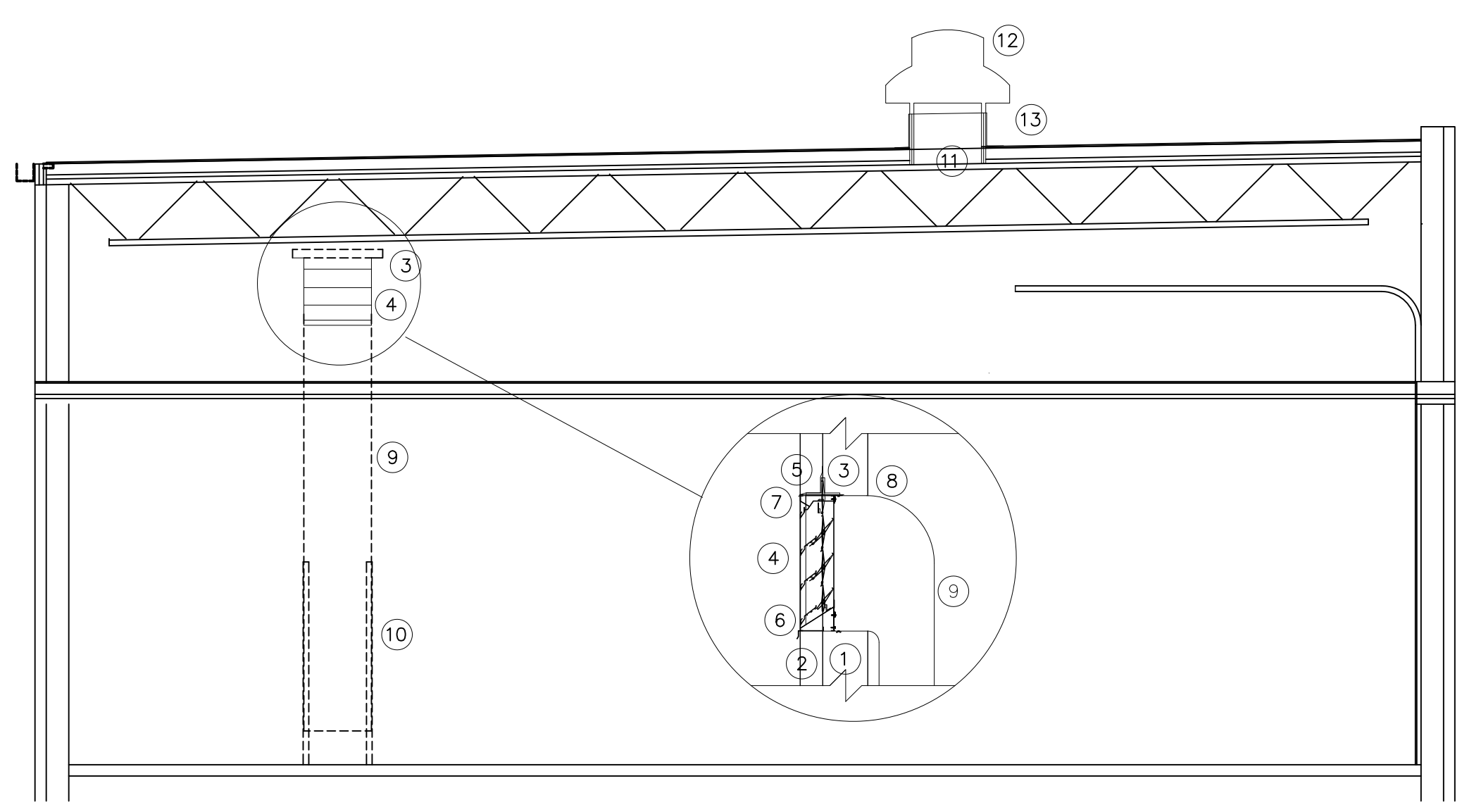
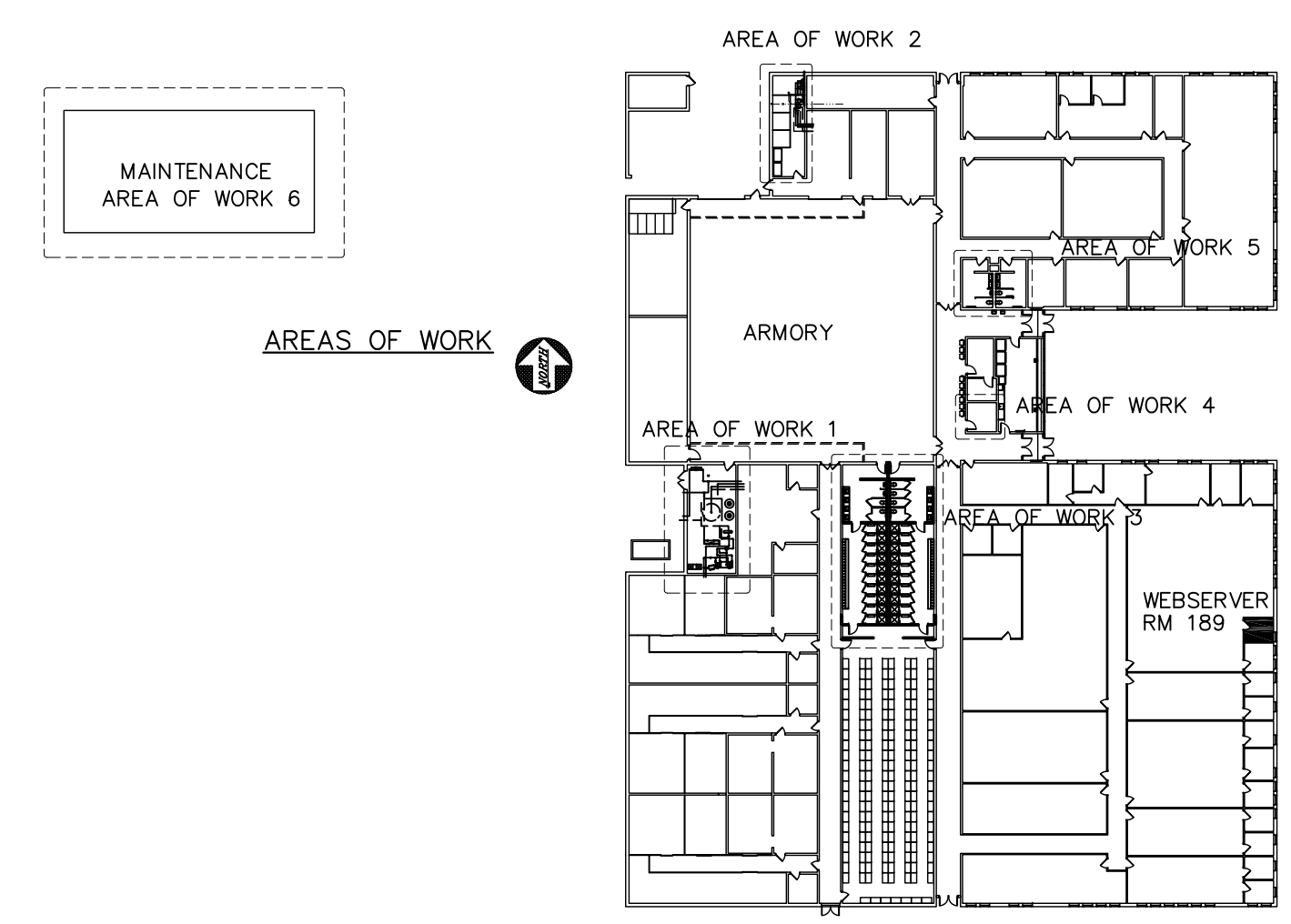
**LATRINE MECHANICAL PLAN**  
**AREA OF WORK #3**  
SCALE 1/4" = 1'-0"



**MAINTENANCE SHOP MECHANICAL PLAN**  
**AREA OF WORK #6**  
 SCALE 1/8" = 1'-0"

**MECHANICAL NOTES—MAINTENANCE SHOP**

- ① INSTALL NEW EXHAUST FAN EF-1  
1600 CFM @ .25"S.P.
- ② INSTALL NEW (2)3"x3"x5/16" STEEL ANGLES
- ③ REMOVE EXISTING EXHAUST DUCTING  
PATCH ROOF WITH CORRUGATED METAL  
ROOFING, OVERLAP ONTO EXISTING METAL  
DUCT 4" IN EACH DIRECTION, SCREW DOWN.  
INSTALL 3.5" OF NEW INSULATION AND 1/2"  
RECOVERY BOARD  
PATCH ROOF WITH CERTIFIED TPO INSTALLER
- ④ REMOVE EXISTING VEHICLE EXHAUST SYSTEM COMPLETE  
INSTALL 1.5" ROOF PATCH, 4" INSULATION AND TPO PATCH
- ⑤ INSTALL 24" X 10" DUCT TO 12" ABOVE FLOOR
- ⑥ INSTALL (2)2"x2"x3/16"x 6'-0", AT DUCT EDGES  
FROM FLOOR TO 6' LEVEL
- ⑦ INSTALL NEW 3"x3"x5/16"  
STEEL ANGLES, BEAR 4" EACH END
- ⑧ REMOVE 24" X 24" BRICK AND  
BLOCK AS REQUIRED TO INSTALL  
COMBINATION DAMPER  
13'-4" A.F.F., SEE DETAIL
- ⑨ REMOVE EXISTING NATURAL GAS FURNACE AND  
INSTALL NEW FURNACE
- ⑩ INSTALL NEW THERMOSTAT, 60" A.F.F.



**MAINTENANCE SHOP SECTION "B"—"B"**  
**AREA OF WORK #6**  
 SCALE 1/4" = 1'-0"

**MAINTENANCE SHOP SECTION "B"—"B"—NOTES**

- ① EXISTING 8" CONCRETE BLOCK WALL
- ② EXISTING 4" FACE BRICK
- ③ INSTALL (2)3"x3"x2'8"x5/16" GALVANIZED STEEL ANGLE HEADER
- ④ INSTALL NEW 24" X 24" COMBINATION LOUVER, ANCHOR TO ADJACENT BRICK.
- ⑤ NEW WALL FLASHING W/ 2 WEEP HOLES
- ⑥ EXTENDED SILL
- ⑦ CAULK PERIMETER
- ⑧ NEW 24 GA SHEET METAL TRANSITION TO 10" X 24" VERTICAL DUCT
- ⑨ NEW 24 GA SHEET METAL INDUCT DUCT, EXTEND TO 12" A.F.F.
- ⑩ INSTALL (2)2" X 2" X 3/16"x 6'-0" STEEL ANGLES. ANCHOR TO FLOOR AND TO DUCT
- ⑪ NEW 24 GA SHEET METAL TRANSITION TO 10" X 24" VERTICAL DUCT
- ⑫ NEW 24 GA SHEET METAL INDUCT DUCT, EXTEND TO 12" A.F.F.
- ⑬ INSTALL (2)2" X 2" X 3/16"x 6'-0" STEEL ANGLES. ANCHOR TO FLOOR AND TO DUCT

**ENLARGED BOILER ROOM NOTES:**

1. INSTALL NEW CONDENSING BOILERS B-1, B-2 AND HYDRAULIC AIR DIRT SEPARATOR HAS-1, SEE HYDRONIC PIPING DETAIL ON THIS SHEET. INSTALL DIRECT PIPED BOILER COMBUSTION AIR INTAKE AND BREECHING THRU ROOF PER MANUFACTURER'S RECOMMENDATIONS. ROUTE BOILER OUTDOOR RESET SENSOR ON EXTERIOR WALL IN 3/4" CONDUIT FROM SENSOR TO BOILER CONTROLLER. INSTALL NEW GAS SHUTOFF VALVE, UNION, AND 6" MIN DIRT LEG. INSTALL GAS PIPING PER NATIONAL FUEL GAS CODE AND SPECIFICATIONS. PAINT GAS PIPE SAFETY YELLOW. CONTRACTOR IS RESPONSIBLE TO COORDINATE BOILER STARTUP, TEST AND CHECK WITH BOILER MANUFACTURER AND DMVA ENGINEERING. CONTRACTOR IS RESPONSIBLE TO PERFORM A CSD-1 ON NEW BOILERS AND PROVIDE BOILER TRAINING.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR TO INSTALL EMERGENCY BOILER SHUTOFF SWITCH AT EACH DOOR, SEE ELECTRICAL SHEETS.
3. INSTALL NEW PUMPS IN THIS AREA, SEE SCHEDULE ON SHEET M5 COORDINATE W/ ELECTRICAL, DDC CONTRACTOR & BOILER MANUFACTURER TO INSTALL A NEW (EXCEPT AS NOTED) COMBINATION MOTOR STARTER/DISCONNECT AND RELAY FOR EACH CIRCULATION PUMPS PER SPECIFICATION. INSTALL NEW RETURN LOOP TEMPERATURE SENSOR PER MANUFACTURER'S RECOMMENDATIONS AND ROUTE SENSOR WIRE IN 3/4" CONDUIT FOR PUMP P-5
4. INSTALL NEW GLYCOL/WATER MAKE-UP SYSTEM BM-1 IN MECHANICAL ROOM AND CONNECT TO BOILER SYSTEM. SEE SCHEDULE ON THIS SHEET. FILL SYSTEM WITH FILTERED/SOFTENED/TREATED WATER.
5. INSTALL NEW DOMESTIC HOT WATER SIDEARM TANKS. COORDINATE WITH ELECTRICAL AND BOILER MANUFACTURER TO CONTROL SIDEARM PUMP VIA BOILER CONTROLLER. REFER TO PIPING DETAIL THIS SHEET.
6. COORDINATE WITH GENERAL CONTRACTOR TO INSTALL NEW 4" CONCRETE HOUSEKEEPING PADS UNDER NEW BOILERS, DOMESTIC HOT WATER TANKS, EXPANSION TANKS.

**SCHEDULES**

**BOILER SCHEDULE**

MARK	BASIS OF DESIGN	INPUT MBH	OUTPUT MBH	GAS PRESSURE MIN/MAX IN W.C.	VENT SIZE IN.	INTAKE SIZE IN.	WATER CONNECTION IN.	WATER PRESSURE DROP FT.	GPM MAX	EWT °F	LWT °F	ELECTRICAL				NOTES
												FLA	VOLTS	PH	HZ	
B-1	VIESMANN VITODENS 200-W B2HA 150	530	495	4/14	4-3/8"	6"	2"	12.6	38	110°F	140°F	12	120	1	60	WALL MOUNTED ①②③
B-2	VIESMANN VITODENS 200-W B2HA 150	530	495	4/14	4-3/8"	6"	2"	12.6	38	110°F	140°F	12	120	1	60	WALL MOUNTED ①②③

① INCLUDE LON COMMUNICATION MODULE & LON GATEWAY  
 ② PROVIDE DIRECT VENT CONCENTRIC VERTICAL ROOF TERMINATION KIT  
 ③ PROVIDE WITH CONDENSATE ACID NEUTRALIZATION KIT

**PUMP SCHEDULE**

MARK	BASIS OF DESIGN	SERVICE	GPM	HEAD FT	HP	ELECTRICAL			NOTES
						VOLTS	PH	HZ	
P-1	GRUNDFOS UPS 26-150F	BOILER B-1 PUMP	33	12.6	1/6	115	1	60	3 SPEEDS, SET ON SPEED 3
P-2	GRUNDFOS UPS 26-150F	BOILER B-2 PUMP	33	12.6	1/6	115	1	60	3 SPEEDS, SET ON SPEED 3
P-3	GRUNDFOS MAGNA3 40-180FN	SYSTEM PUMP	65	33	1	208	1	60	VARIABLE FLOW
P-4	GRUNDFOS MAGNA3 40-180FN	REDUNDANT SYSTEM PUMP	65	33	1	208	1	60	VARIABLE FLOW
P-5	GRUNDFOS MAGNA3 50-150FN	DOMESTIC HEATING LOOP PUMP	84	15	1	208	1	60	VARIABLE FLOW
P-6	GRUNDFOS UP 15-18 BUC7	DOMESTIC RETURN PUMP	5	9	1/25	115	1	60	BRONZE, 3/4" SWEAT
P-7	GRUNDFOS UP 15-18 BUC7	DOMESTIC RETURN PUMP	5	9	1/25	115	1	60	BRONZE, 3/4" SWEAT

**DOMESTIC WATER HEATER TANK & BUNDLE SCHEDULE**

MARK	STORAGE CAPACITY GALLONS	SELECTION BASED ON		RECOVERY G.P.H.	E.W.T. °F	L.W.T. °F	B.W.T. °F	BOILER OUTPUT	REMARKS
		MFR	MODEL						
DWH-1	100	TRIANGLE TUBE	SMART-120	560	60	110	140	350 MBH	
DWH-2	100	TRIANGLE TUBE	SMART-120	560	60	110	140	350 MBH	
DWH-3	100	TRIANGLE TUBE	SMART-120	560	60	110	140	350 MBH	

**MAG / AIR / DIRT SEPARATOR SCHEDULE**

MARK	SERVING	MFR	MODEL	CONNECTION SIZE	FLOW (GPM)	NOTES
HAS-1	HEATING WATER	CALEFFI	NA549120AM	3"	124	MAGNETIC, FLANGE CONNECTION

**BOILER MAKE-UP TANK SCHEDULE**

MARK	DESCRIPTION	BASIS OF DESIGN	SERVICE	NOTES
BM-1	BOILER MAKE-UP TANK	AXIOM - DMF300	HYDRONIC SYSTEM	19 GALLON

**EXPANSION TANK SCHEDULE**

MARK	SERVING	SELECTION BASED ON			TYPE	ACC. VOL (GAL)	FILL PSIG	RELIEF PSIG	MAX OPERATING PSIG	NOTES
		MFR	MODEL	TYPE						
ET-1	BOILER WATER	GRUNDFOS	GNTA-80	ASME	DIAPHRAM	36	15		125	-
ET-2	DOMESTIC WATER	GRUNDFOS	GFXA-50	ASME	BLADDER	13	40	50	125	-

**EXHAUST FAN SCHEDULE**

MARK	LOCATION	CURB SIZE	CFM	STATIC LOSS	FAN RPM	H.P.	VOLTAGE	MATERIAL	TYPE	MODEL	MFG	REMARKS
EF-14	LATRINE	19.5" X 19.5"	500	.375"	1175	.16	120	ALUMINUM	DIRECT DRIVE	135ACEDOR80	LOREN COOK	
EF-15	LATRINE	23.5" X 23.5"	1700	.5"	1371	.5	120	ALUMINUM	DIRECT DRIVE	135ACED	LOREN COOK	OPERATES WITH OCC/SENSOR INTERLOCK WITH MAU-3
EF-20	BOILER RM	27" X 27"	800	.375"	862	.125	120	ALUMINUM	DIRECT DRIVE	135ACED	LOREN COOK	WITH BACKDRAFT DAMPER
EF-21	MAINTENANCE	20" X 20"	1600	.375"	1262	.33	120	ALUMINUM	DIRECT DRIVE	135ACED	LOREN COOK	OPERATION WITH GAS DETECTION INTERLOCK WITH CL-1, BACKDRAFT DAMPER

EF-14 AND EF-15 ARE EXISTING/REPLACEMENT FANS. VERIFY SIZE OF EXISTING CURB AND MODIFY AS REQUIRED  
 EF-20 INSTALL ON AN EXISTING RELIEF HOOD. VERIFY EXISTING CURB AND MODIFY AS REQUIRED  
 EF-21 IS A NEW LOCATION. INSTALL CURB BEFORE RECOATING ROOF

**MAG / AIR / DIRT SEPARATOR SCHEDULE**

MARK	SERVING	CONNECTION SIZE	FLOW (GPM)	MODEL	MFR	NOTES
HAS-1	HEATING WATER	3"	124	NA549120AM	CALEFFI	MAGNETIC, FLANGE CONNECTION

**ACTUATOR SCHEDULE**

MARK	ITEM	OPERATION	MODEL	MFR
A-1	ACTUATOR	0-10 VDC	LF-120	BELIMO

**FURNACE SCHEDULE**

MARK	SERVING	TYPE	BTU	MODEL	MFG
F-1	MAINTENANCE	NATURAL GAS UPFLOW	100,000	R962V	RHEEM CLASSIC

INCLUDE -COMBINATION EXHAUST/VENT THROUGH ROOF  
 CONDENSATE NEUTRALIZING KIT  
 7 DAY PROGRAMMABLE THERMOSTAT  
 4" FILTER BOX

**DOMESTIC WATER HEATER**

MARK	DESCRIPTION	SIZE	IN W.C.	MODEL	MFR
TWH-1	TANKLESS WATER HEATER	18-120 MBH	4"	NPE-1502	NAVIEN

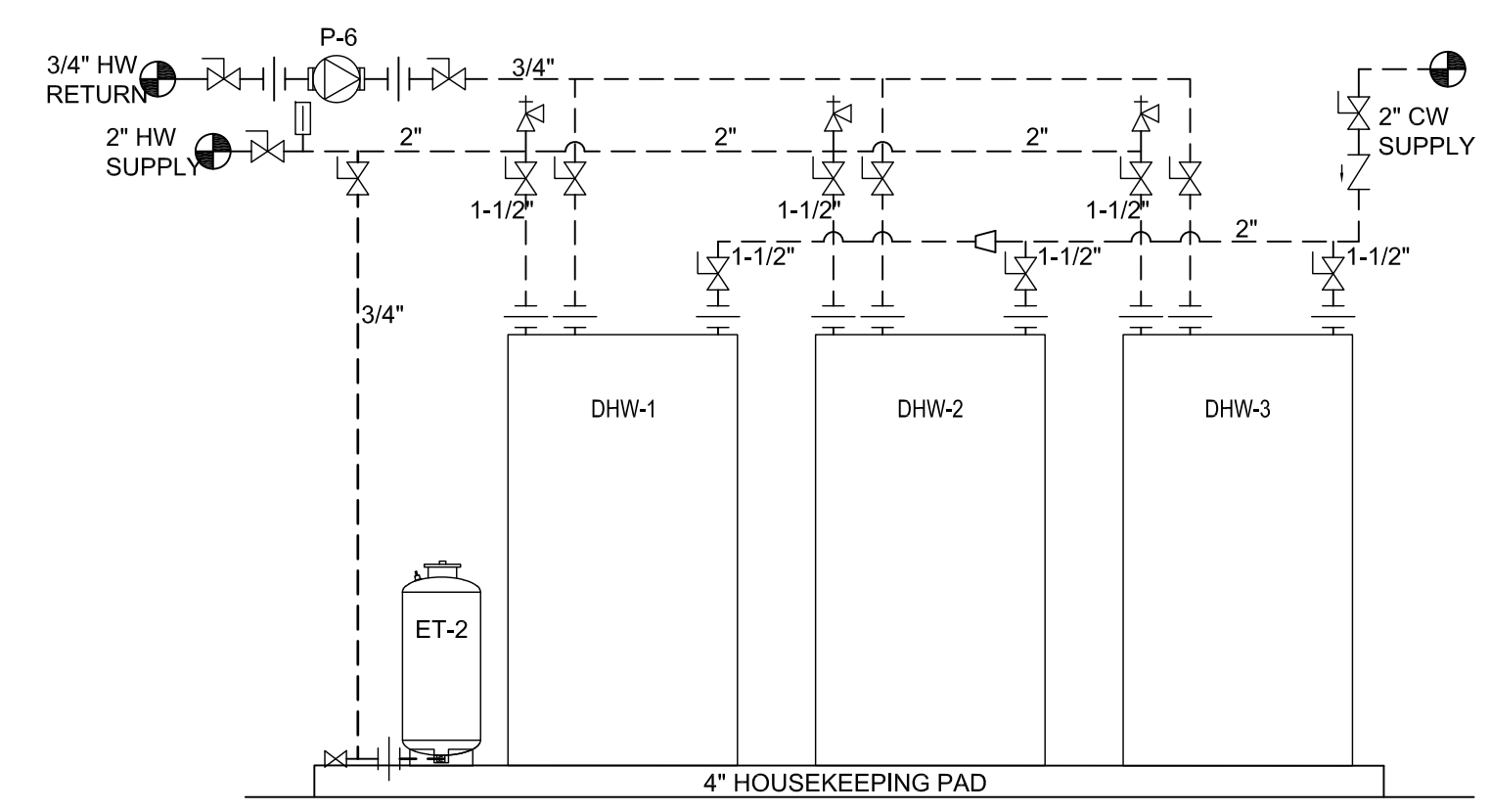
**LOUVER SCHEDULE**

MARK	ITEM	SIZE	MODEL	MFR
CL-1	COMBINATION	24" X 24"	ELC6375DAX	RUSKIN

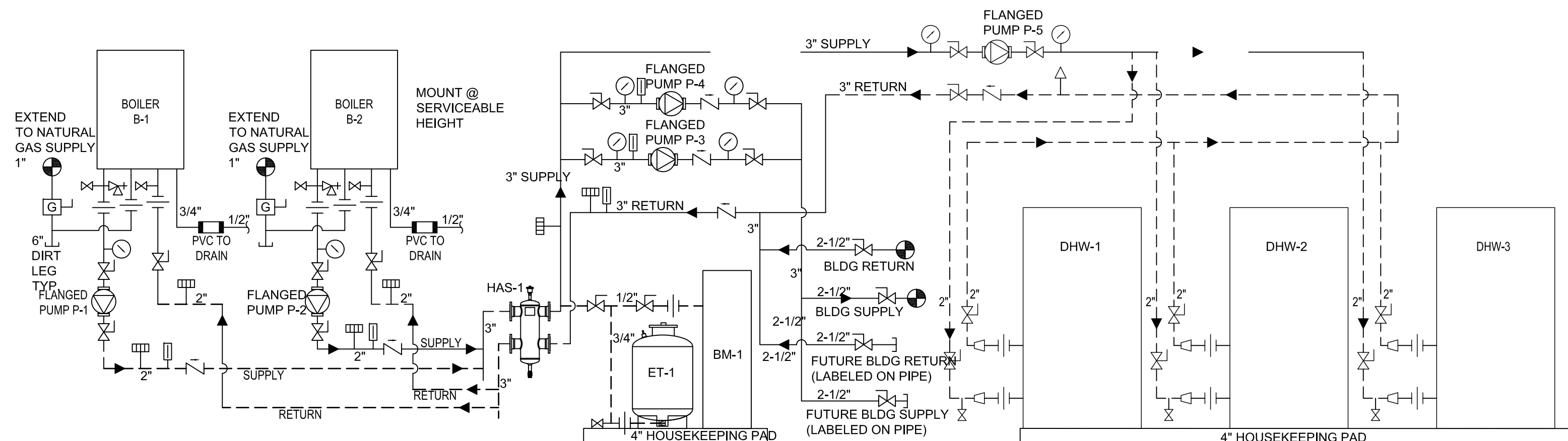
INCLUDE -ACTUATOR A-1, BELIMO LF-120

CONDENSATE NEUTRALIZER GXXX001324  
 VENT COLLAR KIT 30014367B  
 HOT BUTTON GXX001426  
 CASCADE CABLE

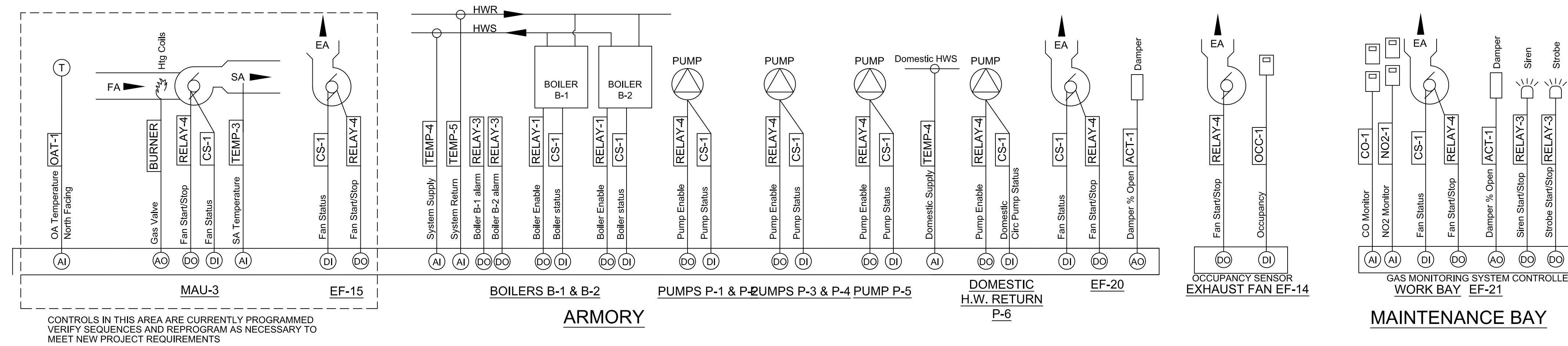
- LEGEND**
- NEUTRALIZING KIT
  - ⊗ SHUTOFF VALVE
  - ≡ UNION
  - ▽ REDUCER AS REQUIRED
  - ⊖ PUMP
  - ⊙ PRESSURE GAUGE
  - ⚠ PRESSURE RELIEF/SAFETY VALVE
  - ⬆ MANUAL AIR VENT @ HIGH POINT
  - ⊡ TEMPERATURE GAUGE
  - ⊡ TEMP SENSOR BY DDC
  - ⊗ CONTRACTOR
  - ⊡ CALIBRATED BALANCING VALVE
  - ⊥ GAS VALVE
  - ⊡ END CAP
  - ⊗ TEMPERATURE CONTROL VALVE
  - ⊡ 3-WAY CONTROL VALVE
  - ⊗ ACTUATOR BY DDC CONTRACTOR
  - ⊡ DRAIN VALVE W/ CAP
  - ⊡ CHECK VALVE
  - ⊗ STRAINER
  - POINT OF NEW CONNECTION



**DOMESTIC PIPING**

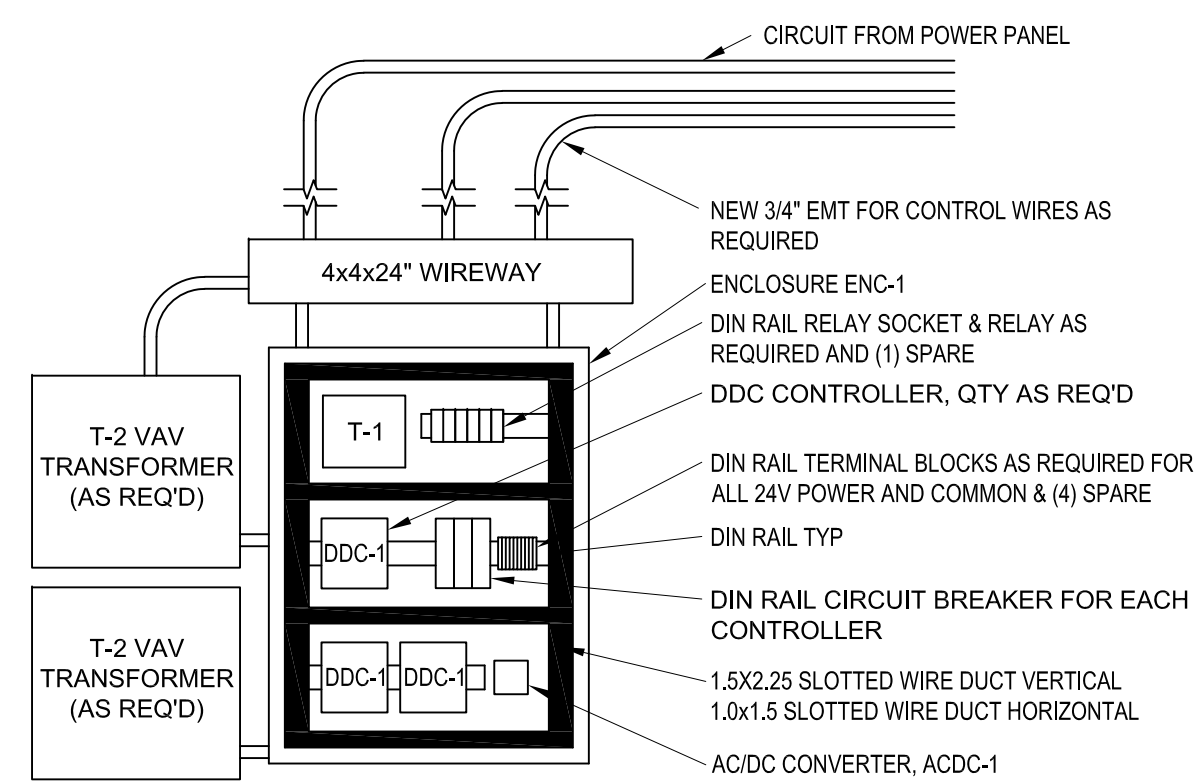


**BOILER PIPING**

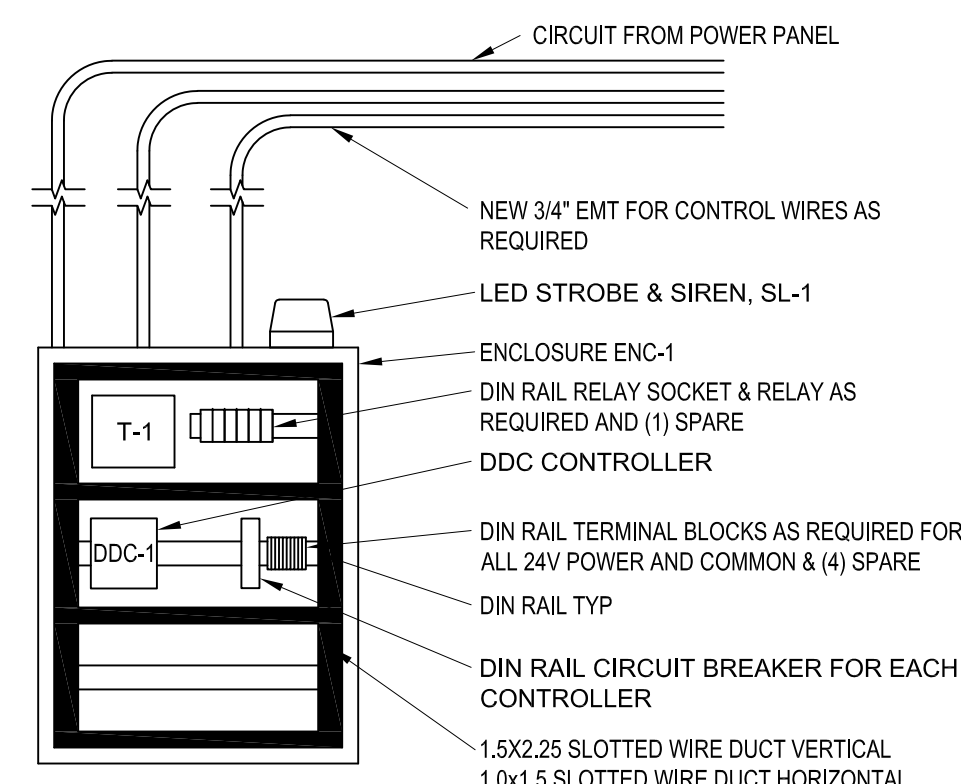


CONTROLS IN THIS AREA ARE CURRENTLY PROGRAMMED. VERIFY SEQUENCES AND REPROGRAM AS NECESSARY TO MEET NEW PROJECT REQUIREMENTS.

### DDC SCHEMATIC



2 DDC EQUIPMENT ENCLOSURE DETAIL  
M6.0 SCALE: 1" = 1'-0"



3 GAS MONITORING ENCLOSURE DETAIL  
M6.0 SCALE: 1" = 1'-0"

GAS MONITORING EQUIPMENT SCHEDULE				
MARK	DESCRIPTION	BASIS OF DESIGN	MOUNTING LOCATION	NOTES
CO-1	CO SENSOR & BASE	VERIS - AG01 CO SENSOR	48" AFF	WALL MOUNT, SEE NOTE
NO2-1	REMOTE NO2 SENSOR	VERIS - AG02 NO2 SENSOR	96" AFF	WALL MOUNT, SEE NOTE
SL-1	LED STROBE LIGHT W/ SIREN	SECO-LARM - SL-1301-SAQ (RED)	ENCLOSURE	MOUNT ON TOP OF GAS MONITORING SYSTEM ENCLOSURE

NOTES: 1. INCLUDE (2) ADDITIONAL CO SENSORS AND (2) ADDITIONAL NO2 SENSORS FOR PARTS STOCK  
2. INSTALL 2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR TO EACH BASE SENSOR UNIT FROM GAS CONTROLLER

#### DDC SCHEMATIC NOTES:

- INSTALL ADDITIONAL PROGRAMMABLE CONTROLLERS AS REQUIRED FOR ALL MECHANICAL EQUIPMENT. PROVIDE PRELIMINARY AS-BUILT CONTROL DRAWINGS PRIOR TO CONSTRUCTION.
- REFER TO ENERGY MANAGEMENT PLAN FOR ALL DDC SENSOR AND EQUIPMENT LOCATIONS.
- REFER TO ENERGY MANAGEMENT SHEETS FOR ADDITIONAL BMS SEQUENCE OF OPERATIONS.
- INDIVIDUAL CURRENT STATUS RELAY NOT REQUIRED IF CONTROL RELAY PROVIDES CURRENT STATUS.
- LOCAL OCCUPANCY SWITCHES NOT CONNECTED TO BMS WILL NOT REQUIRE CURRENT STATUS SENSOR FOR EQUIPMENT IT CONTROLS.
- ALL EQUIPMENT RUN OFF OCCUPANCY SWITCHES CONNECTED TO BMS WILL REQUIRE CURRENT STATUS SENSOR FOR EQUIPMENT IT CONTROLS.

DDC EQUIPMENT SCHEDULE							
MARK	LABEL	DESCRIPTION	BASIS OF DESIGN	SERVICE	LOCATION	QTY / WIRE SIZE TO EQUIPMENT	NOTES
ENC-1	ENC-1	DDC ENCLOSURE	KELE - RET2620	DDC EQUIPMENT ENCLOSURE	MECHANICAL ROOM	-	NO SUBSTITUTIONS, STANDARD BROWN
DDC-1	DDC-1	PROGRAMMABLE CONTROLLER	CIRCON UHC-400	DDC	DDC ENCLOSURE	-	OR APPROVED EQUAL
DDC-2	CATNET	CATNET INTERFACE W/ LON CARD	CATNET - CLI-FT	ENC-1	ONE PER BUILDING, ENC-1	-	NO SUBSTITUTIONS
DDC-3	WEBSERVER	CATNET WEBSERVER	CATNET - HMI CH-2	ENC-1	ONE PER BUILDING, ENC-1	-	NO SUBSTITUTIONS
DDC-4	MODBUS	INTERFACE MODBUS	CATNET - CMI-485	ENC-1	DDC ENCLOSURE	-	NO SUBSTITUTIONS
T-1	T-1-ENC#	TRANSFORMER w/ OUTLET	AIR PROD. & CONTROLS - T-PB-202-0	DDC ENCLOSURE EQUIPMENT	DDC ENCLOSURE	-	
T-2	T-1-ENC#	VAV-1 TRANSFORMER	RIB - PSMN300A or PSMN500A	VAV-1 CONTROLLERS	ENCLOSURE	-	100VA FOR EACH VAV-1, W/ NEMA 1 ENCLOSURE
TEMP-1	TEMP-1-AREA	ROOM TEMPERATURE SENSOR	SAP - SAP-10K-3-B4	ROOM TEMP	SEE LAYOUT, WALL MOUNTED 60" AFF	3 CONDUCTOR / 18 GA.	18 INCHES, TEMP. AVERAGING
TEMP-2	TEMP-2-AHU# or RTU#	DUCT TEMPERATURE SENSOR	SAP - SAP-10K-3-D-18"	MIXED AIR TEMP	RETURN DUCT AFTER FRESH AIR	3 CONDUCTOR / 18 GA.	18 INCHES, TEMP. AVERAGING
TEMP-3	TEMP-3-AHU# or RTU#	PIPE TEMPERATURE SENSOR	SAP - SAP-10K-3-S	DISCHARGE AIR TEMP	SUPPLY DUCT	3 CONDUCTOR / 18 GA.	
HD-1	HD-1-AHU# or RTU#	DUCT HUMIDITY SENSOR	VERIS - HD2XVSK w/ (1) SPARE SENSOR HS2xxx	HUMIDITY	RETURN DUCT BEFORE FRESH AIR	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. DC PWR, USE 16 GA. ON RUNS OVER 150FT	
OAT-1	OAT-1	OUTDOOR AIR TEMP SENSOR	SAP - SAP-10K-3-O-EU	OAT	BLDG EXTERIOR	4 CONDUCTOR / 18 GA.	(2) SINGLE POLE DOUBLE THROW 15A
CS-1	CS-1-(DEVICE NAME)	CURRENT SENSOR	ACI - A/MSCS	AHU/PUMPS/EXHAUST FANS	VARIES	3 CONDUCTOR / 18 GA.	
CO2-1	CO2-1-AHU# OR RTU#	DUCT CO2 SENSOR	VERIS - CDE	CO2	RETURN DUCT	3 CONDUCTOR / 18 GA.	
SD-1	SD-1	SMOKE DETECTOR	AIR PRODUCTS & CONTROLS - SL-2000-P	AHU/RTU	RETURN DUCT BEFORE FRESH AIR	2 CONDUCTOR / 18 GA.	
DIN RAIL	-	DIN RAIL	KELI - BAM-1000	MECHANICAL EQUIP	DDC ENCLOSURE / RTU	-	
WIRE DUCT	-	SLOTTED WIRE DUCT	IBOCO - T1E-1522W & T1E-1015W	MECHANICAL EQUIP	DDC ENCLOSURE	-	
RELAY-1	(VARIES ON DEVICE)	RELAY	RIB - RIBU1S	MECHANICAL EQUIP	VARIES	-	
RELAY-2	(VARIES ON DEVICE)	RELAY	RIB -	MECHANICAL EQUIP	VARIES	2 CONDUCTOR / 18 GA.	
RELAY-3	(VARIES ON DEVICE)	DIN RAIL RELAY SPDT	VERIS - VMD1B-F24A w/ RELAY SOCKET VERIS - VMD1B-F24A	DDC ENCLOSURE	DDC ENCLOSURE	2 CONDUCTOR / 18 GA.	SINGLE POLE DOUBLE THROW 2A
RELAY-4	(VARIES ON DEVICE)	RELAY	RIB - RIBX24SBA	24V INPUT, 120V OUTPUT MECH EQUIP	VARIES	-	HAND, OFF, AUTO
VAV-#	VAV-#-RM#	VAV UNIT CONTROLLER	CIRCON - VAV-332-IMV	VAV UNIT	VARIES	LONBUS COMM / 2 CONDUCTOR / 18 GA. PWR, USE 16 GA. ON RUNS OVER 150FT	
DP-1	DP-1-AHU# or RTU#	DUCT PRESSURE SENSOR	ACI - A/LP2-3-10	AHU/RTU VFD	2/3 DOWN MAIN SUPPLY DUCT	2 CONDUCTOR / 18 GA.	
TBLCK	-	TERMINAL BLOCK	KELE - CDU4N	MECHANICAL EQUIP	DDC ENCLOSURE / RTU	2 CONDUCTOR / 18 GA.	
BRKR	-	CIRCUIT BREAKER FOR CONTROLLER	CBI ELECTRIC - QL-2	PROGRAMMABLE CONTROLLER	DDC ENCLOSURE / RTU	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. PWR, USE 16 GA. ON RUNS OVER 150FT	
ACT-1	ACT-1-(DEVICE NAME)	DAMPER ACTUATOR	KMC CONTROLS - MEP-7552	CONTROL DAMPERS	VARIES	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. PWR, USE 16 GA. ON RUNS OVER 150FT	
ACT-2	ACT-2-(DEVICE NAME)	1/2" & 3/4" VALVE ACTUATOR	KMC CONTROLS - MEP-4252V	CONTROL VALVES	VARIES	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. PWR, USE 16 GA. ON RUNS OVER 150FT	
ACT-3	ACT-2-(DEVICE NAME)	1" - 3" VALVE ACTUATOR	KMC CONTROLS - MEP-4552V	CONTROL VALVES	VARIES	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. PWR, USE 16 GA. ON RUNS OVER 150FT	
OCC-1	OCC-1-RM#	OCCUPANY SENSOR	WATTSTOPPER - CX100	ROOM OCCUPANCY	SEE LAYOUT, WALL MOUNTED 6" FROM CEILING	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. DC PWR, USE 16 GA. ON RUNS OVER 150FT	
ACDC-1	ACDC-1	AC TO DC VOLTAGE CONVERTER	IDEC - PS5R-VA24	OCCUPANCY & HUMIDITY SENSORS	DDC ENCLOSURE	2 CONDUCTOR / 18 GA. SHIELD, 2 CONDUCTOR / 18 GA. DC PWR, USE 16 GA. ON RUNS OVER 150FT	

NOTES:  
1. CONTRACTOR TO FURNISH AND INSTALL MATERIALS IN SCHEDULE. WIRE SHOWN TO BE PULLED INTO ENCLOSURES / MECHANICAL EQUIPMENT AND LABELED AT EACH END.  
2. SUBSTITUTIONS SHALL BE REVIEWED AND APPROVED BY DMA ENGINEERING PRIOR TO INSTALLATION.  
3. INSTALL CAT 6 DATA CABLE TO DDC ENCLOSURE W/ CATNET WEBSERVER

**ENERGY MANAGEMENT PLAN NOTES:**

- ① DDC ENCLOSURE (ENC-1), AN EXISTING PANEL EXISTS IN RM 103, (FACILITY MAINTENANCE, BEHIND KITCHEN). EXISTING CATNET SERVER IS IN ROOM 189 (SEE "AREAS OF WORK PLAN") CONTROLS CONTRACTOR TO DETERMINE IF ADDITIONAL ENCLOSURE IS REQUIRED IN ARMORY.
- ② EXISTING SYSTEM CONSISTS OF (16) UHC-300 CONTROLLERS AND (3)UHC-VAV CONTOLLERS. INTERFACE IS A CATNET HMI-CH-1. EXISTING CONTROLLERS ARE LOCATED IN CEILING UNDER ASSOCIATED UNIT
- ③ CONTRACTOR TO DAISY CHAIN IN SERIES ALL DDC PROGRAMMABLE CONTROLLERS. SEE SPECIFICATIONS FOR CORRECT WIRE TYPE.

**GENERAL ENERGY MANAGEMENT NOTES:**

1. PRIOR TO ANY INSTALLATION OF DDC EQUIPMENT OR DDC WIRING, CONTRACTOR SHALL REQUEST A DDC PRECONSTRUCTION MEETING WITH DMVA ENGINEERING TO DISCUSS CONSTRUCTION SCHEDULING, PRECISE DDC EQUIPMENT LOCATIONS, STARTUPS, LABELING PROCEDURES, AND COMMISSIONING.
2. REFER TO DDC EQUIPMENT SCHEDULE, SHEET M5.0
3. ROUTE ALL DDC CONTROL WIRES PER SCHEDULE AND SPECIFICATIONS.
4. REFER TO DDC SCHEMATIC THIS SHEET FOR ADDITIONAL END DEVICES NOT SHOWN ON PLANS.
5. CONTRACTOR TO INSTALL A MINIMUM 3/4" CONDUIT FOR ALL DDC WIRING. CONTRACTOR IS ALLOWED TO INSTALL J-HOOKS 4' O.C. FOR DDC CONTROL WIRING ONLY IN AREAS ABOVE A SUSPENDED CEILING. ALL CONDUIT IN WALLS TO BE STUBBED INTO CEILING SPACE.
6. CONTRACTOR SHALL PULL ALL DDC WIRING AS SHOWN ON DDC FLOOR PLAN AND DDC EQUIPMENT SCHEDULE. ALL WIRES SHALL BE LABELED WITH A LABEL MAKER APPROVED BY DMVA ENGINEERING. NO HAND WRITTEN LABELS WILL BE ALLOWED. ALL LABELS LOCATED IN ENCLOSURE ENC-1 & 2 MUST BE PLACED 6" DOWN ON WIRE ONCE INSIDE THE ENCLOSURE, DO NOT LOCATE LABEL AT THE END OF WIRE.
7. ALL INPUT/OUTPUT CONTROL WIRES TO BE LON RATED, SEE SPECIFICATIONS.
8. DDC SEQUENCE AND PROGRAMMING WILL BE COMPLETED BY AN APPROVED SUBCONTRACTOR. SEE SPECIFICATIONS.
9. CONTRACTOR TO PURCHASE (1) BUILDING MANAGEMENT WORKSTATION AND TURN OVER TO DMVA ENGINEERING. SEE SPECIFICATIONS FOR FURTHER DETAIL.
10. DDC WIRE COLOR TO BE WHITE
11. SCHEDULE AND SCHEMATIC DRAWING,
12. SECURE TO THE BACK OF THE DOOR IN ENC-1 LABEL ALL MECHANICAL EQUIPMENT TO CORRESPOND TO DDC SCHEMATIC.
13. PROVIDE AND INSTALL ALL END DEVICES SHOWN ON PLANS, DDC SCHEMATIC AND DETAILS.
14. COORDINATE WITH ELECTRICAL TO INSTALL NEW RELAYS. ELECTRICAL CONTRACTOR WILL INSTALL J-BOX FOR NEW RELAYS TO MOUNT ON.
15. THE BAS DATABASE HAS BEEN DEVELOPED UTILIZING LONWORKS, LNS SOFTWARE TOOL. SOFTWARE TOOL IS CIRCON SYSTEMS NETWORK INTEGRATOR.
16. LNS PLUG-INS MUST BE AVAILABLE AND FURNISHED WITH THE DATABASE, FOR CONFIGURATION AND PROGRAMMING OF THE MAIN SYSTEMS CONTROLLERS AT COMPLETION OF PROJECT, A COMPLETE LNS DATABASE BACKUP MUST BE FURNISHED TO THE OWNER THAT INCLUDES ALL PROGRAMMING FILES AND DATA BINDINGS. IMBEDDED WITHIN THE LNS DATABASE BACKUP SHALL BE A DATABASE BACKUP FOR THE CATNET WEBSERVER.
18. ALL PASSWORDS, SOFTWARE TOOLS, OR OTHER ITEMS REQUIRED FOR THE OWNER TO INDEPENDENTLY OPERATE, ACCESS, PROGRAM, OR MODIFY THE BAS MUST BE FURNISHED.
19. THE USE OF OTHER DATABASE DEVELOPMENT SOFTWARE IS NOT ALLOWED
20. ALL SOURCE CODE SHALL BE TURNED OVER AT TIME OF COMMISSIONING.

**SPACE TEMPERATURE SET POINTS (ADJUSTABLE)**

OCCUPIED COOLING: 74.0 F  
 OCCUPIED HEATING: 70.0 F  
 UNOCCUPIED COOLING: 80.0 F  
 UNOCCUPIED HEATING: 62.0 F

**SEQUENCE OF OPERATION FOR EQUIPMENT**

**GENERAL**

OCCUPANCY SENSORS (OC-1) WILL HAVE AN ADJUSTABLE SOFTWARE SET POINT (IN MINUTES) TO TELL THE CONTROL SYSTEM THE DESIRED DURATION OF THE OCCUPIED MODE EACH TIME THE SENSOR IS ACTIVATED.  
 MECHANICAL COOLING AND OUTDOOR AIR DAMPERS WILL NOT BE UTILIZED WITHOUT PROOF OF SUPPLY FAN OPERATION THRU THEIR RESPECTIVE CURRENT SENSING SWITCHES.

**MAU-3 INTERLOCK WITH EF-15**

**OCCUPIED HEATING MODE**

OCCUPIED MODE WILL BE INITIATED THRU EITHER THE BUILDINGS OCCUPANCY SCHEDULE, AS SET THRU THE WEB SERVER USER INTERFACE, OR BY THE BUILDINGS OCCUPANCY SENSOR (OC-1). DURING THIS MODE, THE MAU SUPPLY FAN AND EF-15 WILL RUN CONTINUOUSLY . HEATING MODE WILL BE ALLOWED AS SUPPLY AIR SENSOR CALLS FOR HEAT MAU-3 IS CURRENTLY ON A TIME OF DAY SCHEDULE ONLY

**UNOCCUPIED HEATING MODE**

DURING THIS MODE THE UNIT WILL CYCLE, AS REQUIRED TO MAINTAIN SET BACK TEMPERATURE

**EF-14**

EXHAUST FAN STARTS FROM BUILDING OCCUPANCY (OC-2) AND RUNS FOR ADJUSTABLE SET TIME (30 MIN FOR PROGRAMMING)

**EF-21, EXISTING LOUVER, A-1 (BOILER ROOM)**

WHEN TEMPERATURE GOES ABOVE 80° (ADJUSTABLE) EF-21 STARTS, A-1 OPENS DAMPER. WHEN TEMPERATURE FALLS BELOW 75° FAN STOPS, DAMPER CLOSES

**HEATING HOT WATER BOILER**

THE BOILERS AND ASSOCIATED HEATING PUMPS WILL BE ENABLED TO RUN WHEN THE OUTDOOR AIR TEMPERATURE FALLS BELOW THE PROGRAMMABLE BOILER ENABLE SET POINT, (60.0 DEGREES, ADJUSTABLE). A TWO DEGREE THROTTLING RANGE WILL PREVENT SHORT CYCLING OF THE BOILER.

**HEATING SEQUENCE**

UPON A CALL FOR HEATING, THE LEAD HOT WATER CIRCULATING PUMP WILL BE ENERGIZED. ONCE WATER FLOW HAS BEEN CONFIRMED, THRU THE PUMPS ASSOCIATED CURRENT SENSOR, THE BOILERS WILL BE ENABLED.

THE BOILERS WILL BE STAGED TO MAINTAIN SET POINT BASED UPON THEIR INTERNAL OPERATING CONTROLS.

BOTH THE PUMPS AND THE BOILERS WILL BE OPERATED IN A LEAD/LAG MANNER. THE LEAD PUMP AND BOILER WILL BE ROTATED AFTER EACH 7 DAYS OF ACTUAL RUN TIME. A LEAD BOILER OR PUMP FAILURE WILL RESULT IN THE LAG PIECE OF EQUIPMENT BEING ENERGIZED AFTER A 10 SECOND DELAY.

THE HOT WATER SUPPLY AND RETURN TEMPERATURE, BOILER STATUS AND PUMP STATUS WILL BE MONITORED.

FAILURE OF A BOILER TO MAINTAIN HEATING HOT WATER WILL ENERGIZE ITS ASSOCIATED BOILER ALARM RELAY.

**DOMESTIC HOT WATER**

THE DOMESTIC HOT WATER SYSTEM WILL BE ENABLED WHENEVER THE "HOT " BUTTON IN THE KITCHEN IS ACTIVATED. CIRCULATION PUMP WILL START, INSTANTANEOUS HEATERS WILL CYCLE AND RUN TO MAINTAIN SET TEMPERATURE 120"). CIRCULATION PUMP WILL RUN FOR SET TIME (8 HOURS, ADJUSTABLE).

**WORK BAY**

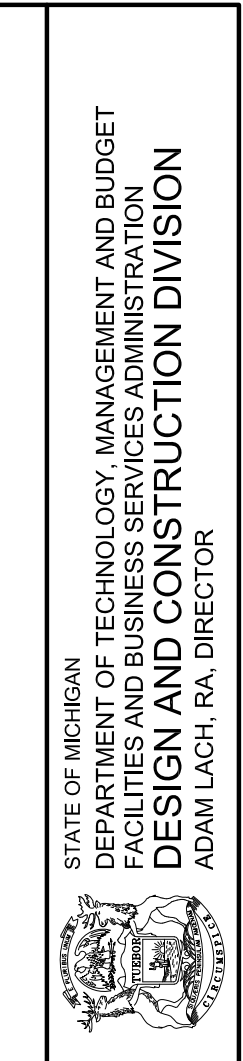
**GAS DETECTION / EXHAUST**

THE WORK BAY IS EQUIPPED WITH TWO SET OF GAS MONITORS. CO AND NO2 GAS LEVELS WILL BE MONITORED AT BOTH LOCATIONS AT ALL TIMES. THE CO LEVEL RISING ABOVE THE CO LEVEL VENTILATION SET POINT (10 PPM, ADJUSTABLE) OR THE NO2 LEVEL RISING ABOVE THE NO2 LEVEL VENTILATION SET POINT (0.5 PPM, ADJUSTABLE) WILL RESULT IN THE WORK BAY EXHAUST FAN BEING ENERGIZED. A REDUCTION IN GAS LEVEL BY HALF WILL DE-ENERGIZE THE FANS. SHOULD THE CO LEVEL RISE ABOVE THE CO LEVEL ALARM SET POINT (25 PPM, ADJUSTABLE) OR THE NO2 LEVEL RISING ABOVE THE NO2 LEVEL ALARM SET POINT (1 PPM, ADJUSTABLE) THE RESPECTIVE AUDIO/VISUAL ALARM RELAY(S) WILL BE ENERGIZED. A MANUAL SWITCH MOUNTED AT THE WORK BAY CONTROL PANEL WILL ALLOW THE OCCUPANTS TO MANUALLY PLACE THE SYSTEM INTO FULL VENTILATION MODE. THE SWITCH DOES NOT ALLOW THE OCCUPANT TO DISABLE VENTILATION MODE. WORK BAY GAS DETECTION SYSTEM OPERATES LOCALLY AND DOES IS NOT MONITORED BY BMS

**ALARMS**

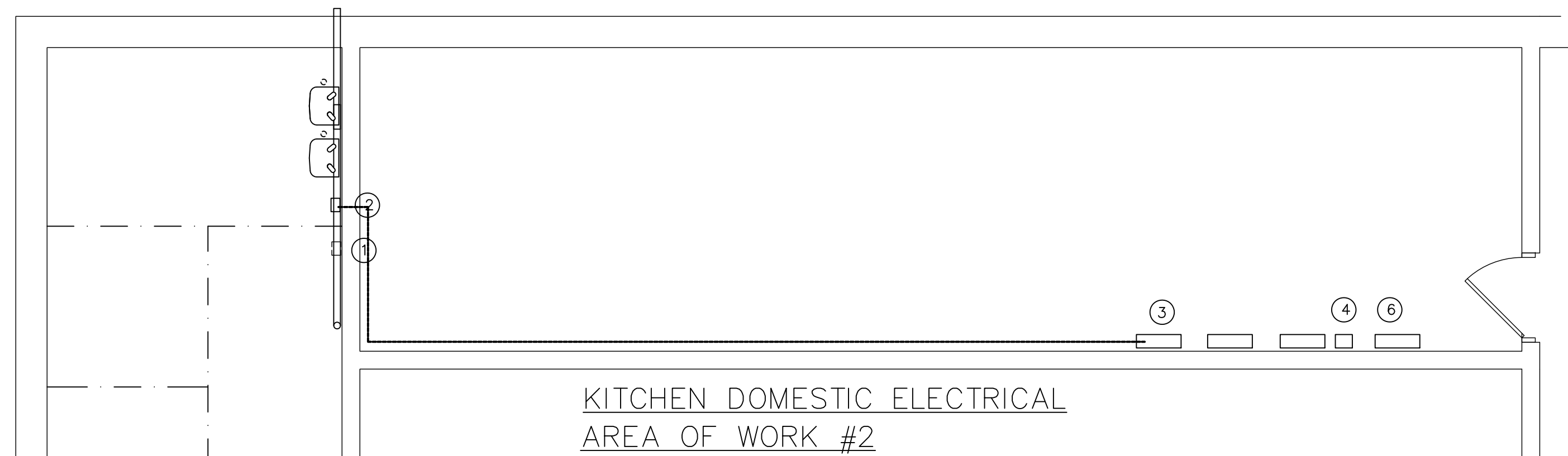
AN ALARM CONDITION WILL BE REPORTED TO THE WEB SERVER USER INTERFACE FOR THE FOLLOWING; ALL EQUIPMENT TYPES ARE LISTED BELOW, INCLUDE ALL EQUIPMENT LISTED ON PLANS FOR EXACT QUANTITY.

- LOW SPACE TEMPERATURE
- HIGH SPACE TEMPERTAURE
- MAU-3 LOW SUPPLY AIR TEMPERATURE
- BOILER B-1 FAILURE
- BOILER B-2 FAILURE
- LOW HEATING LOOP HOT WATER SUPPLY TEMPERATURE
- BOILER PUMP P-1 FAILURE
- BOILER PUMP P-2 FAILURE
- HEATING LOOP PUMP P-3 FAILURE
- HEATING LOOP PUMP P-4 FAILURE
- LOW DOMESTIC HOT WATER SUPPLY TEMPERATURE
- DOMESTIC HOT WATER CIRCULATING PUMP FAILURE
- EXHAUST FAN FAILURE (ALL)



**RENOVATE ARMORY - TAYLOR**  
 DEPARTMENT OF MILITARY AND VETERANS AFFAIRS  
 12450 BEECH DAILY RD., TAYLOR, MI 48180

SHEET	IDENTIFICATION NO.	PROJECT	ISSUED FOR	DATE	DESIGNED	BAB
					DRAWN	BAB
M7.0	260672008	INDEX CODE	PRELIMINARY	7 JUNE 2023	CHECKED	KKM
			CONSTRUCTION	25 JULY 2023	APPROVED	KKM
		INDEX CODE	FINAL RECORD			

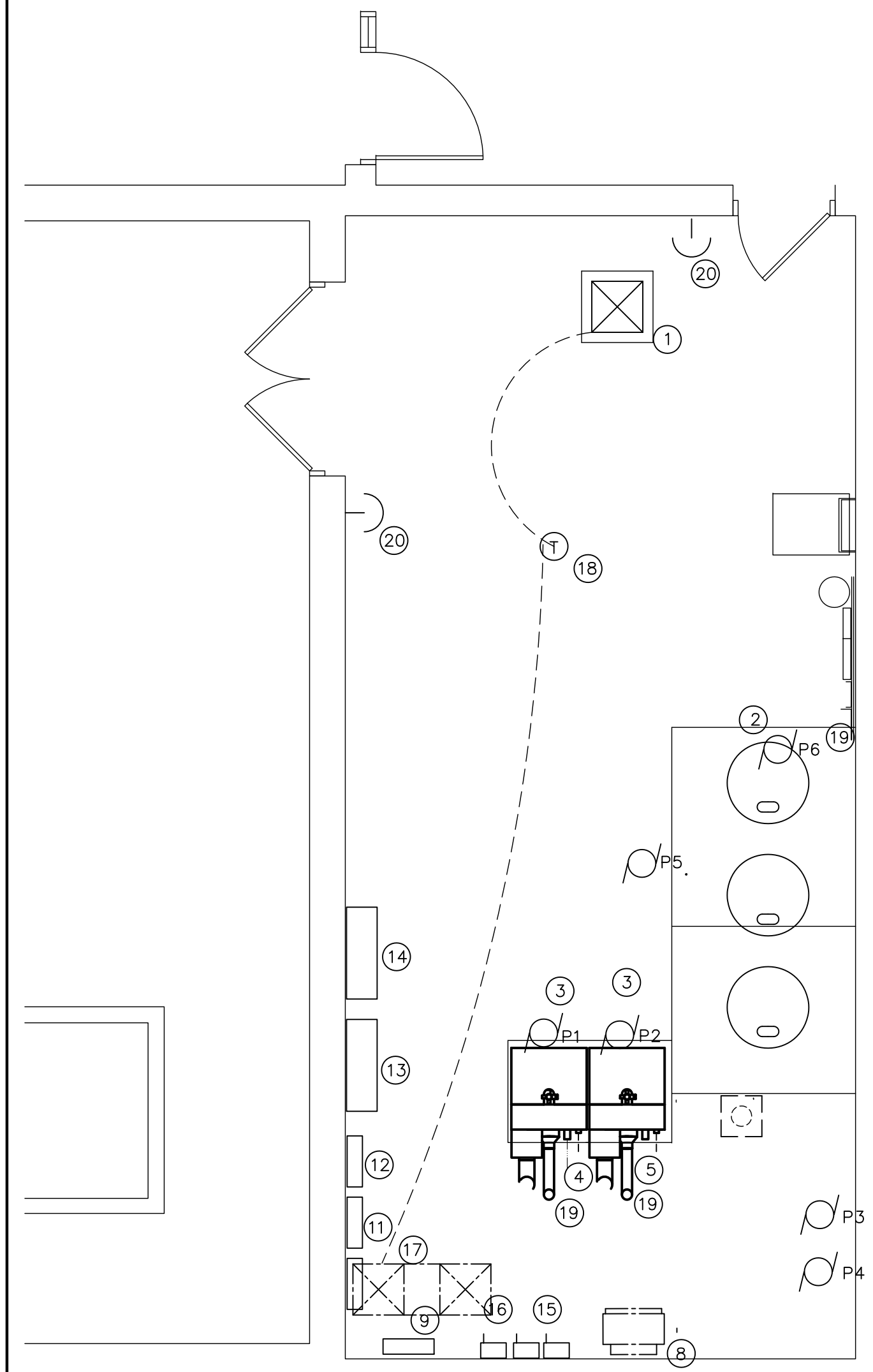
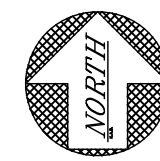


**KITCHEN DOMESTIC ELECTRICAL  
AREA OF WORK #2**

- ① REMOVE EXISTING SWITCH ON DEMOLISHED WATER HEATER. MAKE INTO JUNCTION BOX FOR EXISTING CIRCUIT R2-23
- ② RUN NEW CIRCUIT TO PANEL R2, USE CIRCUIT R2-28. INSTALL 30A DISCONNECT FOR NEW WATER HEATERS AND CIRCULATION PUMP, FUSE DISCONNECT FOR 15A.
- ③ EXISTING PANEL R2 WITH UNUSED BREAKERS. CEILING IN MAINTENANCE 103 IS OPEN TO ROOF
- ④ EXISTING MOTOR STARTER FOR EF-14, TO BE REUSED
- ⑤ NEW 120V OUTLET FROM R2 IN ROOM 103, USE SPARE CIRCUIT
- ⑥ EXISTING BUILDING MANAGEMENT ENCLOSURE

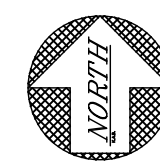
**KITCHEN WATER HEATER REPLACEMENT-ELECTRICAL  
AREA OF WORK #2**

SCALE 1/4" = 1'-0"



**BOILER ROOM ELECTRICAL PLAN  
AREA OF WORK #1**

SCALE 1/4" = 1'-0"



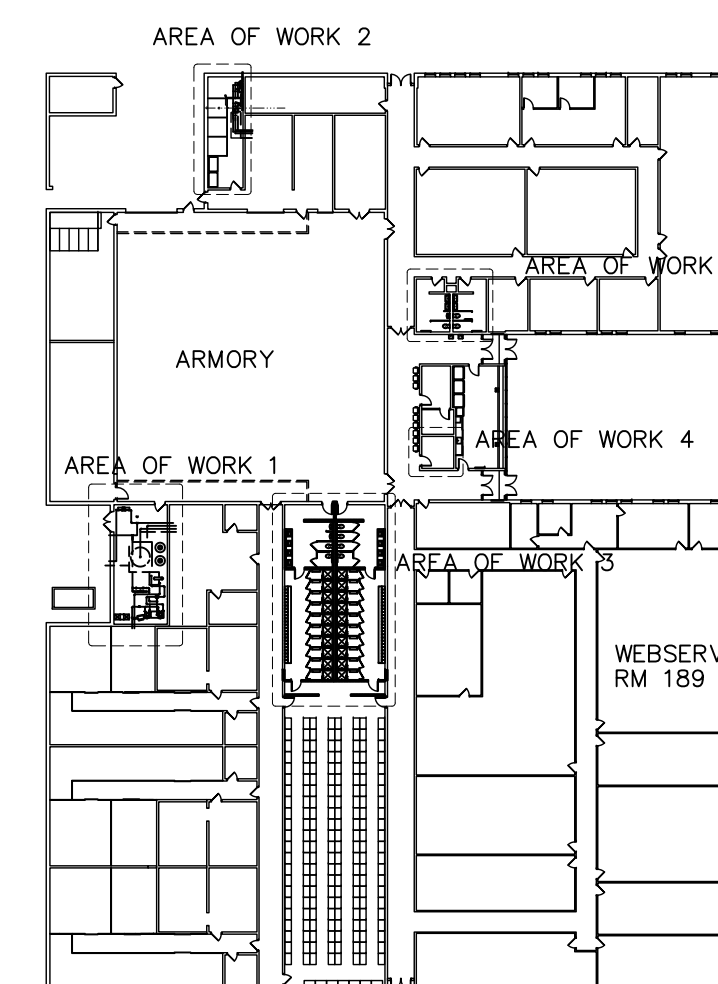
**AREA OF WORK #1-ELECTRICAL**

- ① INSTALL NEW CIRCUIT FOR EF-21, CONNECT TO PANEL P1, CIRCUIT 32
- ② DISCONNECT EXISTING CIRC PUMP AT STORAGE TANK, REUSE CIRCUIT FOR PUMP P6
- ③ INSTALL NEW CIRCUIT FOR PUMPS P1 AND P2, RUN TO PANEL EM, CIRC 12
- ④ USE EXISTING BOILER CONTROL CIRCUIT CONNECTED TO PANEL EM, CIRC 7
- ⑤ USE EXISTING BOILER CONTROL CIRCUIT CONNECTED TO PANEL EM, CIRC 7
- ⑥ DISCONNECT 480V PUMP FROM PANEL DL1, CIRC 1,3,5. INSTALL NEW 2 POLE BREAKER IN PANEL EM, SPACE 14/16
- ⑦ DISCONNECT 480V PUMP FROM PANEL DL1, CIRC 2,4,6. INSTALL NEW 2 POLE BREAKER IN PANEL EM, SPACE 18/20
- ⑧ EXISTING UNIT HEATER, NO CHANGE REQUIRED
- ⑨ EXISTING TRANSFER SWITCH
- ⑩ EXISTING PANEL "EM"
- ⑪ EXISTING PANEL "P1"
- ⑫ EXISTING PANEL "L1"
- ⑬ EXISTING PANEL "DP-2"
- ⑭ EXISTING PANEL "DP-1"
- ⑮ EXISTING DISCONNECT/MOTOR STARTER FOR PUMPS 3 & 4, REMIRE TO NEW PANEL, INSTALL FUSE REDUCERS AND FUSE AT 10A
- ⑯ INSTALL NEW DISCONNECT/MOTOR STARTER FOR PUMP P5, INSTALL FUSE REDUCERS AND FUSE AT 10A
- ⑰ INSTALL NEW DAMPER ACTUATOR ON EXISTING DAMPER
- ⑱ ADJUSTABLE THERMOSTAT (SET AT 80°), SEE SEQUENCE OF OPERATIONS
- ⑲ INSTALL FRACTIONAL HORSE MOTOR STARTERS FOR PUMPS, 1,2,6
- ⑳ EMERGENCY BOILER SHUTOFF, COORDINATE WITH MECHANICAL

**LEGEND**

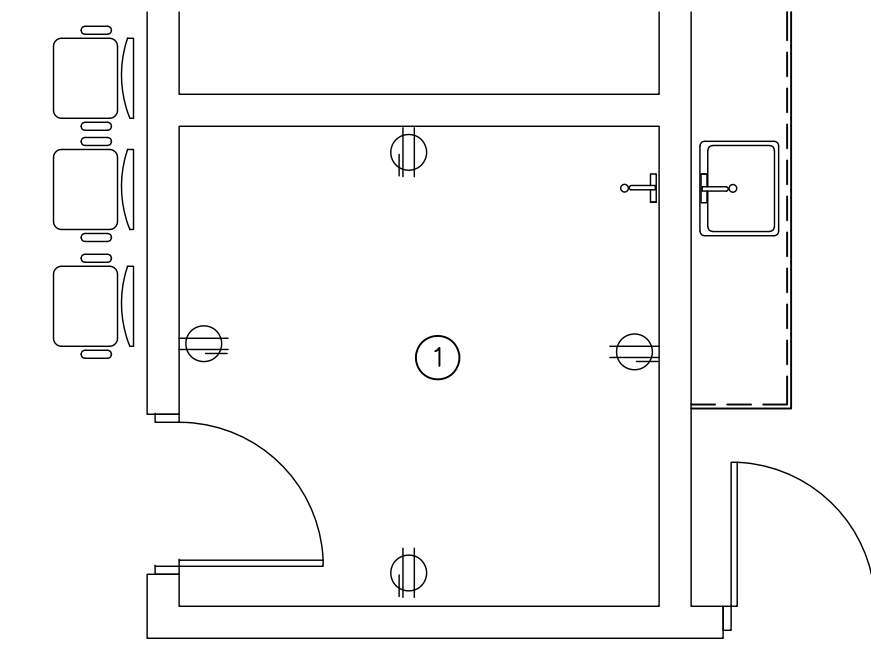
- ITEMS TO BE DEMOLISHED
- EXISTING TO REMAIN
- NEW BOILER PIPING-RETURN
- NEW BOILER PIPING-SUPPLY
- NATURAL GAS
- DOMESTIC COLD WATER PIPING-NEW
- DOMESTIC HOT WATER PIPING-NEW
- NEW EQUIPMENT
- EQUIPMENT CLEARANCE
- DOMESTIC-COLD WATER-EXISTING
- DOMESTIC-HOT WATER-EXISTING
- BOILER DRAIN
- NEW EQUIPMENT PAD
- CAGING

**AREAS OF WORK**



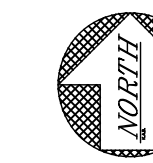
**AREA OF WORK #4-ELECTRICAL**

- ① NO WORK REQUIRED THIS AREA



**LACTATION ROOM ELECTRICAL  
AREA OF WORK #4**

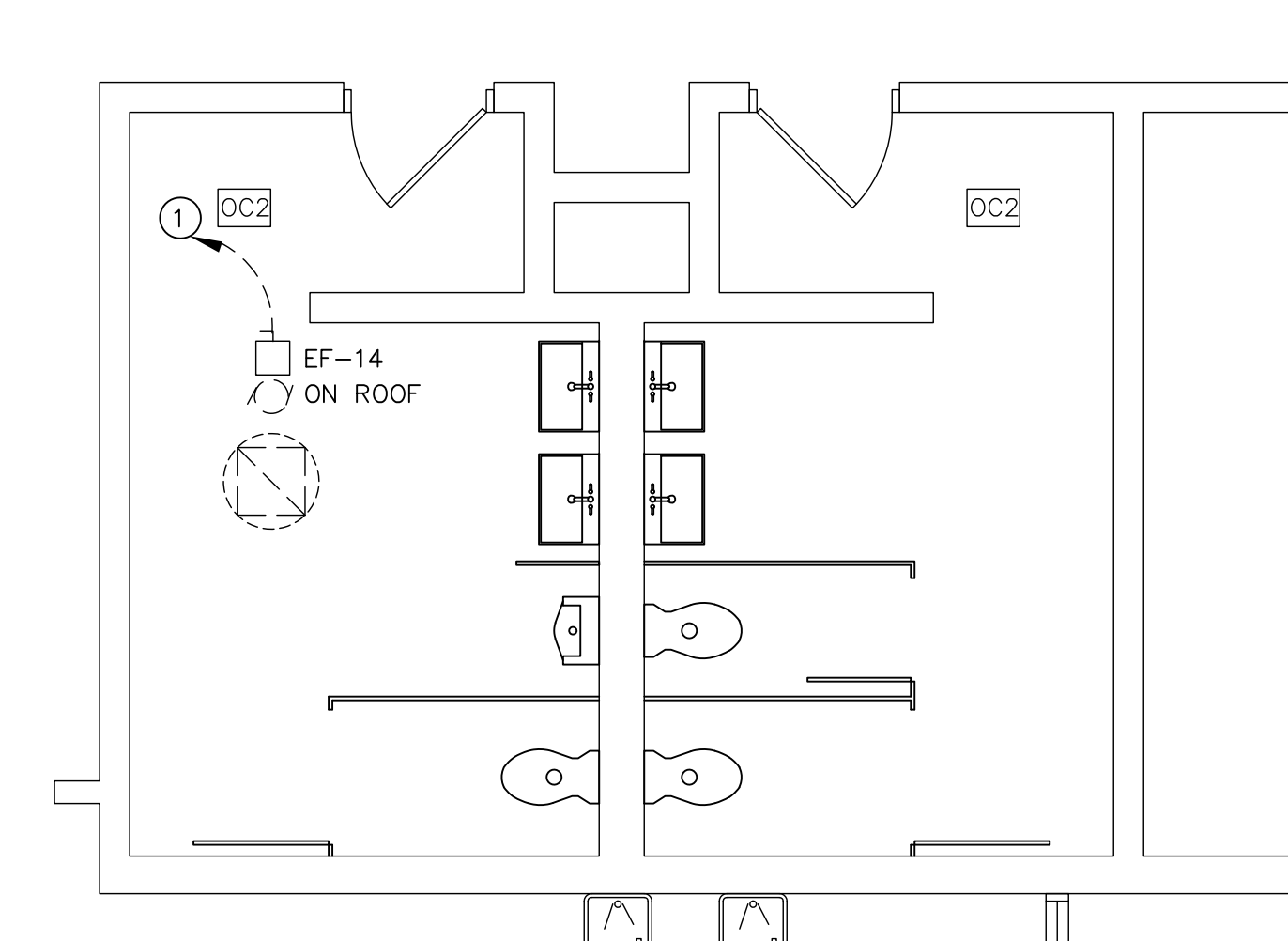
SCALE 1/4" = 1'-0"



**AREA OF WORK #5-ELECTRICAL**

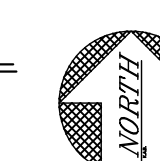
- ① REUSE POWER FOR NEW EXHAUST FAN, EF-14.
- ② INSTALL OCCUPANCY SENSOR TO OPERATE FAN, SEE CONTROL SEQUENCE

OC2 DUAL TECHNOLOGY OCCUPANCY SENSOR, 500 SQ FT COVERAGE, 24VDC



**NORTH LATRINE RENOVATION-ELECTRICAL  
AREA OF WORK #5**

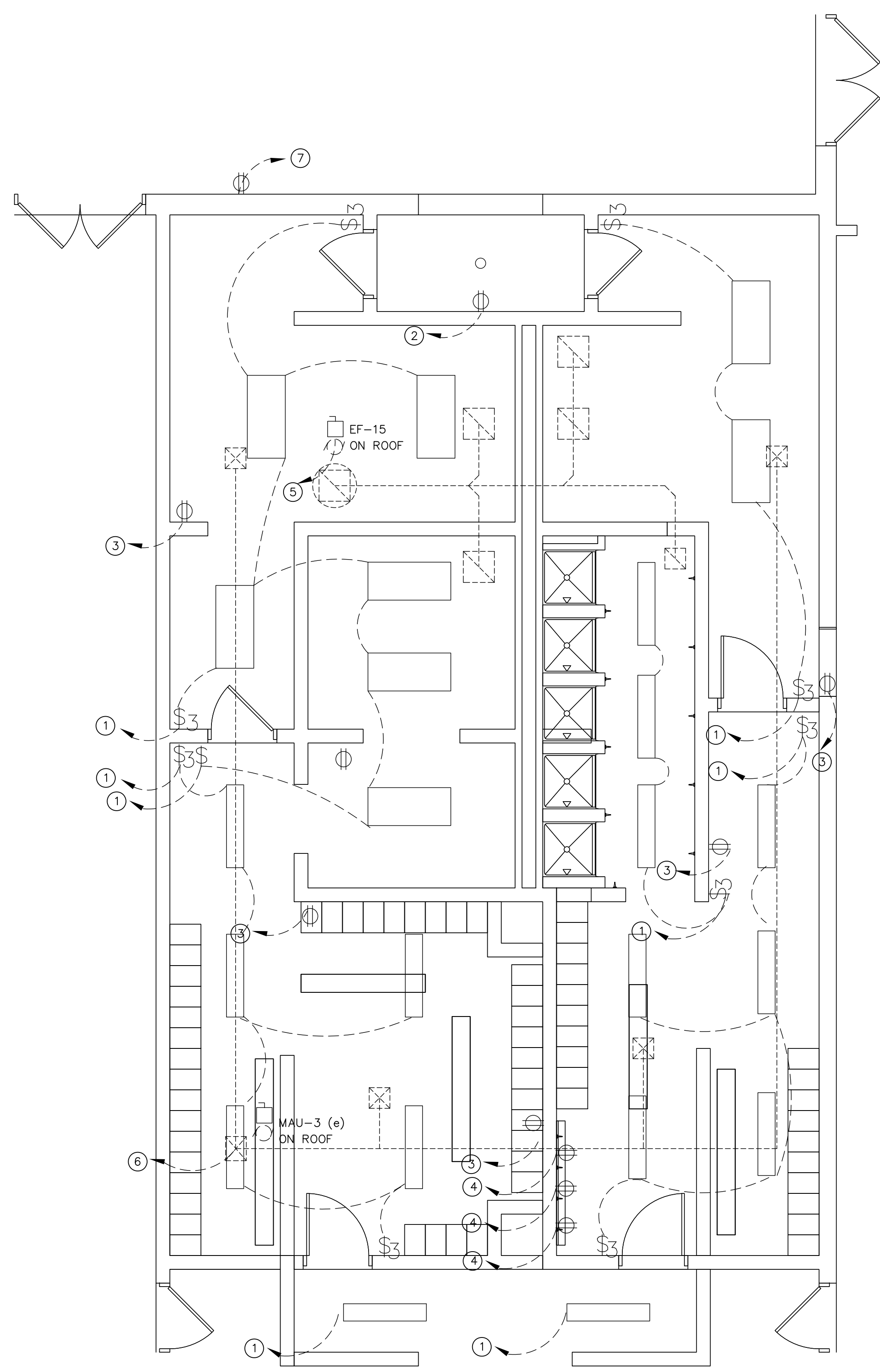
SCALE 1/4" = 1'-0"



SHEET	IDENTIFICATION NO.	BAB	DESIGNED	BAB
	PROJECT	266872208	DRAWN	BAB
E1.0	INDEX CODE		CHECKED	KKM
	INDEX CODE		APPROVED	KKM
	DATE	7 JUNE 2023		
	ISSUED FOR	PRELIMINARY		
		CONSTRUCTION		
		FINAL RECORD		

**AREA OF WORK #3-ELECTRICAL DEMO**

- ① EXISTING 277V CIRCUIT TO PANEL L1-5 IN BOILER ROOM
- ② EXISTING 120V CIRCUIT TO PANEL R1-24 IN BOILER ROOM
- ③ EXISTING 120V CIRCUIT TO PANEL R1-25 IN BOILER ROOM
- ④ EXISTING 120V CIRCUIT TO PANEL R1-21 IN BOILER ROOM
- ⑤ EXISTING 120V CIRCUIT TO PANEL P1-5 IN BOILER ROOM  
DISCONNECT EXISTING EF-15, REUSE CIRCUIT FOR NEW FAN



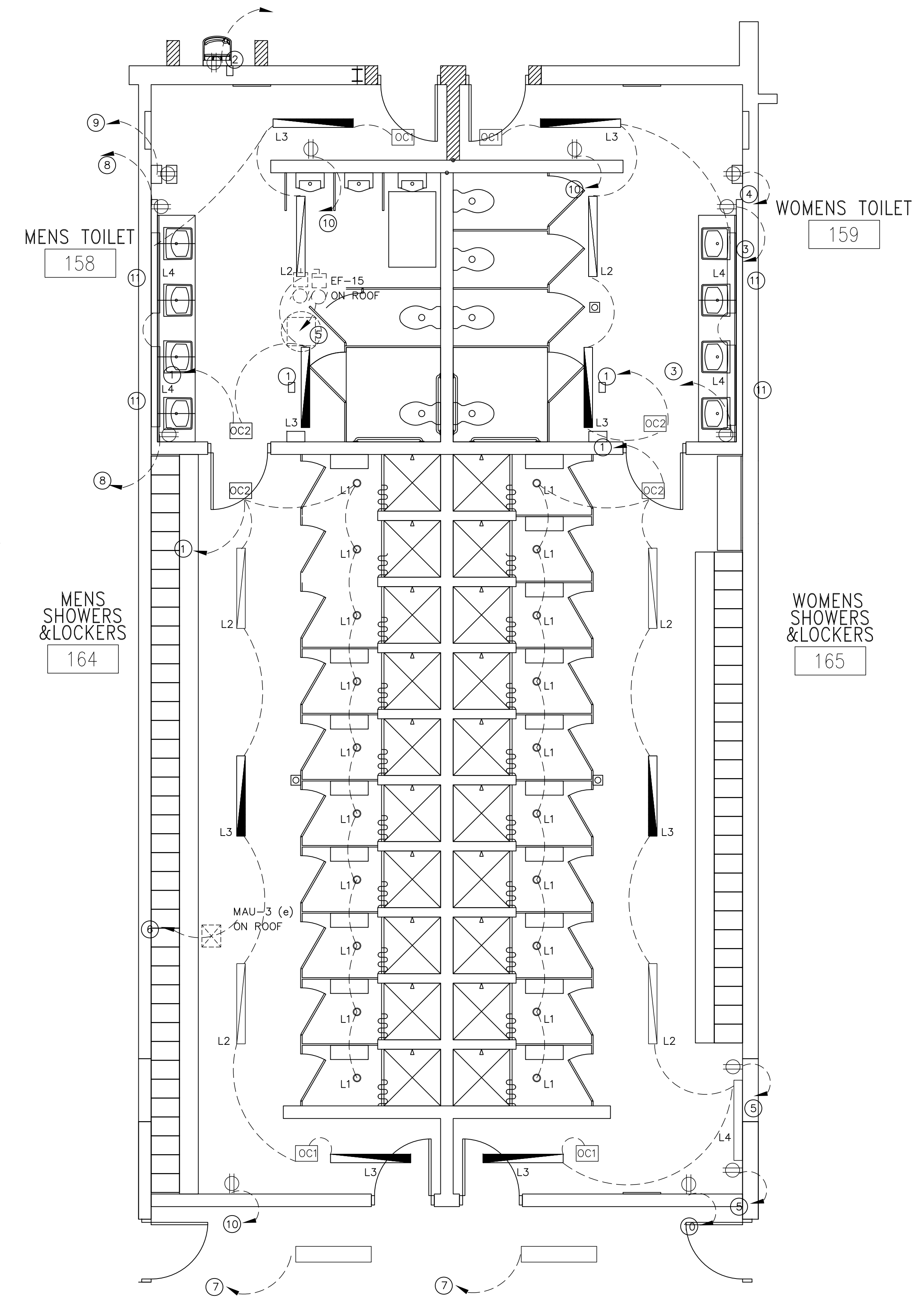
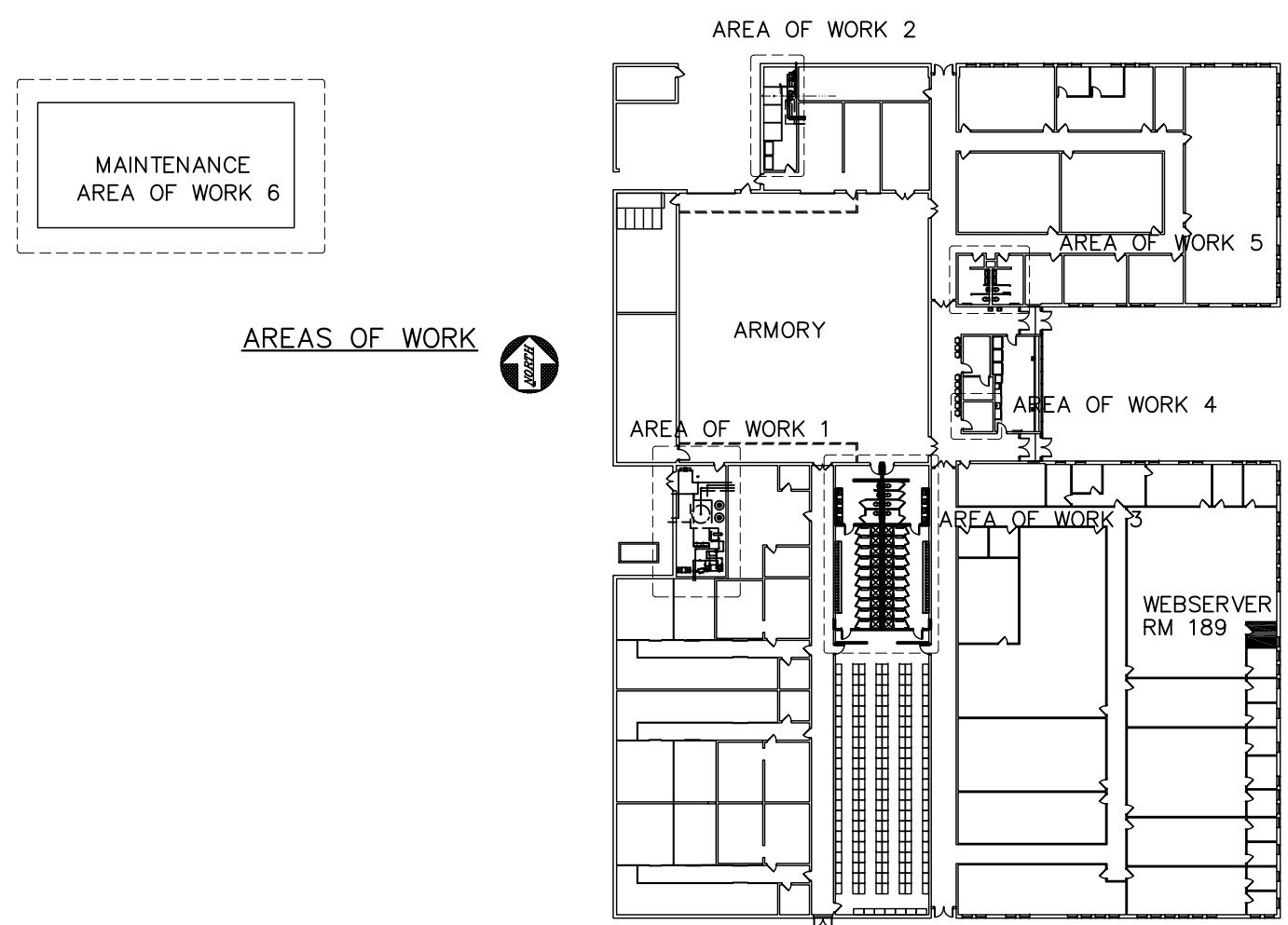
**LATRINE ELECTRICAL DEMO**  
**AREA OF WORK #3**  
 SCALE 1/4" = 1'-0"

**NEW AREA OF WORK #3-ELECTRICAL**

- ① REUSE EXISTING LIGHTING CIRCUIT L1-5
- ② EXISTING OUTLET TO R2-11, CHANGE TO G.F.I. RECEPTACLE
- ③ REUSE EXISTING CIRCUIT R1-21, OUTLETS TO BE G.F.I., 42"
- ④ REUSE EXISTING CIRCUIT P1-17, HAND DRYER AT 45" A.F.F.
- ⑤ REUSE EXISTING CIRCUIT R1-25, OUTLETS TO BE G.F.I. ABOVE COUNTER (42")
- ⑥ EXISTING MAU TO REMAIN
- ⑦ REUSE DEMOLISHED FIXTURES (W/OCC SENSORS) CIRCUIT L1-5
- ⑧ REUSE EXISTING CIRCUIT R1-24, OUTLETS TO BE G.F.I., 42"
- ⑨ INSTALL NEW CIRCUIT TO P1-15, HAND DRYER AT 45" A.F.F.
- ⑩ INSTALL NEW CIRCUIT TO R1-26, G.F.I. RECEPT 16" A.F.F.
- ⑪ INSTALL L4 LIGHTS AT 7'-6" A.F.F., CENTER ON SINKS
- ⑫ INSTALL L4 LIGHT AT 7'-6" A.F.F., CENTER ON COUNTER

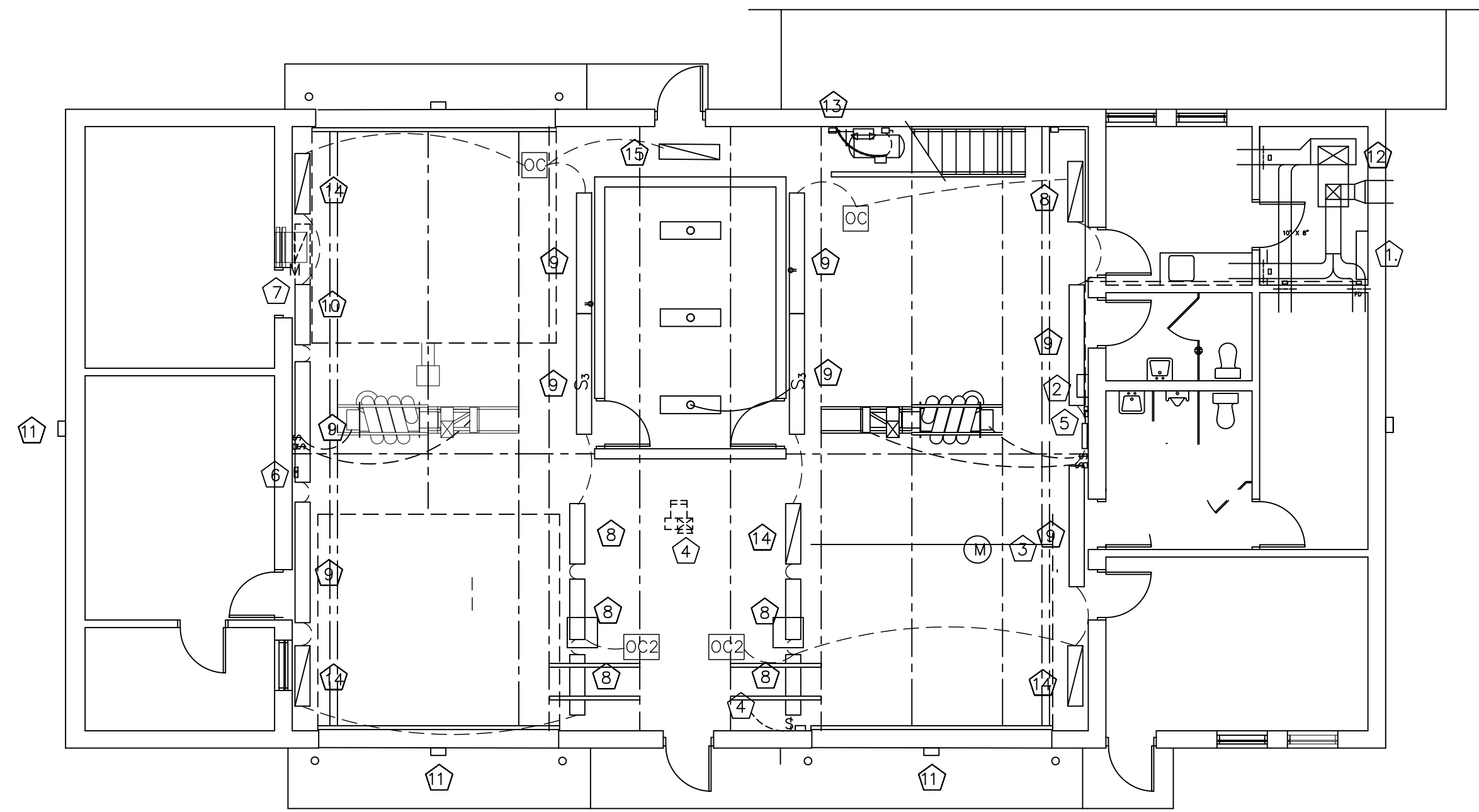
SEE AREA OF WORK #1 FOR PANEL LOCATIONS  
 SEE SHEET E4 FOR LIGHT SCHEDULE

- OC1 DUAL TECHNOLOGY OCCUPANCY SENSOR, 500 SQ FT COVERAGE, 24VDC  
2 SETS OF CONTACTS, 1 FOR LIGHTING, 1 FOR MECHANICAL
- OC2 DUAL TECHNOLOGY OCCUPANCY SENSOR, 500 SQ FT COVERAGE, 24VDC

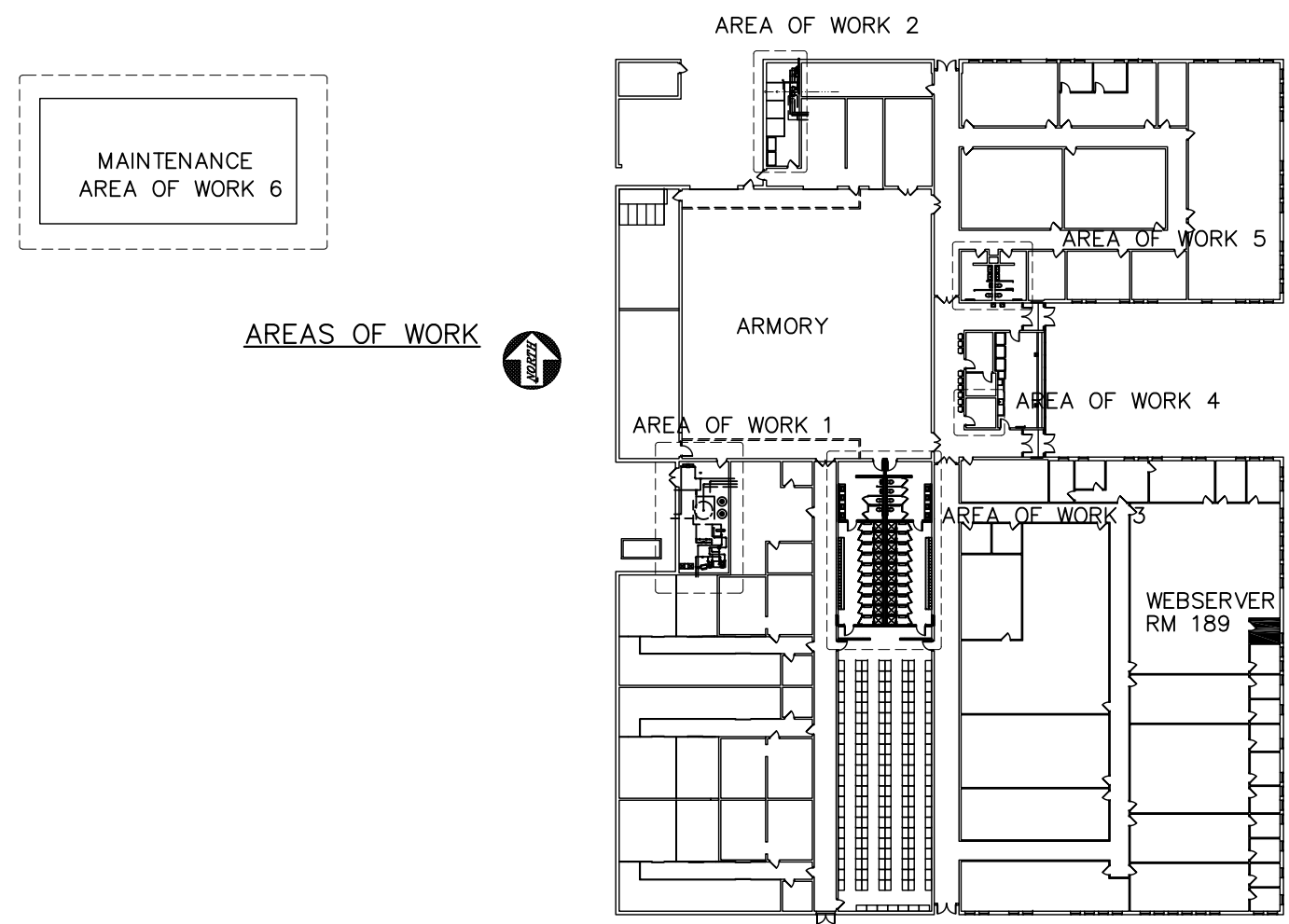


**LATRINE ELECTRICAL PLAN**  
**AREA OF WORK #3**  
 SCALE 1/4" = 1'-0"





MAINTENANCE SHOP ELECTRICAL PLAN  
 AREA OF WORK #6  
 SCALE 1/8" = 1'-0"

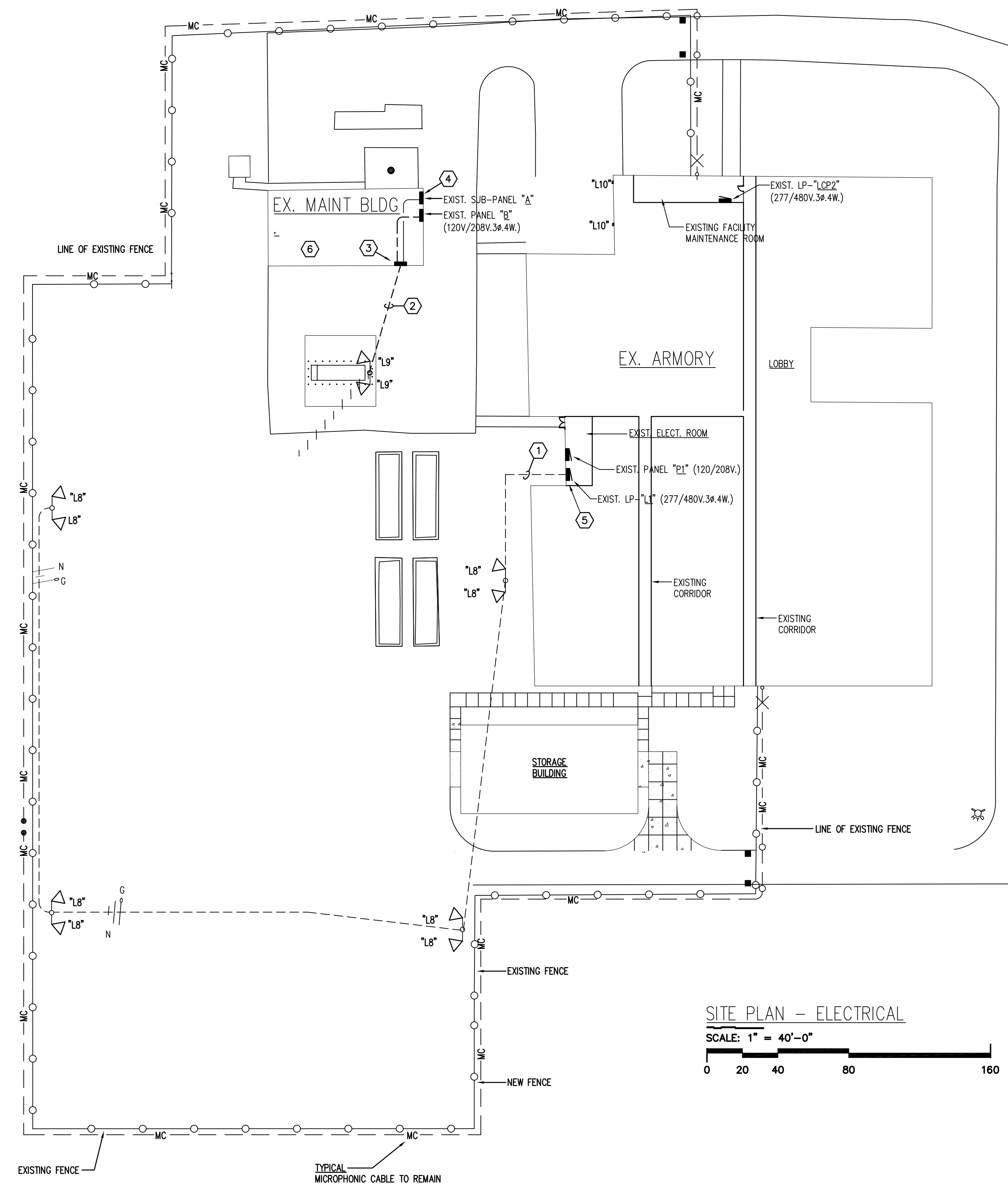


ELECTRICAL NOTES—MAINTENANCE SHOP  
AREA OF WORK #6

- ① EXISTING 125A, 3PH, 4W, 120/208V ITE ELECTRICAL PANEL
- ② EXISTING 20 SPACE, 120/208/3PH, 4W, MLO PANEL  
 INSTALL NEW 15A 1PH CB (120V)
- ③ CONNECT TO NEW EF-21, USE CIRCUIT FROM REMOVED EXHAUST FAN
- ④ REMOVE EXISTING VEHICLE EXHAUST SYSTEM COMPLETE;  
 REMOVE ELECTRICAL TO PANEL
- ⑤ INSTALL NEW GAS DETECTION SYSTEM  
 48" ABOVE FINISHED FLOOR  
 W/ CO SENSOR  
 CONNECT TO ADJACENT ELECTRICAL PANEL  
 INSTALL NEW NO2 SENSOR  
 3' FROM CEILING
- ⑥ INSTALL NEW NO2 SENSOR  
 3'-0" FROM CEILING  
 INSTALL NEW CO SENSOR  
 4'-0" FROM FLOOR, TIE SENSORS TO NEW SYSTEM
- ⑦ CONNECT DAMPER MOTOR TO CO/NO2 SYSTEM  
 DAMPER TO OPEN WITH EXHAUST FAN ON DETECTION OF CO/NO2 SYSTEM
- ⑧ REMOVE EXISTING 4' FIXTURE AND INSTALL NEW FIXTURE L-5  
 MOUNT TO WALL AT SAME HEIGHT AS REMOVED FIXTURE  
 REUSE CIRCUITRY AND SWITCHING
- ⑨ REMOVE EXISTING 8' FIXTURE AND INSTALL NEW FIXTURE L-6  
 MOUNT TO WALL AT SAME HEIGHT AS REMOVED FIXTURE  
 REUSE CIRCUITRY AND SWITCHING
- ⑩ REMOVE EXISTING 8' FIXTURE AND INSTALL NEW FIXTURE L-5  
 MOUNT TO WALL AT SAME HEIGHT AS REMOVED FIXTURE  
 REUSE CIRCUITRY AND SWITCHING
- ⑪ REMOVE EXISTING WALLPACK FIXTURE AND INSTALL NEW FIXTURE L-10  
 MOUNT TO WALL AT SAME HEIGHT AS REMOVED FIXTURE  
 REUSE CIRCUITRY AND INSTALL PHOTO CELL
- ⑫ RECONNECT EXISTING CIRCUIT TO NEW FURNACE
- ⑬ MOVE EXISTING AIR COMPRESSOR DISCONNECT 42" TOWARD OUTSIDE DOOR  
 RECONNECT TO AIR COMPRESSOR
- ⑭ REMOVE EXISTING 4' FIXTURE AND INSTALL NEW FIXTURE L-6  
 MOUNT TO WALL AT SAME HEIGHT AS NEW FIXTURE.  
 REUSE CIRCUITRY AND SWITCHING
- ⑮ INSTALL NEW 4' FIXTURE, INSTALL UNISTRUT AT TRUSS LEVEL AND  
 CHAIN HANG NEW FIXTURE L-6. EXTEND CIRCUIT TO LIGHT

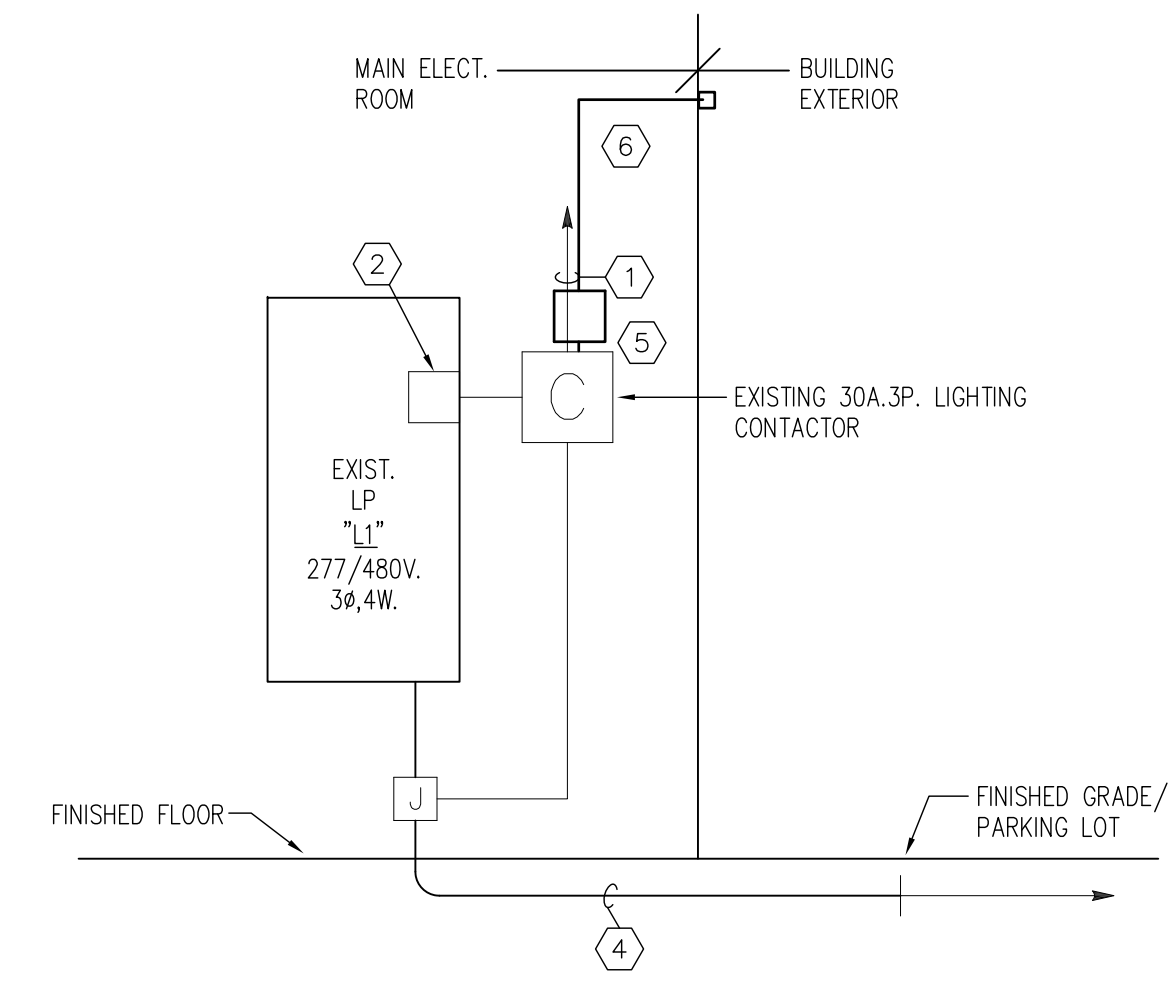
OC2 DUAL TECHNOLOGY OCCUPANCY SENSOR, 500 SQ FT COVERAGE, 24VDC

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE	DESIGNED	BAB
	PROJECT	PRELIMINARY	7 JUNE 2023	DRAWN	BAB
E3.0	INDEX CODE	CONSTRUCTION	25 JULY 2023	CHECKED	KKM
	INDEX CODE	FINAL RECORD		APPROVED	KKM



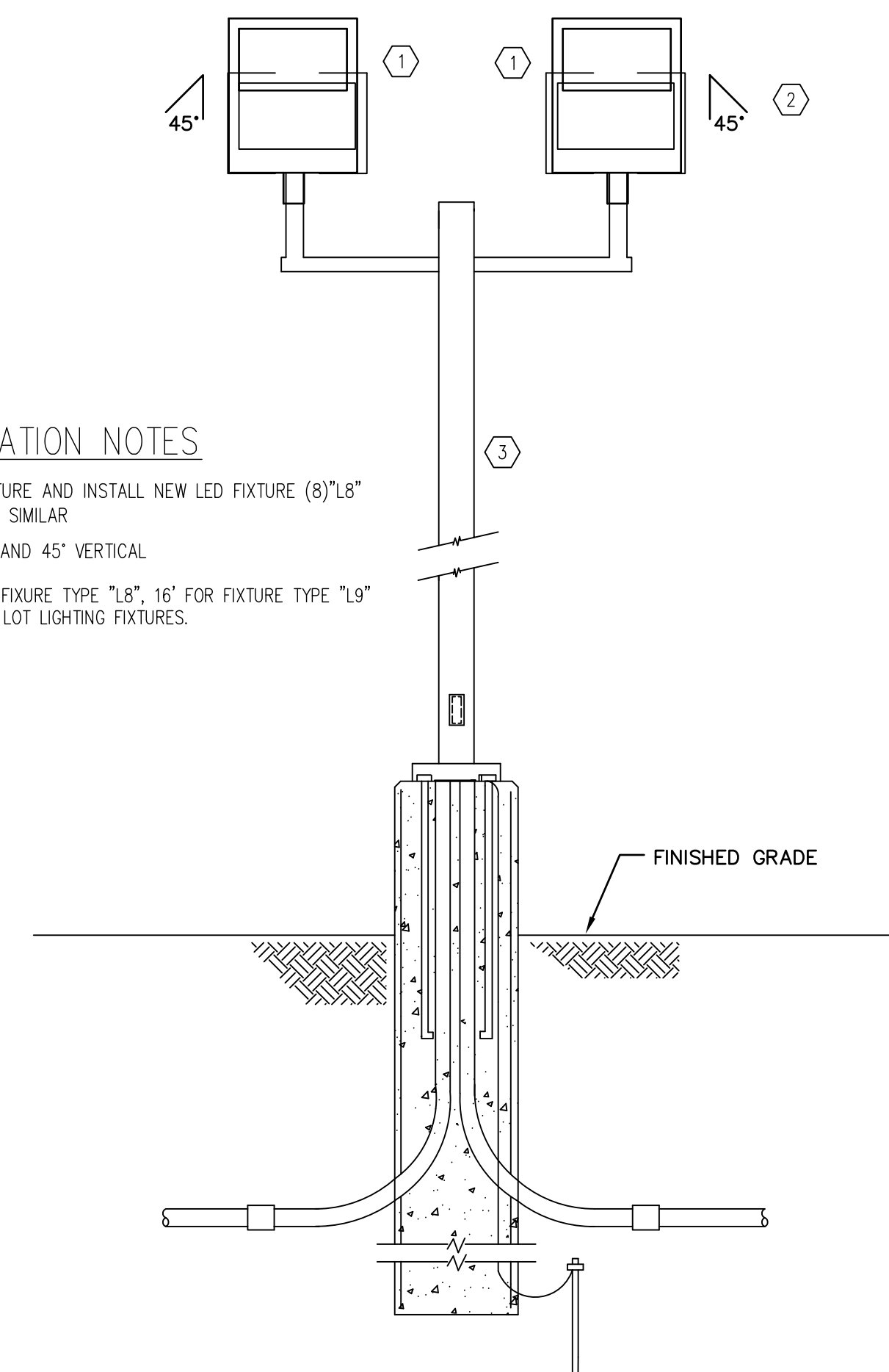
**SITE PLAN - ELECTRICAL**  
 SCALE: 1" = 40'-0"  
 0 20 40 80 160

- KEY NOTES:**
- EXISTING 3ØB & 1ØGRD., 1" C. (2-277V.3ØA. BRANCH CIRCUITS) RUN THRU NEW 3ØA.3P. ELECTRICALLY OPERATED/ELECTRICALLY HELD LIGHTING CONTACTOR TO NEW 3ØA.2P. CIRCUIT BREAKER IN EXISTING LP-"L1".
  - EXISTING UNDERGROUND POWER & DATA/SIGNAL CONDUITS TO FUEL DISPENSING STATION
  - LOCATION OF EXISTING UNDERGROUND FUEL TANK LEAK DETECTION SYSTEM ALARM PANEL AND 3ØA.2ØV. DISC.
  - EXISTING CIRCUIT FOR LIGHT TYPE "L9" AT FUEL ISLAND
  - EXISTING SECURITY PANEL TO REMAIN WIRE AROUND PANEL FOR NEW UPDATED LIGHTING
  - SEE MAINTENANCE BUILDING ELECTRICAL PLAN FOR NEW BUILDING MOUNTED LIGHTS



**MODIFIED LOT LIGHTING CONTROL DIAGRAM**  
 NO SCALE

- DIAGRAM KEY NOTES:**
- EXISTING "DARK" LIGHTING CONTROL PANEL, LEAVE IN PLACE
  - EXISTING 3ØA.2P. BRANCH CIRCUIT BREAKER IN EXISTING PANEL
  - EXISTING BELOW GRADE CONDUIT WITH EXISTING LIGHTING CONDUCTORS
  - EXISTING 3ØB & 1ØGRD., 1" C. (2-277V.3ØA. CKTS.)
  - "ON"/"OFF" OVERRIDE



- LITE POLE MODIFICATION NOTES**
- REMOVE EXISTING QUARTZ FIXTURE AND INSTALL NEW LED FIXTURE (8)"L8" FIXTURE TYPE (2)"L9" MOUNTS SIMILAR
  - TILT LIGHTING 45° HORIZONTAL AND 45° VERTICAL
  - EXISTING ROUND POLE, 30' FOR FIXTURE TYPE "L8", 16' FOR FIXTURE TYPE "L9" EXISTING CONDUITS TO PARKING LOT LIGHTING FIXTURES.

**DETAIL OF LIGHTING FIXTURE TYPE "L8"**  
 NOT TO SCALE  
 (TYPE "L9" SIMILAR)

**LIGHTING FIXTURE SCHEDULE**

MARK	DESCRIPTION	LUMENS	WATTS	DISTRIBUTION	COLOR	VOLTS	FUSE	MOUNT	FIXTURE COLOR	MFG NUMBER <sup>1</sup>	OPTIONS	MFG
L1	LED ROUND	850	11	DOWNLIGHT	5000K	120	SINGLE	CEILING	WHITE	WF4C RD TUWH MW M6		JUNO
L2	LED STRIP-RECESSED	3199	25	DOWNLIGHT	5000K	120-277	SINGLE	CEILING	WHITE	LSIX 4FT 3000LM 80CRI 50K FFR SWL MVOLT MW		LITHONIA
L3	LED STRIP-RECESSED-EMERGENCY	3199	25	DOWNLIGHT	5000K	120-277	SINGLE	CEILING	WHITE	LSIX 4FT 3000LM 80CRI 50K FFR SWL MVOLT E10WLCF MW		LITHONIA
L4	LED WALL	2410	19	DOWNLIGHT	5000K	120-277	SINGLE	WALL/WALL BRACKET	WHITE	WL4 20L MVOLT LP850		LITHONIA
L5	LED STRIP-LOW BAY 4'	4082	31	DOWNLIGHT	5000K	120-277	SINGLE	WALL W/SWIVEL HANGAR	WHITE	UFT L48 4000LM SEF MVOLT 50K 80CRI WH SQ		LITHONIA
L6	LED STRIP-LOW BAY 4'-EMERGENCY	4082	31	DOWNLIGHT	5000K	120-277	SINGLE	WALL W/SWIVEL HANGAR	WHITE	UFT L48 4000LM SEF MVOLT 50K 80CRI WH SQ ILB-CP10-HE-A		LITHONIA
L7	LED STRIP-LOW BAY 8'	8163	61	DOWNLIGHT	5000K	120-277	SINGLE	WALL W/SWIVEL HANGAR	WHITE	UFT L96 8000LM SEF MVOLT 50K 80CRI WH SQ		LITHONIA
L8	LED FLOOD	63,900	483	AREA WIDE FORWARD	5000K	120-277	SINGLE	ADJUSTABLE SLIPFITTER	DARK BRONZE	RSX4 LED P5 50K AWF MVOLT IS SF DOBXD		LITHONIA
L9	LED FLOOD	9843	72	R3	5000K	120-277	SINGLE	ADJUSTABLE SLIPFITTER	DARK BRONZE	RSX1 LED P2 50K R3 MVOLT IS SF DOBXD		LITHONIA
L10	LED WALL	9214	78	R3	5000K	120-277	SINGLE	WALL	DARK BRONZE	TWH LED ALO 50K		LITHONIA

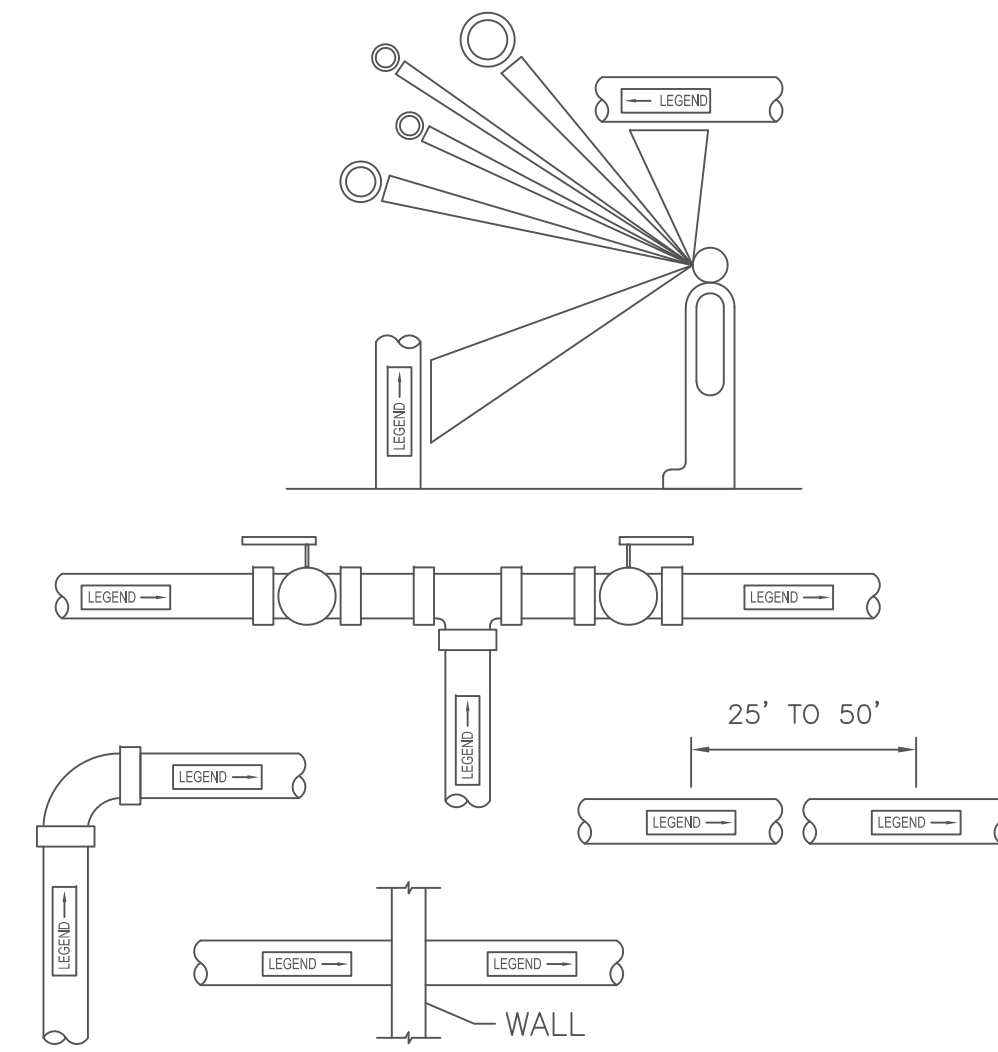
1. MANUFACTURER NUMBERS SHOWN ARE LITHONIA, AN EQUAL PRODUCT CAN BE USED.

## GENERAL NOTES – PLUMBING

1. ALL PLUMBING EQUIPMENT AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE 2018 STATE OF MICHIGAN PLUMBING CODE AND THE 2018 INTERNATIONAL PLUMBING CODE.
2. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING A PLUMBING PERMIT AND INSPECTIONS. A FINAL INSPECTION CERTIFICATE SHALL BE SUBMITTED BEFORE FINAL PAYMENT WILL BE ISSUED.
3. THE PLUMBING CONTRACTOR SHALL FURNISH SHOP DRAWINGS ON FIXTURES, APPURTENANCES AND MATERIALS THAT THEY INTEND TO FURNISH, FOR OWNER APPROVAL.
4. ONE BOUND MANUAL AND ONE ELECTRONIC MANUAL SHALL BE SUBMITTED UPON COMPLETION WITH MAINTENANCE INSTRUCTIONS, PARTS LIST, AND MANUFACTURER'S WARRANTIES. ALONG WITH A WARRANTY FROM THE PLUMBING CONTRACTOR.
5. INSTALL NEW FLUSH VALVES IN ROOMS 129 AND 130 ON A1.0 FLOOR PLANS
6. INSTALL 2'x2' ACCESS CONTROL HATCHES WHERE VALVES ARE LOCATED IN THE CEILING.

## PLUMBING ABBREVIATIONS

AAV – AIR ADMITTANCE VALVE	MISC– MISCELLANEOUS
AFF – ABOVE FINISH FLOOR	MTD – MOUNTED
BFP – BACK FLOW PREVENTER	OD – OVERFLOW DRAIN
DF – DRINKING FOUNTAIN	RD – ROOF DRAIN
DWV – DRAIN WASTE&VENT	S – SINK
EWC – ELECTRIC WATER COOLER	SH – SHOWER
FD – FLOOR DRAIN	TYP – TYPICAL
FCO – FLOOR CLEAN OUT	UR – URINAL
HB – HOSE BIB	VRT – VENT THROUGH ROOF
HVAC– HEATING VENTILATING & AIR CONDITIONING	WC – WATER CLOSET
HWCP–HOT WATER CIRCULATION PUMP	WCO –WALL CLEAN OUT
LAV – LAVATORY	WH –WATER HEATER
MH –MANHOLE	X... –EXISTING



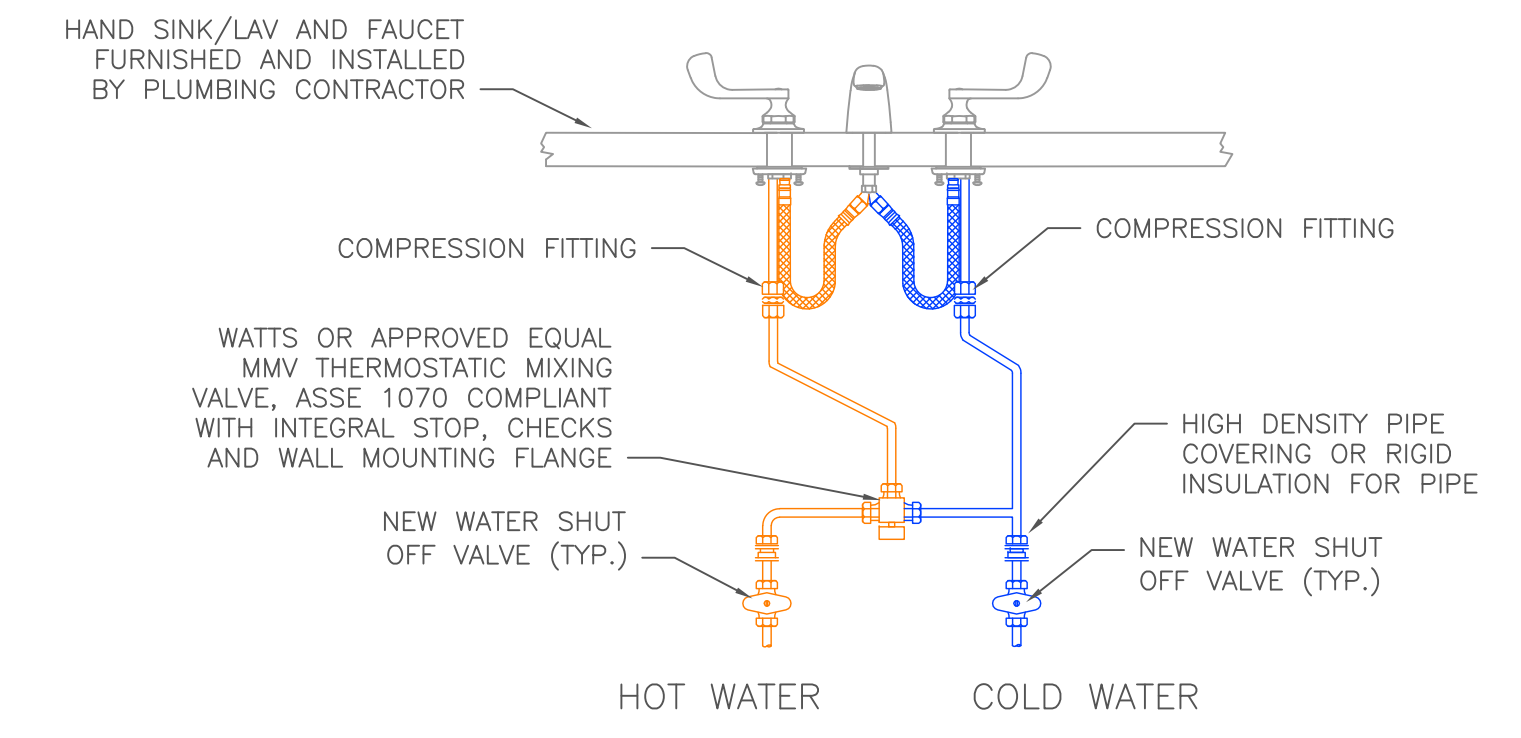
**SIZE OF LEGEND LABELS**

PIPE COVERING O.D. (IN.)	LENGTH OF COLOR FIELD (IN.)	HEIGHT OF LETTERS (IN.)
3/4" TO 1 1/4"	8"	1/2"
1 1/2" TO 2"	8"	3/4"
2 1/2" TO 6"	12"	1 1/4"
8" TO 10"	24"	2 1/2"
OVER 10"	32"	3 1/2"

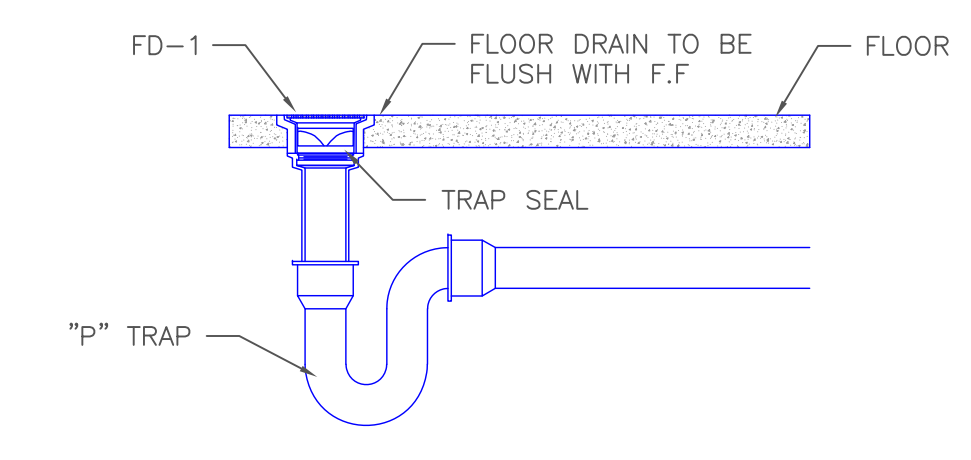
**COLOR OF LEGEND LABELS**

SERVICE	BACKGROUND COLOR	LETTERS
DOMESTIC COLD WATER	SAFETY GREEN	WHITE
DOMESTIC HOT WATER	SAFETY GREEN	WHITE
DOM. HOT WATER RETURN	SAFETY GREEN	WHITE
HEATING WATER SUPPLY	SAFETY GREEN	WHITE
HEATING WATER RETURN	SAFETY GREEN	WHITE
SANITARY DRAIN	SAFETY GREEN	WHITE
NATURAL GAS	SAFETY YELLOW	BLACK
FIRE PROTECTION	SAFETY RED	WHITE
COMPRESSED AIR	SAFETY BLUE	WHITE

NOTE: LABELS SHALL COMPLY WITH ANSI/ASME A13.1-2015.  
**PIPE MARKING AND VALVE TAG DETAILS**  
 SCALE: NONE



**FAUCET PIPING DETAIL**  
 SCALE: NONE

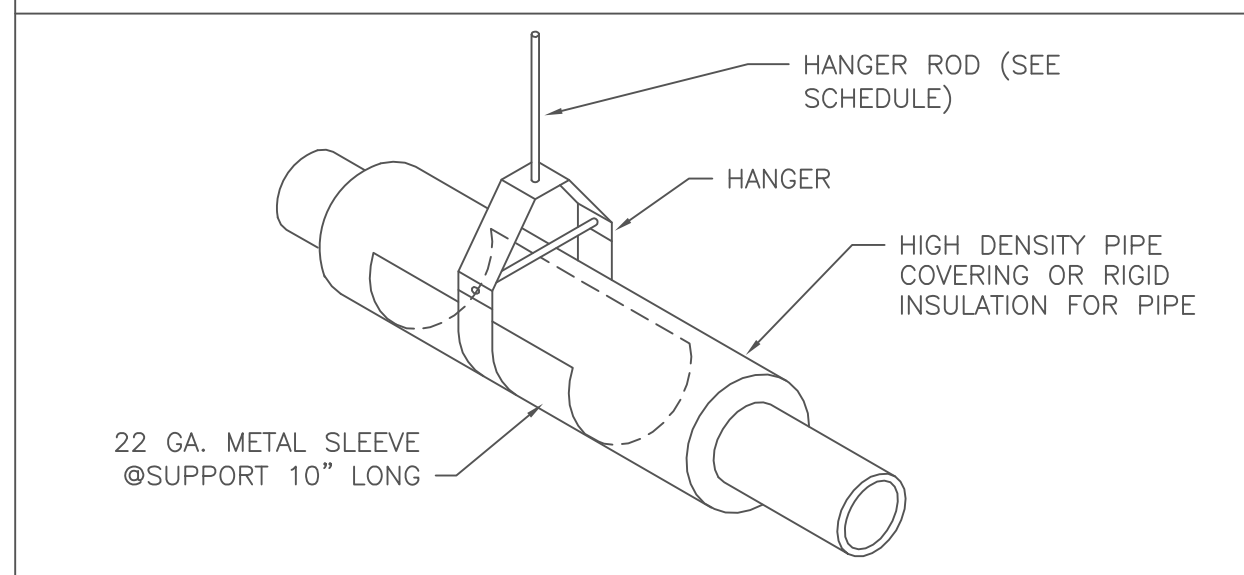


**FLOOR DRAIN DETAIL (TYP.)**  
 SCALE: NONE

## PLUMBING FIXTURE SCHEDULE

TYPE	DESCRIPTION	BASIS OF DESIGN	TRIM	REMARKS
WC-1	FLOOR MOUNTED, BOTTOM DISCHARGE, FLUSH VALVE, VITREOUS CHINA, WHITE, ELONGATED RIM, 1.6 GAL FLUSH	AMERICAN STANDARD, MADERA 16-1/2" MODEL: 2854.016	SEAT K-4731-C-0, FLUSH VALVE MODEL: SLOAN 180-1.5	ADA- MOUNT FLUSH VALVE 26" AFF
WC-2	FLOOR MOUNTED, BOTTOM DISCHARGE, FLUSH VALVE, VITREOUS CHINA, WHITE, ELONGATED RIM, 1.6 GAL FLUSH	AMERICAN STANDARD, MADERA 16-1/2" MODEL: 2854.016	SEAT K-4731-C-0, FLUSH VALVE MODEL: SLOAN 180-1.5	ADA- MOUNT FLUSH VALVE 26" AFF
UR-1	WALL MOUNTED, REAR DISCHARGE, FLUSH VALVE, VITREOUS CHINA, WHITE, 1.0 GAL FLUSH	AMERICAN STANDARD PINTBROOK, MODEL:6002001.020	FLUSH VALVE MODEL: SLOAN 180-1.0	ADA- MOUNT FLUSH VALVE 44" AFF, RIM HEIGHT 19" AFF
UR-2	WALL MOUNTED, REAR DISCHARGE, FLUSH VALVE, VITREOUS CHINA, WHITE, 1.0 GAL FLUSH	AMERICAN STANDARD PINTBROOK, MODEL:6002001.020	FLUSH VALVE MODEL: SLOAN 180-1.0	MOUNT FLUSH VALVE 44" AFF, RIM HEIGHT 24" AFF
FD-1	FLOOR DRAIN, SQUARE, NICKLE-BRONZE	SIoux CHIEF MODEL: 832 SERIES		FINSIH LINE, 1,500LBS HEAL PROOF
SH-1	SHOWER ENCLOSURE, THREE SIDED, FIBERGLASS, 36"x36"	OASIS MODEL: SH3636	KOHLER FORTE MODEL:K-22169-G, SIoux CHIEF MODEL: 825 SERIES	1.75 GPM; BOTTOM OF HEAD IS 6'6" AFF, DRAIN ROUND SCREW ON TYPE STRAINER
EWC-1	STAINLESS STEEL ELECTRIC WATER COLLER AND BOTTLE FILLER	ELKAY MODEL: LZSTL8WSSP	BI-LEVEL ADA COOLER FILTERED, BOTTLE FILLER 115V, 8.0 GPH	
LAV-1	INTEGRAL BOWLS IN ACRYLIC SOLID SURFACE COUNTER TOP	BRADLEY TERREON MODEL: LD-3010	KOHLER TRITON BOWE MODEL: K-800T20-5ANL	ADA COMPLIANT
LAV-2	ACRYLIC SOLID SURFACE COUNTER TOP	ELKAY CELEBRITY MODEL: BCR15	CHICAGO FAUCETS MODEL: W4D-SB6AE1-317ABCP	ADA COMPLIANT

## PIPE HANGER SCHEDULE



PIPE SIZE (NOMINAL)	HANGER SPACING (FT)				HANGER ROD SIZE
	STEEL	CAST IRON	COPPER	PVC/ABS	
1/2"	5	-	6	3	3/8"
3/4"	6	-	6	4	3/8"
1"	7	-	6	4	3/8"
1 1/4"	8	-	6	4	3/8"
1 1/2"	9	5	10	4	3/8"
2"	10	5	10	4	3/8"
2 1/2"	10	-	10	4	1/2"
3"	10	5	10	4	1/2"
4"	10	5	10	4	1/2"
5"	10	5	10	-	1/2"
6"	10	5	10	-	1/2"

## PIPE INSULATION SCHEDULE

PIPE SYSTEM	THICKNESS	TYPE	REMARKS
DOMESTIC HOT WATER	1" TO 1 1/2" SEE NOTE 1	FIBERGLASS	SELF SEALING W/PVC FITTING COVERS
DOMESTIC COLD WATER	1"	FIBERGLASS	SELF SEALING W/PVC FITTING COVERS
HOT WATER RECIRCULATING	1" TO 1 1/2" SEE NOTE 1	FIBERGLASS	SELF SEALING W/PVC FITTING COVERS

1. FOR PIPING LESS THAN 1 1/2", INSULATION THICKNESS SHALL BE 1", FOR PIPING 1 1/2" AND LARGER, INSULATION THICKNESS SHALL BE 1 1/2"

## PIPING SYMBOL LEGEND

PIPING	NEW	EXISTING	DEMOLISH
DOMESTIC COLD WATER	CW	CW	CW
DOMESTIC HOT WATER	HW	HW	HW
HOT WATER CIRCULATION	HW	HW	HW
SANITARY VENT	3"Ø	3"Ø	3"Ø
SANITARY WASTE	SAN	SAN	SAN
STORM SEWER	ST	ST	ST

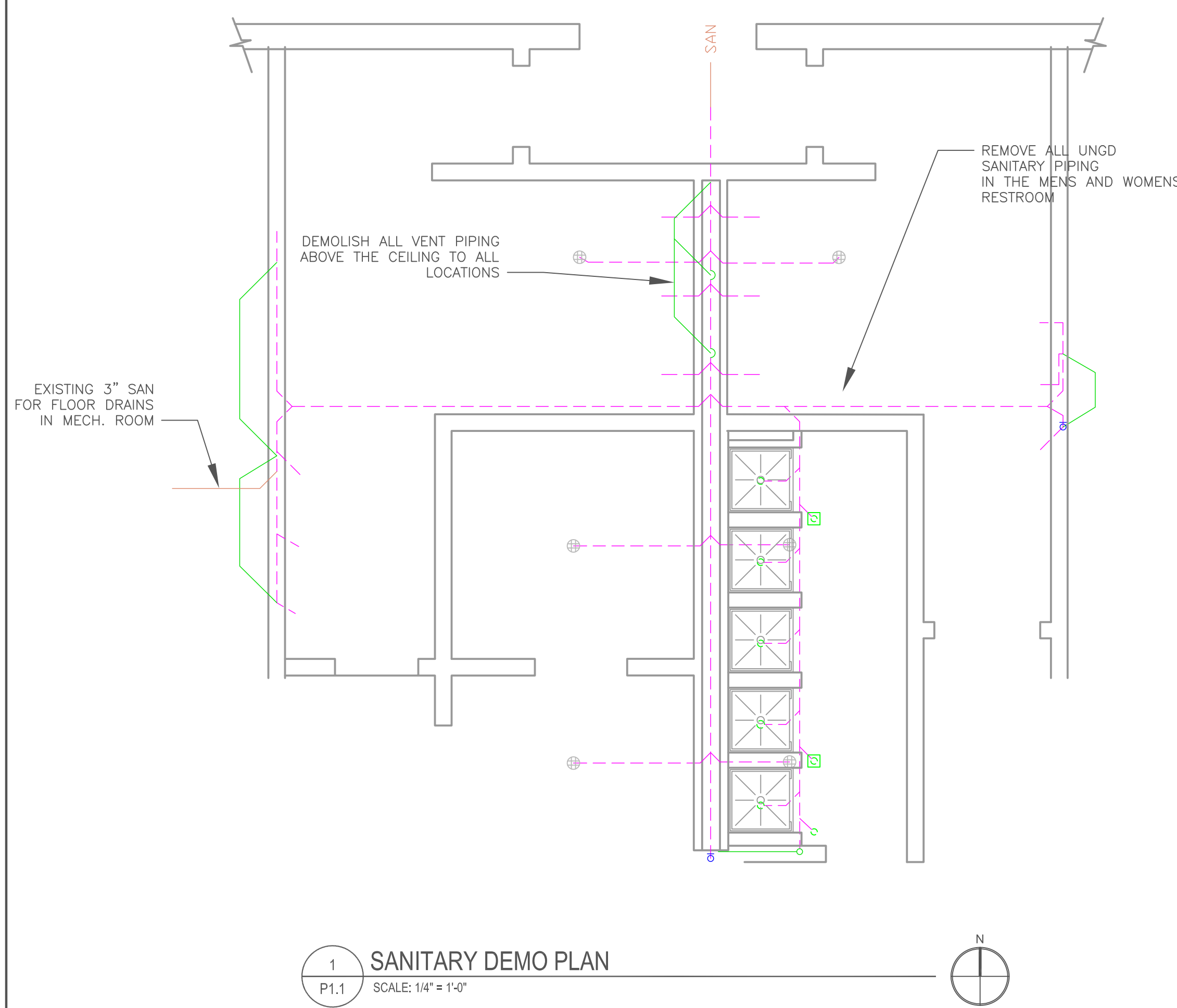
  

VALVES	PIPE FITTINGS	PIPE FITTINGS
3WAY VALVE	HOSE BIB	AIR CHAMBER
BALL VALVE	CONNECT TO EXISTING	AIR ELIMINATOR
BUTTERFLY VALVE	ELBOW DOWN	AIR SEPARATOR
CHECK VALVE	ELBOW UP	AUTOMATIC AIR VENT
CONTROL VALVE	TEE UP	COMPOUND GAUGE
GATE VALVE	TEE DOWN	PRESSURE GAUGE
GLOBE VALVE	CLEAN OUT	SHOCK ABSORBER
RELIEF VALVE	CONCENTRIC REDUCER	
BACK FLOW PREVENTER	ECCENTRIC REDUCER	
PRESSURE REDUCING VALVE	END CAP	
GAS METER	UNION	
WATER METER	STRAINER	
	FLANGED CONNECTION	
	EXPANSION JOINT	

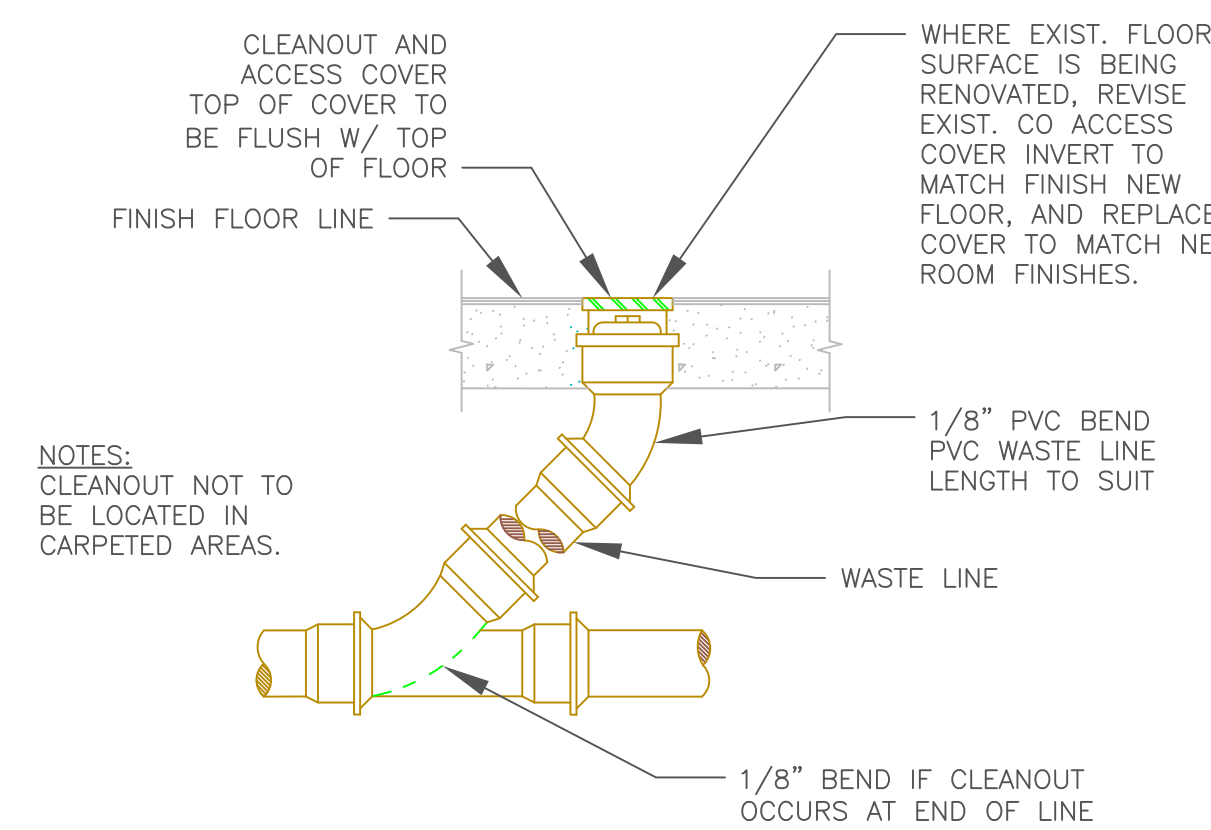
  

OTHER SYMBOLS
XX-X PLUMBING FIXTURE/EQUIPMENT INDICATOR
FLOOR DRAIN

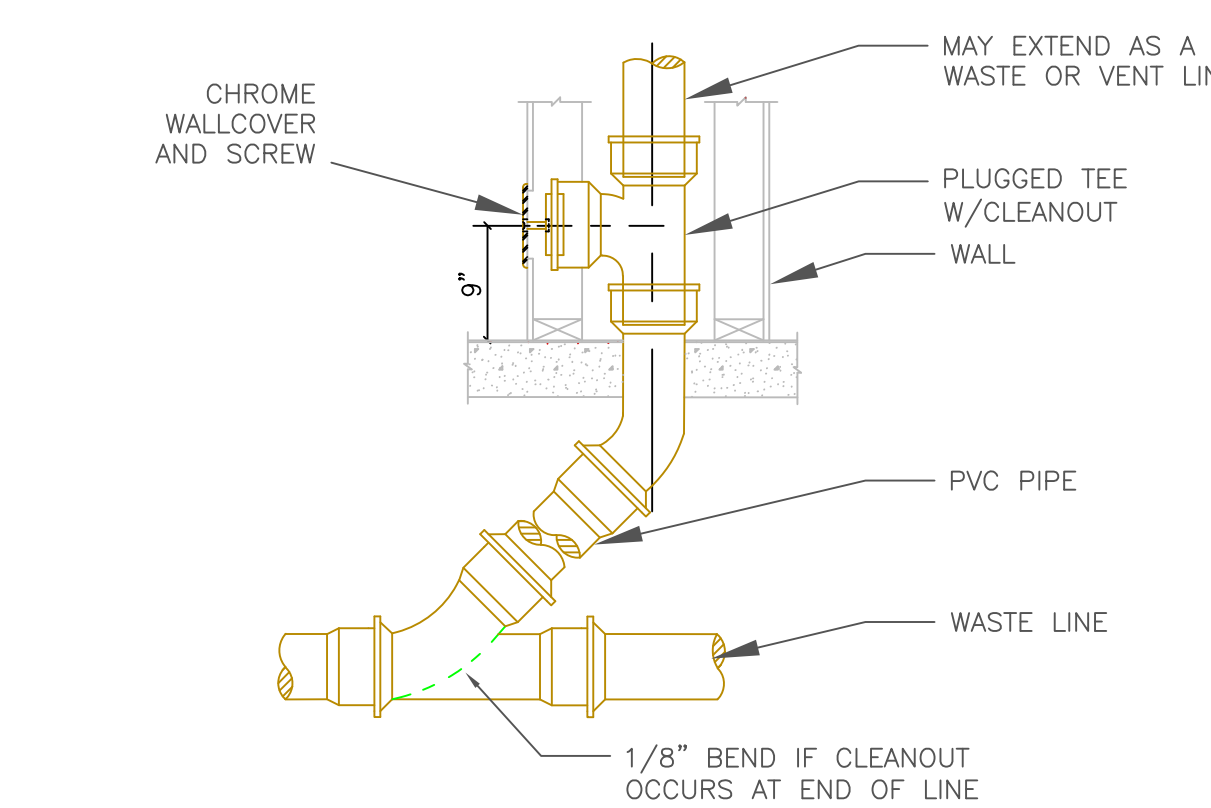
\*\*THIS SHEET IS TO BE PRINTED IN COLOR TO SEE DIFFERENT LINES\*\*



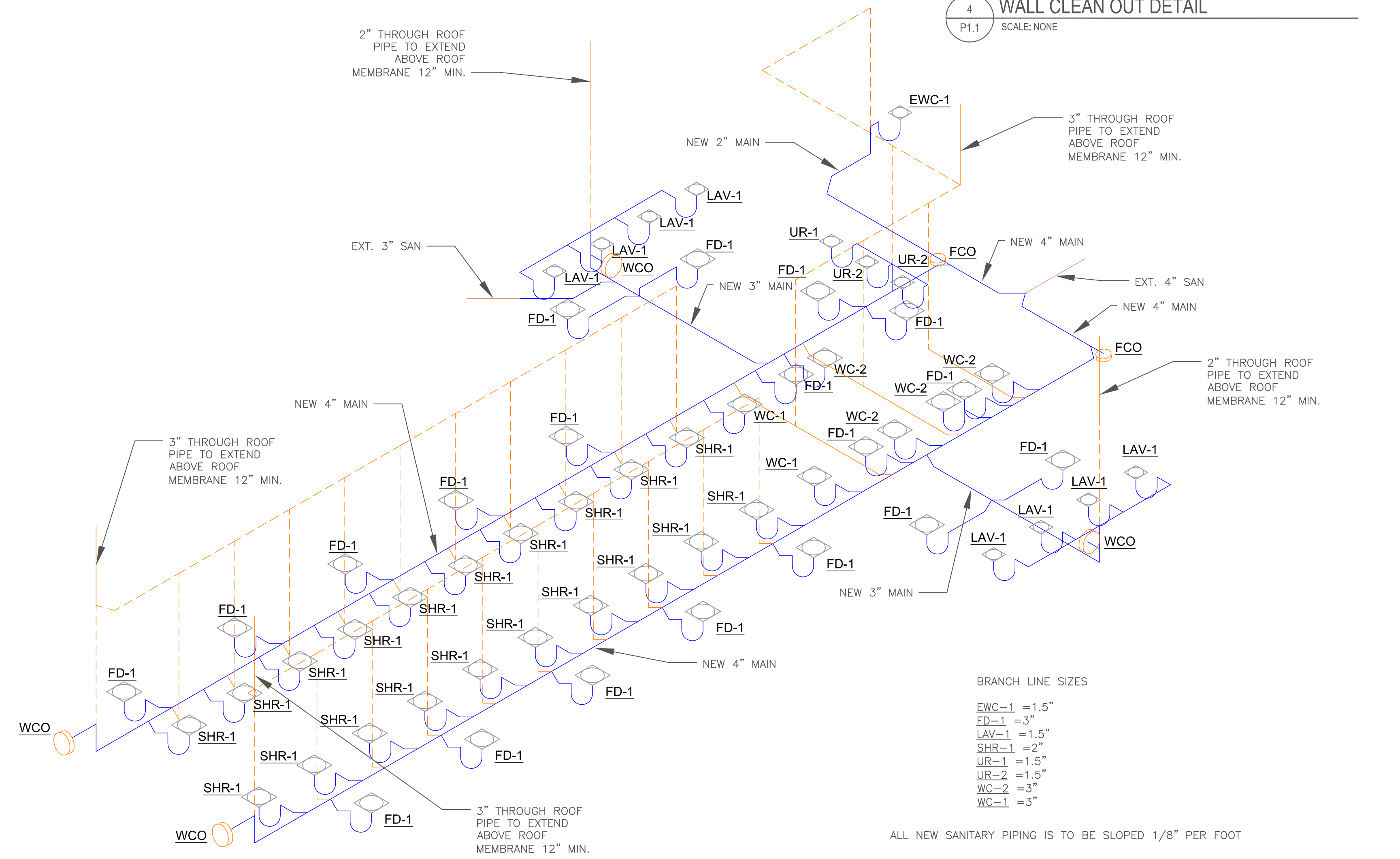
1 SANITARY DEMO PLAN  
P1.1 SCALE: 1/4" = 1'-0"



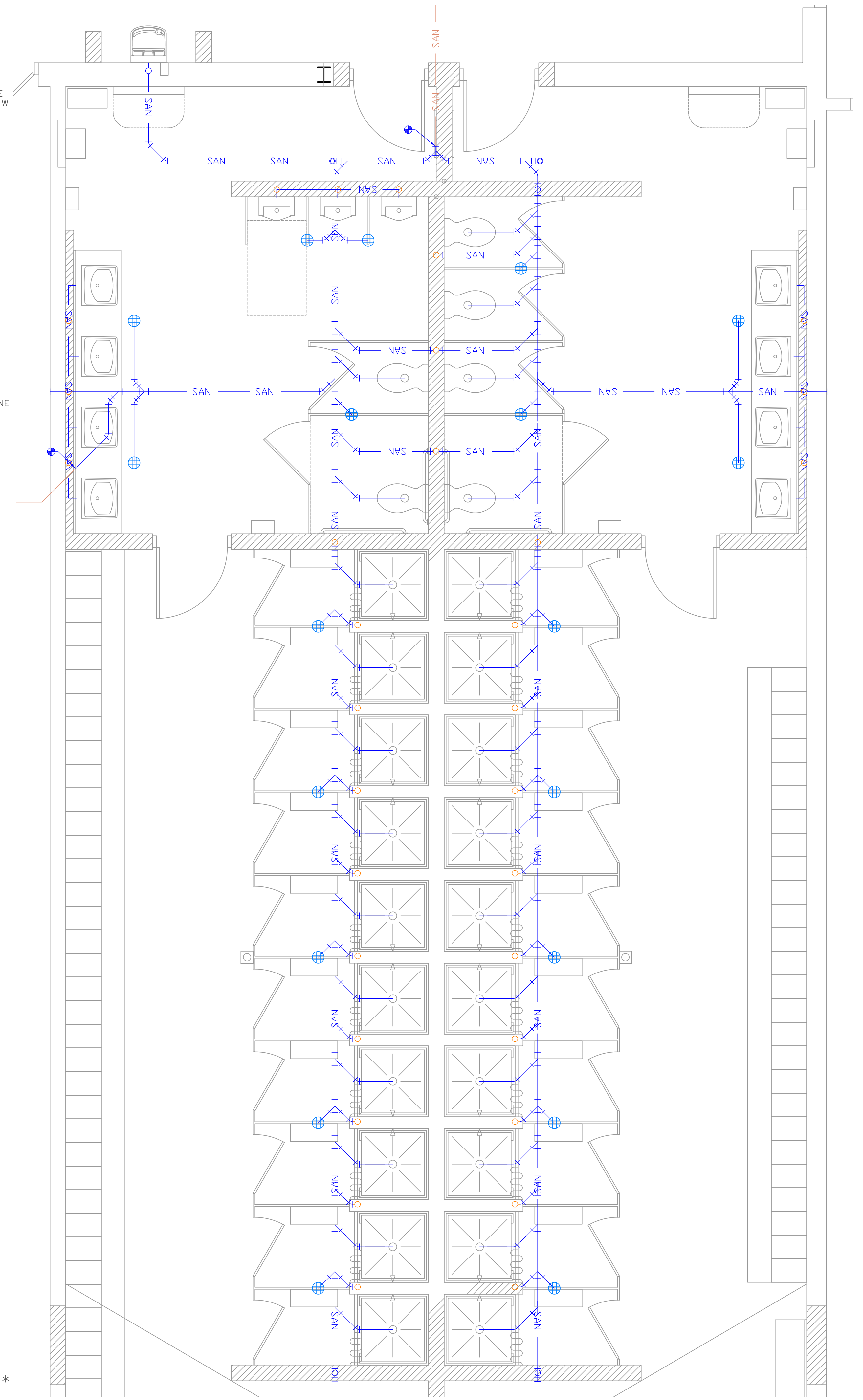
3 FLOOR CLEAN OUT DETAIL  
P1.1 SCALE: NONE



4 WALL CLEAN OUT DETAIL  
P1.1 SCALE: NONE



2 SANITARY SEWER ISOMETRIC PLAN  
P1.1 SCALE: NONE



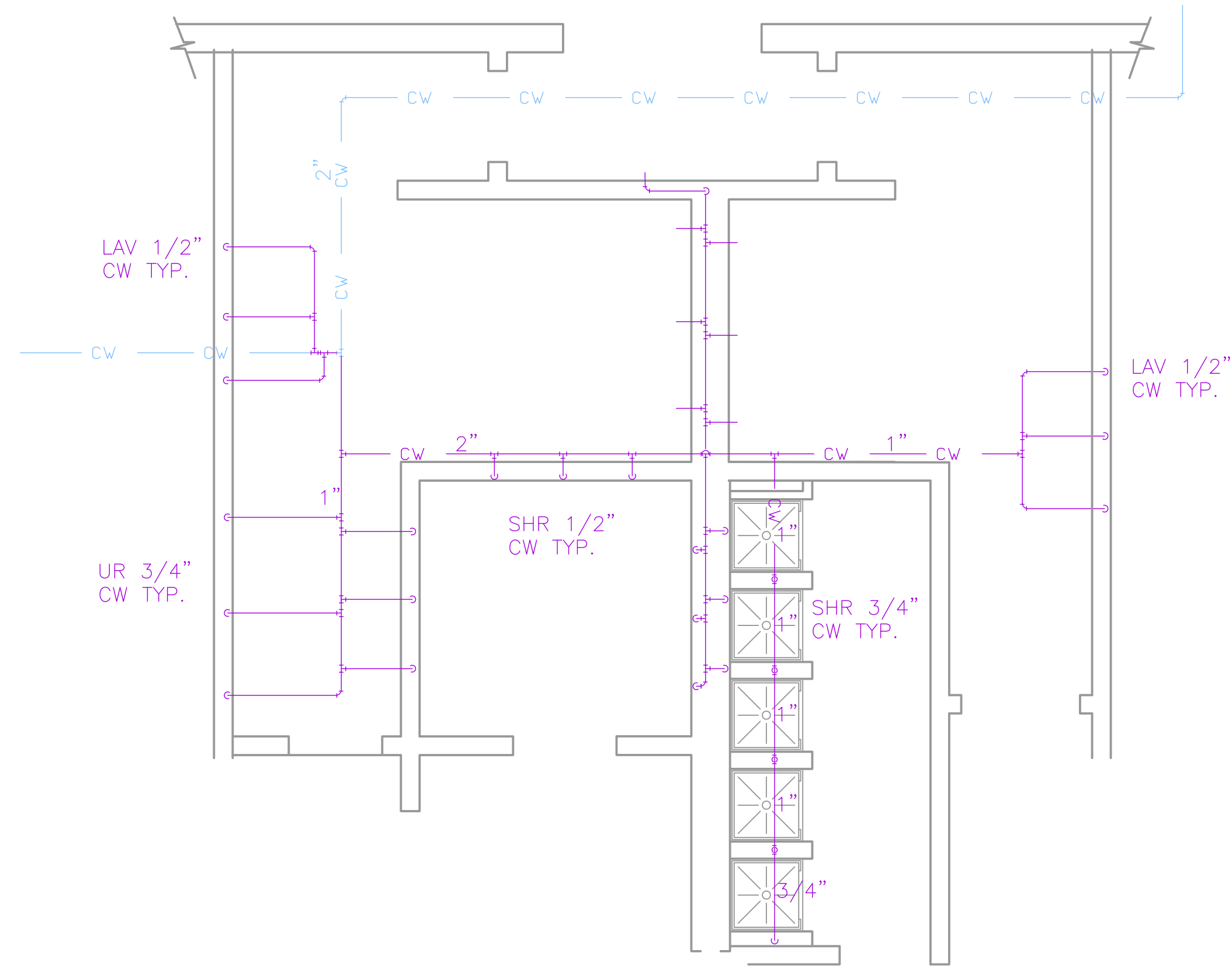
5 SANITARY SEWER PLAN  
P1.1 SCALE: 1/4" = 1'-0"

\*\*THIS SHEET IS TO BE PRINTED IN COLOR TO SEE DIFFERENT LINES\*\*

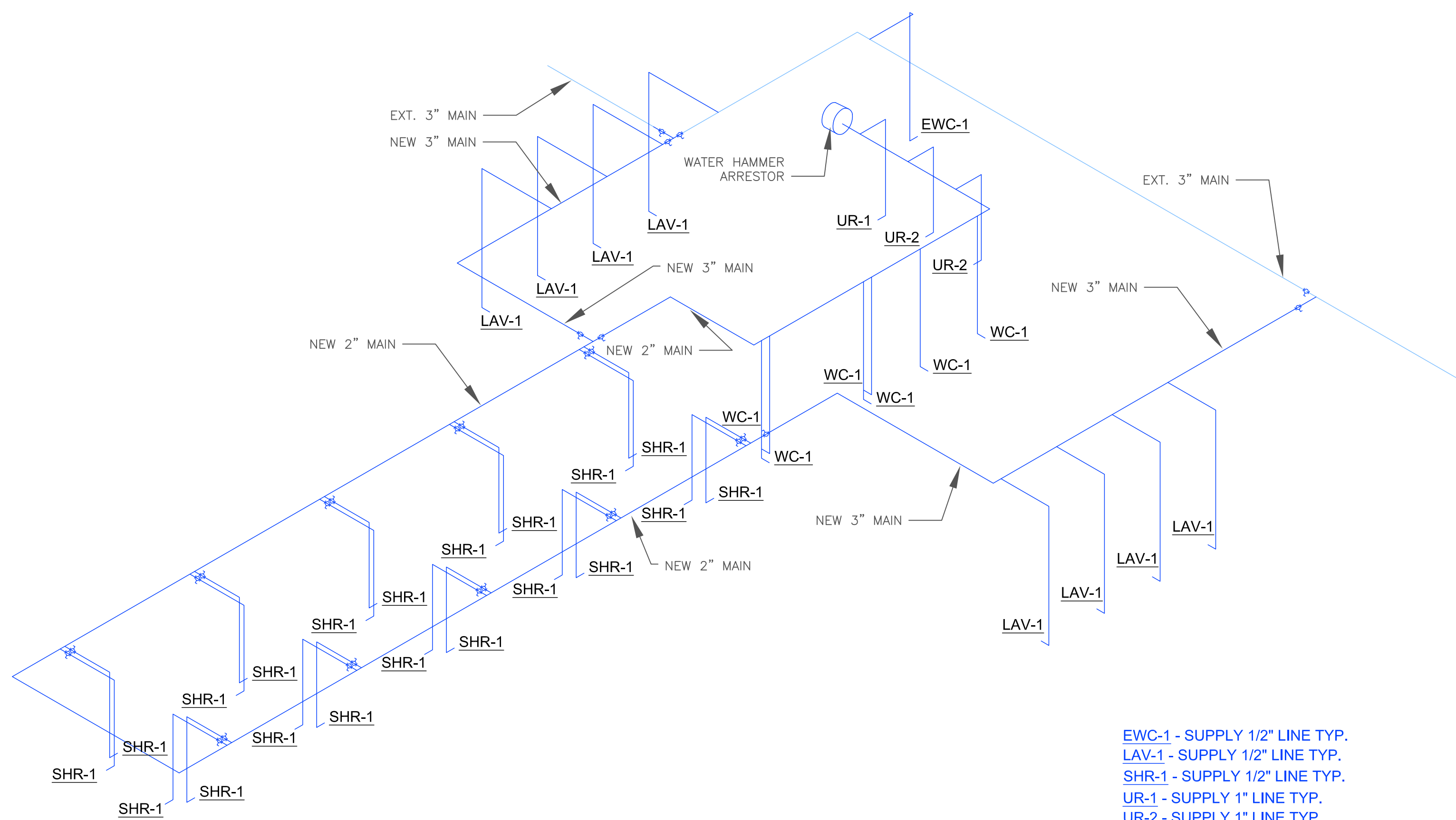
- BRANCH LINE SIZES
- EW-1 = 1.5"
  - FD-1 = 3"
  - LAV-1 = 1.5"
  - SHR-1 = 2"
  - UR-1 = 1.5"
  - UR-2 = 1.5"
  - WC-2 = 3"
  - WC-1 = 3"

ALL NEW SANITARY PIPING IS TO BE SLOPED 1/8" PER FOOT

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE	DESIGNED	SDD
P1.1	2606722008	PRELIMINARY	26 JULY 2023	DRAWN	SDD
		CONSTRUCTION	29 JULY 2023	CHECKED	BAB
		FINAL RECORD		APPROVED	KMM



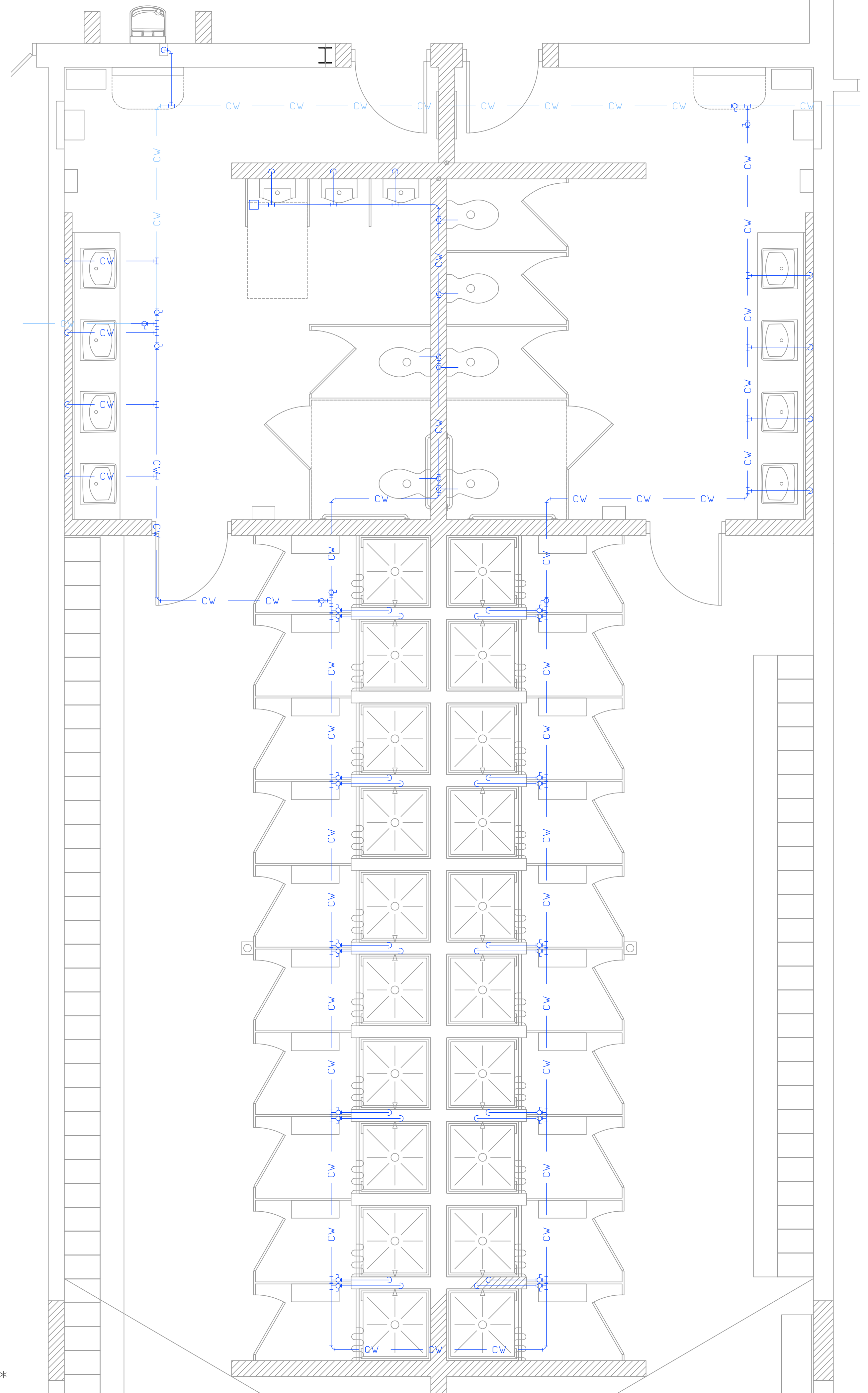
1 COLD WATER LINE DEMO PLAN  
 P1.2 SCALE: 1/4" = 1'-0"



EWC-1 - SUPPLY 1/2" LINE TYP.  
 LAV-1 - SUPPLY 1/2" LINE TYP.  
 SHR-1 - SUPPLY 1/2" LINE TYP.  
 UR-1 - SUPPLY 1" LINE TYP.  
 UR-2 - SUPPLY 1" LINE TYP.  
 WC-1 - SUPPLY 1 1/4" LINE TYP.

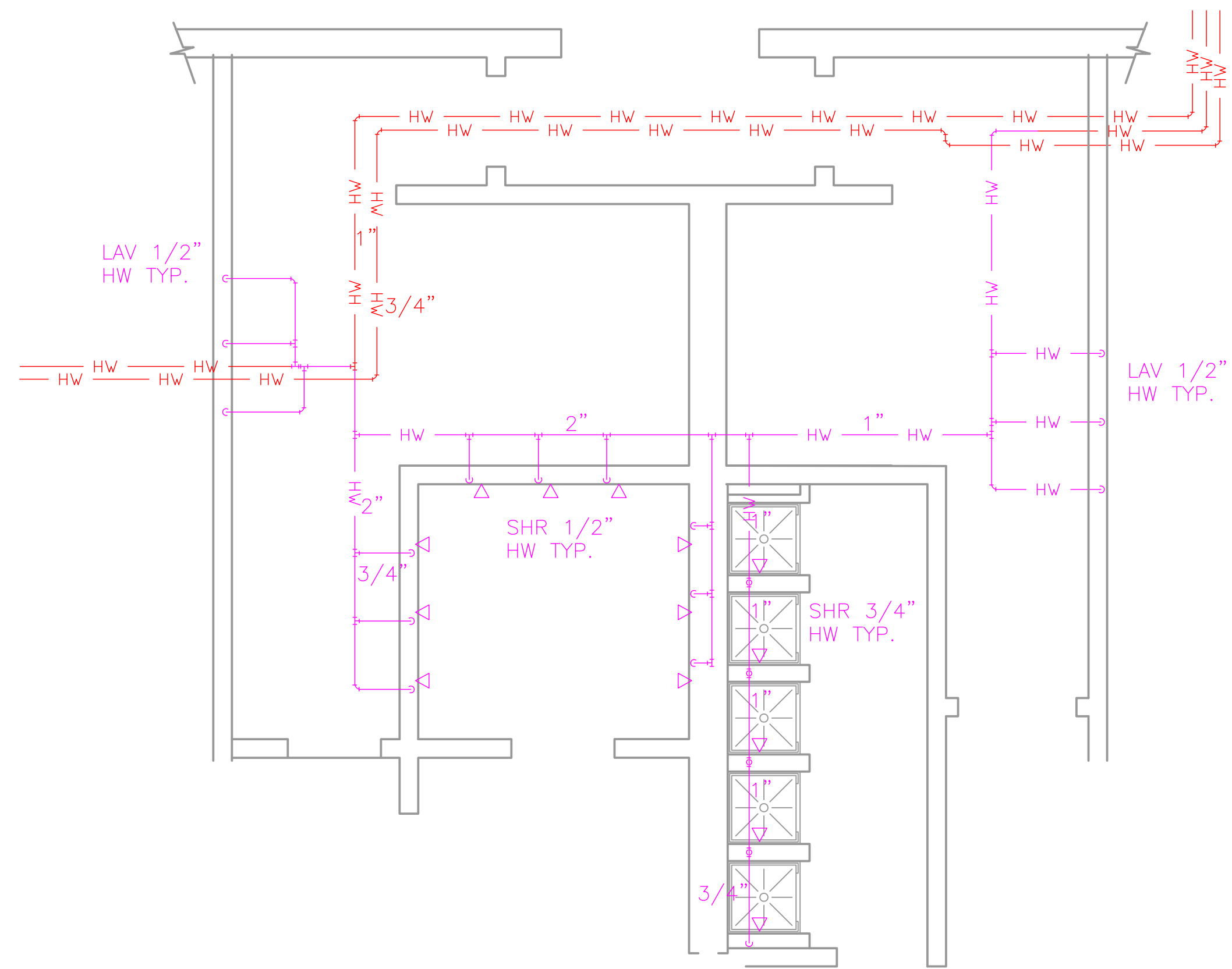
\*\*THIS SHEET IS TO BE PRINTED IN COLOR TO SEE DIFFERENT LINES\*\*

2 NEW COLD WATER LINE ISOMETRIC PLAN  
 P1.2 SCALE: 1/4" = 1'-0"

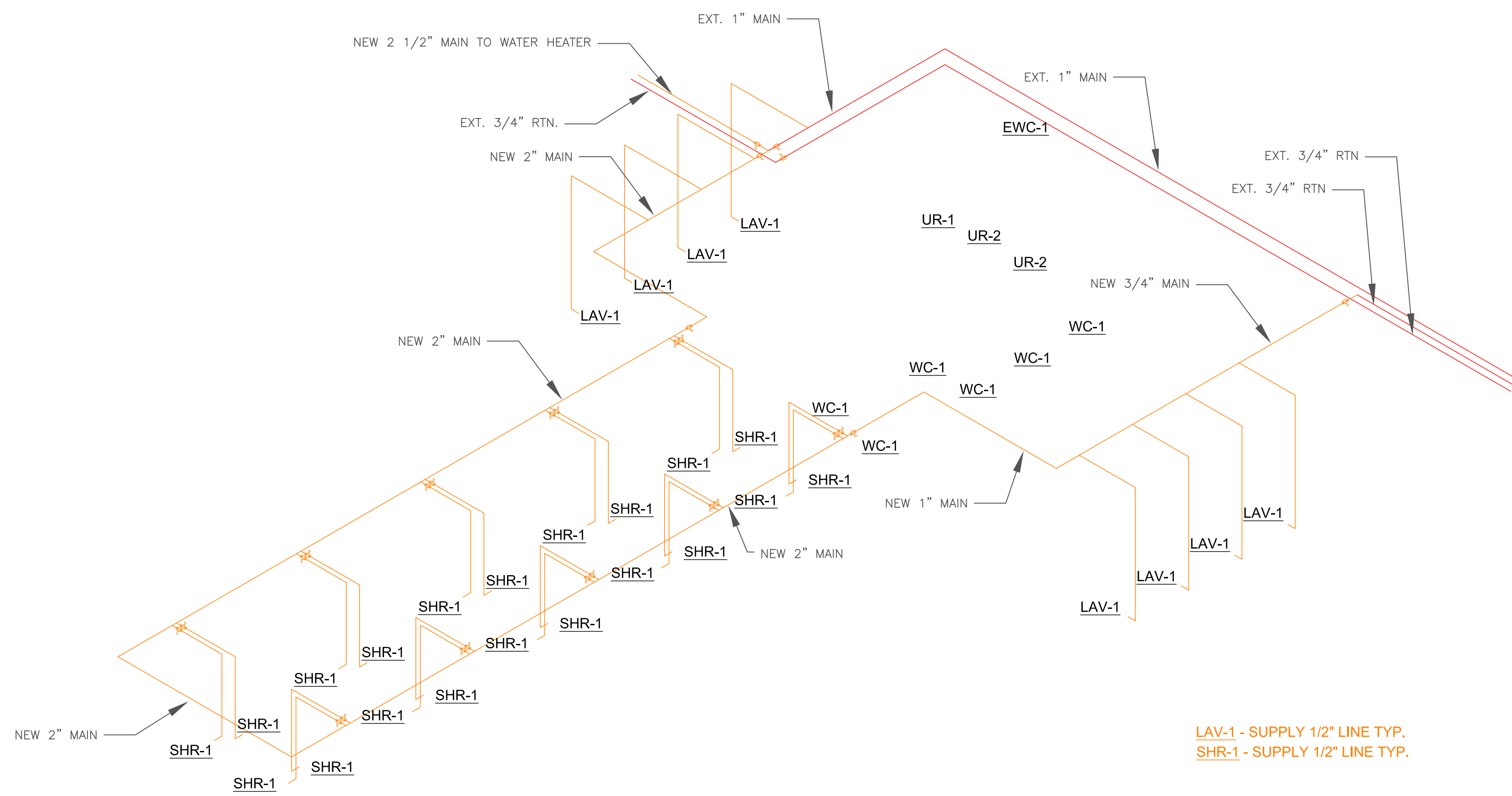


3 COLD WATER LINE PLAN  
 P1.2 SCALE: 1/4" = 1'-0"

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE	DESIGNED	SDD
P1.2	2606722008	PRELIMINARY	26 JULY 2023	DESIGNED	SDD
		CONSTRUCTION	29 JULY 2023	DRAWN	SDD
		FINAL RECORD		CHECKED	BAB
				APPROVED	KMM



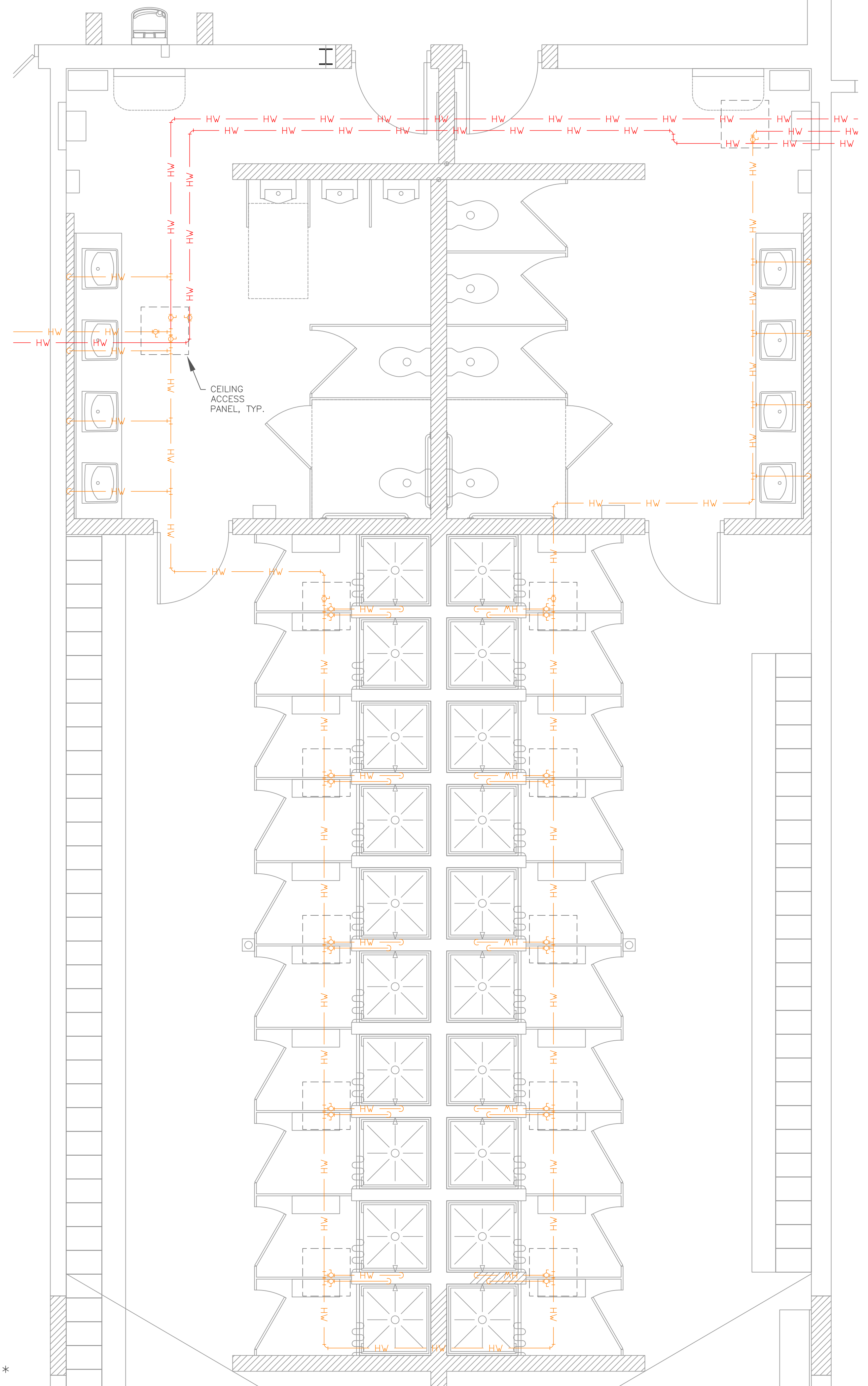
1 HOT WATER LINE DEMO PLAN  
 P1.3 SCALE: 1/4" = 1'-0"



LAV-1 - SUPPLY 1/2" LINE TYP.  
 SHR-1 - SUPPLY 1/2" LINE TYP.

2 NEW HOT WATER LINE ISOMETRIC PLAN  
 P1.3 SCALE: 1/4" = 1'-0"

\*\*THIS SHEET IS TO BE PRINTED IN COLOR TO SEE DIFFERENT LINES\*\*



3 HOT WATER LINE PLAN  
 P1.3 SCALE: 1/4" = 1'-0"

SHEET	IDENTIFICATION NO.	ISSUED FOR	DATE	DESIGNED	SDD
P1.3	260672206	PRELIMINARY	26 JULY 2023	DESIGNED	SDD
		CONSTRUCTION	29 JULY 2023	DRAWN	SDD
		FINAL RECORD		CHECKED	BAB
	PROJECT INDEX CODE			APPROVED	KMM