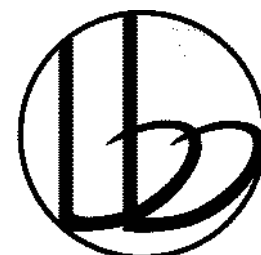


MONTGOMERY COUNTY

WESTERN REGIONAL WATER RECLAMATION FACILITY OPERATIONS
AND MAINTENANCE BUILDINGS RENOVATION

MCES

4111 HYDRAULIC RD
DAYTON, OHIO 45449
BID / PERMIT SET



BROWN & BILLS
ARCHITECTS

893 S. MAIN ST. MB #360
ENGLEWOOD, OH 45322
937-371-8836

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MONTGOMERY COUNTY
WESTERN REGIONAL WATER RECLAMATION FACILITY
OPERATIONS AND MAINTENANCE BUILDINGS
RENOVATION
4111 HYDRAULIC RD
DAYTON, OHIO 45449

VICINITY MAP:

N.T.S.



PROJECT PHASING:

THIS PROJECT CONSISTS OF TWO BUILDINGS UNDERGOING RENOVATION WORK. THE RENOVATIONS ON EACH BUILDING WILL NEED TO BE PHASED, AS THE BUILDINGS CANNOT BE SIMULTANEOUSLY OUT OF OPERATION. THIS FACILITY IS A 24-HOUR, 7 DAYS A WEEK, 365 DAYS A YEAR STAFFED FACILITY. REFER TO EACH ENGINEERING DISCIPLINE FOR SPECIFIC PHASING GUIDELINES. CONSTRUCTION ON THE OPERATIONS BUILDING SHOULD BE COMPLETED FIRST. A COMPLETE PHASING PLAN SHOULD BE INCLUDED WITH THE BID PACKAGE.

COORDINATE WORK WITH THE OWNER BEFORE ANY WORK, UTILITY OUTAGES, OR SYSTEM MODIFICATIONS COMMENCE.

CONTRACTOR TO PROVIDE ONE TEMPORARY OFFICE TRAILER FOR THE OWNER'S USE FOR THE DURATION OF PHASE ONE, AND ONE FOR THE CONTRACTOR'S USE FOR THE DURATION OF THE PROJECT. CONTRACTOR TO PROVIDE TEMPORARY TOILET FACILITIES FOR CONSTRUCTION WORKERS, AS WELL AS SEPARATE TEMPORARY TOILET FACILITIES FOR USE BY THE COUNTY STAFF, LOCATED NEAR THE COUNTY TEMPORARY OFFICE TRAILER FOR THE DURATION OF THE PROJECT.

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G106	LIFE SAFETY PLAN MAINTENANCE BLDG		A501	WALL PARTITIONS, WINDOW AND DOOR TYPE		ELECTRICAL		
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S004	STRUCTURAL SPECIAL INSPECTIONS TABLES		PD101	OPERATIONS BLDG DEMOLITION PLAN		E101	ELECTRICAL POWER NEW WORK PLANS OPERATION BLDG	
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S100	STRUCTURAL COVERED PARKING AREA FRAMING PLAN OPERATIONS BUILDING		P101	OPERATIONS BUILDING SANITARY NEW WORK PLANS		E103	ELECTRICAL ROOF NEW WORK PLAN OPERATIONS BLDG	
S101	STRUCTURAL FIRST & SECOND FLOOR FRAMING PLAN OPERATIONS BUILDING		P102	OPERATIONS BUILDING SUPPLY NEW WORK PLANS		E104	ELECTRICAL POWER NEW WORK PLANS MAINTENANCE BLDG	
S300	STRUCTURAL SECTIONS		P103	MAINTENANCE BUILDING NEW WORK PLAN		E105	ELECTRICAL LIGHTING NEW WORK PLANS MAINTENANCE BLDG	
S301	STRUCTURAL SECTIONS		P104	MAINTENANCE BUILDING SUPPLY NEW WORK PLANS		E601	ELECTRICAL EXISTING PANEL SCHEDULES OPS BLDG	
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S502	STRUCTURAL DETAILS		MECHANICAL			E604	ELECTRICAL SCHEDULES	
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AS101	ARCHITECTURAL SITE PLAN		M003	SCHEDULES				
A001	FIRST AND SECOND FLOOR & CEILING DEMOLITION PLANS OPERATIONS BLDG		MD101	OPERATIONS BUILDING - DEMO PLANS				
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A101	FIRST AND SECOND FLOOR & CEILING PLANS OPERATIONS BLDG		MD103	MAINTENANCE BUILDING - DEMO PLAN				
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CONTACTS:

OWNER	ARCHITECT	STRUCTURAL ENGINEER	PME ENGINEER	BUILDING DEPARTMENT	APPROVAL
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BID / PERMIT
7/10/2026

A201284.6

DRAWN BY: SKK

TITLE SHEET

G101

ABBREVIATIONS

NOTE: ABBREVIATIONS APPLY TO ARCHITECTURAL DRAWINGS ONLY. IF ANY ABBREVIATION IS NOT DEFINED CALL THE ARCHITECT FOR CLARIFICATIONS.

SYMBOLS			H	S
@	AT		HDR. HEADER	S SOUTH
/	CENTERLINE		HDW. HARDWARE	S.C.W. SOLID CORE WOOD
⊥	CHANNEL		H.M. HOLLOWMETAL	SEAL SEALER
⊥	DIAMETER		HOR. HORIZONTAL	S.V. SHEET VINYL
⊥	PERPENDICULAR		HT. HEIGHT	SCHED. SCHEDULE
⊥	PLATE		HTG. HEATING	STUC. STUCCO
⊥	ROUND		H.V.A.C. HEATING, VENTILATING, & AIR CONDITIONING	S.D. STORM DRAIN
⊥	SQUARE	A	H.W.H. HOT WATER HEATER	SEC. SECTION
A.B.	ANCHOR BOLT		HR. HANDRAIL	SHT. SHEET
AC.B	ACOUSTIC BOARD		H.C. HOLLOW CORE	SIM. SIMILAR
AC.PL	ACOUSTIC PLASTER		HDWD. HARDWOOD	SL. SLATE
AC.T	ACOUSTIC TILE			SPEC. SPECIFICATION(S)
A/C	AIR CONDITIONING			SQ. SQUARE
A.D.	AREA DRAIN			S.S. STAINLESS STEEL
A.F.F.	ABOVE FINISH FLOOR			ST. STONE
ALT.	ALTERNATE			STD. STANDARD
ALUM.	ALUMINUM			STOR. STORAGE
ANCH.	ANCHOR			STRUC.T. STRUCTURAL
APPROX.	APPROXIMATELY			SUS. SUSPENDED
ATTEN.	ATTENUATION			STL. STEPS
B/B	BACK TO BACK			T & B TOP & BOTTOM
BD.	BOARD			TEL. TELEPHONE
BLDG.	BUILDING			TEMP. TEMPERED
BI	BUILT-IN CABINETRY			TERR. TERRAZZO
BLK.	BLOCK			T. & G. TONGUE & GROOVE
BLKG.	BLOCKING			THK. THICK
B.M.	BENCH MARK			T.O.F. TOP OF FOUNDATION
BOT.	BOTTOM			T.WALL TOP OF WALL
BRG.	BEARING			T.MAS. TOP OF MASONRY
BRK.	BRICK			T/STL. TOP OF STEEL
BSMT.	BASEMENT			T/CONC. TOP OF CONCRETE
CAR.	CARRIER			TV TELEVISION
C.B.	CATCH BASIN			TYP. TYPICAL
CAB.	CABINET			U.D. UNIT DIMENSION
CEM.	CEMENT			U.N.O. UNLESS NOTED OTHERWISE
CER.M.	CERAMIC MOSAIC			UR. URINAL
CER.T.	CERAMIC TILE			
CLR.	CLEAR			
CHAN.	CHANNEL			
C.I.	CAST IRON			
CLG.	CEILING			
COL.	COLUMN			
CONC.	CONCRETE			
C.M.U.	CONCRETE MASONRY UNIT			
CONST.	CONSTRUCTION			
CONTR.	CONTRACTOR			
C.J.	CONTROL JOINT			
CTG.	COATING			
CR.	CURB			
DIM.	DIMENSION			
D.F.	DRINKING FOUNTAIN			
D.L.	DEADLOAD			
DN.	DOWN			
DS.	DOWNSPOUT			
DTL.	DETAIL			
DW.	DRYWALL			
DWG.	DRAWING			
DBL.	DOUBLE			
DISP.	DISPENSER			
DR.	DOOR			
DWR.	DISHWASHER			
E.	EAST			
EA.	EACH			
EJ.	EXPANSION JOINT			
E.W.	EACH WAY			
ENAM.	ENAMEL			
ELEC.	ELECTRIC			
ELEV.	ELEVATION			
EPXY.	EPOXY			
EQ.	EQUAL			
EQUIP.	EQUIPMENT			
EXIST.	EXISTING			
EXP.	EXPOSED			
EXPSN.	EXPANSION			
EX.RM.	EXISTING TO REMAIN			
EX.RP.	EXISTING TO BE REPAIRED			
FD.	FLOOR DRAIN			
FDTN	FOUNDATION			
F.E.	FIRE EXTINGUISHER			
FIN.	FINISHED			
FLR.	FLOOR			
FLG.	FLOORING			
FTG.	FOOTING			
FND.	FOUNTAIN			
FRM.	FRAME			
FLUOR.	FLUORESCENT			
F.PRG	FIRE PROOFING			
FPL.	FIREPLACE			
FT.	FOOT			
GA.	GAGE, GAUGE			
GALV.	GALVANIZED			
GEN.	GENERAL			
G.C.	GENERAL CONTRACTOR			
G.F.I.	GROUND FAULT INTERRUPT			
G.I.	GALVANIZED IRON			
GL.	GLASS			
GL.T.	GLAZED TILE			
GND.	GROUND			
GRT.	GROUT			
GP.DW.	GYPSON DRYWALL			
GV.	GYPSON			

SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DETAIL NUMBER		ROOM NAME
	SHEET ON WHICH DETAIL IS DRAWN		ROOM NUMBER
	SECTION REFERENCE		DOOR NUMBER
	ENLARGED REFERENCE		WINDOW NUMBER
	ELEVATION NUMBER		NOTE NUMBER
	SHEET ON WHICH ELEVATION IS DRAWN		ITEM NUMBER
	ELEVATION REFERENCE (INTERIOR OR EXTERIOR)		WALL TYPE REFERENCE
	ELEVATION REFERENCE (INTERIOR)		REVISION TAG AND CLOUD
	ELEVATION REFERENCE (INTERIOR)		DOOR & WINDOW SWING (ELEVATION)
	COLUMNS & STRUCTURAL GRID		FIRE EXTINGUISHER IN SEMI-RECESSED CABINET
	ELEVATION REFERENCE		FIRE EXTINGUISHER ON WALL BRACKET
	ELEVATION HEIGHT		FLOOR DRAIN
	MATCH LINE		ROOF DRAIN
	NORTH ARROW		TEST BORING
			STAIR DIRECTION
			1 HOUR FIRE RATING
			POINT OF INTERSECTION BETWEEN RADIUS AND EXTERIOR WALLS

WALL TYPES

SHEAR WALL	NEW WALL	EXISTING WALL	DEMOLITION

TYPICAL DOOR CONVENTIONS

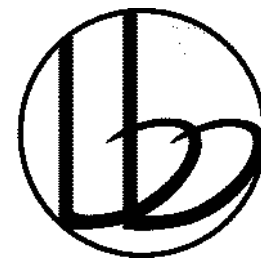
EXIST. DOOR TO BE REMAIN	EXIST. DOOR TO BE REMOVED	DOOR WITH 180 DEGREE SWING
NEW SINGLE DOOR	NEW PAIR OF DOORS	ACCORDIAN FOLDING DOOR
DOUBLE ACTING DOOR	DOOR WITH EMERGENCY RELEASE HDW.	POCKET DOOR
SLIDING DOOR	FOLDING DOORS	CASED OPENING

MATERIAL SYMBOLS

	EARTH OR COMPACT FILL		GRANULAR FILL
	CAST-IN-PLACE/ PRECAST		LIGHT WEIGHT CONCRETE
			SAND/ MORTAR/ PLASTER/ CUT STONE
	TYP. CMU		BRICK
	TYP. CUT STONE		
	ALUMINUM		STEEL/ OTHER MATERIALS
	FINISH		ROUGH
			BLOCKING
	PLYWOOD- LARGE SCALE		PLYWOOD- SMALL SCALE
	GLASS		
	LOOSE OR BATT		RIGID
			SPRAY FOAM
	GYPSUM WALLBOARD		PLASTIC
			LATH AND PLASTER
	CERAMIC TILE		GLASS
	WOOD STUD		METAL STUD
			SPECIAL FINISH FACE

GENERAL NOTES:

- WORK SHALL NOT START UNTIL CONTRACTOR HAS RECEIVED A WRITTEN NOTICE TO PROCEED FROM THE OWNER.
- CONTRACTOR SHALL OBTAIN AND PAY FOR BUILDING AND TRADE PERMITS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL BUILDING CODES. CONTRACTOR TO NOTIFY ARCHITECT IMMEDIATELY IN WRITING IF DOCUMENTS VARY FROM THESE REGULATIONS.
- ALL ELECTRICAL WORK SHALL BE INSTALLED PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
- CONTRACTOR SHALL MAINTAIN A NEAT AND ORDERLY WORK AND STORAGE AREA. OSHA SAFETY REQUIREMENTS SHALL BE IMPLEMENTED AND ENFORCED BY THE CONTRACTOR.
- CONTRACTOR SHALL INSTALL BARRICADES AND DUST BARRIERS TO PROTECT THE PUBLIC, RESIDENTS, OWNERS PERSONNEL, AND ADJACENT PROPERTY FROM DEMOLITION AND CONSTRUCTION OPERATIONS.
- THE CONTRACTOR SHALL PROVIDE AND PAY FOR LABOR, MATERIALS, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY, WATER, HEAT, UTILITIES, TRANSPORTATION, AND OTHER SERVICES NECESSARY FOR COMPLETION OF THE WORK, UNLESS OTHERWISE NOTED IN AGREEMENTS.
- THE CONTRACTOR SHALL PREPARE AND PRESENT A SCHEDULE FOR THE COMPLETION OF THE WORK PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL WARRANT ALL LABOR AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. THIS REQUIREMENT SHALL NOT SUPERSEDE OTHER SPECIFIC MATERIAL WARRANTIES WHICH MAY BE LONGER.
- CONTRACTOR TO SUBMIT REVIEWED SHOP DRAWINGS AS APPLICABLE. NO WORK SHALL COMMENCE ON THIS PORTION OF THE WORK UNTIL REVIEWED BY ARCHITECT.
- NO SUBSTITUTIONS SHALL BE ALLOWED WITHOUT EVALUATION BY THE ARCHITECT AND WRITTEN CONSENT OF THE OWNER.
- IN PREPARATION FOR A SUBSTANTIAL COMPLETION INSPECTION, THE CONTRACTOR SHALL PREPARE A PUNCH LIST AND COMPLETE THIS WORK PRIOR TO THE ARCHITECTS PERFORMING A FINAL PUNCH LIST. THE CONTRACTOR SHALL COMPLETE THIS WORK WITHIN ONE MONTH OF DATE ISSUED AND PRIOR TO FINAL PAYMENT.
- THE CONTRACTOR SHALL CAREFULLY STUDY AND COMPARE DRAWINGS AND OTHER CONTRACT DOCUMENTS. THE CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND OBSERVE CONDITIONS OF THE WORK RELATED TO THE CONTRACT DOCUMENTS. THE ARCHITECT SHALL BE NOTIFIED PROMPTLY OF ANY INCONSISTENCIES FOR CLARIFICATION AND COORDINATION BEFORE PROCEEDING WITH THE WORK.
- DRAWINGS ARE NOT TO BE SCALED. LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS.
- DIMENSIONS ON FLOOR PLAN ARE INDICATED AS FOLLOWS:
-AT EXISTING WALLS, TAKEN FROM FACE OF WALL
-AT NEW WALLS, SHOWN TO FACE OF STUDS, OR TO FACE OF MASONRY, UNLESS NOTED OTHERWISE.
- PROVIDE SOLID WOOD BLOCKING IN STUD WALLS AS REQUIRED TO SUPPORT WALL-MOUNTED CABINETRY, COUNTERS, AND ALL OTHER CABINETRY.
- ALL CONCEALED AND EXPOSED INSULATION SHALL MEET THE MINIMUM FLAME SPREAD AND SMOKE DEVELOPED RATINGS REQUIRED BY THE OHIO BUILDING CODE SECTIONS 720.2 AND 720.3.
- ALL SUSPENDED ITEMS SUCH AS CEILINGS, DUCTS, CONDUITS, ETC. SHALL BE SUSPENDED DIRECTLY FROM BUILDING STRUCTURE.
- CONTRACTOR TO VERIFY ALL CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE FABRICATING OR RELOCATING, ANY ITEMS TO BE INCORPORATED IN THE WORK.
- ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE ICC/ANSI A117.1 - 2017 EDITION AS REQUIRED PER THE 2024 OBC.



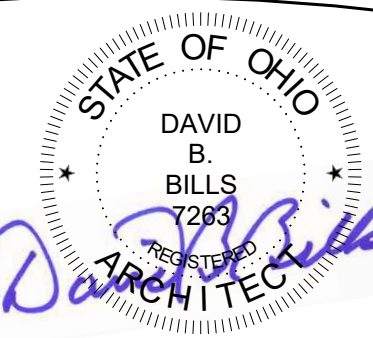
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WESTERN REGIONAL WATER RECLAMATION FACILITY
OPERATIONS AND MAINTENANCE BUILDINGS
RENOVATION

4111 HYDRAULIC RD
DAYTON, OHIO 45449



DAVID B. BILLS, LICENSE #7263
EXPIRATION DATE 12/31/2026

BID / PERMIT
7/10/2026

A201284.6

DRAWN BY: SKK

ABBREVIATIONS,
SYMBOLS, AND GENERAL
NOTES

G102

302 FLOOR SURFACES

302.1 GENERAL. FLOOR SURFACES SHALL BE STABLE, FIRM, AND SLIP RESISTANT, AND SHALL COMPLY WITH SECTION 302. CHANGES IN LEVEL IN FLOOR SURFACES SHALL COMPLY WITH SECTION 303.

302.2 CARPET PILE HEIGHT. CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD, OR BACKING OR NO CUSHION OR PAD. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, OR LEVEL CUT/UNCUT PILE TEXTURE. THE PILE SHALL BE 1/2 INCH (13 MM) MAXIMUM IN HEIGHT. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO THE FLOOR AND SHALL HAVE TRIM ALONG THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE TRIM SHALL COMPLY WITH SECTION 303.

302.3 ELONGATED OPENINGS IN FLOOR OR GROUND SURFACES. OPENINGS IN FLOOR SURFACES SHALL BE OF A SIZE THAT DOES NOT PERMIT THE PASSAGE OF A 1/2 INCH (13 MM) DIAMETER SPHERE. EXCEPT AS ALLOWED IN SECTIONS 407.4.3, 408.4.3, 409.4.3, 410.4, AND 805.10, ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE PREDOMINANT DIRECTION OF TRAVEL.

304 TURNING SPACE

304.1 GENERAL. A TURNING SPACE SHALL COMPLY WITH SECTION 304.

304.2 FLOOR SURFACE. FLOOR SURFACES OF A TURNING SPACE SHALL COMPLY WITH SECTION 302. CHANGES IN LEVEL ARE NOT PERMITTED WITHIN THE TURNING SPACE. EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

304.3 SIZE. TURNING SPACES SHALL COMPLY WITH SECTION 304.3.1 OR 304.3.2.

304.3.1 CIRCULAR SPACE. THE TURNING SPACE SHALL BE A CIRCULAR SPACE WITH A 60-INCH (1525 MM) MINIMUM DIAMETER. THE TURNING SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306.

304.3.2 T-SHAPED SPACE. THE TURNING SPACE SHALL BE A T-SHAPED SPACE WITHIN A 60-INCH (1525 MM) MINIMUM SQUARE, WITH ARMS AND BASE 36 INCHES (915 MM) MINIMUM IN WIDTH. EACH ARM OF THE T SHALL BE CLEAR OF OBSTRUCTIONS 12 INCHES (305 MM) MINIMUM IN EACH DIRECTION, AND THE BASE SHALL BE CLEAR OF OBSTRUCTIONS 24 INCHES (610 MM) MINIMUM. THE TURNING SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306 ONLY AT THE END OF EITHER THE BASE OR 304.4 DOOR SWING, UNLESS OTHERWISE SPECIFIED, DOORS SHALL BE PERMITTED TO SWING INTO TURNING SPACES.

305 CLEAR FLOOR SPACE

305.1 GENERAL. A CLEAR FLOOR SPACE SHALL COMPLY WITH SECTION 305.

305.2 FLOOR SURFACES. FLOOR SURFACES OF A CLEAR FLOOR SPACE SHALL COMPLY WITH SECTION 302. CHANGES IN LEVEL ARE NOT PERMITTED WITHIN THE CLEAR FLOOR SPACE.

EXCEPTION: SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.

305.3 SIZE. THE CLEAR FLOOR SPACE SHALL BE 48 INCHES (1220 MM) MINIMUM IN LENGTH AND 30 INCHES (760 MM) MINIMUM IN WIDTH.

305.4 KNEE AND TOE CLEARANCE. UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306.

305.5 POSITION. UNLESS OTHERWISE SPECIFIED, THE CLEAR FLOOR SPACE SHALL BE POSITIONED FOR EITHER FORWARD OR PARALLEL APPROACH TO AN ELEMENT.

305.6 APPROACH. ONE FULL, UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE SHALL ADJOIN OR OVERLAP AN ACCESSIBLE ROUTE OR ADJOIN ANOTHER CLEAR FLOOR SPACE.

305.7 ALCOVE SPACE. IF A CLEAR FLOOR SPACE IS IN AN ALCOVE OR OTHERWISE CONFINED ON ALL OR PART OF THREE SIDES, ADDITIONAL MANEUVERING CLEARANCES COMPLYING WITH SECTIONS 305.7.1 AND 305.7.2 SHALL BE PROVIDED, AS APPLICABLE.

305.7.1 PARALLEL APPROACH. WHERE THE CLEAR FLOOR SPACE IS POSITIONED FOR A PARALLEL APPROACH, THE ALCOVE SHALL BE 60 INCHES (1525 MM) MINIMUM IN WIDTH WHERE THE DEPTH EXCEEDS 15 INCHES (380 MM).

305.7.2 FORWARD APPROACH. WHERE THE CLEAR FLOOR SPACE IS POSITIONED FOR A FORWARD APPROACH, THE ALCOVE SHALL BE 36 INCHES (915 MM) MINIMUM IN WIDTH WHERE THE DEPTH EXCEEDS 24 INCHES (610 MM).

306 KNEE & TOE CLEARANCE

306.1 GENERAL. WHERE SPACE BENEATH AN ELEMENT IS INCLUDED AS PART OF CLEAR FLOOR SPACE AT AN ELEMENT, CLEARANCE AT AN ELEMENT, OR A TURNING SPACE, THE SPACE SHALL COMPLY WITH SECTION 306. ADDITIONAL SPACE SHALL NOT BE PROHIBITED BENEATH AN ELEMENT, BUT SHALL NOT BE CONSIDERED AS PART OF THE CLEAR FLOOR SPACE OR TURNING SPACE.

306.2 TOE CLEARANCE

306.2.1 GENERAL. SPACE BENEATH AN ELEMENT BETWEEN THE FLOOR AND 9 INCHES (230 MM) ABOVE THE FLOOR SHALL BE CONSIDERED TOE CLEARANCE AND SHALL COMPLY WITH SECTION 306.2.

306.2.2 MAXIMUM DEPTH. TOE CLEARANCE SHALL BE PERMITTED TO EXTEND 25 INCHES (635 MM) MAXIMUM UNDER AN ELEMENT.

306.2.3 MINIMUM DEPTH. WHERE TOE CLEARANCE IS REQUIRED AT AN ELEMENT AS PART OF A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305, THE TOE CLEARANCE SHALL EXTEND 17 INCHES (430 MM) MINIMUM BENEATH THE ELEMENT.

306.2.4 ADDITIONAL CLEARANCE. SPACE EXTENDING GREATER THAN 6 INCHES (150 MM) BEYOND THE AVAILABLE KNEE CLEARANCE AT 9 INCHES (230 MM) ABOVE THE FLOOR SHALL NOT BE CONSIDERED TOE CLEARANCE.

306.2.5 WIDTH. TOE CLEARANCE SHALL BE 30 INCHES (760 MM) MINIMUM IN WIDTH.

306.3 KNEE CLEARANCE

306.3.1 GENERAL. SPACE BENEATH AN ELEMENT BETWEEN 9 INCHES (230 MM) AND 27 INCHES (685 MM) ABOVE THE FLOOR SHALL BE CONSIDERED KNEE CLEARANCE AND SHALL COMPLY WITH SECTION 306.3.

306.3.2 MAXIMUM DEPTH. KNEE CLEARANCE SHALL BE PERMITTED TO EXTEND 25 INCHES (635 MM) MAXIMUM UNDER AN ELEMENT AT 9 INCHES (230 MM) ABOVE THE FLOOR.

306.3.3 MINIMUM DEPTH. WHERE KNEE CLEARANCE IS REQUIRED BENEATH AN ELEMENT AS PART OF A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305, THE KNEE CLEARANCE SHALL BE 11 INCHES (280 MM) MINIMUM IN DEPTH AT 9 INCHES (230 MM) ABOVE THE FLOOR, AND 8 INCHES (205 MM) MINIMUM IN DEPTH AT 27 INCHES (685 MM) ABOVE THE FLOOR.

306.3.4 CLEARANCE REDUCTION. BETWEEN 9 INCHES (230 MM) AND 27 INCHES (685 MM) ABOVE THE FLOOR, THE KNEE CLEARANCE SHALL BE PERMITTED TO BE REDUCED AT A RATE OF 1 INCH (25 MM) IN DEPTH FOR EACH 6 INCHES (150 MM) IN HEIGHT.

306.3.5 WIDTH. KNEE CLEARANCE SHALL BE 30 INCHES (760 MM) MINIMUM IN WIDTH.

307 PROTRUDING OBJECTS

307.1 GENERAL. PROTRUDING OBJECTS ON CIRCULATION PATHS SHALL COMPLY WITH SECTION 307.2 PROTRUSION LIMITS. OBJECTS WITH LEADING EDGES MORE THAN 27 INCHES (685 MM) AND NOT MORE THAN 80 INCHES (2030 MM) ABOVE THE FLOOR SHALL PROTRUDE 4 INCHES (100 MM) MAXIMUM HORIZONTALLY INTO THE CIRCULATION PATH.

307.3 POST-MOUNTED OBJECTS. OBJECTS ON POSTS OR PYLONS SHALL BE PERMITTED TO OVERHANG 4 INCHES (100 MM) MAXIMUM WHERE MORE THAN 27 INCHES (685 MM) AND NOT MORE THAN 80 INCHES (2030 MM) ABOVE THE FLOOR. OBJECTS ON MULTIPLE POSTS OR PYLONS WHERE THE CLEAR DISTANCE BETWEEN THE POSTS OR PYLONS IS GREATER THAN 12 INCHES (305 MM) SHALL HAVE THE LOWEST EDGE OF SUCH OBJECT EITHER 27 INCHES (685 MM) MAXIMUM OR 80 INCHES (2030 MM) MINIMUM ABOVE THE FLOOR. EXCEPTION: SLOPING PORTIONS OF HANDRAILS BETWEEN THE TOP AND BOTTOM RISERS OF STAIRS AND ABOVE THE RAMP RUN SHALL NOT BE REQUIRED TO COMPLY WITH SECTION 307.3.

307.4 VERTICAL CLEARANCE. VERTICAL CLEARANCE SHALL BE 80 INCHES (2030 MM) MINIMUM. RAILS OR OTHER BARRIERS SHALL BE PROVIDED WHERE THE VERTICAL CLEARANCE IS LESS THAN 80 INCHES (2030 MM). THE LEADING EDGE OF SUCH RAILS OR BARRIERS SHALL BE LOCATED 27 INCHES (685 MM) MAXIMUM ABOVE THE FLOOR. EXCEPTION: DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES (1980 MM) MINIMUM ABOVE THE FLOOR.

308.2.2 OBSTRUCTED HIGH REACH. WHERE A HIGH FORWARD REACH IS OVER AN OBSTRUCTION, THE CLEAR FLOOR SPACE COMPLYING WITH SECTION 305 SHALL EXTEND BENEATH THE ELEMENT FOR A DISTANCE NOT LESS THAN THE REQUIRED REACH DEPTH OVER THE OBSTRUCTION. THE HIGH FORWARD REACH SHALL BE 48 INCHES (1220 MM) MAXIMUM ABOVE THE FLOOR WHERE THE REACH DEPTH IS 20 INCHES (510 MM) MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 20 INCHES (510 MM), THE HIGH FORWARD REACH SHALL BE 44 INCHES (1120 MM) MAXIMUM ABOVE THE FLOOR, AND THE REACH DEPTH SHALL BE 25 INCHES (635 MM) MAXIMUM.

308.3 SIDE REACH

308.3.1 UNOBSTRUCTED. WHERE A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305 ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE EDGE OF THE CLEAR FLOOR SPACE IS 10 INCHES (255 MM) MAXIMUM FROM THE ELEMENT, THE HIGH SIDE REACH SHALL BE 48 INCHES (1220 MM) MAXIMUM AND THE LOW SIDE REACH SHALL BE 15 INCHES (380 MM) MINIMUM ABOVE THE FLOOR. EXCEPTION: EXISTING ELEMENTS THAT ARE NOT ALTERED SHALL BE PERMITTED AT 54 INCHES (1370 MM) MAXIMUM ABOVE THE FLOOR.

308.3.2 OBSTRUCTED HIGH REACH. WHERE A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305 ALLOWS A PARALLEL APPROACH TO AN ELEMENT AND THE HIGH SIDE REACH IS OVER AN OBSTRUCTION, THE HEIGHT OF THE OBSTRUCTION SHALL BE 34 INCHES (865 MM) MAXIMUM ABOVE

THE FLOOR AND THE DEPTH OF THE OBSTRUCTION SHALL BE 24 INCHES (610 MM) MAXIMUM. THE HIGH SIDE REACH SHALL BE 48 INCHES (1220 MM) MAXIMUM ABOVE THE FLOOR FOR A REACH DEPTH OF 10 INCHES (255 MM) MAXIMUM. WHERE THE REACH DEPTH EXCEEDS 10 INCHES (255 MM), THE HIGH SIDE REACH SHALL BE 46 INCHES (1170 MM) MAXIMUM ABOVE THE FLOOR FOR A REACH DEPTH OF 24 INCHES (610 MM) MAXIMUM.

EXCEPTION: AT WASHING MACHINES AND CLOTHES DRYERS, THE HEIGHT OF THE OBSTRUCTION SHALL BE PERMITTED TO BE 36 INCHES (915 MM) MAXIMUM ABOVE THE FLOOR.

309 OPERABLE PARTS

309.1 GENERAL. OPERABLE PARTS REQUIRED TO BE ACCESSIBLE SHALL COMPLY WITH SECTION 309.

309.2 CLEAR FLOOR SPACE. A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305 SHALL COMPLY WITH SECTION 309.2.1 AND 309.2.2.

309.3 HEIGHT. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE OF THE REACH RANGES SPECIFIED IN SECTION 308.

309.4 OPERATION. OPERABLE PARTS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL BE 5.0 POUNDS (22.2 N) MAXIMUM.

404 DOORS, DOORWAYS, AND GATES

404.1 GENERAL. DOORS AND DOORWAYS THAT ARE PART OF THE ACCESSIBLE ROUTE SHALL COMPLY WITH SECTION 404.4. GATES SHALL COMPLY WITH THE REQUIREMENTS OF DOORS.

404.2 MANUAL DOORS. MANUAL DOORS AND DOORWAYS, AND MANUAL GATES, INCLUDING TICKET GATES, SHALL COMPLY WITH SECTION 404.2.

EXCEPTION: DOORS, DOORWAYS, AND GATES DESIGNED TO BE OPERATED ONLY BY SECURITY PERSONNEL SHALL NOT BE REQUIRED TO COMPLY WITH SECTIONS 404.2.6, 404.2.7, AND 404.2.8.

404.2.1 DOUBLE LEAF DOORS AND GATES. AT LEAST ONE OF THE ACTIVE LEAVES OF DOORWAYS WITH TWO LEAVES SHALL COMPLY WITH SECTIONS 404.2.2 AND 404.2.3.

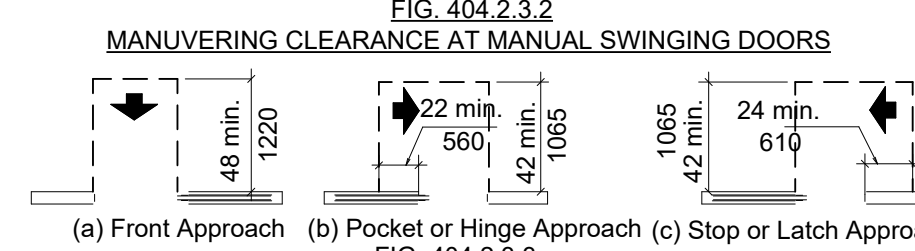
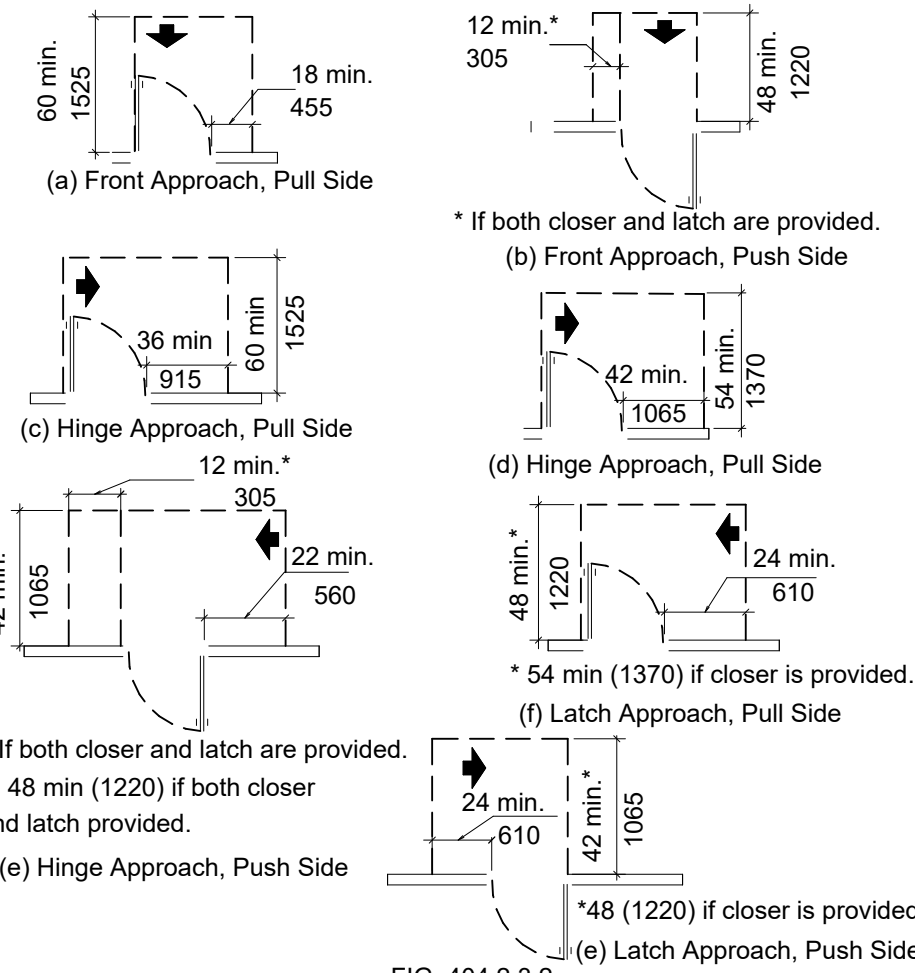
404.2.2 CLEAR WIDTH. DOORWAYS SHALL HAVE A CLEAR OPENING WIDTH OF 32 INCHES (815 MM) MINIMUM. CLEAR OPENING WIDTH OF DOORWAYS WITH SWINGING DOORS SHALL BE MEASURED BETWEEN THE FACE OF DOOR AND STOP, WITH THE DOOR OPEN 90 DEGREES. OPENINGS MORE THAN 24 INCHES (610 MM) IN DEPTH AT DOORS AND DOORWAYS WITHOUT DOORS SHALL PROVIDE A CLEAR OPENING WIDTH OF 36 INCHES (915 MM) MINIMUM. THERE SHALL BE NO PROJECTIONS INTO THE CLEAR OPENING WIDTH LOWER THAN 34 INCHES (865 MM) ABOVE THE FLOOR. PROJECTIONS INTO THE CLEAR OPENING WIDTH BETWEEN 34 INCHES (865 MM) AND 80 INCHES (2030 MM) ABOVE THE FLOOR SHALL NOT EXCEED 4 INCHES (100 MM).

EXCEPTIONS: 1. DOOR CLOSERS AND DOOR STOPS SHALL BE PERMITTED TO BE 78 INCHES (1980 MM) MINIMUM ABOVE THE FLOOR.

2. IN ALTERATIONS, A PROJECTION OF 5/8 INCH (16 MM) MAXIMUM INTO THE REQUIRED CLEAR OPENING WIDTH SHALL BE PERMITTED FOR THE LATCH SIDE STOP.

404.2.3 MANEUVERING CLEARANCES. MINIMUM MANEUVERING CLEARANCES AT DOORS SHALL COMPLY WITH SECTION 404.2.3 AND SHALL INCLUDE THE FULL CLEAR OPENING WIDTH OF THE DOORWAY. REQUIRED DOOR MANEUVERING CLEARANCES SHALL NOT INCLUDE KNEE AND TOE CLEARANCE.

404.2.3.1 FLOOR SURFACE. FLOOR SURFACE WITHIN THE MANEUVERING CLEARANCES SHALL HAVE A SLOPE NOT STEEPER THAN 1:48 AND SHALL COMPLY WITH SECTION 302.



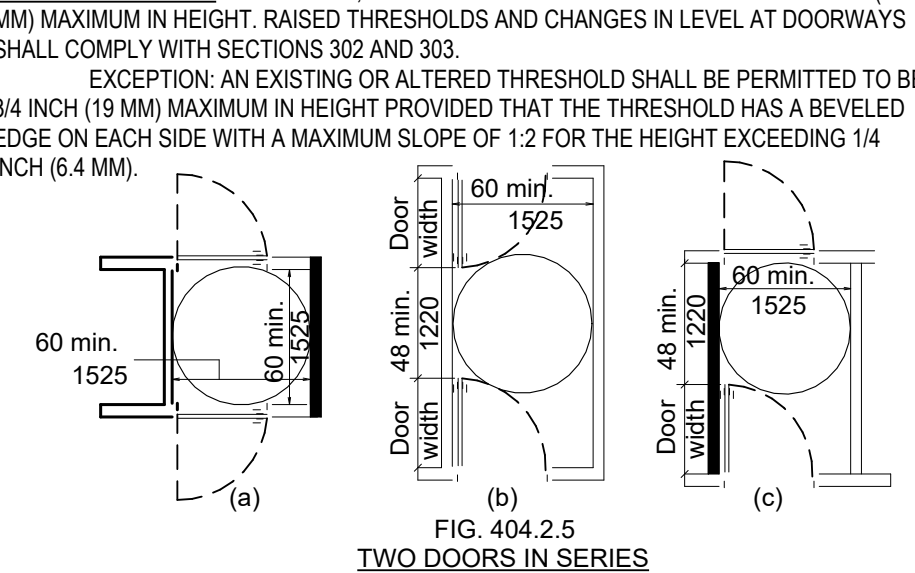
404.2.3.2 SWINGING DOORS. SWINGING DOORS SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE 404.2.3.2. 404.2.3.3 SLIDING AND FOLDING DOORS. SLIDING DOORS AND FOLDING DOORS SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE 404.2.3.3.

404.2.3.4 DOORWAYS WITHOUT DOORS. DOORWAYS WITHOUT DOORS THAT ARE LESS THAN 36 INCHES (915 MM) IN WIDTH SHALL HAVE MANEUVERING CLEARANCES COMPLYING WITH TABLE 404.2.3.4.

404.2.3.5 RECESSED DOORS. WHERE AN OBSTRUCTION WITHIN 18 INCHES (455 MM) OF THE LATCH SIDE OF A DOORWAY PROJECTS MORE THAN 8 INCHES (205 MM) BEYOND THE FACE OF THE DOOR, MEASURED PERPENDICULAR TO THE FACE OF THE DOOR, MANEUVERING CLEARANCES FOR A FORWARD APPROACH SHALL BE PROVIDED.

404.2.4 THRESHOLDS. IF PROVIDED, THRESHOLDS AT DOORWAYS SHALL BE 1/2 INCH (13 MM) MAXIMUM IN HEIGHT. RAISED THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL COMPLY WITH SECTIONS 302 AND 303.

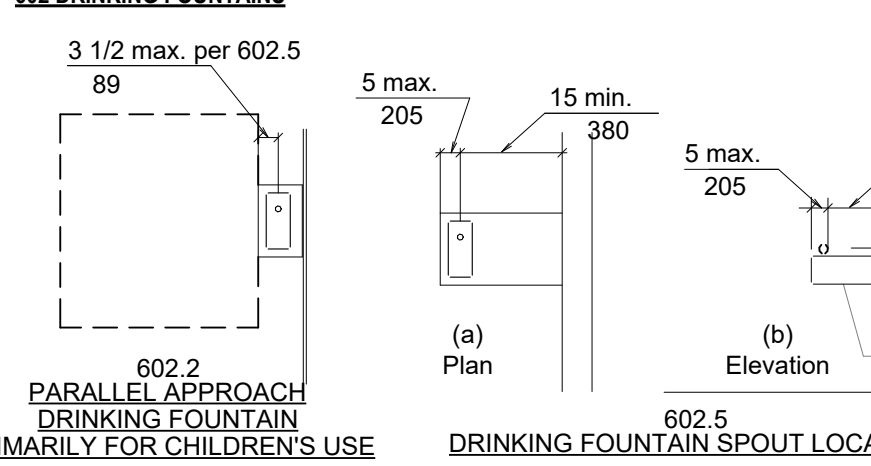
EXCEPTION: AN EXISTING OR ALTERED THRESHOLD SHALL BE PERMITTED TO BE 3/4 INCH (19 MM) MAXIMUM IN HEIGHT PROVIDED THAT THE THRESHOLD HAS A BEVELED EDGE ON EACH SIDE WITH A MAXIMUM SLOPE OF 1:2 FOR THE HEIGHT EXCEEDING 1/4 INCH (6.4 MM).



404.2.5 TWO DOORS IN SERIES. DISTANCE BETWEEN TWO HINGED OR PIVOTED DOORS IN SERIES SHALL BE 48 INCHES (1220 MM) MINIMUM PLUS THE WIDTH OF ANY DOOR SWINGING INTO THE SPACE. THE SPACE BETWEEN THE DOORS SHALL PROVIDE A TURNING SPACE COMPLYING WITH SECTION 304.

404.3.2 MANEUVERING CLEARANCES. MANEUVERING CLEARANCES AT POWER-ASSISTED DOORS SHALL COMPLY WITH SECTION 404.2.3.

404.3.3 THRESHOLDS. THRESHOLDS AND CHANGES IN LEVEL AT DOORWAYS SHALL COMPLY WITH SECTION 404.2.4.

602 DRINKING FOUNTAINS

602.2 CLEAR FLOOR SPACE. A CLEAR FLOOR SPACE COMPLYING WITH SECTION 305, POSITIONED FOR A FORWARD APPROACH TO THE DRINKING FOUNTAIN, SHALL BE PROVIDED. KNEE AND TOE SPACE COMPLYING WITH SECTION 306 SHALL BE PROVIDED. THE CLEAR FLOOR SPACE SHALL BE CENTERED ON THE DRINKING FOUNTAIN.

EXCEPTIONS: 1. DRINKING FOUNTAINS PRIMARILY FOR CHILDREN'S USE SHALL BE PERMITTED WHERE THE SPOUT OUTLET IS 30 INCHES (760 MM) MAXIMUM ABOVE THE FLOOR, A PARALLEL APPROACH COMPLYING WITH SECTION 305 IS PROVIDED AND THE CLEAR FLOOR SPACE IS ENTERED ON THE DRINKING FOUNTAIN.

602.3 OPERABLE PARTS. OPERABLE PARTS SHALL COMPLY WITH SECTION 309.

602.4 SPOUT OUTLET HEIGHT. SPOUT OUTLETS OF WHEELCHAIR ACCESSIBLE DRINKING FOUNTAINS SHALL BE 36 INCHES (915 MM) MAXIMUM ABOVE THE FLOOR. SPOUT OUTLETS OF DRINKING FOUNTAINS FOR STANDING PERSONS SHALL BE 38 INCHES (965 MM) AND 45 INCHES (1140 MM) MAXIMUM ABOVE THE FLOOR (SEE FIG. 27).

602.5 SPOUT LOCATION. THE SPOUT SHALL BE LOCATED 15 INCHES (380 MM) MINIMUM FROM THE VERTICAL SUPPORT AND 5 INCHES (125 MM) MAXIMUM FROM THE FRONT EDGE OF THE DRINKING FOUNTAIN, INCLUDING BUMPERS. WHERE ONLY A PARALLEL APPROACH IS PROVIDED, THE SPOUT SHALL BE LOCATED 31/2 INCHES (90 MM) MAXIMUM FROM THE FRONT EDGE OF THE DRINKING FOUNTAIN, INCLUDING BUMPERS.

602.6 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES (100 MM) MINIMUM IN HEIGHT. THE ANGLE OF THE WATER STREAM FROM SPOUTS WITHIN 3 INCHES (75 MM) OF THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 30 DEGREES MAXIMUM, AND FROM OUTLETS BETWEEN 3 INCHES (75 MM) AND 5 INCHES (125 MM) FROM THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 15 DEGREES MAXIMUM, MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE DRINKING FOUNTAIN.

602.6.1 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES (100 MM) MINIMUM IN HEIGHT. THE ANGLE OF THE WATER STREAM FROM SPOUTS WITHIN 3 INCHES (75 MM) OF THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 30 DEGREES MAXIMUM, AND FROM OUTLETS BETWEEN 3 INCHES (75 MM) AND 5 INCHES (125 MM) FROM THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 15 DEGREES MAXIMUM, MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE DRINKING FOUNTAIN.

602.6.2 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES (100 MM) MINIMUM IN HEIGHT. THE ANGLE OF THE WATER STREAM FROM SPOUTS WITHIN 3 INCHES (75 MM) OF THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 30 DEGREES MAXIMUM, AND FROM OUTLETS BETWEEN 3 INCHES (75 MM) AND 5 INCHES (125 MM) FROM THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 15 DEGREES MAXIMUM, MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE DRINKING FOUNTAIN.

602.6.3 WATER FLOW. THE SPOUT SHALL PROVIDE A FLOW OF WATER 4 INCHES (100 MM) MINIMUM IN HEIGHT. THE ANGLE OF THE WATER STREAM FROM SPOUTS WITHIN 3 INCHES (75 MM) OF THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 30 DEGREES MAXIMUM, AND FROM OUTLETS BETWEEN 3 INCHES (75 MM) AND 5 INCHES (125 MM) FROM THE FRONT OF THE DRINKING FOUNTAIN SHALL BE 15 DEGREES MAXIMUM, MEASURED HORIZONTALLY RELATIVE TO THE FRONT FACE OF THE DRINKING FOUNTAIN.

603 TOILET AND BATHING ROOMS

603.1 GENERAL. ACCESSIBLE TOILET AND BATHING ROOMS SHALL COMPLY WITH SECTION 603.

603.2.1 TURNING SPACE. A TURNING SPACE COMPLYING WITH SECTION 304 SHALL BE PROVIDED WITHIN THE ROOM. THE REQUIRED TURNING SPACE SHALL NOT BE PROVIDED WITHIN A TOILET COMPARTMENT.

603.2.2 DOOR SWING. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE FOR ANY FIXTURE.

603.3 MIRRORS. WHERE MIRRORS ARE LOCATED ABOVE LAVATORIES, A MIRROR SHALL BE LOCATED OVER THE ACCESSIBLE LAVATORY AND SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40 INCHES (1015 MM) MAXIMUM ABOVE THE FLOOR. WHERE MIRRORS ARE LOCATED ABOVE COUNTERS THAT DO NOT CONTAIN LAVATORIES, THE MIRROR SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES (890 MM) MAXIMUM ABOVE THE FLOOR.

603.4 COAT HOOKS AND SHELVES. COAT HOOKS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN SECTION 308. SHELVES SHALL BE 40 INCHES (1015 MM) MINIMUM AND 48 INCHES (1220 MM) MAXIMUM ABOVE THE FLOOR.

603.5 DIAPER CHANGING TABLES. DIAPER CHANGING TABLES SHALL COMPLY WITH SECTIONS 309 AND 902.

603.6 OPERABLE PARTS. OPERABLE PARTS ON TOWEL DISPENSERS AND HAND DRYERS SERVING ACCESSIBLE LAVATORIES SHALL COMPLY WITH TABLE 603.6.

604 WATER CLOSETS AND TOILET COMPARTMENTS

604.1 GENERAL. ACCESSIBLE WATER CLOSETS AND TOILET COMPARTMENTS SHALL COMPLY WITH SECTION 604. COMPARTMENTS CONTAINING MORE THAN ONE PLUMBING FIXTURE SHALL COMPLY WITH SECTION 603. WHEELCHAIR ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH SECTION 604.9. AMBULATORY ACCESSIBLE COMPARTMENTS SHALL COMPLY WITH SECTION 604.10.

604.2 LOCATION. THE WATER CLOSET SHALL BE LOCATED WITH A WALL OR PARTITION TO THE REAR AND TO ONE SIDE. THE CENTERLINE OF THE WATER CLOSET SHALL BE 16 INCHES (405 MM) MINIMUM AND 18 INCHES (455 MM) MAXIMUM FROM THE SIDE WALL OR PARTITION. WATER CLOSETS LOCATED IN AMBULATORY ACCESSIBLE COMPARTMENTS SPECIFIED IN SECTION 604.10 SHALL HAVE THE CENTERLINE OF THE WATER CLOSET 17 INCHES (430 MM) MINIMUM AND 19 INCHES (485 MM) MAXIMUM FROM THE SIDE WALL OR PARTITION.

604.3.3 CLEARANCE OVERLAP. THE REQUIRED CLEARANCE AROUND THE WATER CLOSET SHALL BE PERMITTED TO OVERLAP THE WATER CLOSET, ASSOCIATED GRAB BARS, PAPER DISPENSERS, SANITARY NAPKIN RECEPTACLES, COAT HOOKS, SHELVES, ACCESSIBLE ROUTES, CLEAR FLOOR SPACE AT OTHER FIXTURES AND THE TURNING SPACE. NO OTHER FIXTURES OR OBSTRUCTIONS SHALL BE WITHIN THE REQUIRED WATER CLOSET CLEARANCE.

604.4 HEIGHT. THE HEIGHT OF WATER CLOSET SEATS SHALL BE 17 INCHES (430 MM) MINIMUM AND 19 INCHES (485 MM) MAXIMUM ABOVE THE FLOOR, MEASURED TO THE TOP OF THE SEAT. SEATS SHALL NOT BE SPRUNG TO RETURN TO A LIFTED POSITION.

604.5.1 SIDE WALL GRAB BAR FOR WATER CLOSET. GRAB BARS SHALL BE 36 INCHES (915 MM) MINIMUM AND 42 INCHES (1065 MM) MAXIMUM FROM THE SIDE WALL OR PARTITION. THE GRAB BAR SHALL BE 12 INCHES (305 MM) MINIMUM FROM THE WATER CLOSET SEAT.

604.5.2 REAR WALL GRAB BAR FOR WATER CLOSET. GRAB BARS SHALL BE 36 INCHES (915 MM) MINIMUM AND 42 INCHES (1065 MM) MAXIMUM FROM THE REAR WALL OR PARTITION. THE GRAB BAR SHALL BE 12 INCHES (305 MM) MINIMUM FROM THE WATER CLOSET SEAT.

604.5.3 FLOOR SPACE. A CLEAR FLOOR SPACE SHALL BE PROVIDED FOR FORWARD APPROACH TO THE WATER CLOSET. THE CLEAR FLOOR SPACE SHALL BE 48 INCHES (1220 MM) MINIMUM IN LENGTH AND 30 INCHES (760 MM) MINIMUM IN WIDTH.

604.5.4 KNEE AND TOE CLEARANCE. UNLESS OTHERWISE SPECIFIED, CLEAR FLOOR SPACE SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE COMPLYING WITH SECTION 306.

604.5.5 POSITION. UNLESS OTHERWISE SPECIFIED, THE CLEAR FLOOR SPACE SHALL BE POSITIONED FOR EITHER FORWARD OR PARALLEL APPROACH TO AN ELEMENT.

604.5.6 APPROACH. ONE FULL, UNOBSTRUCTED SIDE OF THE CLEAR FLOOR SPACE SHALL ADJOIN OR OVERLAP AN ACCESSIBLE ROUTE OR ADJOIN ANOTHER CLEAR FLOOR SPACE.

604.5.7 ALCOVE SPACE. IF A CLEAR FLOOR SPACE IS IN AN ALCOVE OR OTHERWISE CONFINED ON ALL OR PART OF THREE SIDES, ADDITIONAL MANEUVERING CLEARANCES COMPLYING WITH SECTIONS 305.7.1 AND 305.7.2 SHALL BE PROVIDED, AS APPLICABLE.

604.5.8.1 PARALLEL APPROACH. WHERE THE CLEAR FLOOR SPACE IS POSITIONED FOR A PARALLEL APPROACH, THE ALCOVE SHALL BE 60 INCHES (1525 MM) MINIMUM IN WIDTH WHERE THE DEPTH EXCEEDS 15 INCHES (380 MM).

604.5.8.2 FORWARD APPROACH. WHERE THE CLEAR FLOOR SPACE IS POSITIONED FOR A FORWARD APPROACH, THE ALCOVE SHALL BE 36 INCHES (915 MM) MINIMUM IN WIDTH WHERE THE DEPTH EXCEEDS 24 INCHES (610 MM).

604.5.9.1 GENERAL. ACCESSIBLE TOILET AND BATHING ROOMS SHALL COMPLY WITH SECTION 603.

604.5.9.2 TURNING SPACE. A TURNING SPACE COMPLYING WITH SECTION 304 SHALL BE PROVIDED WITHIN THE ROOM. THE REQUIRED TURNING SPACE SHALL NOT BE PROVIDED WITHIN A TOILET COMPARTMENT.

604.5.9.3 DOOR SWING. DOORS SHALL NOT SWING INTO THE CLEAR FLOOR SPACE OR CLEARANCE FOR ANY FIXTURE.

604.5.9.4 MIRRORS. WHERE MIRRORS ARE LOCATED ABOVE LAVATORIES, A MIRROR SHALL BE LOCATED OVER THE ACCESSIBLE LAVATORY AND SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 40 INCHES (1015 MM) MAXIMUM ABOVE THE FLOOR. WHERE MIRRORS ARE LOCATED ABOVE COUNTERS THAT DO NOT CONTAIN LAVATORIES, THE MIRROR SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE 35 INCHES (890 MM) MAXIMUM ABOVE THE FLOOR.

604.5.9.5 COAT HOOKS AND SHELVES. COAT HOOKS SHALL BE LOCATED WITHIN ONE OF THE REACH RANGES SPECIFIED IN SECTION 308. SHELVES SHALL BE 40 INCHES (1015 MM) MINIMUM AND 48 INCHES (1220 MM) MAXIMUM ABOVE THE FLOOR.

604.5.9.6 DIAPER CHANGING TABLES. DIAPER CHANGING TABLES SHALL COMPLY WITH SECTIONS 309 AND 902.

604.5.9.7 OPERABLE PARTS. OPERABLE PARTS ON TOWEL DISPENSERS AND HAND DRYERS SERVING ACCESSIBLE LAVATORIES SHALL COMPLY WITH TABLE 603.6.

604.5 GRAB BARS. GRAB BARS FOR WATER CLOSETS SHALL COMPLY WITH SECTION 609 AND SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 604.5.1 AND 604.5.2. GRAB BARS SHALL BE PROVIDED ON THE REAR WALL AND ON THE SIDE WALL CLOSEST TO THE WATER CLOSET.

604.5.1 FIXED SIDE WALL GRAB BARS. FIXED SIDE-WALL GRAB BARS SHALL BE 42 INCHES (1065 MM) MINIMUM IN LENGTH, LOCATED 12 INCHES (305 MM) MAXIMUM FROM

CODE NOTES:

SUBMITTED UNDER THE 2024 OHIO BUILDING CODE (OBC).

PROJECT DESCRIPTION: TWO BUILDINGS:

OPERATIONS BUILDING:
INTERIOR RENOVATION OF AN EXISTING OFFICE BUILDING INTO NEW OFFICE SPACE, AND EXISTING STORAGE/
WORK AREA INTO NEW LAB SPACE, WORK AREA, AND LOCKERS/ RESTROOMS.
MAINTENANCE BUILDING:
INTERIOR RENOVATION OF RESTROOMS, LOCKER ROOMS, AND BREAK ROOM.

AREA OF WORK:
TOTAL EXISTING OPERATIONS BUILDING S.F.: 2,500 S.F. FIRST FLOOR - EXISTING
2,900 S.F. SECOND FLOOR - EXISTING
580 S.F. COVERED PARKING - NEW
TOTAL EXISTING MAINTENANCE BUILDING S.F.: 13,532 S.F. TOTAL BUILDING - EXISTING
1,550 S.F. AREA OF RENOVATION - EXISTING
414 S.F. MEZZANINE - EXISTING - NO WORK

USE AND OCCUPANCY CLASSIFICATION (CHAPTER 3):
GROUP B (BUSINESS): OFFICE SPACE, LAB, LOCKERS/ RESTROOMS
COVERED PARKING

CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS:

BASED ON THE CONSTRUCTION TYPE: IIB AND OCCUPANCY: B, U

TABLE 504.3 ALLOWABLE HEIGHT IN FEET ABOVE GRADE
ALLOWABLE HEIGHT LIMIT: 55'-0"
ACTUAL HEIGHT: 28'-4" EXISTING OPERATIONS BUILDING PARAPET
22'-9" EXISTING MAINTENANCE BUILDING

TABLE 504.4 ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE
ALLOWABLE NUMBER OF STORIES: B USE GROUP - 5
PROPOSED NUMBER OF STORIES: B USE GROUP - 2 (EXISTING OPERATIONS BUILDING)
1 (EXISTING MAINTENANCE BUILDING)

TABLE 506.2 ALLOWABLE AREA
B = 23,000 S.F. OPERATIONS BUILDING = 2,500+2,500+580= 5,580 S.F.
B = 23,000 S.F. EXISTING MAINTENANCE BUILDING = 13,532 S.F.

TABLE 508.4 REQUIRED SEPARATIONS OF OCCUPANCIES

CHAPTER 6 - TYPES OF CONSTRUCTION:
TYPE OF CONSTRUCTION : IIB

SECTION 602.2: TABLE 504.3, 504.4, AND 506.2 ALLOWS TYPE IIB CONSTRUCTION AS DEFINED BY
SECTION 602.2 FOR THE BUILDING'S HEIGHT AND AREA. TABLE 601 AND 602
CONTAIN NO FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS.

CHAPTER 8 - INTERIOR FINISHES:
SECTION 803 - WALL AND CEILING FINISHES
EXIT ENCLOSURES AND EXIT PASSAGEWAYS: CLASS B
CORRIDORS: CLASS B
ROOMS AND ENCLOSED SPACES: CLASS C

SECTION 804 - INTERIOR FLOOR FINISHES
EXIT ENCLOSURES AND EXIT PASSAGEWAYS: CLASS II
CORRIDORS: CLASS II
ROOMS AND ENCLOSED SPACES: CLASS II
ALL OTHER AREAS FLOOR COVERING MATERIALS COMPLY WITH THE DOC FF-1
"PILL TEST" OR ASTM D2899.

CHAPTER 9 - FIRE PROTECTION SYSTEM:
THE BUILDING IS NOT SPRINKLERED.

SECTION 906 PORTABLE FIRE EXTINGUISHERS - FIRE EXTINGUISHER SHALL BE LOCATED AT THE
DIRECTION OF THE LOCAL FIRE AUTHORITY

CHAPTER 10 - MEANS OF EGRESS:
SECTION 1006 EXIT AND EXIT ACCESS DOORWAYS: TWO EXITS OR EXIT ACCESS DOORWAYS FROM
ANY SPACE SHALL BE PROVIDED WHERE ONE OF THE FOLLOWING CONDITIONS EXISTS:

OCCUPANT LOAD IS MORE THAN:
OPERATIONS BUILDING ALLOWABLE ACTUAL
USE GROUP B FIRST LEVEL: 49 45 SECOND EXIT DOOR IS NOT REQUIRED
USE GROUP B SECOND LEVEL: 49 57 SECOND EXIT DOOR IS NOT REQUIRED

MAINTENANCE BUILDING ALLOWABLE ACTUAL
USE GROUP B FIRST LEVEL: 49 89 SECOND EXIT DOOR IS NOT REQUIRED

SECTION 1017 EXIT ACCESS TRAVEL DISTANCE: SECTION 1017.2 - TRAVEL DISTANCE LIMITATIONS AND
TABLE 1017.2 LIMIT THE TRAVEL DISTANCE TO 250 FEET. THE MAXIMUM TRAVEL DISTANCE IS 57'-0".

OCCUPANCY LOAD OPERATIONS BUILDING (TABLE 1004.1.2):
LABS/ WORKBENCH, LOCKER 322 S.F./50 PER PERSON = 19 PEOPLE
OFFICE SPACE 2,122 S.F./100 S.F. PER PERSON = 22 PEOPLE
TOTAL = 41 PEOPLE

OCCUPANCY LOAD MAINTENANCE BUILDING (TABLE 1004.1.2):
OFFICE SPACE 2,462 S.F./100 S.F. PER PERSON = 24 PEOPLE

CHAPTER 11 - ACCESSIBILITY:
SECTION 1101.2 DESIGN - THE PROJECT IS DESIGNED AND SHALL BE CONSTRUCTED TO COMPLY WITH
THE CODE AND ICC A117.1 AS AMENDED IN SECTION 1112 OF THE CODE.

CHAPTER 12 - INTERIOR ENVIRONMENT:
SECTIONS 1203.1 AND 1205.1 - THE PROJECT IS DESIGNED AND SHALL BE CONSTRUCTED WITH
MECHANICAL VENTILATION AND ARTIFICIAL LIGHT IN COMPLIANCE WITH THE MECHANICAL
CODE AND SECTION 1205.3.

CHAPTER 13 - ENERGY EFFICIENCY:
THE PROJECT IS DESIGNED AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH THIS
CHAPTER.

CHAPTER 16 - STRUCTURAL DESIGN:
DESIGN LOADS SHALL BE DETERMINED IN ACCORDANCE THIS CHAPTER.

CHAPTER 17 - STRUCTURAL TESTS AND SPECIAL INSPECTIONS:
SEE THE STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR THIS SECTION.

LEGEND:

COMMON PATH OF TRAVEL = X'-X"

COMMON PATH OF TRAVEL

TRAVEL DISTANCE TO EXIT= X'-X"

TRAVEL DISTANCE TO AN EXIT

ONE HOUR FIRE RATED PARTITION

LED EXIT

LED EXIT / EMERGENCY LIGHT COMBO

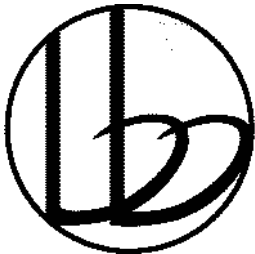
LED EXIT LIGHT W/ DIRECTIONAL INDICATORS

FE

FIRE EXTINGUISHER

LED EMERGENCY LIGHTING

LED EMERGENCY REMOTE HEAD



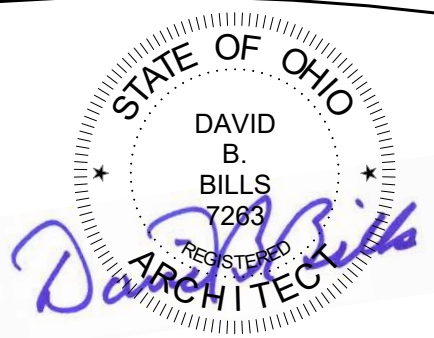
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DAYTON, OHIO 45449



DAVID B. BILLS, LICENSE #7263
EXPIRATION DATE 12/31/2026

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7/10/2026

A201284.6

DRAWN BY: SKK

LIFE SAFETY PLANS
OPERATIONS BLDG

G105

1

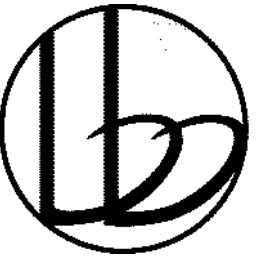
FIRST FLOOR LIFE SAFETY PLAN

1/8" = 1'-0"

2

SECOND FLOOR LIFE SAFETY PLAN

1/8" = 1'-0"



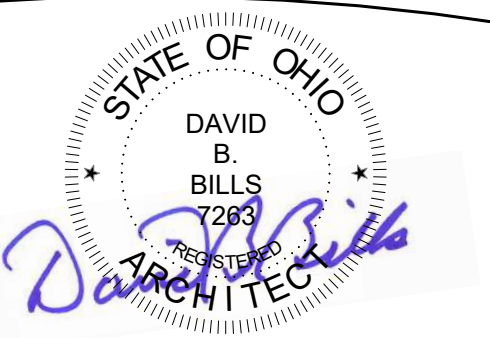
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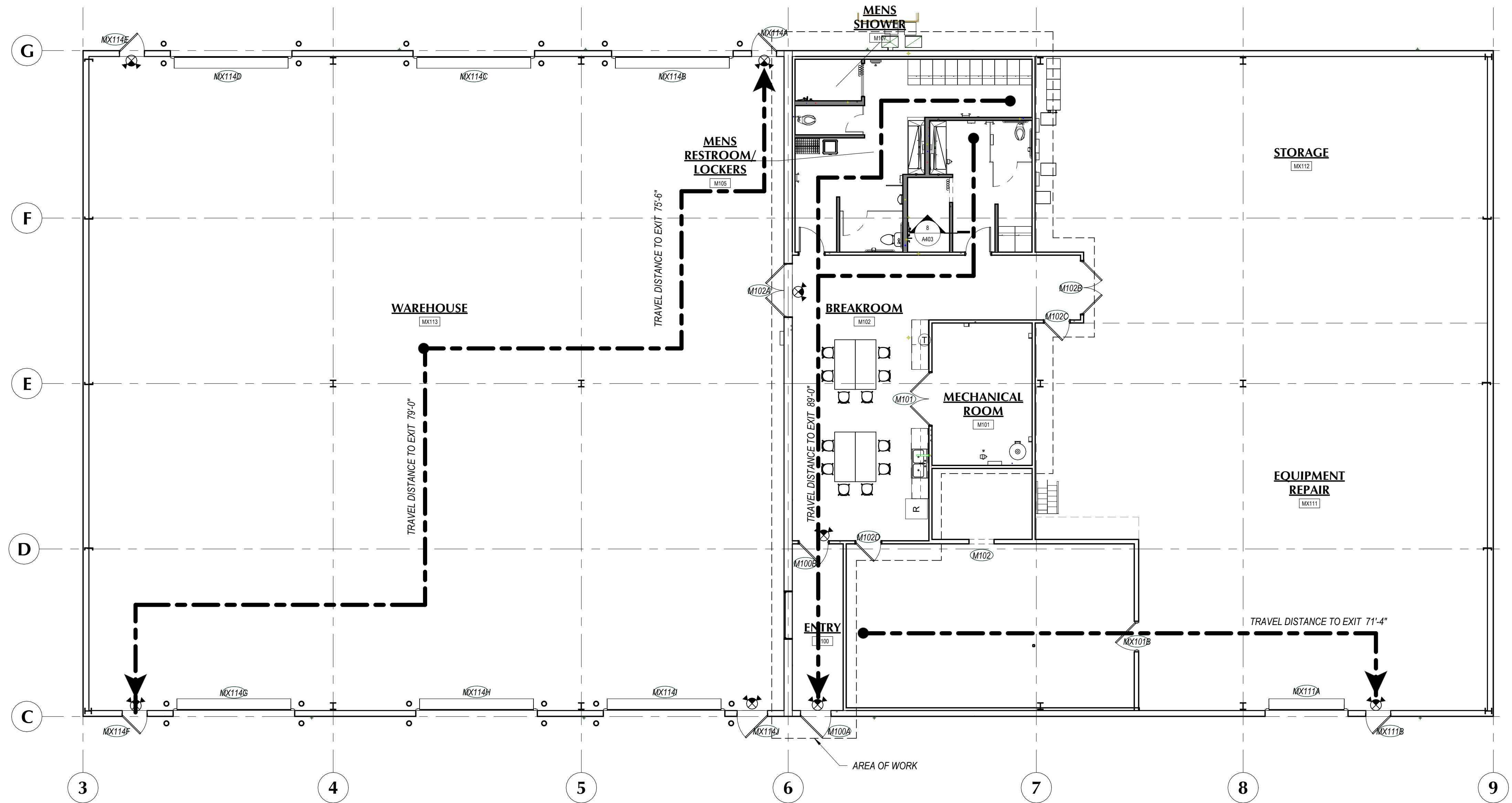
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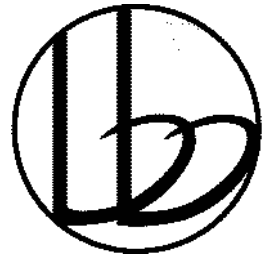
LIFE SAFETY PLAN
MAINTENANCE BLDG

G106

LEGEND:

- | | |
|---------------------------------|--|
| COMMON PATH OF TRAVEL = X'-X" | LED EXIT |
| COMMON PATH OF TRAVEL | LED EXIT / EMERGENCY LIGHT COMBO |
| TRAVEL DISTANCE TO EXIT = X'-X" | LED EXIT LIGHT W/ DIRECTIONAL INDICATORS |
| TRAVEL DISTANCE TO EXIT | FIRE EXTINGUISHER |
| ONE HOUR FIRE RATED PARTITION | LED EMERGENCY LIGHTING |
| | LED EMERGENCY REMOTE HEAD |





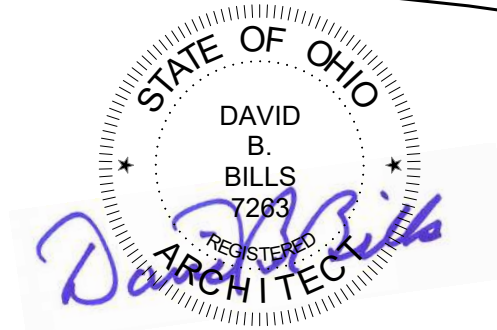
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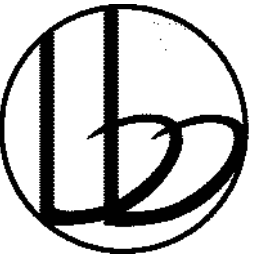
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ARCHITECTURAL SITE
PLAN

AS101



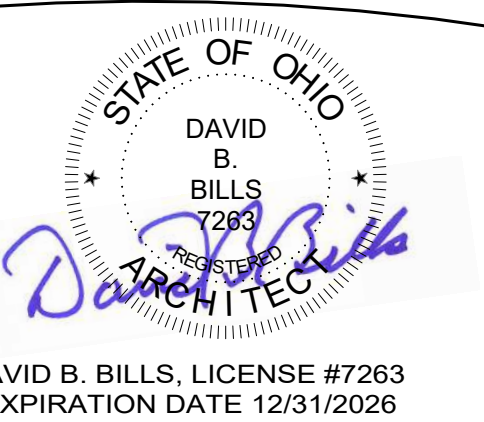
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FIRST AND SECOND
FLOOR & CEILING
DEMOLITION PLANS
OPERATIONS BLDG

A001

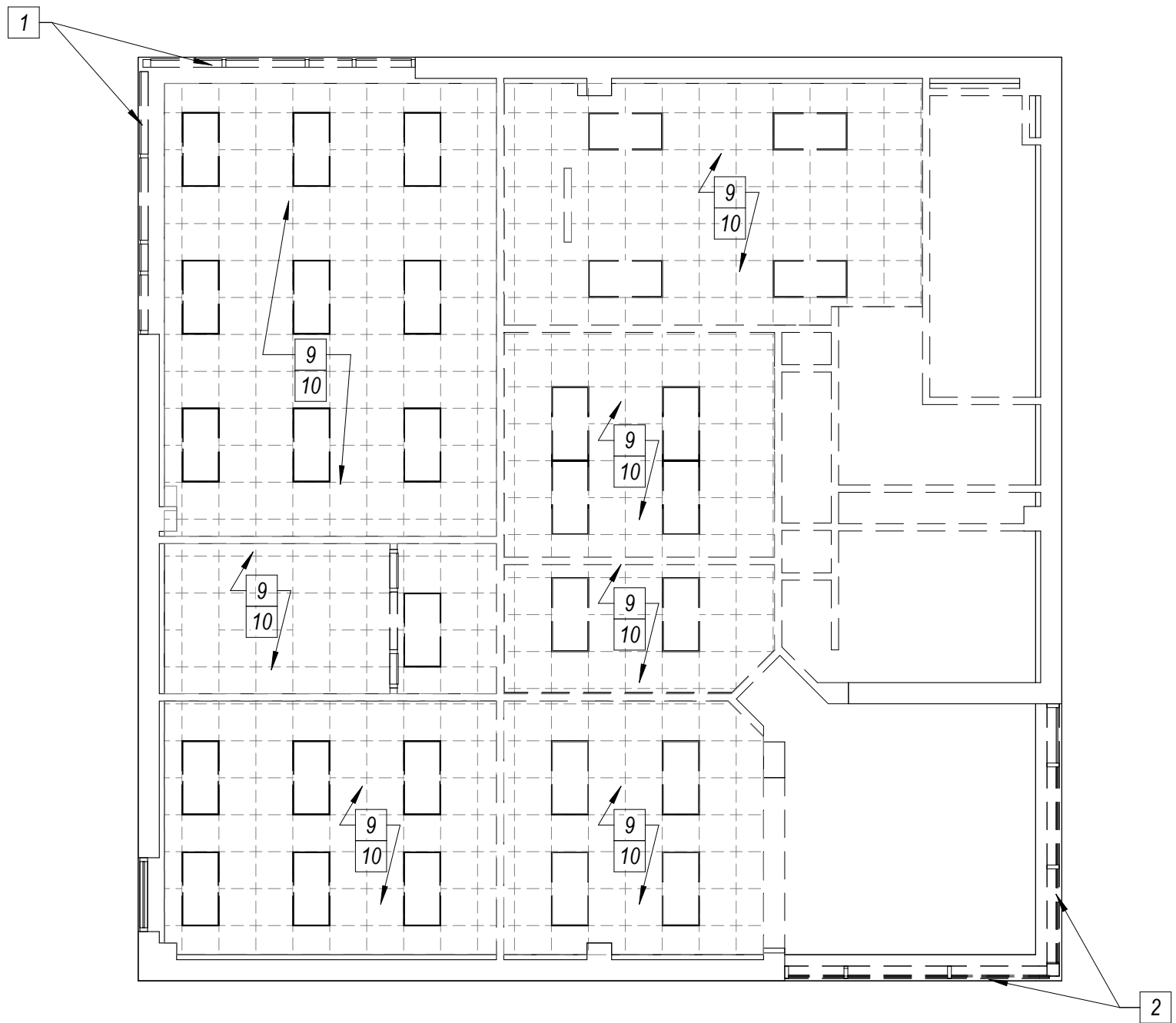
GENERAL NOTES

☐ SHEET NOTES

- 1 EXISTING STOREFRONT TO BE REMOVED.
- 2 EXISTING CURTAIN WALL TO BE REMOVED.
- 3 EXISTING TOILET TO BE REMOVED.
- 4 EXISTING RESTROOM VANITY TO BE REMOVED.
- 5 EXISTING URINAL TO BE REMOVED.
- 6 EXISTING SHOWER TO BE REMOVED.
- 7 EXISTING TUB TO BE REMOVED.
- 8 EXISTING OVERHEAD DOOR TO BE REMOVED.
- 9 EXISTING CEILING TO BE REMOVED.
- 10 EXISTING LIGHTING TO BE REMOVED.
- 11 ERECT NEW PARTITIONS AND DOORS AROUND THE SCADA ROOM PRIOR TO DEMOLISHING THE EXISTING WALLS AND DOOR.

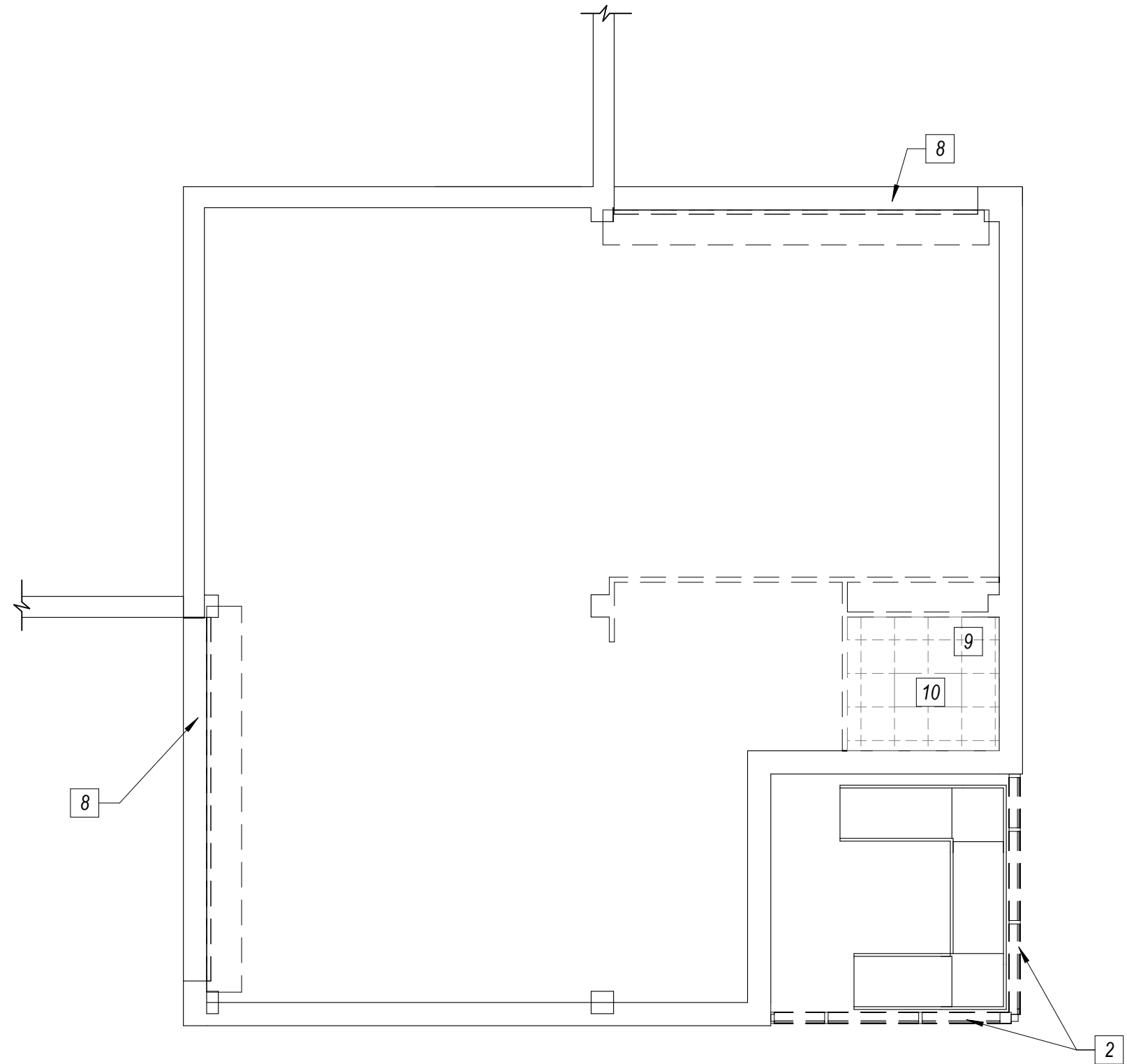
LEVELING COMPOUND INSTALLATION GUIDELINES

- A. FLOOR LEVELING COMPOUND TO BE APPLIED PRIOR TO THE INSTALLATION OF NEW WALLS.
- B. CLEAN AND PRIME ALL FLOORS PER LEVELING COMPOUND SPECIFICATIONS PRIOR TO APPLYING COMPOUND.
- C. FLOOR LEVELING COMPOUND TO BE AN EPOXY CONCRETE WITH FIBERGLASS REINFORCEMENT
- D. EXISTING CONCRETE TO HAVE A MINIMUM OF 1" THICK LEVELING COMPOUND AT ALL LOCATIONS.
- E. CUT NEW CONTROL JOINTS AT THE SAME LOCATIONS AS EXISTING CONTROL JOINTS.
- F. FINISH FLOOR TO BE EXPOSED CONCRETE. FINAL FLOOR FINISH PER OWNER SPECIFICATIONS.



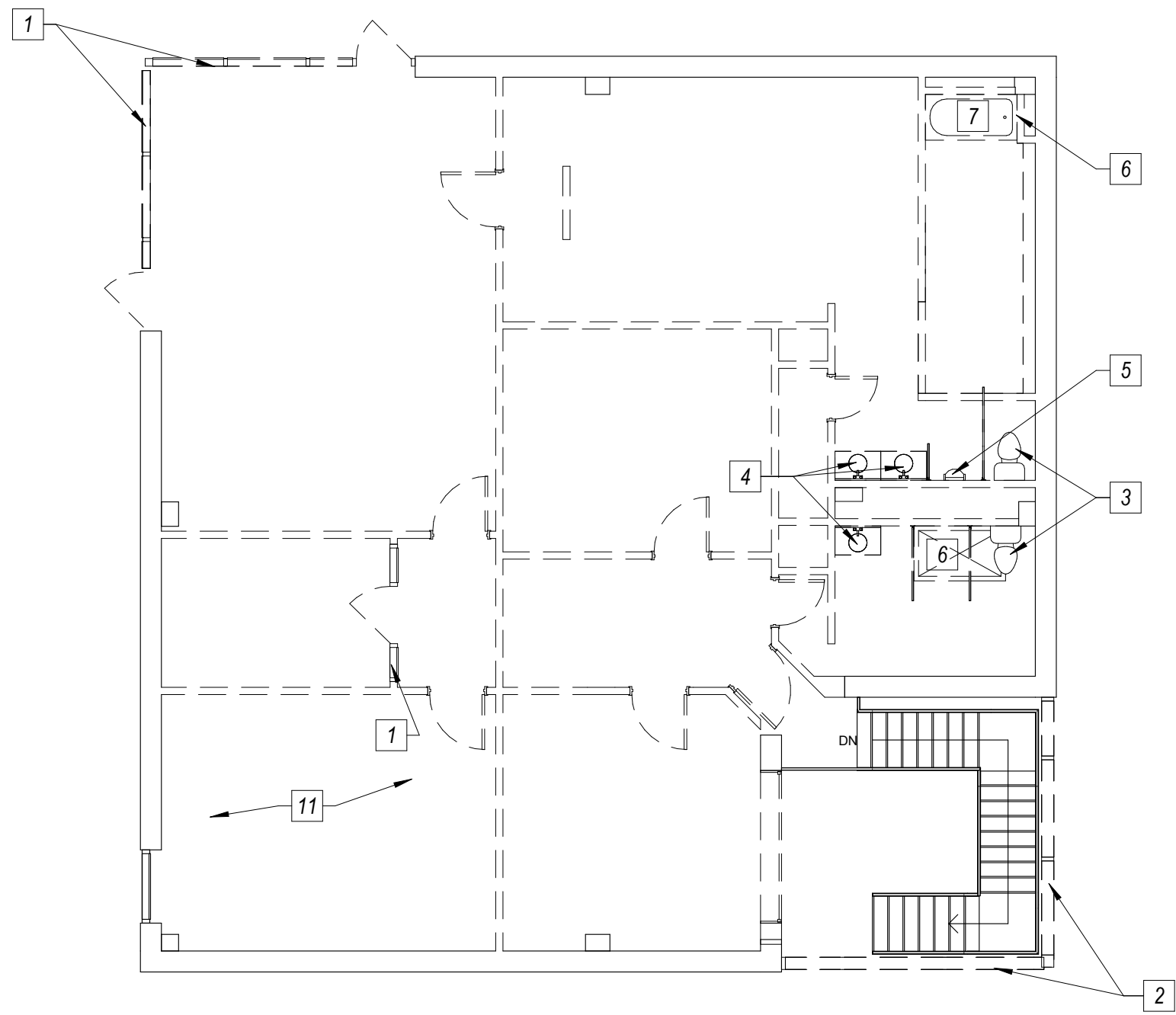
4 SECOND FLOOR DEMOLITION REFLECTED CEILING PLAN

1/8" = 1'-0"



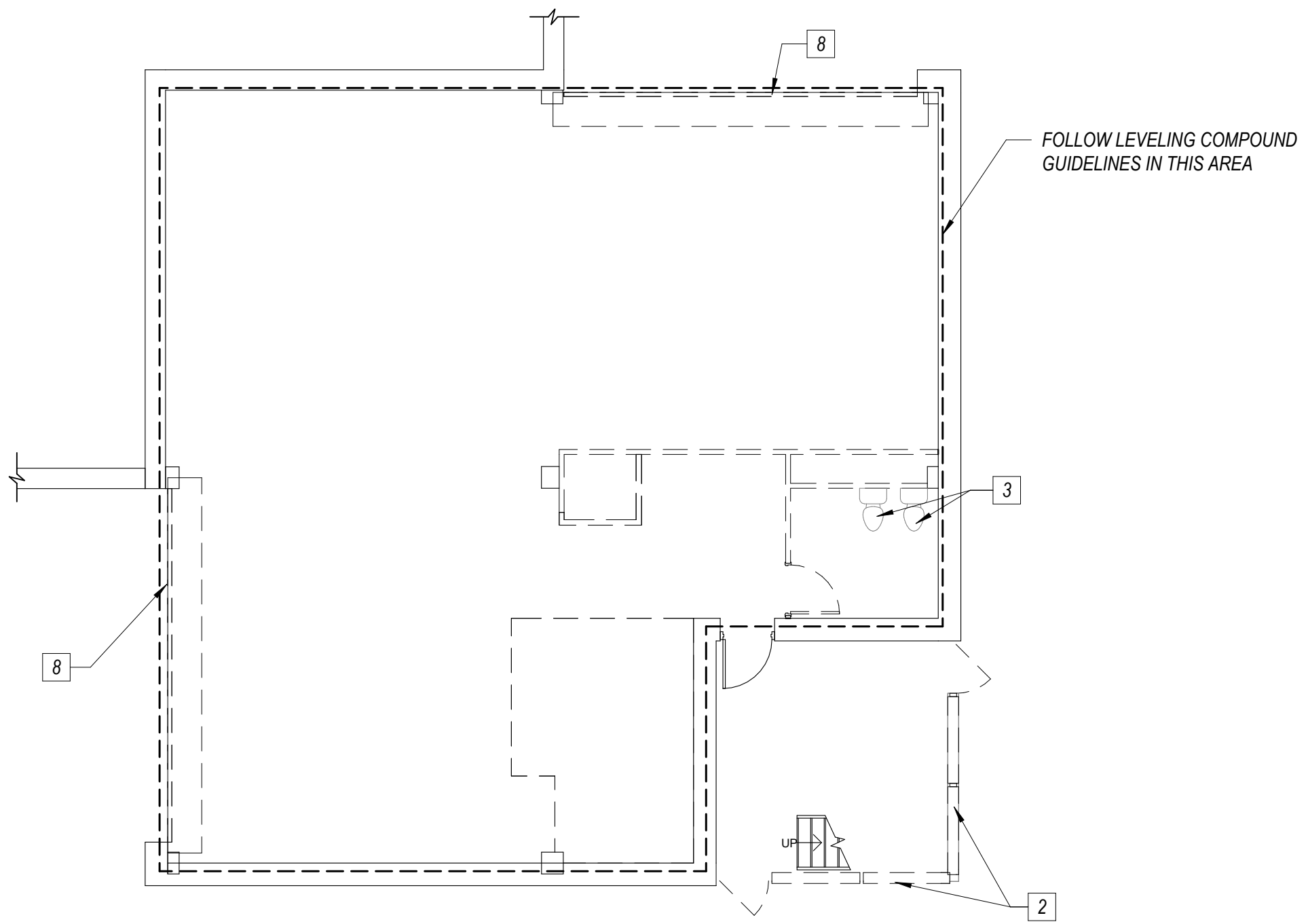
3 FIRST FLOOR DEMOLITION REFLECTED CEILING PLAN

1/8" = 1'-0"



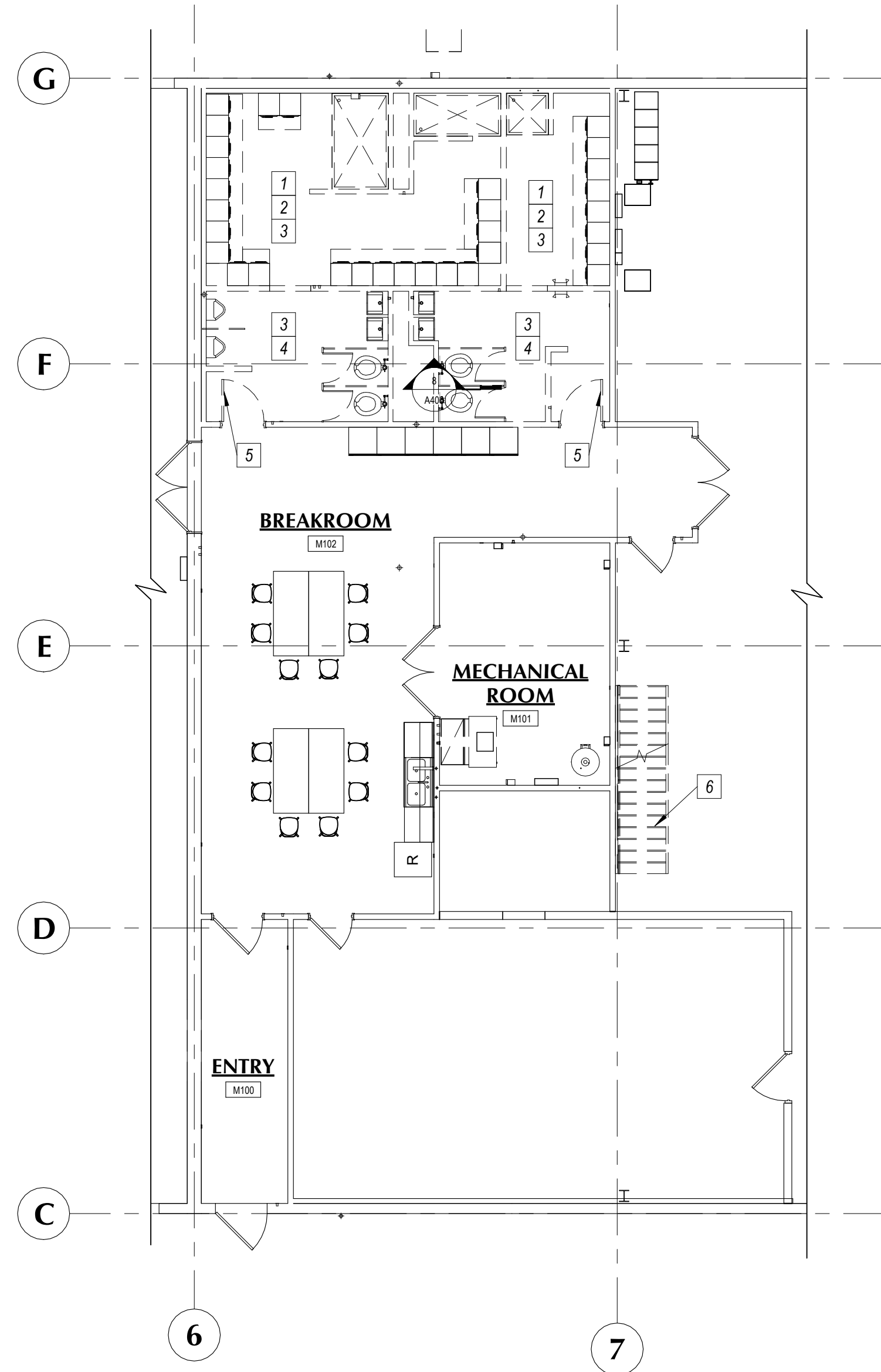
2 SECOND FLOOR DEMOLITION PLAN

1/8" = 1'-0"



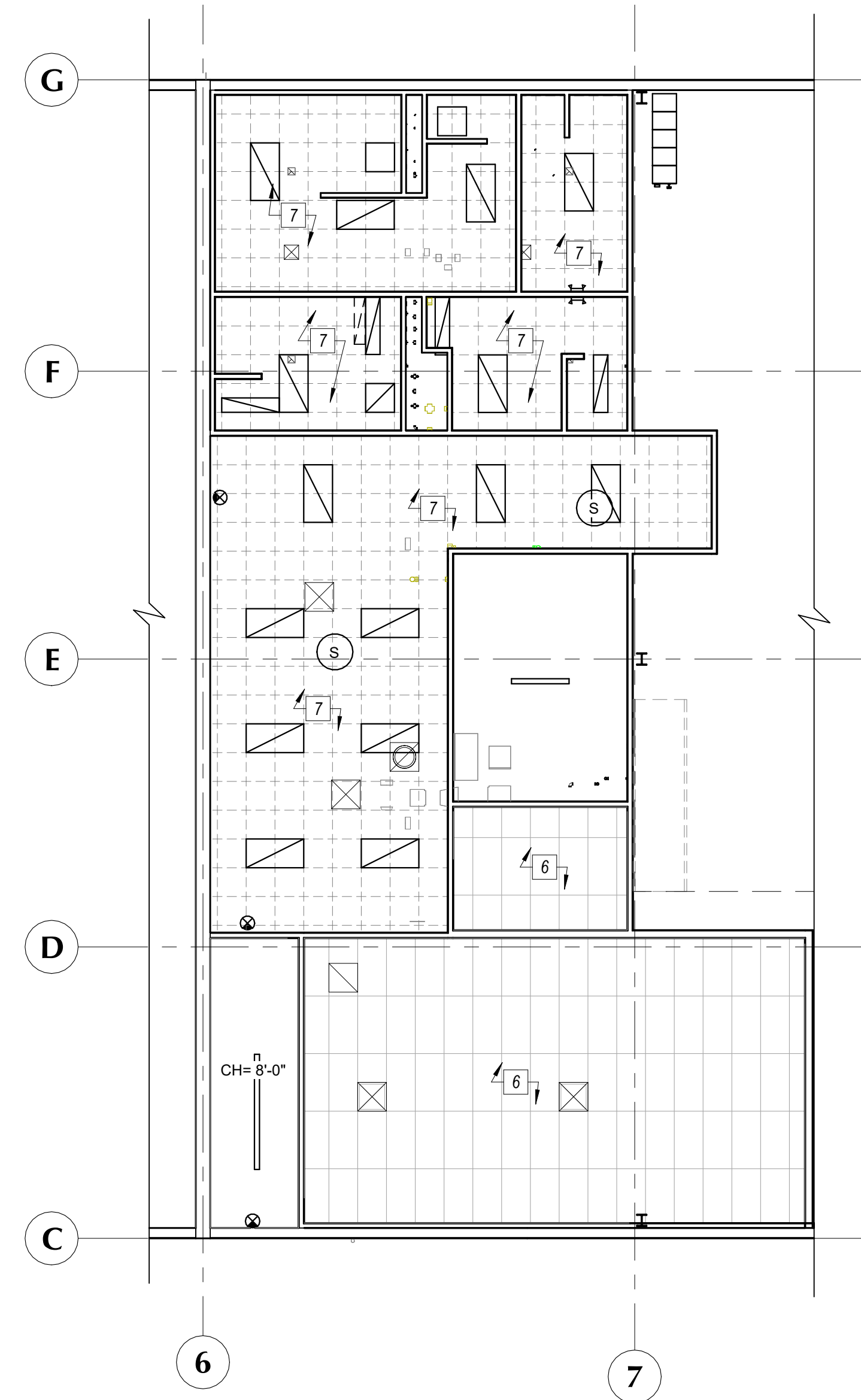
1 FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"



1 FIRST FLOOR DEMOLITION PLAN
MAINTENANCE BLDG

1/8" = 1'-0"



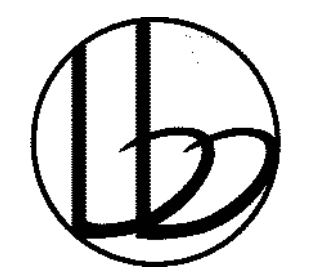
3 FIRST FLOOR DEMOLITION REFLECTED
CEILING PLAN MAINTENANCE BLDG

1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

- 1 EXISTING SHOWERS TO BE REMOVED.
- 2 EXISTING LOCKERS TO BE REMOVED.
- 3 EXISTING WALLS TO BE REMOVED.
- 4 EXISTING RESTROOM VANITY, PLUMBING FIXTURE, PARTITION, COUNTER TO BE REMOVED.
- 5 EXISTING DOOR TO BE REMOVED.
- 6 NOT IN SCOPE
- 7 EXISTING CEILING TO BE REMOVED.



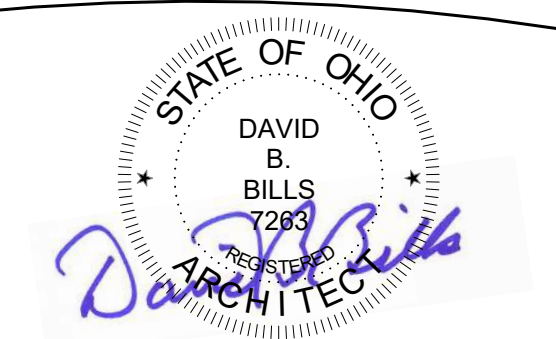
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DAVID B. BILLS, LICENSE #7263
EXPIRATION DATE 12/31/2026

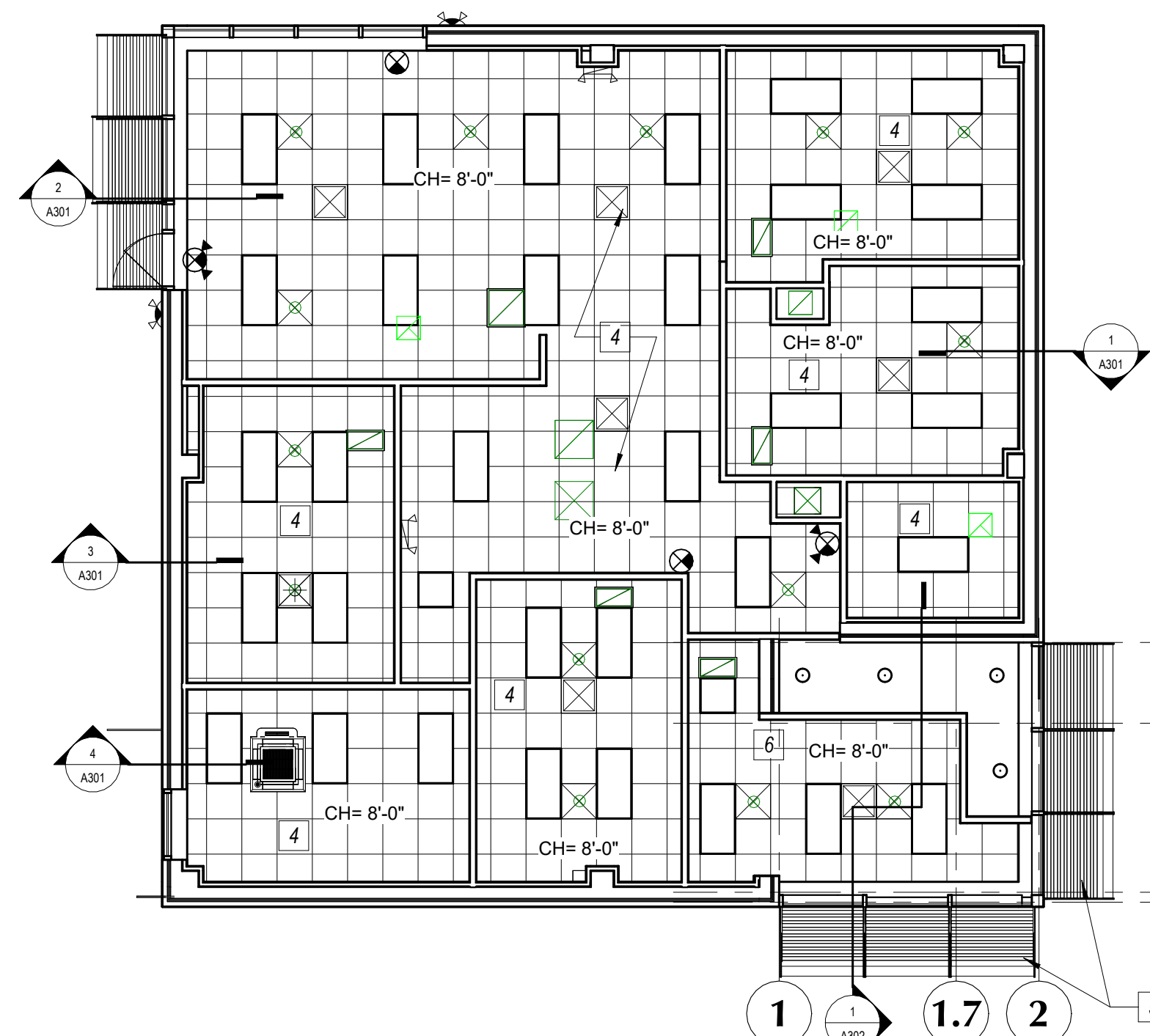
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A201284.6

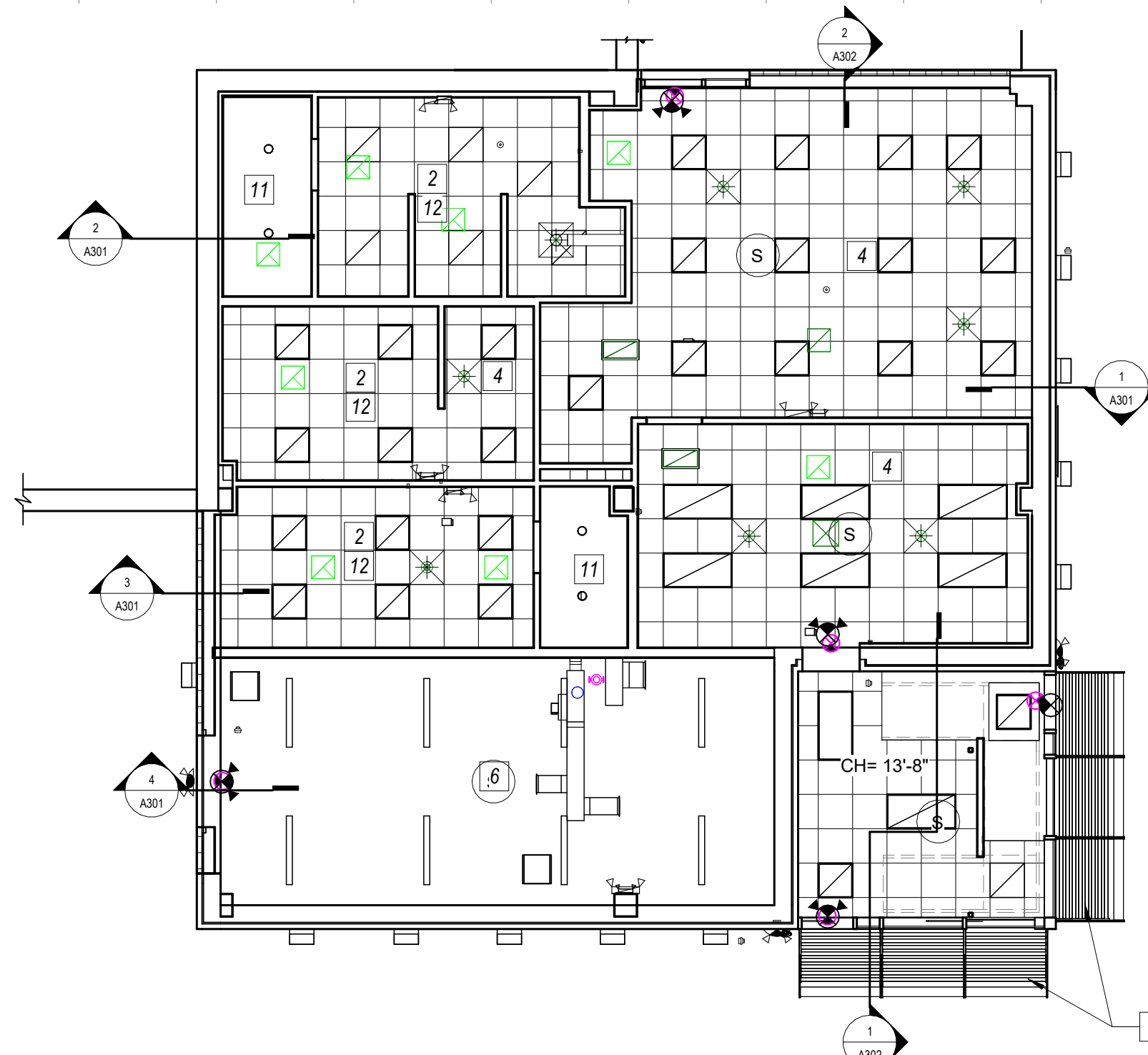
DRAWN BY: SKK

**FIRST FLOOR & CEILING
DEMOLITION PLANS
MAINTENANCE BLDG**

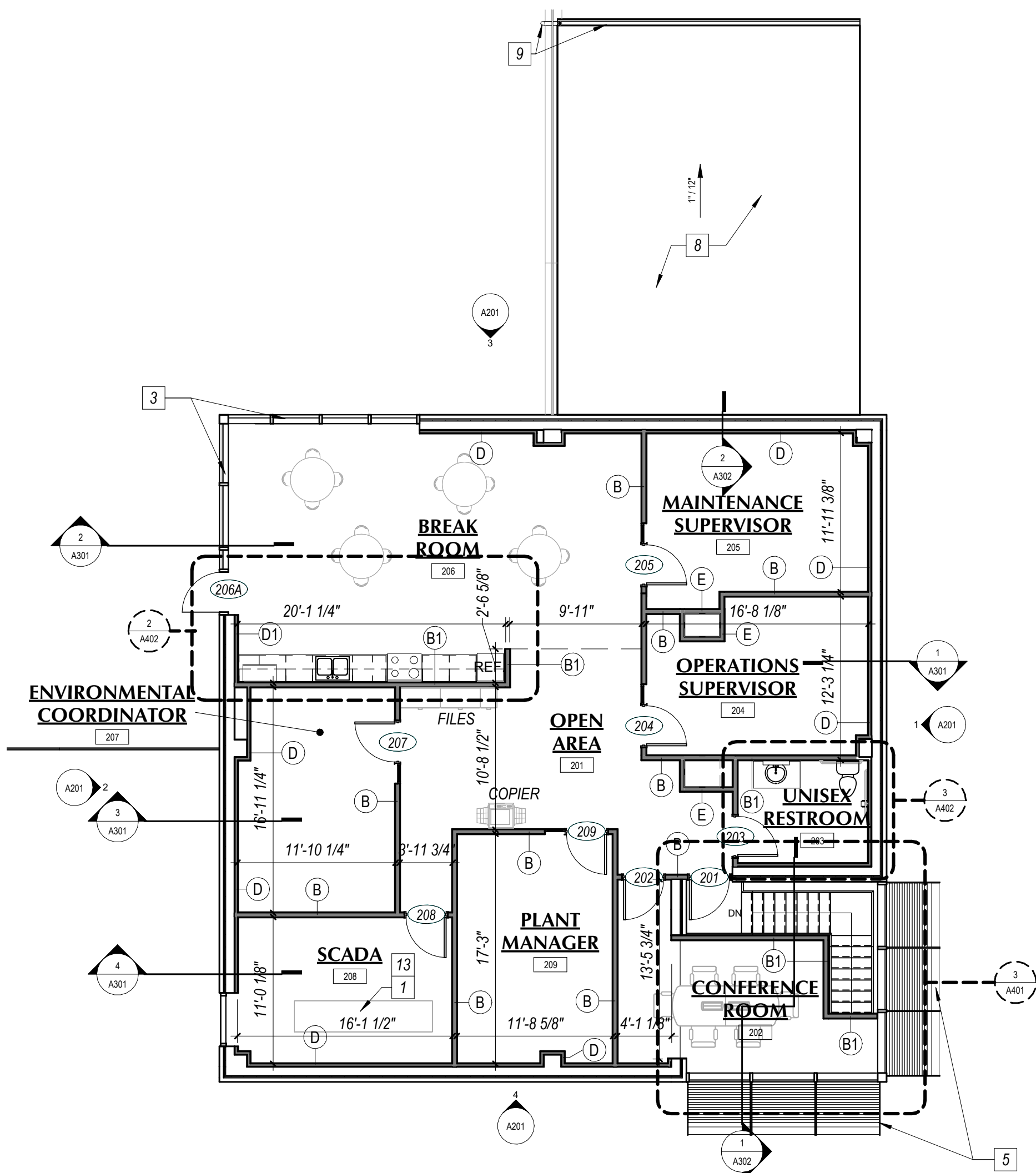
A002



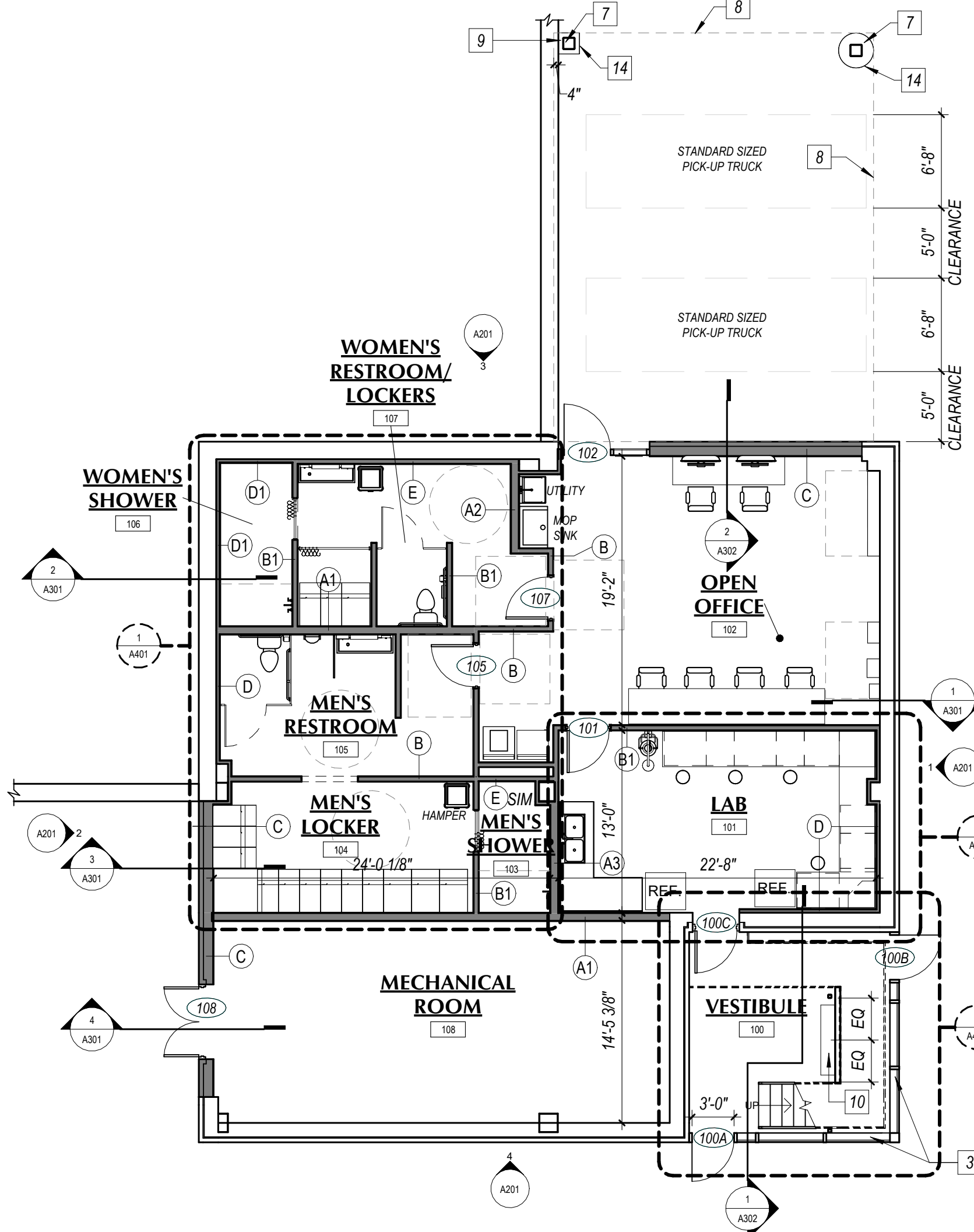
4 SECOND FLOOR REFLECTED CEILING PLAN OPS BLDG 1/8" = 1'-0"



3 FIRST FLOOR REFLECTED CEILING PLAN OPERATIONS BLDG 1/8" = 1'-0"



2 SECOND FLOOR PLAN OPERATIONS BLDG 1/8" = 1'-0"

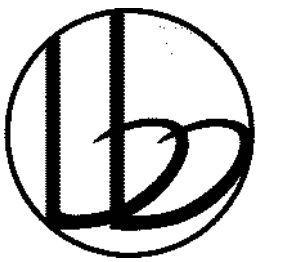


1 FIRST FLOOR PLAN OPERATIONS BLDG 1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

- 1 EXISTING COMPUTER EQUIPMENT TO REMAIN IN OPERATION FOR DURATION OF THE PROJECT.
- 2 LAY-IN CEILING - ACOUSTIC PANELS - TYPE 2.
- 3 CURTAIN WALL.
- 4 LAY-IN CEILING - ACOUSTIC PANELS - TYPE 1.
- 5 SUN SHADE.
- 6 EXISTING EXPOSED STRUCTURE TO BE PAINTED.
- 7 4"x4" STEEL COLUMN ON CONCRETE PIERS TO BE PAINTED.
- 8 METAL ROOF ABOVE.
- 9 GUTTER AND DOWNSPOUT. RETURN DOWNSPOUT TO THE GRASS.
- 10 MAIL / PACKAGE DELIVERY "36 SLOTS".
- 11 GYP BD CEILING
- 12 ALUMINUM GRID AND DEVICES IN LOCKER / REST ROOMS
- 13 ERECT NEW PARTITIONS AND DOORS AROUND THE SCADA ROOM PRIOR TO DEMOLISHING THE EXISTING WALLS AND DOOR.
- 14 PATCH AND REPAIR ASPHALT AROUND NEW FOUNDATIONS AS REQUIRED TO CREATE A SMOOTH TRANSITION TO THE EXISTING PAVEMENT. PATCH AND REPAIR TO BE COMPLIANT WITH COMMERCIAL HEAVY DUTY ASPHALT.



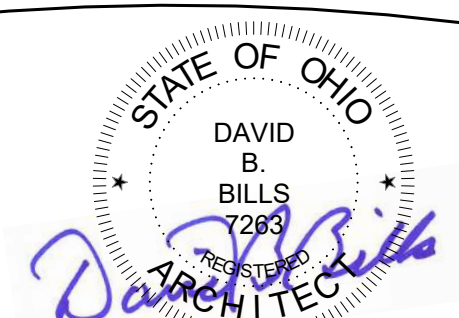
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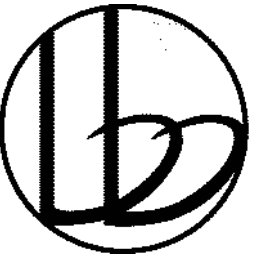
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A201284.6

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**FIRST AND SECOND
FLOOR & CEILING PLANS
OPERATIONS BLDG**

A101



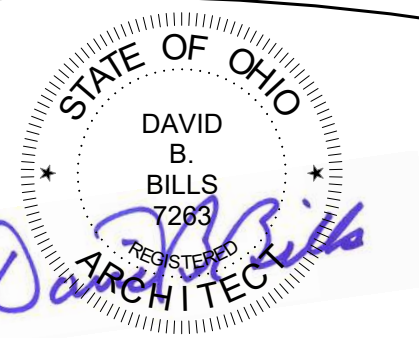
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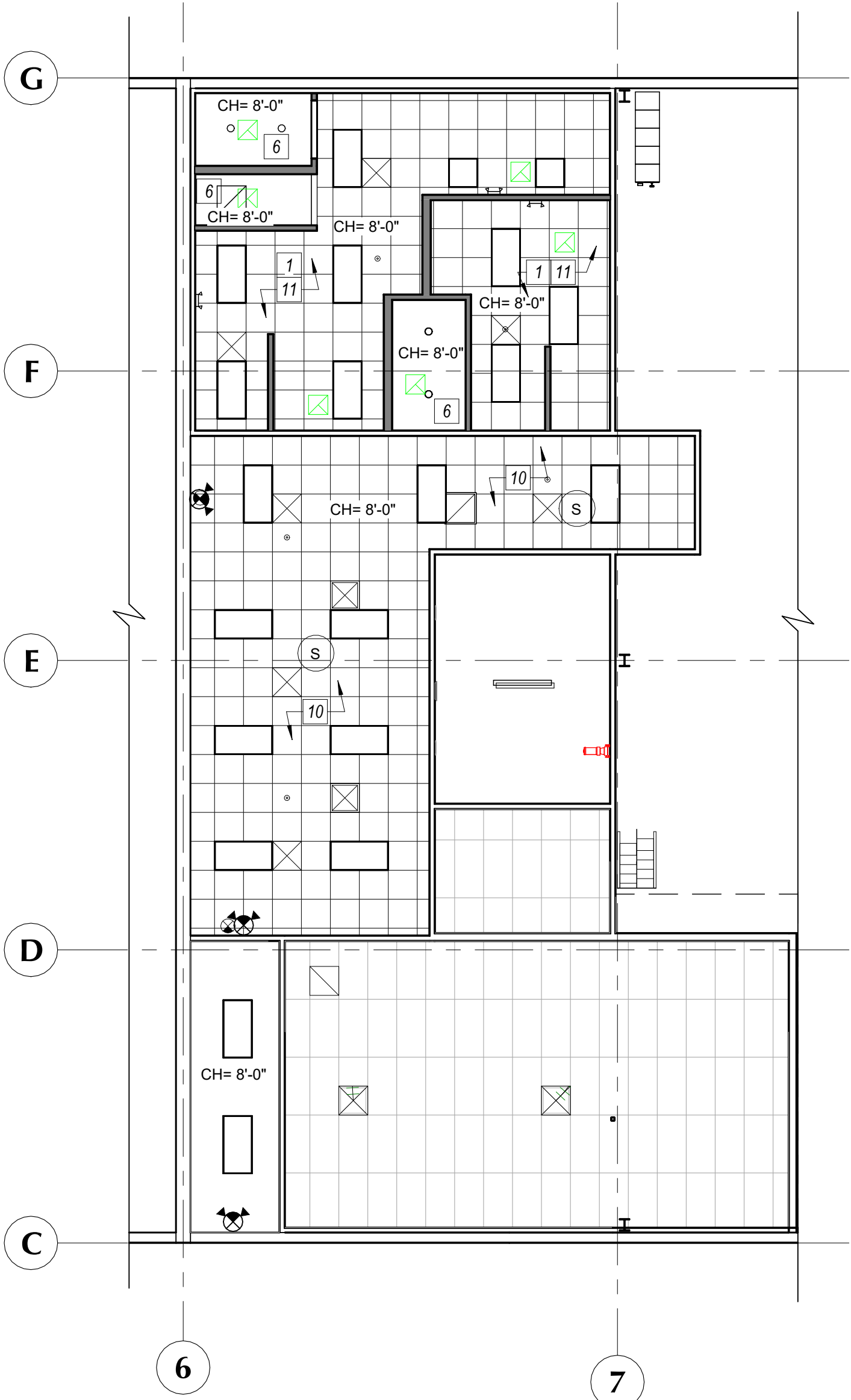
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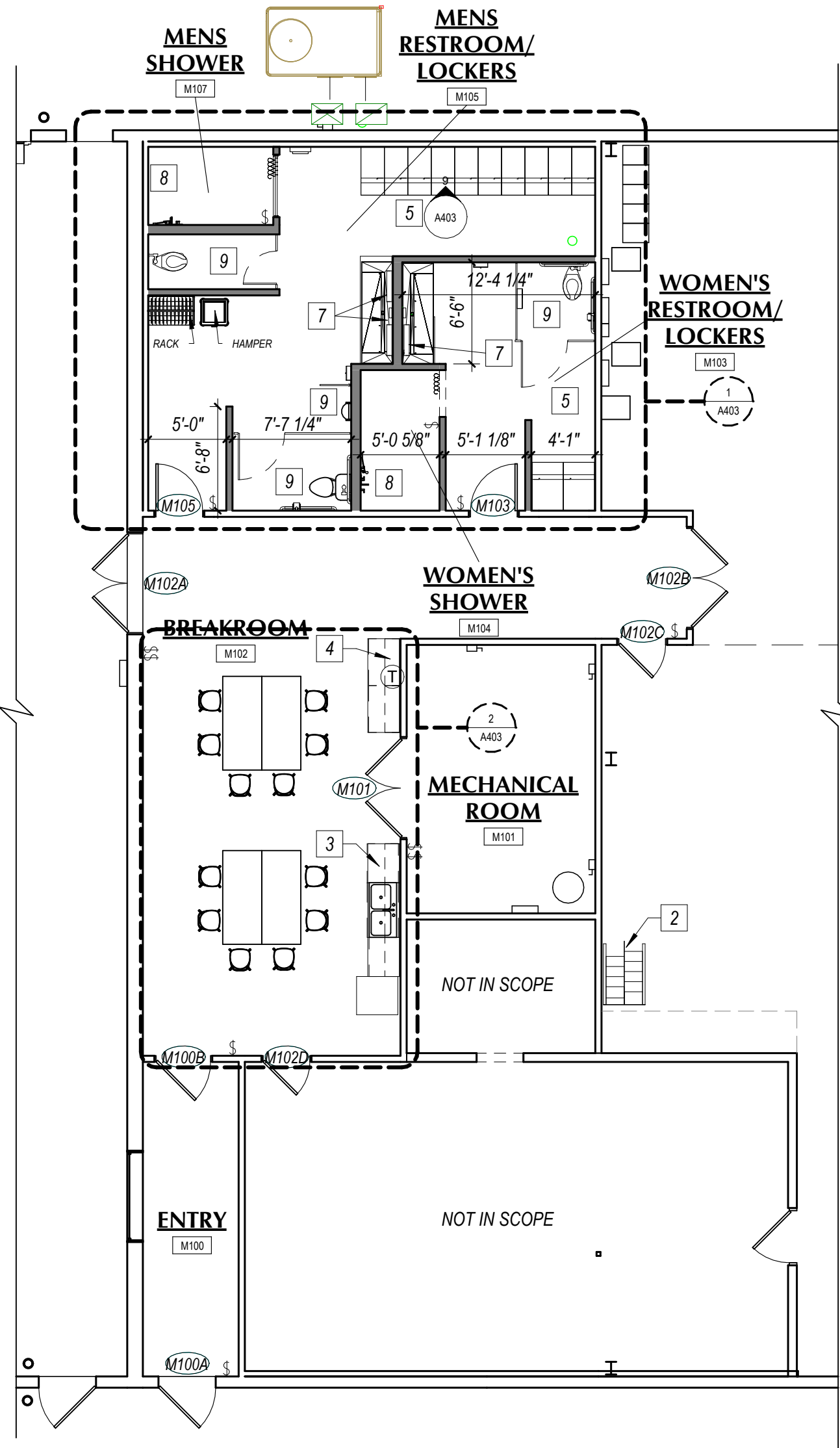
FLOOR & CEILING PLAN -
MAINTENANCE BLDG

A102



2 FIRST FLOOR REFLECTED CEILING PLAN
MAINTENANCE BLDG

1/8" = 1'-0"



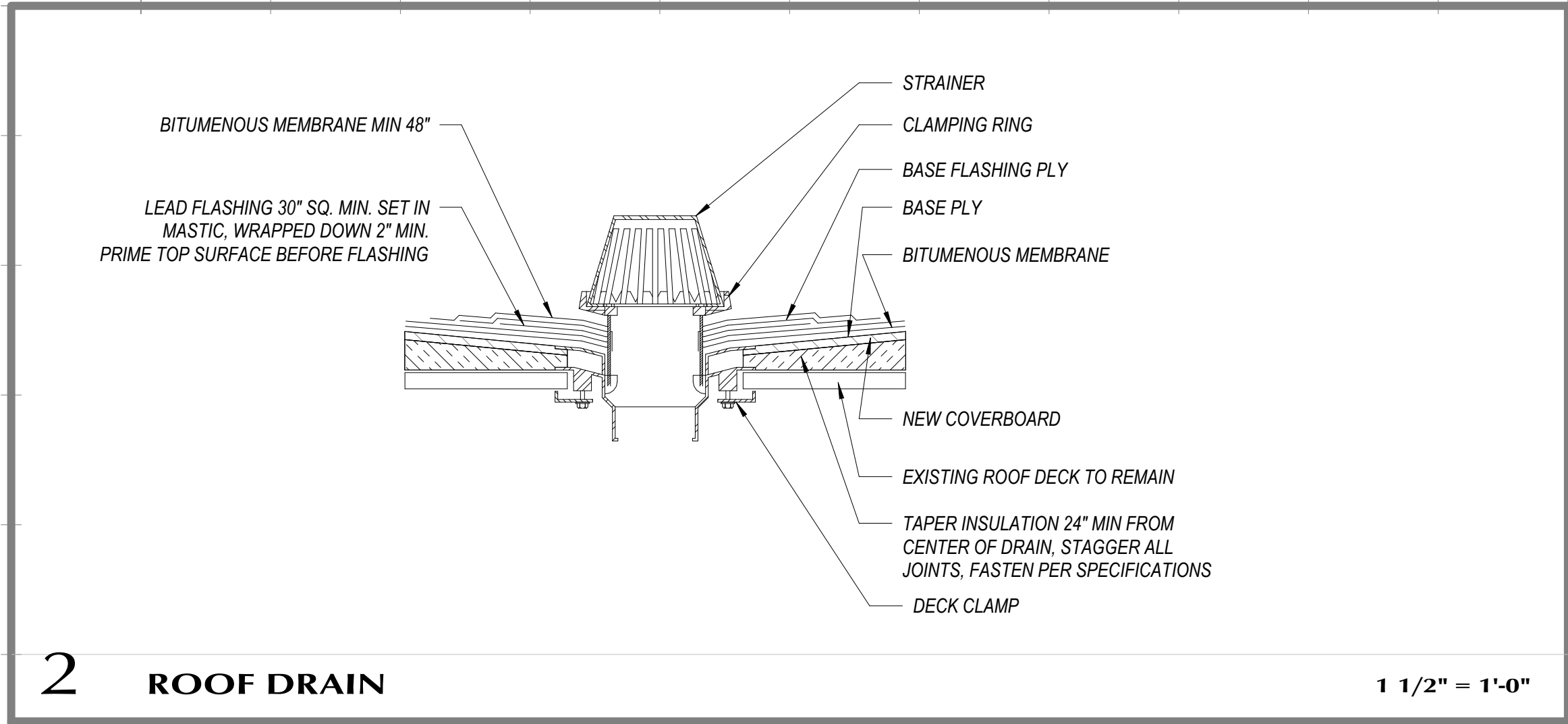
1 FIRST FLOOR PLAN MAINTENANCE BLDG

1/8" = 1'-0"

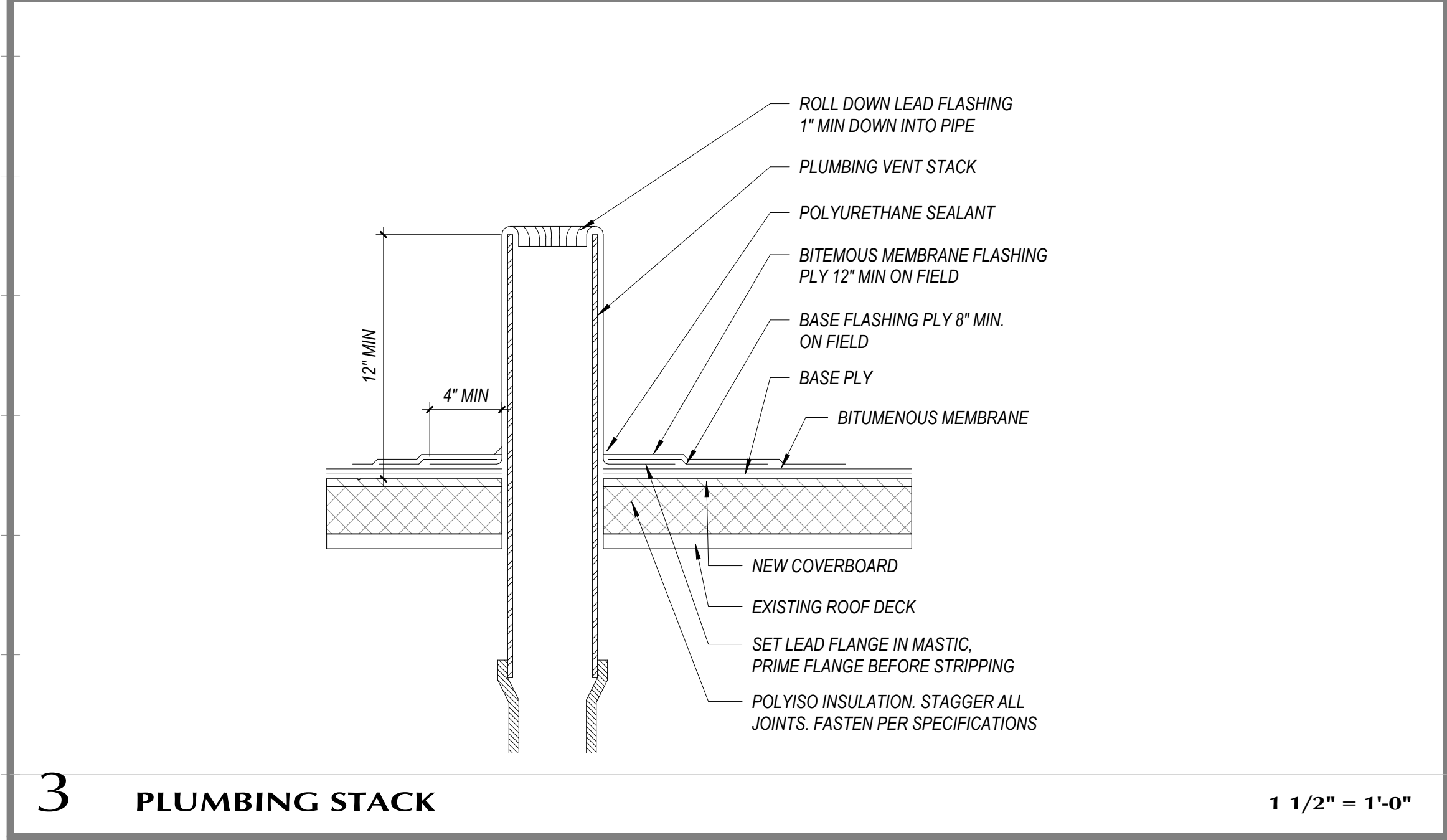
GENERAL NOTES

SHEET NOTES

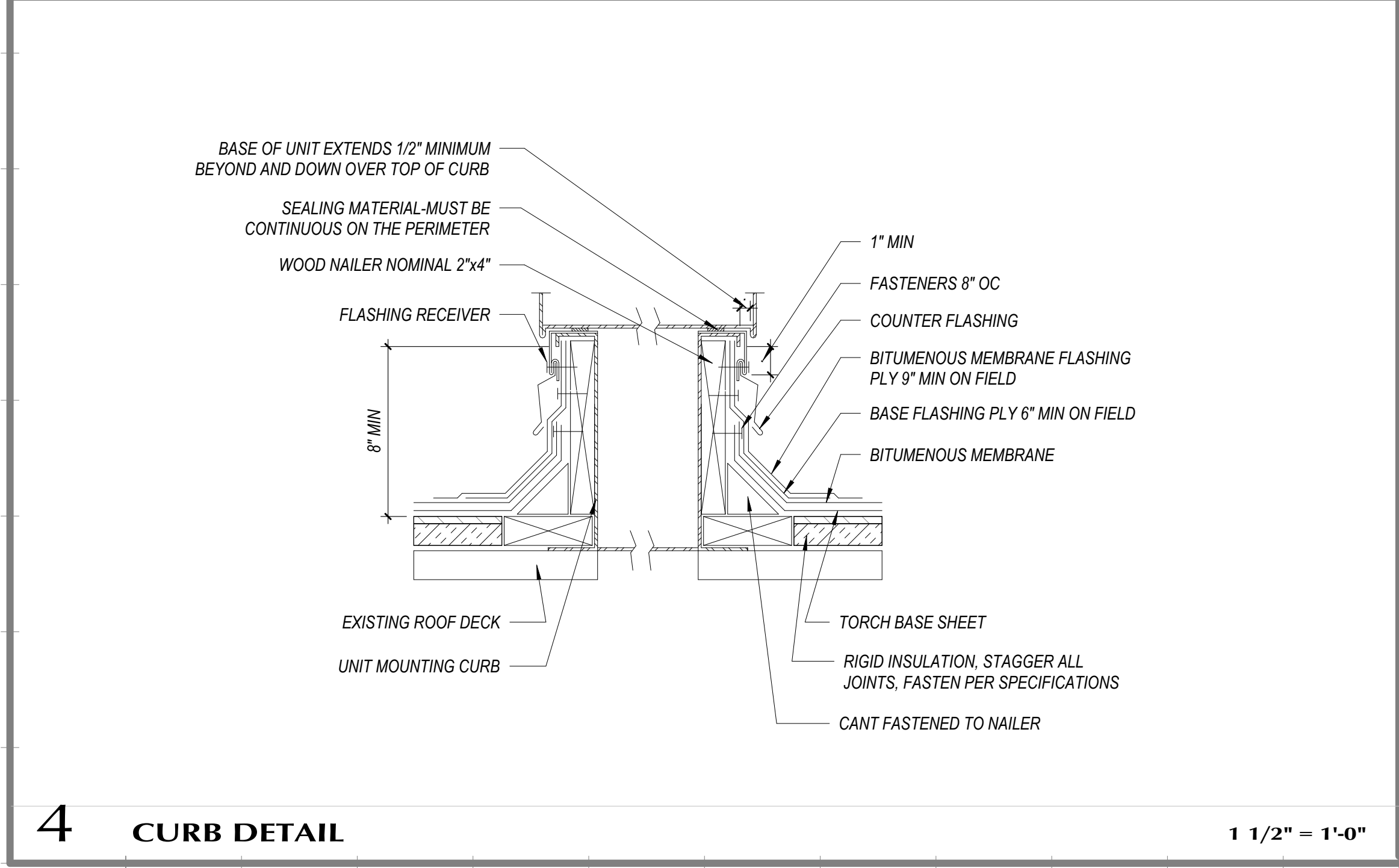
- | | |
|--|--|
| 1 ALUMINUM GRID AND DEVICES IN LOCKER / REST ROOMS | 9 PLUMBING FIXTURE. |
| 2 EXISTING LADDER | 10 LAY-IN CEILING - ACOUSTIC PANELS TYPE 1 |
| 3 UPPER AND LOWER CABINETS. NEW COUNTERTOP WITH SINK. | 11 LAY-IN CEILING - ACOUSTIC PANELS TYPE 2 |
| 4 GATORADE STATION WITH NEW LOWER AND UPPER CABINETS. NEW COUNTER TOP. | |
| 5 24" LOCKERS, SINGLE DOOR, BENCH DRAWER. | |
| 6 DRYWALL CEILING | |
| 7 RESTROOM VANITY OR TROUGH SINK. | |
| 8 SHOWER. | |



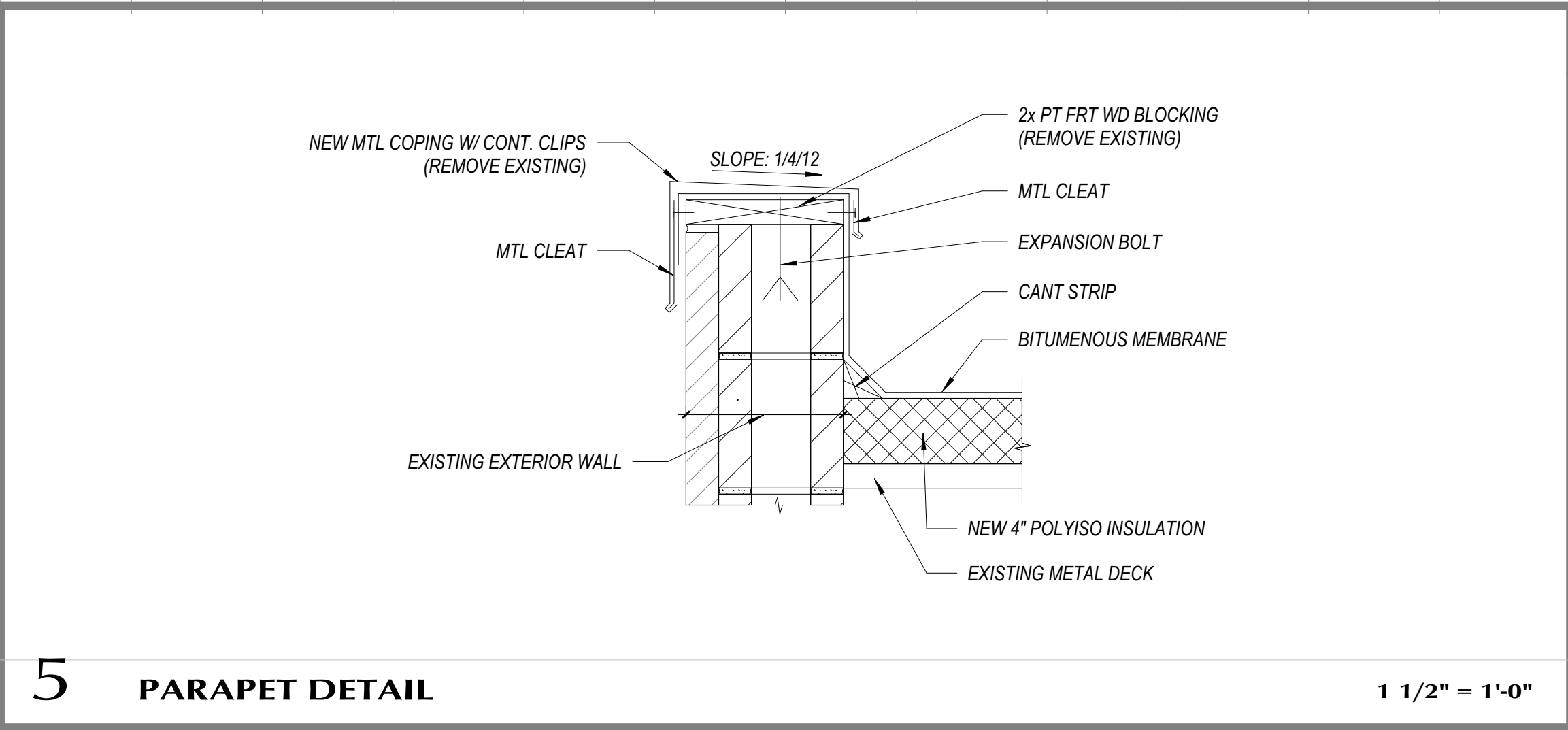
2 ROOF DRAIN 1 1/2" = 1'-0"



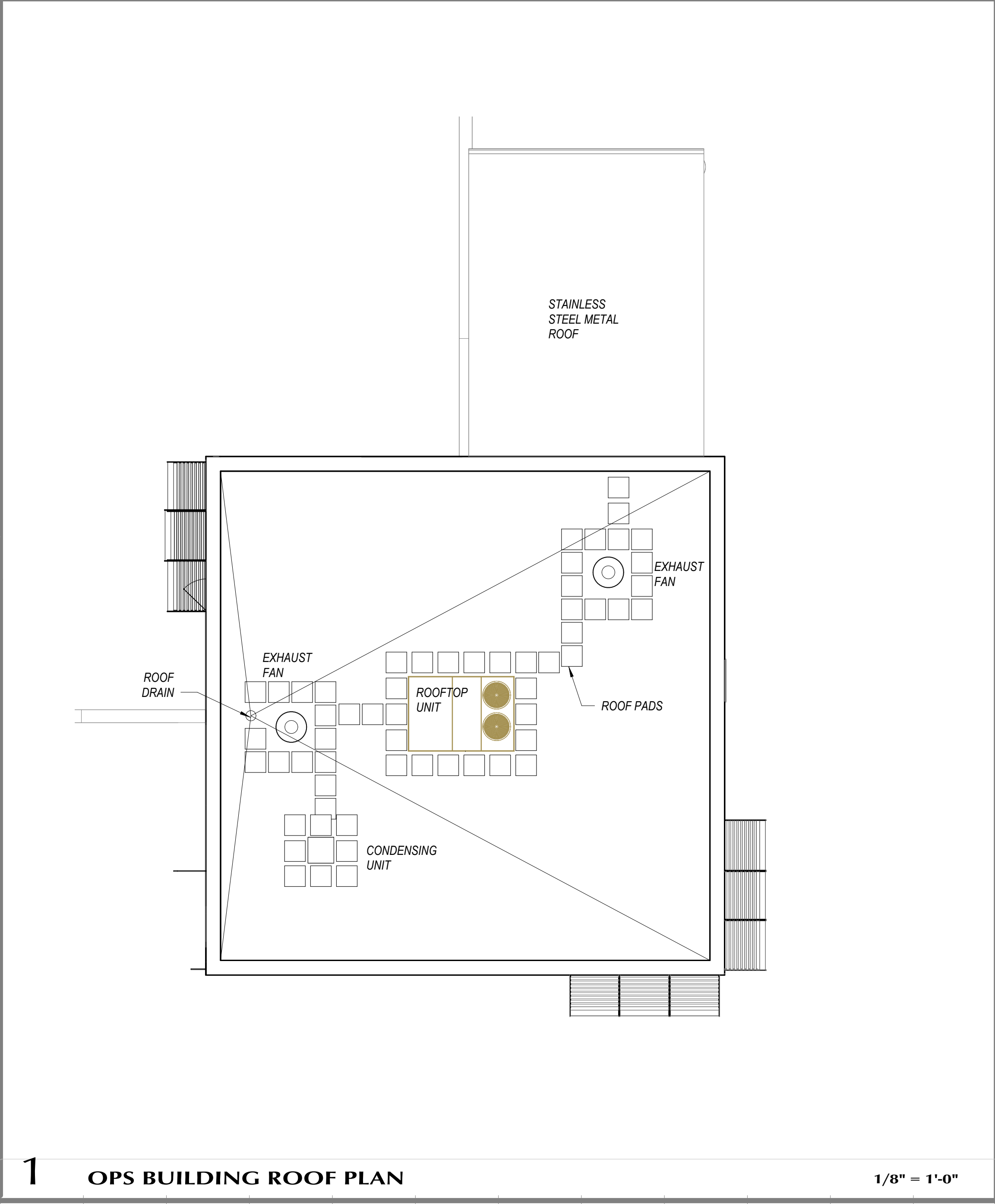
3 PLUMBING STACK 1 1/2" = 1'-0"



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



5 PARAPET DETAIL 1 1/2" = 1'-0"



1 OPS BUILDING ROOF PLAN 1/8" = 1'-0"

GENERAL NOTES

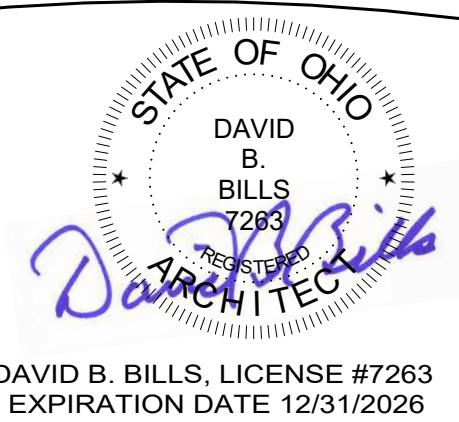


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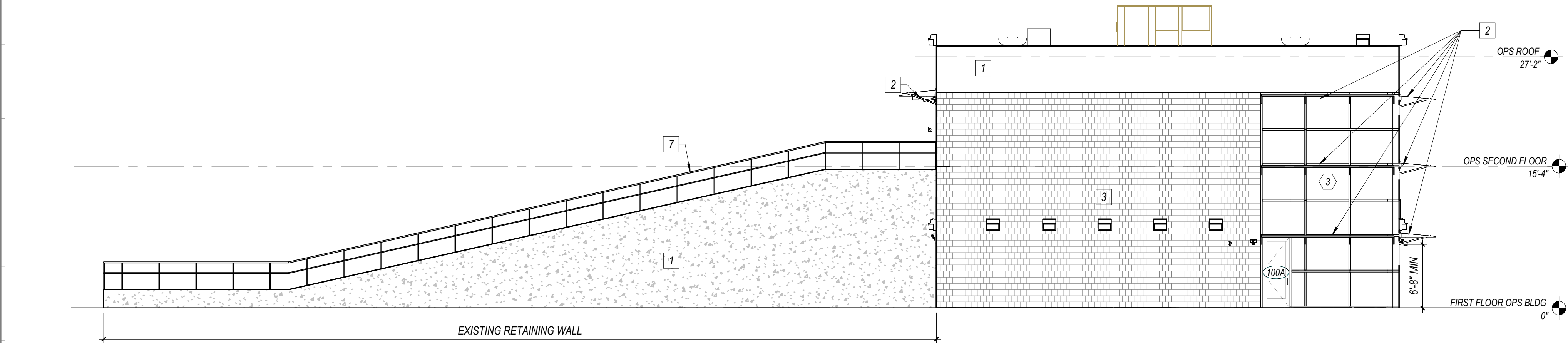
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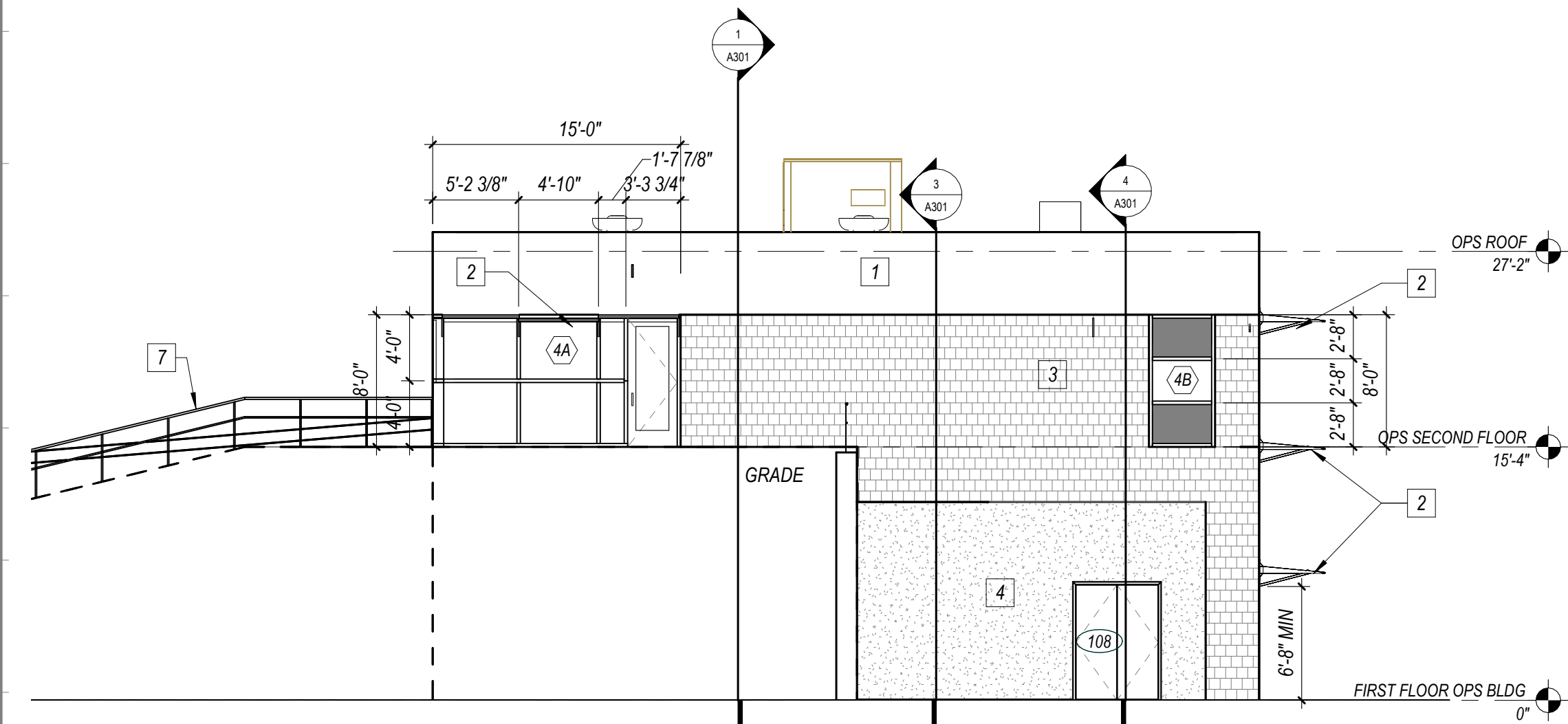
OPERATIONS BLDG ROOF
REPLACEMENT

A103



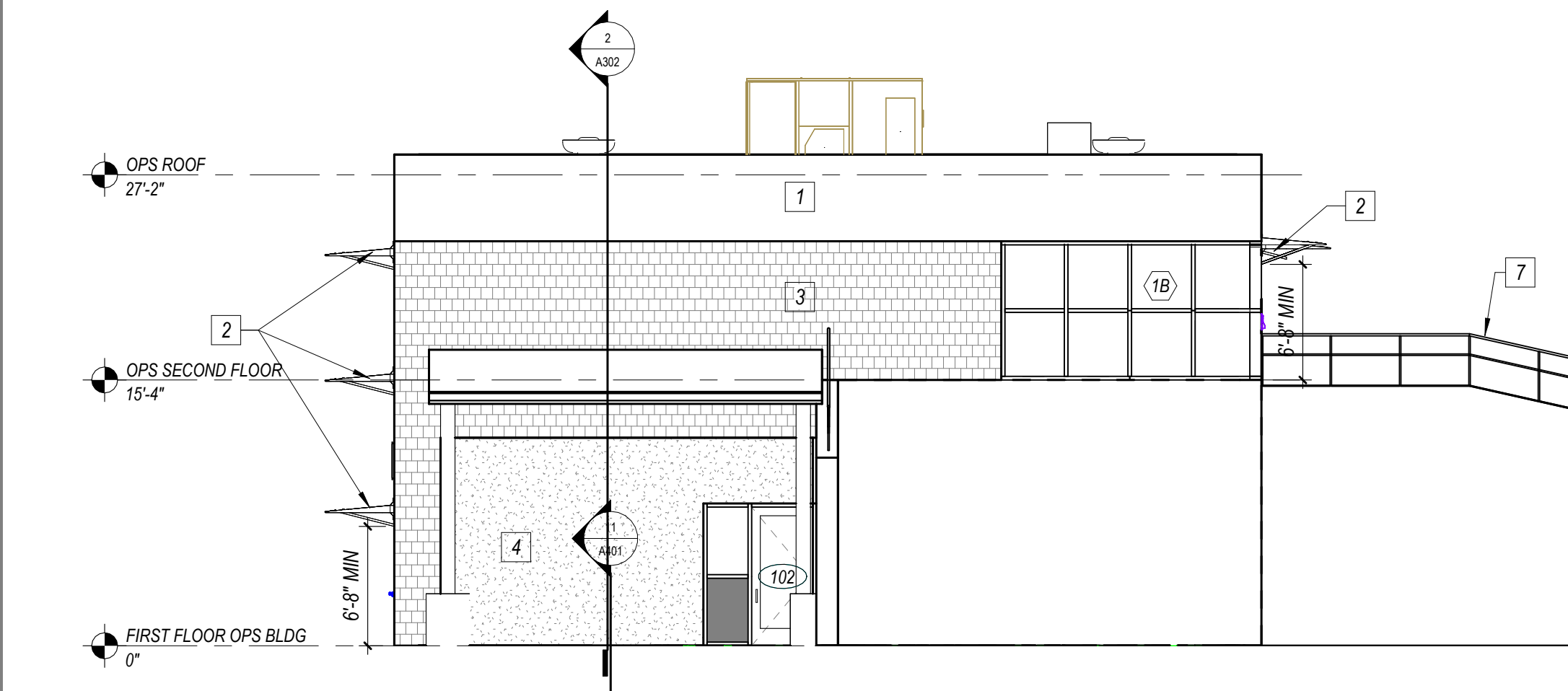
4 SOUTH ELEVATION

1/8" = 1'-0"



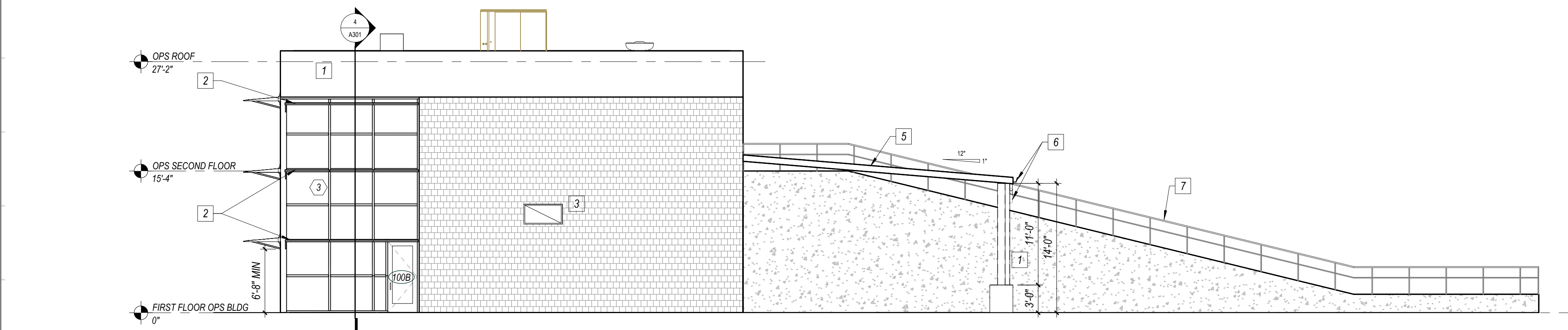
2 WEST ELEVATION

1/8" = 1'-0"



3 NORTH ELEVATION

1/8" = 1'-0"



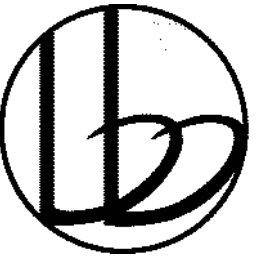
1 EAST ELEVATION

1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

- 1 EXISTING CONCRETE TO BE POWER WASHED OF ANY DIRT AND GRIME TO LIKE NEW CONDITION AND APPLY WATER REPELLANT.
- 2 SUN SHADE.
- 3 EXISTING BRICK TO REMAIN. POWER WASH EXISTING MASONRY AND APPLY WATER REPELLANT. REPAIR DAMAGED BRICK TO MATCH ADJACENT BRICK.
- 4 EIFS.
- 5 COVERED PARKING ROOF.
- 6 GUTTER AND DOWNSPOUT. RETURN DOWNSPOUT TO THE GRASS.
- 7 EXISTING RAILING TO REMAIN. CLEAN, SAND, AND PAINT.



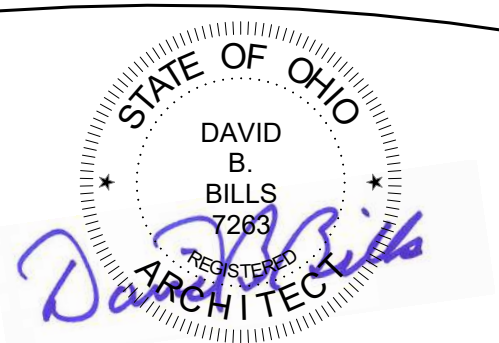
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EXTERIOR ELEVATIONS
OPERATIONS BLDG

A201



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**WALL SECTIONS
OPERATIONS BLDG**

A301

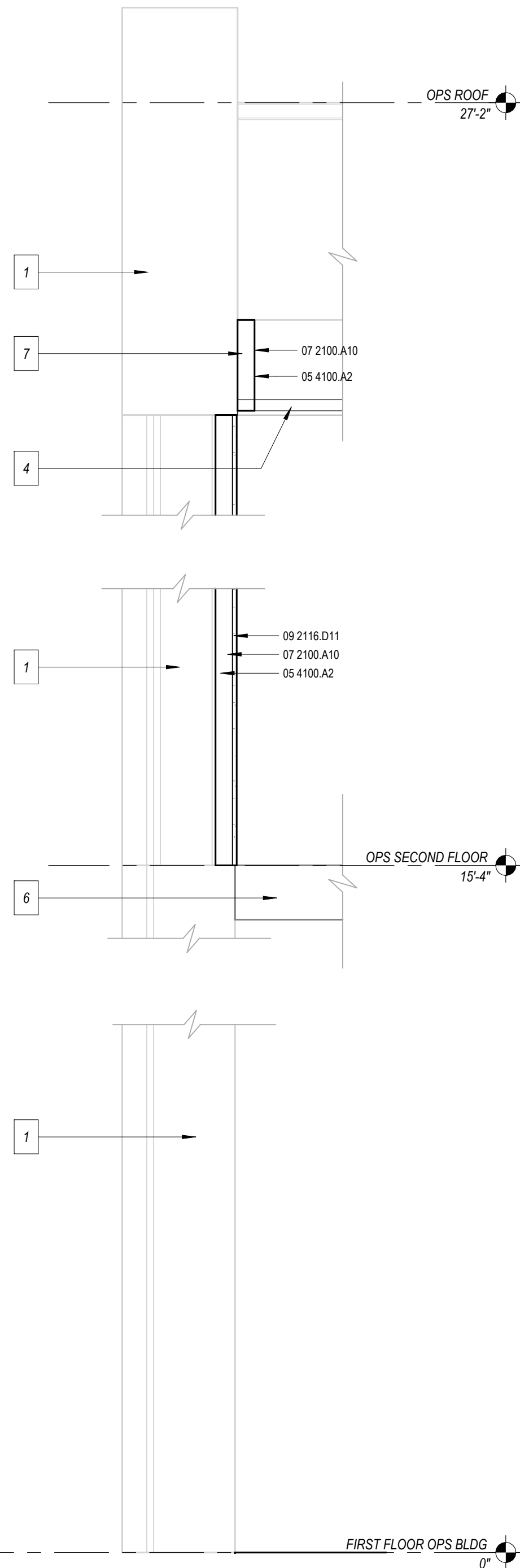
GENERAL NOTES

MATERIAL NOTES

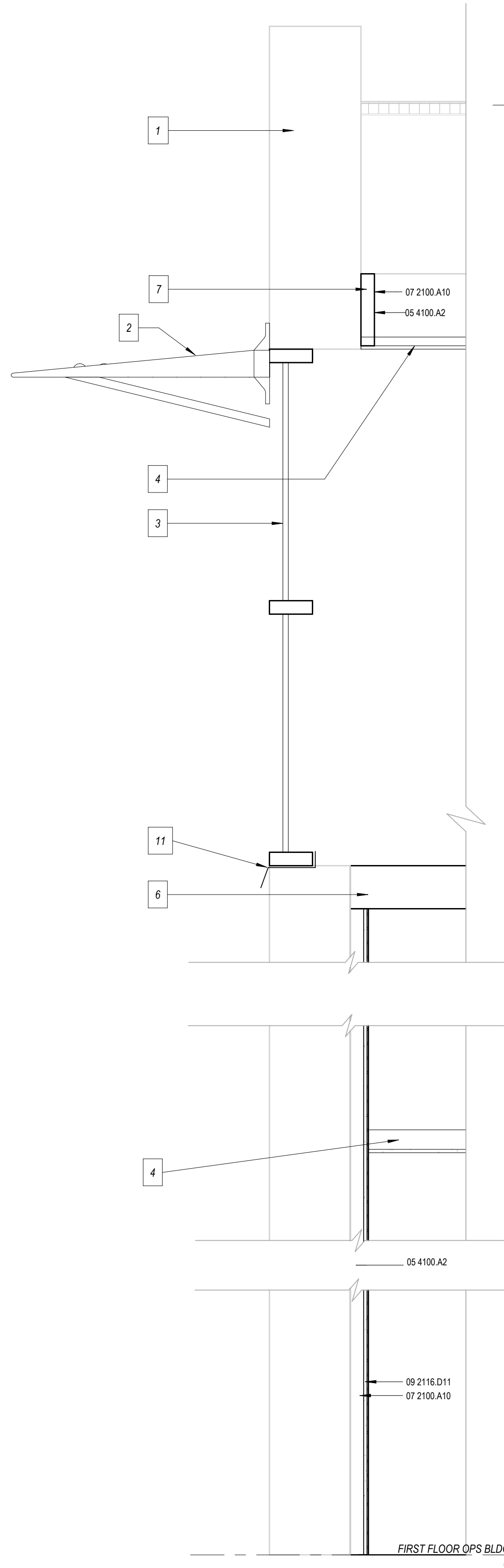
05 4100.A2	2-1/2" METAL STUD
07 2100.A10	BATT INSULATION
09 2116.D11	5/8" TYPE "X" GYPSUM WALLBOARD

☐ SHEET NOTES

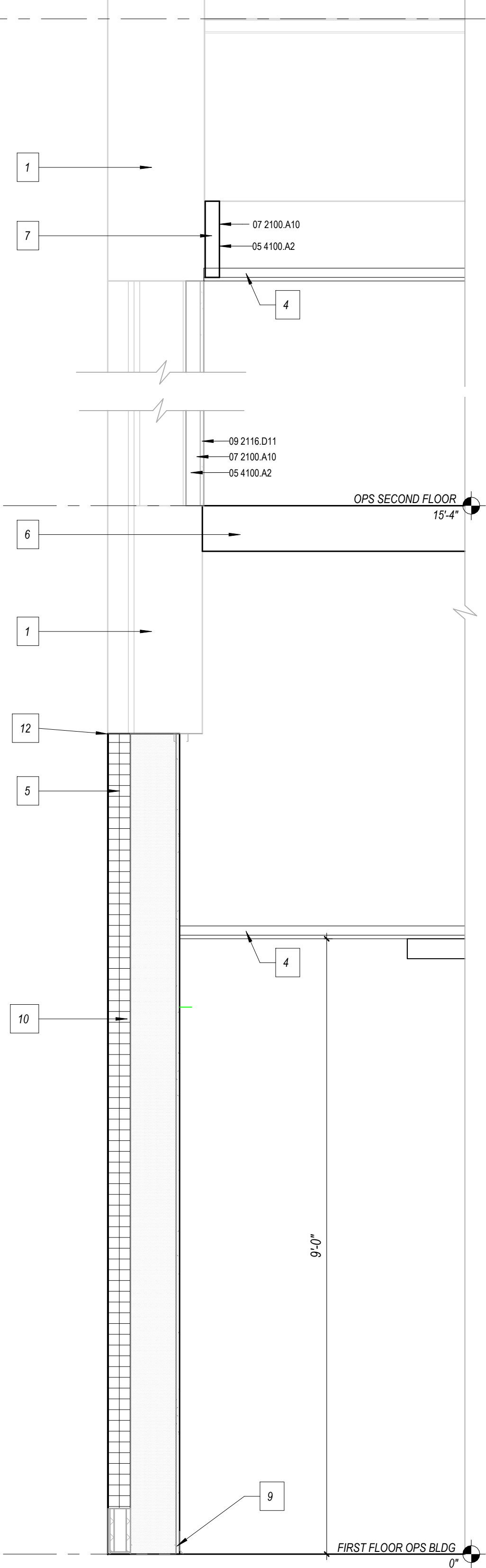
- 1 EXISTING WALL.
- 2 ALUMINUM SUNSHADE DEVICE INTEGRATED WITH CURTAIN-WALL SYSTEM.
- 3 CURTAIN WALL.
- 4 CEILING. SEE REFLECTED CEILING FLOOR PLAN.
- 5 DRAINABLE WALL EIFS SYSTEM
- 6 CONCRETE SLAB. SEE STRUCTURAL DRAWINGS.
- 7 EXTEND FURRED WALL AND BATT INSULATION TO UNDERSIDE OF ROOF STRUCTURE
- 8 4" CMU AT BASE W/ ELASTOMERIC COATING
- 9 EPOXY FLOOR BASE
- 10 VAPOR RETARDER
- 11 ALUMINUM FLASHING
- 12 SEALANT AT TOP AND SIDES OF EIFS



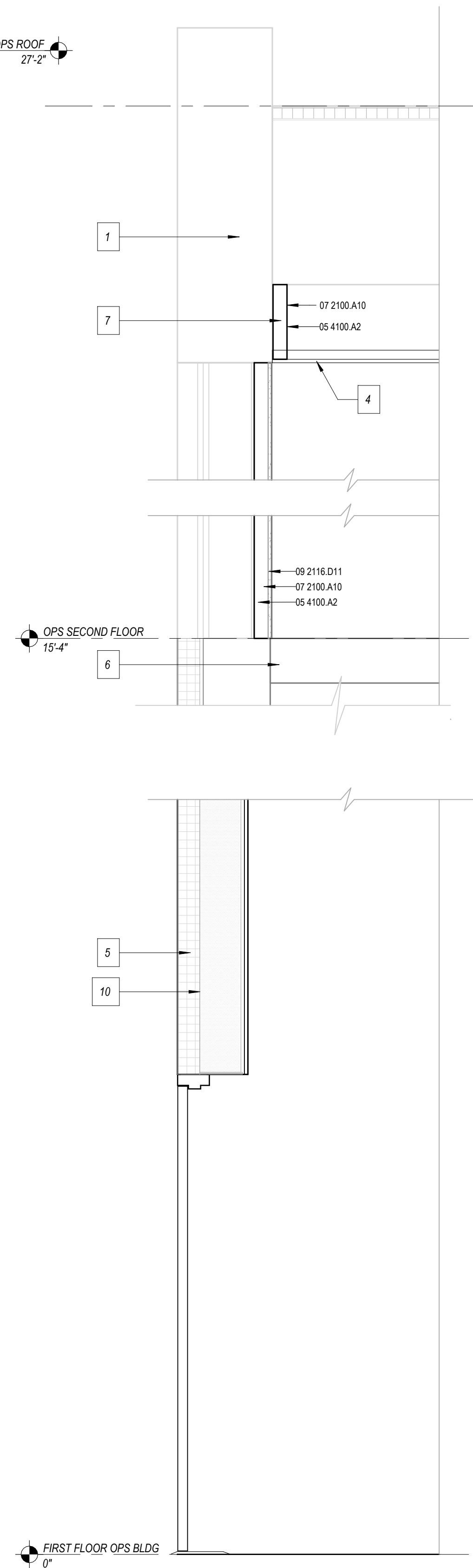
1 WALL SECTION 3/4" = 1'-0"



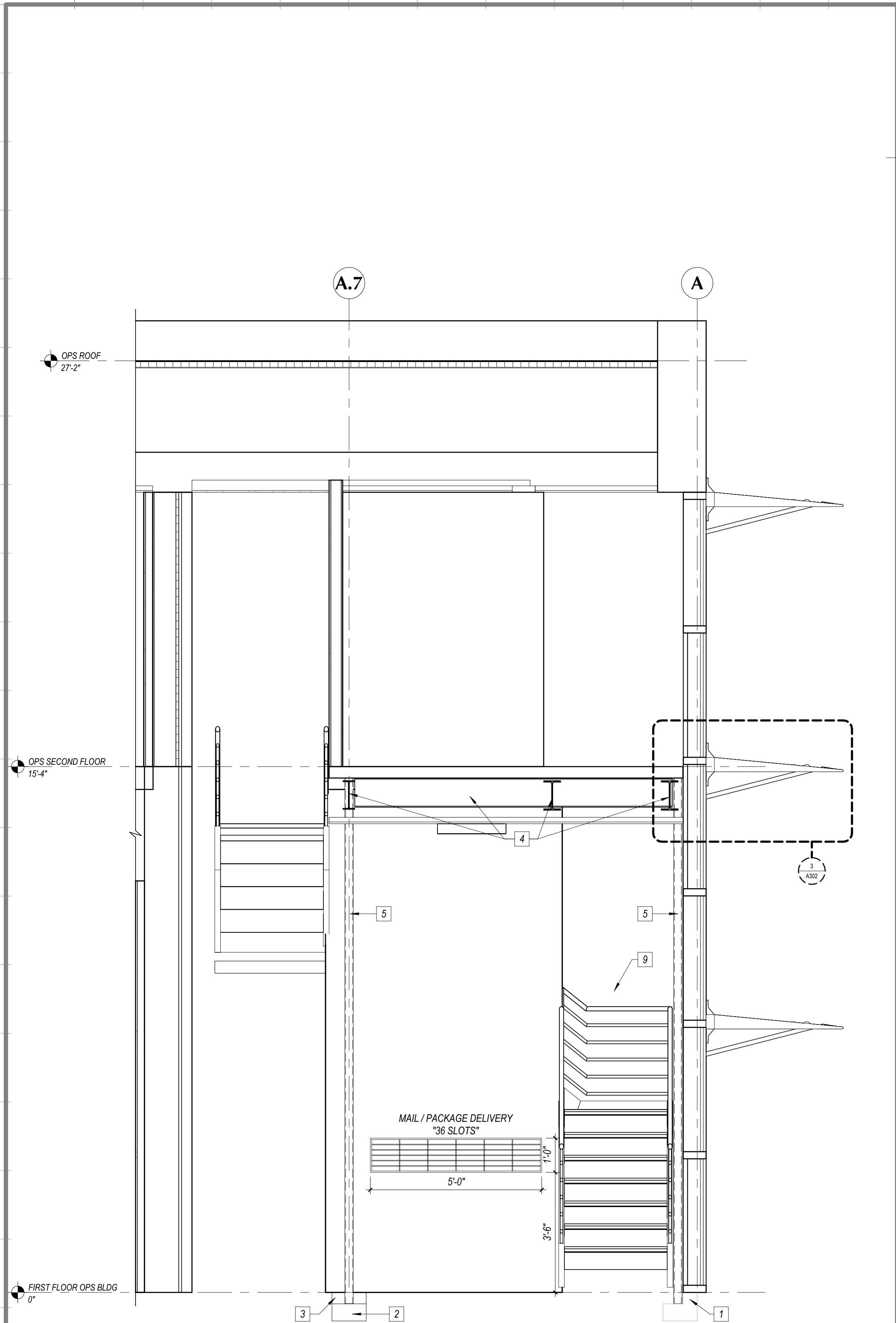
2 WALL SECTION 3/4" = 1'-0"



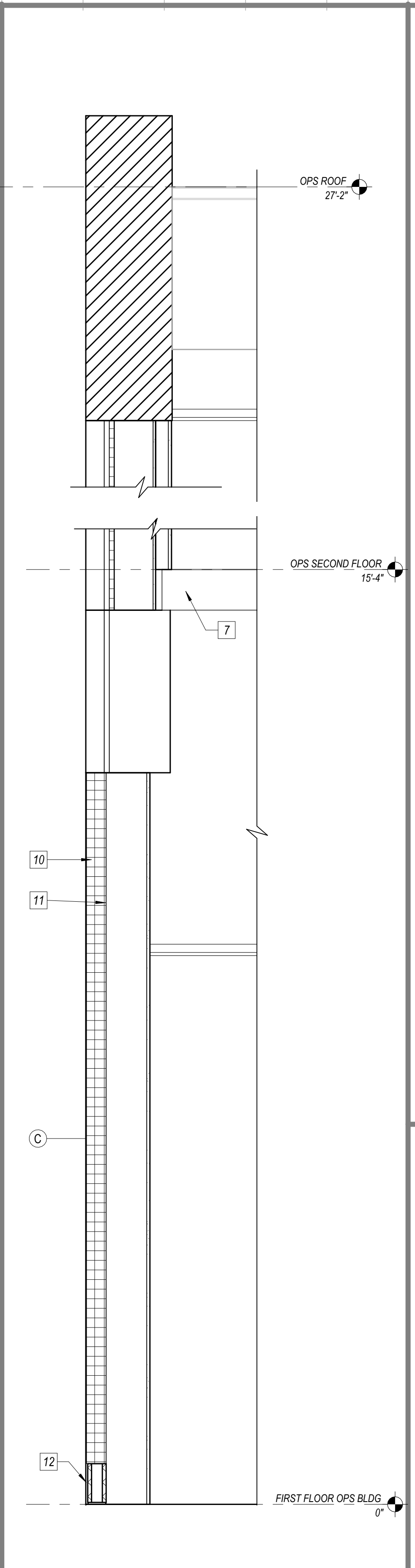
3 WALL SECTION 3/4" = 1'-0"



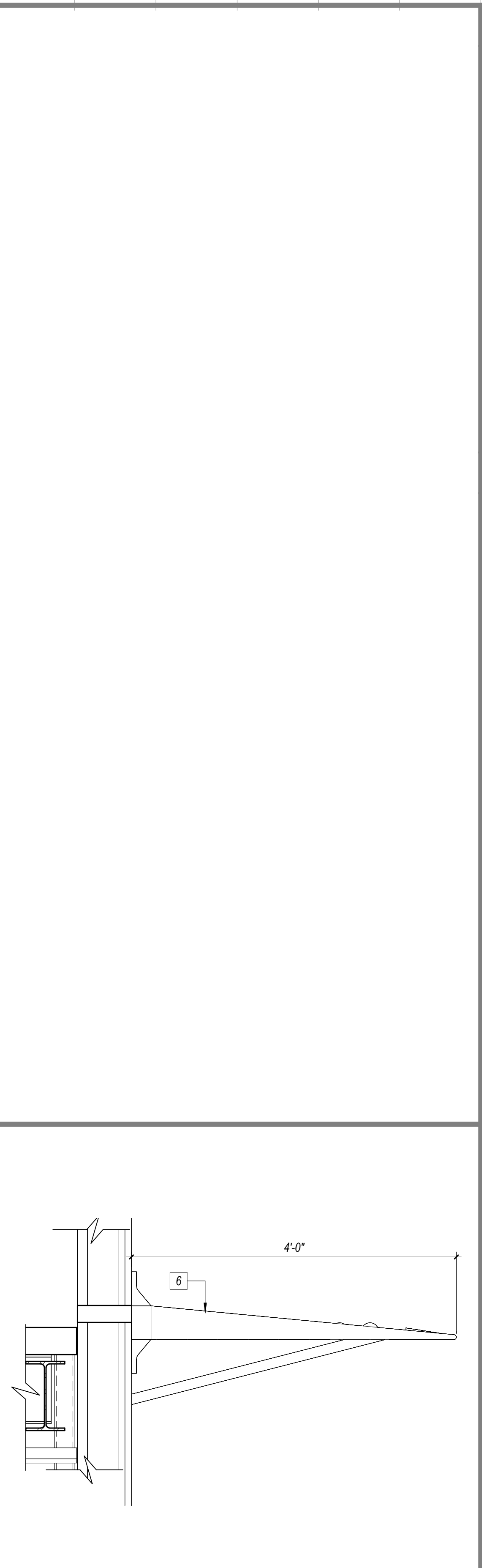
4 WALL SECTION 3/4" = 1'-0"



1 STAIRWELL SECTION 1/2" = 1'-0"



2 WALL SECTION 3/4" = 1'-0"

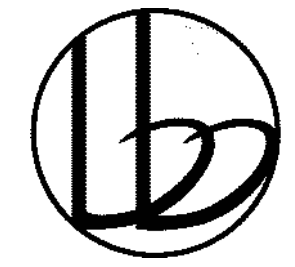


3 CANOPY DETAIL 1" = 1'-0"

GENERAL NOTES

SHEET NOTES

- 1 EXISTING FOUNDATION. SEE STRUCTURAL DRAWINGS.
- 2 FOUNDATION. SEE STRUCTURAL DRAWINGS.
- 3 INFILL SLAB. SEE STRUCTURAL DRAWINGS.
- 4 "W" BEAM. SEE STRUCTURAL DRAWINGS.
- 5 HSS 3x3x5/16 COLUMN. SEE STRUCTURAL DRAWINGS.
- 6 ALUMINUM SUNSHADE WITH DIAGONAL ALUMINUM SUPPORT TO BE MOUNTED AND SUPPORTED IN CURTAIN WALL MULLION.
- 7 CONCRETE SLAB. SEE STRUCTURAL DRAWINGS.
- 8 NOT USED
- 9 EXISTING RAILING TO REMAIN
- 10 DRAINABLE WALL EIFS ON 5/8" THICK DENSGLASS SHEATHING
- 11 VAPOR RETARDER
- 12 PROVIDE SILICONE ELASTOMERIC WATER PROOFING EQUAL TO DOW ALLGUARD



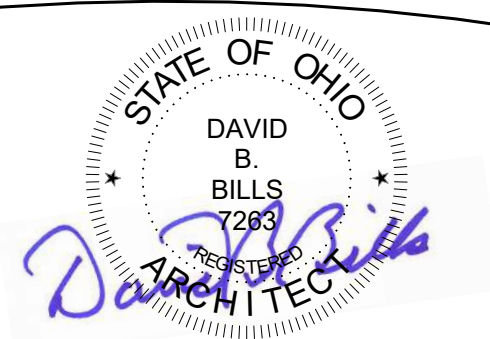
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4111 HYDRAULIC RD
DAYTON, OHIO 45449



DAVID B. BILLS, LICENSE #7263
EXPIRATION DATE 12/31/2026

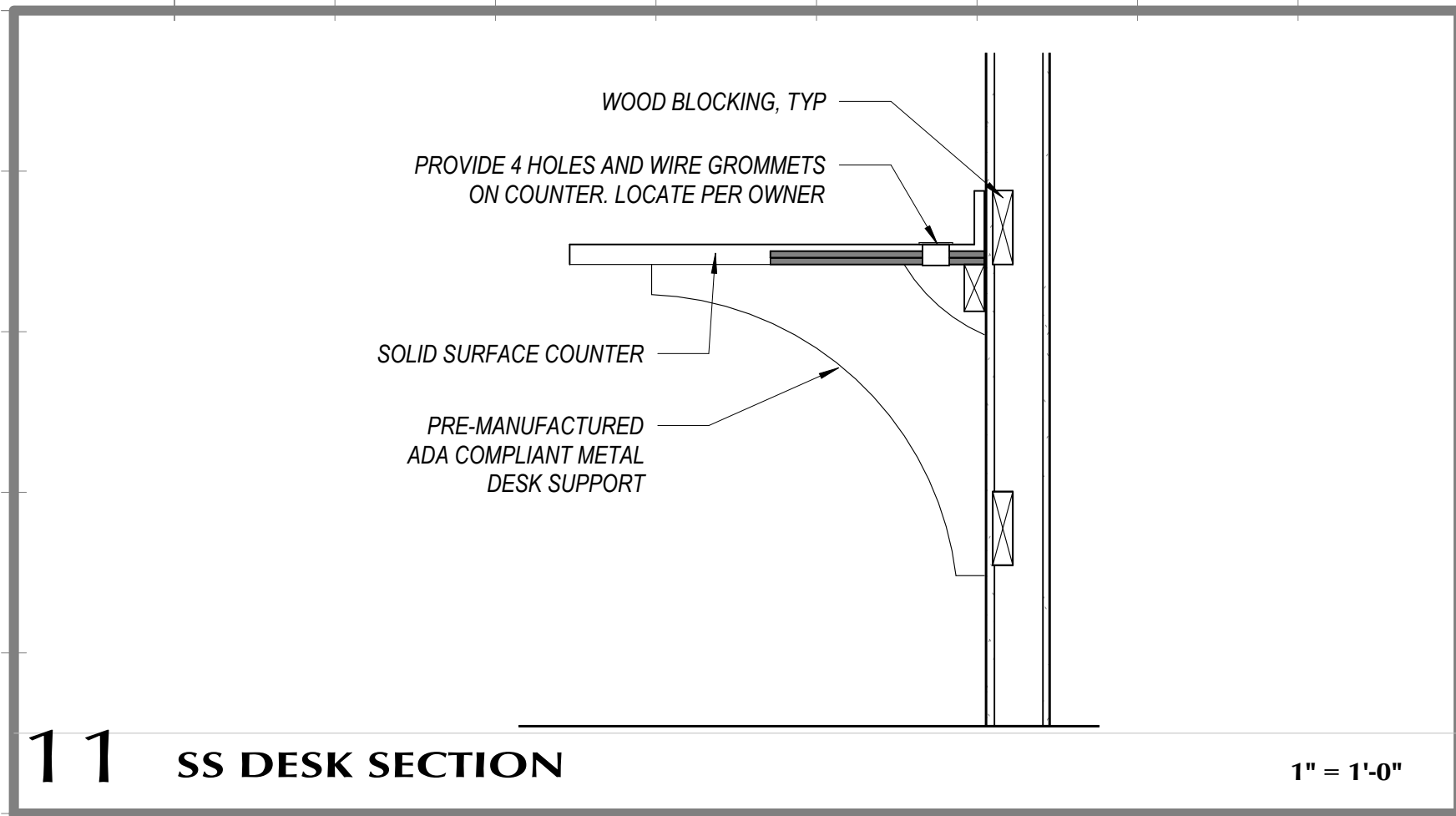
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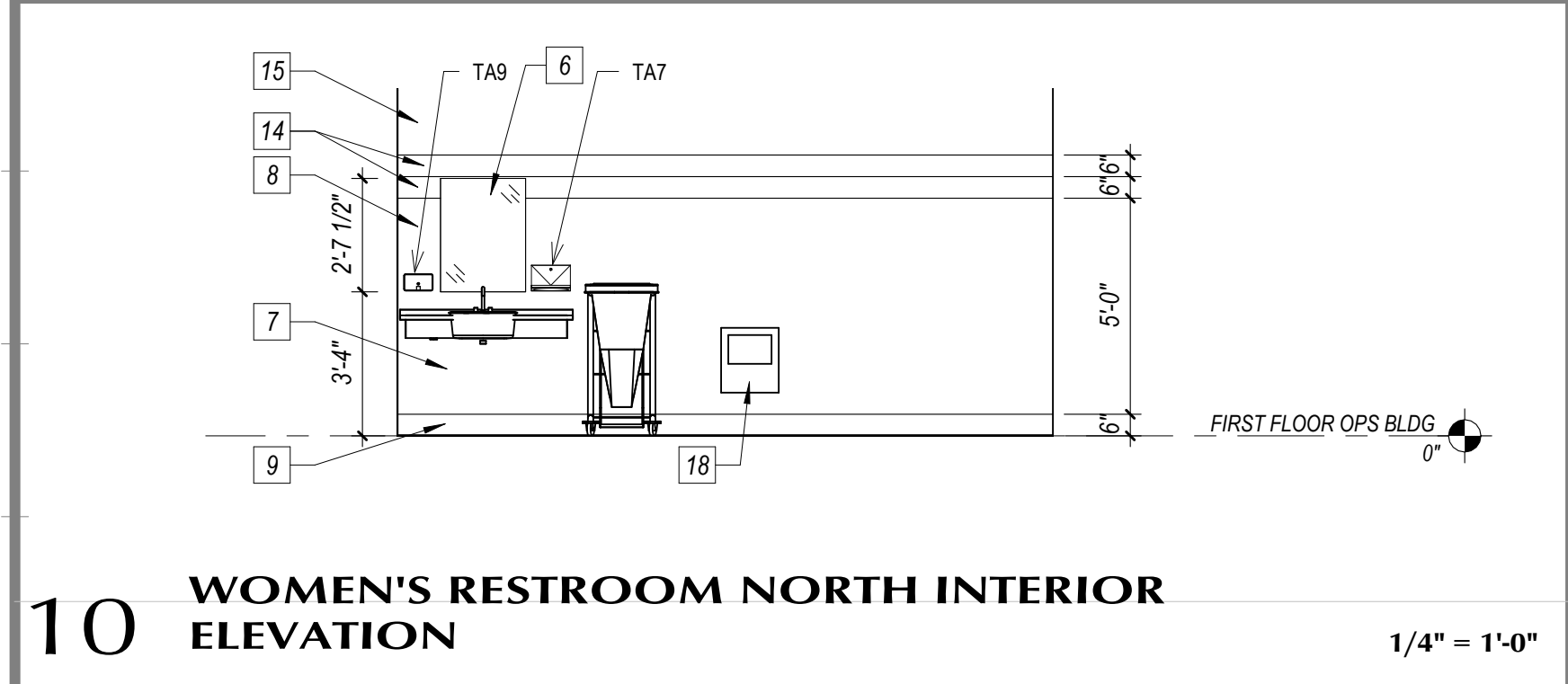
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WALL SECTIONS
OPERATIONS BLDG

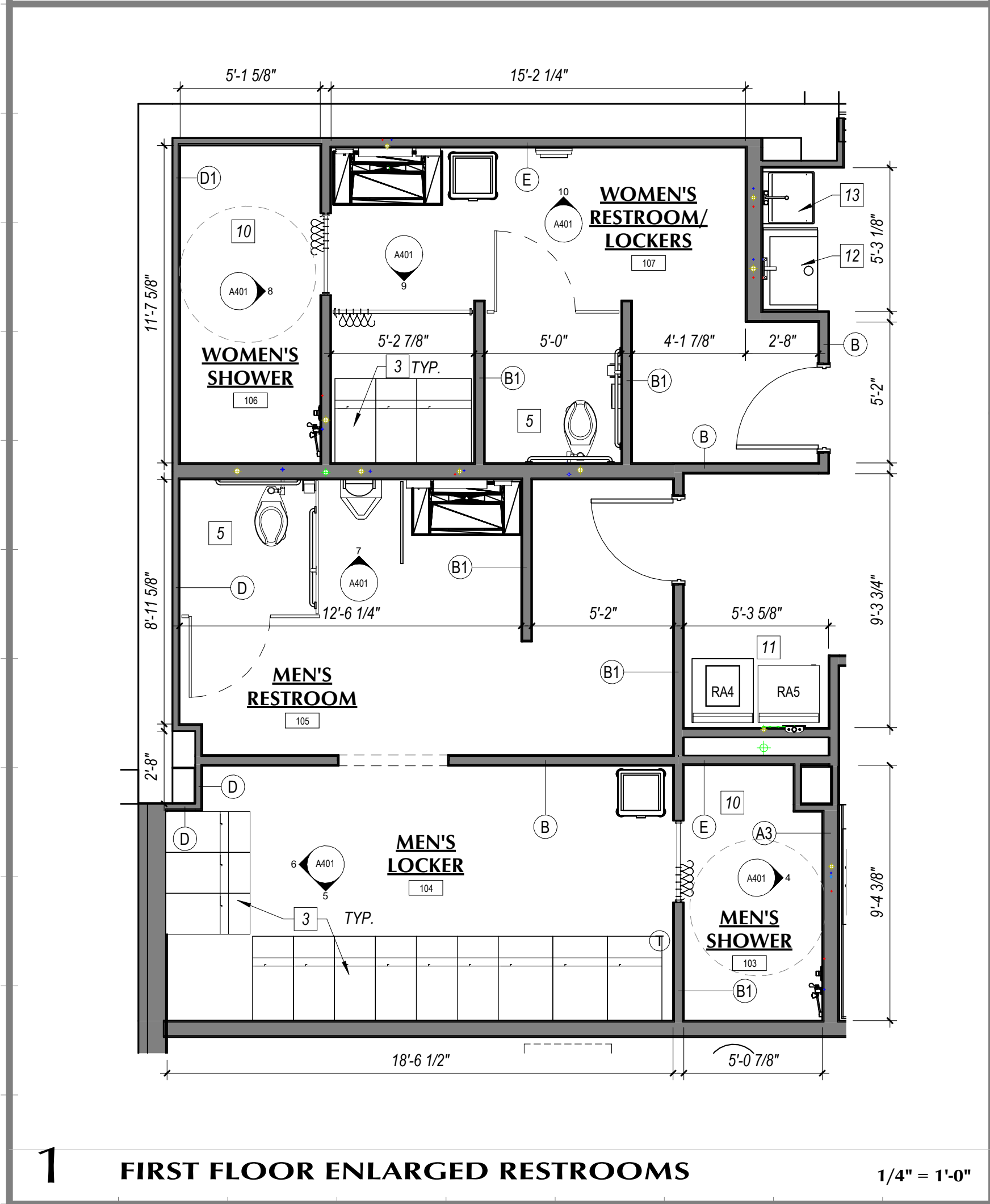
A302



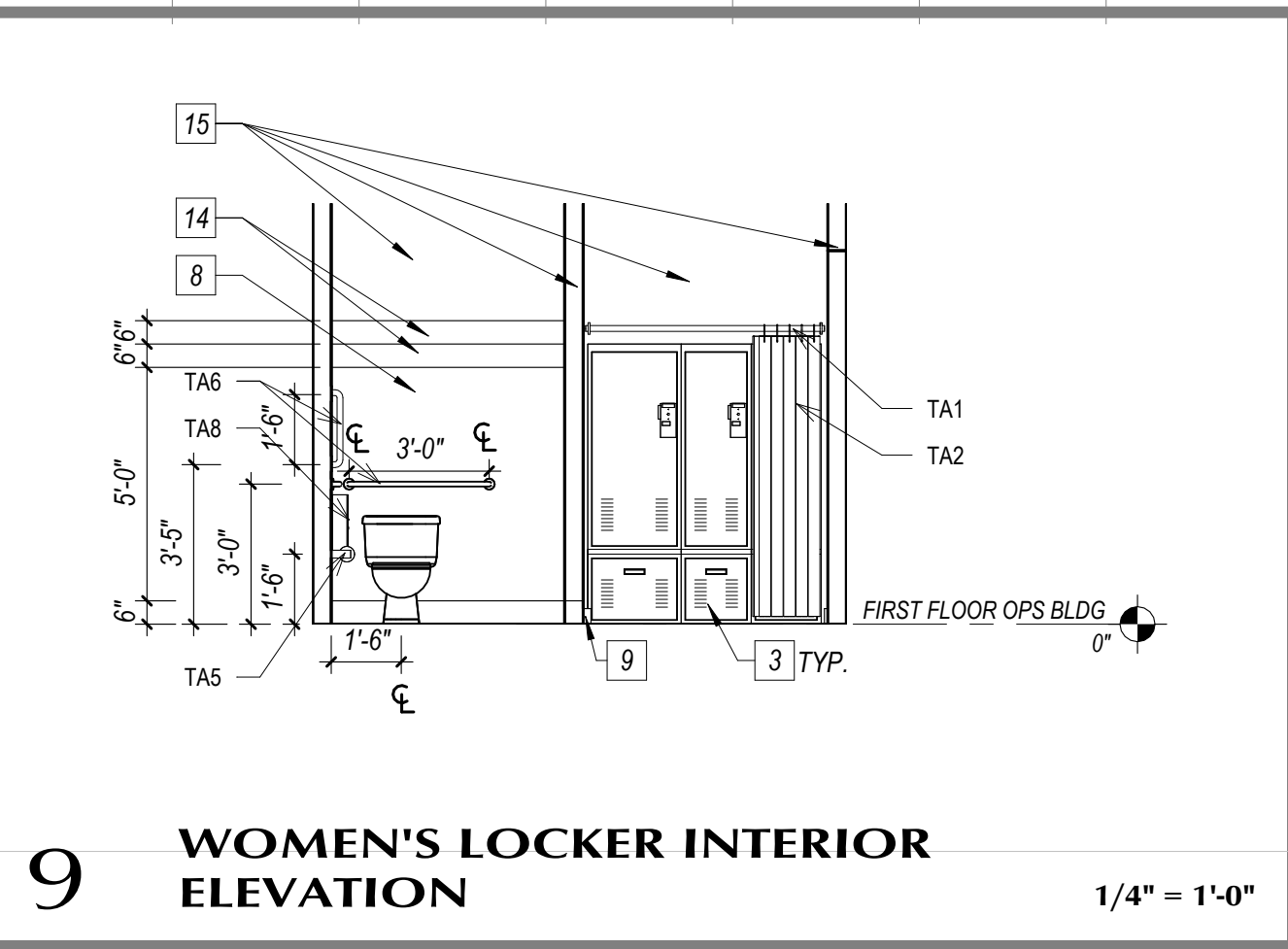
11 SS DESK SECTION 1" = 1'-0"



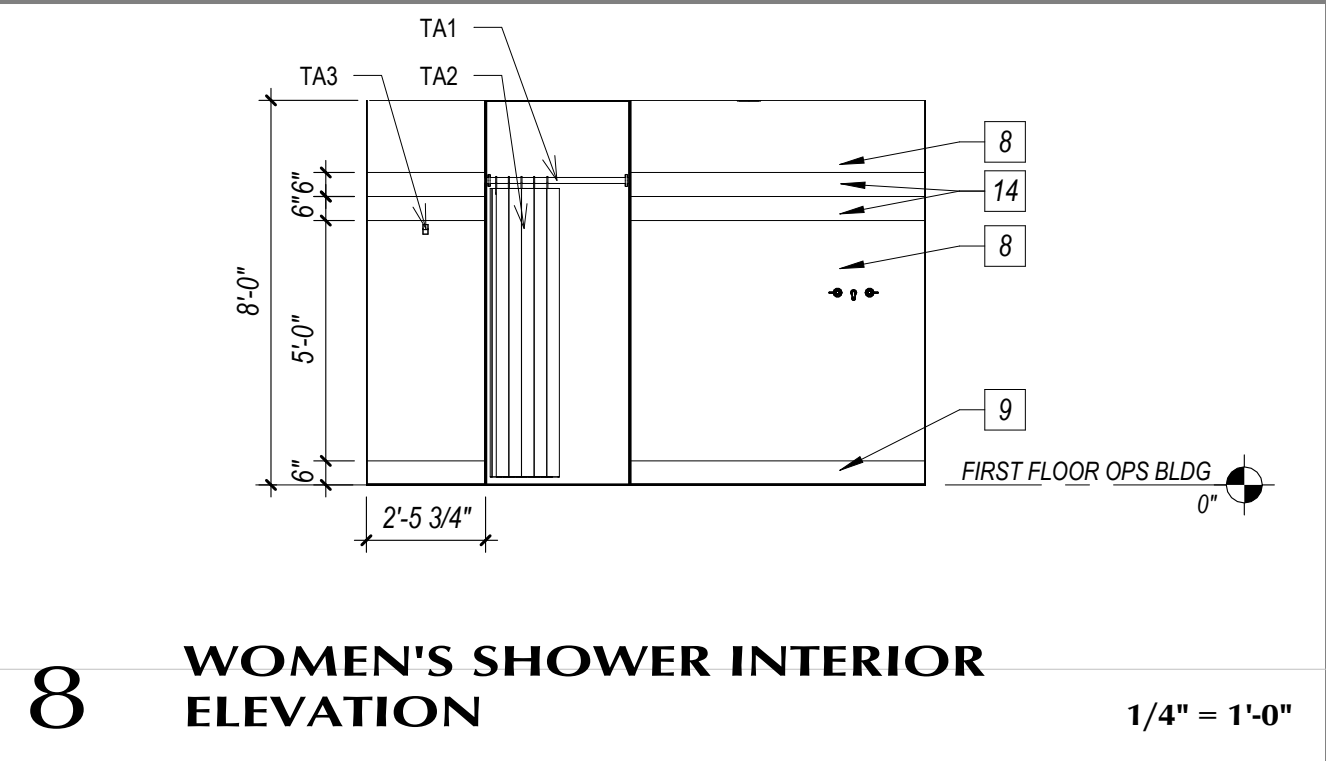
10 WOMEN'S RESTROOM NORTH INTERIOR ELEVATION 1/4" = 1'-0"



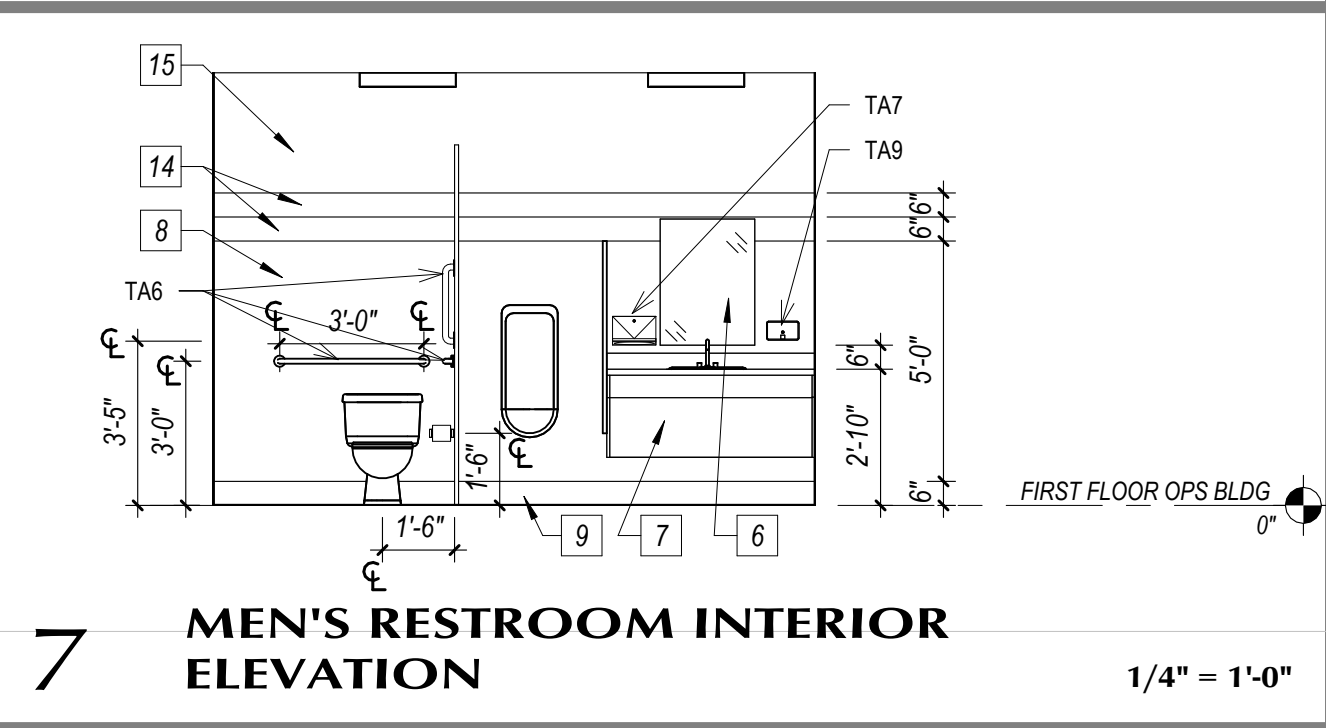
1 FIRST FLOOR ENLARGED RESTROOMS 1/4" = 1'-0"



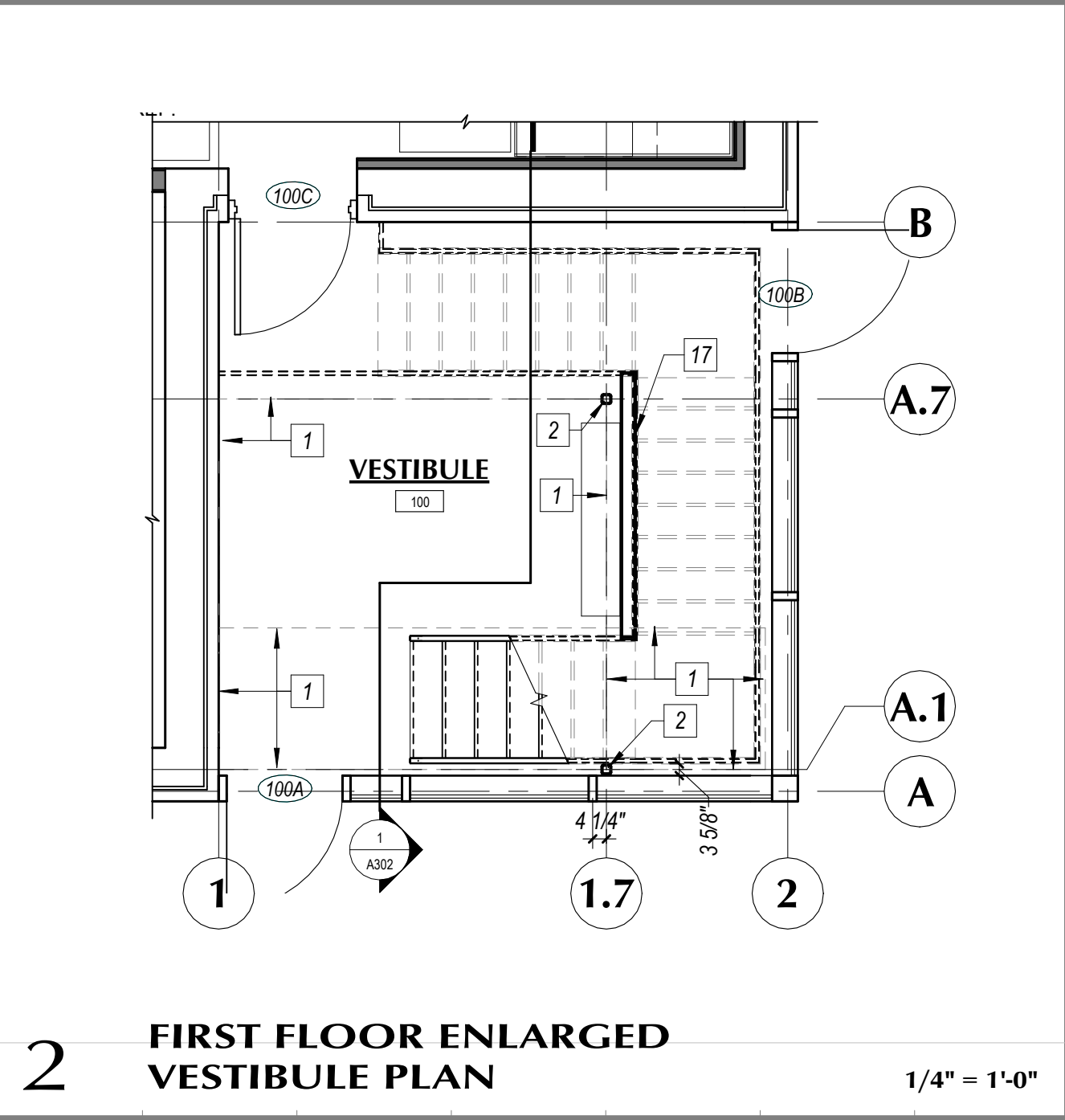
9 WOMEN'S LOCKER INTERIOR ELEVATION 1/4" = 1'-0"



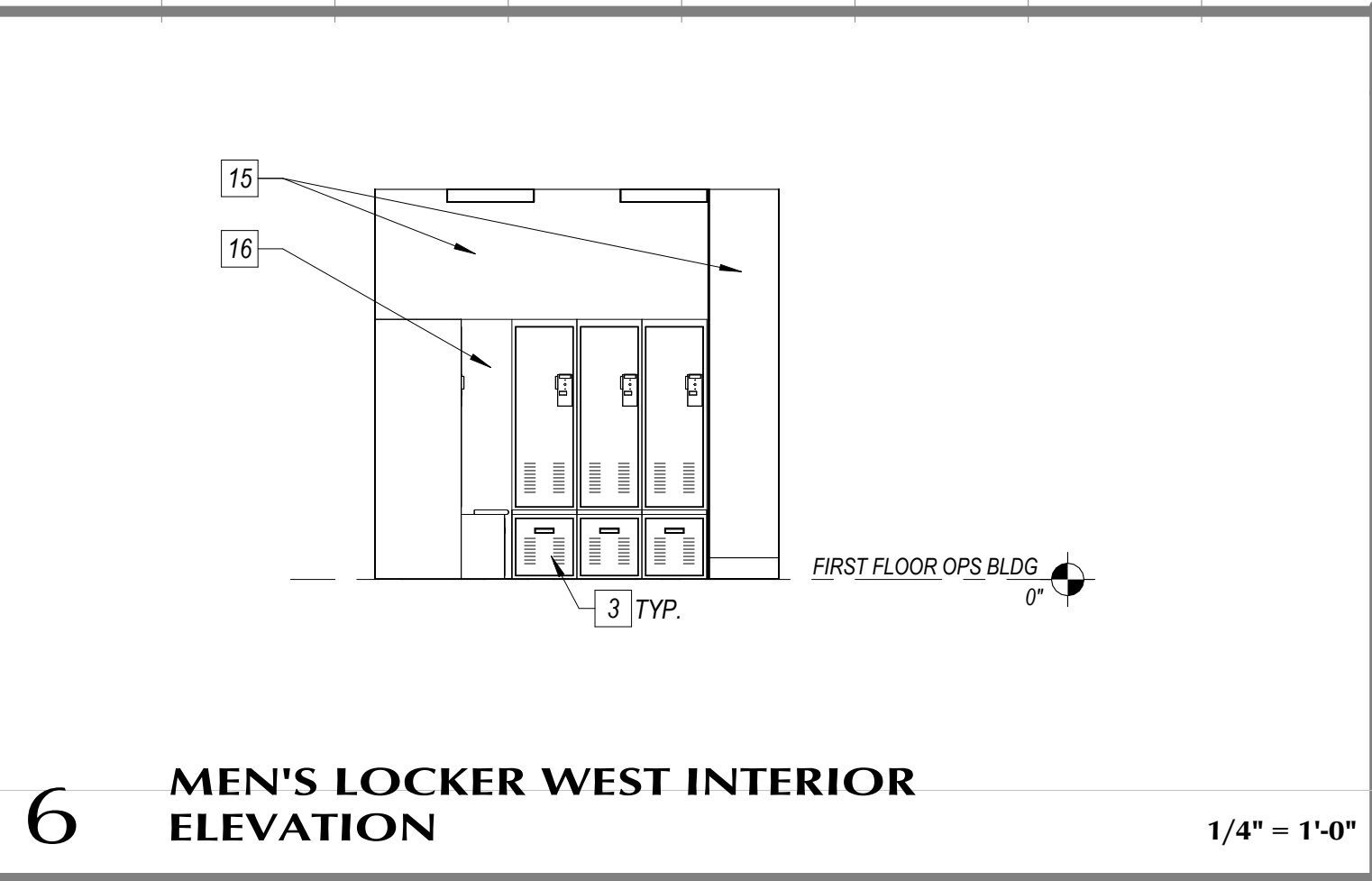
8 WOMEN'S SHOWER INTERIOR ELEVATION 1/4" = 1'-0"



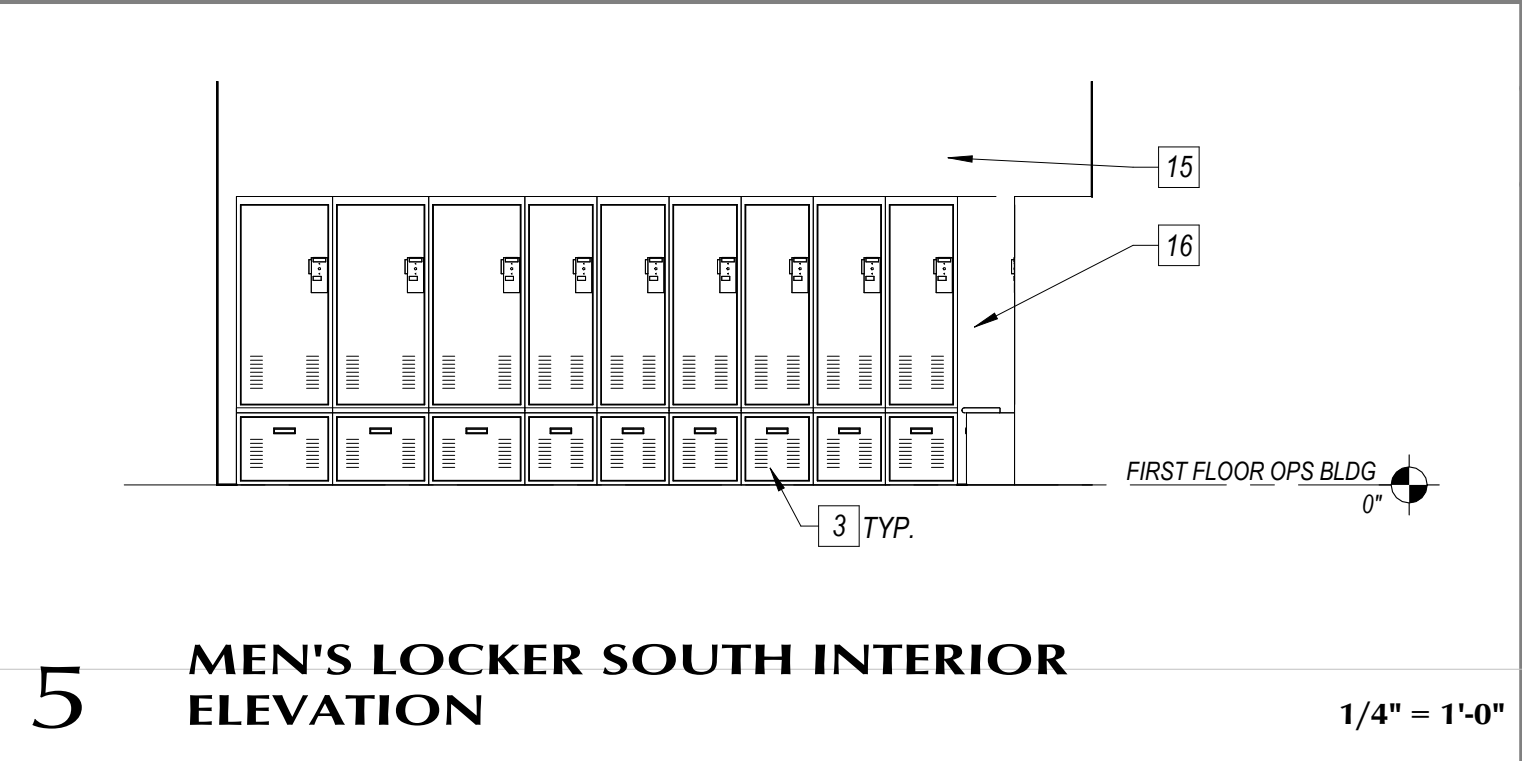
7 MEN'S RESTROOM INTERIOR ELEVATION 1/4" = 1'-0"



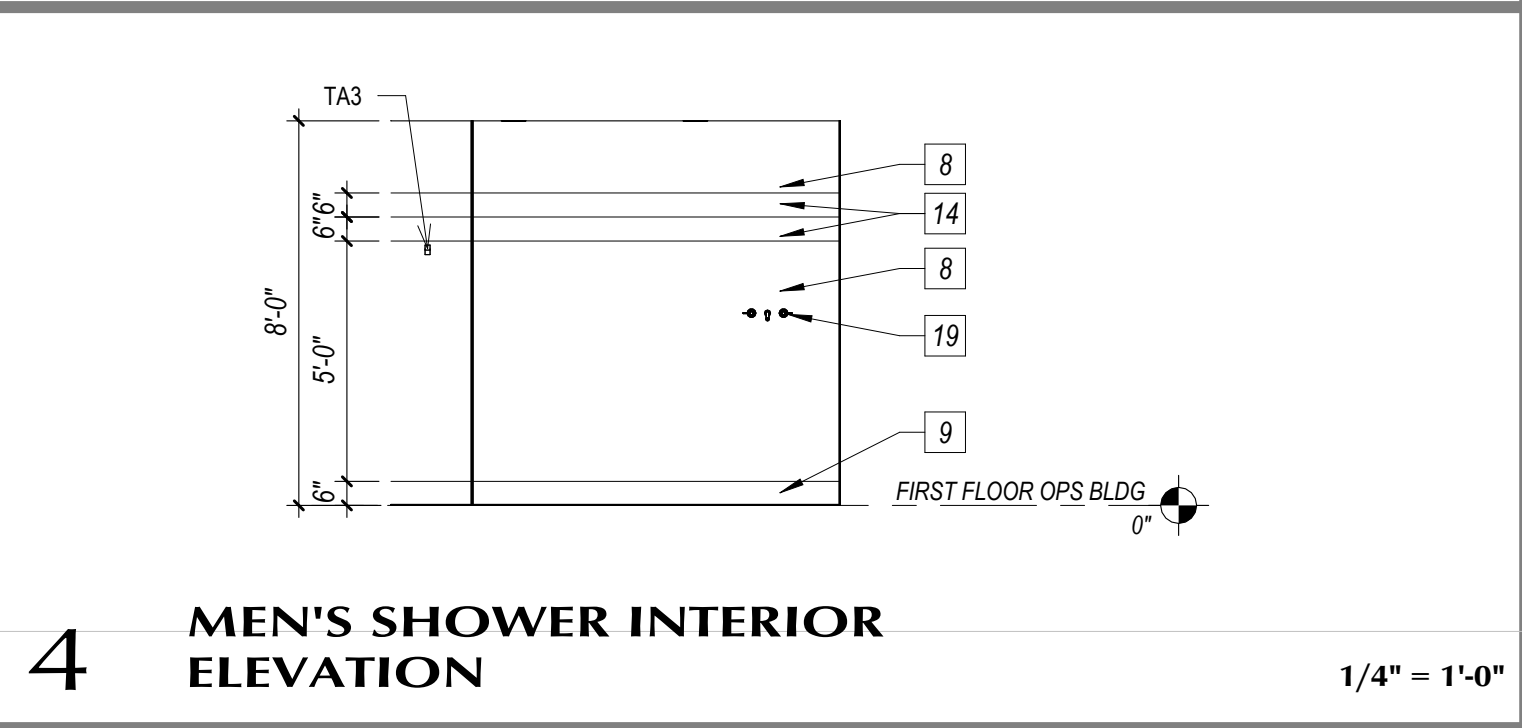
2 FIRST FLOOR ENLARGED VESTIBULE PLAN 1/4" = 1'-0"



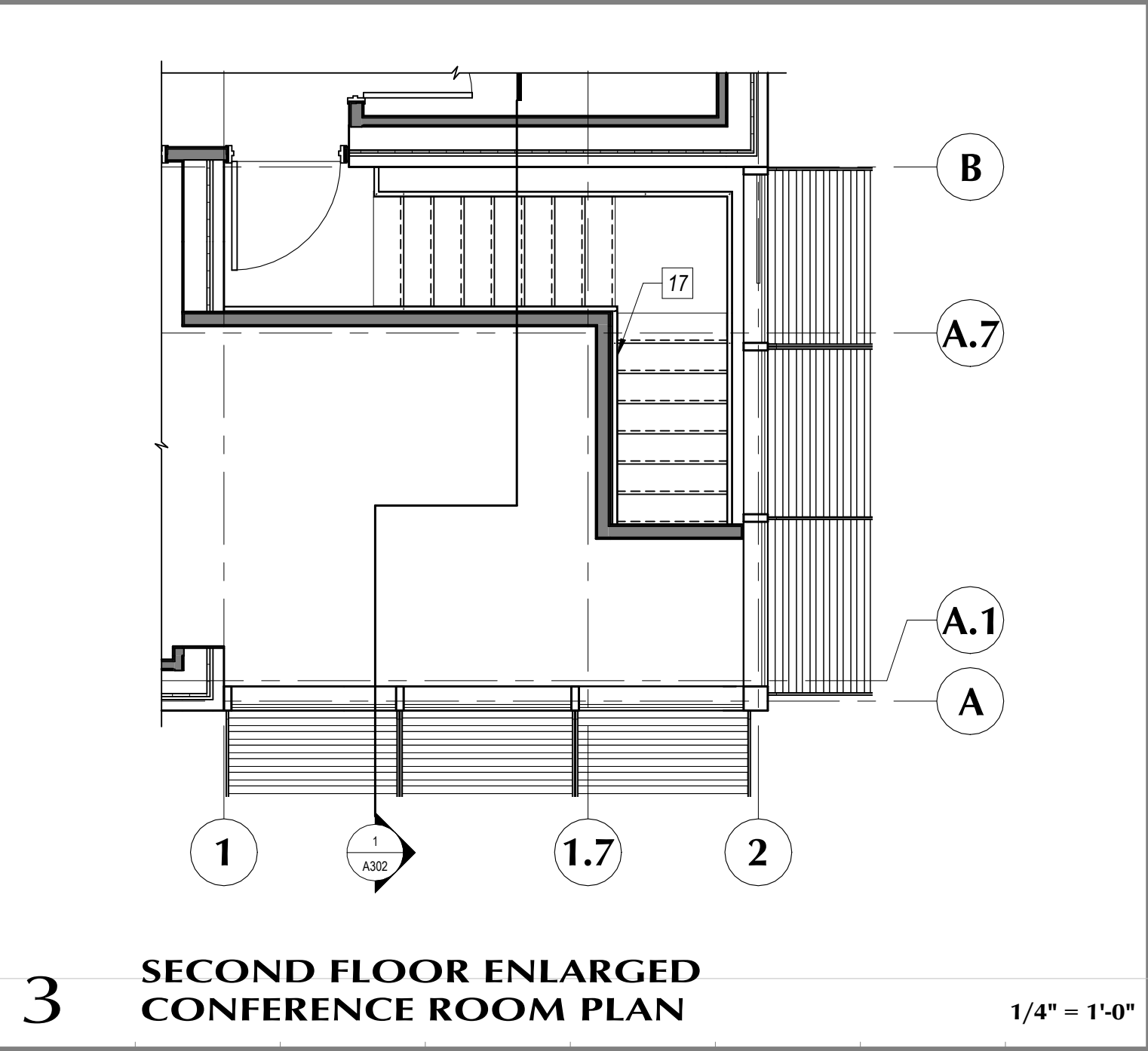
6 MEN'S LOCKER WEST INTERIOR ELEVATION 1/4" = 1'-0"



5 MEN'S LOCKER SOUTH INTERIOR ELEVATION 1/4" = 1'-0"



4 MEN'S SHOWER INTERIOR ELEVATION 1/4" = 1'-0"



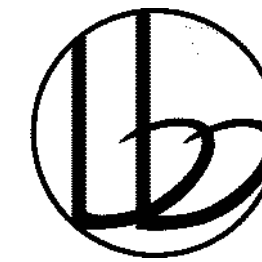
3 SECOND FLOOR ENLARGED CONFERENCE ROOM PLAN 1/4" = 1'-0"

GENERAL NOTES

- A. SEE SPECIFICATIONS SECTION 10 28 00 FOR TOILET AND BATH ACCESSORIES SCHEDULE.
- B. SEE SPECIFICATIONS SECTION 11 30 13 FOR RESIDENTIAL APPLIANCES SCHEDULE.
- C. SEE SPECIFICATIONS SECTION 11 40 00 FOR FOOD SERVICE EQUIPMENT SCHEDULE.

SHEET NOTES

- 1 "W" BEAM, PAINTED. SEE STRUCTURAL DRAWINGS.
- 2 HSS 3x3x5/16 COLUMN, PAINTED. SEE STRUCTURAL DRAWINGS.
- 3 LOCKERS, SINGLE DOOR, BENCH DRAWER.
- 4 RESTROOM VANITY.
- 5 PLUMBING FIXTURE.
- 6 ADA ACCESSIBLE MIRROR - 24"x36".
- 7 ADA SINK SKIRT.
- 8 FIELD TILE 6"x6", TYP ALL WALLS. CT-1.
- 9 6" EPOXY WALL BASE, TYP ALL WALLS.
- 10 SHOWER.
- 11 WASHER/DRYER.
- 12 MOP SINK.
- 13 UTILITY SINK.
- 14 ACCENT TILE, TYP ALL WALLS. 6"x6". CT-3, CT-4.
- 15 PAINT.
- 16 CORNER FILLER.
- 17 WALL-MOUNTED HANDRAIL. PROVIDE CONNECTION FROM EXISTING HANDRAIL TO MAKE SMOOTH TRANSITION.
- 18 UNIT HEATER.
- 19 SHOWER FIXTURE.



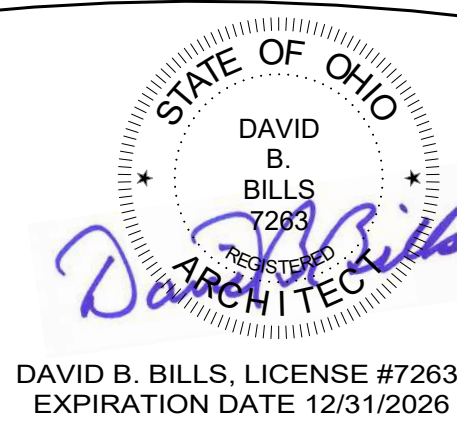
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EXPIRATION DATE 12/31/2026

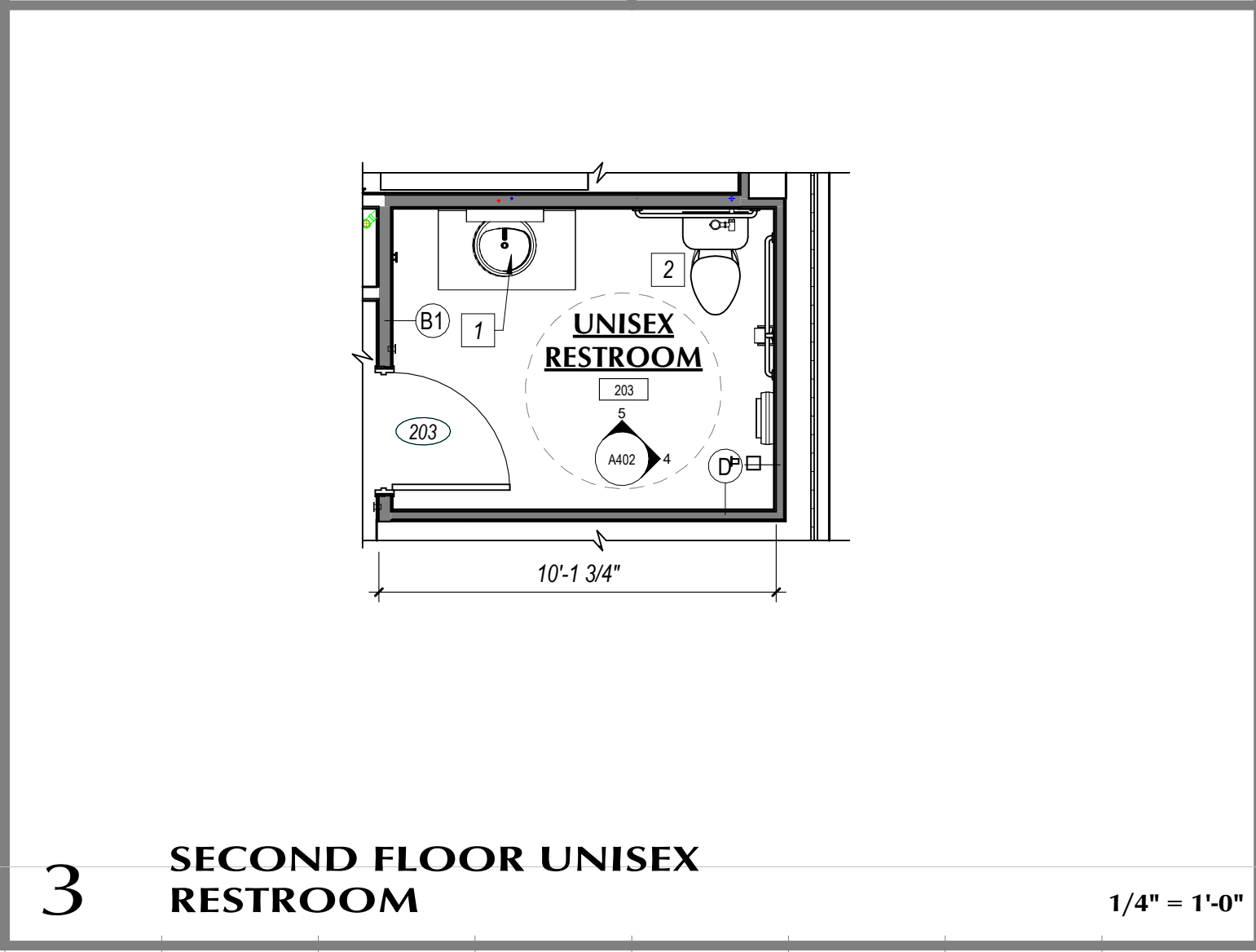
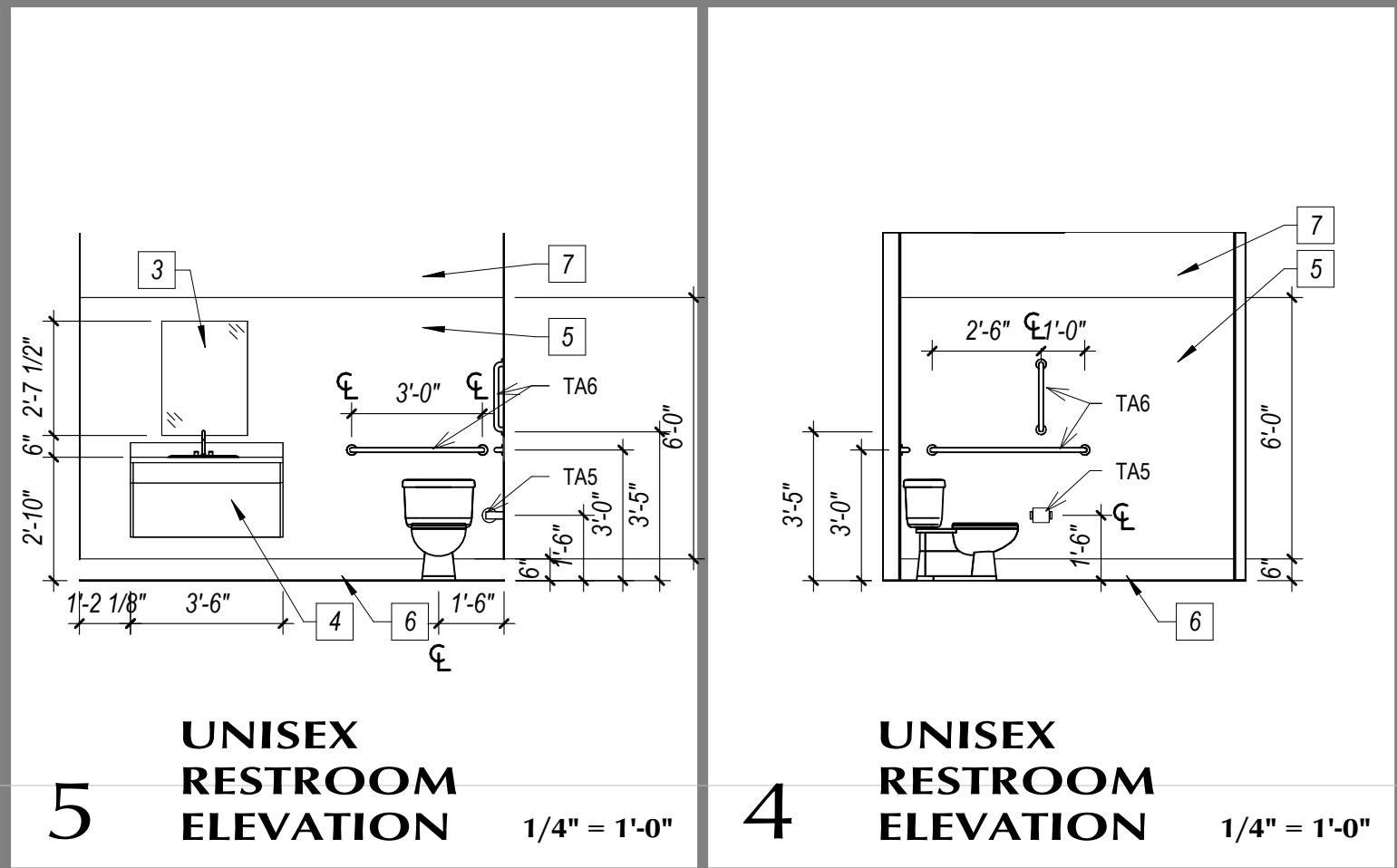
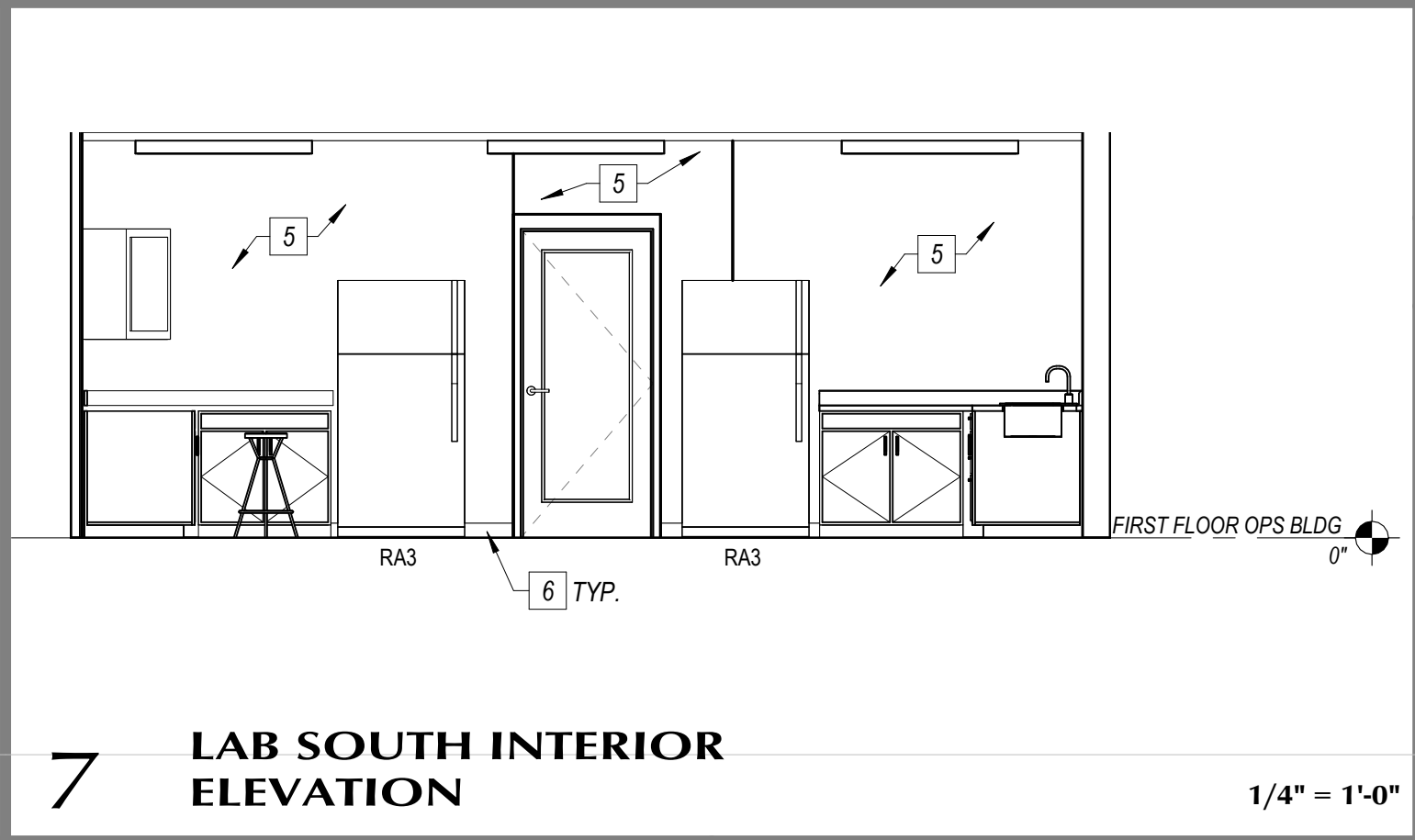
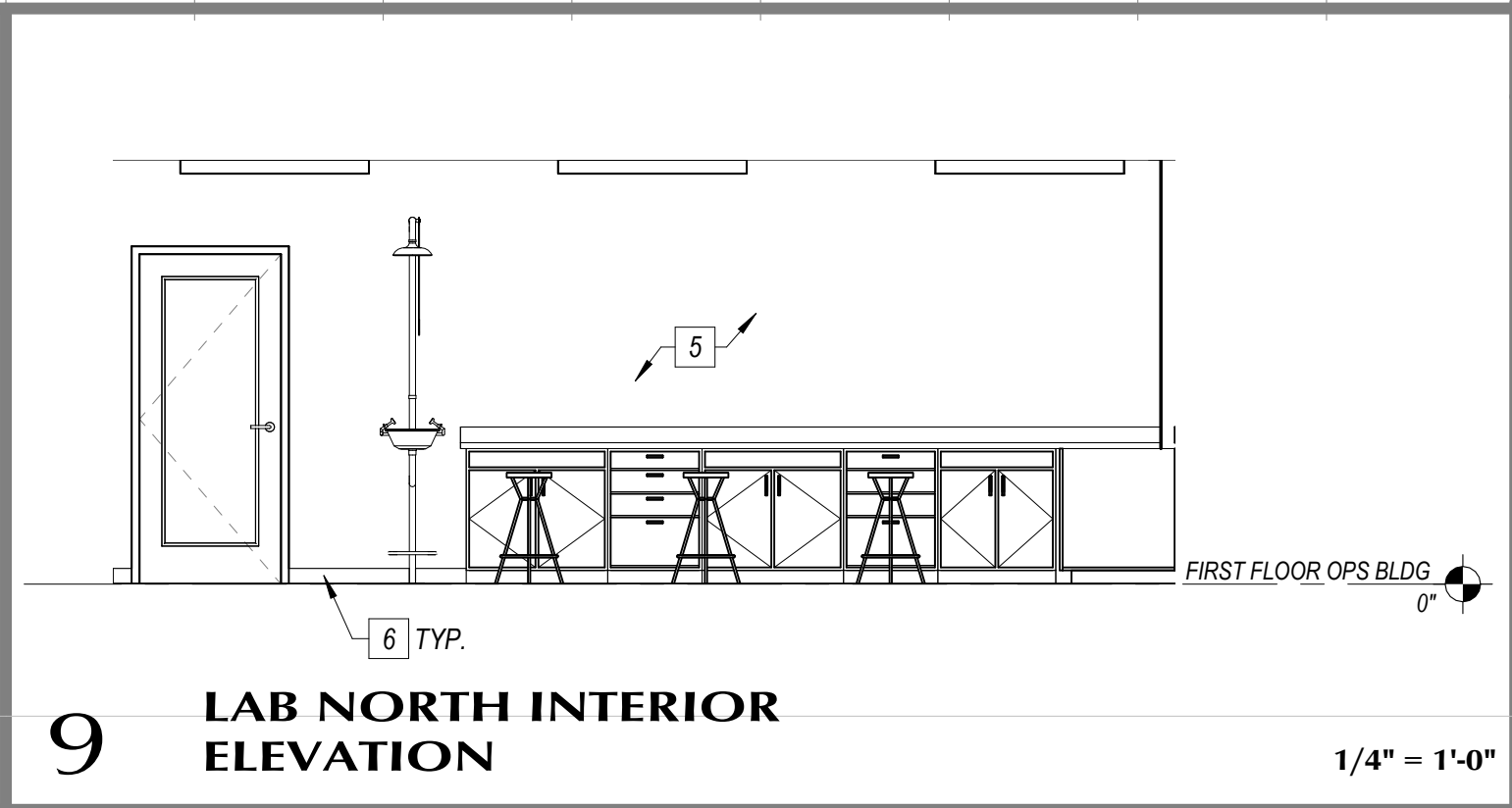
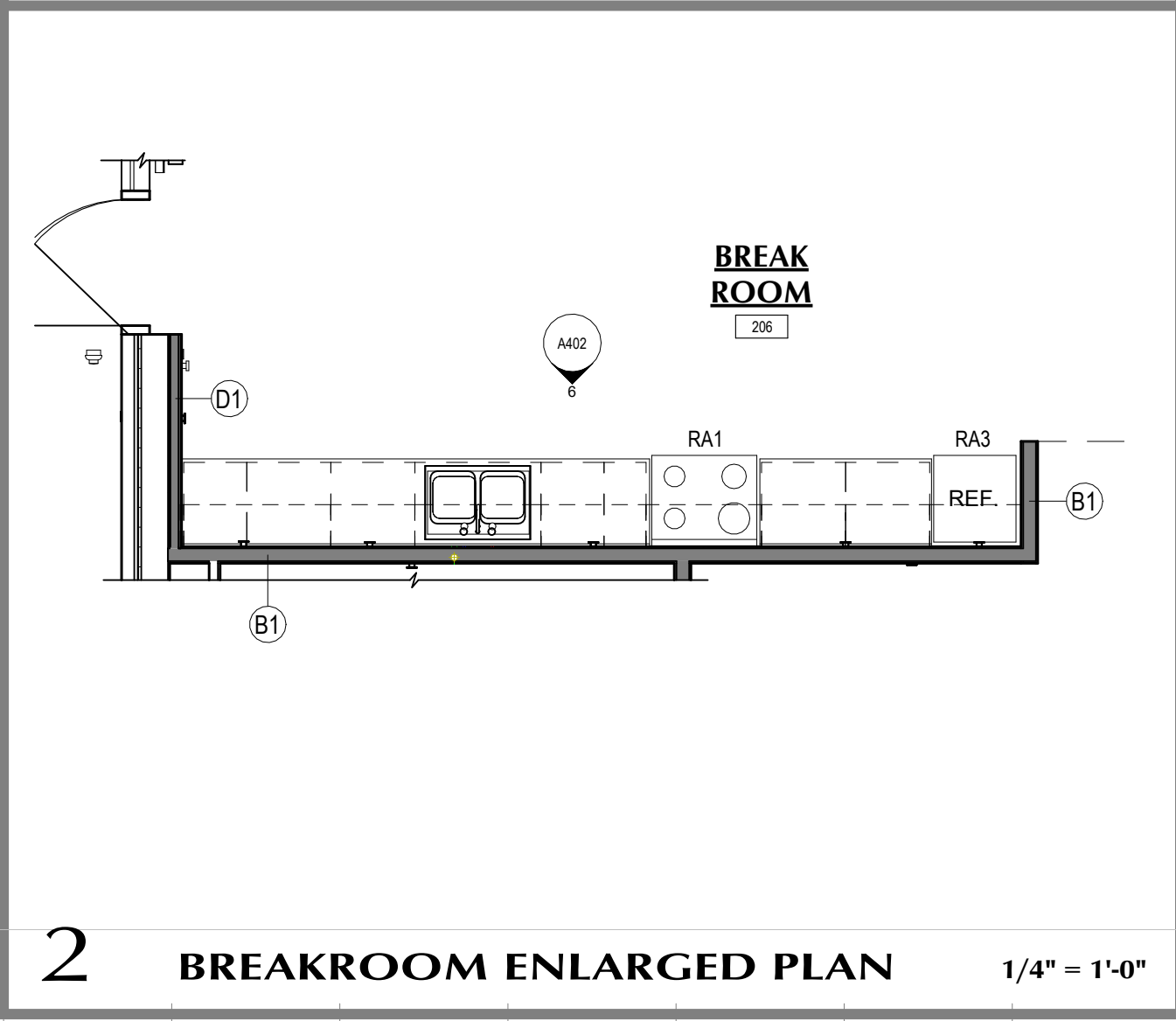
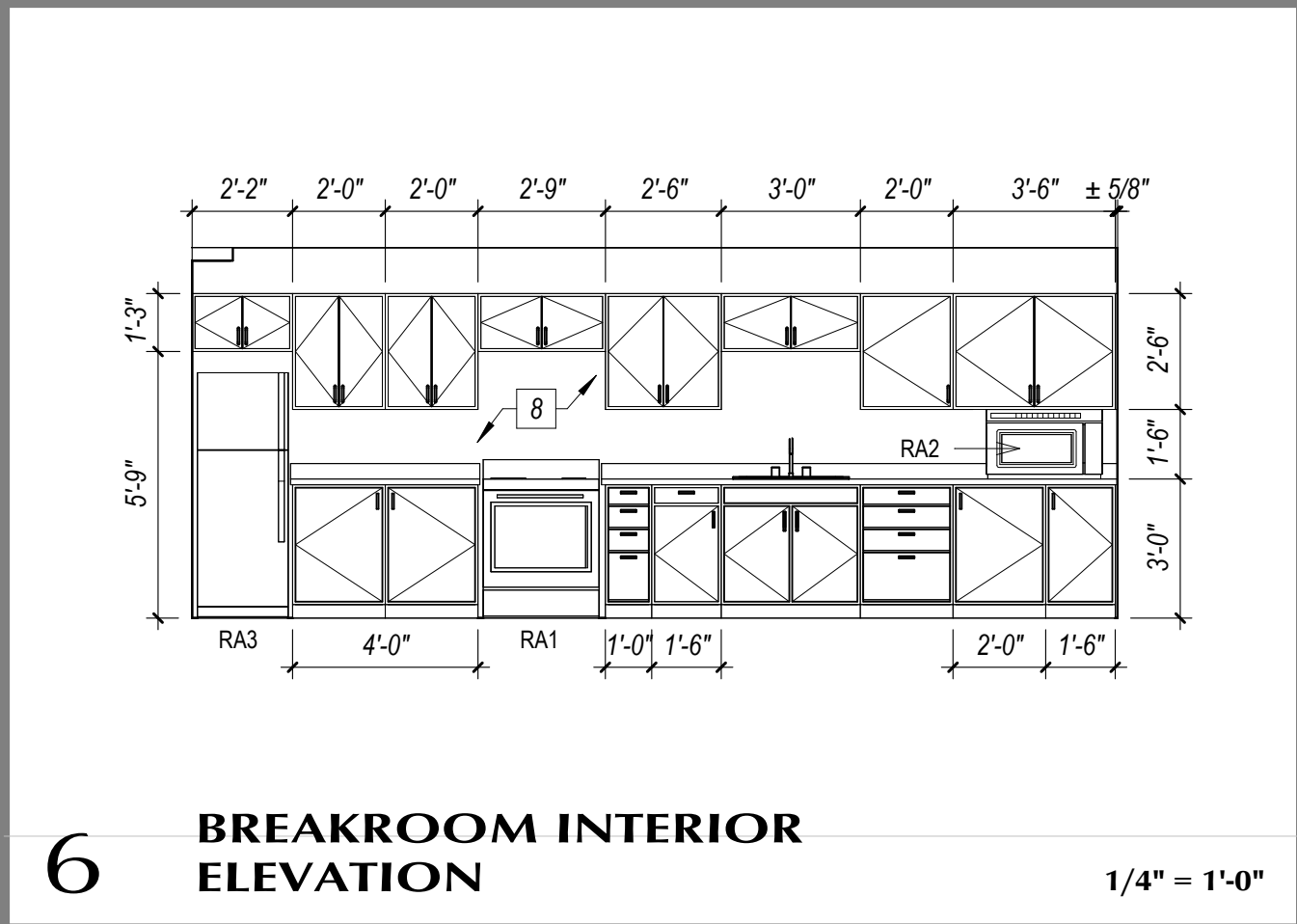
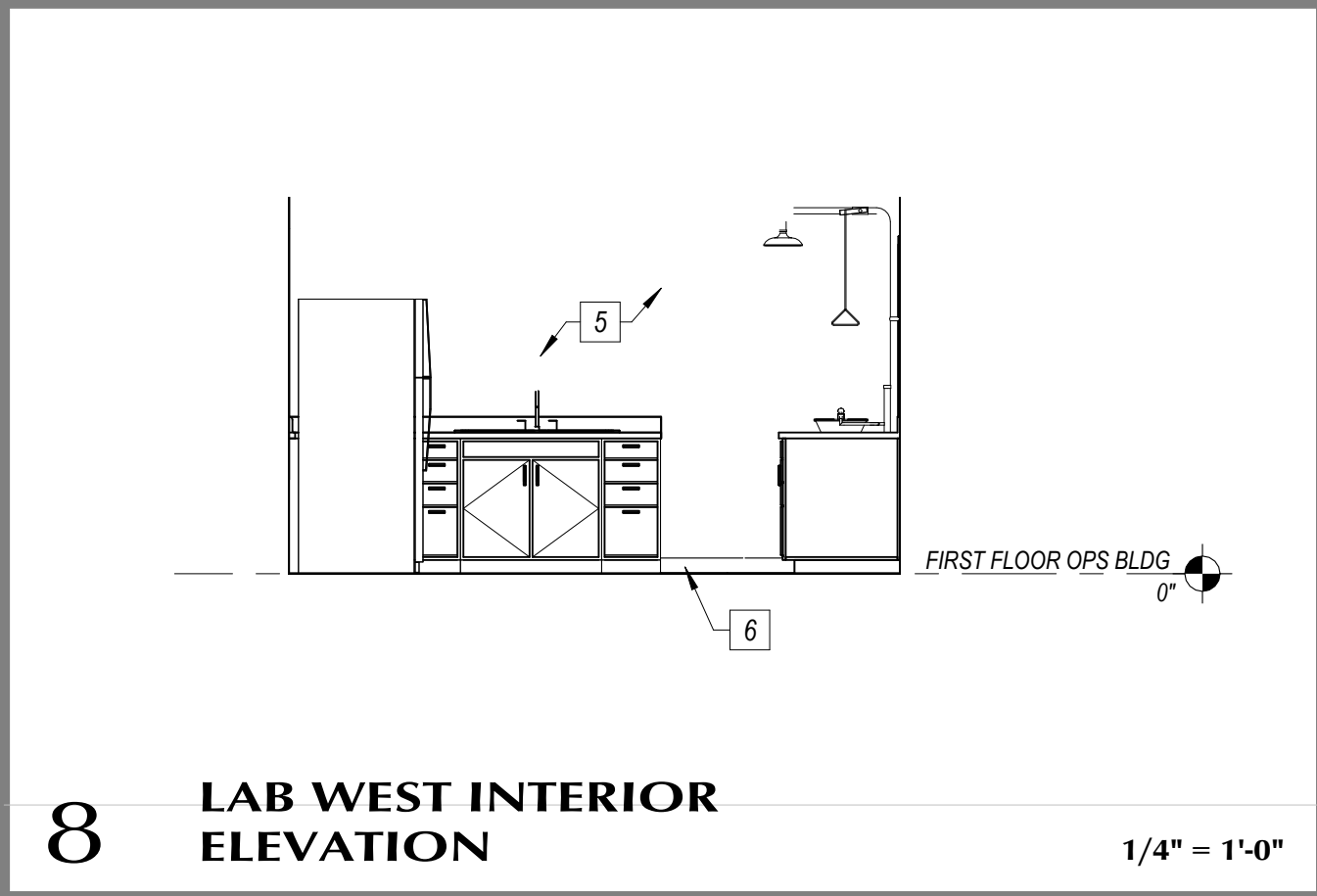
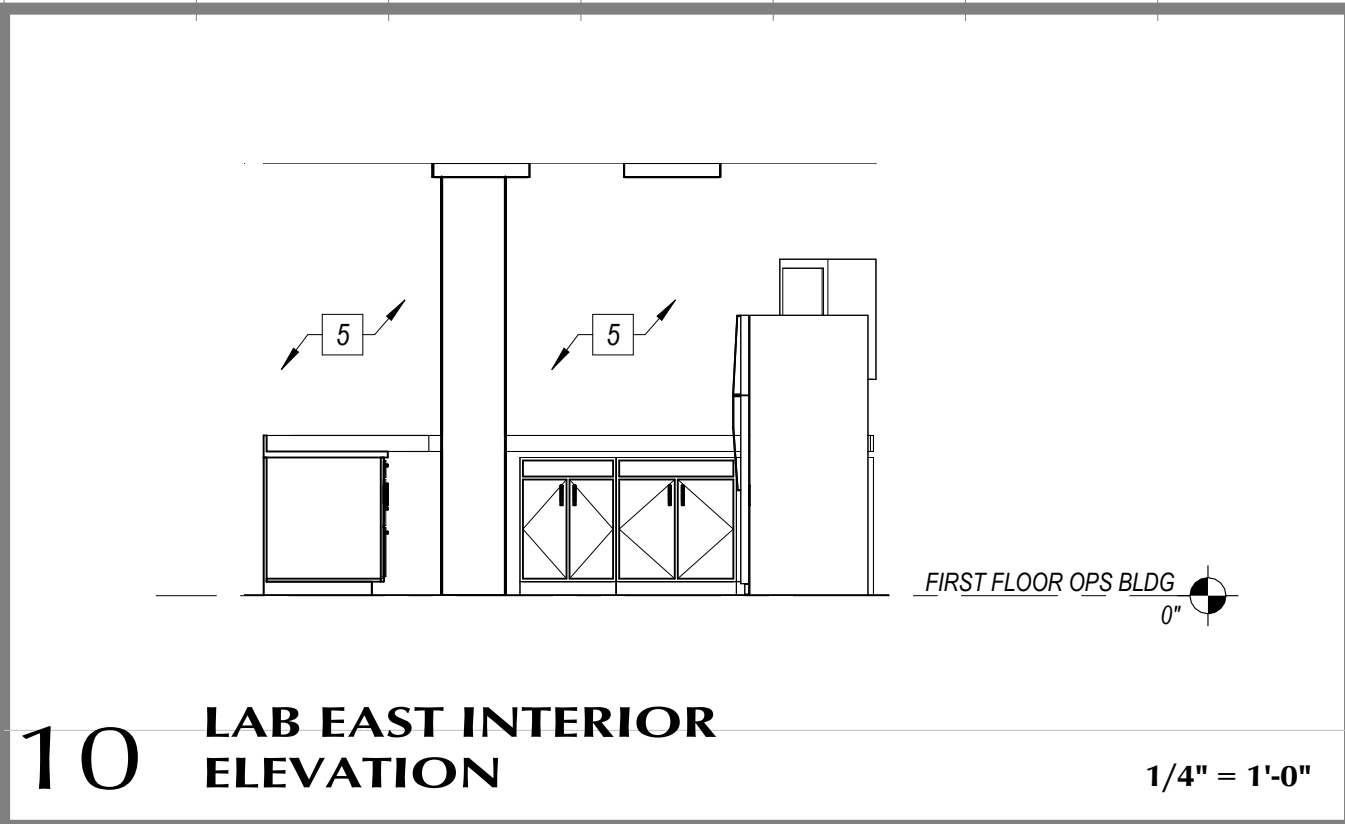
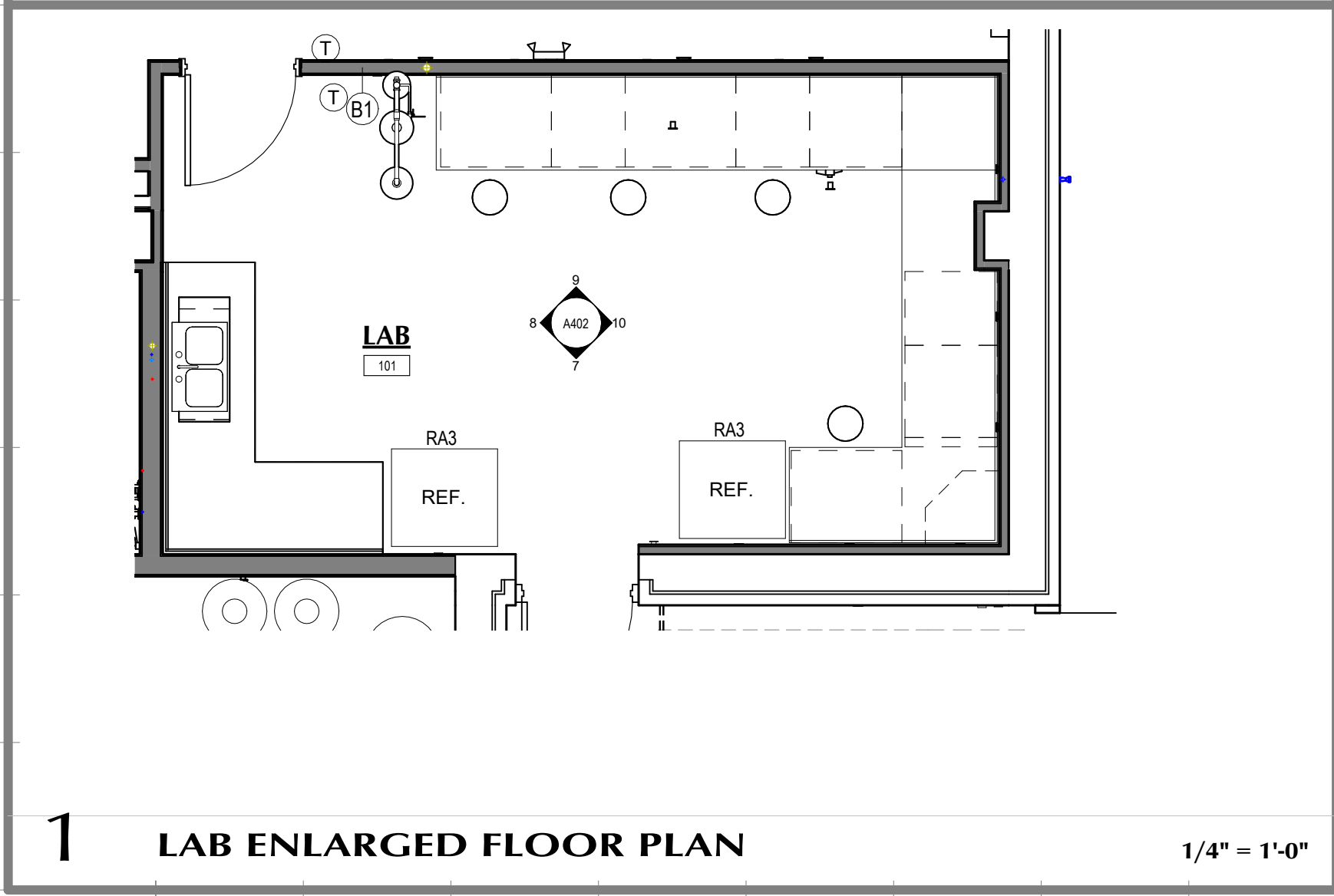
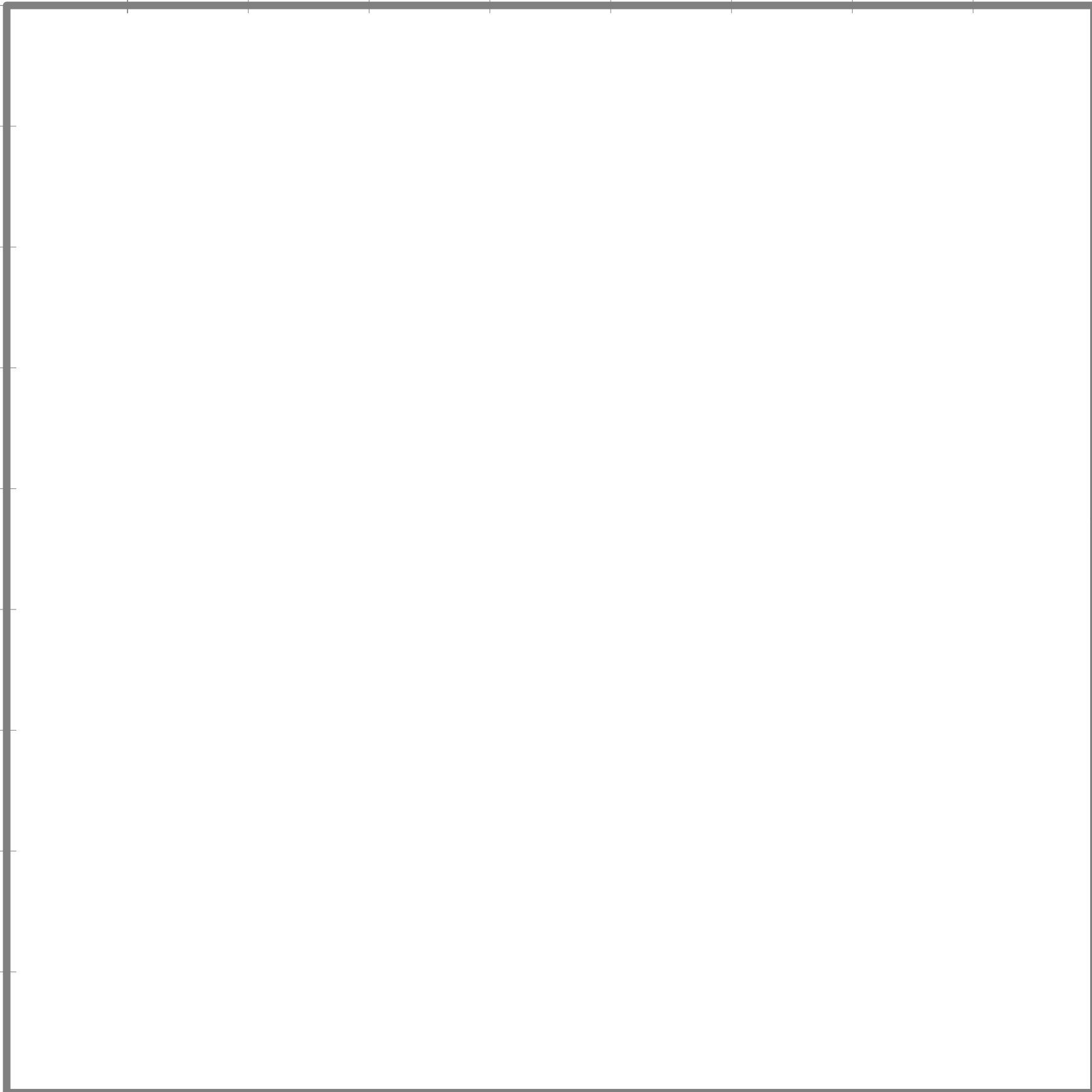
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ENLARGED PLANS, AND
INTERIOR ELEVATIONS
OPERATIONS BLDG

A401

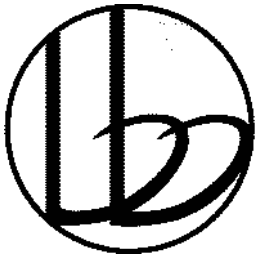


GENERAL NOTES

- A. SEE SPECIFICATIONS SECTION 10 28 00 FOR TOILET AND BATH ACCESSORIES SCHEDULE.
- B. SEE SPECIFICATIONS SECTION 11 30 13 FOR RESIDENTIAL APPLIANCES SCHEDULE.
- C. SEE SPECIFICATIONS SECTION 11 40 00 FOR FOOD SERVICE EQUIPMENT SCHEDULE.

SHEET NOTES

- 1 RESTROOM VANITY.
- 2 PLUMBING FIXTURE.
- 3 ADA ACCESSIBLE MIRROR 2'x2'6"
- 4 ADA SINK SKIRT.
- 5 FIELD TILE 6"x6", CT-1
- 6 6" EPOXY WALL BASE.
- 7 PAINT PT-1
- 8 CERAMIC TILE 3"x6" CT-2, CT-5



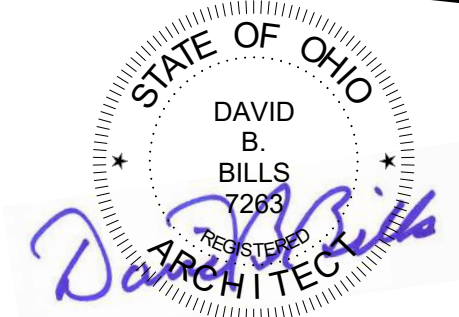
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EXPIRATION DATE 12/31/2026

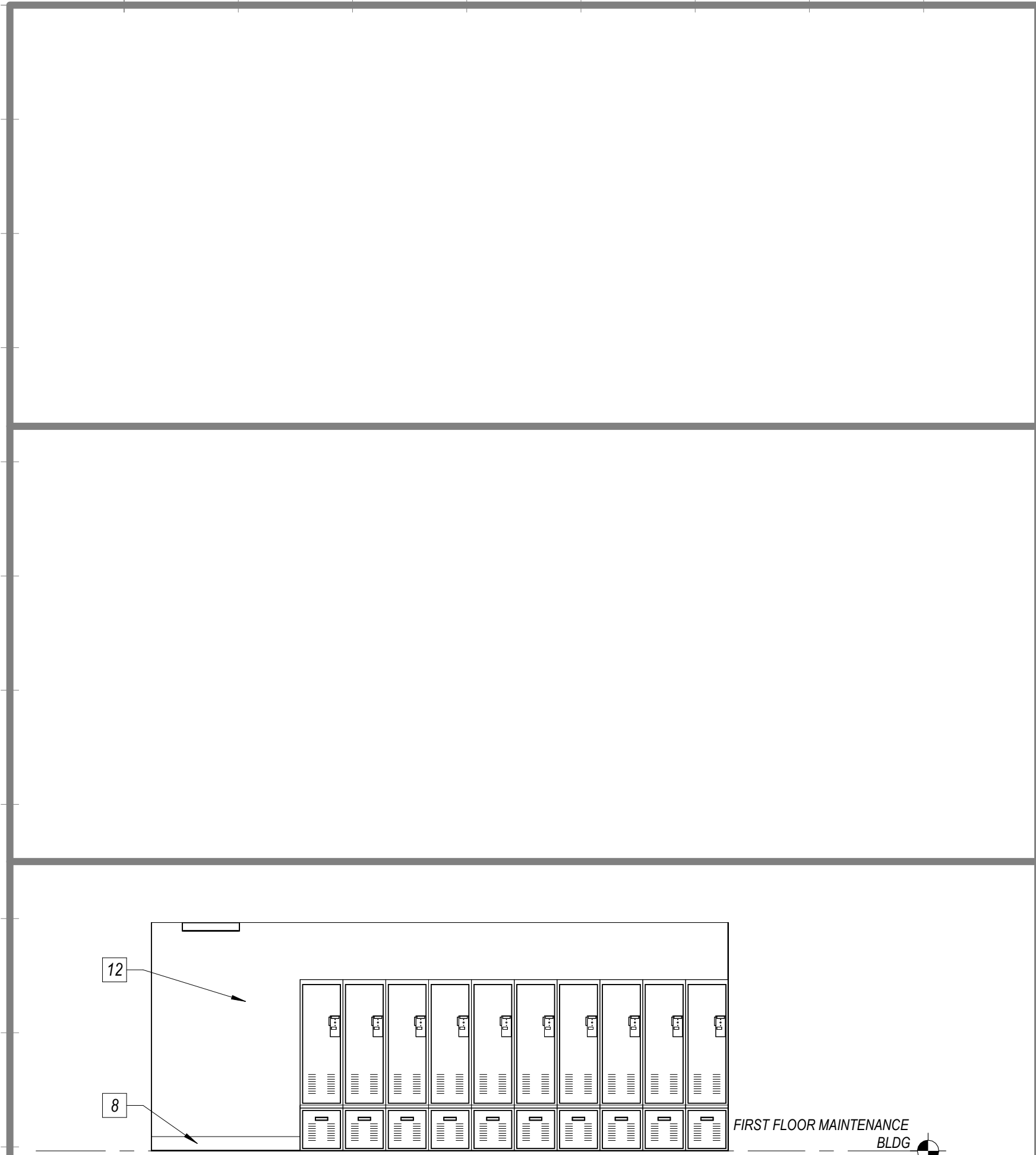
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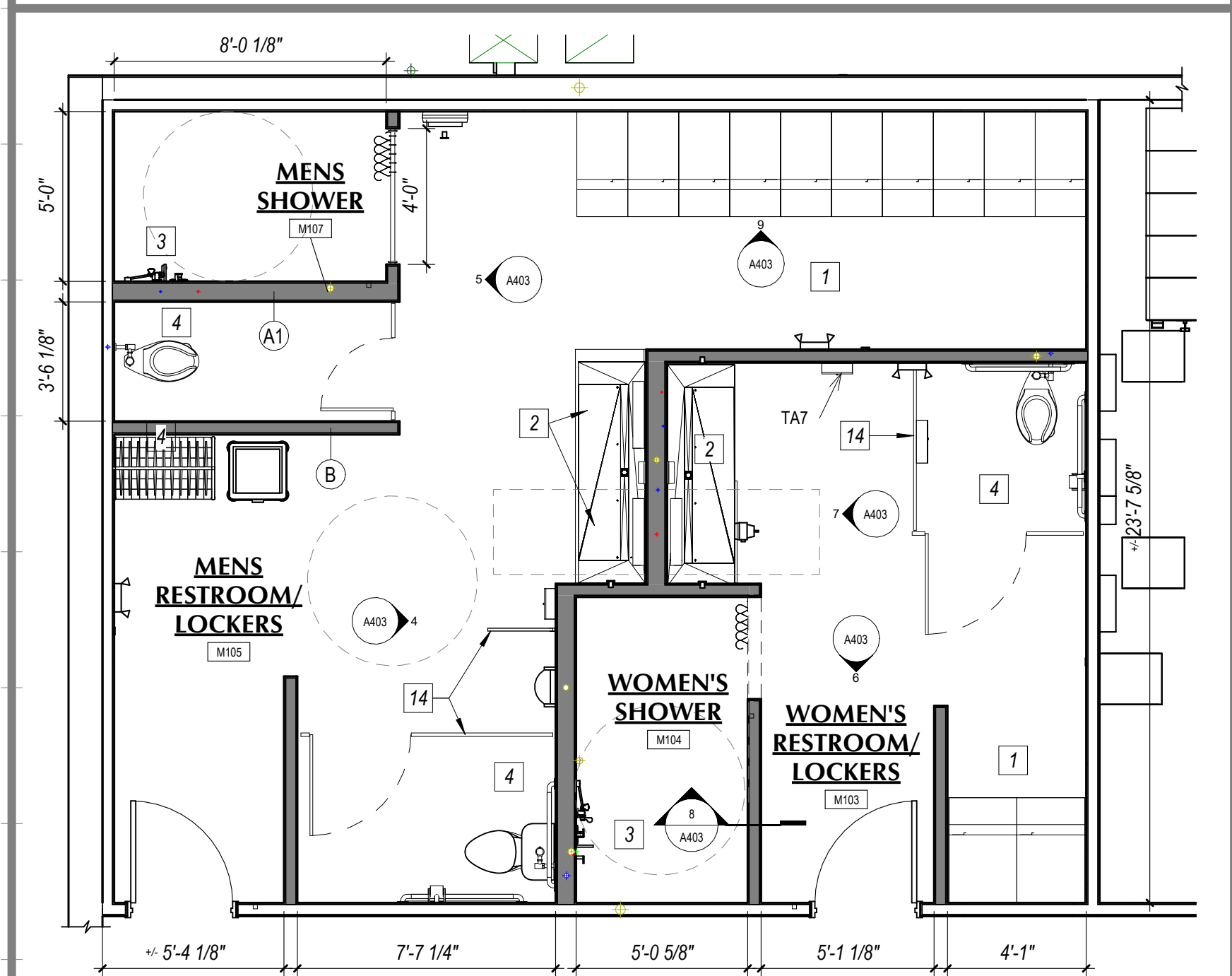
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ENLARGED PLANS, AND
INTERIOR ELEVATIONS
OPERATIONS BLDG

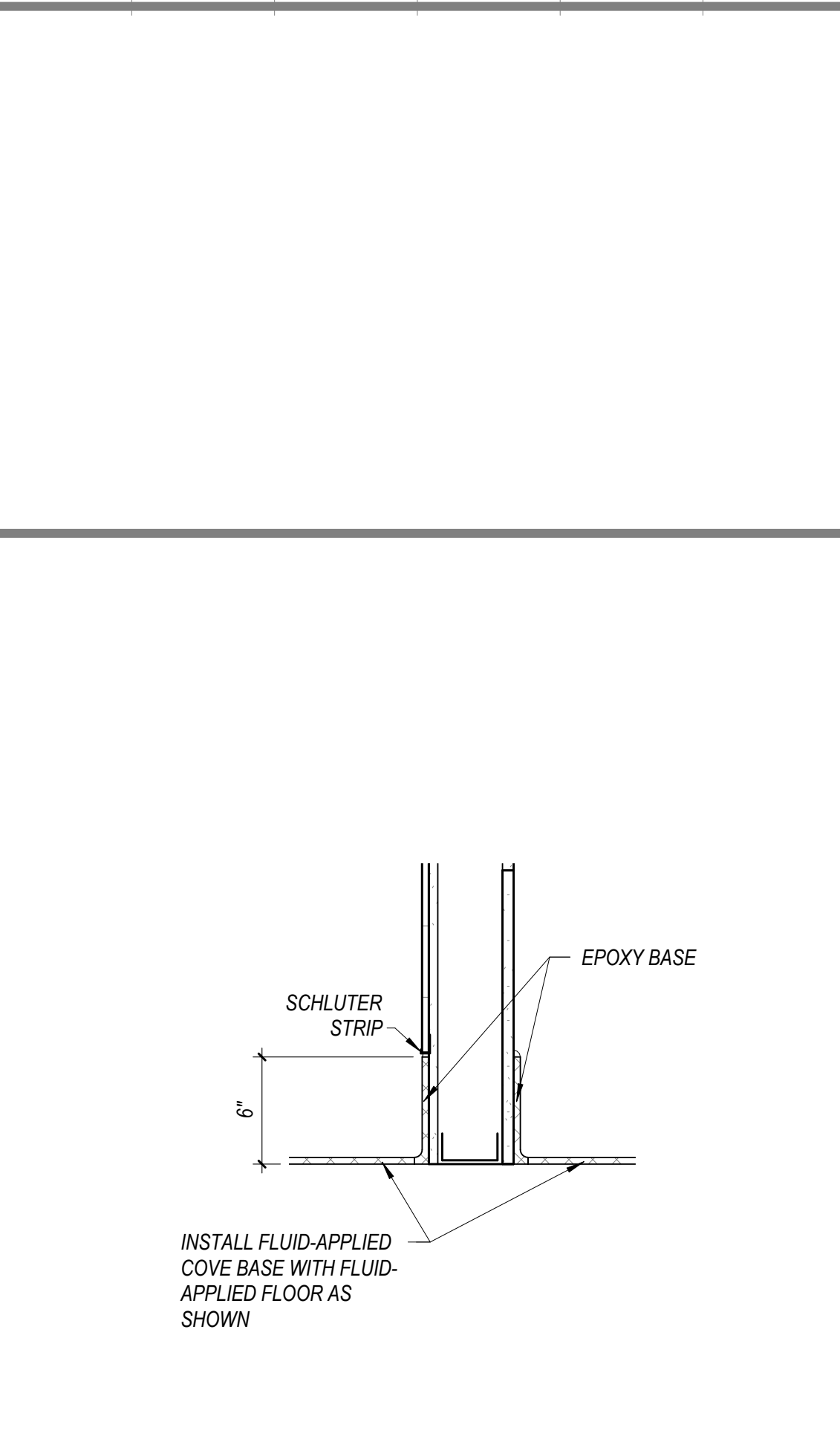
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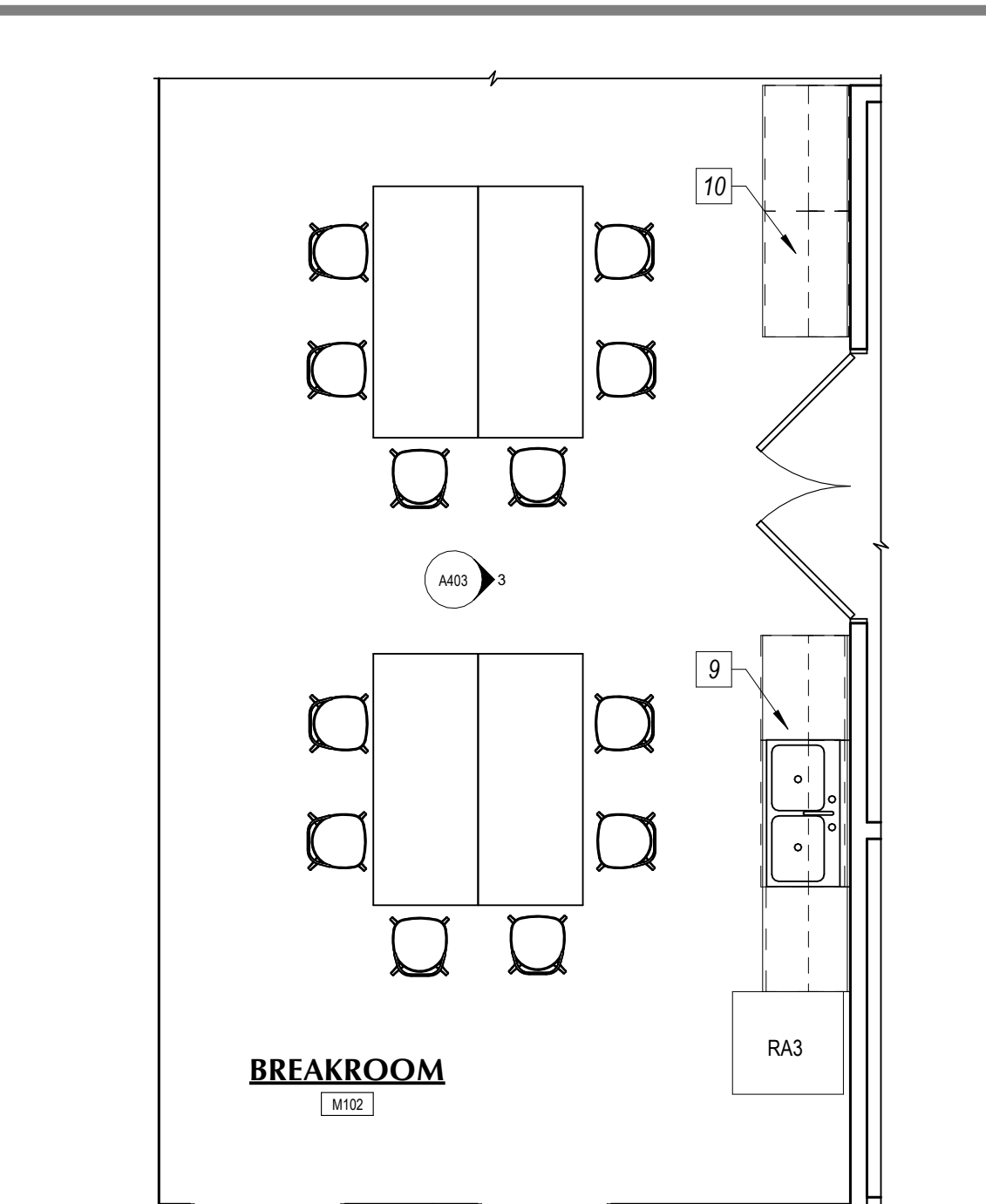
9 MEN'S RESTROOM LOCKERS 1/4" = 1'-0"



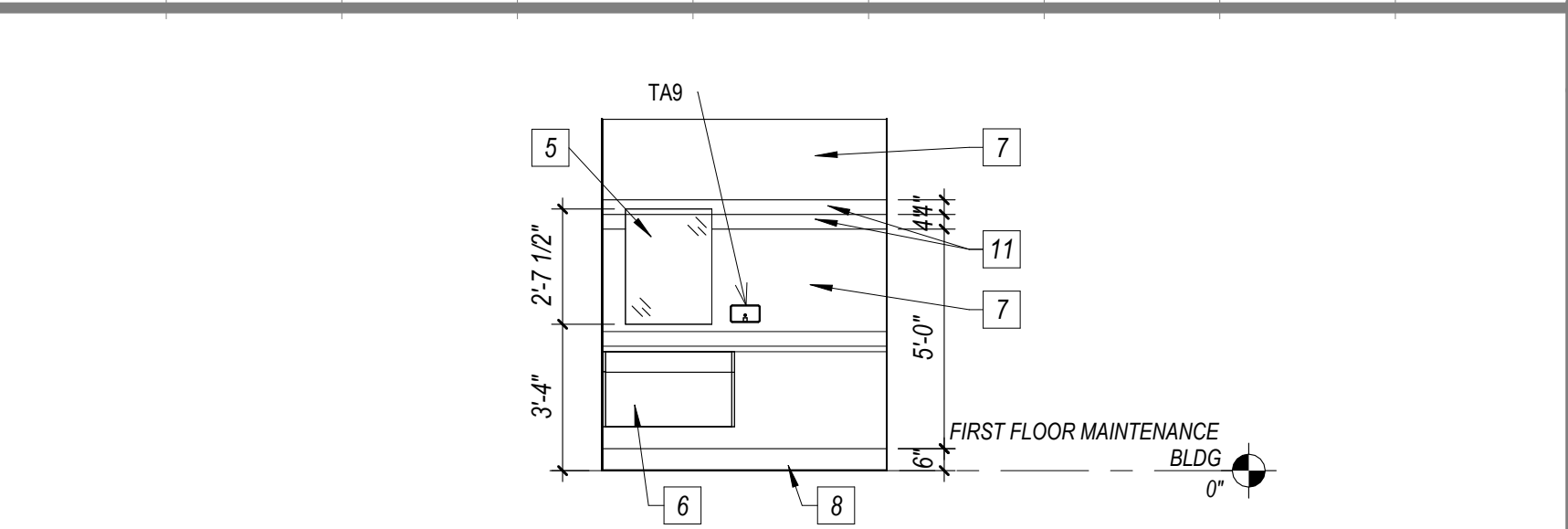
1 FIRST FLOOR MAINTENANCE BLDG RESTROOMS ENLARGED PLANS 1/4" = 1'-0"



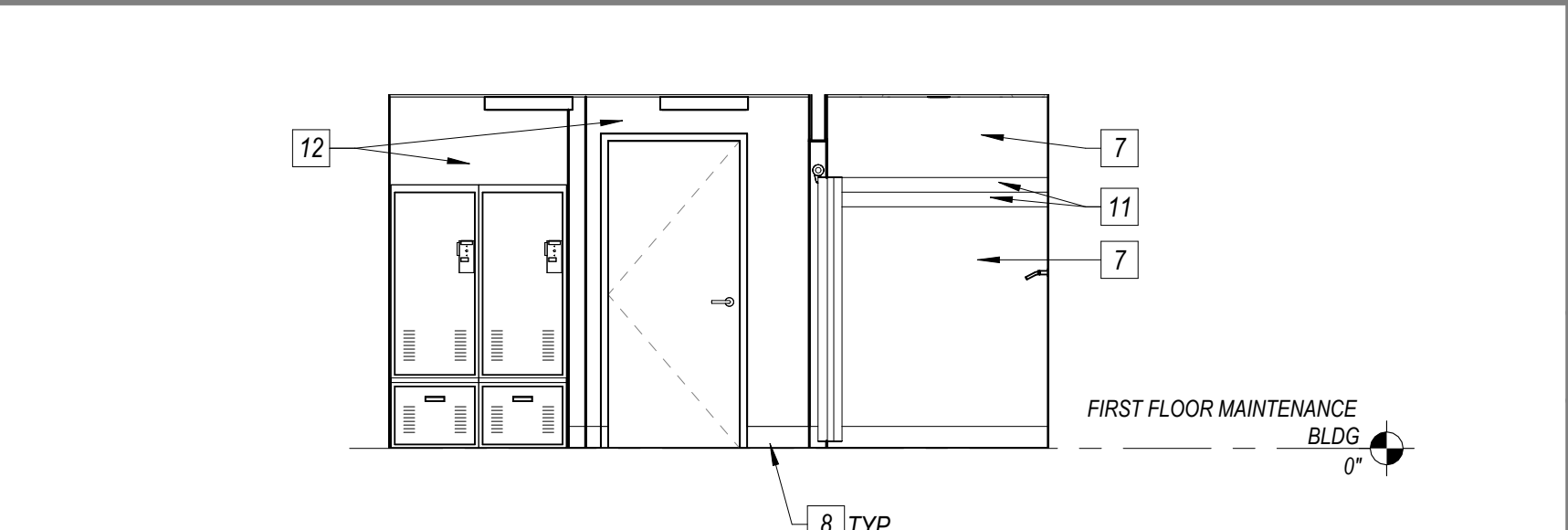
8 TYPICAL COVE TILE WALL BASE DETAIL 1 1/2" = 1'-0"



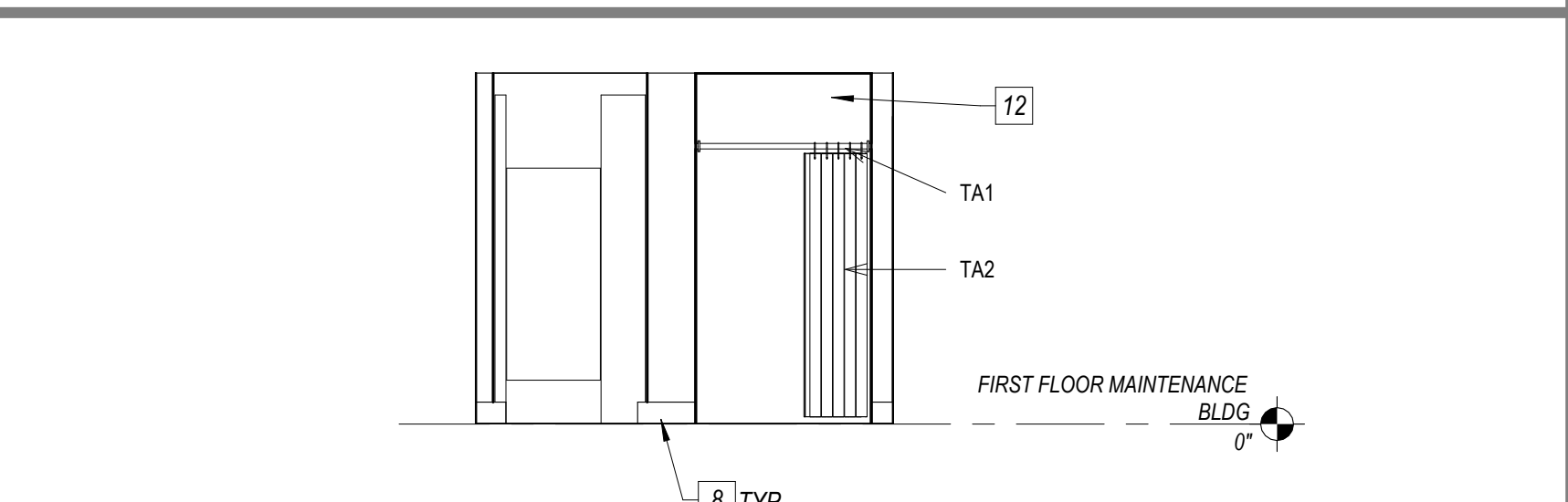
2 FIRST FLOOR MAINTENANCE BLDG BREAKROOM ENLARGED PLANS 1/4" = 1'-0"



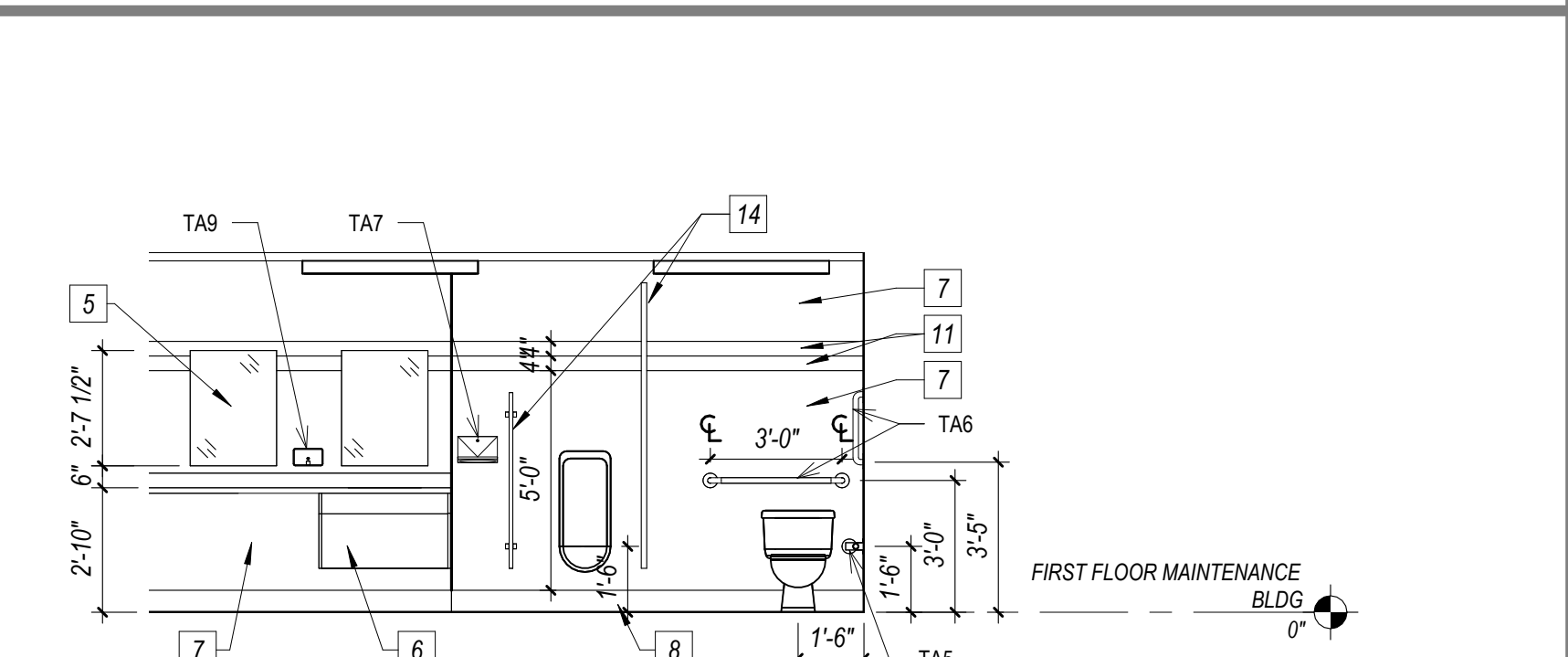
7 WOMEN'S RESTROOM-VANITY AREA 1/4" = 1'-0"



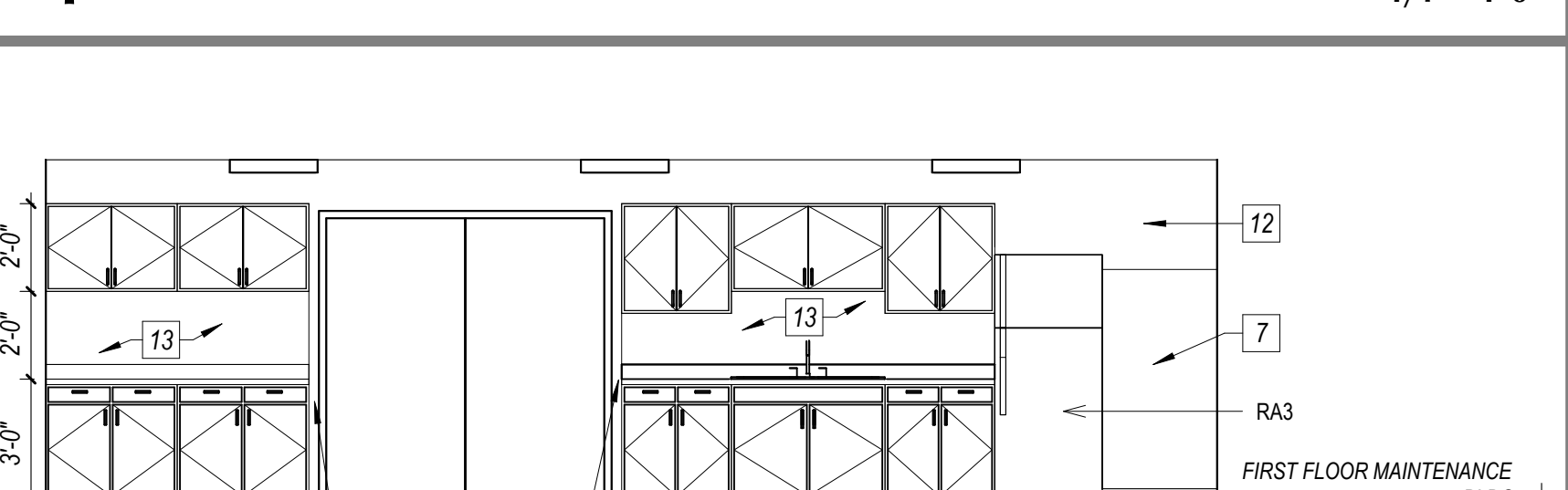
6 WOMEN'S RESTROOM-LOCKERS/SHOWER AREA 1/4" = 1'-0"



5 MEN'S RESTROOM-SHOWER AREA 1/4" = 1'-0"



4 MEN'S RESTROOM-VANITY AREA 1/4" = 1'-0"



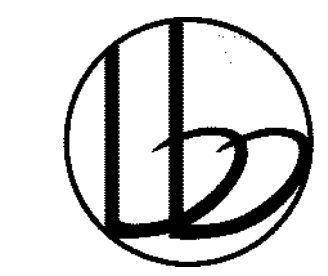
3 BREAKROOM ELEVATION 1/4" = 1'-0"

GENERAL NOTES

- A. SEE SPECIFICATIONS SECTION 10 28 00 FOR TOILET AND BATH ACCESSORIES SCHEDULE.
- B. SEE SPECIFICATIONS SECTION 11 30 13 FOR RESIDENTIAL APPLIANCES SCHEDULE.
- C. SEE SPECIFICATIONS SECTION 11 40 00 FOR FOOD SERVICE EQUIPMENT SCHEDULE.

SHEET NOTES

- 1 24" LOCKERS, SINGLE DOOR, BENCH DRAWER.
- 2 RESTROOM VANITY.
- 3 SHOWER.
- 4 PLUMBING FIXTURE.
- 5 ADA ACCESSIBLE MIRROR 2'x2'6"
- 6 ADA SINK SKIRT.
- 7 FIELD TILE 6"X6". CT-1
- 8 6" EPOXY WALL BASE.
- 9 UPPER AND LOWER CABINETS. NEW COUNTERTOP WITH SINK.
- 10 GATORADE STATION WITH NEW LOWER AND UPPER CABINETS. NEW COUNTER TOP.
- 11 ACCENT TILE 6"X6". CT-3, CT-4
- 12 PAINT P-1
- 13 MOSAIC TILE 3"X6". CT-2, CT-5
- 14 TOILET PARTITION
- 15 SOAP DISPENSER
- 16 PAPER TOWEL DISPENSER



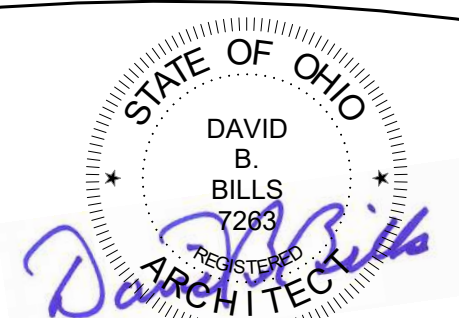
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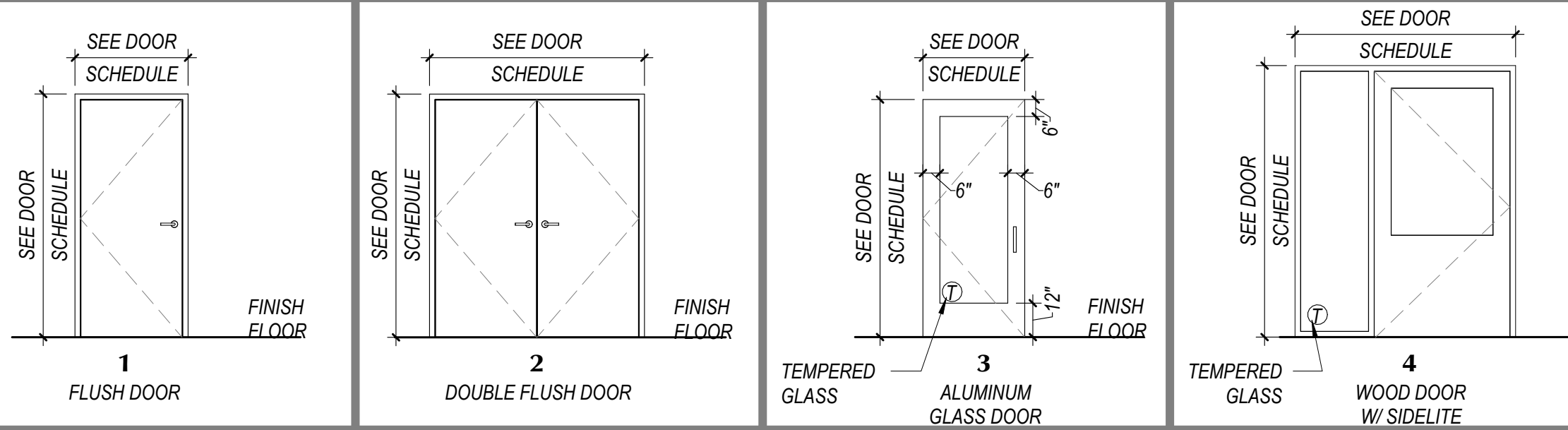
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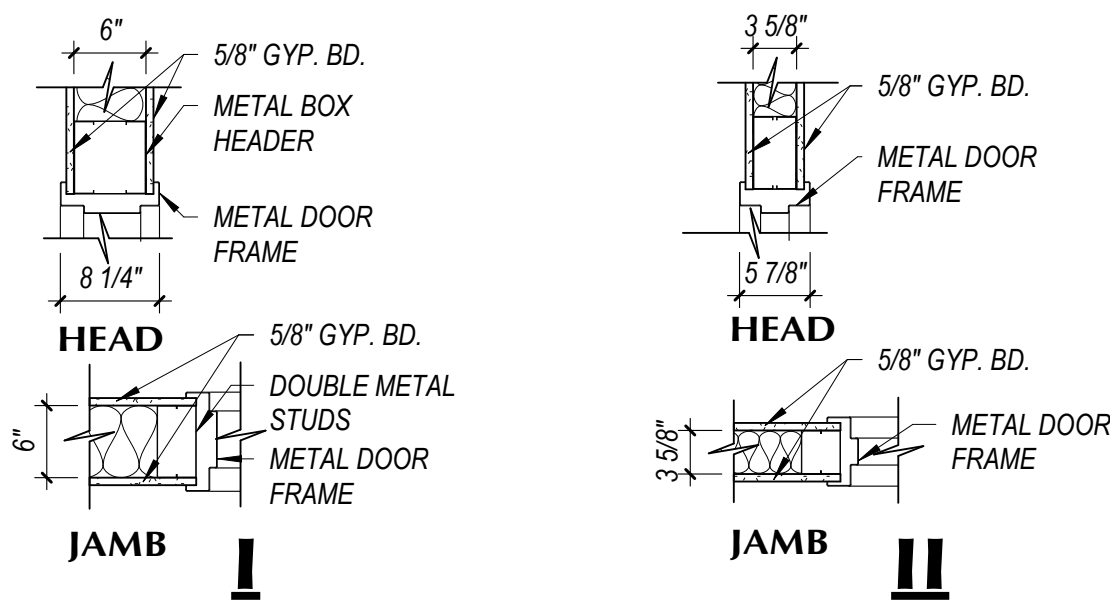
ENLARGED PLANS, AND
INTERIOR ELEVATIONS
MAINTENANCE BLDG

A403

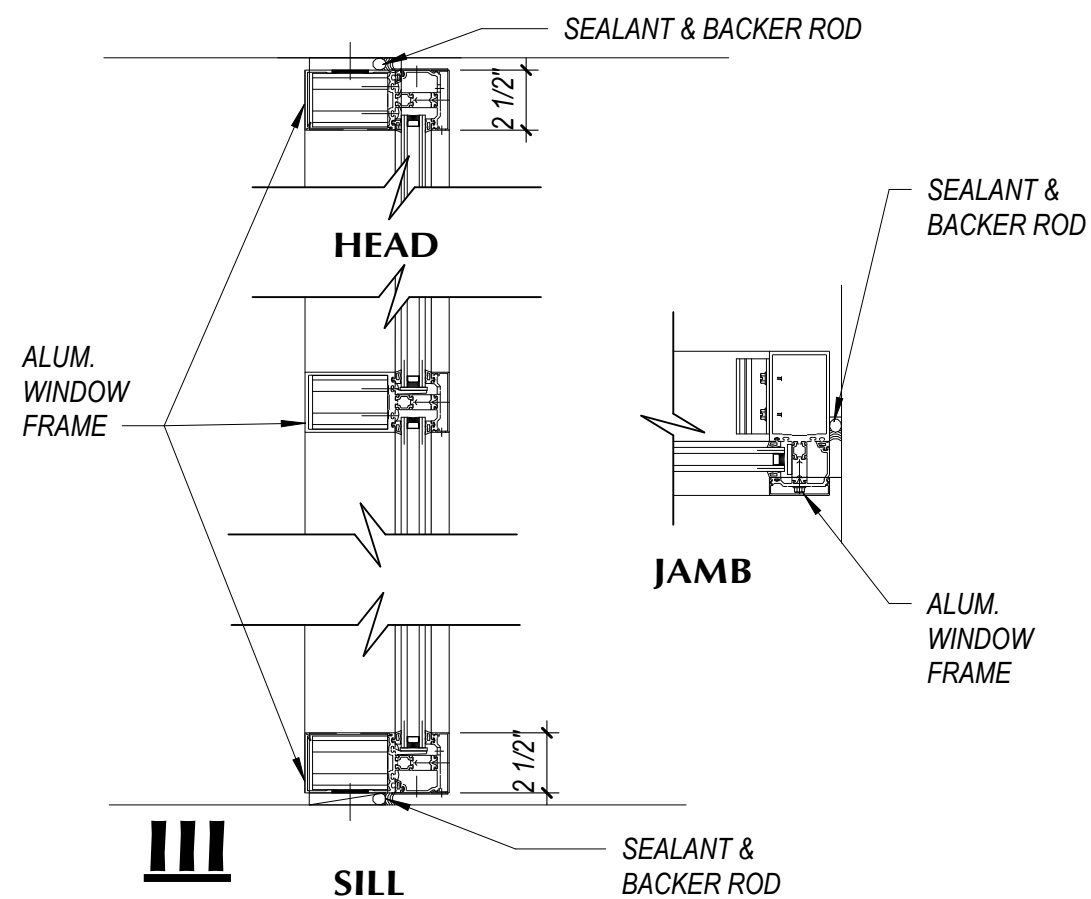
DOOR TYPE



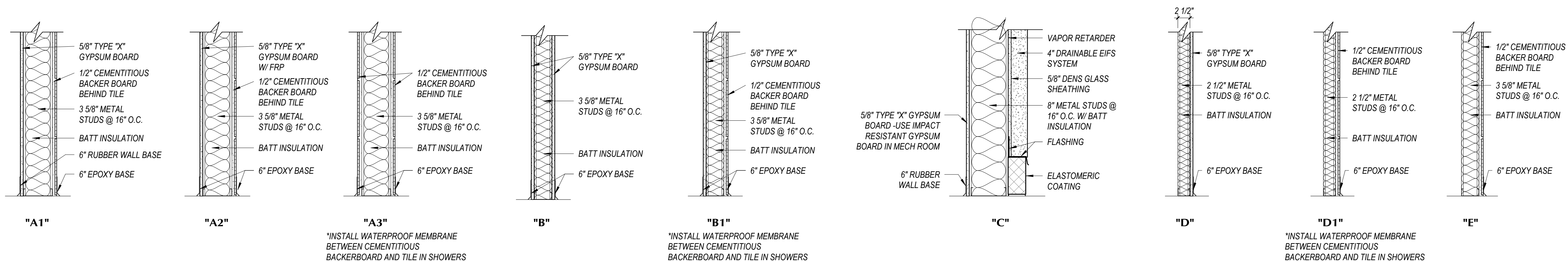
DOOR JAMB/HEAD



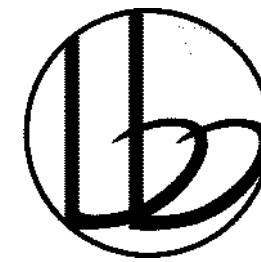
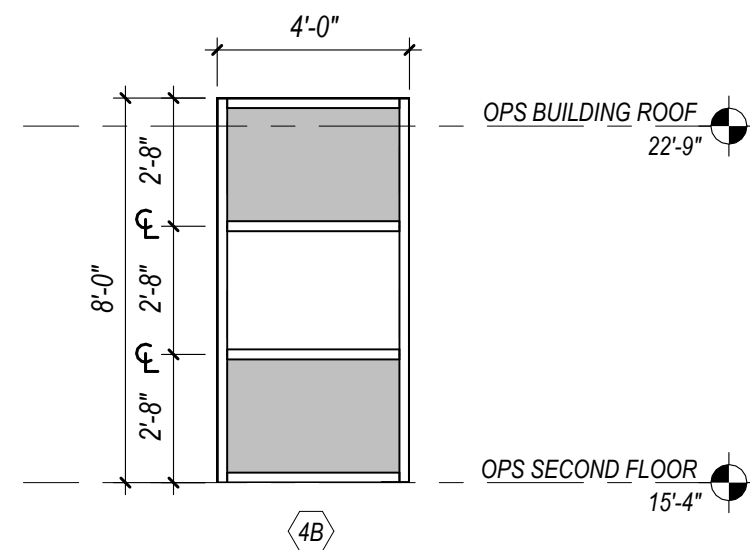
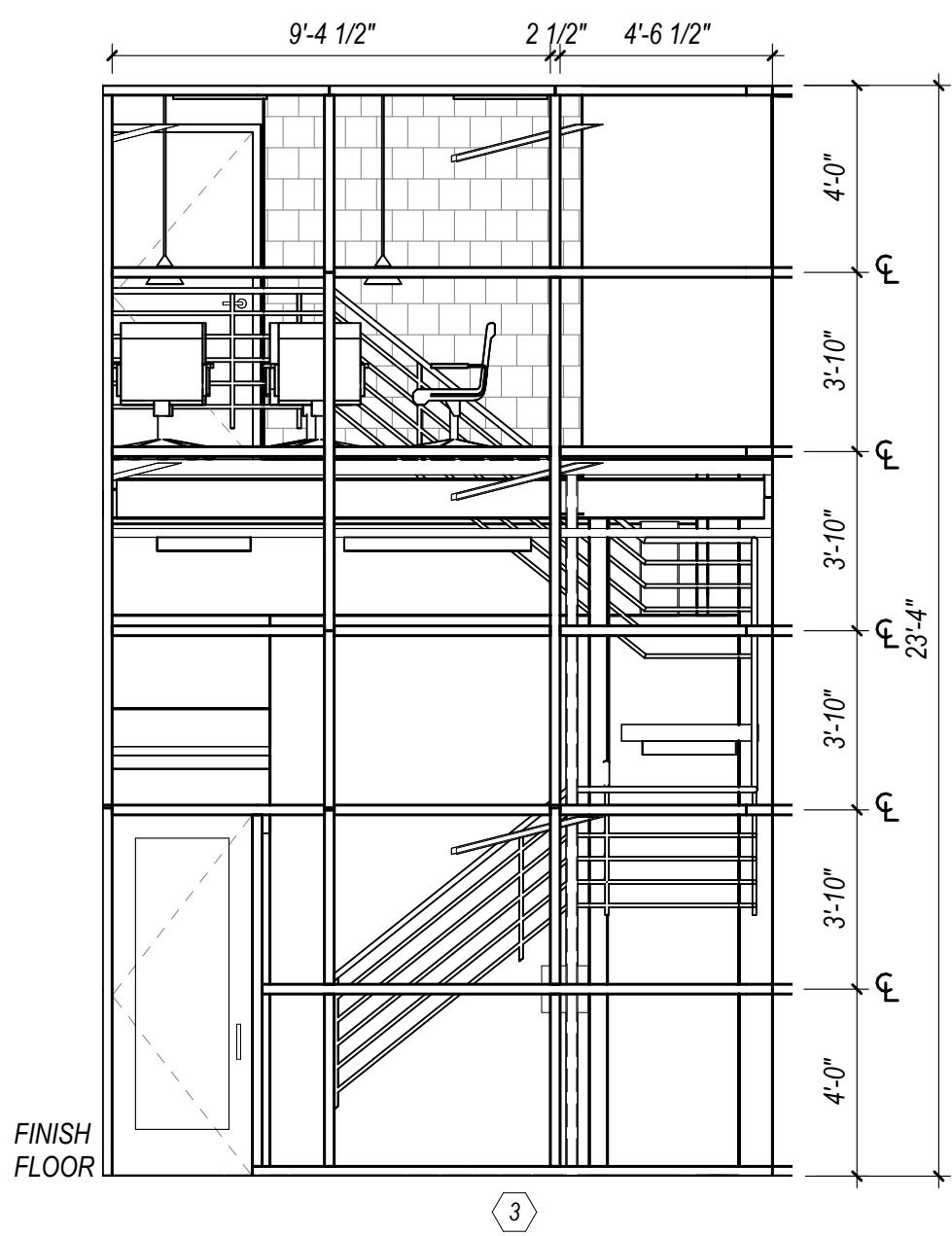
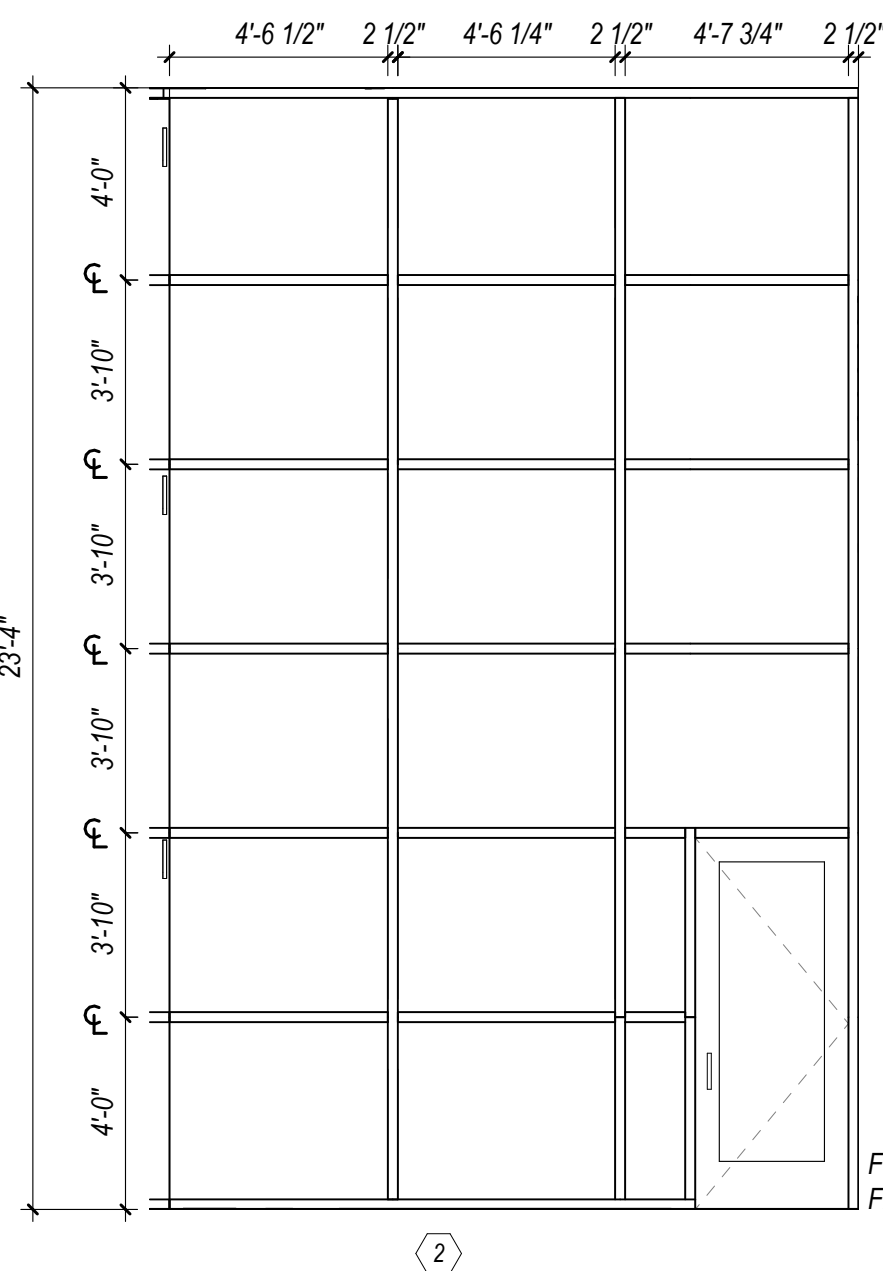
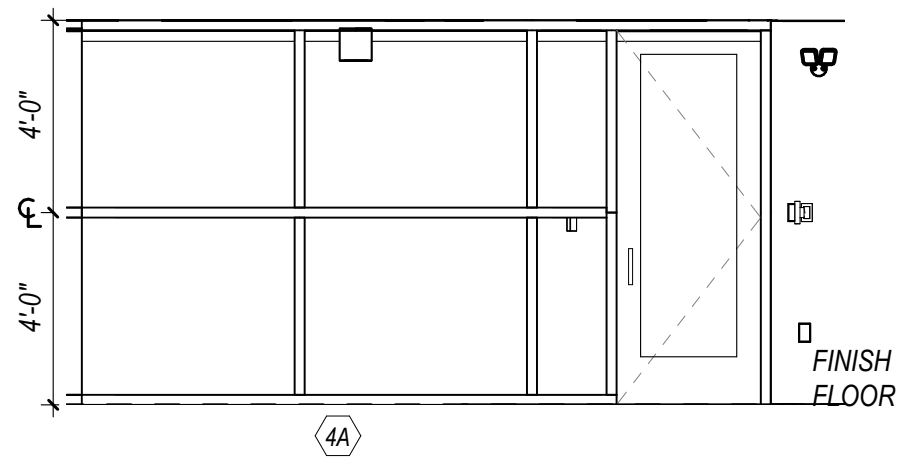
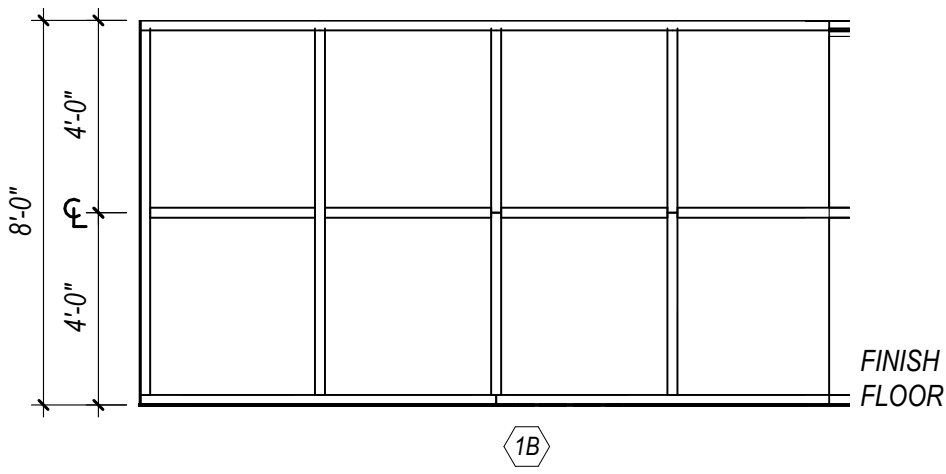
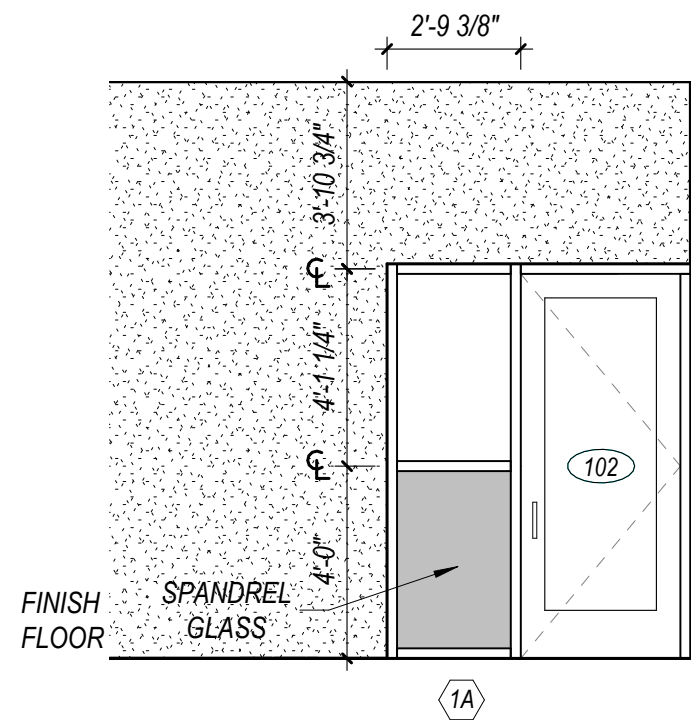
WINDOW JAMB/HEAD



WALL TYPES



WINDOW TYPES



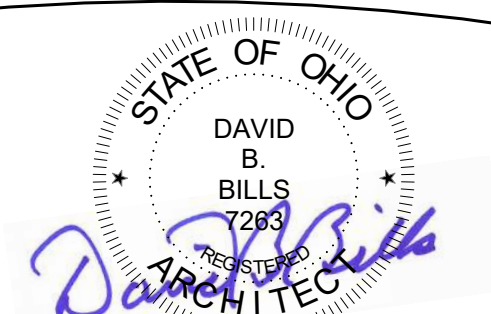
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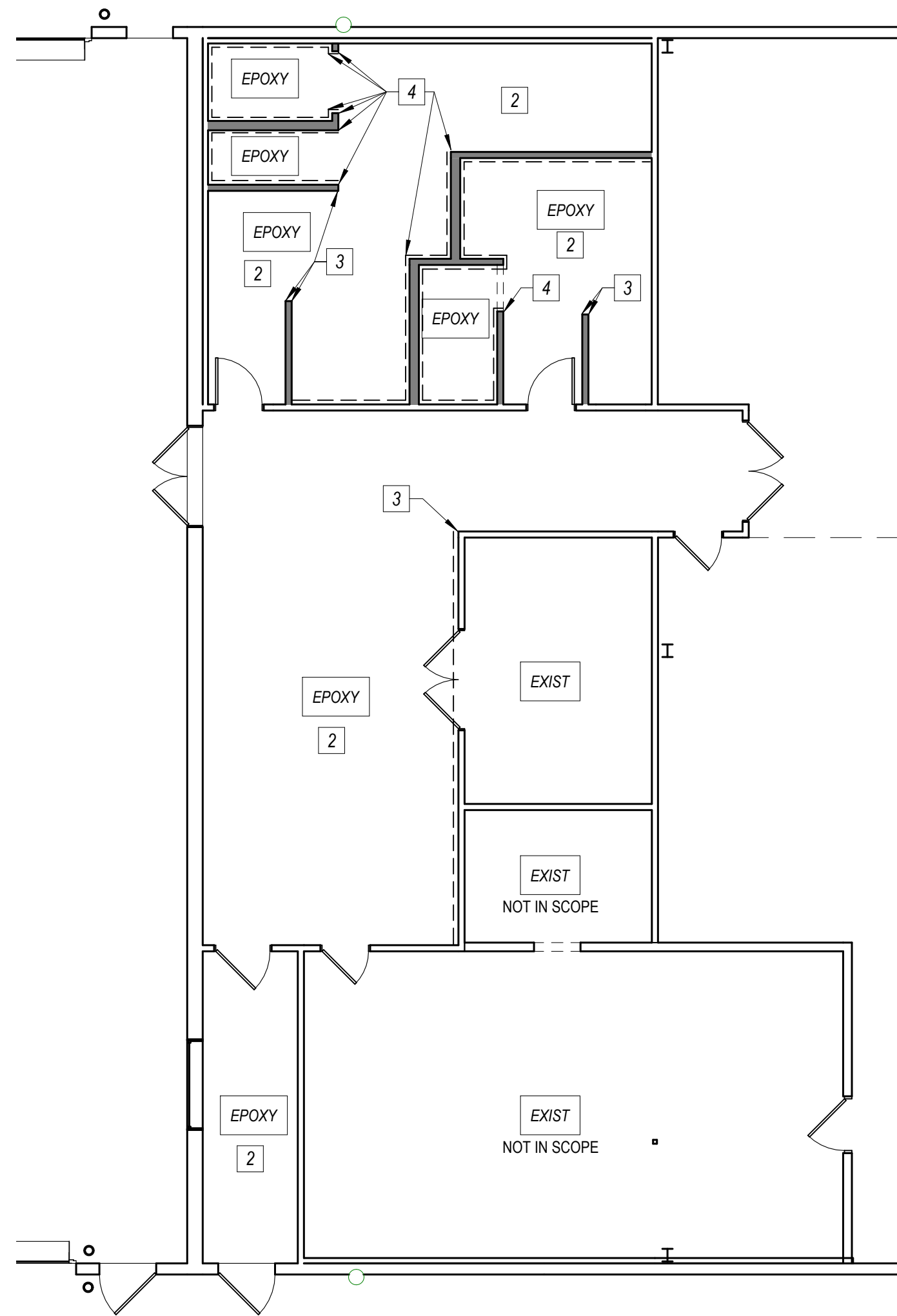
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WALL PARTITIONS,
WINDOW AND DOOR
TYPE

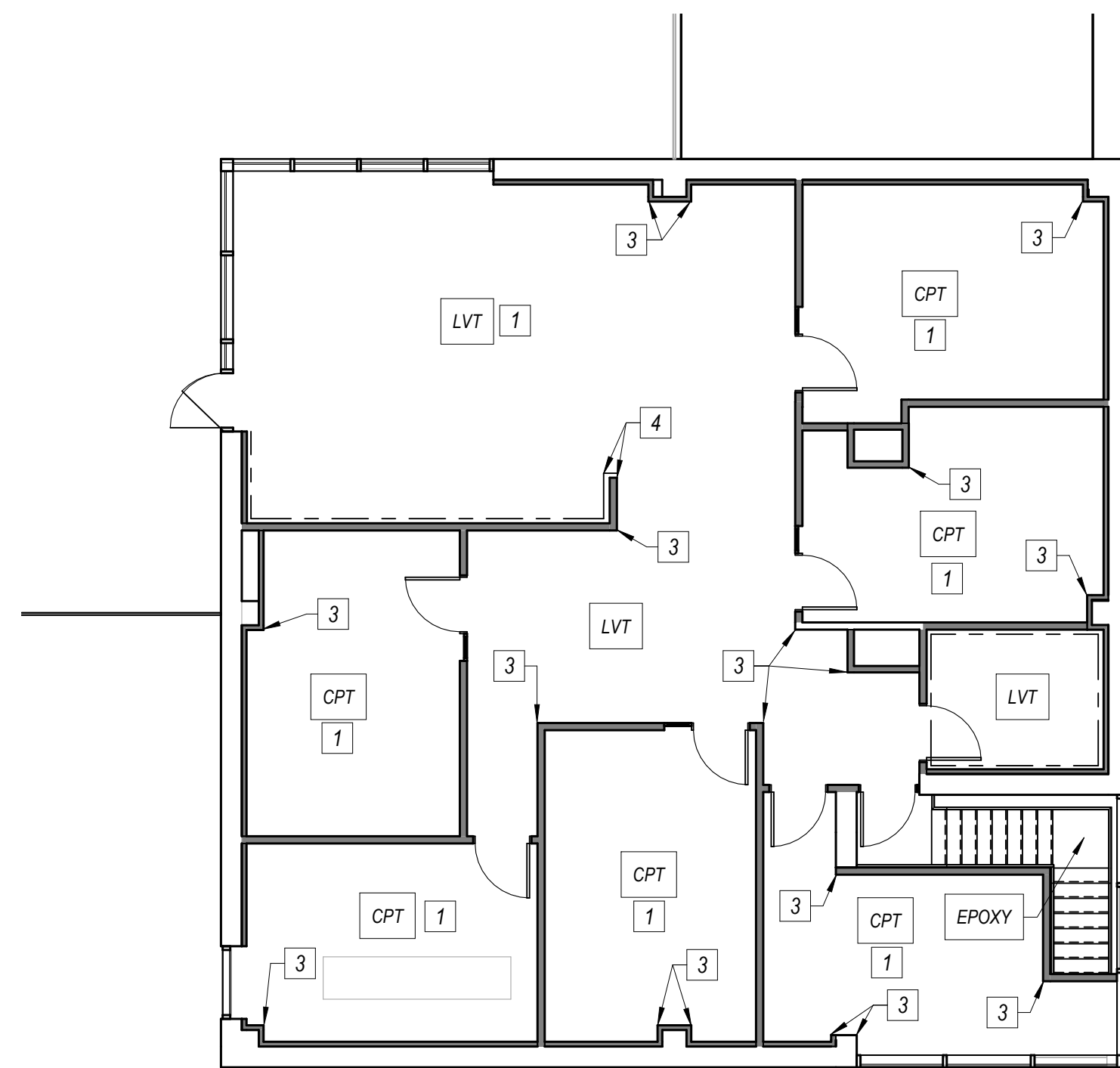
A501



3

FIRST FLOOR PLAN MAINTENANCE BLDG

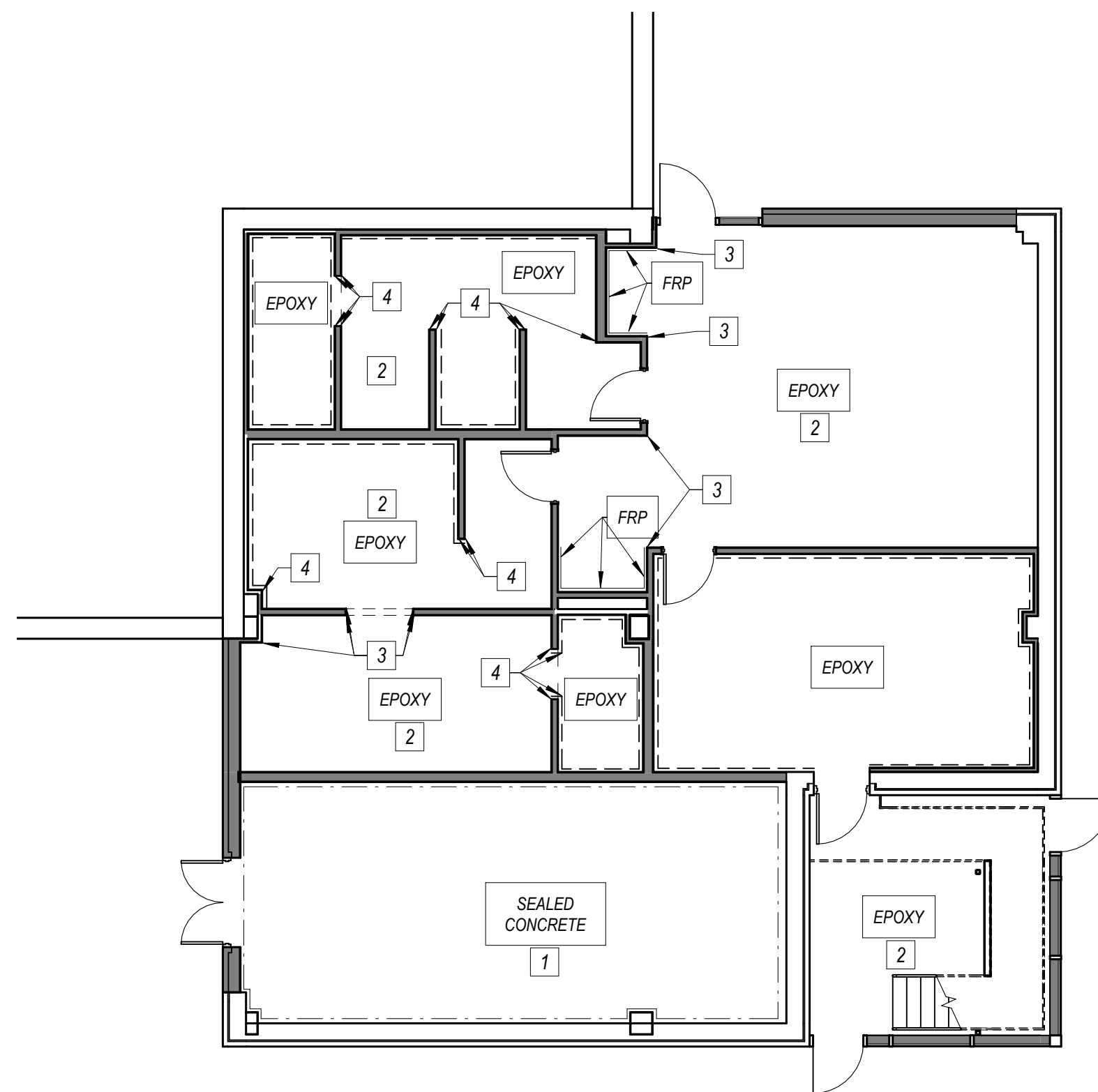
1/8" = 1'-0"



2

SECOND FLOOR PLAN OPERATIONS BLDG

1/8" = 1'-0"



1

FIRST FLOOR PLAN OPERATIONS BLDG

1/8" = 1'-0"

GENERAL NOTES

- A. SEE SHEET A602 FOR ROOM FINISH SCHEDULE
- B. ALL WALLS TO BE PAINTED UNLESS NOTED OTHERWISE

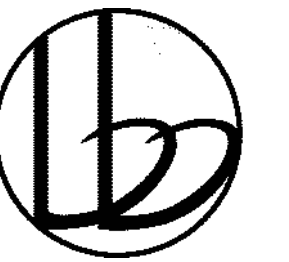
SHEET NOTES

- 1 PAINT AND INSTALL VINYL BASE ON WALLS
- 2 PAINT WALLS UNLESS INDICATED OTHERWISE
- 3 CORNER GUARD
- 4 SCHLEUTER STRIP

FINISH LEGEND

- WALL TILE AND EPOXY BASE
- EPOXY FLOOR FINISH
- PAINT AND VINYL BASE
- WALL TILE AND VINYL BASE

NOTE:
PAINT AND EPOXY BASE ON ALL WALLS UNLESS OTHERWISE NOTED



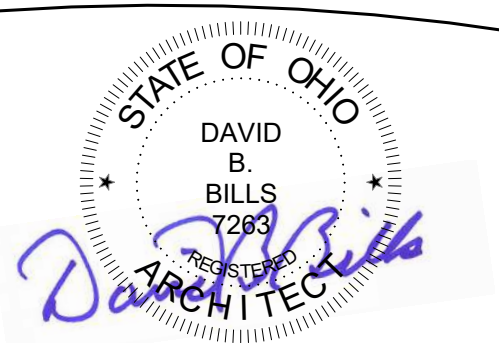
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FINISH PLANS

A601

DOOR SCHEDULE

OPERATIONS BLDG.

DOOR #	DOOR						FRAME			FIRE RATING	HARDWARE SET	REMARKS
	OPENING SIZE		DOOR THICKNESS	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	TYPE			
	WIDTH	HEIGHT										
100A	3'-0"	7'-8 3/4"			ALUM		ALUM	ANO			1.0	CARD READER
100B	3'-2 1/4"	7'-8 3/4"			ALUM		ALUM	ANO			1.0	CARD READER
100C	3'-0"	7'-0"	1 3/4"	5			EXIST			1 HR	5.0	KEYED LOCK; FIRE-RATED GLASS; EXIST DOOR FRAME
101	3'-0"	7'-0"	1 3/4"								6.0	KEYED LOCK
102	3'-3 7/8"	8'-0"			ALUM		ALUM	ANO			1.0	CARD READER / KEYPAD
105	3'-0"	6'-8"	1 3/4"	2							9.0	
107	3'-0"	6'-8"	1 3/4"	2							9.0	
108	5'-0"	7'-0"	1 3/4"	0	HM		HM				4.0	KEYED LOCK, INSULATED
201	3'-0"	7'-0"	1 3/4"	5	HM		HM			1 HR	5.0	FIRE-RATED GLASS
202	3'-0"	7'-0"	1 3/4"	1	WD		HM				10.0	
203	3'-0"	7'-0"	1 3/4"	1	WD		HM				9.0	PRIVACY LATCH
204	3'-0"	7'-0"	1 3/4"	1	WD		HM				7.0	KEYED LOCK
205	3'-0"	7'-0"	1 3/4"	1	WD		HM				8.0	KEYED LOCK
206A	3'-0"	7'-9 1/2"			ALUM		ALUM	ANO			2.0	CARD READER
207	3'-0"	7'-0"	1 3/4"	1	WD		HM				8.0	KEYED LOCK
208	3'-0"	7'-0"	1 3/4"	1	WD		HM				6.0	CARD READER
209	3'-0"	7'-0"	1 3/4"	1	WD		HM				7.0	KEYED LOCK

SEE SPECIFICATIONS FOR HARDWARE SETS.

REMARKS:

1. CONFIRM DOOR FINISHES WITH GENERAL CONTRACTOR
2. CONTRACTOR TO COORDINATE DOOR TYPE WITH MECHANICAL CONTRACTOR (DOOR TO BE UNDERCUT OR HAVE LOUVERS FOR VENTILATION)
3. WD - SHOULD BE LAMINATE
4. ANO = ANODIZED

ROOM FINISH SCHEDULE

OPERATIONS BLDG.

ROOM #	ROOM NAME	FLOOR					WALL BASE		WALLS		CEILING			REMARKS
		SEALED CONCRETE	EXISTING	VINYL TILE	CARPET	EPOXY	VINYL BASE	EPOXY BASE	PAINT	CERAMIC TILE	PAINT DRYWALL	LAY-IN	NO CEILING	
100	VESTIBULE					X	X		X		X			1, PT-1
101	LAB					X	X	X	X		X			CT-1
102	OPEN OFFICE					X	X	X	X				X	2, PT-1
103	MEN'S SHOWER					X	X			X	X			CT-1
104	MEN'S LOCKER					X	X	X	X		X			3, CT-1, CT-3, CT-4, PT-1
105	MEN'S RESTROOM					X	X	X	X	X	X			3, CT-1, CT-3, CT-4
106	WOMEN'S SHOWER					X	X	X	X	X	X			CT-1
107	WOMEN'S RESTROOM/ LOCKERS					X	X	X	X	X	X			3, CT-1, CT-3, CT-4, PT-1
108	MECHANICAL ROOM	X					X		X		X		X	4, PT-1
201	OPEN AREA			X			X		X				X	PT-1
202	CONFERENCE ROOM				X		X	X	X				X	PT-1
203	UNISEX RESTROOM			X			X	X	X	X	X			CT-1
204	OPERATIONS SUPERVISOR				X		X	X	X		X			PT-1
205	MAINTENANCE SUPERVISOR				X		X	X	X		X			PT-1
206	BREAK ROOM			X			X	X	X	X	X			CT-2, CT-5, PT-1
207	ENVIRONMENTAL COORDINATOR				X		X	X	X		X			PT-1
208	SCADA				X		X	X	X		X			PT-1
209	PLANT MANAGER				X		X	X	X		X			PT-1

REMARKS:

1. PAINTED DRYWALL AND EXPOSED STEEL
2. PAINTED CONCRETE WALL AND CONDUIT
3. PAINTED DRYWALL. PT-1
4. PAINTED DRYWALL AND CONCRETE

MAINTENANCE BLDG.

DOOR #	DOOR						FRAME			FIRE RATING	HARDWARE SET	REMARKS
	OPENING SIZE		DOOR THICKNES	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	TYPE			
	WIDTH	HEIGHT										
M100A	3'-8"	7'-0"	1 3/4"								11.0	EXISTING HARDWARE / CARD READER
M100B	3'-6"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M101	6'-4"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M102A	6'-4"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M102B	6'-4"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M102C	3'-0"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M102D	3'-0"	6'-8"	1 3/4"								12.0	EXISTING HARDWARE
M103	3'-0"	7'-0"	1 3/4"	WD							9.0	
M105	3'-0"	7'-0"	1 3/4"	WD							9.0	

MAINTENANCE BUILDING EXTERIOR DOOR HARDWARE COVERED UNDER SEPARATE PROJECT.

MAINTENANCE BLDG.

ROOM #	ROOM NAME	FLOOR					WALL BASE		WALLS		CEILING			REMARKS
		SEALED CONCRETE	EXISTING	VINYL TILE	CARPET	EPOXY	VINYL BASE	EPOXY BASE	PAINT	CERAMIC TILE	PAINT DRYWALL	LAY-IN	NO CEILING	
M100	ENTRY					X		X	X			X		PT-1
M101	MECHANICAL ROOM		X										X	
M102	BREAKROOM					X		X	X	X		X		CT-1, CT-2, CT-5, PT-1
M103	WOMEN'S RESTROOM/ LOCKERS					X		X	X	X		X		CT-1, CT-3, CT-4, PT-1
M104	WOMEN'S SHOWER					X		X	X	X	X			CT-1
M105	MENS RESTROOM/ LOCKERS					X		X	X	X	X	X		CT-1, CT-3, CT-4, PT-1
M106	SHOWER					X		X	X	X	X			CT-1
M107	MENS SHOWER					X		X	X	X	X			CT-1

NOTES:

1. USE PT-3 SEMI-GLOSS PAINT ON SHOWER CEILINGS
2. USE PT-2 FOR ALL OTHER DRYWALL CEILINGS

FINISH LEGEND

FLOOR

EPOXY EPOXY
HYBRI-FLEX EC
COLOR: MACKEREL

CARPET

CPT PATCRAFT
STYLE: INCLUSION GEMSCAPE
COLOR: GRANITE
SIZE: 24"x24"

TILE

CT-1 DAL-TILE CERAMIC
STYLE: NATURAL HUES
COLOR: CARNATION GLOSS QH48
SIZE: 6x6
GROUT COLOR: WHITE

CT-2 DAL-TILE CERAMIC
STYLE: NATURAL HUES
COLOR: AZURE QH44
SIZE: 3x6
GROUT COLOR: WHITE

CT-3 DAL-TILE CERAMIC
STYLE: NATURAL HUES
COLOR: ICEBERG QH82
SIZE: 6x6
GROUT COLOR: WHITE

CT-4 DAL-TILE CERAMIC
STYLE: NATURAL HUES
COLOR: STARLIGHT QH68
SIZE: 6x6
GROUT COLOR: WHITE

CT-5 DAL-TILE CERAMIC
STYLE: NATURAL HUES
COLOR: AGEAN QH41
SIZE: 3x6
GROUT COLOR: WHITE

VINYL TILE

LVT PATCRAFT
STYLE: HOMEGRAIN 8
COLOR: LOUNGE V2
SIZE: 6x48

WALL BASE

WB-1 EPOXY
COLOR: MACKEREL

VINYL WALL BASE

WB-2 JOHNSONITE
PROFILE: TRADITIONAL
WALL BASE
COLOR: 20 CHARCOAL
SIZE: 6"

CEILING TILE

ACT-1 ARMSTRONG
TYPE 1
COLOR: WHITE
SIZE: 2x2'

ACT-2 ARMSTRONG
TYPE 2
COLOR: WHITE
SIZE: 2x2'

PAINT

PT-1 SHERWIN-WILLIAMS
FINISH: EGGSHELL
COLOR: SW7007 BRIGHT
WHITE

PT-2 SHERWIN-WILLIAMS
FINISH: FLAT
COLOR: SW7007 CEILING
BRIGHT WHITE

PT-3 SHERWIN-WILLIAMS
FINISH: SEMI-GLOSS
COLOR: SW7007 BRIGHT WHITE
**USE ON SHOWER CEILINGS ONLY

SOLID SURFACE

SS-1 CORIAN SOLID SURFACE
COLOR: MATTERHORN

STAIR TREADS

ST JOHNSONITE ANGLEFIT
HAMMERED PROFILE
COLOR: 40 BLACK B

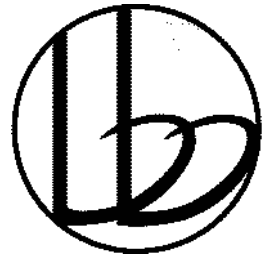
ACCESSORIES/ APPLIANCES

TOILET ACCESSORIES

- TA1 SHOWER CURTAIN ROD
- TA2 SHOWER CURTAIN
- TA3 TOWEL HOOKS
- TA4 CUSTODIAL MOP AND BROOM HOLDERS
- TA5 TOILET TISSUE (ROLL) DISPENSER
- TA6 GRAB BARS
- TA7 PAPER TOWEL DISPENSERS
- TA8 SANITARY NAPKIN DISPOSAL UNIT
- TA9 AUTOMATIC SOAP DISPENSER
- TA10 THREE-FOLD PAPER TOWEL DISPENSER

APPLIANCES

- RA1 ELECTRIC RANGE
- RA2 MICROWAVE OVEN
- RA3 REFRIGERATOR/ FREEZER
- RA4 CLOTHES WASHER
- RA5 CLOTHES DRYER

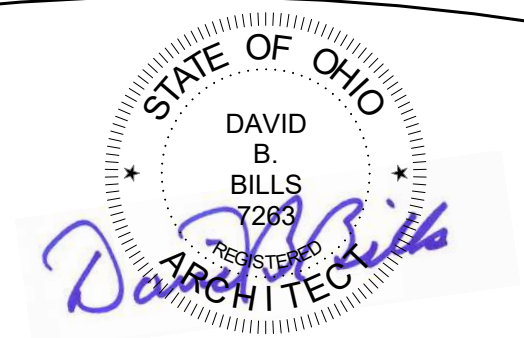


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WESTERN REGIONAL WATER RECLAMATION FACILITY
OPERATIONS AND MAINTENANCE BUILDINGS
RENOVATION
4111 HYDRAULIC RD
DAYTON, OHIO 45449



DAVID B. BILLS, LICENSE #7263
EXPIRATION DATE 12/31/2026

BID / PERMIT
7/10/2026

A201284.6

DRAWN BY: SKK

DOOR AND ROOM
FINISH SCHEDULE

A602

DESIGN CRITERIA PER THE 2024 OHIO BUILDING CODE (IBC 2021)				
Building Risk Category				II
Roof Live Load				
Roof Live Load (psf), Non-Reducible				20
Roof Snow Load				
Ground Snow Load, Pg (psf)				20
Flat Roof Snow Load, Pf (psf)				14
Minimum Specified Roof Snow Load, (psf)				20
Snow Load Importance Factor, Is				1.00
Snow Exposure Factor, Ce				1.0
Sloped Roof Factor, Cs				1.0
Snow Thermal Factor, Ct				1.0
Rain Load				
Design Rainfall 15-min Intensity, i (in/hour)				5.54
Design Rainfall 60-min Intensity, i (in/hour)				2.68
Wind Design Data				
Ultimate Design Wind Speed, Vult, (mph)				107
Nominal Design Wind Speed, Vasd, (mph)				82.9
Wind Exposure Category				C
Enclosure Classification				ENCLOSED
Internal Pressure Coefficients				+/- 0.18
Earthquake Design Data				
Seismic Importance Factor, Ie				1.00
Spectral Response Acceleration at 0.2-sec Period, Ss				0.141
Spectral Response Acceleration at 1-sec Period, S1				0.071
Design Spectral Response Acceleration at Short Periods, Sds				0.15
Design Spectral Response Acceleration at 1-sec Period, Sd1				0.114
Site Class				D-Default
Seismic Design Category				B
Ordinary Reinforced Concrete Shear Walls	R=	4	Cs=	0.038
Steel Systems Not Specifically Detailed For Seismic Resistance	R=	3	Cs=	0.05
Design Base Shear (Kips), V = Cs W	See Reactions			
Analysis Procedure: Equivalent Lateral Force Procedure				
Covered Parking Roof Load				
Live Load (psf) (Reducible)				20
Minimum Specified Roof Snow Load, (psf)				20
Roof Snow Drift Load, Pd (psf)				As Required
Standing Seam Metal Roof (psf)				2
Collateral Load (psf)				8
Beam Framing Load (psf)				Self Weight
Existing Building Roof Load				
Roof Live Load (psf), Reducible				20
Minimum Specified Roof Snow Load, (psf)				20
Roof Snow Drift Load, Pd (psf)				As Required
Single Ply Roof Membrane, Cover Board, Insulation, and Metal Deck (psf)				
Single Ply Roof Membrane (psf)				0.7
1/2" Cover Board (psf)				2.0
2" Insulation (0.2 psfinch) (psf)				0.4
Existing Metal Deck (psf)				1.7
Collateral Load (psf) (Ceiling, Lights, Mechanical, Finishes, etc...)				10.0
Bar Joist Framing Load (psf)				2.0
Second Floor Load at Conference Room				
Live Load; Offices (psf)				50
Partition Dead Load on Slabs with Live Load Less than or Equal to 80psf (psf)				15
3.0" Normal Weight Concrete on 2.0CD22 Composite Metal Deck (5" Total Thickness)				50
Additional Dead Load Resulting from Beam Deflection During the Concrete Placement (psf)				8
Collateral Load (psf)				10
Beam Framing Load (psf)				Self Weight

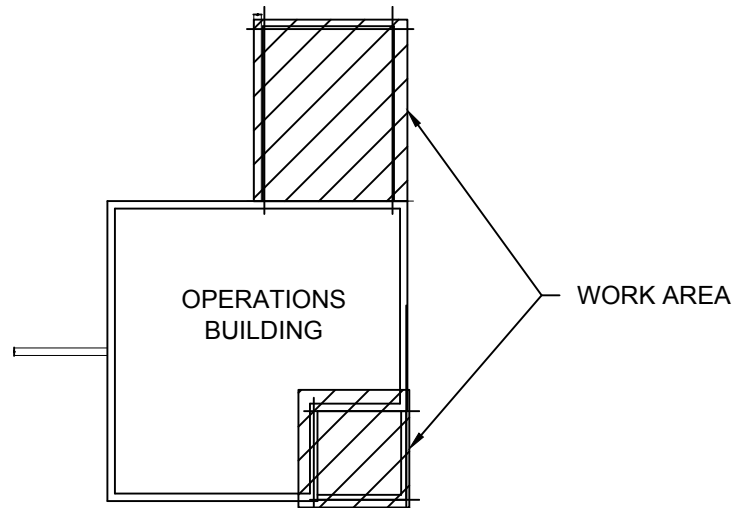
Deflection & Drift Criteria	
Framing that is Vertically supporting: Roof Beams with Metal Roof Deck	Deflection Limit: L/240 Load Case S (or Lr) Deflection Limit: L/180 Load Case D + S (or Lr)
Framing that is Vertically supporting: Floor Beams with Slab over Metal Floor Deck	Deflection Limit: L/360 Load Case L Deflection Limit: L/240 Load Case D + L
Metal Roof Deck (or Panel):	Deflection Limit: L/240 Load Case S (or Lr) Deflection Limit: L/240 Load Case W Deflection Limit: L/180 Load Case D + S (or Lr)
Exterior Wall System (Cold Form Metal Studs):	Deflection Limit: L/240 Load Case W
NOTE:	
The Wind Load (W) is permitted to be taken as 0.42 times the "Components & Cladding" wind load, or as directly calculated using the 10-yr mean recurrence interval wind speed, for the purpose of Serviceability limit state checks.	

OPS BUILDING GROSS COMPONENTS AND CLADDING (UNFACTORED) WIND LOADING (ASCE 7-16)						
EDGE ZONE (SEE NOTE #1)	EFFECTIVE WIND AREA, Ae (ft²)					
	Ae <= 10 ft²		Ae = 50 ft²		Ae >= 100 ft²	
	(P) (psf)	(S) (psf)	(P) (psf)	(S) (psf)	(P) (psf)	(S) (psf)
ROOF ZONE						
1'	11.6	-26.1	9.9	-26.1	9.2	-26.1
1	11.6	-45.5	9.9	-38.5	9.2	-35.5
2	11.6	-60.0	9.9	-51.0	9.2	-47.2
3	11.6	-81.7	9.9	-63.8	9.2	-56.1
3'	-	-	-	-	-	-
WALL ZONE						
4	26.1	-28.3	23.4	-25.6	22.3	-24.4
5	26.1	-34.8	23.4	-29.4	22.3	-27.1

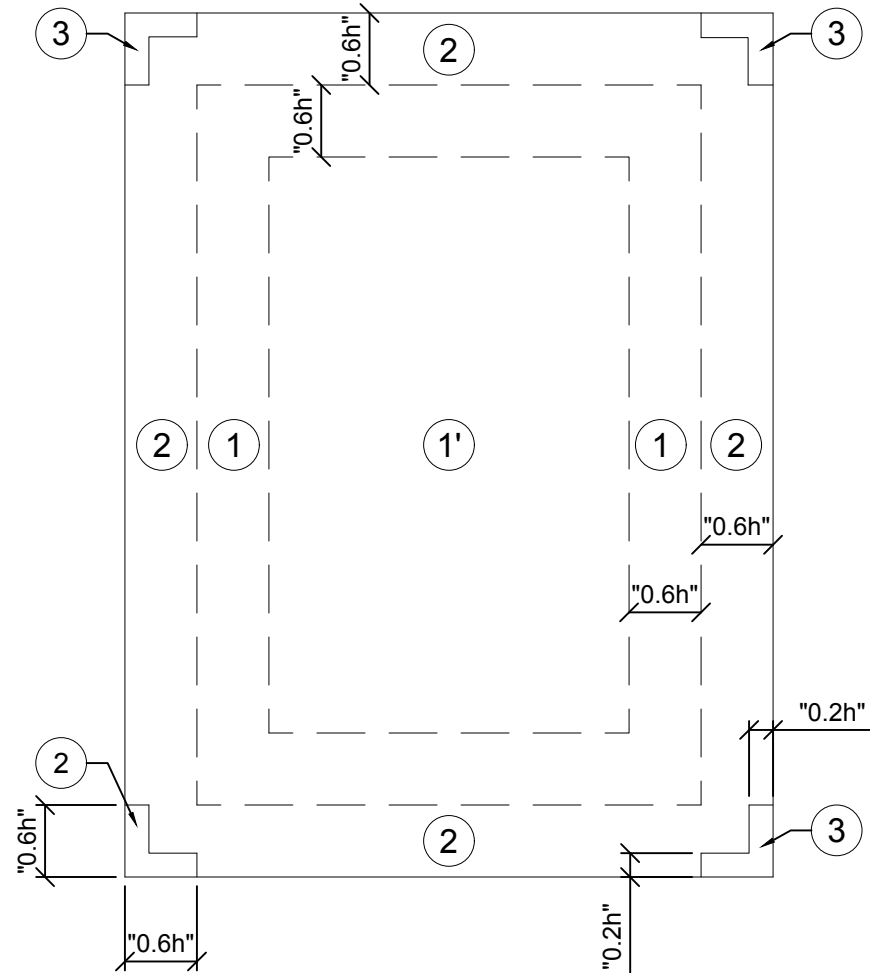
GROSS COMPONENTS AND CLADDING WIND LOADING TABLE NOTES:	
1. EDGE ZONE DISTANCES: a = 5'-0"	
2. PRESSURES SHOWN IN TABLES ARE APPLIED NORMAL TO THE SURFACE. POSITIVE AND MINUS SIGNS INDICATE PRESSURE ACTING TOWARD OR AWAY FROM A SURFACE, RESPECTIVELY.	
3. FOR EFFECTIVE WIND AREAS OTHER THAN SHOWN IN TABLE ABOVE, LINEAR INTERPOLATION IS ACCEPCTABLE. WIND PRESSURE VALUES SHOWN FOR EFFECTIVE WIND AREAS LESS THAN ACTUAL EFFECTIVE AREA ARE PERMITTED TO BE USED IN LIEU OF LINEAR INTERPOLATION.	
4. FOR ALLOWABLE STRESS DESIGN ("ASD"), MULTIPLY THE TABULATED PRESSURES BY "0.6" FACTOR. FOR STRENGTH DESIGN ("LRFD"), MULTIPLY THE TABULATED PRESSURES BY "1.0" FACTOR.	
5. THE WIND LOAD SHALL BE PERMITTED TO BE TAKEN AS 0.42 TIMES THE ULTIMATE WIND LOADS OR DIRECTLY CALCULATED USING THE ALLOWABLE 10-YEAR MEAN RETURN INTERVAL WIND SPEED FOR THE PURPOSE OF DETERMINING DEFLECTION/DRIFT LIMITS.	

COVERED PARKING GROSS COMPONENTS AND CLADDING (UNFACTORED) WIND LOADING (ASCE 7-16)						
EDGE ZONE (SEE NOTE #1)	EFFECTIVE WIND AREA, Ae (ft ²)					
	Ae <= 10 ft ²		Ae = 50 ft ²		Ae >= 100 ft ²	
	(P) (psf)	(S) (psf)	(P) (psf)	(S) (psf)	(P) (psf)	(S) (psf)
ROOF ZONE						
1	26.9	-28.1	26.9	-28.1	26.9	-28.1
2	40.4	-42.7	26.9	-28.1	26.9	-28.1
3	40.4	-42.7	26.9	-28.1	26.9	-28.1

GROSS COMPONENTS AND CLADDING WIND LOADING TABLE NOTES:	
1. EDGE ZONE DISTANCES: a = 3'-0"	
2. PRESSURES SHOWN IN TABLES ARE APPLIED NORMAL TO THE SURFACE. POSITIVE AND MINUS SIGNS INDICATE PRESSURE ACTING TOWARD OR AWAY FROM A SURFACE, RESPECTIVELY.	
3. FOR EFFECTIVE WIND AREAS OTHER THAN SHOWN IN TABLE ABOVE, LINEAR INTERPOLATION IS ACCEPCTABLE. WIND PRESSURE VALUES SHOWN FOR EFFECTIVE WIND AREAS LESS THAN ACTUAL EFFECTIVE AREA ARE PERMITTED TO BE USED IN LIEU OF LINEAR INTERPOLATION.	
4. FOR ALLOWABLE STRESS DESIGN ("ASD"), MULTIPLY THE TABULATED PRESSURES BY "0.6" FACTOR. FOR STRENGTH DESIGN ("LRFD"), MULTIPLY THE TABULATED PRESSURES BY "1.0" FACTOR.	
5. THE WIND LOAD SHALL BE PERMITTED TO BE TAKEN AS 0.42 TIMES THE ULTIMATE WIND LOADS OR DIRECTLY CALCULATED USING THE ALLOWABLE 10-YEAR MEAN RETURN INTERVAL WIND SPEED FOR THE PURPOSE OF DETERMINING DEFLECTION/DRIFT LIMITS.	

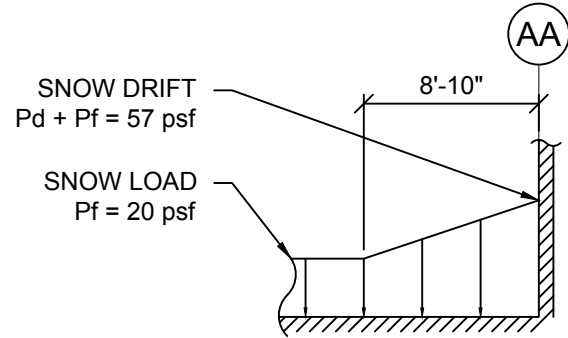


KEY PLAN
SCALE: 1/32"=1'-0"



ROOF PLAN

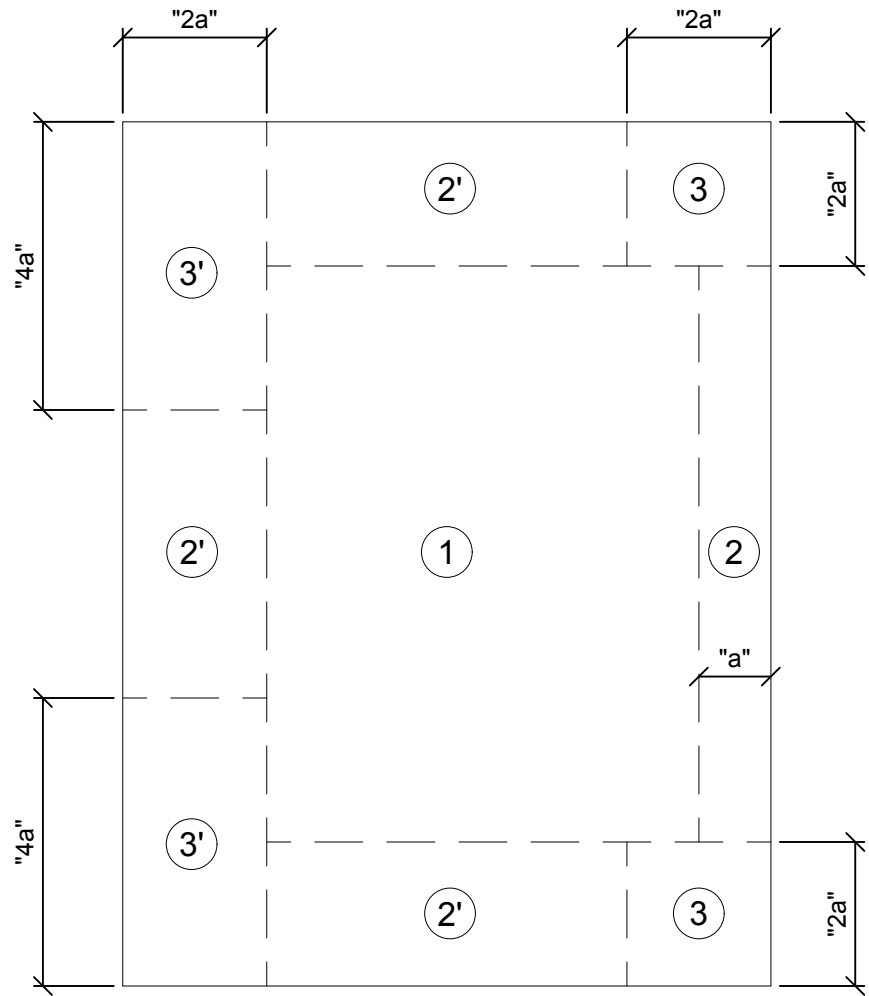
MONOSLOPE ROOFS WITH A SLOPE LESS THAN 3° (ASCE 7-16: FIGURE 30.3-2A)



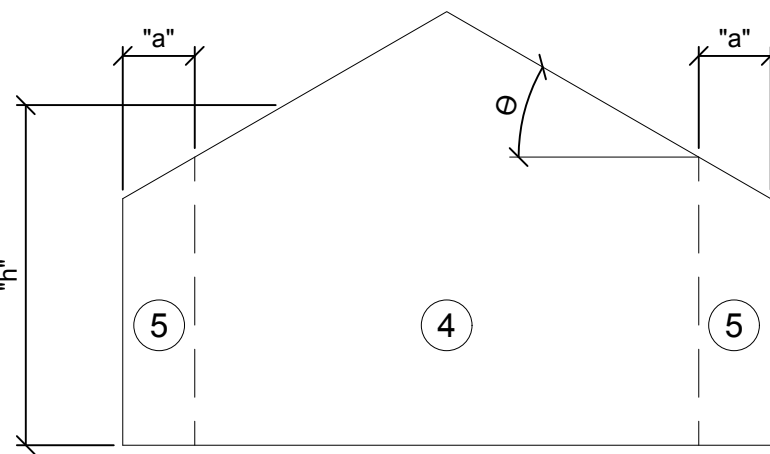
SNOW DRIFT @ COVERED PARKING AREA-OPS BUILDING TRANSITION

INDEX OF DRAWINGS - STRUCTURAL

SHEET	DRAWING TITLE
S001	DESIGN DATA
S002	NOTES
S003	SPECIAL INSPECTIONS NOTES & TABLES
S004	SPECIAL INSPECTIONS TABLES
S005	SPECIAL INSPECTIONS TABLES
S100	COVERED PARKING AREA FRAMING PLAN - OPS BUILDING
S101	FIRST & SECOND FLOOR FRAMING PLAN - OPS BUILDING
S300	SECTIONS
S301	SECTIONS
S500	DETAILS
S501	DETAILS
S502	DETAILS
S503	DETAILS



END WALL ELEVATION



SIDE WALL ELEVATION

TYPICAL WALLS H < 60FT (ASCE 7-16: FIGURE 30.4-1)

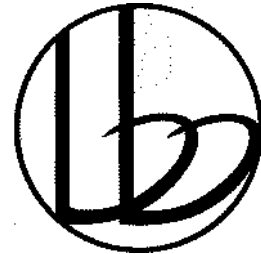
NOTE: REFER TO DRAWINGS FOR THE MEAN ROOF HEIGHT ("h") AND ROOF SLOPE ("θ").

"h": MEAN ROOF HEIGHT (ft.), EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR θ <= 10°.

"θ": ANGLE OF ROOF PLANE FROM HORIZONTAL, IN DEGREES.



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RENOVATION

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DAYTON, OHIO 45449



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A201284.6

DRAWN BY: FWB

STRUCTURAL
DESIGN DATA

S001

GENERAL NOTES:

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS AS WELL AS ADDITIONAL OWNER SPECIFIC SAFETY REQUIREMENTS. THE CONTRACTOR SHALL EXERCISE PRECAUTION ALWAYS FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL ALSO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK INCLUDING THE CURRENT EDITION OF THE OCCUPATIONAL SAFETY AND HEALTH ACT.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCES. DURING ERECTION OF THE STRUCTURE, THE CONTRACTOR SHALL DETERMINE MEANS AND METHODS OF TEMPORARY BRACING (INCLUDING, BUT NOT LIMITED TO TEMPORARY TIE-DOWNS, BRACING, OR GUYS) AS WELL AS THE ADEQUACY OF SHORT-TERM OR INCOMPLETE CONNECTIONS. ALL MISCELLANEOUS ERECTION MATERIAL SHALL BE REMOVED AFTER STABILITY OF THE STRUCTURE HAS BEEN VERIFIED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
- THE DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND MEANS NECESSARY TO PROTECT PERSONS AND STRUCTURES DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING, ETC. OBSERVATION VISITS BY THE ARCHITECT OR ENGINEER DOES NOT INCLUDE INSPECTION OF THOSE ITEMS.
- NO PIPES OR DUCTS SHALL BE PLACED IN STRUCTURAL MEMBERS UNLESS SPECIFICALLY DETAILED AND APPROVED BY THE ENGINEER.
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON THE STRUCTURAL FRAME. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOADS. PROVIDE SHORING AND BRACING WHERE DESIGN STRENGTH HAS NOT BEEN ATTAINED OR STRUCTURE IS NOT COMPLETE.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE TEMPORARY REMOVAL AND REINSTALLATION (INCLUDING NECESSARY MODIFICATIONS) OF EXISTING UTILITIES OR OTHER OBSTRUCTIONS AS REQUIRED FOR THE SUCCESSFUL COMPLETION OF WORK.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE REMOVAL OF CONSTRUCTION WASTE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
- DIMENSIONS PERTAINING TO EXISTING CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION, CONSTRUCTION, AND/OR ERECTION. DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE ENGINEERING DRAWINGS SHALL BE SUBMITTED IN WRITTEN FORM TO THE OWNER, OR THEIR APPOINTED REPRESENTATIVE, FOR REVIEW AND/OR APPROVAL.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE OWNER, OR APPOINTED REPRESENTATIVE, FOR APPROVAL PRIOR TO THE START OF SHOP WORK. DISCREPANCIES BETWEEN THE ENGINEERING AND SHOP DRAWINGS SHALL BE DOCUMENTED AND CLEARLY MARKED ON THE SHOP DRAWINGS SUBMITTAL.
- ALL OPENINGS IN WALLS, FLOORS, ROOFS, ETC. SHALL BE LOCATED AND SIZED AS PER MECHANICAL AND ARCHITECTURAL REQUIREMENTS, EVEN IF NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

CONCRETE NOTES:

- ALL CONCRETE WORK INCLUDING FORMING, REINFORCING, MIXING, PLACING, FINISHING, AND CURING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) MANUAL OF CONCRETE PRACTICE INCLUDING "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301, AND ALL STANDARDS REFERENCED THEREIN.
- ALL CONCRETE SHALL BE NORMAL (145 PCF) WEIGHT WITH AGGREGATES CONFORMING TO ASTM C33.
- CONCRETE SHALL DEVELOP THE FOLLOWING 28-DAY COMPRESSIVE STRENGTH (F'c):
FLOOR SLABS - 4,000 PSI (w/c < 0.50)
FOUNDATIONS - 4,000 PSI (w/c < 0.44)
- CONCRETE EXPOSED TO WEATHER, VEHICLES, AND/OR DEICING CHEMICALS SHALL BE AIR-ENTRAINED WITH 6% (+/-)1.5% ENTRAINED AIR BY VOLUME AT POINT OF DISCHARGE. DO NOT ALLOW AIR CONTENT OF TROWELED FINISH FLOORS TO EXCEED 3%.
- CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" (+/-) 1" (ASTM C-143) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY.
- NO WATER MAY BE ADDED TO THE CONCRETE MIX ON SITE UNLESS WATER IS WITHHELD AT THE BATCHING FACILITY. IF WATER IS WITHHELD AT THE BATCHING FACILITY IT SHOULD BE REFLECTED ON THE LOAD TICKET. THE TOTAL AMOUNT OF WATER IN THE MIX SHALL NOT EXCEED WHAT IS NOTED ON THE APPROVED MIX. THIS SHALL BE NOTED IN THE SPECIAL INSPECTOR'S RECORDS.
- REINFORCING STEEL SHALL BE DEFORMED AND CONFORM TO A615, A616, OR A617, GRADE 60, WITH A MINIMUM YIELD STRESS (Fy) OF 60,000 PSI.
- WELDED WIRE FABRIC (WWF) REINFORCING STEEL SHALL BE SMOOTH AND CONFORM TO A185, GRADE 65, WITH A MINIMUM YIELD STRESS (Fy) OF 65,000 PSI. THE MINIMUM LAP FOR SPLICES SHALL BE 9".
- CONCRETE COVER ON REINFORCING STEEL CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH SHALL BE 3", ALL OTHER COVER SHALL BE 1-1/2" U.N.O..
- CONCRETE FINISH:
INTERIOR FLOOR SLAB ON METAL DECK - HARD TROWELED FINISH (OR AS REQ'D FOR FLOOR FINISH)
- SUBMIT REINFORCEMENT SHOP DRAWINGS AND CONCRETE MIX DESIGN TO THE ENGINEER OF RECORD (E.O.R.) FOR REVIEW PRIOR TO PLACEMENT.
- GENERAL CONTRACTOR SHALL CHECK ENTIRE SET OF CONTRACT DOCUMENTS AND DRAWINGS (E.G. ARCHITECTURAL, M.E.P., F.P., ETC.) AND WITH OTHER CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK, AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR PROPER LOCATION BEFORE PLACING CONCRETE.
- SPACE CONTROL JOINTS TO FORM APPROXIMATE SQUARE SECTIONS W/AREAS NOT TO EXCEED 150 SQ. FEET. LOCATE JOINTS AT ISOLATION JOINTS, COLUMNS, CHANGES IN SLAB THICKNESS AND OTHER FEATURES PENETRATING OR INTERSECTING THE SLAB. SEE PLAN FOR LOCATIONS. PROVIDE CONTROL/CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. NO CONSTRUCTION, CONTROL, OR EXPANSION JOINTS SHALL BE INSTALLED IN THE COMPOSITE CONCRETE SLAB WITHOUT THE PRIOR WRITTEN APPROVAL OF THE E.O.R. OR UNLESS SPECIFICALLY INDICATED ON THE SLAB PLAN.
- ALL REINFORCING SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 315 AND ACI 315-R. THE REINFORCING STEEL CONTRACTOR SHALL FABRICATE ALL REINFORCEMENT AND FURNISH ALL ACCESSORIES, CHAIRS, SPACER BARS, AND SUPPORTS NECESSARY TO SECURE THE REINFORCEMENT (BARS & W.W.F.) IN THE POSITIONS SHOWN ON THE DRAWINGS
- COMPRESSION AND TENSION LAP SPLICES SHALL BE CLASS "B" AND SHALL BE 48 BAR DIAMETER MINIMUM U.N.O. LAP TOP BARS AT MID-SPAN AND LAP BOTTOM BARS AT SUPPORTS WHERE TWO LAYERS OF REINFORCEMENT IS PROVIDED U.N.O.
- WELDING OF REINFORCING BARS WILL ONLY BE ALLOWED WHEN SHOWN ON THE STRUCTURAL DRAWINGS.

CONCRETE NOTES (CONTINUED):

- CHLORIDE BASED ADMIXTURES ARE PROHIBITED IN ALL REINFORCED CONCRETE. OTHER ADMIXTURES SHALL CONFORM TO ASTM C494.
- MAXIMUM WATER TO CEMENT RATIO (W/C) SHALL BE 0.45. TOTAL AIR CONTENT SHALL NOT EXCEED 3% AND BE GREATER THAN 1% FOR INTERIOR SLABS.
- ELECTRICAL CONDUIT MUST BE PLACED ABOVE THE BOTTOM REINFORCEMENT AND BELOW THE TOP REINFORCEMENT. ELECTRICAL CONDUIT EMBEDDED IN SLABS SHALL NOT BE LARGER THAN 1/3 OF THE SLAB THICKNESS AND SHALL NOT BE PLACED CLOSER THAN THREE DIAMETERS OR 1 1/2", WHICHEVER IS LARGER.
- THE MINIMUM LAP FOR CONCRETE SLAB REINFORCING SPLICES (CLASS "B") SHALL BE THE FOLLOWING:
#3 - 1'-6"
#4 - 2'-0"
#5 - 2'-6"
- THE MINIMUM LEG OF STANDARD 90 DEGREE HOOKS FOR CONCRETE SLAB REINFORCING SHALL BE:
#3 - 6
#4 - 8
#5 - 10

FOUNDATION NOTES:

- FOUNDATIONS SHALL BEAR ON UNDISTURBED SOIL OR ENGINEERED FILL. FOUNDATION DESIGN BASED ON 1,500 PSF ALLOWABLE SOIL CAPACITY.
- HORIZONTAL REINFORCING IN FOOTINGS SHALL BE CONTINUOUS AT CORNERS AND INTERSECTIONS. CORNER BARS SHALL BE PROVIDED TO MATCH HORIZONTAL STEEL. REINFORCING STEEL SHALL BE LAPPED AS FOLLOWS WHERE SPLICES ARE REQUIRED:
BAR SIZE LAP DIMENSION
#4 2'-0"
#5 2'-6"
#6 3'-0"
- ANCHOR BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM F1554 GRADE 36. UNLESS OTHERWISE SPECIFIED, ANCHOR RODS ARE DESIGNED AND DETAILED AS "CAST-IN-PLACE" ANCHOR RODS WITH "SNUG TIGHT" CONNECTIONS.
- ALL FOUNDATIONS SHALL BE LEVEL, SQUARE, AND SMOOTH. ANCHOR RODS MUST BE ACCURATELY PLACED AS SHOW ON THE DRAWINGS OR STEEL WILL NOT FIT. THE BUILDER IS RESPONSIBLE FOR ACCURATE SETTING OF ANCHOR RODS PER AISC CODE OF STANDARD PRACTICE, SEC. 7.5.

MASONRY NOTES:

FIELD REPAIR

- REMOVE BRICK AS NEEDED. REUSE EXISTING BRICK IF POSSIBLE, OTHERWISE MATCH THE EXISTING BRICK COLOR.
- USE A MORTAR THAT IS COMPATIBLE WITH THE EXISTING MORTAR TYPE.

STRUCTURAL STEEL NOTES:

QUALITY ASSURANCE:

- REFER TO SPECIFICATIONS. EXCEPT AS OTHERWISE SPECIFIED, MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS WHICH SHALL FORM A PART OF THIS SECTION: "MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION ASD, AS ADOPTED BY AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 360-10. "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" BY AMERICAN INSTITUTE OF STEEL CONSTRUCTION "CODE OF STANDARD PRACTICE" FOR STEEL BUILDINGS AND BRIDGES, AS ADOPTED BY AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", APPROVED BY RESEARCH COUNCIL ON STRUCTURAL JOINTS "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" BY RESEARCH COUNCIL ON STRUCTURAL CONTRACTION.
- PERSONNEL EMPLOYED AS WELDERS SHALL BE QUALIFIED TO PERFORM THE TYPE OF WORK REQUIRED HEREIN BY TESTS AS PRESCRIBED IN "STRUCTURAL WELDING CODE - STEEL" OF THE AMERICAN WELDING SOCIETY (AWS).
- PROMPTLY UPON RECEIPT OF ORDER AND PRIOR TO FABRICATING ANY MATERIAL, FURNISH COMPLETE SHOP DETAIL DRAWINGS AND SETTING DIAGRAMS FOR REVIEW. SHOP DRAWINGS SHALL BE CHECKED BY FABRICATOR AND BEAR CHECKER'S INITIALS BEFORE SUBMITTING.
- OWNER REPRESENTATIVE'S REVIEW SHALL BE FOR GENERAL CHARACTER OF CONSTRUCTION, AND SHALL NOT BE HELD TO INCLUDE RESPONSIBILITY FOR CORRECTNESS OF DIMENSIONS OR FITTING OF MEMBERS. SUCH RESPONSIBILITY SHALL BE BORNE BY THE CONTRACTOR.
- ALL WEATHER EXPOSED STRUCTURAL STEEL SHAPES, GRATINGS, AND FASTENERS SHALL BE HOT-DIPPED GALVANIZED. HOT-DIPPED GALVANIZED FASTENERS TO MEET ASTM A325 STANDARDS.
- ALL INTERIOR STRUCTURAL STEEL MEMBERS SHALL HAVE ONE COAT OF STANDARD SHOP PRIMER.

MATERIALS:

- ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO REQUIREMENTS OF STANDARD SPECIFICATION FOR STRUCTURAL STEEL, ASTM A992, GRADE 50.
- COLD-FORMED STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500, GRADE B, Fy = 46 KSI.
- TYPE 1 HIGH TENSILE BOLTS SHALL HAVE HEAVY HEX HEAD, INCLUDE HEAVY SEMI-FINISHED HEX NUT AND ONE HARDENED WASHER, SUCH SHALL CONFORM TO ASTM A325N AND A490 HIGH STRENGTH CARBON STEEL BOLTS. WASHERS SHALL BE FLAT, ROUND TYPE, WITH CLIPPED AND/OR BEVELED TYPE SHALL BE PROVIDED WHERE REQUIRED. "PRE-TENSION" ALL A325 BOLTS AT CONNECTIONS WHERE THE BOLTS ARE SUBJECT TO TENSILE LOADING AND PRYING ACTION, INCLUDING, BUT NOT LIMITED TO: BEAM TO COLUMN MOMENT CONNECTIONS, BEAM TO BEAM MOMENT SPLICED, BRACING CONNECTIONS, AND HANGER CONNECTIONS.

FABRICATION:

- WORKMANSHIP MUST BE FIRST CLASS IN ALL RESPECTS, AND MEMBERS NOT PRESENTING A FINISHED AND WORKMANLIKE APPEARANCE WILL BE REJECTED. FINISHED MEMBERS SHALL BE FREE FROM TWISTS, BENDS, OR OPEN JOINTS UNLESS SO DEFINED.

STRUCTURAL STEEL NOTES (CONT.):

QUALITY ASSURANCE (CONT.):

WELDING:

- BOTH SHOP AND FIELD WELDING SHALL BE DONE BY MANUAL SHIELDED ARC OR SUBMERGED ARC METHOD IN CONFORMANCE WITH AWS D1.1/D1.1M 2015 STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION. BY THE AMERICAN WELDING SOCIETY.
- WELDING ELECTRODES FOR MANUAL SHIELDED METAL-ARC WELDING SHALL CONFORM TO AWS A5.1 OF SPECIFICATIONS FOR "MILD STEEL COVERED ARC-WELDING ELECTRODES". BARE ELECTRODES AND GRANULAR FUSIBLE FLUX USED IN SUBMERGED ARC WELDING SHALL PRODUCE WELD METAL HAVING TENSILE PROPERTIES CONFORMING TO AWS A5.17 "SPECIFICATION FOR CARBON STEEL ELECTRODES AND FLUXES FOR SUBMERGED ARC WELDING.

ERECTION:

- CONTRACTOR SHALL BE RESPONSIBLE FOR ERRORS OF FABRICATION AND FOR PROPER FIT OF STRUCTURAL MEMBERS.
- FIELD CONNECTIONS, UNLESS OTHERWISE NOTED, SHALL BE BEARING TYPE MADE WITH ASTM A325N, 3/4-INCH DIAMETER HIGH STRENGTH BOLTS, OR BY WELDING, ACCORDING TO APPROVED SHOP DRAWINGS AND/OR AS SHOWN ON STRUCTURAL AND ARCHITECTURAL DETAILS. BOLTS SHALL BE TIGHTENED BY "TURN OF NUT" METHOD, HIGH STRENGTH BOLTED JOINTS SHALL MEET REQUIREMENTS OF "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AS PUBLISHED IN THE FOURTEENTH EDITION OF AISC MANUAL OF STEEL CONSTRUCTION.
- STEEL WORK SHALL BE PLUMB, TRUE, AND IN PROPER ALIGNMENT AT COMPLETION OF ERECTION.
- SHOP DRAWINGS OF ALL STRUCTURAL STEEL MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. SHOP AND ERECTION DRAWINGS MUST SHOW ALL SHOP AND FIELD WELDS.
- THE STRUCTURAL STEEL CONTRACTOR SHALL VERIFY THE FOUNDATION CONSTRUCTION FOR ANCHOR ROD LOCATION, ELEVATION OF TOP OF CONCRETE, AND/OR LEVELING PLATES AND BEARING PLATES, ALIGNMENT, ETC. PRIOR TO START OF ERECTION.

UNIT MASONRY NOTES:

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530, "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES", AND ACI 530.1, "SPECIFICATION FOR MASONRY STRUCTURES", AND COMMENTARIES, LATEST EDITIONS.
- MATERIAL PROPERTIES:
 - PROVIDE UNIT MASONRY THAT DEVELOPS THE MINIMUM NET-AREA COMPRESSIVE STRENGTHS OF THE MASONRY ASSEMBLIES (F'm) AT 28 DAYS AS FOLLOWS:
 - CONCRETE UNIT MASONRY F'm = 3,000 psi
 - UNIT MASONRY MATERIALS AND REINFORCING SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING ASTM SPECIFICATIONS:
 - CONCRETE MASONRY UNITS (SOLID AND HOLLOW) SHALL BE NORMAL WEIGHT UNITS, TYPE 1, GRADE N AND CONFORM TO ASTM C90 WITH A MINIMUM NET AREA UNIT COMPRESSION STRENGTH OF 1,900 psi.
 - PORTLAND CEMENT-LIME MORTAR MIX SHALL CONFORM TO ASTM C270, TYPE "S", WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,800 psi AT 28 DAYS.
 - REINFORCED MASONRY WALL GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH OF 3,000 psi AT 28 DAYS.
 - STEEL REINFORCING BARS SHALL CONFORM TO ASTM A615 (GRADE 60) WITH A MINIMUM TENSILE STRENGTH (Fy) = 60,000 psi.
 - HORIZONTAL JOINT REINFORCING SHALL CONFORM TO ASTM A651 AND BE #9 GAGE (W1.7) CONTINUOUS SIDE WIRES WITH #9 GAGE (W1.7) CROSS TIES AND HOT-DIPPED GALVANIZED.
- GENERAL MASONRY NOTES:
 - HOLLOW UNITS THAT ARE TO HAVE A GROUTED CORE SHALL HAVE THE SURROUNDING WEBS FULLY MORTARED TO CONFINE THE GROUT TO THE INTENDED CORE.
 - CLEAN-OUT OPENINGS ARE NOT REQUIRED WHEN WALLS ARE ERECTED AND THE CORES GROUTED AT NO MORE THAN FOUR (4) FOOT LIFTS. WALLS CARRIED UP HIGHER THAN FOUR (4) FOOT LIFTS SHALL HAVE A CLEAN-OUT AT THE BASE OF THE CORES TO BE FILLED WITH GROUT.
 - MASONRY WALLS SHALL HAVE TWO (2) COURSES X 24" MINIMUM FILLED WITH GROUT DIRECTLY BELOW ALL STEEL BEAM/OPEN WEB STEEL JOIST BEARING LOCATIONS, U.N.O.
 - SUPPLY VERTICAL STEEL REINFORCING BARS IN 4'-0" + 48 BAR DIAMETER LAP LENGTHS FOR LOW-LIFT GROUTING METHOD, U.N.O.
 - PLACEMENT OF ALL MASONRY AT WALL RETURNS, CORNERS AND INTERSECTIONS SHALL BE INTEGRAL AND TOOTHED TOGETHER AT EVERY OTHER COURSE PER ACI 530.1 REQUIREMENTS. PROVIDE PROPERLY LAPPED CORNER BARS AT ALL BOND BEAMS AND HORIZONTAL JOINTS AS REQ'D.
 - MASONRY WALLS SHALL BE ADEQUATELY BRACED/SHORED DURING ERECTION TO SAFELY WITHSTAND ALL ERECTION LOADS, INCLUDING LATERAL LOADS (I.E.: WIND AND SEISMIC) PER GOVERNING BUILDING CODE. ALL BRACING/SHORING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT LATERAL SUPPORTS (I.E., FLOOR SLABS, ROOFS, ETC.) ARE FULLY INSTALLED AND HAVE ACHIEVED THEIR FULL DESIGN CAPACITIES.

STEEL FLOOR DECK:

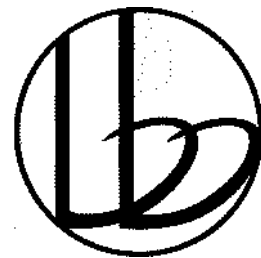
- THE DESIGN, FABRICATION AND ERECTION OF STEEL FLOOR DECK SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT SDI "SPECIFICATIONS AND COMMENTARIES FOR STEEL FLOOR DECK" AND "DIAPHRAGM DESIGN MANUAL", WITH THE FOLLOWING SUPPLEMENTAL REQUIREMENTS:
- THE STEEL FLOOR SLAB AND DECK FUNCTIONS AS A STRUCTURAL ELEMENT IN RESISTING LOADS AND PROVIDES OVERALL STABILITY FOR THE BUILDING. THEREFORE, CONSTRUCTION BRACING SHALL NOT BE REMOVED UNTIL ALL STEEL DECK IS COMPLETELY FASTENED IN PLACE AND SLAB IS POURED AND SET FOR A MINIMUM OF (7) DAYS.
- FLOOR DECK SHALL BE A MINIMUM 50 KSI YIELD STRENGTH AND CONFORM TO ASTM A 653 GRADE 50, Fy = 50 KSI, OR EQUIVALENT.
- THE COMPOSITE DECK SHALL BE BUTT LAPPED. THE MINIMUM DECK END BEARING OVER SUPPORT SHALL BE 2" AND THE MINIMUM DECK INTERIOR BEARING OVER A SUPPORT SHALL BE 4".
- WELDING SHALL CONFORM TO THE CURRENT AWS "SPECIFICATIONS FOR WELDED SHEET STEEL". WELDING ELECTRODES SHALL BE E6022. (HOBART #1139, 5/32" DIAMETER, OR APPROVED EQUALLY). PROVIDE 18 GAGE WELDING WASHER WITH 3/8" DIAMETER HOLE FOR DECK GAGES LESS THAN 22 GAGE.
- THE DECK SHALL BE FASTENED TO ALL SUPPORTS AND AT ALL SIDELAPS AS INDICATED PER THE DETAILS.
- FLOOR DECK SHALL BE GALVANIZED ASTM-A653 G-60 OR EQUIVALENT.
- THE PLACEMENT AND MOVEMENT OF ALL CONSTRUCTION MATERIAL (DECKING, REINFORCEMENT, ETC.) ON TOP OF THE BARE FLOOR DECK SHALL BE PROVIDED AND PERFORMED IN A MANNER SO AS NOT TO EXCEED THE FLOOR DECK CONSTRUCTION UNIFORM LIVE LOAD OF 20PSF, OR A CONCENTRATED LOAD OF 150 LBS (PER ONE SQUARE FOOT AREA), NOR CAUSE LOCAL DAMAGE TO THE DECK, SUCH AS CRIPPLING OR CRUSHING OF THE DECK FLUTE(S) OR DAMAGE TO THE CONNECTIONS OF THE SUPPORTS OR SIDELAPS.

LIGHT GAGE METAL FRAMING NOTES:

- SPECIFICATIONS AND STANDARDS:
 - ALL STRUCTURAL PROPERTIES OF LIGHT GAGE METAL FRAMING SHALL BE COMPUTED IN ACCORDANCE WITH AISI S308.1 "DESIGN SPECIFICATION FOR DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" AND SHALL BE PUBLISHED IN THE MANUFACTURERS CATALOG.
 - WELDING SHALL BE PERFORMED ONLY BY QUALIFIED OPERATORS USING PROPER EQUIPMENT FOR THE PARTICULAR TYPE OF WORK REQUIRED.
 - AWS D1.3 SPECIFICATION FOR WELDING SHEET STEEL IN STRUCTURES.
 - MAXIMUM ALLOWABLE DEFLECTION, NORMAL TO PLANE OF WALL, SHALL BE L/360.
 - PROVIDE SHOP DRAWINGS TO THE ENGINEER OF RECORD FOR REVIEW. THE SHOP DRAWINGS FOR COLD-FORMED METAL FRAMING INDICATED TO COMPLY W/DESIGN LOADS SHALL INCLUDE STRUCTURAL ANALYSIS AND DESIGN DATA SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
- MATERIALS:
 - STRUCTURAL FRAMING MEMBERS 16 GAGE (54 MIL) AND HEAVIER: GALVANIZED, ASTM A653, GRADE D, Fy = 50,000 PSI.
 - STRUCTURAL FRAMING MEMBERS 18 GAGE (43 MIL) AND LIGHTER: GALVANIZED, ASTM A653, GRADE A, Fy = 33,000 PSI.
 - ALL FRAMING MEMBERS TO BE "C" SHAPED WITH A MINIMUM FLANGE WIDTH OF 1-5/8" UNLESS OTHERWISE NOTED. ALL "U" SHAPED TRACK SHALL HAVE A MIN. FLANGE WIDTH OF 1-1/4" UNO.
 - ALL TRACK AND BRIDGING MATERIALS, Fy = 33,000 PSI MIN.
 - ALL FRAMING MEMBERS SHALL BE GALVANIZED, G90 OR EQUIVALENT.
 - WELDING ELECTRODES: AWS A5.1, A5.5 OR A5.18 SERIES E60.
- CONNECTIONS:
 - CUT ALL FRAMING COMPONENTS TO FIT SQUARELY AGAINST ABUTTING MEMBERS AND HOLD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
 - ALL PANELS SHALL BE SQUARE AND BRACED AGAINST RACKING.
 - WIRE TYING OF STRUCTURAL FRAMING COMPONENTS IS NOT PERMITTED.
 - LIGHT GAGE METAL FRAMING CONNECTIONS TO BE FASTENED TOGETHER WITH A MINIMUM OF 2 #10 SCREWS OR AS SHOWN ON THE PLANS.
- ERECTION:
 - ATTACH TRACK SECURELY TO THE FLOOR AND OVERHEAD STRUCTURE.
 - SEAT STUDS SQUARELY TO THE FLOOR AND OVERHEAD TRACK AND ATTACH SECURELY.
 - SPLICES IN STRUCTURAL FRAMING MEMBERS ARE NOT PERMITTED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
 - DO NOT ALLOW AXIAL LOADS TO STUDS UNTIL ALL BRIDGING, CONNECTIONS, AND ATTACHMENT OF COLLATERAL MATERIALS ARE COMPLETE.
 - ATTACH U-BAR CHANNEL BRIDGING TO BOTH FLANGES OF WALL STUDS TO PREVENT STUD ROTATION. BRIDGING ROWS SHALL BE SPACED AT 4'-0" C/C OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - PROVISIONS SHALL BE MADE FOR STRUCTURE VERTICAL MOVEMENT AT PARTITIONS AND CURTAIN WALL IN FILL AND WHERE INDICATED USING VERTICAL SLIDE TRACK AND VERTICAL SLIDE CLIPS. PROVIDE U-BAR CHANNEL BRIDGING IN BOTH FLANGES OF WALL STUDS WITHIN 12" OF THE SLIDE TRACK LOCATIONS.
 - DO NOT BRIDGE BUILDING EXPANSION JOINTS OR CONTROL JOINTS W/ FRAMING. INDEPENDENTLY FRAME BOTH SIDES OF JOINTS.
 - INSTALL STEEL SHEET DIAGONAL STRAP BRACING TO BOTH SIDES OF STUD FLANGES AND TERMINATE AT GUSSET. FASTEN TO GUSSET PLATE AND TO MULTIPLE END STUDS AND TRACK. ANCHOR END STUDS TO STRUCTURE AS REQUIRED.



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WESTERN REGIONAL WATER RECLAMATION FACILITY
OPERATIONS AND MAINTENANCE BUILDINGS
RENOVATION

4111 HYDRAULIC RD
DAYTON, OHIO 45449



BID / PERMIT
7/10/2026

A201284.6

DRAWN BY: FWB

STRUCTURAL NOTES

S002

SPECIAL INSPECTION AND TESTING NOTES (OBC 2024):

THIS PROJECT REQUIRES SPECIAL INSPECTION AND TESTING IN ACCORDANCE WITH CHAPTER 17 OF THE OHIO BUILDING CODE, 2024 EDITION. THESE NOTES AND THE STATEMENT OF SPECIAL INSPECTIONS PREPARED FOR THE PROJECT OWNER ARE INTENDED TO INFORM THE CONTRACTOR OF THE QUALITY ASSURANCE PROGRAM AND THE EXTENT OF THE CONTRACTOR'S RESPONSIBILITIES.

GENERAL NOTES:

- THE SPECIAL INSPECTION AND TESTING PROGRAM IS A QUALITY ASSURANCE PROGRAM INTENDED TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY TO COMPLY WITH THE OFFICIAL CONTRACT DOCUMENTS. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR ANY DEVIATIONS FROM THE OFFICIAL CONTRACT DRAWINGS. THE SPECIAL INSPECTOR DOES NOT REPLACE THE DUTIES OF THE BUILDING OFFICIAL NOR THE QUALITY CONTROL RESPONSIBILITIES AND PERSONNEL OF THE CONTRACTOR. JOB SITE SAFETY AND MEANS AND METHODS OF CONSTRUCTION ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
- THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN THE IBC SECTION 110 AND SPECIFIC STRUCTURAL OBSERVATION AS MAY BE REQUIRED BY THE CODE.
- THOUGH NOT REQUIRED BY CODE, SPECIAL INSPECTORS AND/OR INSPECTION AGENCIES CAN DOCUMENT ACCEPTANCE OF THEIR RESPONSIBILITIES AND SCOPE OF WORK FOR A PROJECT BY SIGNING AN AGREEMENT THAT INCLUDES A DETAILED SCHEDULE OF SERVICES, COMMONLY KNOWN AS THE SPECIAL INSPECTION AND TESTING AGREEMENT AND THE SPECIAL INSPECTION AND TESTING SCHEDULE. THIS DOCUMENT MAY REFERENCE THIS SHEET AS THE "STATEMENT OF SPECIAL INSPECTIONS," (SSI).
- THE STRUCTURAL DESIGN METHODS AND/OR ASSUMPTIONS UTILIZED ARE BASED UPON THE SPECIAL INSPECTIONS REQUIRED WITHIN THE CONTRACT DOCUMENTS.

OWNER RESPONSIBILITIES AND DUTIES:

- THE PROJECT OWNER, THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE, OR AN AGENT OF THE OWNER IS RESPONSIBLE FOR ENGAGING AND FUNDING SPECIAL INSPECTION SERVICES.

CONTRACTOR RESPONSIBILITIES AND DUTIES:

- THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND PROVIDING ADEQUATE NOTICE TO THE SPECIAL INSPECTORS FOR ALL INSPECTIONS. THE CONTRACTOR SHALL REQUEST SPECIAL INSTRUCTION OF THE REQUIRED ITEMS PRIOR TO THOSE ITEMS BECOMING INACCESSIBLE AND UNOBSERVABLE DUE TO PROGRESSION OF WORK.
- THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO THE APPROVED CONTRACT DOCUMENTS. THESE DOCUMENTS INCLUDE SEALED DRAWINGS AND SPECIFICATIONS, ADDENDA, CHANGE ORDERS, APPROVED SHOP DRAWINGS, ISSUED SKETCHES AND REVISION DRAWINGS, AND ALL DIRECTIVES ISSUED BY THE ARCHITECT/ENGINEER. THIS CURRENT SET OF DOCUMENTS SHALL BE AVAILABLE AT THE JOB SITE.
- THE CONTRACTOR IS TO CORRECT DISCREPANCIES AND DEVIATIONS AS DETERMINED BY SPECIAL INSPECTOR. ALL DISCREPANCIES AND DEVIATIONS OBSERVED SHALL BE RE-INSPECTED UNTIL THE SPECIAL INSPECTOR DEEMS CONSTRUCTION TO BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR IS TO RETAIN SPECIAL INSPECTION RECORDS COMPLETED BY THE SPECIAL INSPECTORS AT THE JOB SITE.

SPECIAL INSPECTOR QUALIFICATIONS AND RESPONSIBILITIES:

- THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
- SPECIAL INSPECTORS SHALL NOTIFY CONTRACTOR PERSONNEL OF THEIR PRESENCE AND RESPONSIBILITIES AT THE JOB SITE.
- THE SPECIAL INSPECTOR/AGENCY SHALL NOT BE IN THE EMPLOY OF THE CONTRACTOR, SUBCONTRACTOR, OR MATERIAL SUPPLIER. IN THE CASE OF AN OWNER/CONTRACTOR, THE SPECIAL INSPECTOR/AGENCY SHALL BE EMPLOYED AS SPECIFIED BY THE BUILDING OFFICIAL.
- THE SPECIAL INSPECTOR IS OBLIGATED TO BOTH THE OWNER AND THE BUILDING OFFICIAL FOR OBSERVING THAT THE WORK IS EXECUTED IN ACCORDANCE WITH THE OFFICIAL CONTRACT DOCUMENTS. THESE DOCUMENTS INCLUDE SEALED DRAWINGS AND SPECIFICATIONS, ADDENDA, CHANGE ORDERS, APPROVED SHOP DRAWINGS, ISSUED SKETCHES AND REVISION DRAWINGS, AND ALL DIRECTIVES ISSUED BY THE ARCHITECT/ENGINEER.
- SPECIAL INSPECTORS SHALL KEEP ORGANIZED RECORDS OF INSPECTIONS AND SUBMIT INSPECTION REPORTS WITH A MINIMUM WEEKLY FREQUENCY TO THE CONTRACTOR, BUILDING OFFICIAL, ENGINEERS, AND ARCHITECTS INDIVIDUALLY. REPORTS SHOULD INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION TO THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THEY SHOULD BE REPORTED TO THE BUILDING OFFICIAL AND TO THE ENGINEER OF RECORD.
- A FINAL SIGNED REPORT IS TO BE SUBMITTED AT THE END OF THE PROJECT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES. THIS REPORT SHOULD STATE THAT ALL ITEMS REQUIRING SPECIAL INSPECTION AND TESTING WERE FULFILLED AND REPORTED TO THE BEST OF THEIR KNOWLEDGE IN CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS, AND THE APPLICABLE PROVISIONS OF THE IBC. ITEMS NOT IN CONFORMANCE, UNRESOLVED ITEMS, OR ANY DISCREPANCIES IN INSPECTION COVERAGE SHOULD BE SPECIFICALLY ITEMIZED.
- THE FOLLOWING ARE THE QUALIFICATIONS FOR INDIVIDUALS PERFORMING SPECIFIC INSPECTIONS OR TESTS INCLUDING IN THIS PROJECT'S SSI:
 - AMERICAN CONCRETE INSTITUTE (ACI):
 - CONCRETE FIELD TESTING TECHNICIAN - GRADE 1 (ACI-CFTT)
 - CONCRETE CONSTRUCTION INSPECTOR (ACI-CCI)
 - LABORATORY TESTING TECHNICIAN - GRADE 1 OR 2 (ACI-LTT)
 - STRENGTH TESTING TECHNICIAN (ACI-STT)
 - AMERICAN WELDING SOCIETY (AWS):
 - CERTIFIED WELDING INSPECTOR (AWS-CWI)
 - CERTIFIED STRUCTURAL STEEL INSPECTION (AWS/AISC-SSI)
 - AMERICAN SOCIETY OF NON-DESTRUCTIVE TESTING (ASNT)
 - NON-DESTRUCTIVE TESTING TECHNICIAN - LEVEL II OR III (ANST)
 - INTERNATIONAL CODE COUNCIL (ICC):
 - STRUCTURAL STEEL AND BOLTING SPECIAL INSPECTOR (ICC-SSSI)
 - STRUCTURAL WELDING SPECIAL INSPECTOR (ICC-SWI)
 - REINFORCED CONCRETE SPECIAL INSPECTOR (ICC-RCSI)
 - SOILS SPECIAL INSPECTOR (ICC-SSI)
 - PROFESSIONAL STATE LICENSING:
 - PROFESSIONAL ENGINEER (PE)

SPECIAL INSPECTION AND TESTING NOTES (OBC 2024) (CONT.):

STATEMENT OF SPECIAL INSPECTIONS (SSI):

THE FOLLOWING TABLES INDICATE THE MINIMUM SPECIFIC SPECIAL INSPECTION AND TESTING TO BE PERFORMED ON THIS PROJECT AND THE QUALIFICATIONS OF THE INDIVIDUAL INSPECTORS AND TESTING TECHNICIANS.

DEFINITIONS:

CONTINUOUS SPECIAL INSPECTION:

THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. 100% OF THE WORK MUST BE INSPECTED AND IT MUST BE INSPECTED AS THE WORK IS BEING PERFORMED.

PERIODIC SPECIAL INSPECTION:

THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN, OR IS BEING, PERFORMED AND AT THE COMPLETION OF WORK.

YES: THE INSPECTION AND/OR TESTING IS REQUIRED BY THE BUILDING CODE AND MUST BE PERFORMED.

NO: THIS INSPECTION AND/OR TESTING IS NOT APPLICABLE TO THE PROJECT, AND NEED NOT BE PERFORMED.

SUGGESTED:

THIS INSPECTION AND/OR TESTING IS NOT REQUIRED BY THE BUILDING CODE. HOWEVER, THE ENGINEER OF RECORD RECOMMENDS IMPLEMENTING THEM FOR QUALITY ASSURANCE. A POTENTIAL EXISTS FOR THESE MEASURES TO BE A VALUE ADDED SERVICE FOR THE OWNER TO ENSURE PROPER PROJECT COMPLETION.

Special Inspections			
Structural Steel Inspection Tasks Prior to Welding (AISC 360-16 - TABLE N5.4-1)			
Inspection Tasks Prior to Welding	QC	QA	Required on Project
Welder qualification records and continuity records	P	O	YES
WPS available	P	P	YES
Manufacturer certification for welding consumables available	P	P	YES
Material identification (type/grade)	O	O	YES
Welder identification system*	O	O	YES
Fit-up of groove welds (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	O	O	YES
Fit-up of CJP groove welds of HSS T-, Y- and K-joints without backing (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	P	O	NO
Configuration and finish of access holes	O	O	NO
Fit-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	O	O	YES
Check welding equipment	O	-	YES
* The fabricator or erector, as applicable, shall maintain a system by which a welder who has welded a joint or member can be identified. Stamps, if used, shall be the low-stress type. Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			O -

Structural Steel Inspection Tasks During Welding (AISC 360-16 - TABLE N5.4-2)			
Inspection Tasks During Welding	QC	QA	Required on Project
Use of qualified welders	O	O	YES
Control and handling of welding consumables • Packaging • Exposure control	O	O	YES
No welding over cracked tack welds	O	O	YES
Environmental conditions • Wind speed within limits • Precipitation and temperature	O	O	YES
WPS followed • Setting on welding equipment • Travel Speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min./max.) • Proper position (F, V, H, OH)	O	O	YES
Welding Techniques • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements	O	O	YES
Placement and installation of steel headed stud anchors	P	P	NO
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

Structural Steel Inspection Tasks After Welding (AISC 360-16 TABLE - N5.4-3)			
Inspection Tasks After Welding	QC	QA	Required on Project
Welds cleaned	O	O	YES
Size, length and location of welds	P	P	YES
Welds meet visual acceptance criteria • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	P	P	YES
Arc strikes	P	P	YES
k-area *	P	P	YES
Weld access holes in rolled heavy shapes and built-up heavy shapes **	P	P	NO
Backing removed and weld tabs removed (if required)	P	P	YES
Repair activities	P	P	YES
Document acceptance or rejection of welded joint or member	P	P	YES
No prohibited welds have been added without the approval of the EOR	O	O	YES
* When welding of doubler plates, continuity planes or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld. ** After rolled heavy shapes (see AISC Section A3.1c) and built-up heavy shapes (see AISC Section A3.1d) are welded, visually inspect the weld access hole for cracks.			
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

Structural Steel Inspection Tasks Prior to Bolting (AISC 360-16 - TABLE N5.6-1)			
Inspection Tasks Prior to Welding	QC	QA	Required on Project
Manufacturer's certification available for fastener materials	O	P	YES
Fasteners marked in accordance with ASTM requirements	O	O	YES
Correct fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O	YES
Correct bolting procedure selected for joint detail	O	O	YES
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O	YES
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O	YES
Protected storage provided for bolts, nuts, washers, and other fastener components	O	O	YES
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

Structural Steel Inspection Tasks During Bolting (AISC 360-16 - TABLE N5.6-2)			
Inspection Tasks During Welding	QC	QA	Required on Project
Fastener assemblies placed in all holes and washers and nuts are positioned as required	O	O	YES
Joint brought to the snug-tight condition prior to the pretensioning operation	O	O	YES
Fastener component not turned by the wrench prevented from rotating	O	O	YES
Fasteners are pretensioned in accordance with the RCSC <i>Specification</i> , progressing systematically from the most rigid point towards the free edges	O	O	YES
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

Structural Steel Inspection Tasks After Bolting (AISC 360-16 - TABLE N5.6-3)			
Inspection Tasks After Welding	QC	QA	Required on Project
Document acceptance or rejection of bolted connections	P	P	YES
O - Observe these items on a random basis. Operations need not be delayed pending these inspections. P - Perform these tasks for each welded joint or member.			

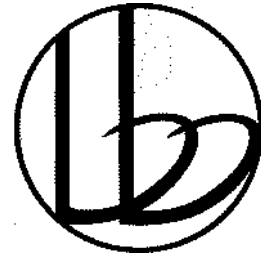


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STRUCTURAL
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NOTES & TABLES

S003

Steel Deck Inspection or Execution Tasks Prior to Placement (ANSI/SDI -2022 Table 1.1)				
	Task	QC	QA	Required on Project
A	Verify compliance of materials (deck and all deck accessories)with construction documents, including profiles, material properties and base metal thickness	Perform	Perform	YES
B	Document acceptance or rejection of deck and deck accessories	Perform	Perform	YES

Steel Deck Inspection or Execution Tasks After Placement (ANSI/SDI -2022 Table 1.2)				
	Task	QC	QA	Required on Project
A	Verify compliance of deck and all deck accessories' installation with construction documents	Perform	Perform	YES
B	Verify deck materials are represented by mill certifications that comply with the construction documents	N/A	Perform	YES
C	Document acceptance or rejection of installation of deck and deck accessories	Perform	Perform	YES

Steel Deck Inspection or Execution Tasks Prior to Welding (ANSI/SDI -2022 Table 1.3)				
	Task	QC	QA	Required on Project
A	Welding procedure specifications (WPS) available	Observe	Observe	YES
B	Manufacturer certifications for welding consumables available	Observe	Observe	YES
C	Material identification (type/grade)	Observe	Observe	YES
D	Check welding equipment	Observe	Observe	YES

Steel Deck Inspection or Execution Tasks During Welding (ANSI/SDI -2022 Table 1.4)				
	Task	QC	QA	Required on Project
A	Use of qualified welders	Observe	Observe	YES
B	Control and handling of welding consumables	Observe	Observe	YES
C	Environmental conditions (wind speed, moisture, temperature)	Observe	Observe	YES
D	WPS followed	Observe	Observe	YES

Steel Deck Inspection or Execution Tasks After Welding (ANSI/SDI -2022 Table 1.5)				
	Task	QC	QA	Required on Project
A	Verify size and location of welds, including support, side-lap and perimeter welds	Perform	Perform	YES
B	Welds meet visual acceptance criteria	Perform	Perform	YES
C	Verify repair activities	Perform	Perform	YES
D	Document acceptance or rejection of welds	Perform	Perform	YES

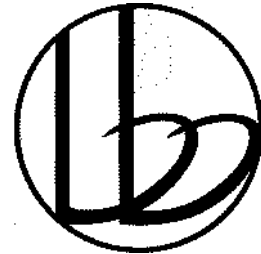
Steel Deck Inspection or Execution Tasks Prior to Mechanical Fastening (ANSI/SDI -2022 Table 1.6)				
	Task	QC	QA	Required on Project
A	Manufacturer installation instructions available for mechanical fasteners	Observe	Observe	YES
B	Proper tools available for fastener installation	Observe	Observe	YES
C	Proper storage for mechanical fasteners	Observe	Observe	YES

Steel Deck Inspection or Execution Tasks During Mechanical Fastening (ANSI/SDI -2022 Table 1.7)				
	Task	QC	QA	Required on Project
A	Fasteners are positioned as required	Observe	Observe	YES
B	Fasteners are installed in accordance with manufacturer's instructions	Observe	Observe	YES

Steel Deck Inspection or Execution Tasks After Mechanical Fastening (ANSI/SDI -2022 Table 1.8)				
	Task	QC	QA	Required on Project
A	Check spacing, type and installation of support fasteners	Perform	Perform	YES
B	Check spacing, type and installation of side-lap fasteners	Perform	Perform	YES
C	Check spacing, type and installation of perimeter fasteners	Perform	Perform	YES
D	Verify repair activities	Perform	Perform	YES
E	Document acceptance or rejection of mechanical fasteners	Perform	Perform	YES

Inspections of Cold-Formed Steel Framing Construction (2021 IBC Section 1705.2.4, 1705.12.2, 1705.13.3)					
Type	Scope	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard*	Required on Project
1. Member Sizes, Thickness, & Properties	Verify member sizes, thickness, and properties match approved drawings.	—	X	AISI	YES
2. Connections	Inspect connection of framing members. Including screws and bolts for size and spacing. Verify metal hardware connectors for type and proper installation.	—	X	AISI & Supplier's Specs	YES
3. Welding	Inspect welding for proper fillet length and size.	—	X	AISI and AWS	NO
4. Framing and Details	Inspect framing for plumbness, spacing, bearing length, and size. Verify bracing is installed as required.	—	X	AISI	YES
5. Diaphragms and Shearwalls	Inspect size, configuration, blocking and fastening of shearwalls and diaphragms. Verify panel grade and thickness. Verify size and installation of hold-downs and straps.	—	X	AISI & Supplier's Specs	NO
6. Prefabricated Trusses	Inspect installation for location, spacing, bearing length, connectors, and permanent bracing.	—	X	AISI	NO

Inspections and Tests of Concrete Construction (2021 IBC - Table 1705.3)					
Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard*	IBC Reference	Required on Project
1. Inspect reinforcement, including prestressing tendons, and verify placement.	—	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	—	YES
2. Reinforcing bar welding: a. Verify weldability of reinforcing bars other than ASTM A706; b. Inspect single-pass fillet welds, maximum 5/16"; and c. Inspect all other welds.	— — X	X X —	AWS D1.4 ACI 318: 26.6.4	—	NO
3. Inspect anchors cast in concrete.	—	X		ACI 318: 17.8.2	YES
4. Inspect anchors post-installed in hardened concrete members.b a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.c	X	—	ACI 318: 17.8.2.4	—	NO
b. Mechanical anchors and adhesive anchors not defined in 4.a.	—	X	ACI 318: 17.8.2		YES
5. Verify use of required design mix.	X	—	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2	YES
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	—	ASTM C31 ASTM C172 ACI 318: 26.5, 26.12	—	YES
7. Inspect concrete and shotcrete placement for proper application techniques. 8. Verify maintenance of specified curing temperature and techniques.	X —	— X	ACI 318: 26.5	—	YES
9. Inspect prestressed concrete for: a. Application of prestressing forces; and b. Grouting of bonded prestressing tendons.	X X	— —	ACI 318: 26.10	—	NO
10. Inspect erection of precast concrete members.	—	X	ACI 318: 26.9	—	NO
11. For precast concrete diaphragm connections or reinforcement at joints classified as moderate or high deformability elements (MDE or HDE) in structures assigned to Seismic Design Category C, D, E or F, inspect such connections and reinforcement in the field for: a. Installation of the embedded parts b. Completion of the continuity of reinforcement across joints. c. Completion of connections in the field.	— X X	X — —	ACI 318: 26.13.1.3	—	NO
12. Inspect installation tolerances of precast concrete diaphragm connections for compliance with ACI 550.5.	—	X	ACI 550.5		NO
13. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of	—	X	ACI 318: 26.11.2		NO
14. Inspect formwork for shape, location and dimensions of the concrete member being formed. For SI: 1 inch = 25.4 mm. a.Where applicable, see Section 1705.13. b.Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.	—	X	ACI 318: 26.11.1.2(b)	—	YES



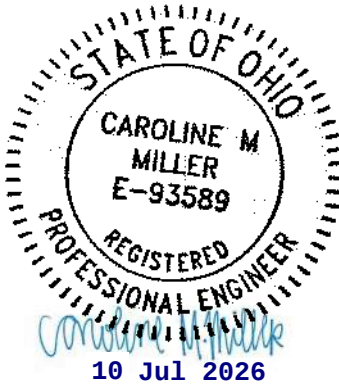
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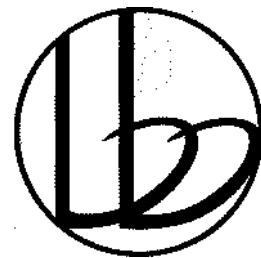
STRUCTURAL
SPECIAL INSPECTIONS
TABLES

S004

Masonry Minimum Verification Requirements (TMS 602-16 - TABLE 3)					
Minimum Verification	Required for Quality Assurance			Reference for Criteria TMS 602	Required on Project
	Level 1	Level 2	Level 3		
Prior to construction, verification of compliance of submittals	R	R	R	Art. 1.5	YES
Prior to construction, verification of f'_m and f'_{AAC} , except where specifically exempted by the Code	NR	R	R	Art. 1.4 B	YES
During construction, verification of Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site	NR	R	R	Art. 1.5 & 1.6.3	YES
During construction, verification of f'_m and f'_{AAC} for every 5,000 sq. ft. (465 sq. m.)	NR	NR	R	Art. 1.4 B	NO
During construction, verification of proportions of materials as delivered to the project site for premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout	NR	NR	R	Art. 1.4 B	NO
R - Required NR - Not Required					

Masonry Minimum Special Inspection (TMS 602-16 - TABLE 4)						
Inspection Tasks	Frequency *			Reference for Criteria		Required on Project
	Level 1	Level 2	Level 3	TMS 402	TMS 602	
1. As masonry construction begins, verify that the following are in compliance:						
a. Proportions of site-prepared mortar	NR	P	P	-	Art. 2.1,2.6 A, & 2.6 C	YES
b. Grade and size of prestressing tendons and anchorages	NR	P	P	-	Art. 2.4 B & 2.4 H	NO
c. Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages	NR	P	P	-	Art. 3.4 & 3.6 A	NO
d. Prestressing technique	NR	P	P	-	Art. 3.6 B	NO
e. Properties of thin-bed mortar for AAC masonry	NR	C ** / P ***	C	-	Art. 2.1 C.1	NO
f. Sample panel construction	NR	P	C	-	Art. 1.6 D	NO
2. Prior to grouting, verify that the following are in compliance:						
a. Grout space	NR	P	C	-	Art. 3.2 D & 3.2 F	YES
b. Placement of prestressing tendons and anchorages	NR	P	P	Sec. 10.8 & 10.9	Art. 2.4 & 3.6	NO
c. Placement of reinforcement, connectors and anchor bolts	NR	P	C	Sec. 6.1, 6.3.1, 6.3.6, & 6.3.7	Art. 3.2 E & 3.4	YES
d. Proportions of site-prepared grout and prestressing grout for bonded tendons	NR	P	P	-	Art. 2.6 B & 2.4 G.1.b	YES
3. Verify compliance of the following during construction:						
a. Materials and procedures with the approved submittals	NR	P	P	-	Art. 1.5	YES
b. Placement of masonry units and mortar joint construction	NR	P	P	-	Art. 3.3 B	YES
c. Size and location of structural members	NR	P	P	-	Art. 3.3 F	NO
d. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	NR	P	C	Sec. 1.2.1(e), 6.2.1, & 6.3.1	-	YES
e. Welding of reinforcement	NR	C	C	Sec. 6.1.6.1.2	-	NO
f. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C)) or hot weather (temperature above 90°F (32.2°C))	NR	P	P	-	Art. 1.8 C & 1.8 D	NO
g. Application and measurement of prestressing force	NR	C	C	-	Art. 3.6 B	NO
h. Placement of grout and prestressing grout for bonded tendons is in compliance	NR	C	C	-	Art. 3.5 & 3.6 C	NO
i. Placement of AAC masonry units and construction of thin-bed mortar joints	NR	C ** / P ***	C	-	Art. 3.3 B.9 & 3.3 F.1.b	NO
4. Observe preparation of grout specimens, mortar specimens, and/or prisms	NR	P	C	-	Art. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, & 1.4 B.4	YES
* Frequency refers to the frequency of inspection, which may be continuous during the listed task or periodically during the listed task, as defined by the table. NR - Not Required, P - Periodic, C - Continuous ** Required for the first 5000 square feet (465 square meters) of AAC masonry. *** Required after the first 5000 square feet (465 square meters) of AAC masonry.						

Inspection and Tests of Soil (2021 IBC - Table 1705.6)			
Type	Continuous Special Inspection	Periodic Special Inspection	Required on Project
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	x	YES
2. Verify excavations are extended to proper depth and have reached proper material.	—	x	YES
3. Perform classification and testing of compacted fill materials.	—	x	NO
4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.	x	—	NO
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	—	x	NO



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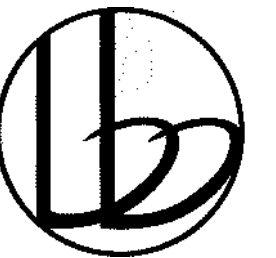
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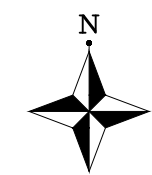
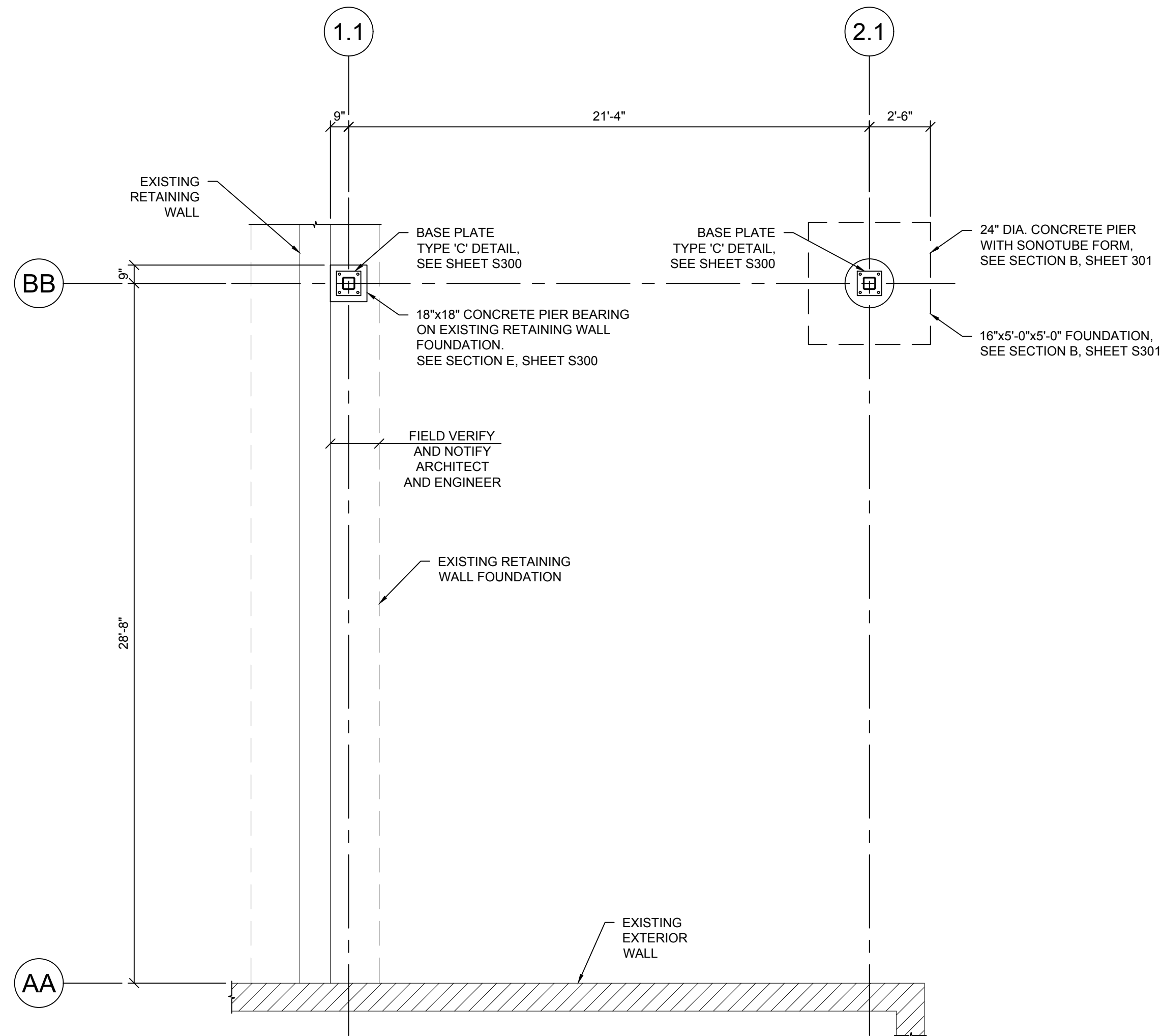
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FRAMING PLAN
OPERATIONS BLDG

S100

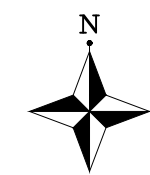
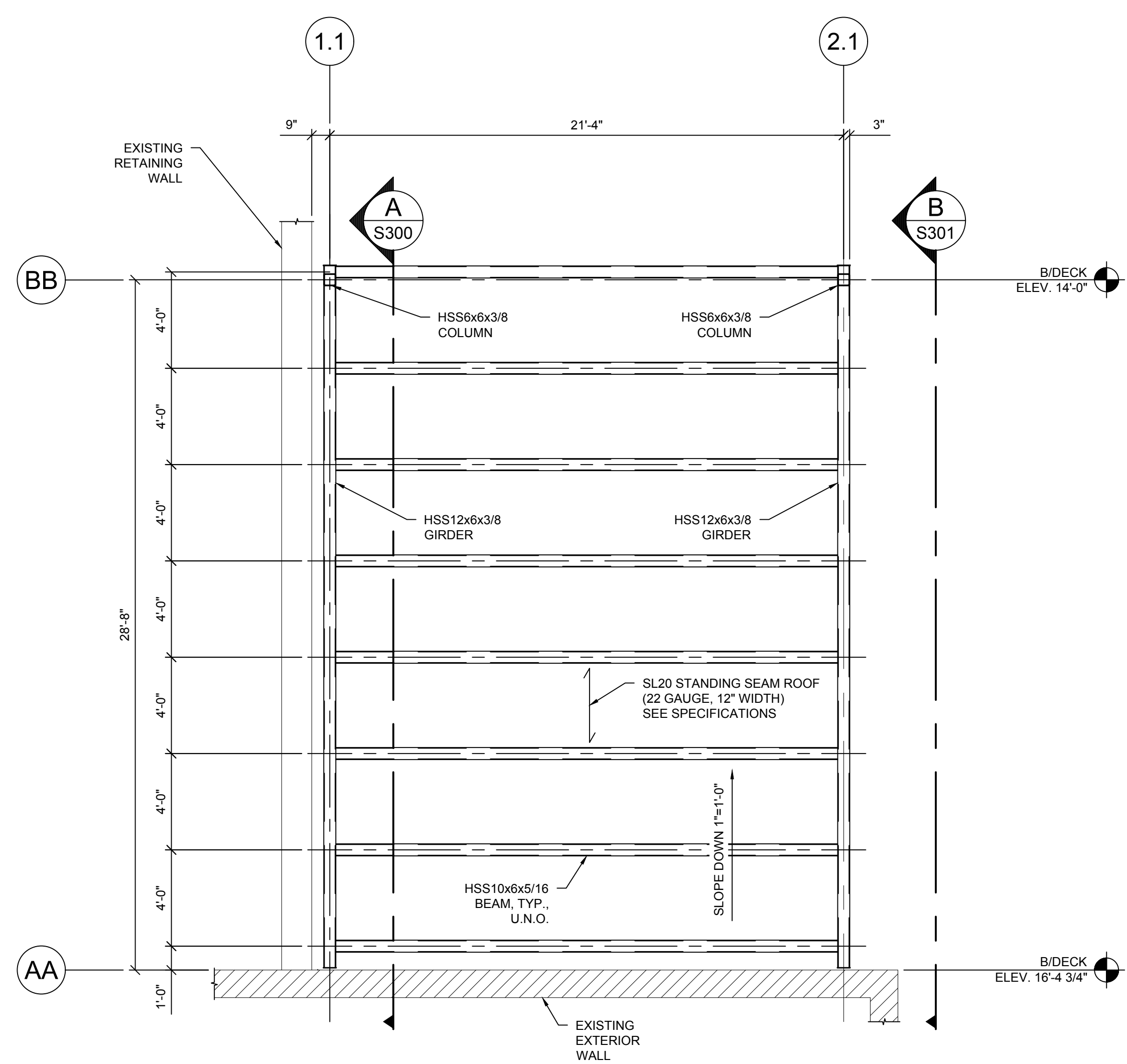


COVERED PARKING AREA FOUNDATION PLAN

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

NOTES:

1. FINISH FLOOR ELEVATION = 0'-0"
2. BOTTOM OF BASE PLATE ELEVATION = 3'-1"
3. TOP OF PIER ELEVATION = 3'-0"
4. PROVIDE 1" OF NON-SHRINK GROUT UNDER ALL BASE PLATES, U.N.O.

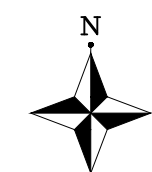
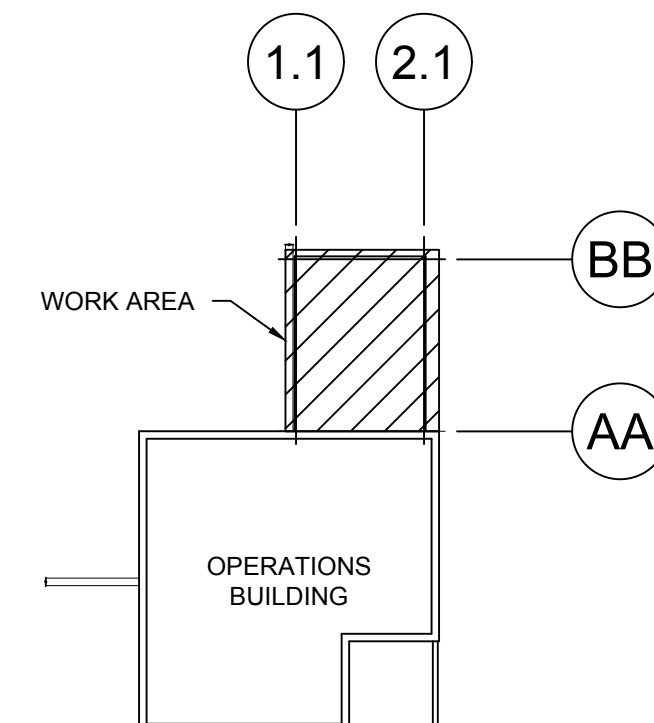


COVERED PARKING AREA FRAMING PLAN

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

NOTES:

1. FINISH FLOOR ELEVATION = 0'-0"



KEY PLAN

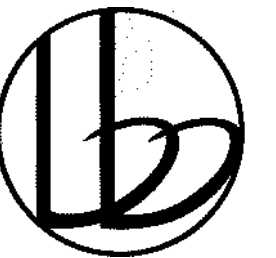
SCALE: 1/32"=1'-0"



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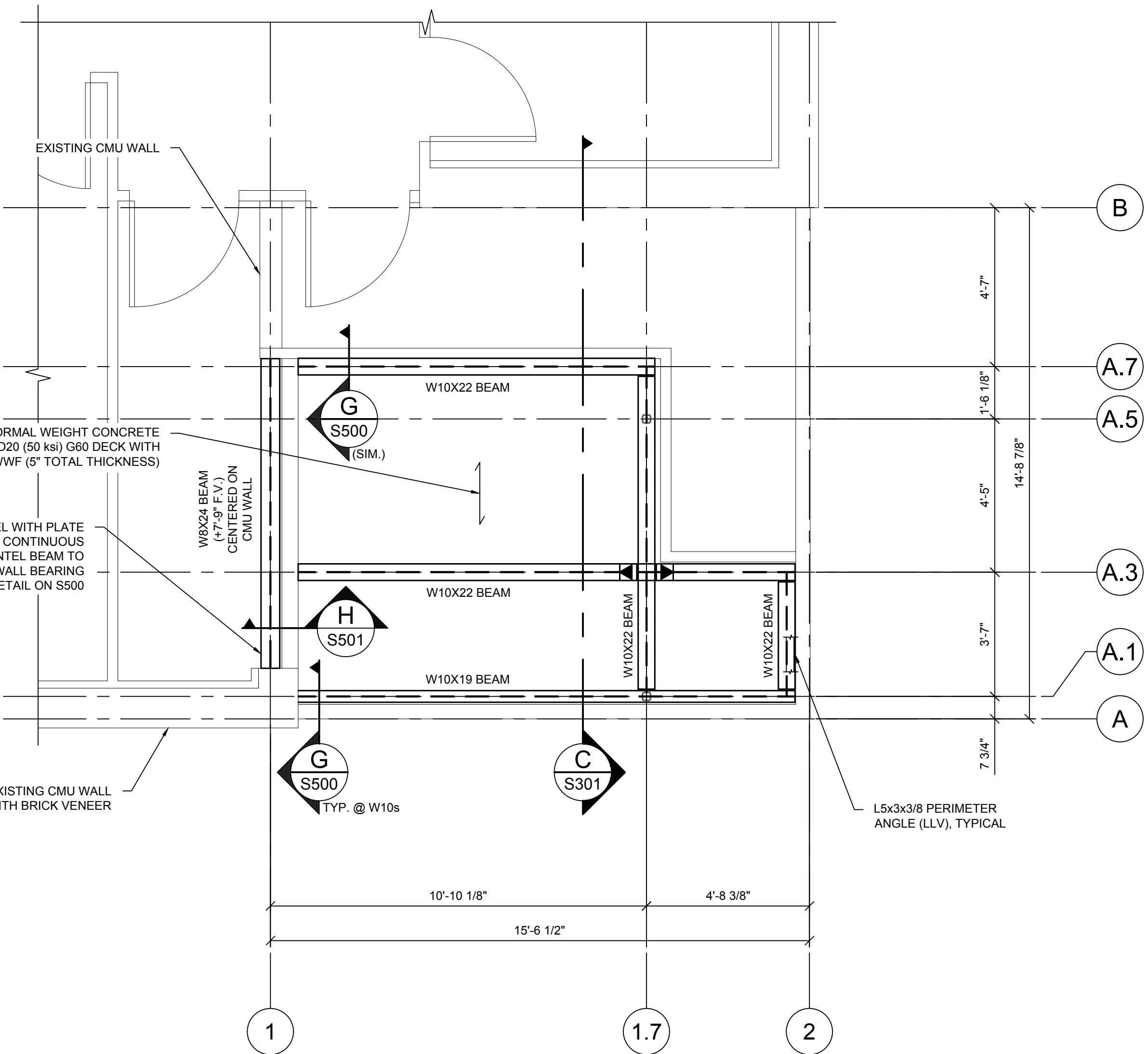
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STRUCTURAL
FIRST & SECOND FLOOR
FRAMING PLAN
OPERATIONS BLDG

S101



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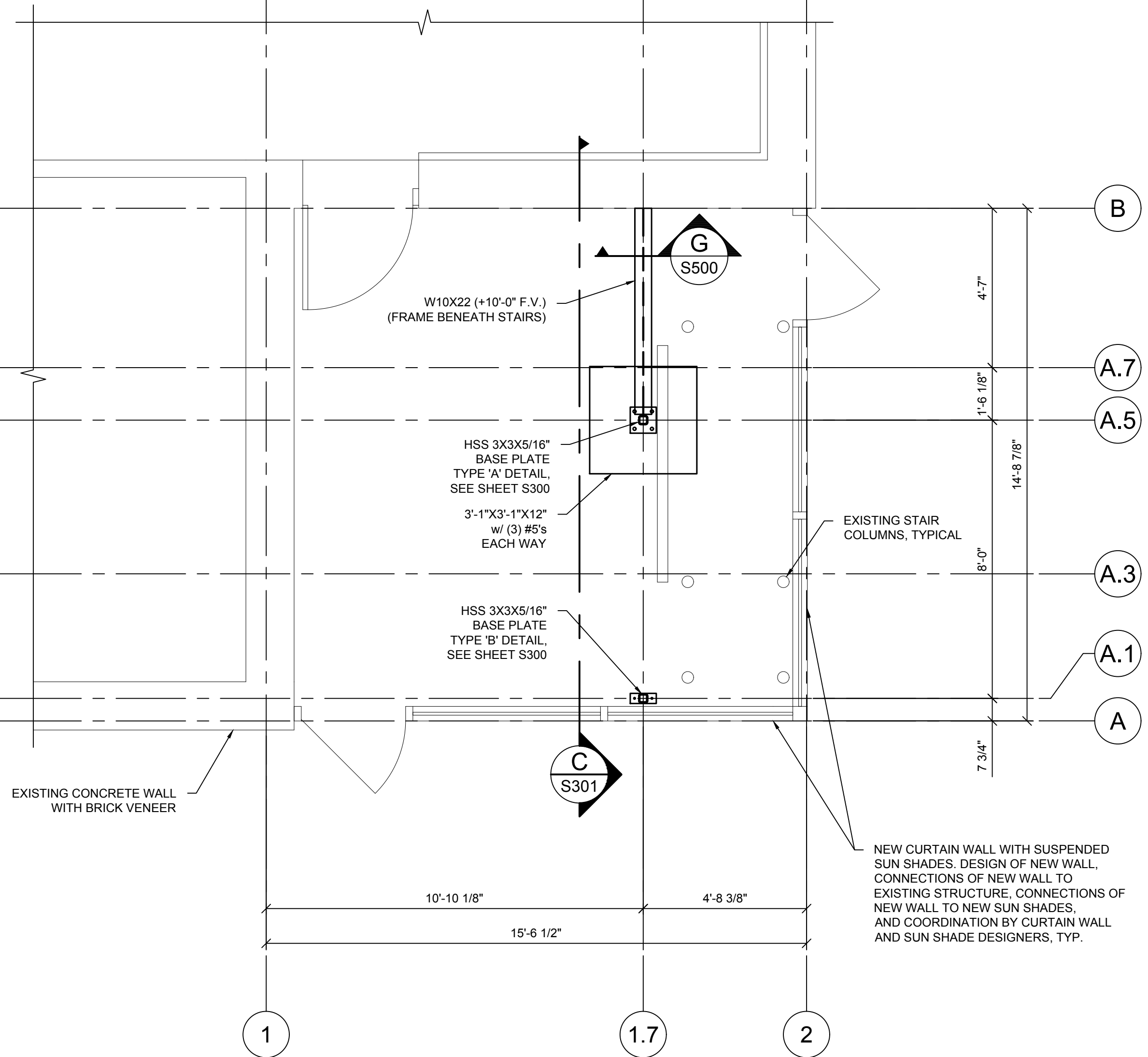


SECOND FLOOR FRAMING PLAN OPERATIONS BLDG

SCALE: 3/8"=1'-0"

NOTES:

1. FINISH FLOOR ELEVATION = 0'-0"
 2. FINISH SECOND FLOOR ELEVATION = 15'-4"
 3. T/STEEL ELEVATION = 14'-11" TYP., U.N.O.
 4. (+#) DENOTES RAISED TOP OF STEEL ELEVATION FROM 14'-11"
 5. F.V. = FIELD VERIFY
 6. THE FINISH FLOOR SURFACE SHALL BE LEVEL. PROVIDE SUFFICIENT CONCRETE TO ACCOUNT FOR BEAM DEFLECTION DUE TO WEIGHT OF WET CONCRETE AND PLACING.
- DENOTES MOMENT CONNECTION. SEE "TYPICAL CANTILEVERED BEAM CONNECTION DETAIL ON SHEET S500".

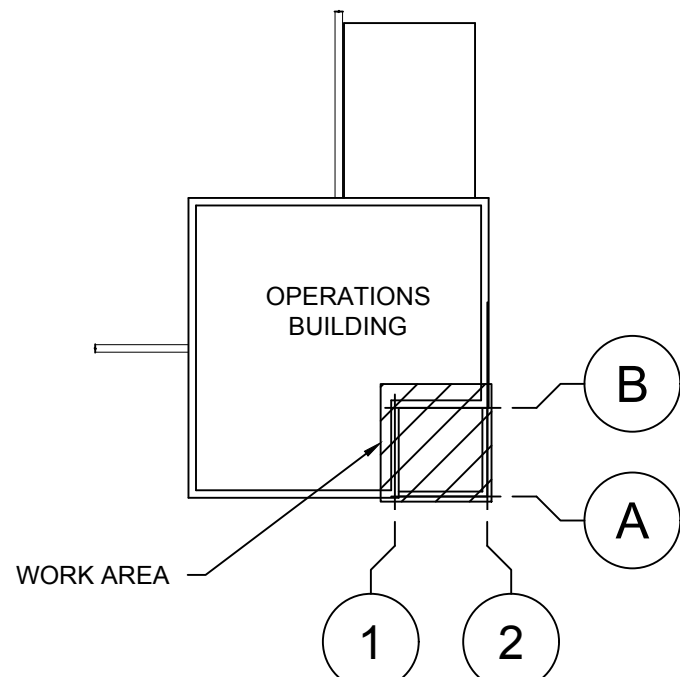


FIRST FLOOR FOUNDATION PLAN OPERATIONS BLDG

SCALE: 3/8"=1'-0"

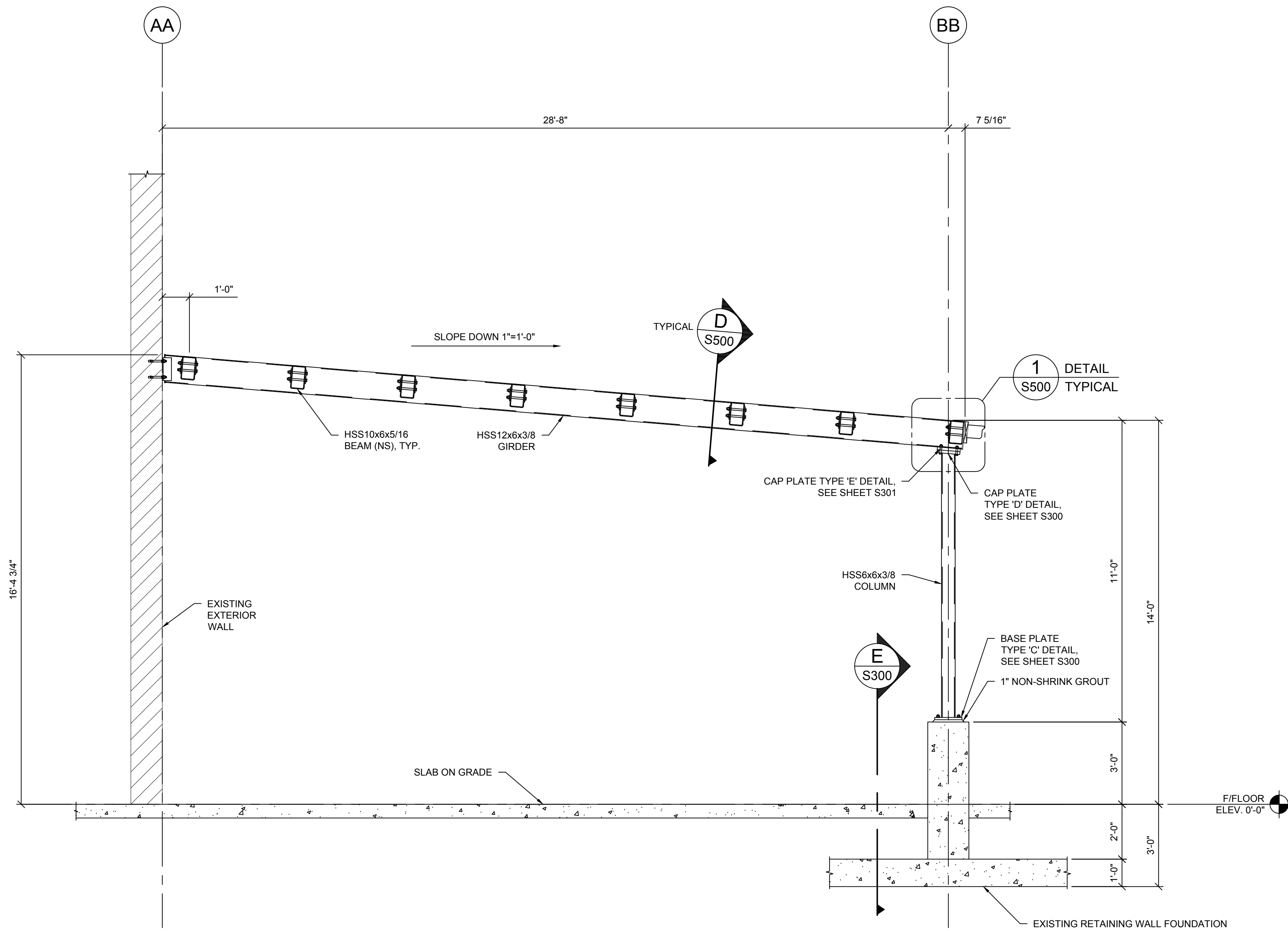
NOTES:

1. FINISH FLOOR ELEVATION = 0'-0"
2. (+#) DENOTES RAISED TOP OF STEEL ELEVATION FROM 0'-0"
3. F.V. = FIELD VERIFY
4. B/BASE PLATE ELEVATION = -0'-6"

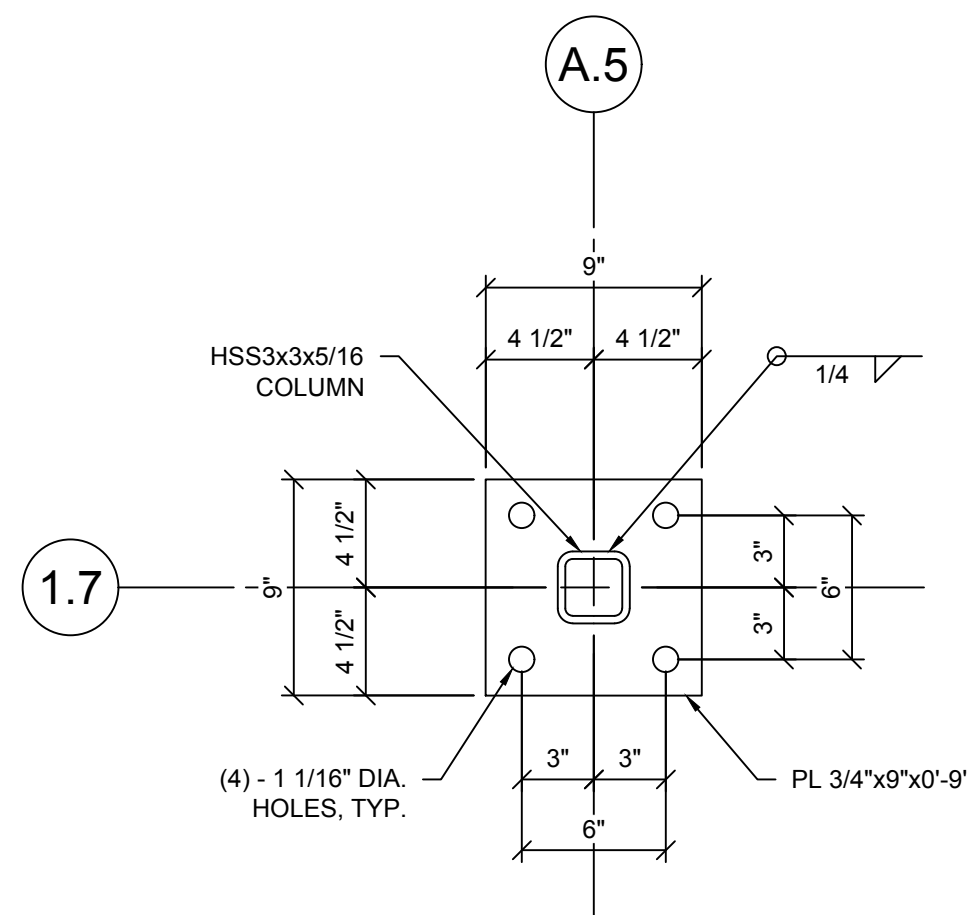


KEY PLAN

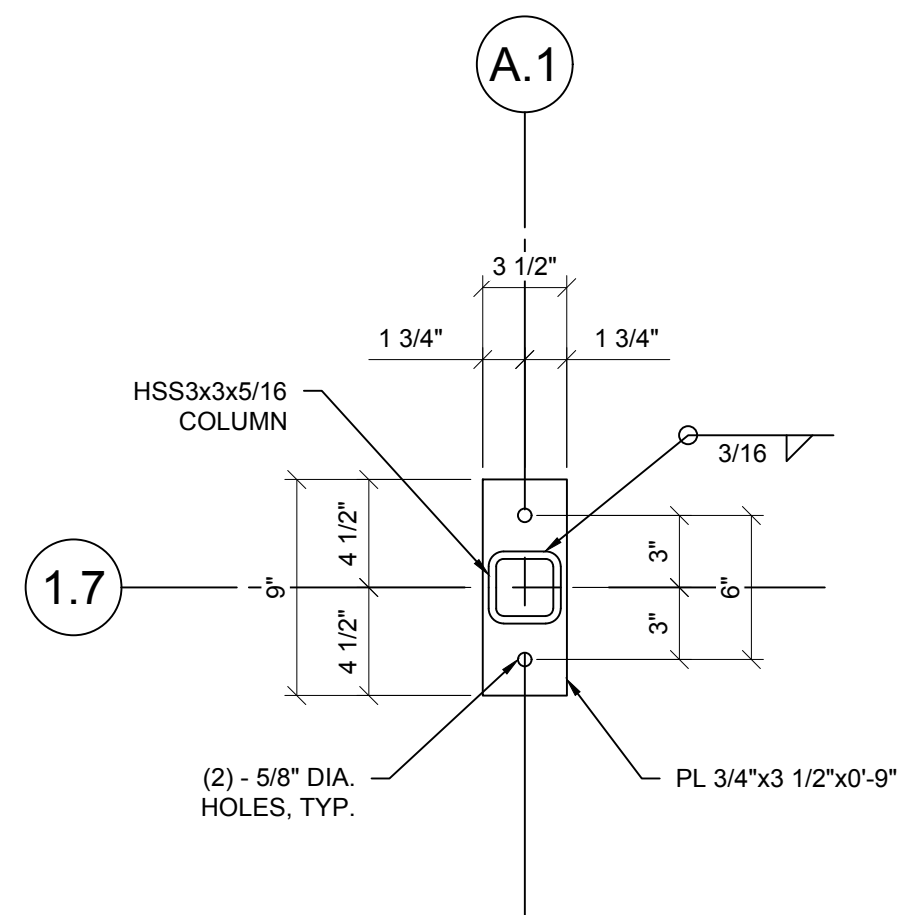
SCALE: 1/32"=1'-0"



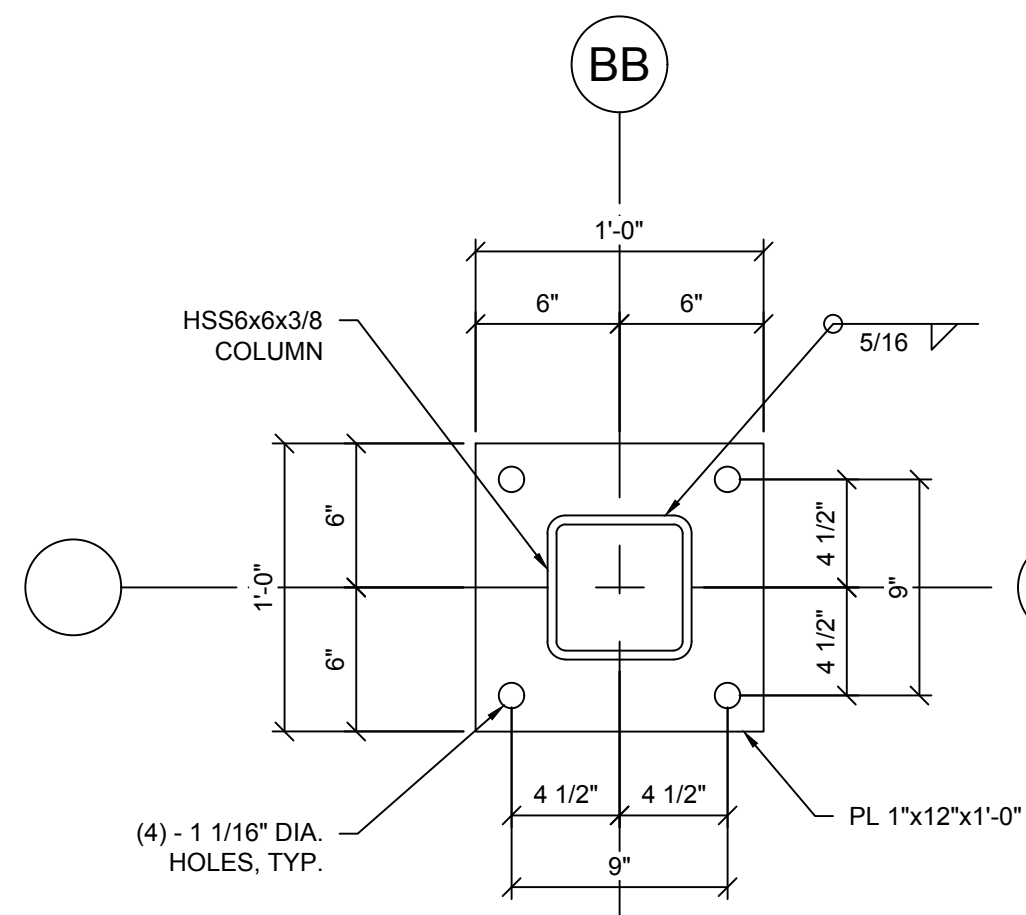
A COVERED PARKING AREA SECTION ON GRID 1.1
S100 SCALE: 3/8"=1'-0"



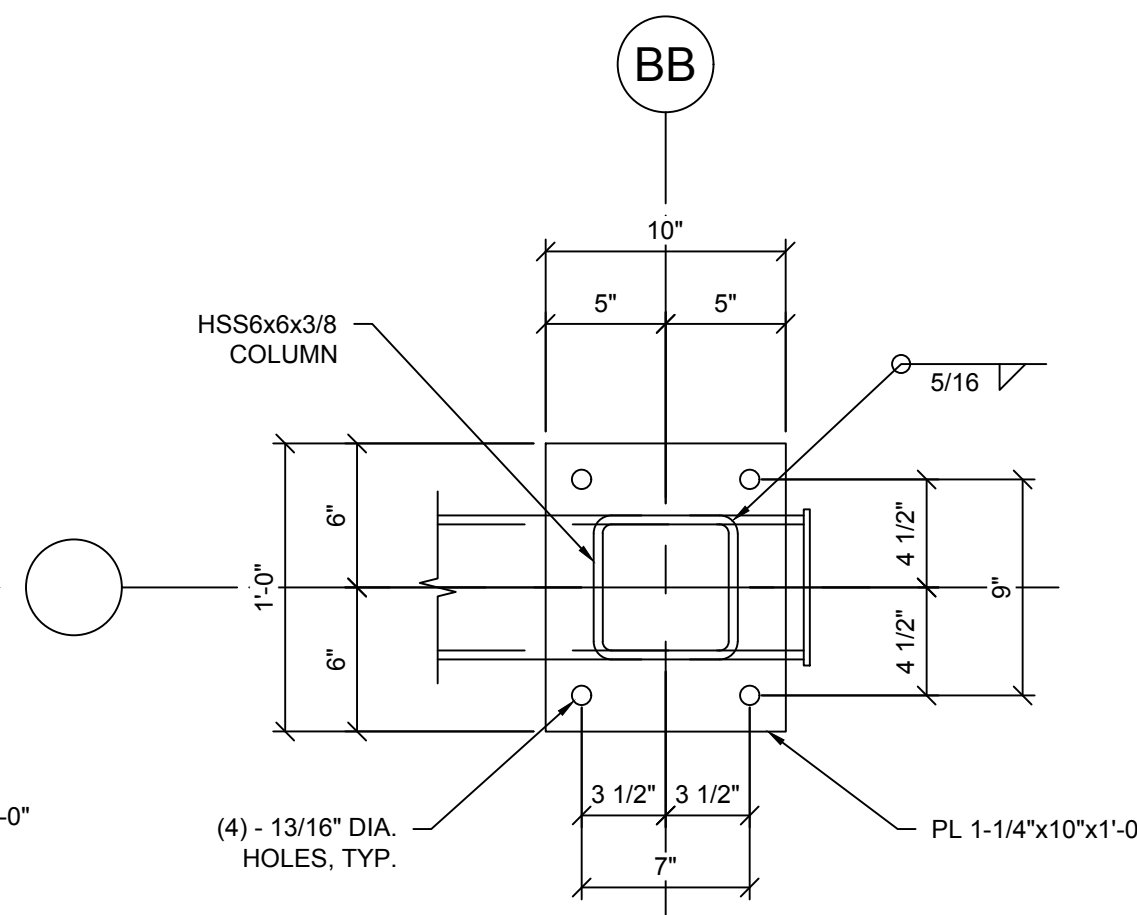
BASE PLATE TYPE 'A' DETAIL
(4) - 3/4" DIA. ANCHOR RODS WITH 4" MIN. PROJECTION AND 9" MIN. EMBEDMENT



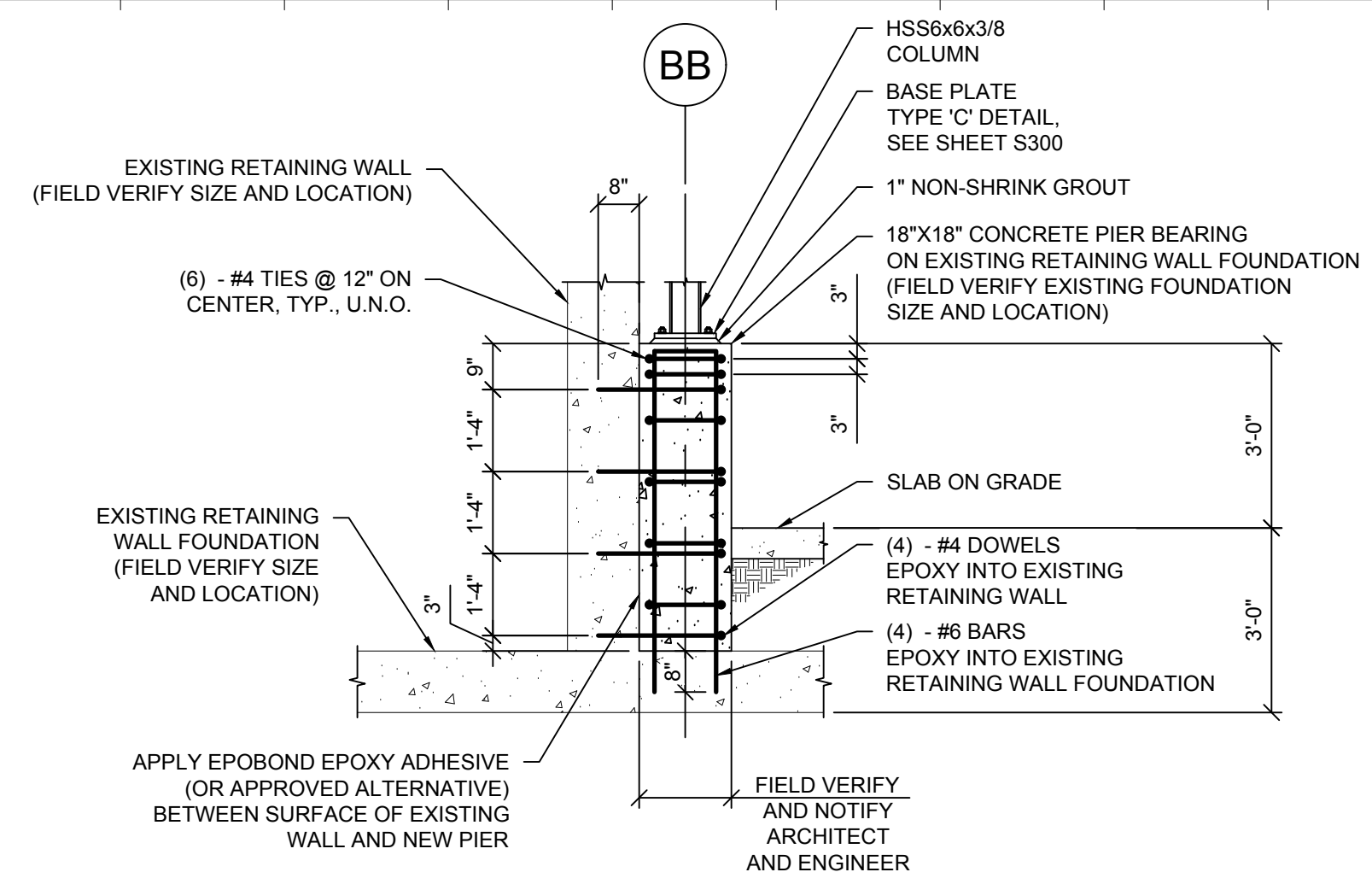
BASE PLATE TYPE 'B' DETAIL
(2) - 1/2"x5" HILTI KWIK-X WITH KHC 1/2" ADHESIVE OR APPROVED ALTERNATIVE



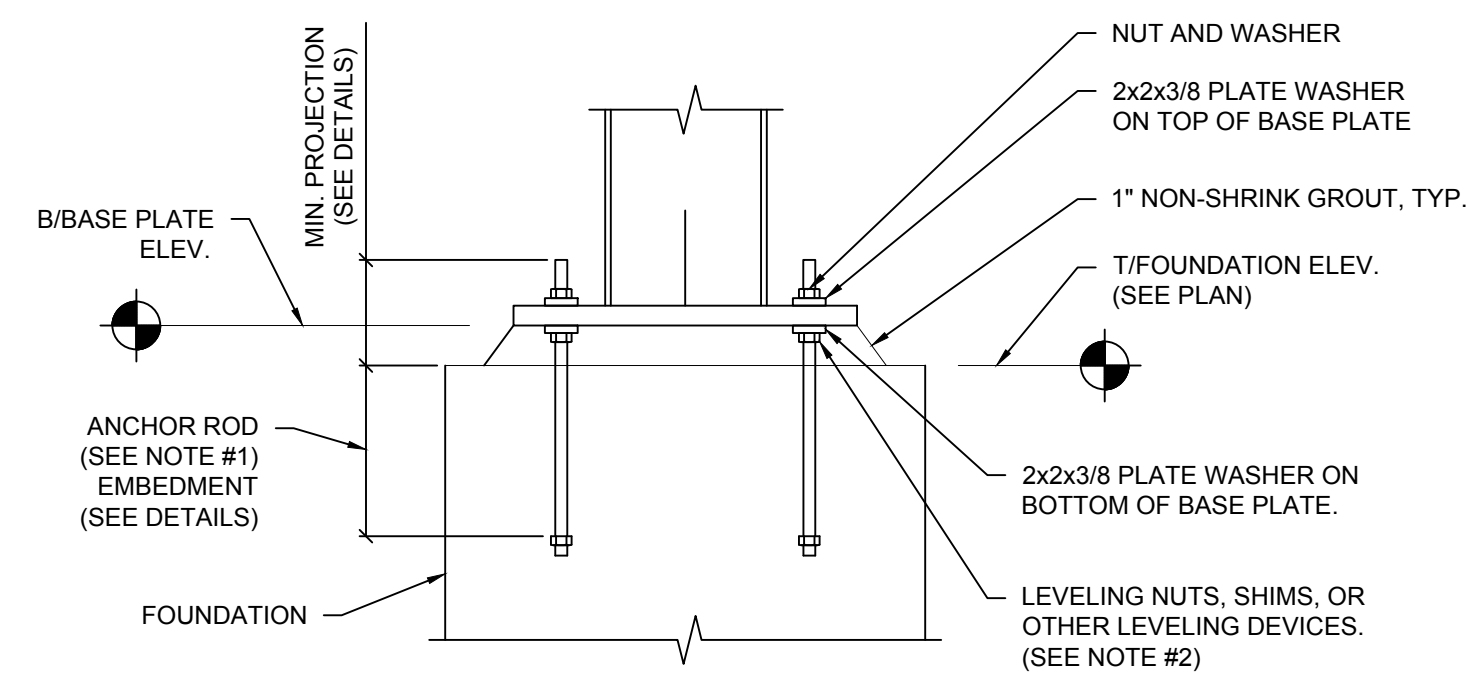
BASE PLATE TYPE 'C' DETAIL
(4) - 3/4" DIA. ANCHOR RODS WITH 4" MIN. PROJECTION AND 9" MIN. EMBEDMENT



CAP PLATE TYPE 'D' DETAIL
(4) - 3/4" DIA. A325 BOLTS



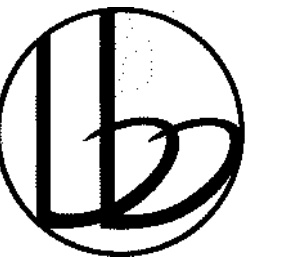
E FOUNDATION SECTION ON GRID BB
S300 SCALE: 3/8"=1'-0"



TYPICAL ANCHOR ROD DETAIL

NOTES:

- ANCHOR ROD MATERIAL SPECIFICATION SHALL BE A MINIMUM OF THE FOLLOWING:
3/4" DIA. ANCHOR RODS TO BE ASTM-F1554 GRADE 36 KSI MATERIAL
- THE NON-SHRINK GROUT SHALL BE PLACED IN A PROPER AND TIMELY MANNER, PRIOR TO THE APPLICATION OF DEAD AND LIVE LOADING WITH THE EXCEPTION TO THE SELF-WEIGHT OF THE STRUCTURAL FRAMING. WHERE LEVELING PLATES ARE PROVIDED, THE LEVELING PLATES SHALL BE SET TO ELEVATION AND GROUTED PRIOR TO THE SETTING OF THE COLUMNS.



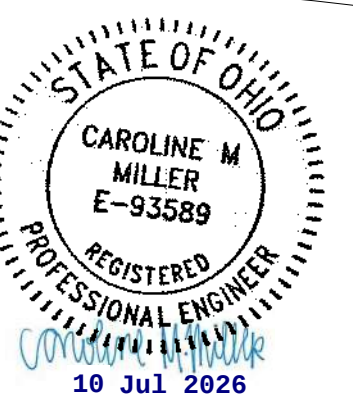
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STRUCTURAL SECTIONS

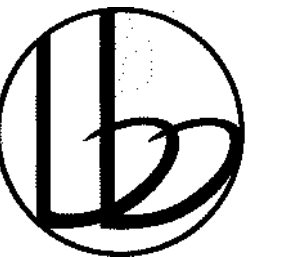


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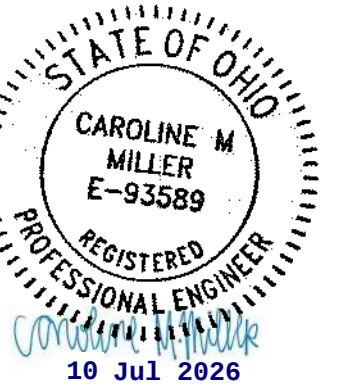
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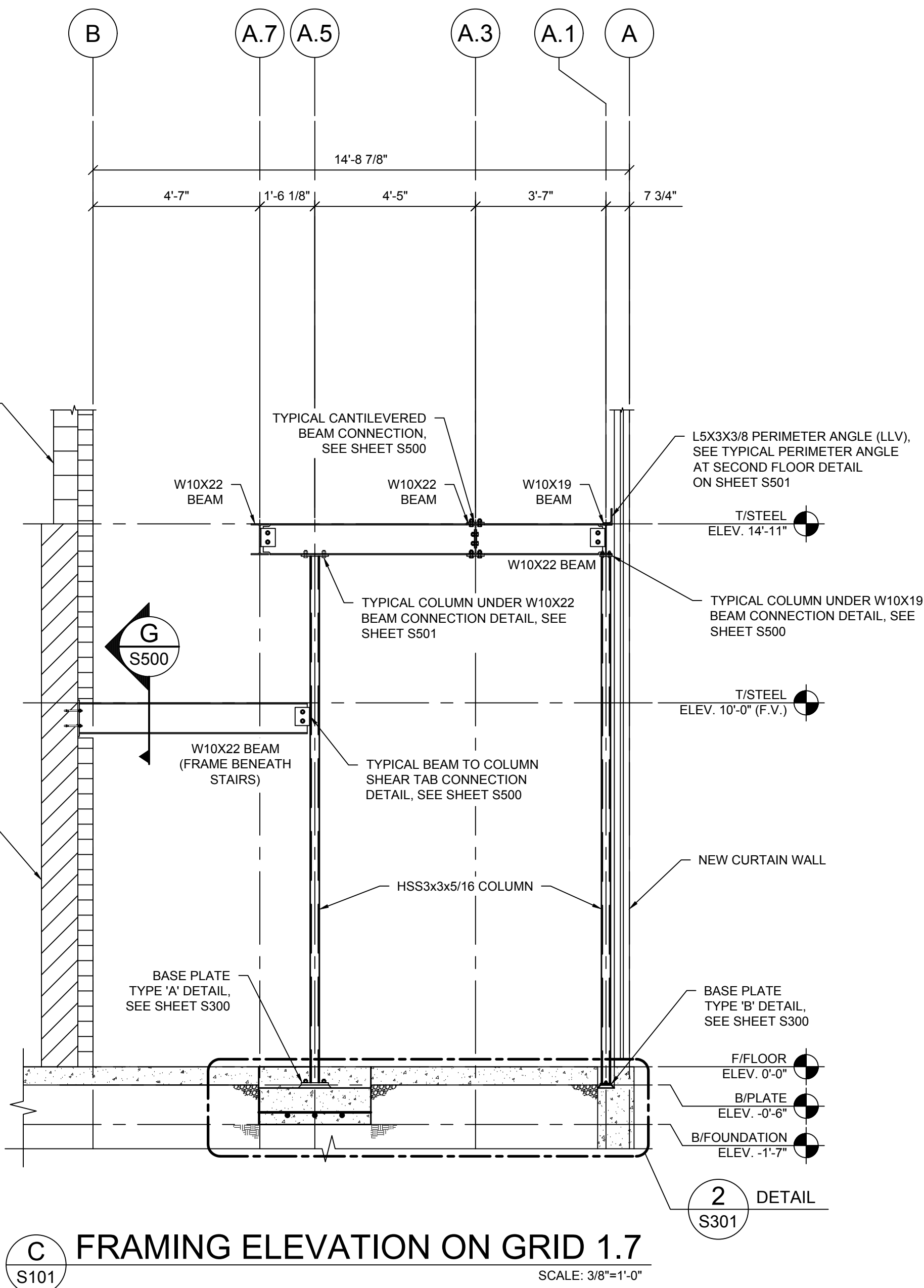
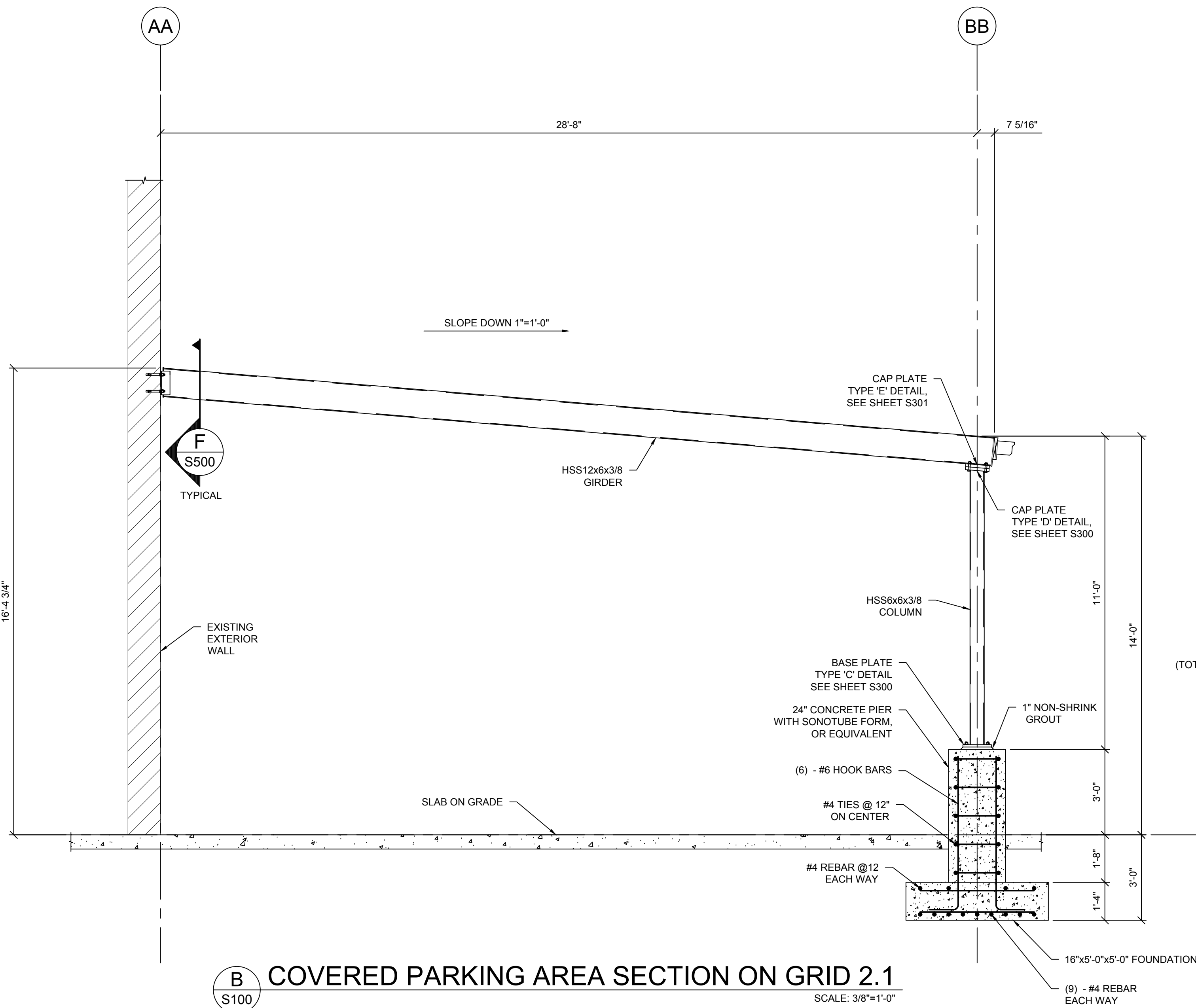
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STRUCTURAL SECTIONS

S301

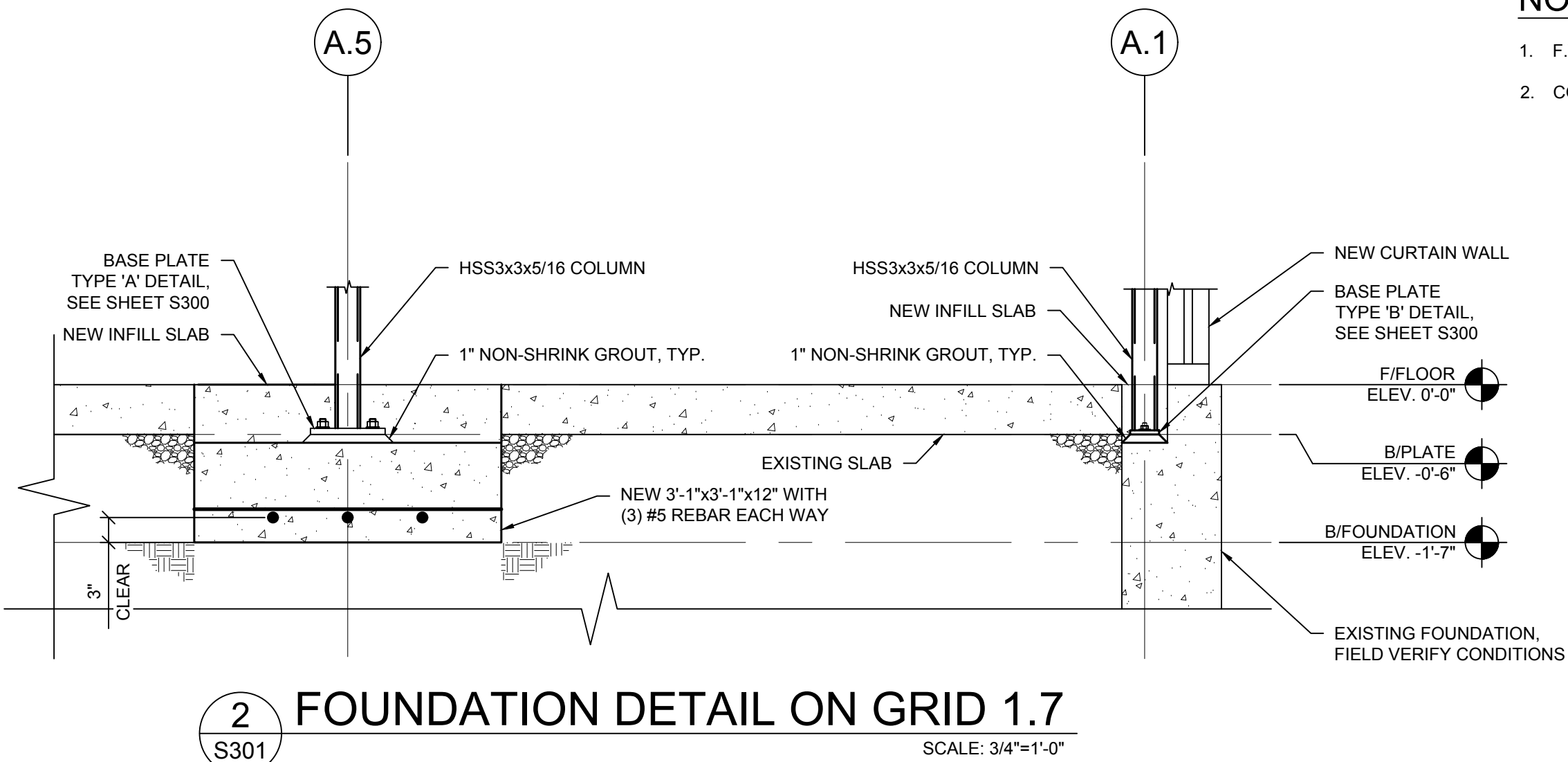
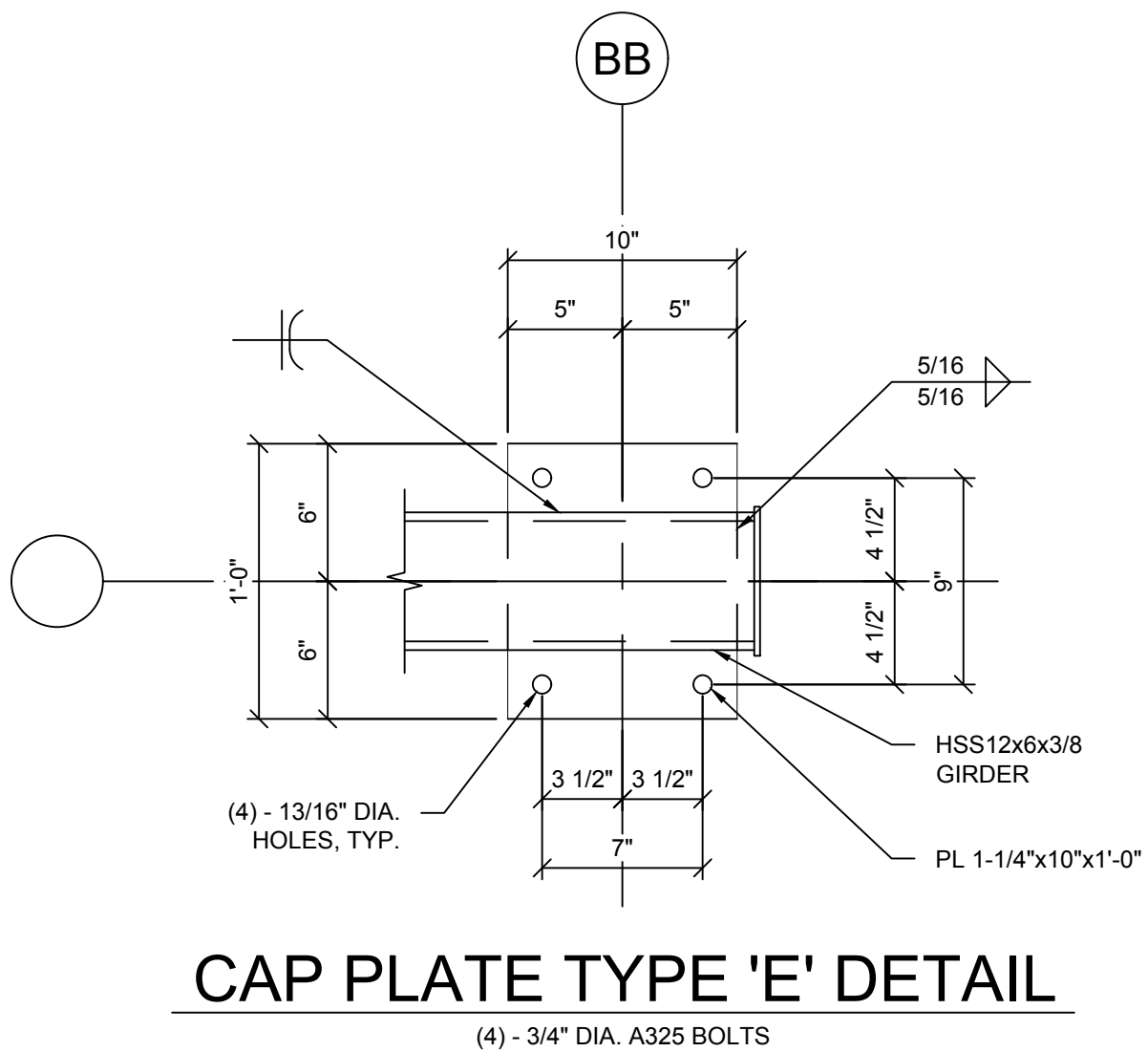


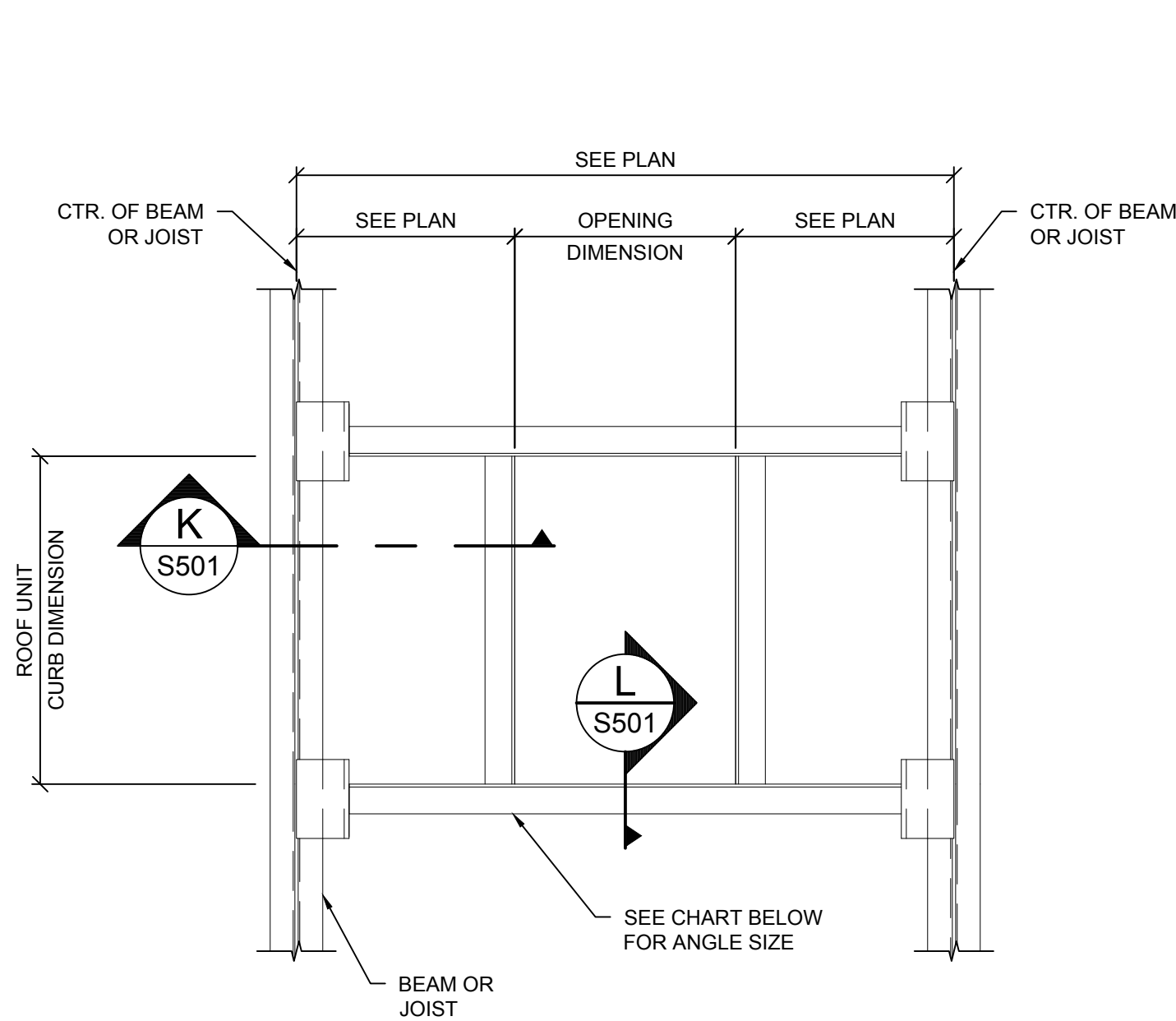
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NOTES:

- F.V. = FIELD VERIFY
- CONFERENCE ROOM COMPOSITE DECK FLOOR NOT SHOWN FOR CLARITY.

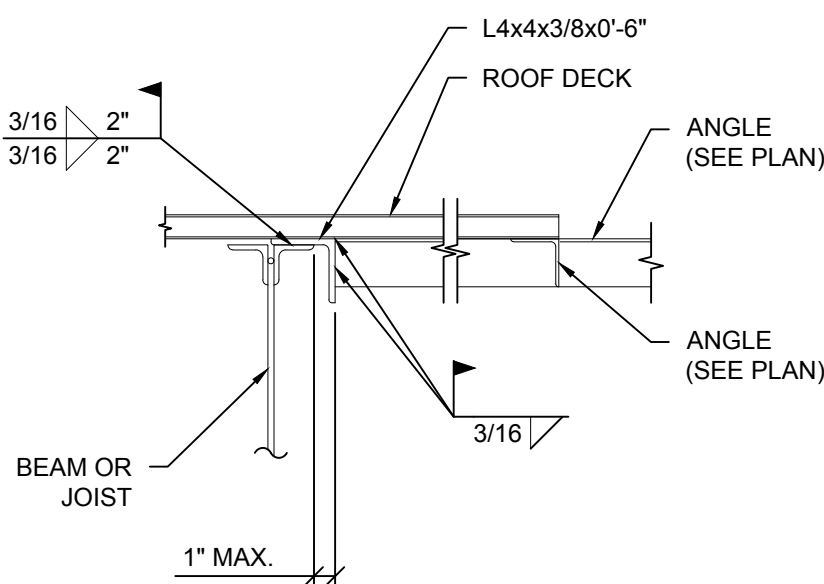




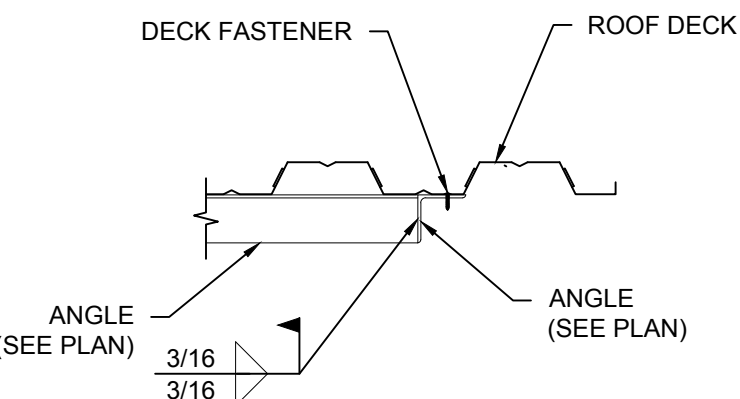
ROOF FRAMED OPENING PLAN
SCALE: NO SCALE

NOTES:

1. RTU/MECHANICAL EQUIPMENT/ROOF HATCH FRAMED OPENING (CURB) SIZES AND LOCATIONS ARE TO BE COORDINATED WITH THE MECHANICAL AND/OR ARCHITECTURAL DRAWINGS.
2. FIELD VERIFY ALL FRAMED OPENING LOCATIONS AND DIMENSIONS WITH THE MECHANICAL AND/OR ARCHITECTURAL DRAWINGS PRIOR TO CUTTING AND PLACEMENT OF FRAMES.
3. FOR CONDITIONS CONFLICTING OR DIFFERING WITH THE STRUCTURAL DRAWINGS, PLEASE CONSULT THE ENGINEER OF RECORD.
4. FOR OPENINGS GREATER THAN 12" SQUARE, PROVIDE DECK REINFORCING AS SHOWN IN THE DETAIL ABOVE. FOR OPENINGS LESS THAN 12" SQUARE, PROVIDE L3X3X1/4 REINFORCING ANGLE.

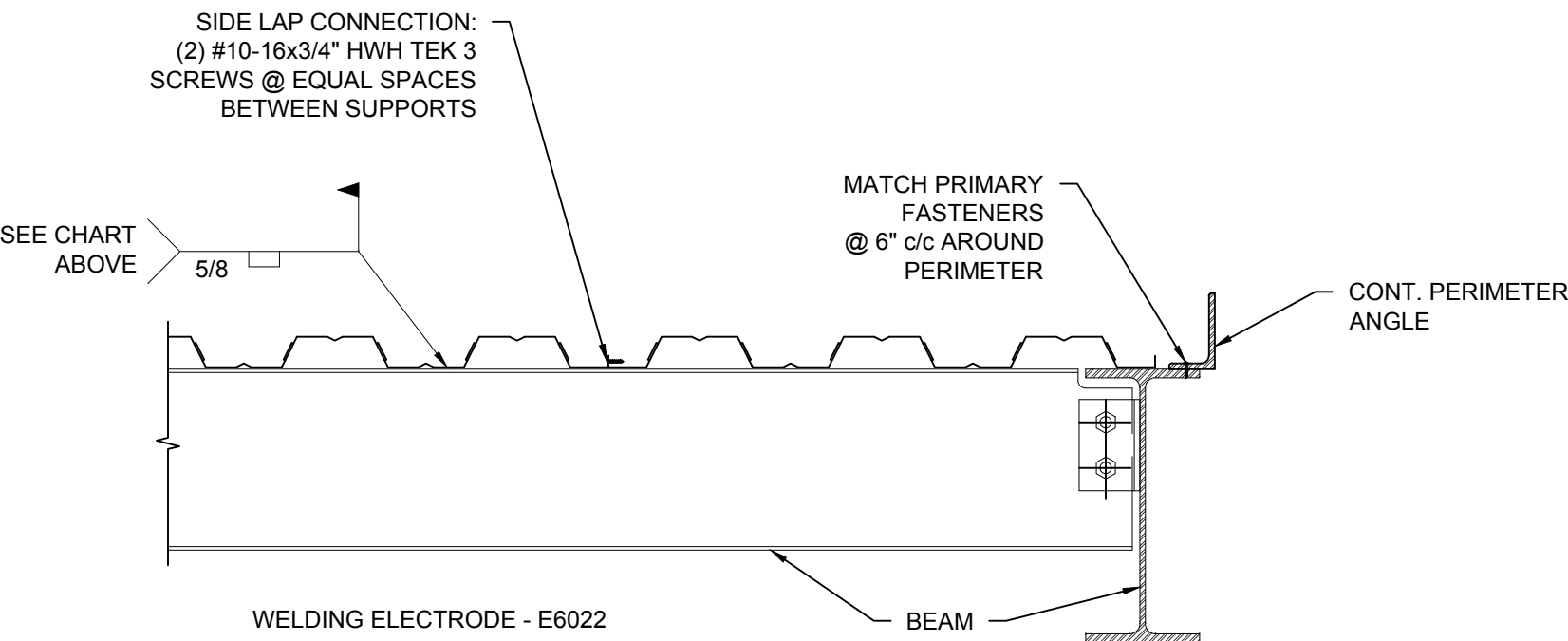
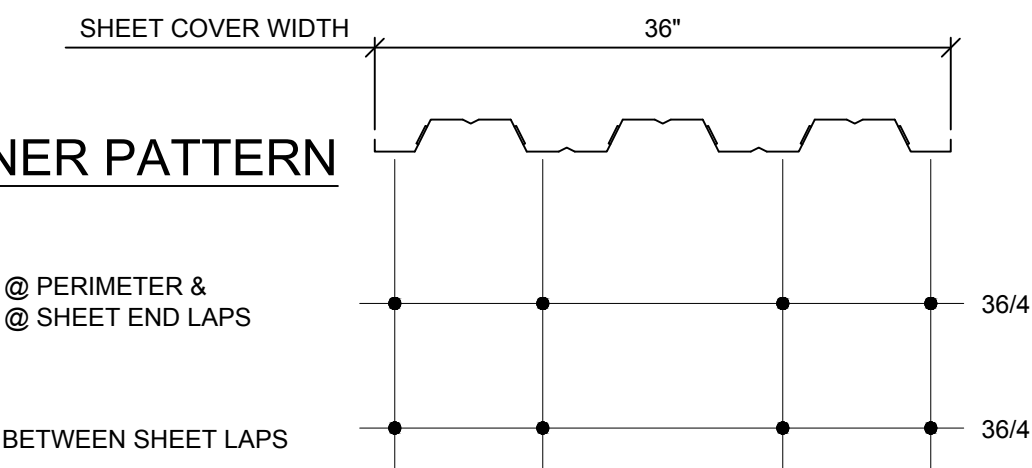


K SECTION
S501 SCALE: NO SCALE



L SECTION
S501 SCALE: NO SCALE

PRIMARY FASTENER PATTERN



2.0CD20 COMPOSITE FLOOR DECK FASTENER CONNECTION

NOTE:

DECK SHALL BE ATTACHED TO SUPPORTS AT A MIN. OF 18" O.C. WITH EITHER STUDS, PUDDLE WELDS, OR SCREWS.

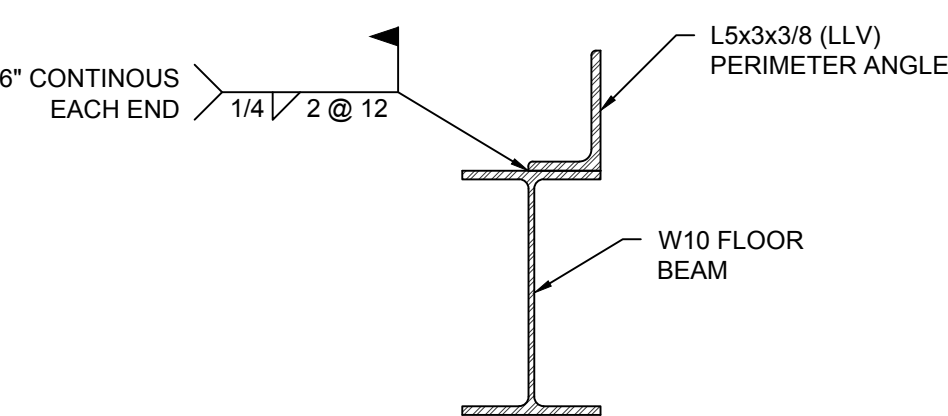
CONTRACTOR OPTION:

PROVIDE HILTI POWDER ACTUATED FASTENERS AT SUPPORTS IN LIEU OF PUDDLE WELDS WITH PATTERNS AS SHOWN ABOVE.

CONTRACTOR OPTION:

PROVIDE #12-24 HWH TEKS SELF DRILLING SCREWS AT SUPPORTS IN LIEU OF PUDDLE WELDS WITH PATTERNS AS SHOWN ABOVE.

STEEL SUPPORT THICKNESS, "t"	FASTENER TYPE
JOISTS w/ 1/8" (3mm) <= "t" <= 3/8" (10mm)	HILTI X-HSN 24
STRUCTURAL BEAMS w/ "t" >= 1/4" (6mm)	HILTI X-ENP-19 L15

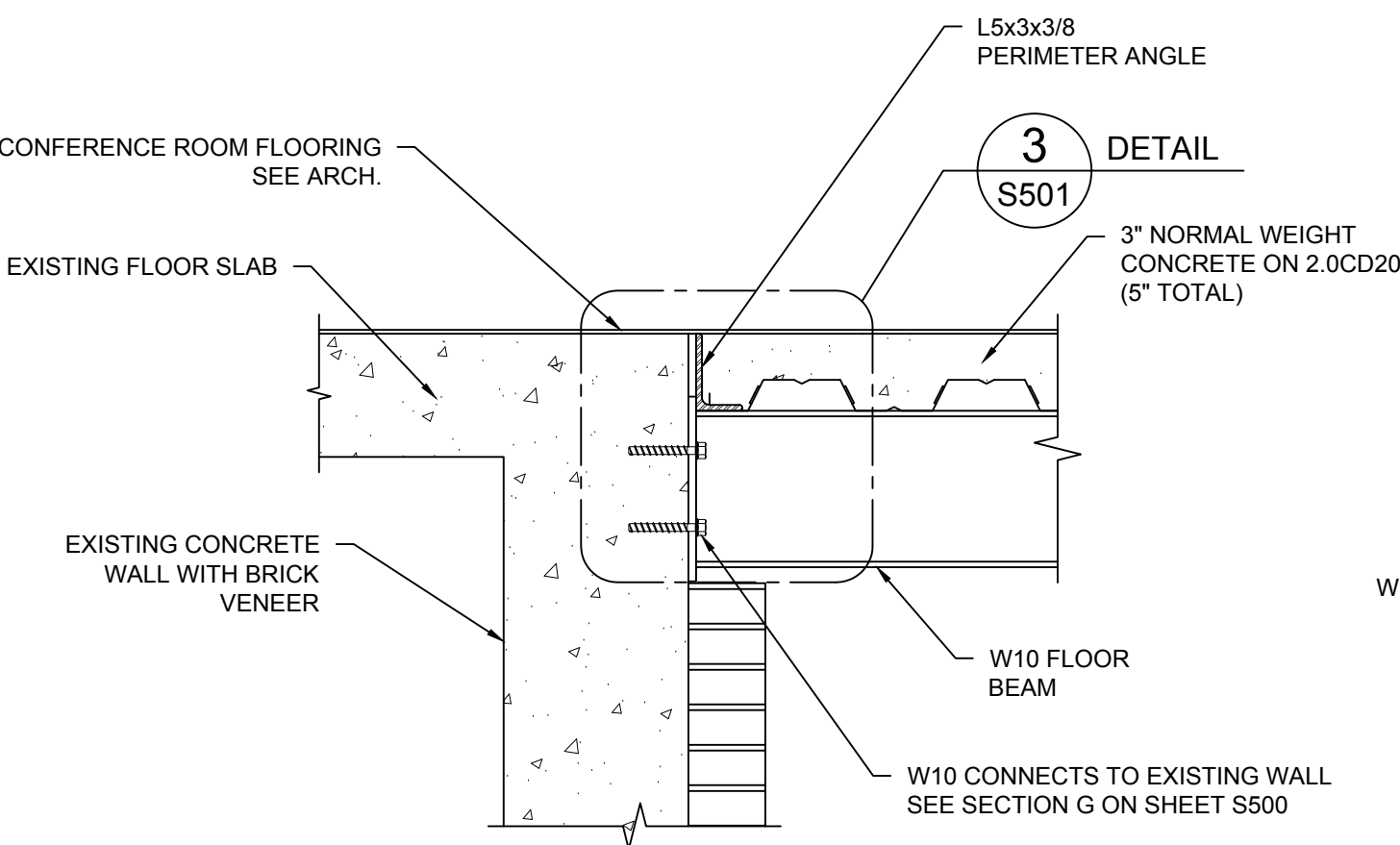


TYPICAL PERIMETER ANGLE AT SECOND FLOOR DETAIL

SCALE: 1-1/2"=1'-0"

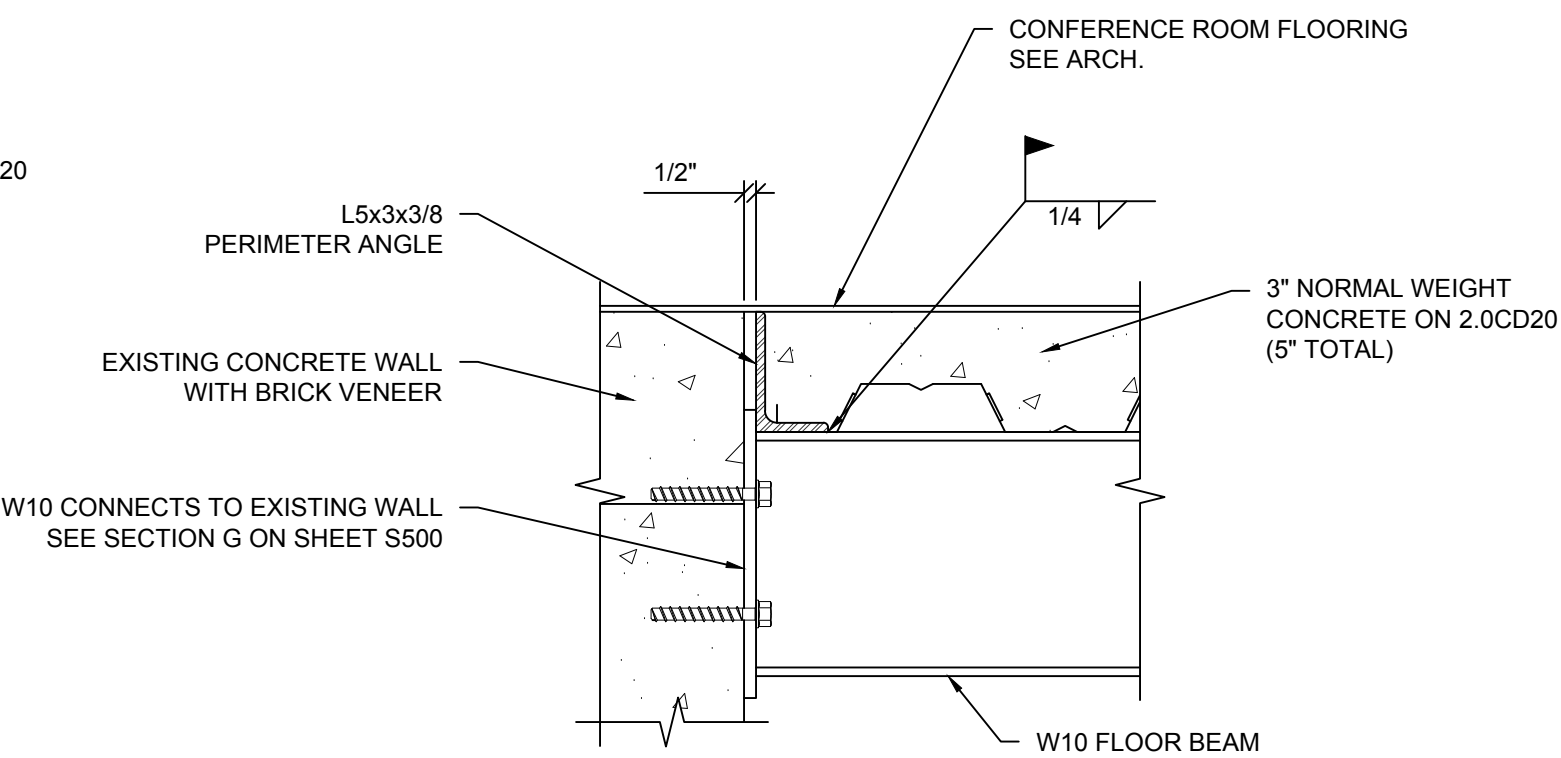
NOTES:

1. DECK NOT SHOWN FOR CLARITY.



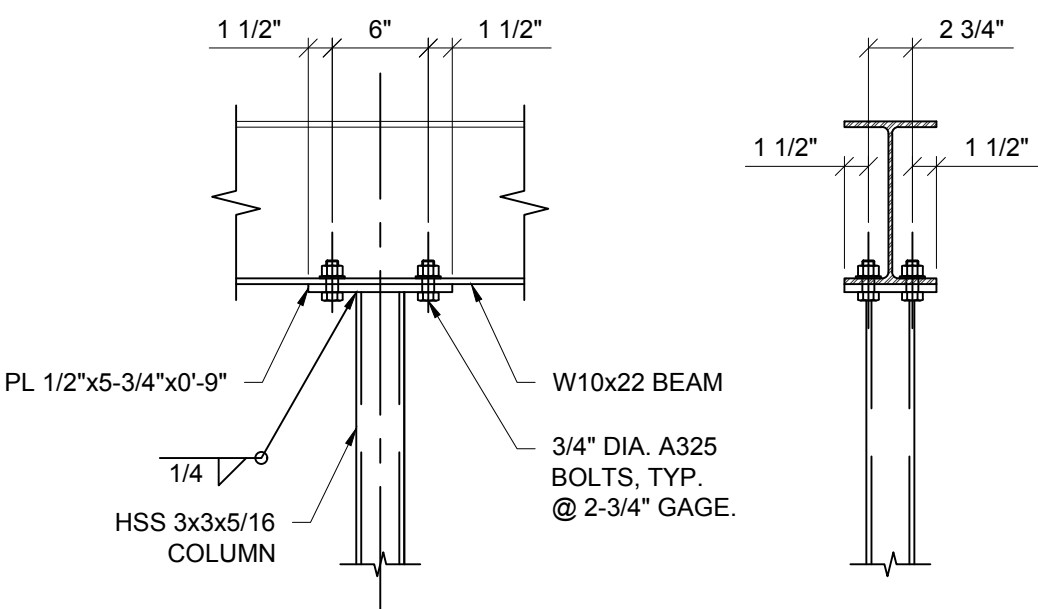
H S501 TRANSITION AT NEW CONFERENCE ROOM FLOOR SECTION

SCALE: 1"=1'-0"



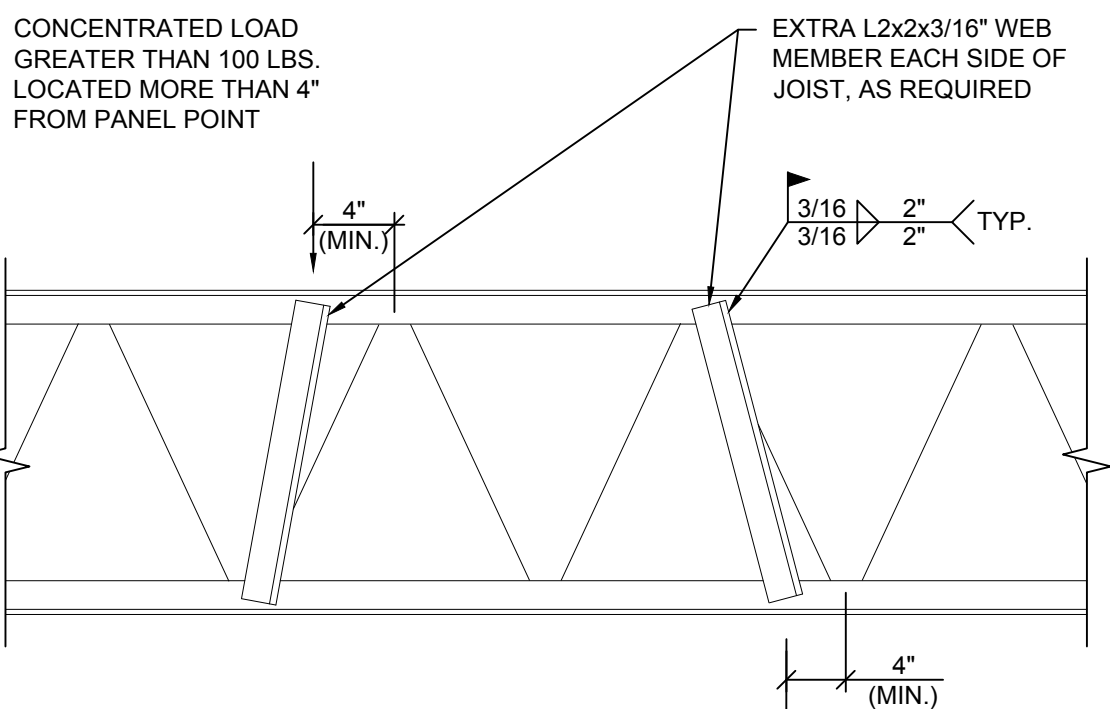
3 S501 PERIMETER ANGLE AT NEW CONFERENCE ROOM FLOOR SECTION

SCALE: 1-1/2"=1'-0"



TYPICAL COLUMN UNDER W10X22 BEAM CONNECTION DETAIL

SCALE: 1"=1'-0"



NOTES:

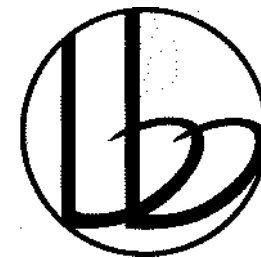
1. CONCENTRATED LOADS GREATER THAN 200lbs SHALL BE REVIEWED AND APPROVED BY THE JOIST MANUFACTURER.
2. WEB REINFORCING SHALL NOT BE REQUIRED IF CONCENTRATED AND/OR HANGING LOADS ARE LESS THAN OR EQUAL TO 100lbs. (TOTAL SUM OF LOADS WITHIN CHORD PANEL) AND CONCENTRICALLY ATTACHED TO THE JOIST CHORD LOCATED ANYWHERE WITHIN THE CHORD PANEL SPAN, PER SJI CODE OF STANDARD PRACTICE.

TYPICAL JOIST WEB PANEL REINFORCING DETAIL

SCALE: NO SCALE



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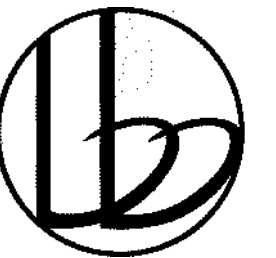
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STRUCTURAL DETAILS

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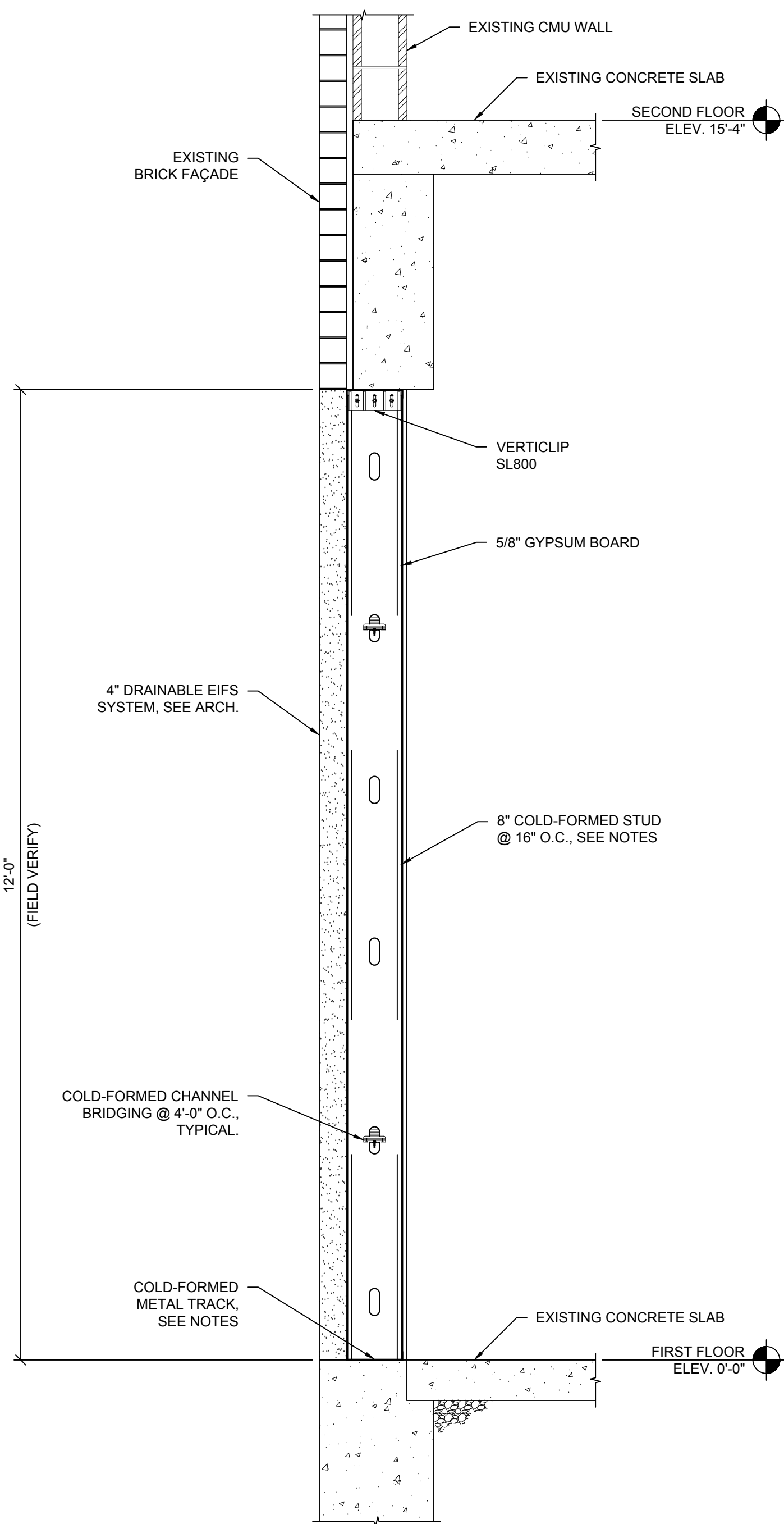
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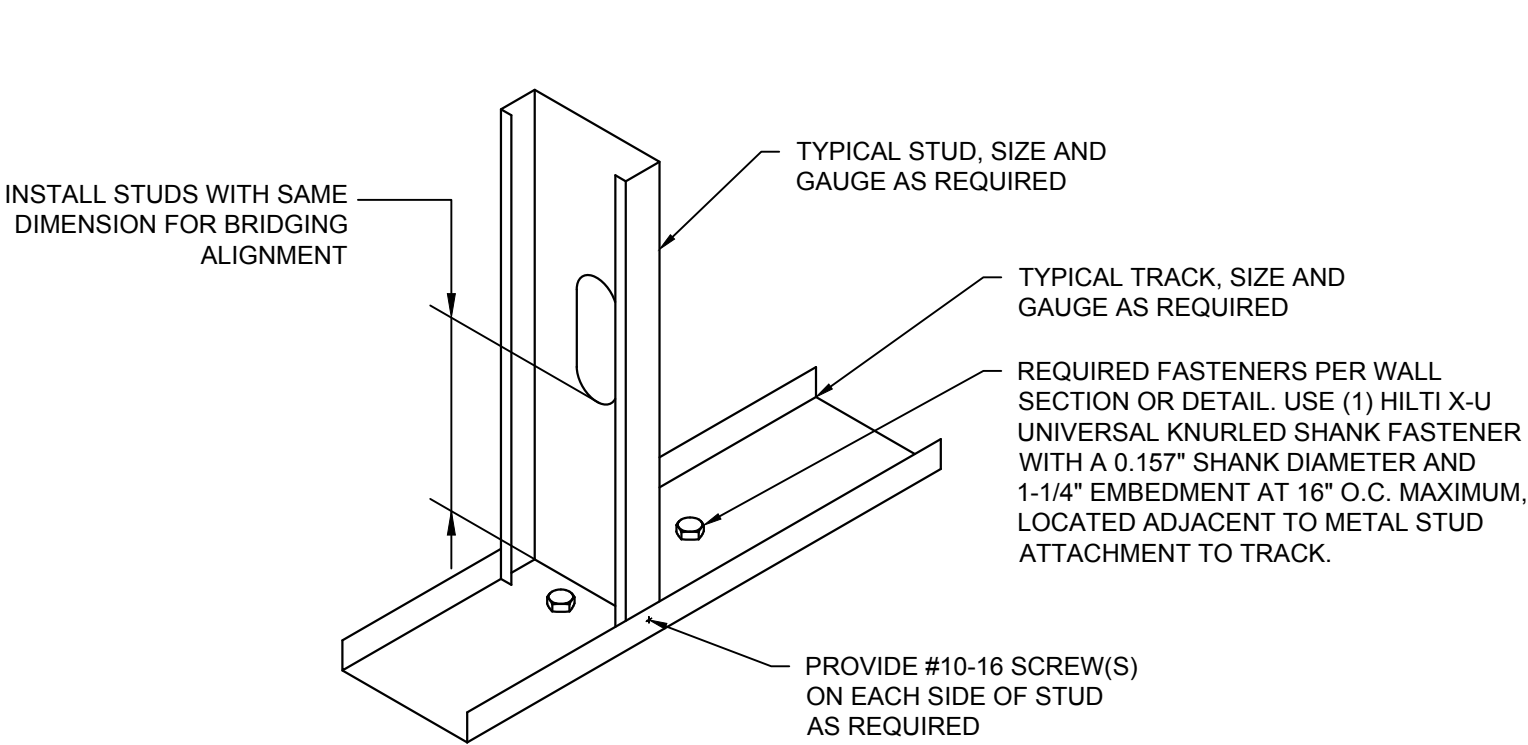
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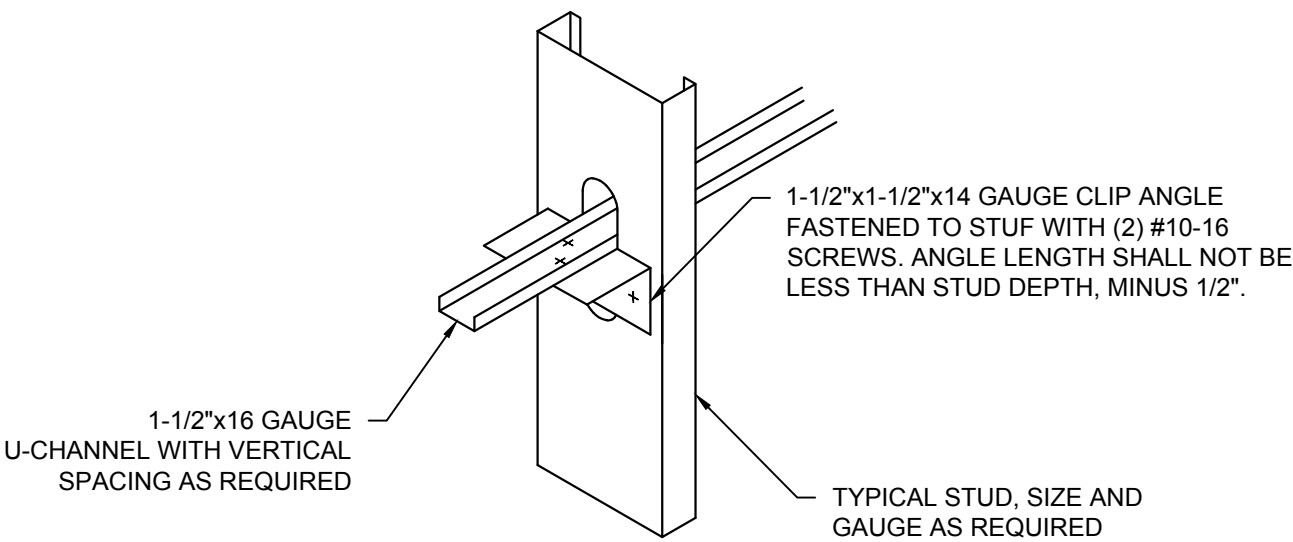
TYPICAL COLD-FORM
STUD EXTERIOR WALL SECTION
SCALE: 3/4"=1'-0"

NOTES:

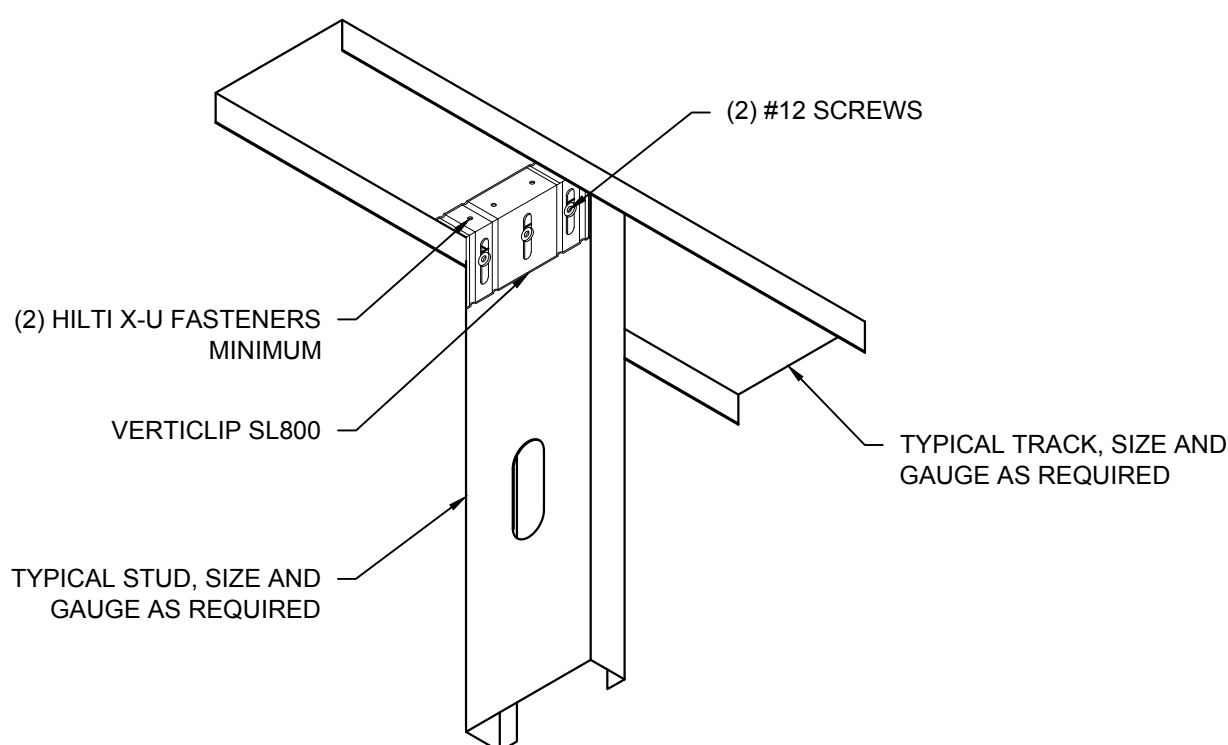
- ALL COLD-FORMED STUDS SHALL BE 800S137-33 (33ksi) SPACED 16" O.C.
- ALL COLD-FORMED TRACK SHALL USE 800T125-43 (33ksi) TRACKS.



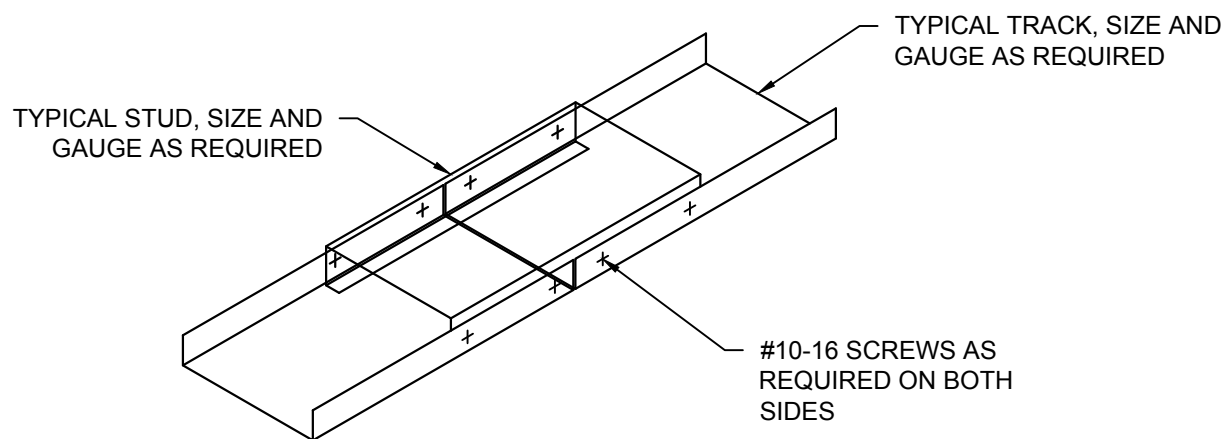
TYPICAL STUD TO TRACK
CONNECTION DETAIL
SCALE: NO SCALE



TYPICAL U-CHANNEL
WALL BRIDGING DETAIL
SCALE: NO SCALE



TYPICAL VERTICLIP
CONNECTION DETAIL
SCALE: NO SCALE

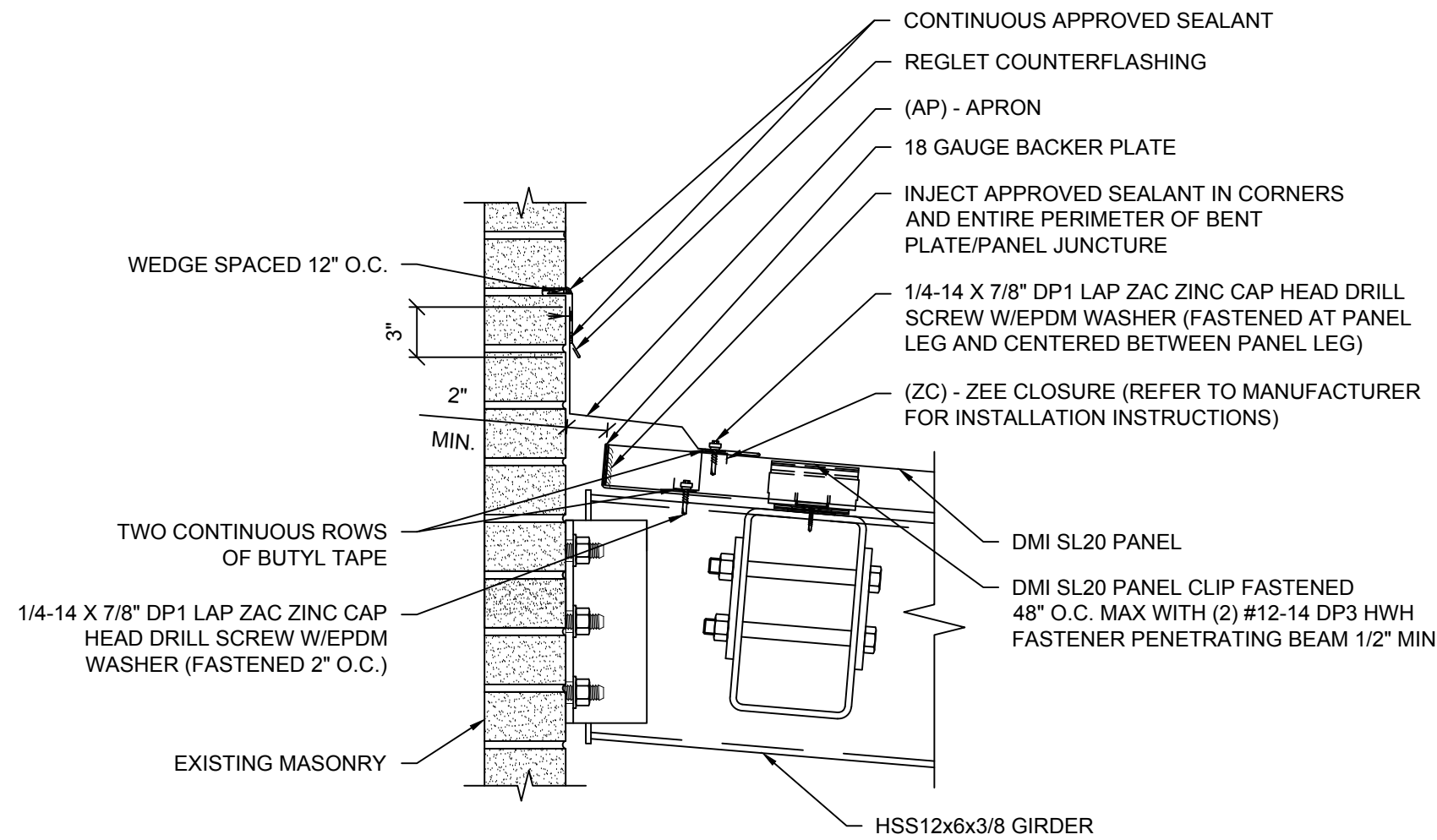


TYPICAL TRACK SPLICE
CONNECTION DETAIL
SCALE: NO SCALE

NOTE
REGLET FLASHING TO BE INSTALLED BELOW ALL WEEP HOLES.
SURFACED MOUNT COUNTERFLASHINGS NOT ACCEPTABLE.

FLASHING LAP NOTE
LAP APRON AND REGLET 2" MINIMUM WITH 2 ROWS OF BUTYL SEALANT.

FASTENER NOTE
ALL EXTERIOR FASTENERS ARE TO BE GALVANIZED.



**TYPICAL COVERED PARKING AREA ROOF
HIGH EAVE SHEET METAL AND FLASHING DETAIL**
SCALE: NO SCALE

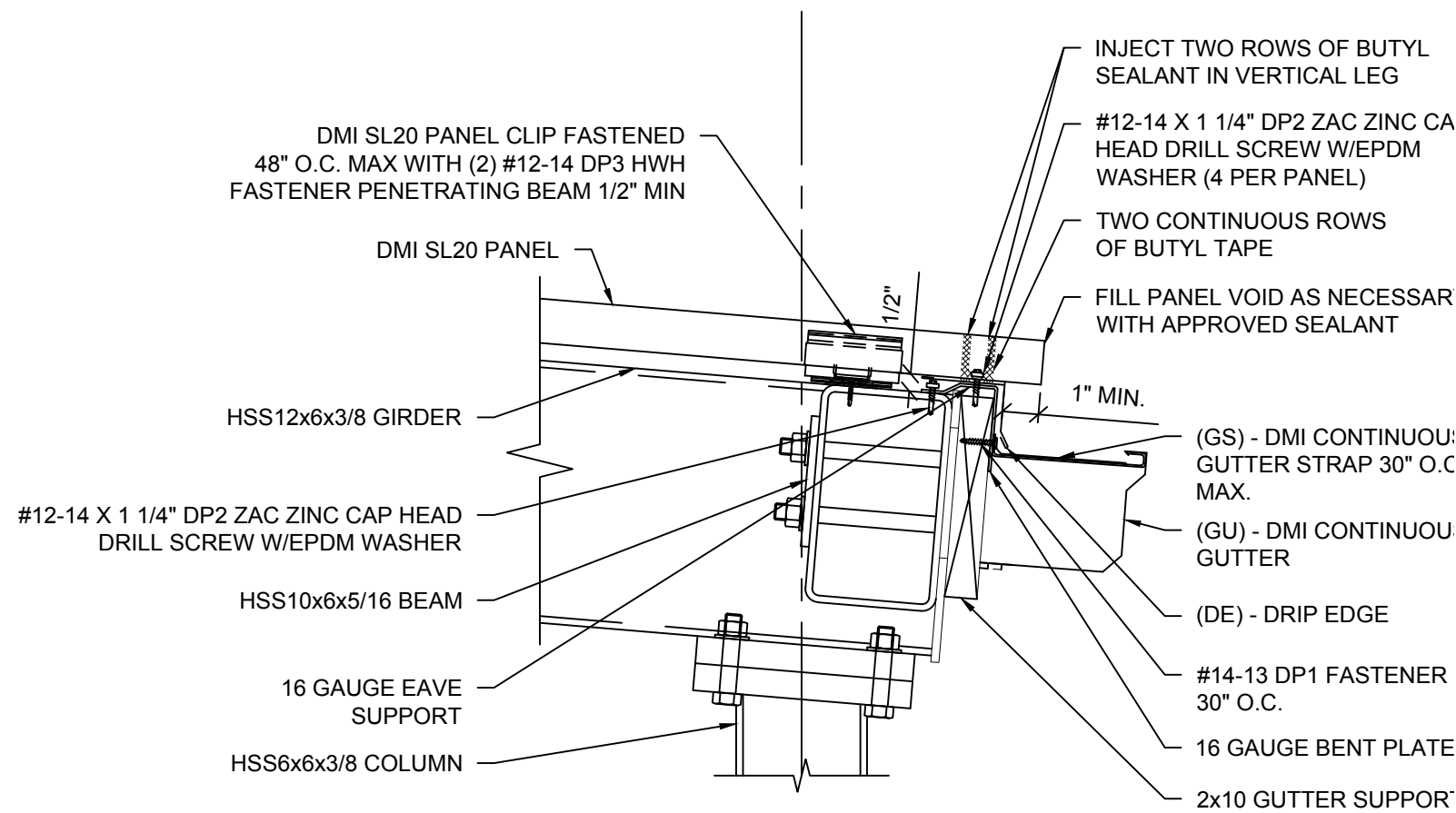
NOTES:

1. DMI SL20 PANEL AND DETAILS SHOWN ARE BASIS OF DESIGN. EQUIVALENT ALTERNATIVES ARE ACCEPTABLE AS NOTED IN THE SPECIFICATIONS.

GUTTER LAP NOTE
LAP GUTTER 3" MIN W/ 2 ROWS OF APPROVED SEALANT AND POP RIVET JOINT 2" O.C. SET IN AND CAP POP RIVETS IN APPROVED SEALANT.

FLASHING LAP NOTE
LAP FLASHINGS 2" MIN W/ 1 ROW OF BUTYL SEALANT.

FASTENER NOTE
ALL EXTERIOR FASTENERS ARE TO BE GALVANIZED.



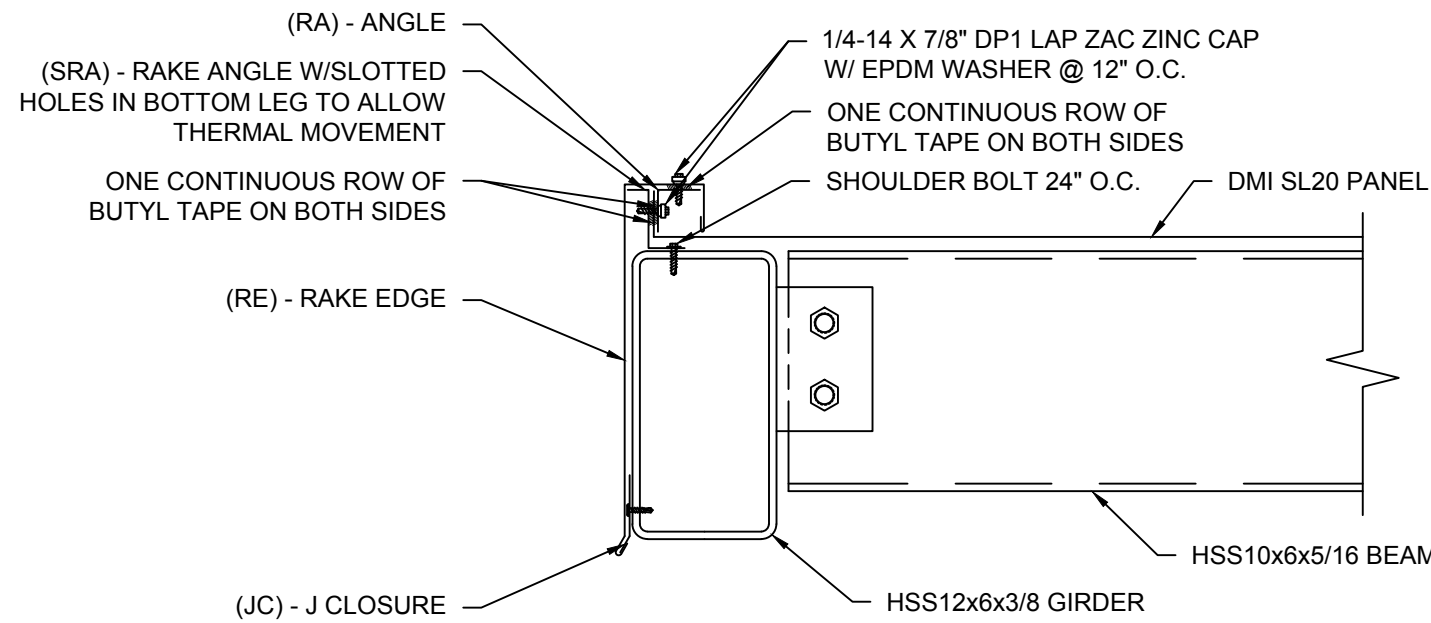
**TYPICAL COVERED PARKING AREA ROOF LOW
EAVE SHEET METAL AND GUTTER DETAIL**
SCALE: NO SCALE

NOTES:

1. DMI SL20 PANEL AND DETAILS SHOWN ARE BASIS OF DESIGN. EQUIVALENT ALTERNATIVES ARE ACCEPTABLE AS NOTED IN THE SPECIFICATIONS.

FLASHING LAP NOTE
LAP FLASHINGS 2" MIN W/ 1 ROW OF BUTYL SEALANT.

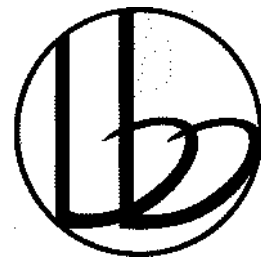
FASTENER NOTE
ALL EXTERIOR FASTENERS ARE TO BE GALVANIZED.



**TYPICAL COVERED PARKING AREA
ROOF RAKE DETAIL**
SCALE: NO SCALE

NOTES:

1. DMI SL20 PANEL AND DETAILS SHOWN ARE BASIS OF DESIGN. EQUIVALENT ALTERNATIVES ARE ACCEPTABLE AS NOTED IN THE SPECIFICATIONS.



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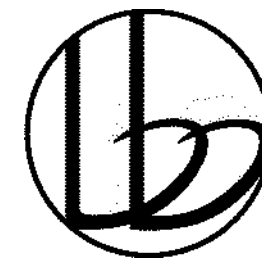
S503



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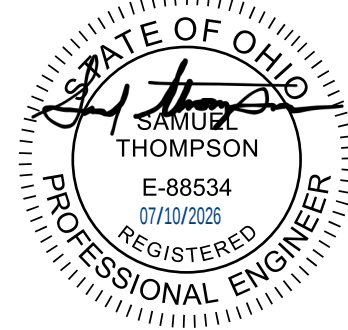
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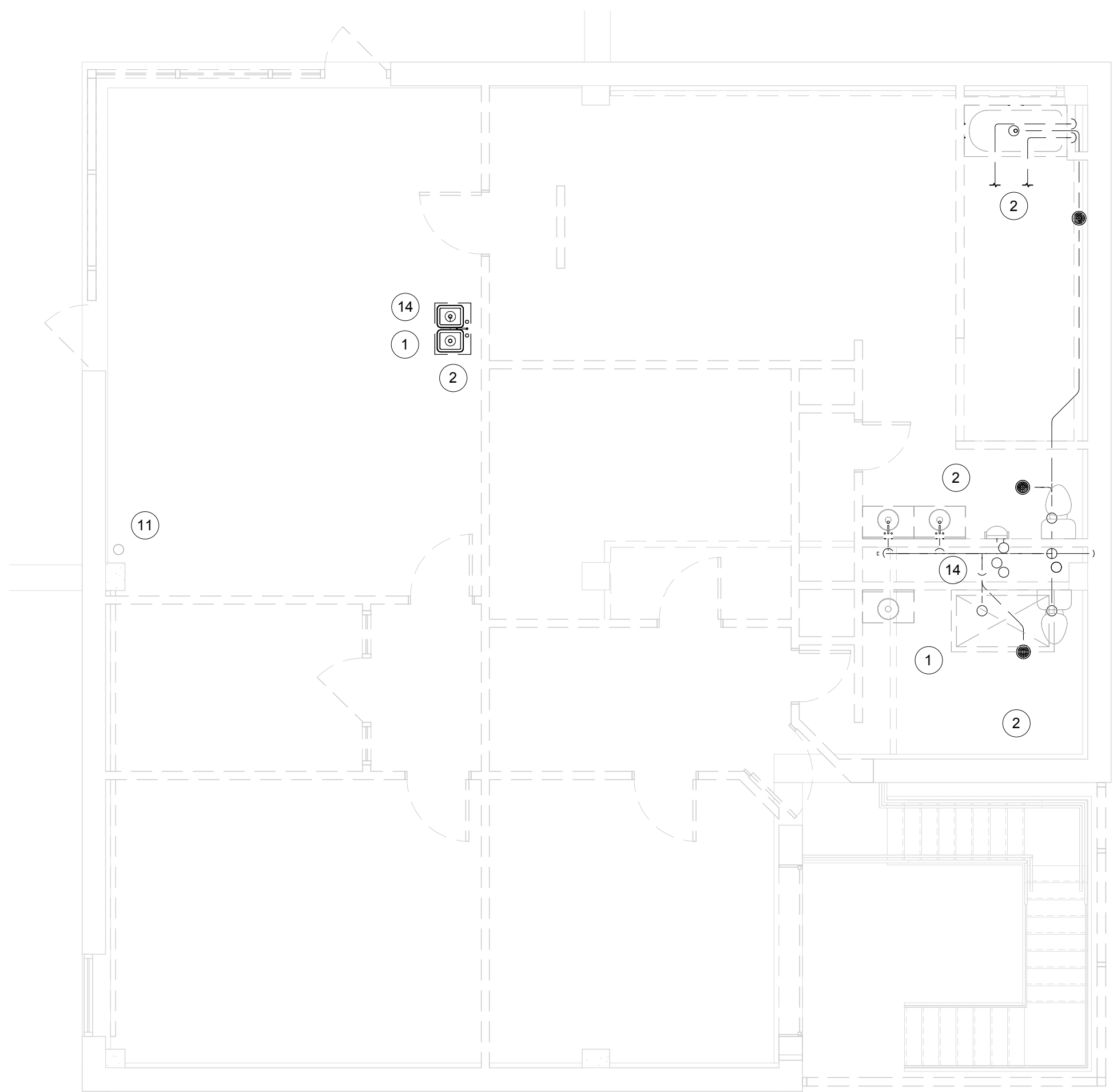
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OPERATIONS BLDG
DEMOLITION PLANS

PD101

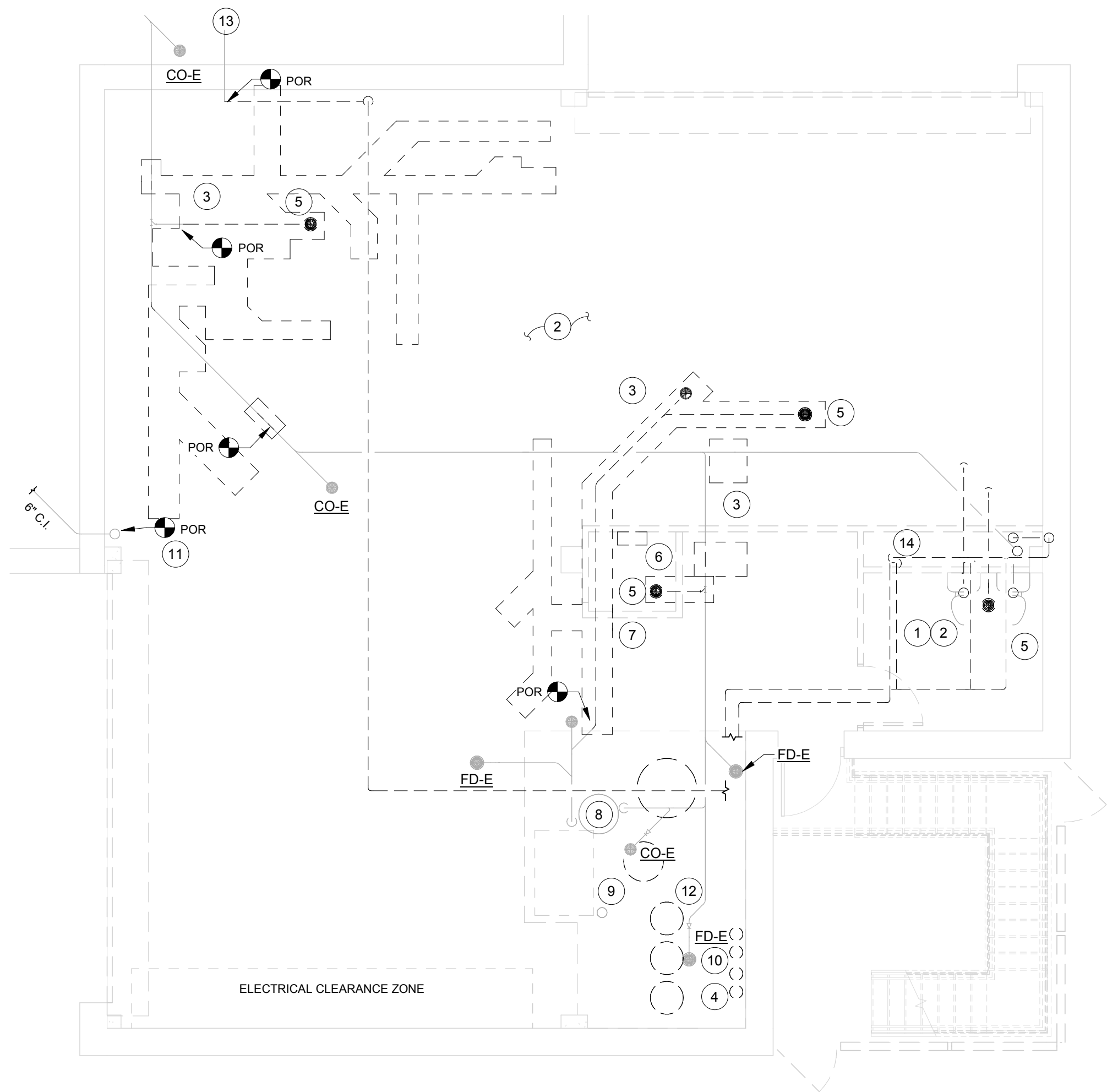
DEMOLITION NOTES:

1. REMOVE AND DISPOSE ALL EXISTING FIXTURES IN THIS AREA.
2. DEMO EXISTING DCW AND DHW LINES IN THIS AREA. DEMO DOMESTIC LINES BACK TO WELL HEAD/BUILDING WATER ENTRANCE.
3. TRENCH FLOOR AS NECESSARY FOR NEW SANITARY PIPING BELOW FLOOR. REFER TO PLUMBING NEW WORK PLAN AND ARCHITECTURAL SHEETS FOR EXACT LOCATION OF THE TRENCH PRIOR TO CUTTING THE FLOOR. CONTRACTOR TO VIDEO INSPECT PIPES AND TURN INFORMATION OVER TO THE ENGINEER PRIOR TO COMMENCING ANY WORK.
4. REMOVE REMAINING FOUNTAIN PIPING COMPLETE.
5. DEMO EXISTING FLOOR DRAIN. FILL IN DRAIN AIR-TIGHT AND PATCH FLOOR AS NECESSARY TO MATCH EXISTING FLOOR LEVEL.
6. REMOVE AND RETURN TO OWNER EEMAX INSTANTANEOUS WATER HEATER.
7. REMOVE CURBED FLOOR SINK.
8. EXISTING OIL SEPARATOR TO REMAIN.
9. EXISTING FLANGE FROM WELL HEAD TO REMAIN. REMOVE ALL DOMESTIC WATER DISTRIBUTION BEYOND EXISTING FLANGE.
10. REMOVE DI SYSTEM AND TURN OVER TO OWNER.
11. STORM DRAIN PIPING INSIDE THE BUILDING TO BE REMOVED AND REPLACED LIKE-IN KIND. EXISTING THROUGH WALL STORM LATERAL TO REMAIN.
12. REMOVE EXISTING WELL. ACCUMULATOR TANKS. COORDINATE WITH SYSTEM OPERATIONAL PHASING NOTES.
13. UNDERGROUND WATER FEED TO OTHER CAMPUS BUILDINGS TO REMAIN. REFER TO PHASING NOTES FOR MORE INFORMATION.
14. REMOVE ALL SANITARY PIPING ABOVE SLAB.



OPERATIONS BLDG: SECOND FLOOR DEMO PLAN

SCALE: 3/16" = 1'-0"



OPERATIONS BLDG: FIRST FLOOR DEMO PLAN

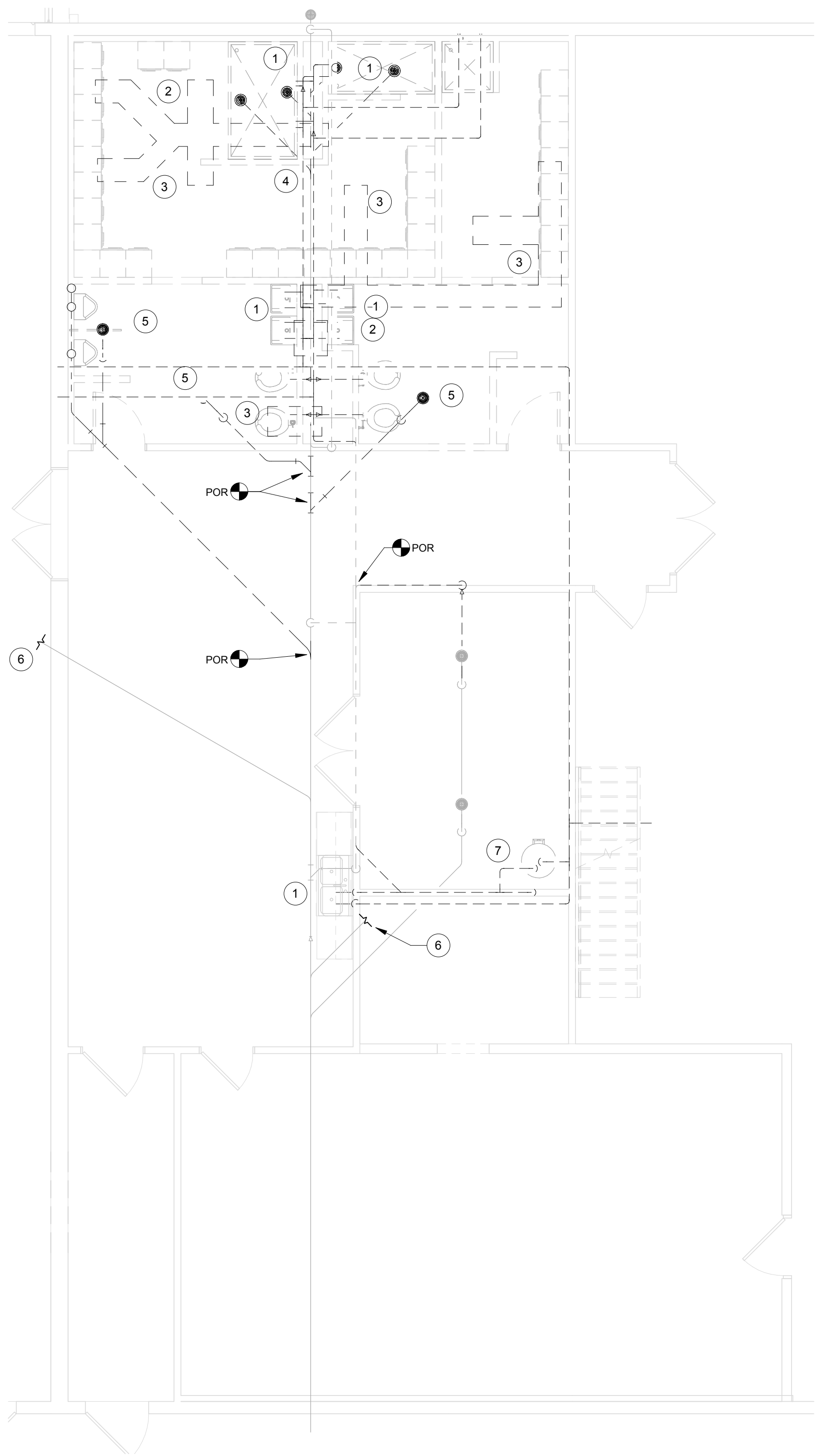
SCALE: 3/16" = 1'-0"



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DEMOLITION NOTES:

1. REMOVE AND DISPOSE ALL EXISTING FIXTURES IN THIS AREA.
2. DEMO EXISTING DCW AND DHW LINES IN THIS AREA.
3. TRENCH FLOOR AS NECESSARY FOR NEW PIPING BELOW SLAB. REFER TO PLUMBING NEW WORK PLAN AND ARCHITECTURAL SHEETS FOR EXACT LOCATION OF THE TRENCH PRIOR TO CUTTING THE FLOOR. CONTRACTOR TO VIDEO INSPECT PIPES AND TURN INFORMATION OVER TO THE ENGINEER PRIOR TO COMMENCING ANY WORK.
4. REMOVE EXISTING VENT PIPING ABOVE THE CEILING. MAINTAIN EXISTING VTR FOR REUSE WITH NEW WORK.
5. DEMO EXISTING FLOOR DRAIN. FILL IN DRAIN AIR-TIGHT AND PATCH FLOOR AS NECESSARY TO MATCH EXISTING FLOOR LEVEL.
6. FIELD VERIFY SANITARY AND VENT CONNECTIONS TO MOP SINK AND HAND SINKS OUTSIDE OF THE AREA OF WORK. DWV PIPING SERVING THESE FIXTURES SHALL BE MAINTAINED.
7. EXISTING WATER HEATER TO REMAIN. DEMO DOMESTIC LINES EXTENDING TO AND FROM WATER HEATER.



MAINT BLDG: SANITARY DEMO PLAN

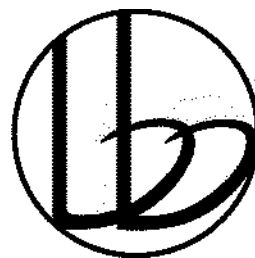
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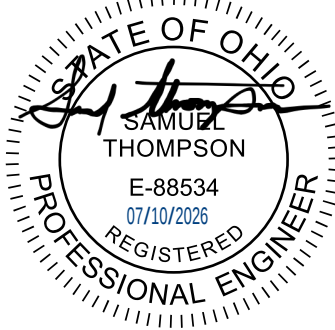
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MAINTENANCE BLDG
DEMOLITION PLAN

PD102

GENERAL PLUMBING NOTES:

- A. PROJECT COORDINATION: CONSULT THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS TO AVOID INTERFERENCES AND CONFLICTS WITH OTHER TRADES. COVER REWORK COSTS DUE TO LACK OF COORDINATION.
- B. REGULATORY REQUIREMENTS: FILE PERMIT APPLICATIONS AND PAY ASSOCIATED COSTS WITH THE NECESSARY GOVERNING AUTHORITIES RELATIVE TO DOMESTIC WATER AND SANITARY SEWER INSTALLATION WORK ON THIS PROJECT. WORK SHALL CONFORM TO APPLICABLE CODES (MATERIAL AND LABOR), INCLUDING ACCESSIBILITY REQUIREMENTS.
- C. REFER TO THE SPECIFICATION BOOK FOR INFORMATION NOT CONTAINED WITHIN THE DRAWING SET. SUBMIT A REQUEST FOR INFORMATION (RFI) IF INSUFFICIENT INFORMATION IS FOUND WITHIN THE PROJECT MANUAL.
- D. "PROVIDE" MEANS "FURNISH AND INSTALL."
- E. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES. WHERE THERE IS A CONFLICT, THE MOST STRINGENT SHALL APPLY.
- F. INSTALL ALL ITEMS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, DETAILS AND DESIGN. EQUIPMENT CALLED OUT BY CERTAIN MANUFACTURERS IS INTENDED TO CREATE A STANDARD. EQUALS MAY BE ACCEPTED UPON APPROVAL.
- G. VISIT SITE AND REVIEW THE EXISTING CONDITIONS AND WORK TO BE DONE. CAREFULLY CHECK PLANS OF ALL DISCIPLINES. ASSUME RESPONSIBILITY FOR A COMPLETE AND FUNCTIONING SYSTEM, INCLUDING VERIFICATION OF DIMENSIONS, SEQUENCING, ETC. MAKE ADJUSTMENTS AS NECESSARY BEFORE BEGINNING WORK.
- H. ALL ITEMS SHALL BE NEW UNLESS OTHERWISE NOTED. PROVIDE AND INSTALL PLUMBING SYSTEM ELEMENTS, COMPLETE. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL CODES.
- I. CONTRACTOR SHALL BE RESPONSIBLE FOR ENVIRONMENTAL CONTROLS REQUIRED TO PREVENT DUST AND CONTAMINATES FROM MIGRATING FROM WORK AREA TO OCCUPIED AREAS. PROVIDE AND INSTALL BARRIER PROTECTION AS REQUIRED FOR JOB PERFORMANCE AND SAFETY.
- J. ANY PORTION OF THE PROPERTY OR BUILDING DAMAGED BY THE CONTRACTOR AS A RESULT OF CONSTRUCTION SHALL BE REPLACED AND/ OR REPAIRED AT NO COST TO THE OWNER.
- K. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS. CHANGES SHALL NOT BE MADE WITHOUT APPROVAL OF THE OWNER.
- L. PREPARE OR OBTAIN FROM THE MANUFACTURER SHOP DRAWINGS OF ALL ITEMS OF EQUIPMENT TO BE FURNISHED AND SUBMIT ELECTRONIC COPIES TO THE ARCHITECT AND/OR ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH INSTALLATION OR CONSTRUCTION. THESE DRAWINGS SHALL BE COMPLETE IN EVERY RESPECT SHOWING PERTINENT DETAILS OF SIZE, COLOR, FINISH, KINDS AND THICKNESS OF MATERIALS.
- M. ALL WORK SHALL BE DONE IN A PROFESSIONAL AND CRAFTSMAN-LIKE MANNER.
- N. GUARANTEE WORK FOR A MINIMUM PERIOD OF 1 (ONE) YEAR FOLLOWING THE OWNER TURN-OVER. REPLACE DEFECTIVE SYSTEM COMPONENTS (LABOR AND MATERIALS) AT NO COST TO OWNER DURING THIS PERIOD.
- O. CLOSEOUT PROCEDURES: DEMONSTRATE OPERATION OF SYSTEMS AND EQUIPMENT TO THE OWNER, FURNISH THE OPERATING AND SERVICE MANUALS FOR EQUIPMENT TO THE OWNER.
- P. PLUMBING PIPING:
- a. PROVIDE PIPING SYSTEMS COMPLETE, UNLESS NOTED OTHERWISE. COMPLETE INSTALLATION SHALL INCLUDE, BUT NOT BE LIMITED TO, PIPE AND FITTINGS, PIPE HANGERS AND ANCHORS, EQUIPMENT, FIXTURES, SPECIALTIES, ETC. COORDINATE PROVISIONS FOR PENETRATIONS IN WALLS OR FLOORS (I.E. SLEEVES, LINTELS, ETC.) WITH THE GENERAL CONTRACTOR.
- b. FIELD VERIFY EXISTING PIPE SIZES, LOCATIONS, RELATIVE DIMENSIONS, ETC.
- c. CONCEAL PIPES WITHIN WALLS OR CHASES WHENEVER PRACTICAL.
- Q. DOMESTIC WATER PIPING:
- a. PROVIDE AND INSTALL DOMESTIC HOT AND COLD WATER DISTRIBUTION TO NECESSARY LOCATIONS INCLUDING VALVES, FITTINGS, HANGERS, BACKFLOW PREVENTERS, WATER HEATERS, ETC.
- b. INSTALL WATER PIPING MEETING THE REQUIREMENTS OF PLUMBING CODE.
- c. SUPPORT PIPING WITH 3/8" ALL THREAD AND CLEVIS HANGERS AND IN ACCORDANCE WITH SECTION 308 OF THE PLUMBING CODE.
- d. INSULATE NEW DOMESTIC HOT AND COLD WATER DISTRIBUTION INCLUDING FITTINGS.
- e. PROVIDE AND INSTALL SERVICE VALVES ON DOMESTIC HOT AND COLD WATER DISTRIBUTION TO EACH FIXTURE. LOCATE VALVES IN CONVENIENT LOCATIONS.
- f. PROVIDE AN APPROPRIATE WATER HAMMER ARRESTOR DEVICE AT EQUIPMENT WITH QUICK CLOSING VALVES.
- R. SANITARY WASTE AND VENT PIPING:
- a. PROVIDE SANITARY SEWER TO NECESSARY LOCATIONS INCLUDING FLOOR DRAINS, CLEANOUTS, TRAPS, VENTS, ETC.
- b. INSTALL SANITARY SEWER MEETING THE REQUIREMENTS OF THE PLUMBING CODE.
- c. INSTALL SANITARY SEWER PIPE WITH 1/4" PER FOOT MINIMUM SLOPE UNLESS NOTED OTHERWISE.
- d. LOOP VENTS ABOVE SUSPENDED CEILING.
- e. PVC IS NOT ACCEPTABLE FOR VENT PIPING IN PLENUM SPACE(S) ABOVE CEILING.
- f. PVC PIPE IS ACCEPTABLE FOR WASTE AND VENT PIPING, (EXCEPT AS NOTED ABOVE). COORDINATE PIPE MATERIALS AND PLENUMS.
- S. PLUMBING FIXTURES:
- a. PLUMBING FIXTURES SHALL BE WHITE UNLESS OTHERWISE NOTED.
- b. EXPOSED TRAPS AND TRIM SHALL BE BRIGHT CHROME UNLESS OTHERWISE NOTED.
- c. REFERENCE ARCHITECTURAL SHEETS FOR PLUMBING FIXTURE LOCATIONS, MOUNTING HEIGHTS, ETC.

GENERAL DEMOLITION NOTES:

- A. EXISTING CONDITIONS SHOWN ON THIS DRAWING ARE TAKEN FROM ORIGINAL DRAWINGS AND FIELD INVESTIGATION. ALL EXISTING CONDITIONS MUST BE VERIFIED PRIOR TO BID. FIELD CONDITIONS SHALL GOVERN.
- B. UTILITIES AND SYSTEMS SERVING OTHER SPACES OR FLOORS THAT RUN THROUGH THE PROJECT AREA SHALL REMAIN ACTIVE DURING CONSTRUCTION SO AS NOT TO CAUSE ANY DISRUPTION TO THESE OTHER SPACES.
- C. COORDINATE DISPOSAL REQUIREMENTS WITH THE OWNER PRIOR TO DEMOLITION. ITEMS TO BE SALVAGED FOR THE OWNER SHALL BE REMOVED (UNDAMAGED) AND TURNED OVER TO OWNER. CAREFULLY TRANSPORT TO AND NEATLY STORE AT AN ON-SITE STORAGE LOCATION AS DIRECTED IN THE FIELD.

WATER SERVICE PHASING NOTES:

THIS PROJECT CONSISTS OF TWO BUILDINGS UNDERGOING RENOVATION WORK. THE DOMESTIC WATER SYSTEMS OF BOTH BUILDINGS ARE INTERCONNECTED AND FED FROM TWO DOMESTIC WELLS, WHICH ENTER THE OPERATIONS BUILDING, IS TREATED, AND IS THEN SUPPLIED TO THE MAINTENANCE BUILDING. THE BUILDINGS CANNOT BE SIMULTANEOUSLY OUT OF OPERATION, AS THE FACILITY IS A 24 HOUR, 7 DAY A WEEK, 365 DAY A YEAR STAFFED FACILITY.

REFER TO THE ARCHITECTURAL FOR PHASING PLAN NOTES AND COORDINATE WORK WITH THE OWNER BEFORE ANY WORK. UTILITY OUTAGES OR SYSTEM MODIFICATIONS COMMENCE. IT IS ANTICIPATED THAT THE WELL FEED WILL NEED TO BE MAINTAINED FOR THE DURATION OF THE PROJECT. HOWEVER, TO FACILITATE CHANGEOVER, WATER OUTAGES SHALL BE LIMITED TO 8 HOURS OR LESS AND SHALL BE COORDINATED WITH THE COUNTY IN WRITING TWO WEEKS PRIOR TO THE SCHEDULED OUTAGE. INCLUDE WITH THE BID PACKAGE A PHASING PLAN TO IMPLEMENT THE WATER SERVICE MODIFICATION.

CONSTRUCTION ON THE OPERATIONS BUILDING IS ANTICIPATED TO BE COMPLETED FIRST. IT IS ANTICIPATED THE NEW WELL TREATMENT WILL REQUIRE A TIME PERIOD WHERE THE OLD TREATMENT WELL TANK SYSTEM WILL BE REMOVED FROM SERVICE. THE COUNTY IS ALLOWING UP TO TWO WEEKS OF TIME FOR "RAW" WELL WATER TO BE PROVIDED TO THE BUILDINGS. THIS TWO WEEK PERIOD WILL ALLOW FOR TREATMENT SYSTEM CHANGEOVER. THE COUNTY WILL PROVIDE POTABLE WATER FOR ITS EMPLOYEES DURING THE TWO WEEK CHANGEOVER. SOLUTIONS TO LIMIT THE DOWNTIME OR TIME WITH RAW WATER WILL BE CONSIDERED. THE AWARDED CONTRACTOR SHALL PROVIDE A FINALIZED PHASING PLAN AT THE CONSTRUCTION KICKOFF MEETING. THE POTABLE WATER OUTAGE SHALL OCCUR ONLY AFTER ALL SYSTEM COMPONENTS ARE PROCURED TO INSTALL THE NEW TREATMENT SYSTEMS COMPLETE.

CONTRACTOR TO PROVIDE TEMPORARY TOILET FACILITIES FOR CONSTRUCTION WORKERS, AS WELL AS SEPARATE TEMPORARY TOILET FACILITIES LOCATED BY THE TEMPORARY OFFICE TRAILER FOR THE DURATION OF THE WATER OUTAGES.

PIPING LEGEND

	PIPE ANCHOR
	PIPE GUIDE
	EXPANSION JOINT
	VENTURI
	GATE VALVE
	GLOBE VALVE
	HOSE VALVE WITH CAP
	BUTTERFLY VALVE
	CHECK VALVE
	DOUBLE BACKFLOW PREVENTER
	BALANCING VALVE
	BALL VALVE
	PLUG VALVE
	SOLENOID VALVE
	SAFETY OR PRESSURE RELIEF, ANGLE VALVE
	SAFETY OR PRESSURE RELIEF, STRAIGHT THRU VALVE
	PRESSURE REGULATING VALVE
	AUTOMATIC CONTROL VALVE, 2 WAY
	AUTOMATIC CONTROL VALVE, 3 WAY
	CAP
	ELBOW, 90°
	ELBOW, 90° TURNED UP
	ELBOW, 90° TURNED DOWN
	ELBOW, 45°
	TEE
	TEE, TURNED UP
	TEE, TURNED DOWN
	LATERAL Y
	REDUCER
	UNION
	STRAINER
	METER
	REGULATOR
	CLEANOUT
	FLOOR DRAIN
	VENT THROUGH ROOF
	POINT OF REMOVAL
	POINT OF CONNECTION
	UNLESS NOTED OTHERWISE

DRAWING INDEX	
SHEET NO.	DESCRIPTION
P001	PLUMBING GENERAL NOTES & LEGENDS
PD101	OPERATIONS BLDG DEMOLITION PLANS
PD102	MAINTENANCE BLDG DEMOLITION PLAN
P101	OPERATIONS BUILDING SANITARY NEW WORK PLANS
P102	OPERATIONS BUILDING SUPPLY NEW WORK PLANS
P103	MAINTENANCE BLDG SANITARY NEW WORK PLAN
P104	MAINTENANCE BLDG SUPPLY NEW WORK PLANS
P601	FIXTURE SCHEDULE
P901	ISOMETRICS

EQUIPMENT LEGEND

	STORAGE TANK X = NUMBER
	SOLIDS SEPARATOR X = NUMBER
	SOLIDS RECOVERY FILTER X = NUMBER
	HEAT EXCHANGER X = NUMBER
	PUMP YYY = SERVICE, X = NUMBER
	EXPANSION TANK X = NUMBER
	MOTOR
	TEMPERATURE SENSOR WITH PIPE INSERTION BULB
	DIFFERENTIAL PRESSURE SENSOR
	VARIABLE FREQUENCY DRIVE
	CONTROL I/O POINT X = NUMBER

PIPING SYSTEM LEGEND

	EXISTING PIPING TO REMAIN
	EXISTING PIPING TO BE REMOVED
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RETURN PIPING
	DOMESTIC HOT WATER PIPING
	SANITARY DRAIN PIPING
	SANITARY VENT PIPING
	STORM DRAIN PIPING
	GAS PIPING

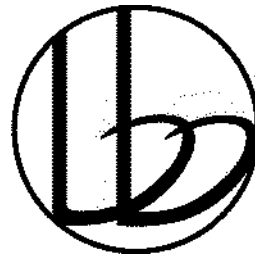
INFORMATION CONCERNING THE LOCATIONS AND SIZES OF EXISTING PLUMBING LINES AND FIXTURES IS BASED ON LIMITED INFORMATION AND CURSORY FIELD OBSERVATION, AND NOT ACTUAL "AS-BUILT" DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION, FLOW, AND SIZE OF EXISTING UNDER SLAB PLUMBING LINES PRIOR TO CONSTRUCTION AND/OR DEMO WORK.

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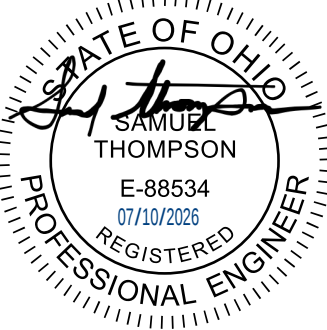


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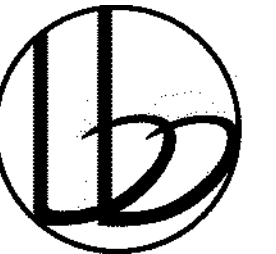
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PLUMBING GENERAL NOTES &
LEGENDS

P001



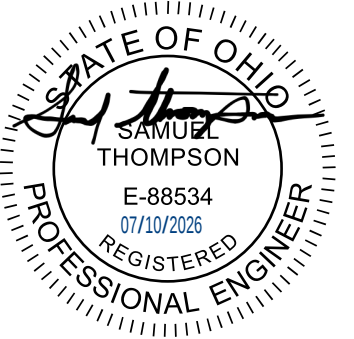
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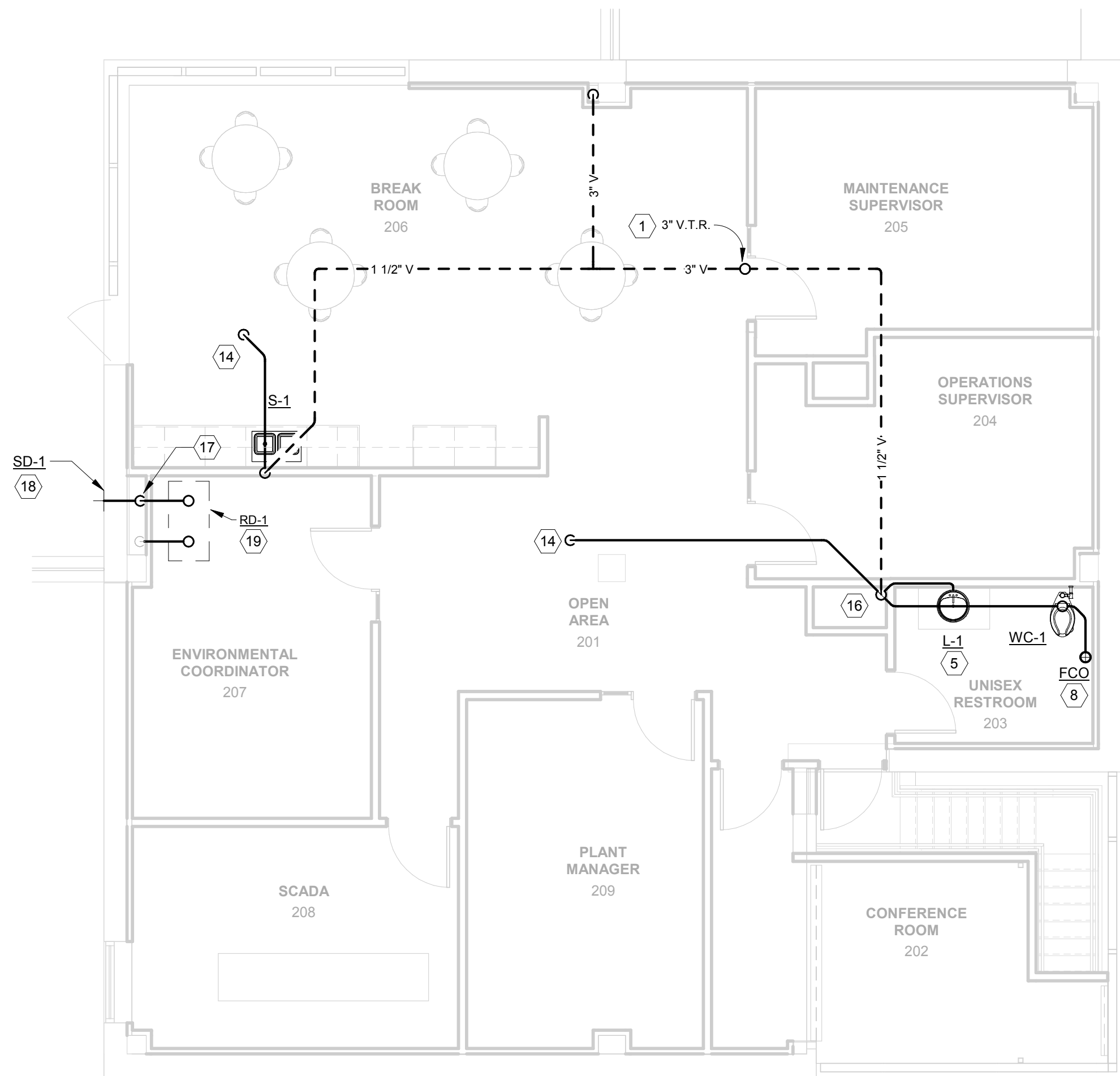
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OPERATIONS BUILDING
SANITARY NEW WORK PLANS

P101

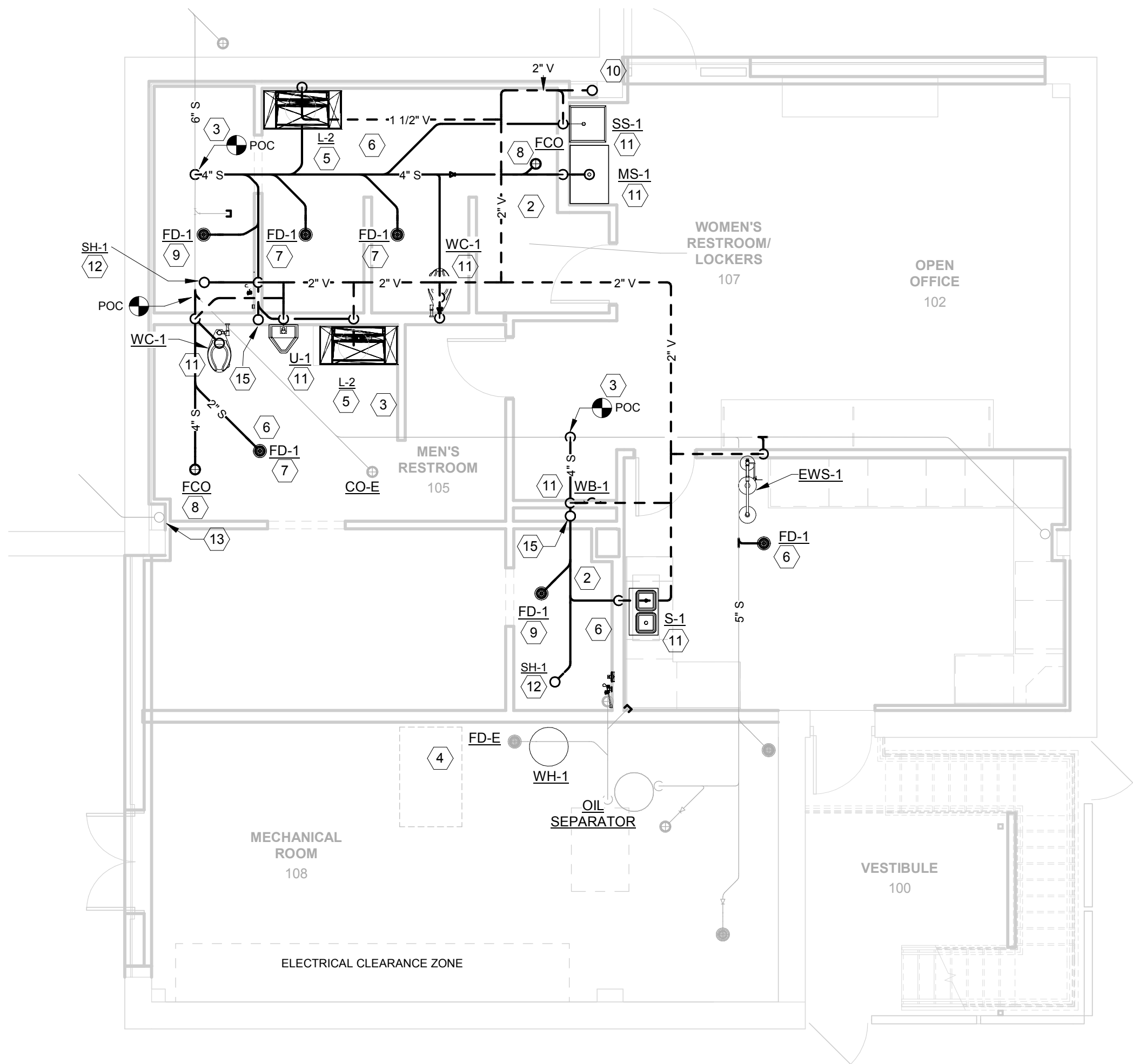
INSTALLATION NOTES:

1. LOCATION OF NEW VENT-THROUGH-ROOF. MAINTAIN MINIMUM 10'-0" DISTANCE FROM ALL OUTSIDE AIR INTAKES. EXTEND VTR TO A MINIMUM OF 12" ABOVE FINISHED ROOF MEMBRANE LEVEL.
2. FILL IN TRENCH AND PATCH FLOOR AS NECESSARY TO MATCH EXISTING AFTER PIPE INSTALLATION IS COMPLETE. REFER TO TRENCH INFILL DETAIL.
3. PROVIDE NEW SANITARY LINE AND CONNECTION TO EXISTING MAIN. FIELD VERIFY EXISTING CONDITIONS AND INVERTS BY VIDEO INSPECTION. REPAIR ANY DETERIORATED AREAS. PROVIDE VIDEO TO ENGINEER FOR REVIEW.
4. EXISTING FLOOR DRAIN TO REMAIN. PROVIDE FD-1 IF EXISTING CONDITION IS DAMAGED FOLLOWING DEMOLITION. RE-FEED EXISTING FLOOR DRAIN TRAP PRIMERS FROM NEW PRIMER LOCATION.
5. PLUMBING CONTRACTOR TO PROVIDE TROUGH SINK. EXTEND PIPING TO MAIN. REFER TO PLUMBING FIXTURE SCHEDULE. REFER TO ARCHITECTURAL ACCESSIBILITY ELEVATIONS FOR MOUNTING HEIGHT. REFER TO PLUMBING FIXTURE SCHEDULE AND SANITARY ISOMETRIC FOR MORE INFORMATION.
6. SANITARY WASTE PIPING ROUTED BELOW FLOOR. EXTEND TO EXISTING WASTE PIPING. FIELD VERIFY FOOTER LOCATIONS.
7. PROVIDE FLOOR DRAIN. EXTEND TRAP PRIMER CONNECTION TO TRAP PRIMER.
8. PROVIDE CLEANOUT.
9. INSTALL SHOWER FLOOR DRAIN. COORDINATE WITH ARCHITECTURAL AND GENERAL CONTRACTOR FOR INSTALLATION RESPONSIBILITY AND DELINEATION.
10. EXTEND VENT THROUGH TO ABOVE FLOOR. SEAL PENETRATION AT FLOOR DECK.
11. PROVIDE PLUMBING FIXTURE. REFER TO SCHEDULE AND INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
12. COORDINATE WITH GENERAL CONTRACTOR FOR FLOOR DRAIN ELEVATION AND SLOPING OF FLOOR FINISHES IN SHOWER SPACE TO THE FLOOR DRAIN.
13. REPLACE ROOF DRAIN. TIE INTO EXISTING ROOF DRAIN PIPING IN CHASE WITH 5" LINE TO MATCH EXISTING 5" DRAIN.
14. ROUTE SANITARY PIPING UNDER FLOOR IN 1ST FLOOR CEILING SPACE. PIPING CONTINUED ON FIRST FLOOR SPACE.
15. SANITARY PIPING RUN TO FIXTURE ON SECOND FLOOR.
16. EXTEND DRAIN AND VENT LINE UP THROUGH EXISTING CHASE OPENING. COORDINATE ROUTING WITH MECHANICAL CONTRACTOR.
17. ROUTE 4" SECONDARY STORM DRAIN LINE AS SHOWN TO SD-1. REFER TO PLUMBING FIXTURE SCHEDULE FOR FURTHER INFO.
18. PROVIDE DISCHARGE LOCATION FOR SECONDARY ROOF DRAIN. PROVIDE SPLASH BLOCK ON GRADE BELOW. MOUNT DRAIN 12" ABOVE GRADE ELEVATION.
19. PROVIDE DUAL DOME ROOF DRAIN. CONNECT TO PRIMARY AND SECONDARY DRAIN SYSTEMS. REFER TO FIXTURE SCHEDULE.



OPERATIONS BLDG SECOND FLOOR SANITARY PLAN

SCALE: 3/16" = 1'-0"



OPERATIONS BLDG FIRST FLOOR SANITARY PLAN

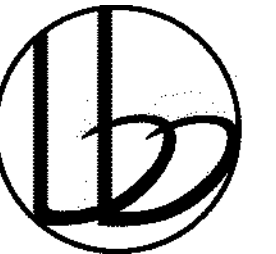
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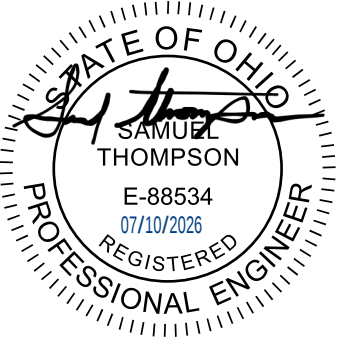
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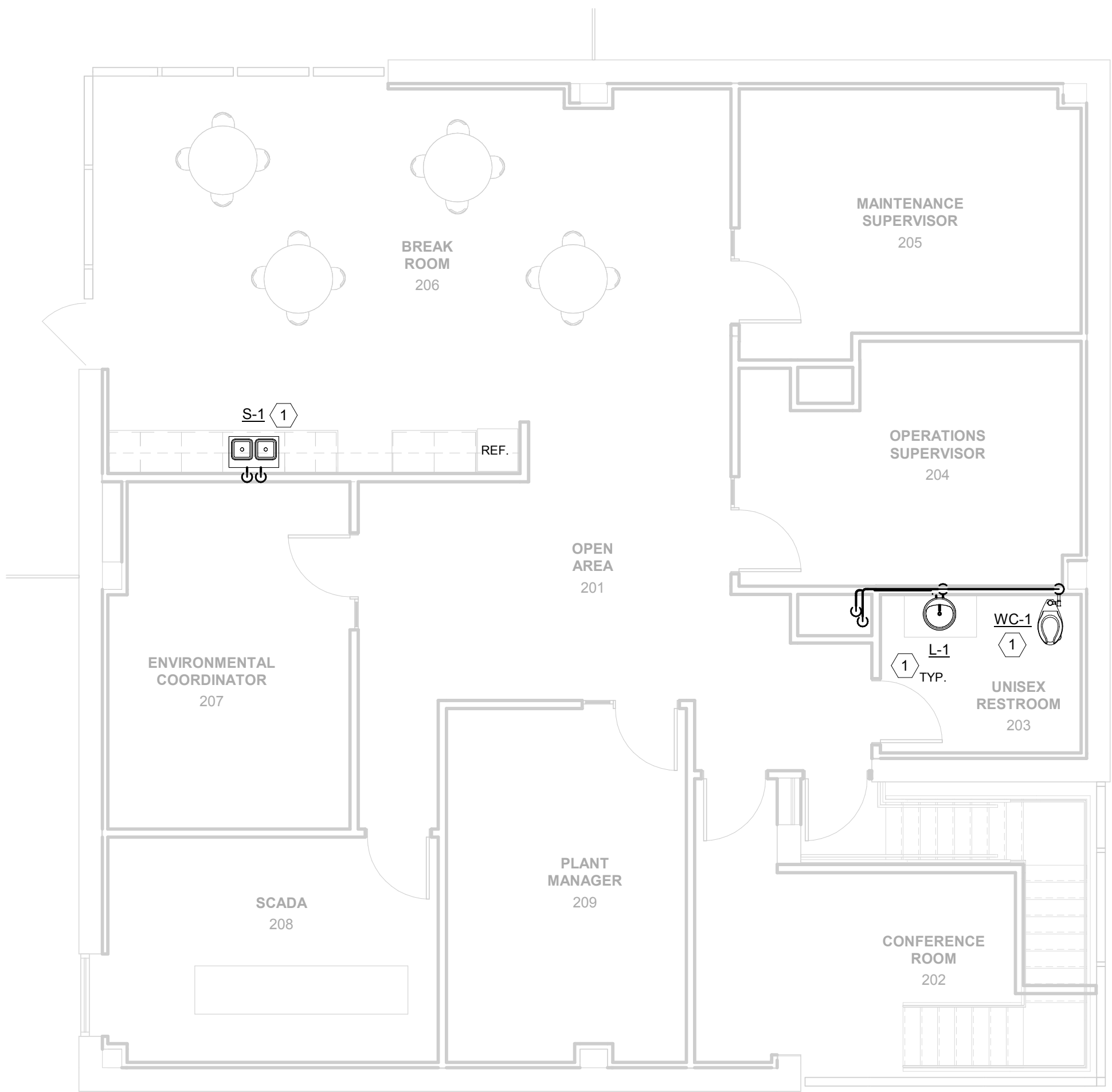
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OPERATIONS BUILDING SUPPLY
NEW WORK PLANS

P102

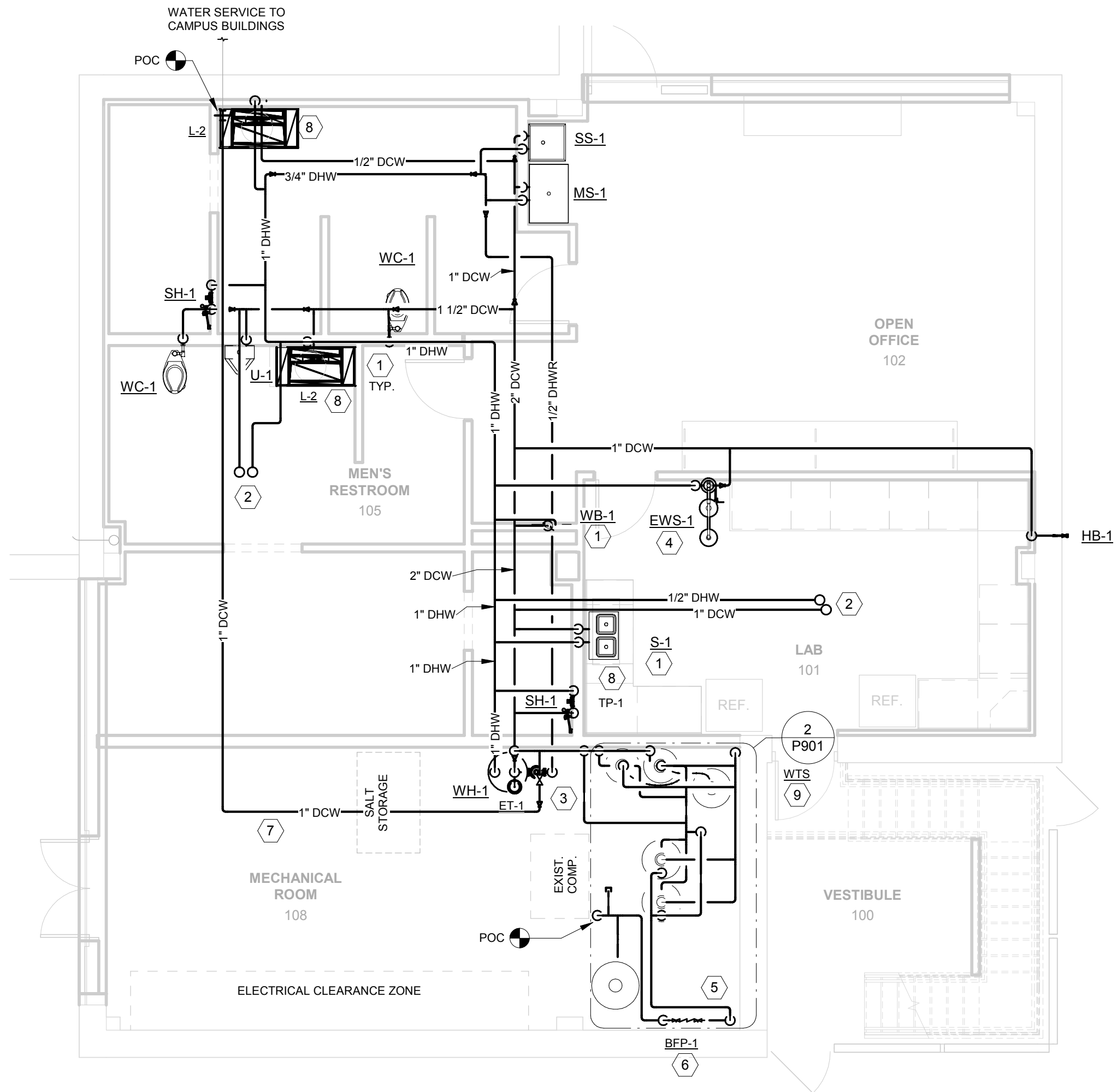
INSTALLATION NOTES:

1. PROVIDE NEW FIXTURES. REFER TO FIXTURE SCHEDULE SHEET P601.
2. RISER(S) TO SECOND FLOOR. PENETRATE FLOOR FOR NEW PIPE ROUTING. SLEEVE PENETRATION WITH PVC. PROVIDE PIPE SLEEVE AT FLOOR PENETRATION AT SUPPORT PIPING AT SLAB DECK.
3. PROVIDE HOT WATER RECIRCULATION PUMP. REFER TO FIXTURE SCHEDULE SHEET P601.
4. PROVIDE EYE WASH STATION AND ASSOCIATED MIXING VALVE. SEE FIXTURE SCHEDULE SHEET P601.
5. EXISTING FLANGE FROM WELL HEAD. EXTEND TO NEW PIPING SYSTEM. REFER TO WATER SYSTEM PHASING NOTES. EXISTING WELL PUMPS TO REMAIN. BUILDING WATER SYSTEM FED FROM TWO WELL HEADS WITH ALTERNATING DUTY. EXISTING CONTROLS TO REMAIN.
6. PROVIDE BACKFLOW PREVENTER. EXTEND STRAINER DRAIN TO FLOOR DRAIN.
7. REWORK SERVICE LINE INTO OTHER BUILDINGS. REFER TO SEQUENCING NOTES ON P001. MATCH EXISTING LINE SIZE.
8. PROVIDE TRAP PRIMER. EXTEND LINE TO FLOOR DRAIN.
9. PROVIDE WATER TREATMENT SYSTEM. REFER TO PLUMBING FIXTURE SCHEDULE AND ENLARGED PLAN FOR PIPE SIZES AT FILTRATION EQUIPMENT REFER TO WATER SYSTEM PHASING NOTES.



OPERATIONS BLDG SECOND FLOOR SUPPLY PLAN

SCALE: 3/16" = 1'-0"



OPERATIONS BLDG FIRST FLOOR SUPPLY PLAN

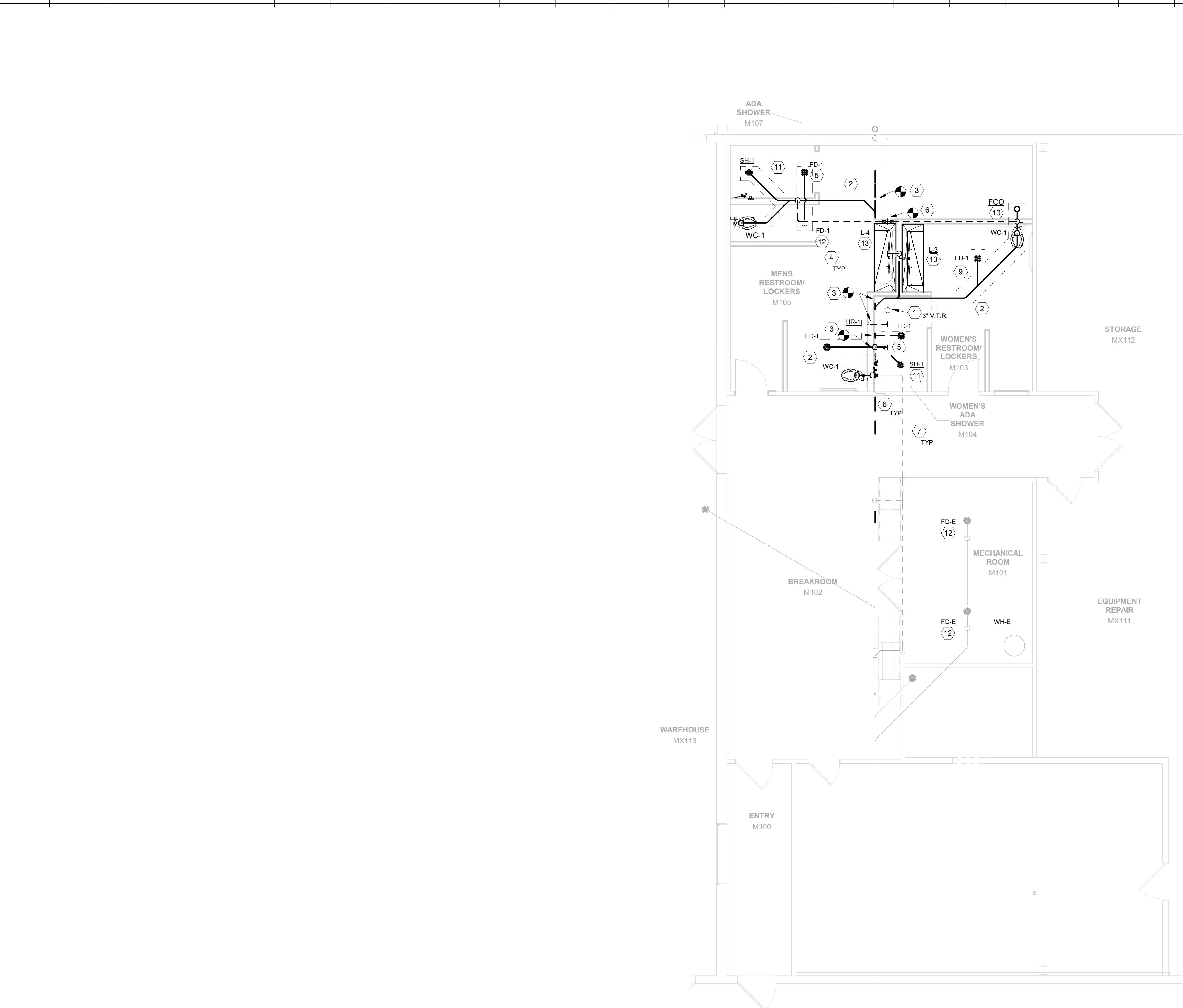
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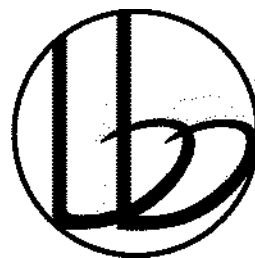


MAINTENANCE BUILDING SANITARY PLAN

SCALE: 3/16" = 1'-0"

INSTALLATION NOTES:

1. LOCATION OF VENT-THROUGH-ROOF: VERIFY LOCATION MAINTAINS MINIMUM 10'-0" DISTANCE FROM ALL OUTSIDE AIR INTAKES. EXTEND VTR TO A MINIMUM OF 12" ABOVE FINISHED ROOF MEMBRANE LEVEL.
2. FILL IN TRENCH AND PATCH FLOOR AS NECESSARY TO MATCH EXISTING AFTER PIPE INSTALLATION IS COMPLETE. REFER TO TRENCH INFILL DETAIL.
3. PROVIDE NEW SANITARY LINE AND CONNECTION TO EXISTING MAIN. FIELD VERIFY EXISTING CONDITIONS AND INVERTS BY VIDEO INSPECTION. REPAIR ANY DETERIORATED AREAS. PROVIDE VIDEO TO ENGINEER FOR REVIEW.
4. REFER TO ISOMETRIC AND SCHEDULES FOR INFORMATION ABOUT PIPE ROUTING AND FIXTURES.
5. COORDINATE WITH GENERAL CONTRACTOR FOR FLOOR DRAIN ELEVATION AND SLOPING OF FLOOR FINISHES IN SHOWER SPACE TO THE FLOOR DRAIN.
6. CONNECT NEW VENT SECTIONS TO EXISTING VENT SYSTEM.
7. EXISTING FIXTURES NOT SHOWN SHALL REMAIN FUNCTIONAL.
8. PROVIDE LAVATORY. EXTEND PIPING TO MAIN. REFER TO SCHEDULE FOR MORE INFORMATION. REFER TO SANITARY ISOMETRIC AND SCHEDULE FOR MORE INFORMATION.
9. PROVIDE FLOOR DRAIN. EXTEND TRAP PRIMER CONNECTION TO TRAP PRIMER.
10. PROVIDE CLEANOUT.
11. INSTALL SHOWER DRAIN. COORDINATE WITH ARCHITECTURAL AND GENERAL CONTRACTOR FOR INSTALLATION RESPONSIBILITY AND DELINEATION.
12. EXISTING FLOOR DRAIN TO REMAIN. PROVIDE FD-1 IF EXISTING CONDITION IS DAMAGED FOLLOWING DEMOLITION. PROVIDE BARRIER-TYPE TRAP SEALS AT EXISTING FLOOR DRAINS.
13. PLUMBING CONTRACTOR TO PROVIDE TROUGH SINK. REFER TO PLUMBING FIXTURE SCHEDULE. REFER TO ARCHITECTURAL ACCESSIBILITY ELEVATIONS FOR MOUNTING HEIGHT



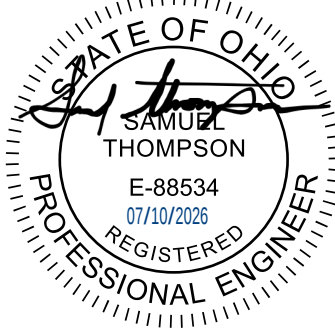
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MAINTENANCE BLDG SANITARY
NEW WORK PLAN

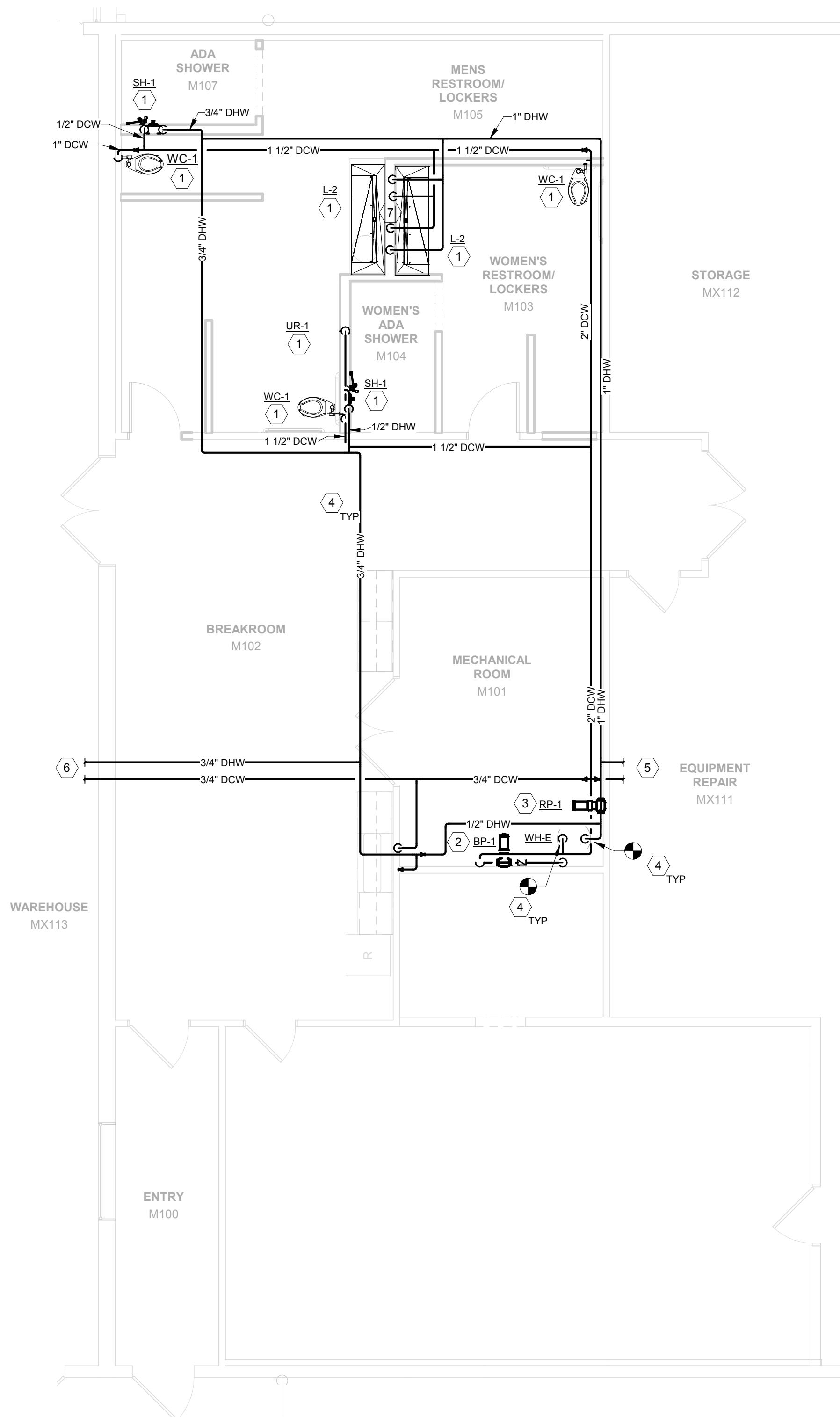
P103



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INSTALLATION NOTES:

1. PROVIDE CONNECTION TO NEW FIXTURES. REFER TO PLUMBING FIXTURE SCHEDULE.
2. PROVIDE BUILDING WATER PRESSURE BOOSTER PUMP. SET AT 60 PSI. REFER TO WATER SERVICE ENTRANCE ISOMETRIC FOR BOOSTER PUMP AND PIPE ROUTING.
3. PROVIDE HOT WATER RECIRCULATION PUMP. REFER TO PLUMBING FIXTURE SCHEDULE.
4. PROVIDE DOMESTIC COLD AND HOT WATER PIPING. INSULATE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. RE-FEED EXISTING HAND WASHING SINK AND SERVICE SINK.
6. RE-FEED EXISTING HAND WASHING SINK.
7. DROP 3/4" DCW AND DHW TO FEED BACK TO BACK LAVATORIES. REFER TO PLUMBING FIXTURE SCHEDULE.



MAINTENANCE BUILDING SUPPLY PLAN

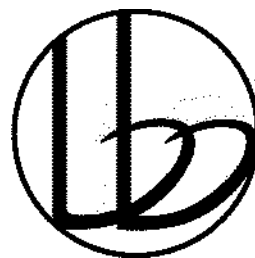
SCALE: 3/16" = 1'-0"



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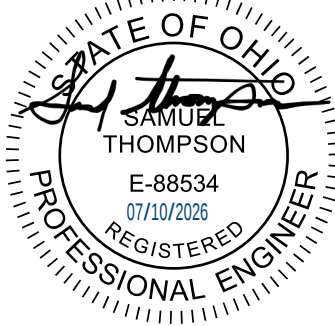
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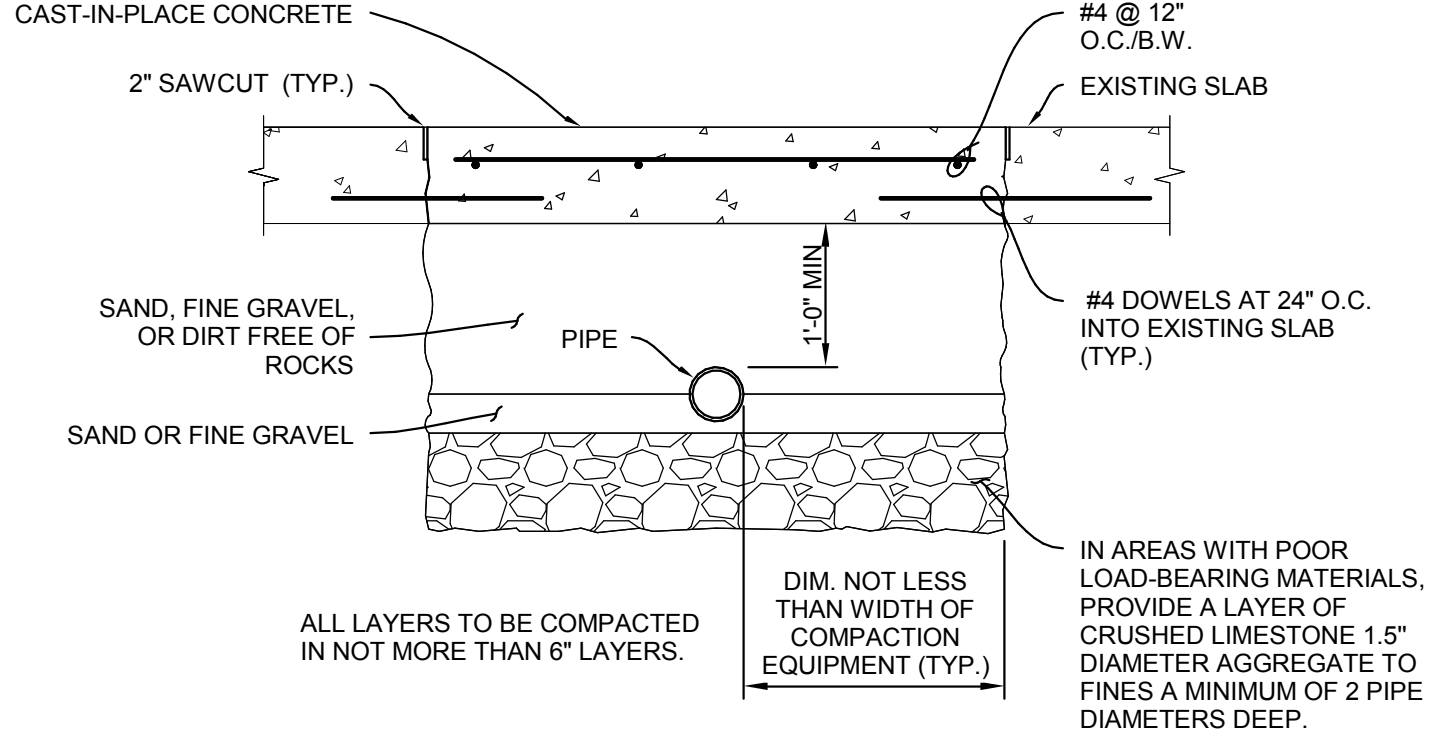
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MAINTENANCE BLDG SUPPLY
NEW WORK PLANS

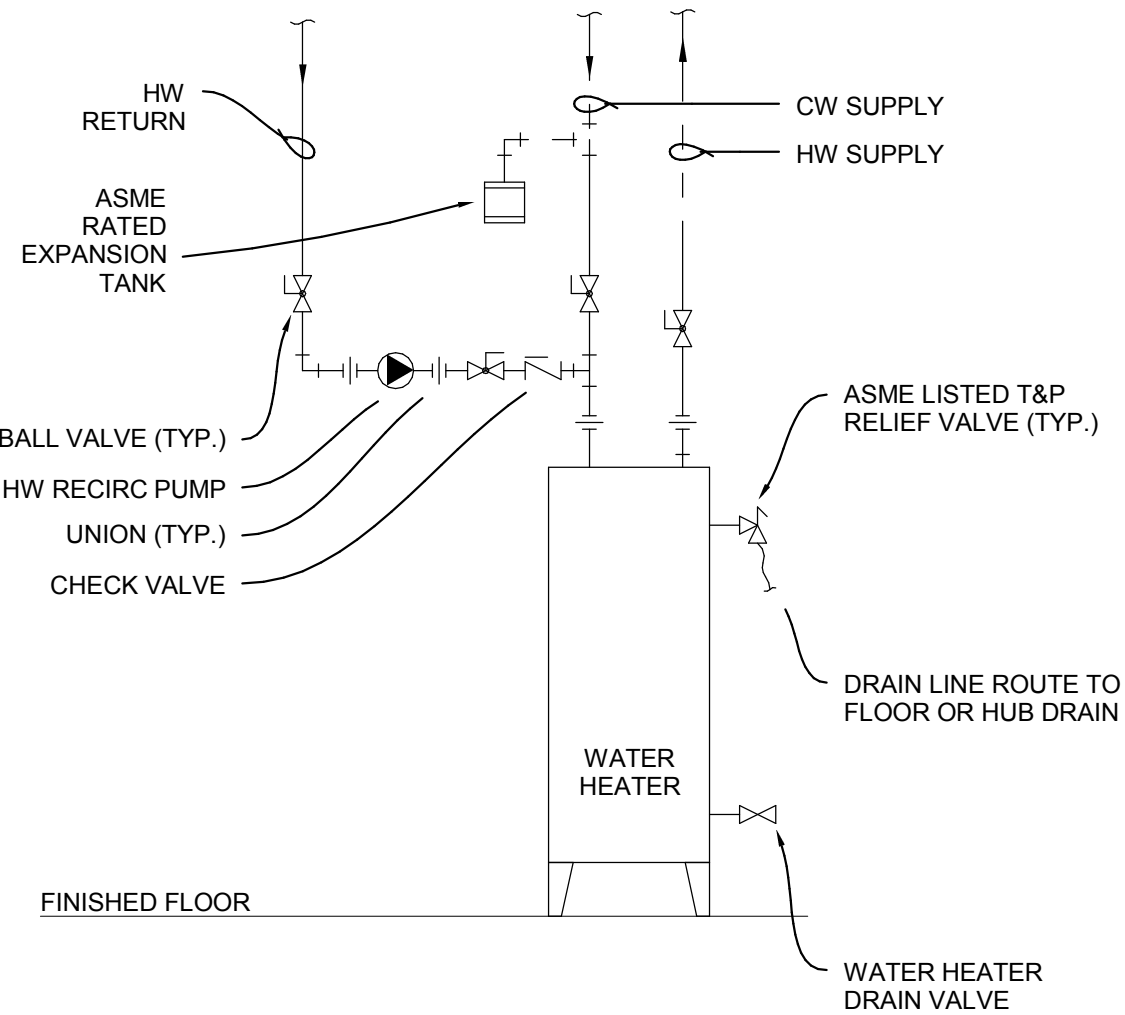
P104

PLUMBING FIXTURE SCHEDULE						
MARK	FIXTURE	WASTE	VENT	HOT	COLD	DESCRIPTION
BFP-1	BACKFLOW PREVENTER	-	-	-	2"	WATTS MODEL 909, LEAD FREE REDUCED PRESSURE BACKFLOW PREVENTER WITH FULL PORT SHUT OFF VALVES, BRONZE STRAINER, AND AIR GAP.
BP-1	WATER BOOSTER PUMP	-	-	-	-	GRUNDFOS CMBE 3-62 I-U-C-B-D-G HIGH EFFICIENCY COMPACT BOOSTER PUMP. 1.5-HP, 240V / 1 PH / 60 HZ. 18 US GPM WITH 3780 RPM AT 150 FT HEAD.
ET-1	EXPANSION TANK	-	-	-	3/4"	POTABLE WATER EXPANSION TANK, 3 GALLON CAPACITY, MAX TEMP. 200°F, PRE-CHARGE AIR 60 PSI.
EWS-1	EMERGENCY SHOWER	1-1/4"	1"	1-1/4" TEPID	-	BRADLEY #S19314AC: COMBINATION DRENCH SHOWER AND EYE/FACE WASH UNIT, 1-1/4" NPT TEPID WATER INLET AND 1-1/4" NPT DRAIN OUTLET, GALVANIZED STEEL PIPING WITH SAFETY YELLOW COATING, 3.1" PLASTIC IMPACT RESISTANT SHOWERHEAD, TYPE 304 SS PULL ROD AND HANDLE, CHROME-PLATED BRASS 1" SHOWER BALL VALVE AND 1/2" STAY-OPEN EYE/FACE WASH VALVE, SHOWER AND EYE/FACE WASH FLOW CONTROLS, HALO EYE/FACE WASH SYSTEM WITH SS HAND AND FOOT ACTIVATION PADS, FLIP OPEN DUST COVERS, MOUNTING HARDWARE, ANSI Z358.1 CERTIFIED.
FCO	CLEAN OUT	SEE PLAN	-	-	-	ZURN #ZN1400-SZ-NL-BP-VP: "LEVEL-TROL" 5" SQUARE, ADJUSTABLE LEVELING FLOOR CLEANOUT, NEO-LOC CONNECTION, DCCI WITH POLISHED NICKEL BRONZE TOP, BRONZE PLUG, VANDAL-PROOF SCREWS.
FD-1	FLOOR DRAIN	2" U.N.O.	-	-	-	ZURN #ZN415B-NL-P-VP: DURA-COATED CAST IRON BODY WITH NEO-LOC BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND TYPE "B" POLISHED NICKEL BRONZE, ROUND HEEL-PROOF LIGHT DUTY STRAINER, TRAP PRIMER CONNECTION, VANDAL-PROOF SCREWS.
HB-1	HOSE BIB	-	-	-	1/2"	WATTS SERIES FHB-1, FROST -PROOF AUTOMATIC SELF DRAINING WALL HYDRANT WITH INTEGRAL BACKFLOW PROTECTION, VACUUM BREAKER, PROVIDE 14" MODEL.
L-1	LAVATORY (ADA)	1-1/2"	1-1/2"	1/2"	1/2"	SOLID SURFACE COUNTERTOP WITH INTEGRAL SINK BOWL PROVIDED BY OTHERS. PLUMBING CONTRACTOR TO PROVIDE FAUCET AND ACCESSORIES AND MAKE CONNECTIONS. FAUCET EQUAL TO ZURN MODEL #6955-XL-S-W1-F.CHROME PLATED CAST BRASS 4" CENTERSET BODY, BATTERY POWERED INFRA-RED SENSOR ACTIVATION, 0.5 GPM NON-AERATED OUTLET, INLINE FILTERS, LESS POP-UP DRAIN (ROD AND HOLE); NSF-61G, ANSI 372, AND ADA COMPLIANT.
L-2	LAVATORY (LOCKER ROOMS)	1-1/2"	1-1/2"	1/2"	1/2"	SOPHSTONE #SOPH-ST: "SLANT" COMPOSITE STONE WITH HONED FINISH, ONE DRAIN, CUSTOM DIMENSIONS 48" WIDE X 2'-1" DEEP, WITH PLUMBING ENCLOSURE, PROVIDE ZURN #6955-XL-S-W1-F: "AQUA-FIT" SERIO CHROME PLATED CAST BRASS 4" CENTERSET BODY, BATTERY POWERED INFRA-RED SENSOR ACTIVATION, 0.5 GPM NON-AERATED OUTLET, INLINE FILTERS, LESS POP-UP DRAIN (ROD AND HOLE); NSF-61G, ANSI 372, AND ADA COMPLIANT.
L-3	LAVATORY (LOCKER ROOMS)	1-1/2"	1-1/2"	1/2"	1/2"	SOPHSTONE #SOPH-ST: "SLANT" COMPOSITE STONE WITH HONED FINISH, ONE DRAIN, CUSTOM DIMENSIONS 78" WIDE X 2'-1" DEEP, WITH PLUMBING ENCLOSURE, PROVIDE ZURN #6955-XL-S-W1-F: "AQUA-FIT" SERIO CHROME PLATED CAST BRASS 4" CENTERSET BODY, BATTERY POWERED INFRA-RED SENSOR ACTIVATION, 0.5 GPM NON-AERATED OUTLET, INLINE FILTERS, LESS POP-UP DRAIN (ROD AND HOLE); NSF-61G, ANSI 372, AND ADA COMPLIANT.
L-4	LAVATORY (LOCKER ROOMS)	1-1/2"	1-1/2"	1/2"	1/2"	SOPHSTONE #SOPH-ST: "SLANT" COMPOSITE STONE WITH HONED FINISH, ONE DRAIN, CUSTOM DIMENSIONS 78" WIDE X 2'-1" DEEP, WITH PLUMBING ENCLOSURE, PROVIDE TWO ZURN #6955-XL-S-W1-F: "AQUA-FIT" SERIO CHROME PLATED CAST BRASS 4" CENTERSET BODY, BATTERY POWERED INFRA-RED SENSOR ACTIVATION, 0.5 GPM NON-AERATED OUTLET, INLINE FILTERS, LESS POP-UP DRAIN (ROD AND HOLE); NSF-61G, ANSI 372, AND ADA COMPLIANT.
MV-1	THERMOSTATIC MIXING VALVE	-	-	1/2" HOT IN 1/2" TEMPED OUT	1/2"	WATTS #LFUSG-B-SC-M2: "UNDER SINK GUARDIAN" THERMOSTATIC MIXING VALVE, LEAD-FREE BRASS BODY, TAMPER-RESISTANT LOCKING NUT, BUILT-IN CHECK VALVES, INTEGRAL STRAINERS WITH 40 MESH STAINLESS STEEL SCREENS, "H" PATTERN FOR COLD AND HOT WATER INLETS WITH COLD AND TEMPERED WATER OUTLETS, SATIN CHROME FINISH
RD-1	ROOF DRAIN W/SECONDARY DRAIN.	4"	-	-	-	ZURN MODEL Z163 15" DIAMETER ROOF DRAIN AND OVERFLOW DRAIN, DURA-COATED CAST IRON BODIES WITH COMBINATION MEMBRANE AND OVERFLOW DRAIN. DURA-COATED CAST IRON BODIES WITH COMBINATION MEMBRANE FLASHING CLAMP/GRAVEL GUARDS, DOUBLE TOP-SET DECK PLATE AND LOW SILHOUETTE POLY-DOMES.
RP-1	HOT WATER RECIRCULATION PUMP	-	-	3/4"	-	BELL AND GOSSET MODEL NBF-8S/LW, IN-LINE CIRCULATOR PUMP. 115V, 0.38 FLA WITH BUILT-IN TIMER SCHEDULE TIME IN ACCORDANCE WITH OWNER'S REQUIREMENTS.
S-1	SINK	2"	1 - 1/2"	1/2"	1/2"	ELKAY LUSTERTONE MODEL LR2918 STAINLESS STEEL 29"x18"x7'-5/8" DOUBLE BOWL DROP-IN SINK. PROVIDE WITH MODEL LK99 DRAIN AND MODEL LK406GN08T4 4" CENTERSET WITH EXPOSED DECK FAUCET WITH 8" GOOSENECK, SPOUT AND 4" WRISTBLADE HANDLES
SD-1	STORM DOWNSPOUT	4"	-	-	-	ZURN ZF199 CHAMELEON DOWNSPOUT NOZZLE, ALL ALUMINUM BODY AND DOWNSPOUT GASKET FOR CAST IRON OR PVC INLET WITH POWDER COATED FACE OF WALL FLANGE, OUTLET NOZZLE, AND PERFORATED HINGED FLAPPER.
SH-1	ADA SHOWER	2"	1-1/2"	1/2"	1/2"	SHOWER ENCLOSURE BY TILE CONTRACTOR TO BE DURAFLEX EPOXY SYSTEM, PLUMBING CONTRACTOR TO PROVIDE, PROVIDE WITH SYMMONS "SAFETYMIX" #1-25-FSB-1.5-VP-X: 3-PORT PRESSURE BALANCING MIXING VALVE WITH LEVER HANDLE AND ADJUSTABLE STOP SCREW, OPEN FLOW FS HAND SHOWER WITH 5-FOOT FLEXIBLE METAL HOSE, INLINE VACUUM BREAKER, WALL CONNECTION AND FLANGE, 30" ADJUSTABLE SLIDE BAR, 1.5 GPM, POLISHED CHROME FINISH, VANDAL RESISTANT, INTEGRAL STOPS AT VALVE. MEETS ADA. PLUMBING CONTRACTOR TO PROVIDE FD-1 AS SHOWER DRAIN OR TILE SYSTEM DRAIN FROM SAME MANUFACTURER AS TILE MEMBRANE.
SS-1	SERVICE SINK- MOP	3"	1-1/2"	1/2"	1/2"	MUSTEE #63M: ONE-PIECE WHITE MARBLEIZED MOLDED FIBERGLASS, 24" X 24" X 10" DEEP, SS DRAIN SHALL BE INTEGRALLY MOLDED IN UNIT WITH REMOVABLE STAINLESS STEEL STRAINER, 3" DRAIN SEAL, MEET OR EXCEED ANSI Z 124-2017. PROVIDE WITH ZURN #Z643M1-FC: POLISHED CHROME-PLATED CAST BRASS 8" JANITOR SINK FAUCET, QUARTER-TURN CERAMIC DISC CARTRIDGES, 3/8" SHORT SWIVEL INLETS WITH ADJUSTABLE CENTERS, INTEGRAL SERVICE STOPS, 6" CENTERLINE CAST BRASS SPOUT WITH CHEMICAL RESISTANT ATMOSPHERIC VACUUM BREAKER, 3/4" HOSE THREADED OUTLET, PAIL HOOK, 2.0 GPM LAMINAR FLOW, ADJUSTABLE WALL BRACE, 2-1/2" VANDAL-RESISTANT COLOR CODED BRASS LEVER HANDLES, ASSE 1001, ADA.
TP-1	TRAP PRIMER	-	-	-	1/2"	WATTS LFTP300-DR LEAD FREE TRAP PRIMER. PROVIDE LFTP300-DR MODEL WITH DISTRIBUTION UNIT AS NECESSARY TO PRIME UP TO (4) TRAPS FROM ONE SINGLE UNIT
U-1	WALL-MOUNTED URINAL (ADA)	2"	1-1/2"	-	1"	AMERICAN STANDARD WASHBROOK FLOWISE MODEL #6590.001 URINAL; 0.125 GPF; EXPOSED 3/4" TOP SPUD FLUSH VALVE CONNECTION; FLUSHING RIM; WASHOUT FLUSHING ACTION; 18-7/8" W X 26-1/8" L X 9-1/4" D; WHITE VITREOUS CHINA; EXTENDED SIDES; 2" DRAIN OUTLET; STRAINER; WALL HUNG; ADA;
WB-1	WASHER BOX	2"	1-1/2"	1/2"	1/2"	GUY GRAY #WB200HATM: RIGHT DRAIN GALVANIZED WMOB W/ SINGLE LEVER, ARRESTER VALVE, G90 HOT DIPPED GALVANIZED STEEL, 20 GAUGE BOX AND 20 GAUGE FACEPLATE, 1/2" MIP/SWEAT CONNECTION, 2" THREADED DRAIN.
WC-1	FLOOR-MOUNTED WATER CLOSET (ADA)	3"	1-1/2"	-	1"	AMERICAN STANDARD ADA ACCESSIBLE HEIGHT #3461.001 MADERA FLUSHOMETER TOILET SYSTEM, VITREOUS CHINA, FLOOR MOUNTED, 1.6 GAL. FLUSH, 16.5" RIM HEIGHT, WITH AMERICAN STANDARD #5325.024 SOLID PLASTIC OPEN FRONT SEAT & COVER, ANTI-SIPHON WATER CONTROL WITH MANUAL FLUSH VALVE.
WH-1	WATER HEATER	-	-	1"	1"	A.O. SMITH WATER HEATER, MODEL LTE-80D, 80-GALLON WATER HEATER, 6100 WATTS 277V/1PH/60HZ.
WTS	WATER TREATMENT SYSTEM	-	-	2"	-	PROVIDE SYSTEM COMPLETE. REFER TO SHEET P901 FOR MORE INFORMATION. BID ALTERNATE MEETING THE EPA NATIONAL PRIMARY DRINKING WATER REGULATIONS AT A MINIMUM. ALTERNATE TREATMENT SYSTEMS MEETING MINIMUM EPA DRINKING WATER STANDARDS ARE ACCEPTABLE WITH ENGINEER APPROVAL. REFER TO EXISTING TO WATER TEST RESULTS IN SPECIFICATIONS FOR CURRENT WATER QUALITY REFERENCE POINT.



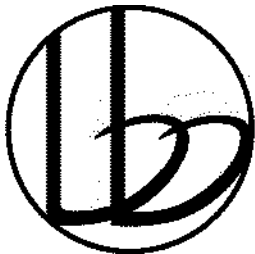
TYP. TRENCH DETAIL

SCALE: NONE



ELECTRIC WATER HEATER PIPING DETAIL

SCALE: NONE



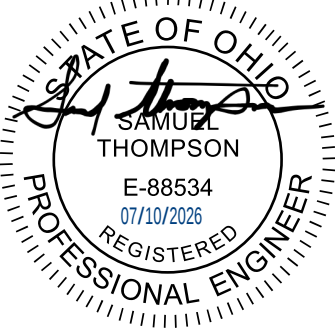
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FIXTURE SCHEDULE

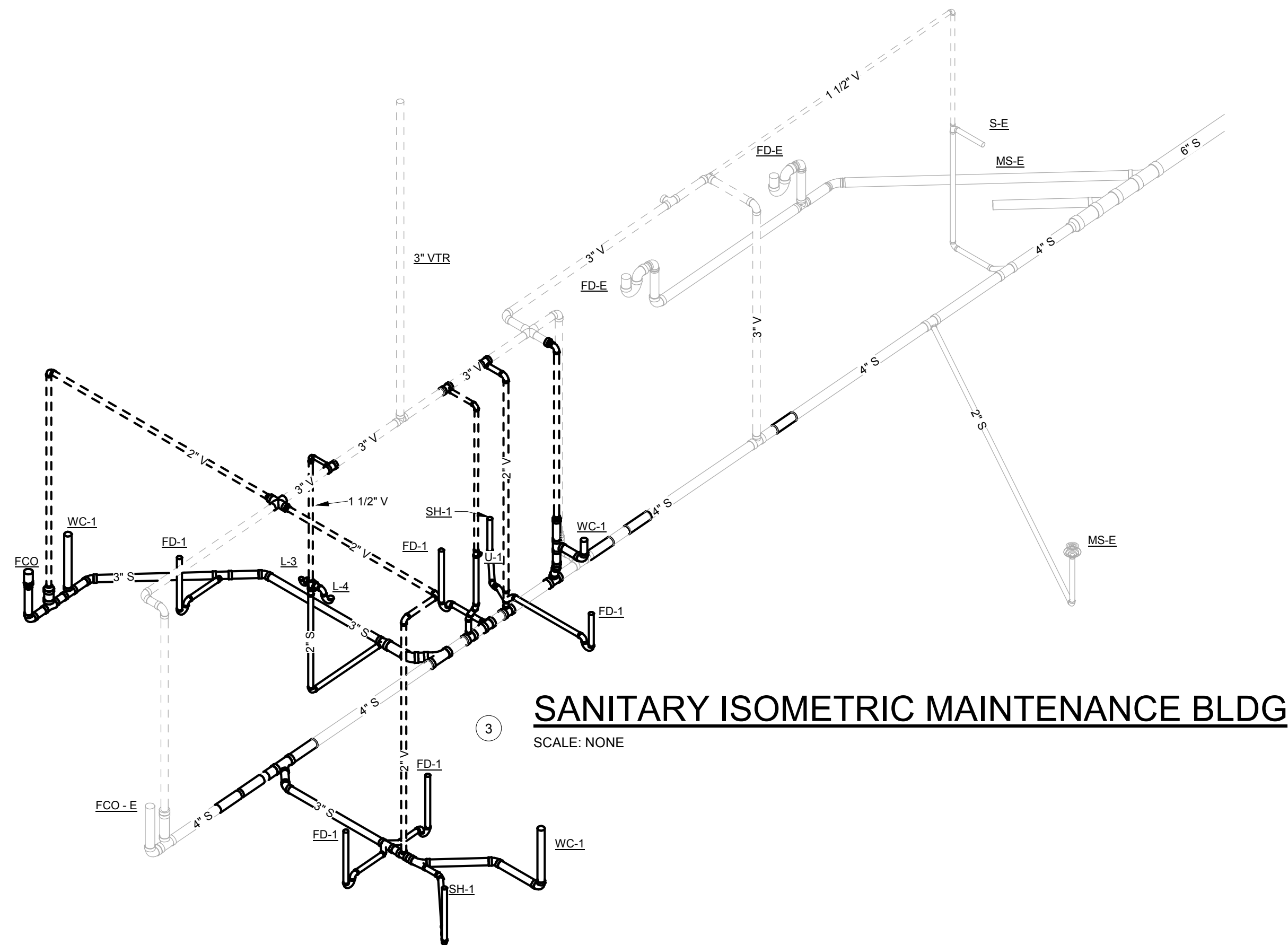
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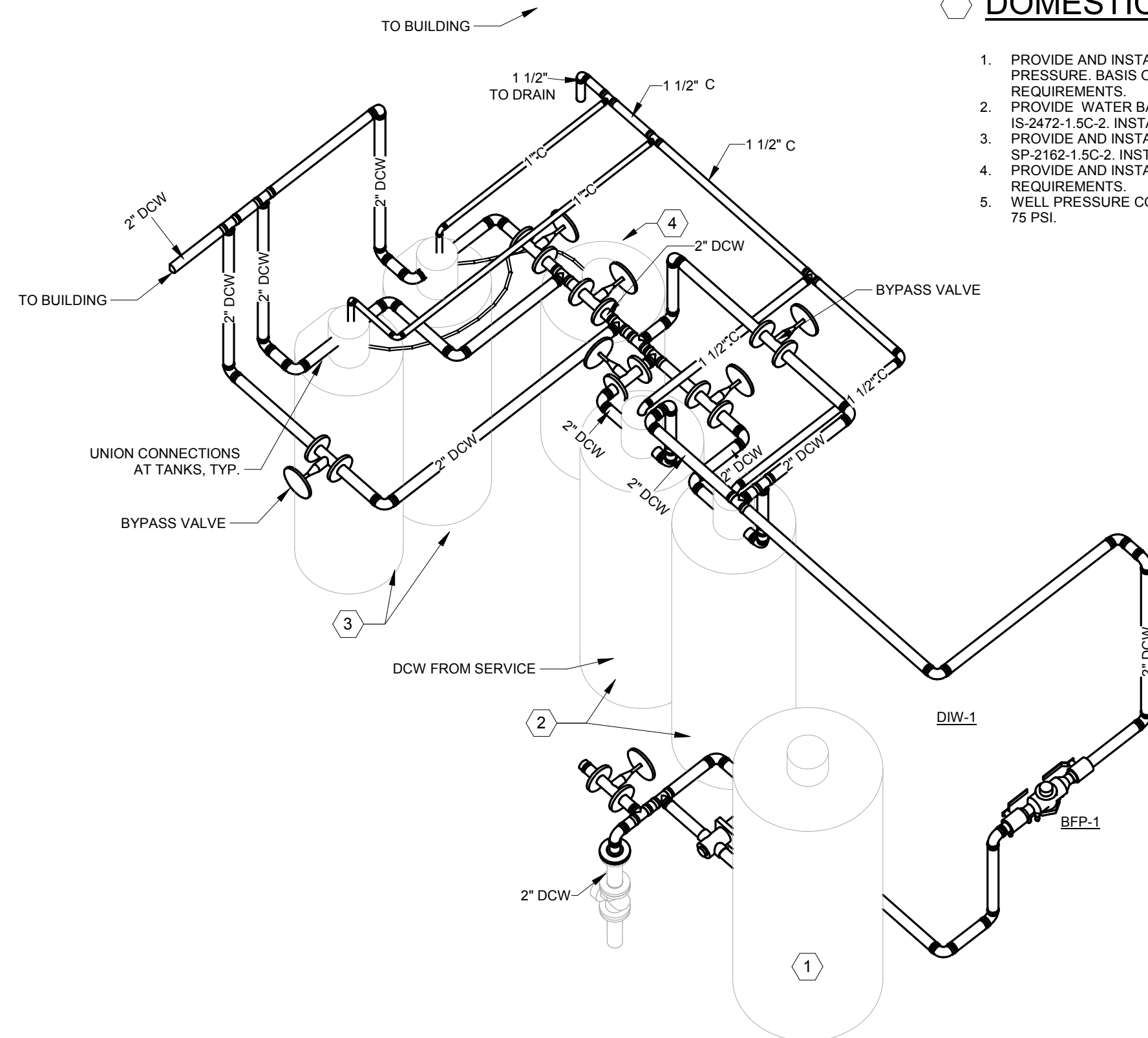
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SANITARY ISOMETRIC MAINTENANCE BLDG
SCALE: NONE

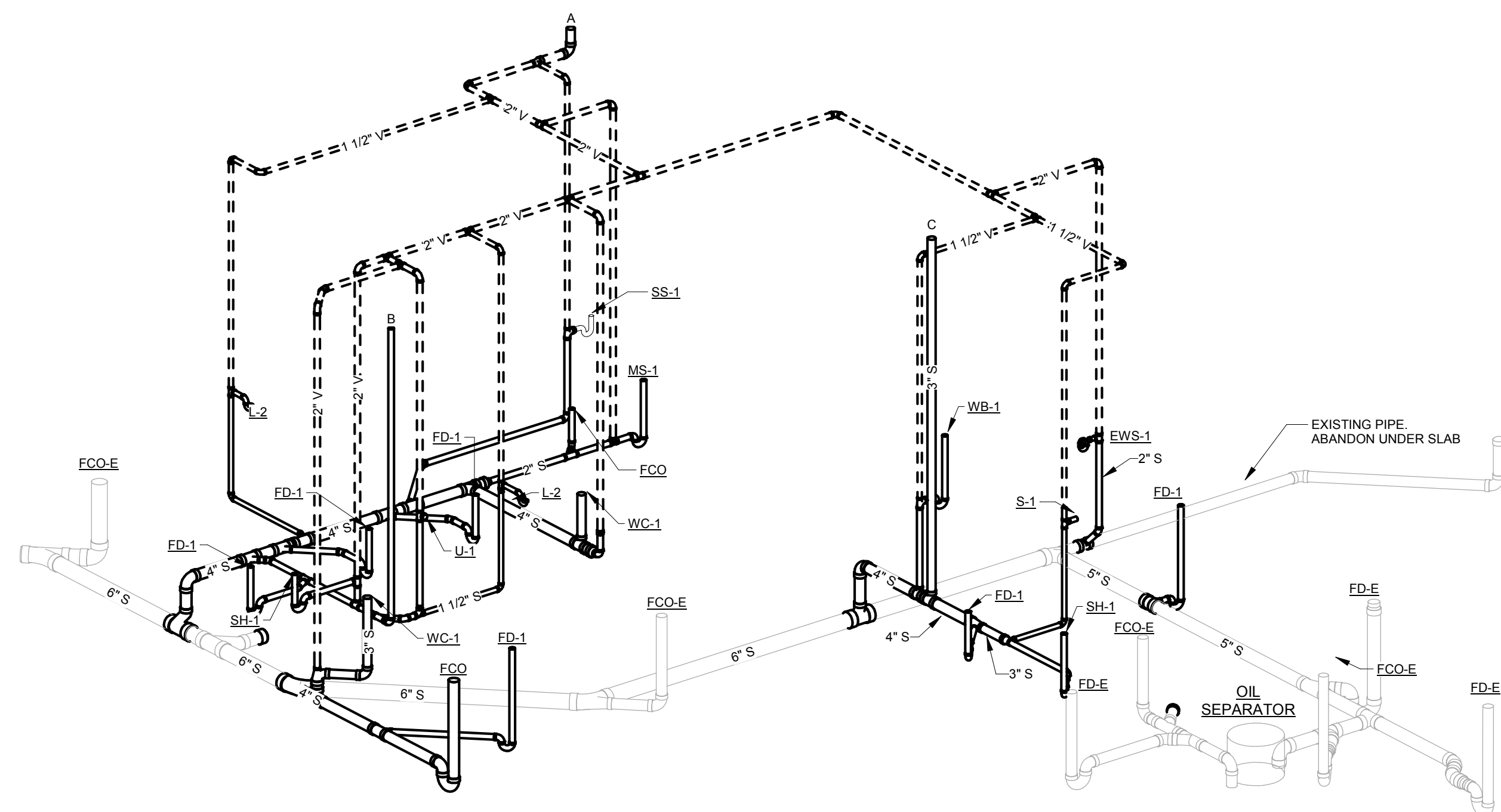


DOMESTIC WATER PROCESSING OPERATIONS BLDG
SCALE: NONE

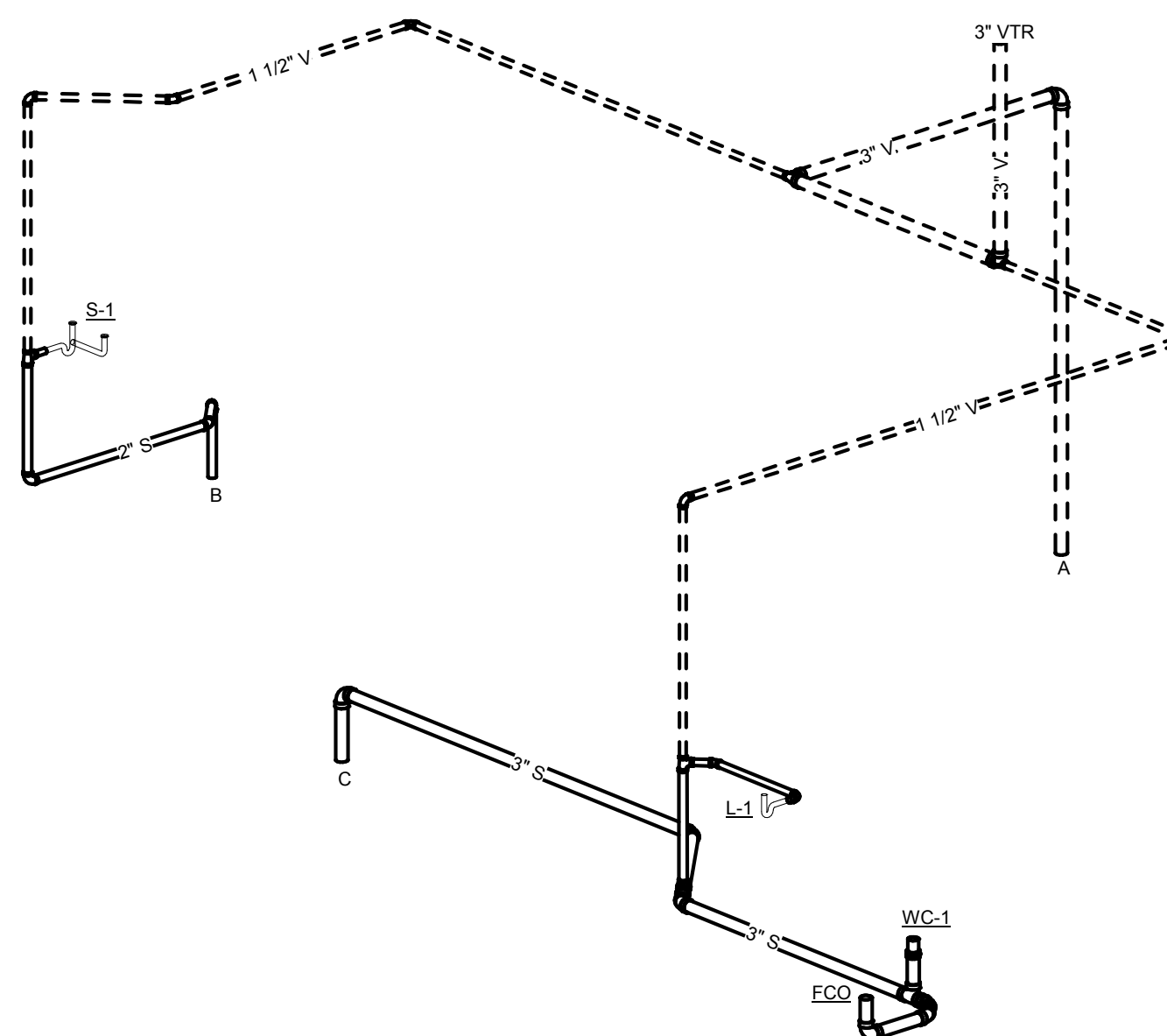
DOMESTIC WATER PROCESSING NOTES:

1. PROVIDE AND INSTALL DIAPHRAGM WELL TANK, NOMINAL 317 GAL. CAPACITY, 125 PSIF WORKING PRESSURE. BASIS OF DESIGN AMTROL WELL-X-TROL WX-454-C. INSTALL PER MANUFACTURER'S REQUIREMENTS.
2. PROVIDE WATER BACKWASHING FILTRATION TANKS (2). BASIS OF DESIGN EASY WATER MODEL NO. IS-2472-1-5C-2. INSTALL PER MANUFACTURER'S REQUIREMENTS.
3. PROVIDE AND INSTALL WATER SOFTENER SYSTEM. BASIS OF DESIGN EASY WATER MODEL SP-2162-1-5C-2. INSTALL PER MANUFACTURER'S REQUIREMENTS.
4. PROVIDE AND INSTALL BRINE TANK FOR WATER SOFTENER SYSTEM. INSTALL PER MANUFACTURER'S REQUIREMENTS.
5. WELL PRESSURE CONTROL SWITCH. BASIS OF DESIGN IS SQUARE D DPST. SET IN AT 55 PSI, OUT AT 75 PSI.

WATER QUALITY TESTING:
THE WELL WATER SHALL BE TESTED AT THE COMPLETION OF CONSTRUCTION. RESULTS SHALL BE REVIEWED AND APPROVED BY THE OWNER AND EQUIPMENT VENDOR. ANY REMEDIAL WORK TO MEET THE PRE-CONSTRUCTION WATER QUALITY TARGET SHALL BE THE RESPONSIBILITY OF THE EQUIPMENT VENDOR, PLUMBING CONTRACTOR, AND GENERAL CONTRACTOR.



SANITARY ISOMETRIC OPERATIONS BLDG 1ST FLOOR
SCALE: NONE



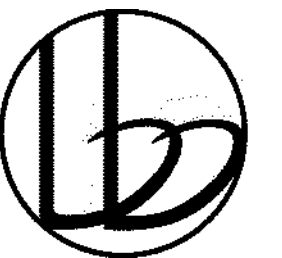
SANITARY ISOMETRIC OPERATIONS BLDG 2ND FLOOR
SCALE: NONE

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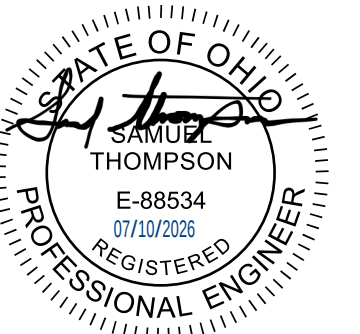
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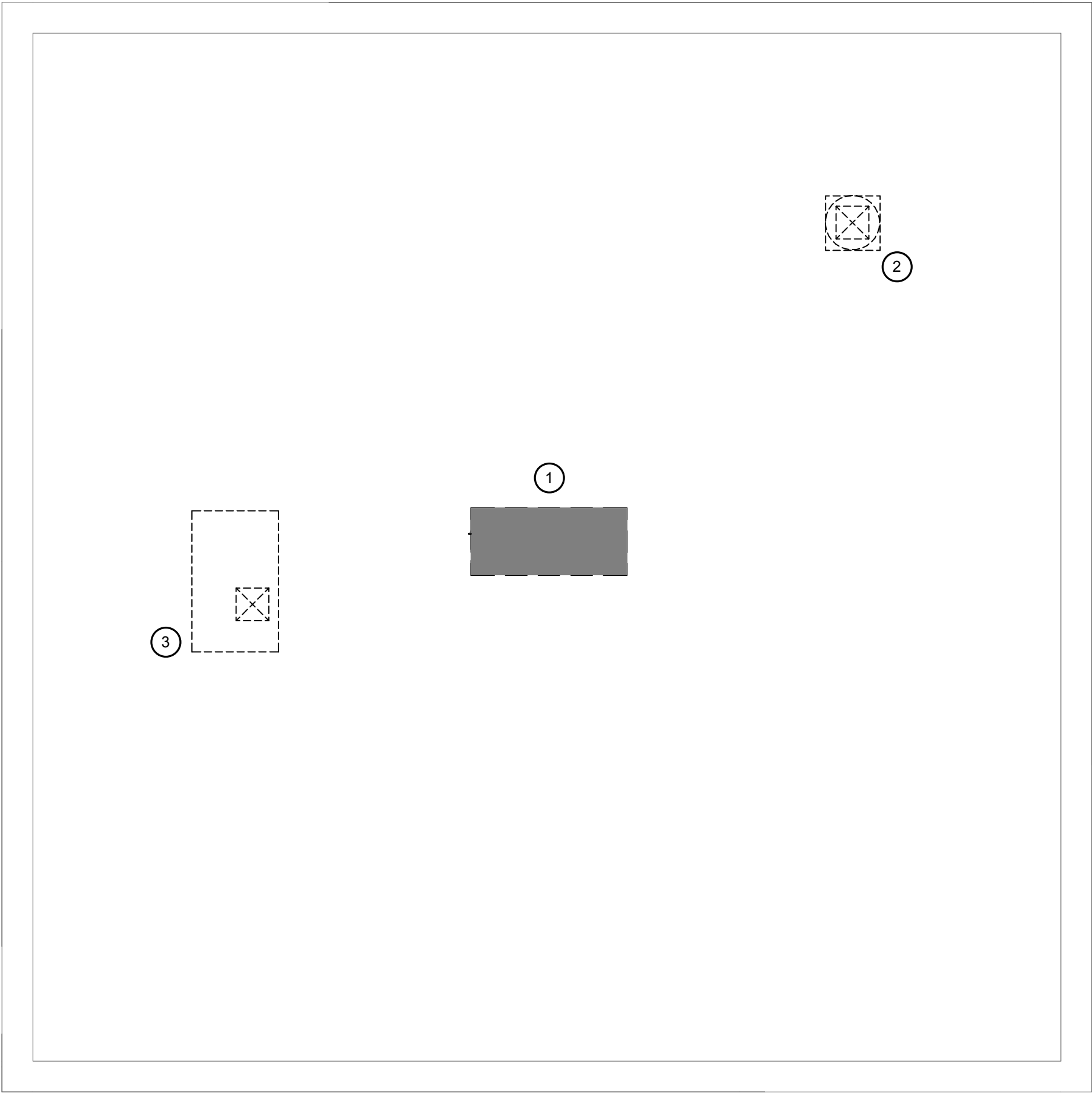
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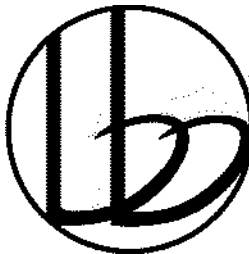
P901



ROOF DEMO PLAN OPERATIONS BLDG
SCALE: 3/16" = 1'-0"

DEMOLITION NOTES:

1. REMOVE EXISTING ROOF VENTILATOR AND ROOF CURB. REUSE DUCT PENETRATION TO PASS NEW DUCT FOR PROPOSED RTU.
2. REMOVE EXISTING EF. REUSE ROOF CURB FOR PROPOSED EF.
3. REMOVE EXISTING RTU AND ASSOCIATED DUCTWORK AND ELECTRICAL FEED. PROVIDE 16 GAUGE GALVANIZED SHEET METAL BLANK OFF WITH 1" RIGID INSULATION.



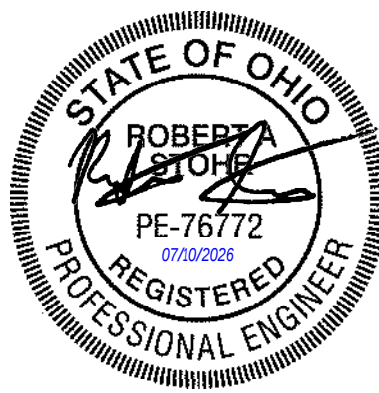
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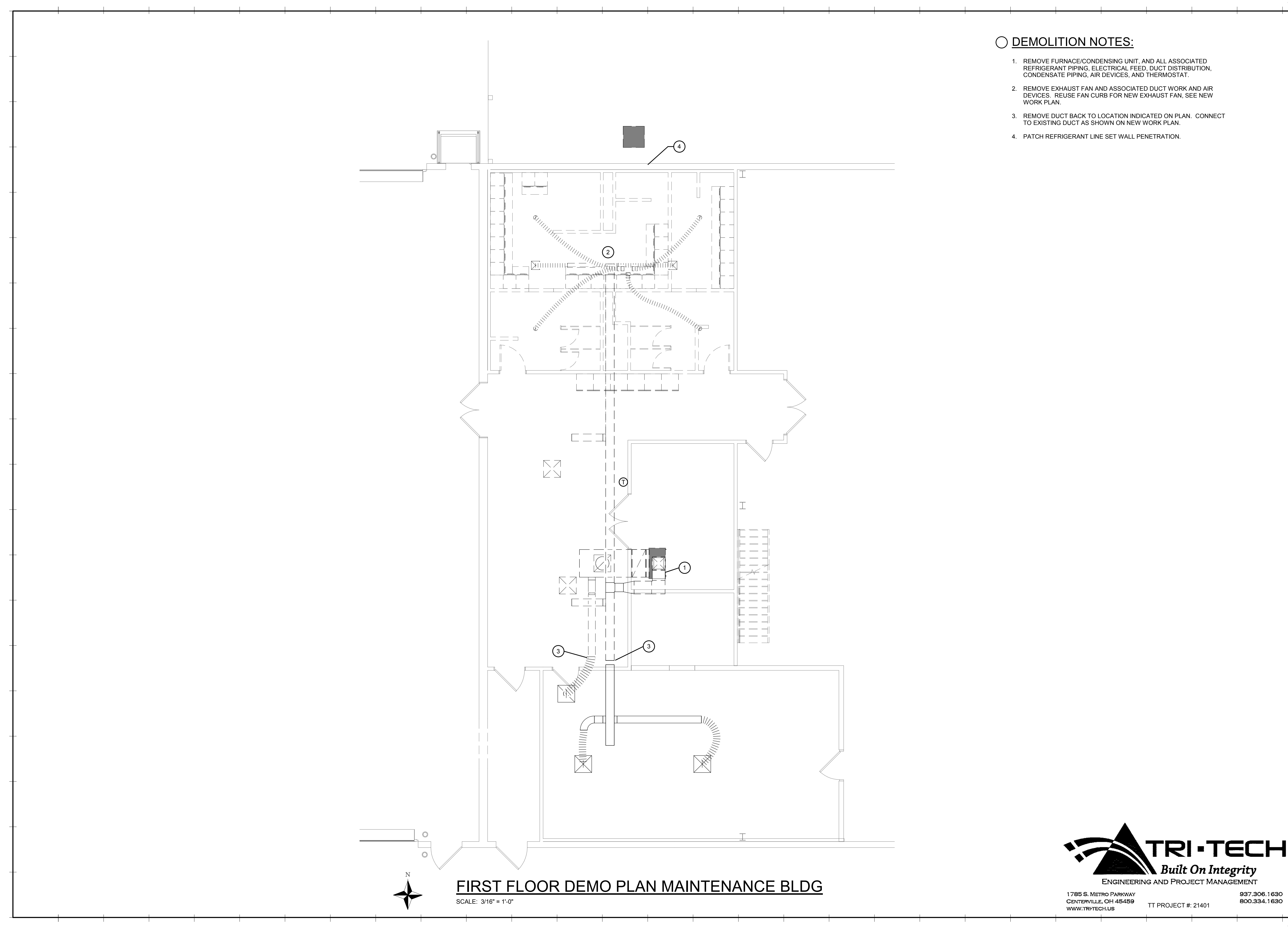
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OPS BLDG - ROOF DEMO

MD102

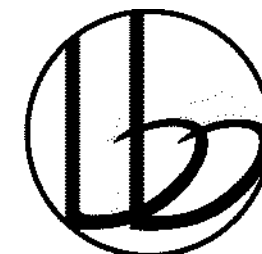


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○ **DEMOLITION NOTES:**

1. REMOVE FURNACE/CONDENSING UNIT, AND ALL ASSOCIATED REFRIGERANT PIPING, ELECTRICAL FEED, DUCT DISTRIBUTION, CONDENSATE PIPING, AIR DEVICES, AND THERMOSTAT.
2. REMOVE EXHAUST FAN AND ASSOCIATED DUCT WORK AND AIR DEVICES. REUSE FAN CURB FOR NEW EXHAUST FAN, SEE NEW WORK PLAN.
3. REMOVE DUCT BACK TO LOCATION INDICATED ON PLAN. CONNECT TO EXISTING DUCT AS SHOWN ON NEW WORK PLAN.
4. PATCH REFRIGERANT LINE SET WALL PENETRATION.



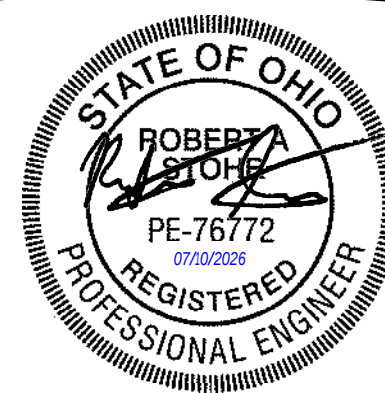
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**MONTGOMERY COUNTY
WESTERN REGIONAL WATER RECLAMATION FACILITY
OPERATIONS AND MAINTENANCE BUILDINGS
RENOVATION**

**4111 HYDRAULIC RD
DAYTON, OHIO 45449**



**BID / PERMIT
7/10/2026**

A201284.6

DRAWN BY: RAS

**MAINTENANCE BLDG -
DEMO PLAN**

MD103



1785 S. METRO PARKWAY
CENTERVILLE, OH 45459
WWW.TRI-TECH.US

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TT PROJECT #: 21401

PIPE INSULATION SCHEDULE

GENERAL NOTES FOR PIPE INSULATION:

REQUIREMENTS ARE FOR BOTH SUPPLY & RETURN SYSTEMS.

FIRE, SMOKE RATINGS: FLAME SPREAD RATING OF 25 OR LESS, SMOKE DEVELOPED RATING OF 50 OR LESS.

GREEN GUARD INDOOR AIR QUALITY CERTIFIED.

INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.

COLD SERVICE PIPE INSULATION AND VAPOR BARRIER/JACKET TO BE CONTINUOUS THRU FLOOR AND WALL SLEEVES AT ALL PIPE DEVICES AND PUMP CASINGS.

INSULATION AND VAPOR BARRIER TO BE CONTINUOUS AT PIPE HANGERS AND SUPPORTS ON HORIZONTAL PIPING. PROVIDE HARDWOOD INSERT SUPPORT FOR PIPES 2.5" AND LARGER.

VERTICAL PIPE SUPPORTS SHALL ATTACH DIRECTLY TO PIPE. INSULATE SUPPORT AND OTHER SURFACES WITH FLEXIBLE CLOSED CELL INSULATION, SAME THICKNESS AS SYSTEM INSULATION ON COLD SERVICE PIPES TO PREVENT CONDENSATION.

INSULATION MAY BE OMITTED ON HOT WATER VALVES AND DEVICES 2" AND SMALLER PIPE SIZE (EXCEPT WITHIN 12" OF AIR REHEAT BOXES), HOT WATER PIPING WITHIN UNIT HEATERS, EXPOSED COOLING COIL CONDENSATE PIPING AND SAFETY RELIEF VALVE PIPING. SEE HEATING COIL PIPING DETAIL.

SYSTEM & SIZE	INSULATION THICKNESS	TYPE	LOCATION
REFRIGERANT LIQUID	-	NOT REQ'D	
REFRIGERANT HOT GAS	-	NOT REQ'D	
REFRIGERANT SUCTION	1"	P1, P2	
COOLING COIL CONDENSATE	0.50"	F1, F2, F3	

TYPE	BASIS OF DESIGN	APPROVED EQUALS	DESCRIPTION
F1	OWENS-CORNING SSL1-ASJ	KNAUF 1000* PIPE, JOHNS MANVILLE MICRO-LOK HP	* INORGANIC GLASS FIBER WITH RESIN BONDING. * K=0.24 @ 100 DEG. F. * 3.5 - 5.5 PCF. * PREFORMED TUBULAR. * WHITE FSRK JACKET. * LONGITUDINAL LAP WITH SELF-SEALING ADHESIVE. * ELBOWS, TEES, VALVES, CAPS, ETC., WHITE ONE PIECE, PREMOLDED 25/50 0.20" PVC FITTING COVERS WITH HIGH DENSITY FIBERGLASS INSULATION INSERTS SAME THICKNESS, K=0.26 EQUAL TO ZESTON OR PROTO.
F2	OWENS-CORNING EVOLUTION	-	* INORGANIC GLASS FIBER WITH RESIN BONDING. * K=0.24 @ 100 DEG. F. * 3.5 - 5.5 PCF. * PREFORMED TUBULAR PAPER FREE ALL SERVICE OR CONTINUOUS PVC JACKET NOT SUPPORTING MOLD GROWTH. * LONGITUDINAL LAP WITH SELF-SEALING ADHESIVE. * ELBOWS, TEES, VALVES, CAPS, ETC., WHITE ONE PIECE, PREMOLDED 25/50 0.20" PVC FITTING COVERS WITH HIGH DENSITY FIBERGLASS INSULATION INSERTS SAME THICKNESS, K=0.26 EQUAL TO ZESTON OR PROTO.
F3	OWENS-CORNING VAPOR WICK	-	* HIGH DENSITY FIBERGLASS INSULATION WITH ORGANIC BINDER AND SYNTHETIC WICKING MATERIAL. * K=0.24 @ 100 DEG. F. * WHITE, RESILIENT POLYMER FACING EQUAL TO PVC JACKETING. * AUXILIARY WICK MATERIAL FOR FITTINGS, ELBOWS, TEES, ETC.
P1	AEROFLEX - AEROCEL EPDM	RUBATEX	* PREFORMED, FLEXIBLE CLOSED CELL EPDM, TUBULAR INSULATION, OR SHEET INSULATION. * K=0.25 @ 75 DEG. F. * CLEAN PIPE SURFACE WITH DENATURED ALCOHOL PRIOR TO INSULATING.
P2	AP ARMAFLEX "FR" TUBES	RUBATEX, AEROFLEX	* PREFORMED, FLEXIBLE CLOSED CELL, TUBULAR INSULATION. * CLEAN PIPE SURFACE WITH DENATURED ALCOHOL PRIOR TO INSULATING. * K=0.25 @ 75 DEG. F. * 25/50 FLAME/SMOKE RATING. * PROVIDE 0.20" ROLL ALLOY ALUMINUM EMBOSSED JACKET, SEAM SIDE DOWN WITH 0.50" WIDE, 0.015" S.S. STRAP AND SEALS EQUAL TO PABCO-CHILDERS METALS/GERRARD.

DUCT INSULATION SCHEDULE

QUALITY ASSURANCE

INSULATION SHALL MEET NFPA 255, 25 FLAME SPREAD & 50 SMOKE DEVELOPMENT, UL 181, NFPA 90A/90B, ASTM 1136, AND ASTM E84.

MINIMUM INSULATION THICKNESS SHALL COMPLY WITH ASHRAE 90.1-2019.

PRODUCTS

- PROTECTIVE METAL JACKET COVERS - 0.016" ALUMINUM.

EXECUTION

- INSULATION SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- DUCTWORK SHALL BE SEALED PRIOR TO INSTALLATION OF INSULATION.

- ALL EXTERIOR DUCT INSULATION SHALL BE SEALED WATERTIGHT.

- REINSULATE DUCTWORK WHERE EXISTING INSULATION IS DAMAGED IN CONNECTION OF NEW DUCTWORK.

- ALL INSULATION VAPOR BARRIERS SHALL BE MAINTAINED.

- ADHESIVE SHALL BE APPLIED TO AID INSTALLATION.

- REQUIRED INTERNAL DUCT LINING IS INDICATED ON DRAWINGS. LINED DUCTWORK NEED NOT BE FURTHER INSULATED.

- DUCT COILS, REHEAT BOX COILS, CONTROL DAMPER, FIRE DAMPERS & SMOKE DAMPERS SHALL BE INSULATED IF SYSTEM INSULATION IS INDICATED.

- ALL INSULATION SHALL BE MARKED WITH MANUFACTURER, "R" VALUE, FLAME SPREAD & SMOKE DEVELOPMENT.

SYSTEM	INSULATION THICKNESS	TYPE	LOCATION	NOTES
SUPPLY AIR DUCT	1.5"	1	CONCEALED	
SUPPLY AIR DUCT	2"	2	EXPOSED	
SUPPLY AIR DUCT	2"	4	EXTERIOR	
OUTDOOR AIR DUCT & PLENUMS	2"	2	EXPOSED	
RETURN AIR DUCT	0.5"	1	CONCEALED	
RETURN AIR DUCT	-	-	EXPOSED	
RETURN AIR DUCT	2"	3	EXTERIOR	
EXHAUST AIR DUCT & PLENUMS	-	-	CONCEALED	
EXHAUST AIR DUCT & PLENUMS	-	-	EXPOSED	

TYPE	BASIS OF DESIGN	APPROVED EQUALS	DESCRIPTION
1	OWENS-CORNING SOFTR TYPE 75	KNAUF JM CERTAIN TEED	MATERIAL FIBERGLASS DUCT WRAP ON DUCT K = 0.30 @ 75 DEG. F. DENSITY - 0.75 PCF JACKET - FOIL REINFORCED JOINTS - OVERLAPPING STAPLE ALL JOINTS AT 6" CENTERS. FASTENERS - MECHANICAL ON 24" & WIDER DUCT. ADHESIVE - NONE TAPE - 3" WIDE
2	OWENS-CORNING TYPE 703	KNAUF JM CERTAIN TEED	MATERIAL FIBERGLASS BOARD ON DUCT K = 0.23 @ 75 DEG. F. DENSITY - 3.0 PCF JACKET - ASJ JOINTS - BUTT FASTENERS - METAL PINS & CLIPS ON 12" CENTERS ADHESIVE - NONE TAPE - 3" WIDE VAPOR PATCHED
3	ARMACELL ARMATUFF PLUS	RUBATEX	MATERIAL CLOSED CELL FOIL FILM ELASTOMERIC ON DUCT K = 0.27 @ 75 DEG. F. DENSITY - 3.0 PCF JACKET - INTEGRAL JOINTS - BUTT EDGES WITH ADHESIVE FASTENERS - NONE WITH 520 ADHESIVE TAPE - 4" WIDE ARMATUFF

DUCTWORK LEGEND

20/12

20/12

RECTANGULAR DUCT
FIRST FIGURE IS SIDE SHOWN

10"ø

10"ø

ROUND DUCT
DIAMETER INDICATED

DUCT WITH INTERIOR ACOUSTIC LINER

FLEXIBLE FABRIC DUCT CONNECTION

INSULATED FLEXIBLE DUCT

R

CHANGE OF ELEVATION
R = RISE, D = DROP

ELBOW WITH TURNING VANES

20/12

ROUND RUNOUT DUCT TAP TO RECTANGULAR DUCT
WITH SPIN-IN FITTING, SEE DETAIL

10"ø

ROUND RUNOUT DUCT FITTING IN ROUND DUCT MAIN

VOLUME DAMPER

SUPPLY DUCT SECTION - RISE, DROP

RETURN DUCT SECTION - RISE, DROP

1-03

VARIABLE AIR VOLUME (VAV) UNIT WITH ELECTRIC REHEAT COIL
1-03 = VAV BOX TAG. SEE SCHEDULE AND DETAIL
1 = INDICATES RTU-NUMBER
03 = INDICATES VAV BOX NUMBER

S1-8"

300

SUPPLY AIR DEVICE S1
SEE SCHEDULE AND DETAIL
8" = NECK SIZE
300 = REQUIRED AIR FLOW (CFM)

R1

300

RETURN/EXHAUST/TRANSFER GRILLE R1
R1 = DEVICE TAG. SEE SCHEDULE AND DETAIL
300 = REQUIRED AIR FLOW (CFM)
DEVICE SIZE AS DEPICTED ON DRAWINGS OR AS INDICATED IN AIR DEVICE SCHEDULE

S2-24/12

300-8'6"

SIDEWALL AIR DEVICE
SEE AIR DEVICE SCHEDULE
24/12 = DEVICE SIZE
300 = AIR FLOW (CFM)
8'6" = MOUNTING HEIGHT (AFF)

(E)

120

EXISTING AIR DEVICE
REBALANCE TO AIR FLOW INDICATED

Ⓢ

ROOM TEMPERATURE SENSOR

GENERAL LEGEND

③

NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.

②

DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.

H-1

EQUIPMENT REFERENCE SYMBOL. ELECTRICAL CONNECTION REQUIRED.

H-1

EQUIPMENT REFERENCE SYMBOL. NO ELECTRICAL CONNECTION REQUIRED.

1

M601

DETAIL SYMBOL
DETAIL "1" SHOWN ON SHEET M601

CONNECTION, NEW TO EXISTING.

ITEM TO BE REMOVED.

EXISTING ITEM TO REMAIN.

NEW ITEM.

PIPING LEGEND

— CD —

CONDENSATE DRAIN

— NP —

NON-POTABLE WATER

— L —

REFRIGERANT - LIQUID

— S —

REFRIGERANT - SUCTION

0.375"L, 0.75"S

REFRIGERANT LINE SET BETWEEN FAN COIL UNIT AND HEAT PUMP UNIT.
0.375" = LIQUID PIPE SIZE
0.75"S = SUCTION GAS PIPE SIZE

SHUT-OFF VALVE, SEE SCHEDULE FOR TYPE

STRAINER, Y-TYPE

CAP

PIPE HOSE THREAD CONNECTION

CONNECTION, BOTTOM

CONNECTION, TOP

CONNECTION, SIDE

ELBOW, 90°, LONG RADIUS

ELBOW, 45°

INDEX OF DRAWINGS - MECHANICAL

SHEET	DRAWING TITLE
M001	LEGEND, NOTES & SCHEDULES
M002	NOTES & SCHEDULES
M003	SCHEDULES
MD101	OPERATIONS BUILDING DEMO
MD102	OPERATIONS BUILDING ROOF DEMO
MD103	MAINTENANCE BUILDING DEMO
M101	OPERATIONS BUILDING NEW WORK - 1ST & 2ND FLRS
M102	OPERATIONS BUILDING NEW WORK - ROOF
M103	MAINTENANCE BUILDING NEW WORK
M601	DETAILS
M602	DETAILS
M603	DETAILS
M701	CONTROLS
M702	CONTROLS

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DRAWN BY: RAS

LEGENDS, NOTES &
SCHEDULES

M001

GENERAL NOTES - HVAC	
1.	PROVIDE COMPLETE AND FUNCTIONAL HVAC SYSTEMS PER HVAC PLANS INCLUDING FURNISHING, INSTALLING, TESTING AND WARRANTY OF ALL WORK.
2.	WORK SHALL BE IN ACCORDANCE WITH THE 2017 OHIO BUILDING AND MECHANICAL CODES INCLUDING REFERENCED CODES AND STANDARDS, ALL FEDERAL, STATE, AND LOCAL CODES AND ALL APPLICABLE LAWS, ORDINANCES AND REGULATIONS.
3.	WORK SHALL BE PERFORMED USING BEST QUALITY INSTALLATION PRACTICE BY A QUALIFIED TRADE CONTRACTOR AND THEIR QUALIFIED SUBCONTRACTORS. ALL CONTRACTORS SHALL BE LICENSED AND BE BONDED FOR THE WORK.
4.	ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND OWNER SAFETY STANDARDS AND PRACTICES. ALL ON SITE PERSONNEL SHALL BE SAFETY TRAINED AND OWNER CERTIFIED.
5.	OBTAIN REQUIRED PERMITS RELATED TO THE WORK AND PAY ALL PERMIT AND INSPECTION FEES.
6.	THE AUTHORITY HAVING JURISDICTION SHALL INSPECT AND APPROVE ALL WORK. PROVIDE A FINAL CERTIFICATE OF APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND PRESENT TO THE OWNER BEFORE REQUESTING FINAL PAYMENT AND RELEASE OF RETAINAGE.
7.	ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL HVAC SYSTEMS ARE INCLUDED IN THE CONTRACT.
GENERAL REQUIREMENTS - HVAC	
1.	PROTECT ALL FURNISHED MATERIAL AND EQUIPMENT FROM THEFT AND DETERIORATION OR CONTAMINATION DUE TO WEATHER OR CONSTRUCTION ACTIVITIES.
2.	PROTECT OWNERS PROPERTY AND PROPERTY OF OTHER CONTRACTORS.
3.	REMOVE ALL CONSTRUCTION DEBRIS FROM SITE. RECYCLE DEBRIS WHERE POSSIBLE. DISPOSE OF ALL HAZARDOUS MATERIAL IN ACCORDANCE WITH ENVIRONMENTAL LAWS.
4.	PROVIDE ALL CUTTING AND PATCHING REQUIRED TO INSTALL MATERIAL AND EQUIPMENT.
5.	EXISTING ROOF PATCHING SHALL BE SUBCONTRACTED TO A BONDED ROOFING CONTRACTOR FAMILIAR WITH THE ROOFING SYSTEM. MAINTAIN ANY REMAINING ROOF WARRANTY.
6.	PROVIDE APPROPRIATE FIRESTOPPING SYSTEM FOR ANNULAR SPACE OPENINGS AROUND DUCT AND PIPE PENETRATIONS THROUGH FIRE RESISTANCE RATED CONSTRUCTION. ANNULAR SPACE OPENINGS AT DUCT OR PIPE PENETRATIONS IN NON RATED CONSTRUCTION TO BE CLOSED AIR AND WATER TIGHT.
7.	MATERIALS AND EQUIPMENT SHALL BE ONE OF THE BRAND OR MANUFACTURERS LISTED OR AN APPROVED EQUAL.
8.	ELECTRONIC SHOP DRAWINGS SHALL BE PROVIDED IN .PDF FORMAT FOR THE ENGINEER'S APPROVAL FOR ALL MATERIALS AND EQUIPMENT. SHOP DRAWINGS SHALL BE SPECIFICALLY EDITED TO ELIMINATE SUPERFLUOUS INFORMATION AND SHALL CLEARLY SHOW SPECIFICS FOR THE MATERIAL AND EQUIPMENT PROVIDED.
9.	COORDINATE INSTALLATION OF ACTUAL EQUIPMENT AND SYSTEMS PROVIDED WITH OTHER TRADES AND NEW OR EXISTING CONDITIONS.
10.	PROJECT CONDITIONS REQUIRE COORDINATION TO MAKE SYSTEMS FIT IN THE AVAILABLE SPACE. ALL CONTRACTORS SHALL COOPERATE TO MODIFY THEIR RESPECTIVE MATERIAL AND EQUIPMENT INSTALLATION AND DEPICT ON A DETAILED, FINISHED COORDINATION SET OF DRAWINGS BEFORE INSTALLATION. ALLOW FOR EXPECTED MINOR OFFSETS OR RELOCATION SYSTEM OR EQUIPMENT WITHOUT REQUEST FOR COMPENSATION ADJUSTMENT.
11.	INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS. PROVIDE REQUIRED CLEARANCES TO MEET CODE REQUIREMENTS, MANUFACTURER'S RECOMMENDATIONS AND MAINTENANCE SERVICE.
12.	ALL WORK AREAS SHALL BE CLEANED TO MATCH ORIGINAL CONDITION.
13.	PROVIDE TESTING, ADJUSTING AND BALANCING (TAB) REPORTS FOR AIR AND WATER SYSTEMS. A CERTIFIED AABC OR NEBB FIRM SHALL PROVIDE THE BALANCE.
14.	PROVIDE FINAL COORDINATION/INSTALLATION DRAWINGS TO THE OWNER IN BOUND PAPER AS WELL AS ELECTRONIC FORMAT FOR RECORD.
15.	MAINTAIN RECORD DRAWINGS AND PROVIDE TO THE OWNER OR HIS AGENT.
16.	PROVIDE TWO (2) BOUND, PAPER COPIES OF ALL OPERATING AND MAINTENANCE MANUALS. PROVIDE AN ELECTRONIC COPY OF THE OPERATING AND MAINTENANCE MANUAL.
17.	PROVIDE WARRANTY FOR ALL WORKMANSHIP, EQUIPMENT AND MATERIAL. WARRANTY SHALL BE 1 YEAR FOR PART AND LABOR, PROVIDE EXTENDED WARRANTY PERIOD FOR PARTS AND/OR LABOR AS IDENTIFIED OR AS STANDARD FOR CERTAIN ITEMS OF EQUIPMENT.
18.	PROVIDE TRAINING AND MAINTENANCE INSTRUCTION FOR SYSTEMS AND EQUIPMENT TO THE OWNER. TRAINING SHALL BE 16 HOURS OF TIME WITH MAXIMUM TRAINING PERIOD OF 4 HOURS.

DUCT CONSTRUCTION AND SEALING SCHEDULE					
QUALITY ASSURANCE					
- COMPLY WITH GENERAL WELDING PERSONNEL & PROCEDURES UNDER AWS D1.1/D1.1M, AWS D1.2/D1.2M & AWS D9.1/D9.1M. - COMPLY WITH GENERAL DUCT CONSTRUCTION STANDARDS UNDER SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE - THIRD EDITION AND MOST CURRENT VERSION OF APPLICABLE ASHRAE 90.1 SECTION 6.4.4 AND ASHRAE 62.1 SECTIONS 5 & 7. - COMPLY WITH SEISMIC REQUIREMENTS PRESCRIBED UNDER SMACNA DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE THIRD EDITION & ASCE/SEI 7.					
PRODUCTS					
RECTANGULAR DUCTWORK - 2" S.P. AND HIGHER - FLAT SLIP, STANDING DRIVE OR GASKETED FLANGE DUCT SYSTEM CONNECTIONS. - RADIUS OR SQUARE THROAT WITH DOUBLE WALL TURNING VANES ELBOW. 45 DEG. ENTRY OR CONICAL SPIN-IN BRANCH CONNECTIONS. - RADIUSED, ANGLED (15" MAX.) OR MITERED (15" MAX.) OFFSETS. - CONCENTRIC TRANSITIONS, 0 = 45° MAX. - ECCENTRIC TRANSITIONS, 0 = 30° MAX. - BRANCH DUCTS SHALL BE CONICAL TEE FITTINGS. - SQUARE THROAT, RADIUS HEEL 90° ELBOWS ARE NOT PERMITTED.					
RECTANGULAR DUCTWORK - 1" S.P. OR LESS (SAME AS ABOVE EXCEPT:) - TURNING VANES IN ELBOWS NOT REQUIRED FOR AIR VELOCITIES LESS THAN 800 FPM. - STRAIGHT TAP AND STANDARD SPIN-IN BRANCH CONNECTIONS PERMITTED.					
DUCT SEALANT & GASKETS					
- GALVANIZED DUCT SEALANT - WATER BASED SYNTHETIC LATEX EMULSION, GRAY IN COLOR. - FLANGE GASKETS - BUTYL RUBBER, NEOPRENE, OR EPDM POLYMER W/ POLYISOBUTYLENE PLASTICIZER. - ALUMINUM DUCT SEALANT - ALUMINUM SILICONE, GRAY IN COLOR. - PVC COATED DUCT SEALANT - PVS SEALANT OR CAULK/MINERAL IMPREGNATED FIBER TYPE.					
DUCT HANGER SUPPORTS					
- DUCT HANGER SUPPORTS SHALL DIRECTLY ATTACH TO DUCTWORK. - EXTERIOR DUCT INSULATION WRAP SHALL BE APPLIED OVER DUCT AND HANGER SUPPORTS. - ANGLE OR UNISTRUT SUPPORTS SHALL BE INSULATED A MINIMUM OF 4" BEYOND DUCT BEARING POINT TO PREVENT CONDENSATION.					
EXECUTION					
- DRAWINGS INDICATE GENERAL LOCATION OF DUCTWORK. COORDINATE DUCT LAYOUT CAREFULLY WITH OTHER TRADES TO AVOID CONFLICT. PROVIDE OFFSETS AS REQUIRED. - SPAN DUCTWORK FROM STRUCTURAL CONCRETE/STEEL MEMBERS OR SUPPLEMENTARY STEEL SHAPES. - FOR EXPOSED DUCTWORK, GRIND WELDS SMOOTH AND POLISH AND TRIM SEALANTS FLUSH WITH DUCT SURFACES. - PROTECT DUCTWORK DURING CONSTRUCTION AND CLEAN PRIOR TO SYSTEM OPERATION. - ROUTE DUCTWORK TO AVOID PASSING THRU TRANSFORMER VAULTS OR ABOVE ELECTRICAL SWITCHGEAR OR PANELBOARDS PER NEC REQUIREMENTS. - SEAL DUCTS ACCORDING TO SMACNA SEAL CLASS NOTED IN SCHEDULE. - SYSTEMS OPERATING AT 3" S.P. OR HIGHER AND ALL EXTERIOR DUCTWORK SHALL REQUIRE DUCT PRESSURE TESTING. - WET DUCT SYSTEMS SHALL BE PITCHED FOR DRAINAGE. PROVIDE TRAPPED DRAIN AT SYSTEM LOW POINTS AND PIPE TO LOCAL DRAIN POINT.					
DUCTWORK SYSTEM SCHEDULE					
DUCTWORK SYSTEM	LOCATION	MATERIAL	SMACNA CLASS.		NOTES
			S.P. CONSTR.	SEAL CLASS	
RETURN AIR	EXPOSED	G1, G2	-2"	C	1
RETURN AIR	EXTERIOR	F1	-2"	C	
OUTDOOR RETURN/EXHAUST AIR	ALL	G1	-2"	C	
OUTDOOR SUPPLY AIR	ALL	G1	4"	A	
EXHAUST AIR	CONCEALED	G1	-2"	C	
EXHAUST AIR	EXPOSED	G1, G2	-2"	C	1
SUPPLY AIR - CONSTANT VOLUME	EXTERIOR	F1	+3"	B	
DUCTWORK MATERIALS SCHEDULE					
TYPE	MATERIAL	DESCRIPTION			
F1	NON-FIBROUS CLOSED CELL	EQUAL TO THERMADUCT #OD. R = 12 (MIN.) ZERO-FIBER FOAM WITH HIGH IMPACT VINYL SHELL. COMPLIES WITH UL 723 25/50 FLAME/SMOKE RATING.			
G1	GALVANIZED STEEL	24 GA. MIN., HOT DIPPED, GALVANIZED BOTH SIDES, G90 PER ASTM A653.			
G2	GALVANNEALED STEEL	24 GA. MIN., HOT DIPPED, HEAT TREATED GALVANNEALED BOTH SIDES PER ASTM A653, PAINT UNIFORM GRAY MATTE APPEARANCE, A40 PER ASTM A653.			

NOTES:

1. FIELD PREPARE GALVANIZED DUCTWORK FOR PAINTING WITH AN ACID WASH OF VINEGAR.

GENERAL HVAC REMOVAL NOTES	
A.	THIS REMOVAL PLAN HAS BEEN MADE TO ASSIST THE CONTRACTOR IN DETERMINING GENERAL SCOPE OF REMOVALS. THESE DRAWINGS SHALL NEITHER BE CONSIDERED AS SHOWING ALL REMOVAL ITEMS NOR SHALL IT BE CONSIDERED A SUBSTITUTE FOR A THOROUGH SITE INVESTIGATION. NO ALLOWANCE SHALL BE MADE FOR LACK OF KNOWLEDGE CONCERNING EXISTING SITE CONDITIONS. ALL PIPE AND/OR DUCTWORK SHALL BE MADE CONTINUOUS TO ANY ACTIVE EQUIPMENT PAST THE ITEM(S) BEING REMOVED.
B.	THE HVAC CONTRACTOR IS TO REMOVE ALL EXISTING, ACCESSIBLE UNUSED OR ABANDONED DEVICES, PIPING, WIRING, DUCTWORK AND SUPPORT HANGERS OR STRUCTURES TOTALLY BACK TO SOURCE. IN NO CASE SHALL ANY ABANDONED PIPING, WIRING, DUCTWORK, OR EQUIPMENT REMAIN WITHIN THE CONSTRUCTION AREA OR IN ADJACENT AREAS TO MECHANICAL ROOMS OR CLOSETS. ONLY ITEMS THAT ARE INACCESSIBLE SHALL BE ALLOWED TO BE ABANDONED IN PLACE WITH ALL ACCESSIBLE SERVICES APPROPRIATELY CAPPED.
C.	REMAINING ACTIVE PIPING, DUCTWORK, ETC. SHALL BE RE-SUPPORTED AS REQUIRED WHERE EXISTING SUPPORTS ARE REMOVED, AS IN THE CASE OF DUCTWORK OR PIPING, WHICH IS BEING REMOVED OR WHERE EXISTING SUPPORTS/LOCATION CONFLICTS WITH NEW UTILITIES. SUPPORTS SHALL UTILIZE APPROVED AND RECOGNIZED MATERIALS AND METHODS AND BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS.
D.	RECESSED THERMOSTAT IN EXISTING WALLS WHICH ARE TO BE REMOVED IN FINISHED AREAS SHALL BE COVERED BY SUITABLE BLANK COVERPLATES.
E.	OPENINGS OR HOLES EXPOSED TO EXTERIOR CONDITIONS SHALL BE MADE WEATHERTIGHT AND WATERPROOF.
F.	ALL INACTIVE DUCT ABOVE CEILINGS SHALL BE REMOVED IN ENTIRETY AND CAPPED AT NEAREST ACTIVE MAINS.
G.	COORDINATE REMOVAL ITEMS CLOSELY WITH OWNER. ANY ITEMS REMOVED WITHIN THE CONSTRUCTION AREA SHALL BE TURNED OVER TO THE OWNER IN GOOD CONDITION WHEN INDICATED HEREIN OR WHEN SO REQUESTED BY THE OWNER. ALL OTHERS WILL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE REQUIRED TO BE DISPOSED OF ACCORDINGLY.
H.	EXISTING MATERIALS AND FINISHES ARE TO BE PROTECTED AND RESTORED TO MATCH ADJACENT FINISHES.
I.	ANY EXISTING EQUIPMENT OR DEVICES IN ADJACENT SPACES MADE INACTIVE BY REMOVAL OF DEVICES WITHIN THE CONSTRUCTION AREA SHALL BE RE-FED AS REQUIRED TO MAKE DEVICES OR EQUIPMENT OPERATIONAL.
J.	PROVIDE ADEQUATE PROTECTION TO ALL EXPOSED SURFACES AND EQUIPMENT WITHIN THE REMOVAL AREA.
K.	EXISTING PIPING AND DUCTWORK TO REMAIN WITH DAMAGED INSULATION ENCOUNTERED IN AREAS OF WORK SHALL HAVE DAMAGED INSULATION REMOVED AND REPLACED WITH NEW. INSULATION THICKNESS SHALL MATCH EXISTING CONDITION.
L.	WHERE DUCTWORK, PIPING, EQUIPMENT, OR AIR DEVICES ARE REMOVED, CONTRACTOR SHALL BE RESPONSIBLE TO PATCH WALL AND FINISH CONSISTENT WITH ARCHITECTURAL FINISHES FOR THAT AREA.
M.	ANY MATERIAL SUSPECTED OF CONTAINING ASBESTOS ENCOUNTERED DURING THE COURSE OF CONSTRUCTION SHALL IMMEDIATELY BE REPORTED TO OWNER AND PROJECT MANAGER. ALL WORK IN THAT AREA SHALL CEASE UNTIL DEEMED SAFE.

ELECTRIC FINNED TUBE CONVECTOR SCHEDULE

GENERAL NOTES

BASIS OF DESIGN - VULCAN RADIATOR.

HEATING ELEMENTS CONSIST OF A STEEL SHEATH AND MECHANICALLY BONDED ALUMINUM FINs. ELEMENT FIN TO NOT EXCEED 350°F. PEDESTAL TYPE ELEMENT SHALL BE CENTER ANCHORED AND FREE FLOATING AT EACH END ON NYLON BUSHINGS.

6" (1 OR 2 DEVICES) OR 12" (3 OR MORE DEVICES) CONTROL SECTIONS TO ACCOMPANY EACH HEATING ELEMENT. CONTROL SECTION TO INCLUDE: D-DISCONNECT, T-THERMOSTAT, PR-PNEUMATIC RELAY, TR-TRANSFORMER RELAY, FD-FUSED DISCONNECT OR DR-DUPLEX RECEPTACLE.

COLOR DESIGNATIONS: P-1=WHITE, DB-1=DARK BRONZE, VP-2=EGGSHELL, SB-1=GRAY, DB-5=FLAT BLACK

TAG	FIN TUBE MODEL	SERVICE	ROWS OF FINNED TUBE	CABINET STYLE	LOAD DATA			APPROX. DIMENSIONS			COLOR	NOTES
					KW/FT	TOTAL KW	V/PH	LENGTH (FT)	DEPTH (IN)	HEIGHT (IN)		
FT-ELEC-1	LB-9350	BREAK ROOM 206 - N	1	LBT	0.35	3.15	277V/1φ	10	5.5	12		1,2,3,4
FT-ELEC-2	LB-9350	BREAK ROOM 206 - W	1	LBT	0.35	3.15	277V/1φ	10	5.5	12		1,2,3,4
FT-ELEC-3	LB-10350	CONF ROOM 202	1	LBT	0.35	3.5	277V/1φ	13	5.5	12		1,2,3,5

NOTES:

1.

PROVIDE LB-CS 12" CONTROL SECTION.

2.

PROVIDE LB-ITS THERMOSTAT SINGLE POLE RATED 22AMPS, 227 VOLT. ADJUSTABLE THROUGH DISCHARGE GRILLE, MOUNTED IN RIGHT HAND JUNCTION BOX.

3.

PROVIDE END CAPS (QTY 2).

4.

ENCLOSURE IS TO BE 9 FT WITH AN ADDITIONAL 1 FT CONTROL SECTION. HEATING ELEMENT TO BE 9 FT.

5.

ENCLOSURE IS TO BE 13 FT WITH AN ADDITIONAL 1 FT CONTROL SECTION. HEATING ELEMENT TO BE 10 FT.

AIR DEVICE SCHEDULE					
GENERAL NOTES:					
AIR DEVICES BASED ON PRICE, LOUVERS BASED ON GREENHECK. REFER TO SPECIFICATIONS FOR OTHER MANUFACTURERS.			STANDARD WHITE BAKED ACRYLIC FINISH UNLESS NOTED OTHERWISE.		
MAXIMUM SOUND LEVEL OF NC-25 AT INDICATED AIR FLOW.			DIFFUSERS SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED OR INDICATED ON DRAWINGS.		
BALANCING DAMPER GENERALLY PROVIDED IN DUCT, NOT AT DEVICE.			VERIFY CEILING TYPE AND PROVIDE APPROPRIATE MOUNTING FRAME WHERE REQUIRED FOR OTHER THAN LAY-IN APPLICATION OR IN LINE "T" BAR.		
TAG	DESCRIPTION	MODEL NO.	MATERIAL	ACCESSORIES	NOTES
S1 & S1A	2'X2' SQUARE PLAQUE DIFFUSER LAY-IN FRAME ROUND DUCT CONNECTION	SPD (ASPD)	STEEL	INSULATED BACKPAN (STYLE 31)	
S2	LOUVERED SUPPLY GRILLE DOUBLE DEFLECTION W/ LONG FRONT BLADES, 3/4" BLADE SPACING	520	STEEL		
S3	2'X2' SQUARE PLAQUE DIFFUSER SURFACE MOUNT FRAME ROUND DUCT CONNECTION	SPD	STEEL	INSULATED BACKPAN (STYLE 31)	
R1	RETURN GRILLE DEVICE SIZE - 24" X 24" 45° HORIZONTAL BLADES 1/2" SPACING	635	ALUMIN.	LAY-IN FRAME	
R2	LOUVERED FACE RETURN GRILLE DEVICE SIZE - INDICATED ON PLAN 45° HORIZONTAL BLADES 1/2" SPACING	635	ALUMIN.	SURFACE MOUNT FRAME	
E1	EXHAUST GRILLE DEVICE SIZE - 16" X 16" 45° HORIZONTAL BLADES 1/2" SPACING	635	ALUMIN.	SURFACE MOUNT FRAME	1
E2	LOUVERED FACE EXHAUST GRILLE DEVICE SIZE - INDICATED ON PLAN 45° HORIZONTAL BLADES 1/2" SPACING	635	ALUMIN.	SURFACE MOUNT FRAME	
E3	LOUVERED FACE EXHAUST GRILLE DEVICE SIZE - 14" X 14" 45° HORIZONTAL BLADES 1/2" SPACING	635	ALUMIN.	SURFACE MOUNT FRAME	1
L1	FIXED BLADE LOUVER DEVICE SIZE - 48"x24" LOUVER FRAME SIZE - 6" FRAME MIN. 50% FREE AREA	ESD-635	ALUMIN.	BLACK BIRDSCREEN	2

1. DEVICE TO BE SURFACE MOUNTED IN CENTER OF ACOUSTIC CEILING PAD FOR LAY-IN APPLICATION.

2. DARK BRONZE ANODIZED FINISH. PROVIDE COLOR SELECTION TO ARCHITECT FOR APPROVAL.

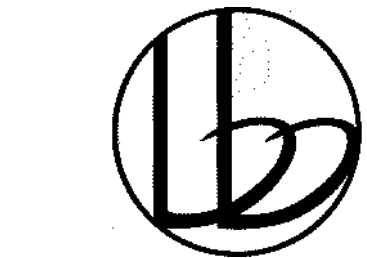


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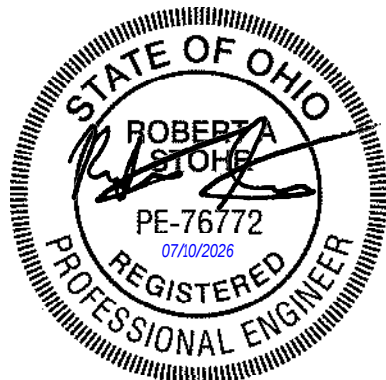
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NOTES & SCHEDULES

M002

ROOFTOP COOLING/HEATING UNITS		
UNIT TAG	RTU-01	RTU-M1
BASIS OF DESIGN	TRANE #DHK-180A4S0L	TRANE #WHK-090A4SOH
SERVICE	OPERATIONS BUILDING	MAINTENANCE BUILDING
DESCRIPTION	VARIABLE VOLUME MULTI ZONE	CONSTANT VOLUME SINGLE ZONE
MOUNTING	CURB MOUNTED - DOWNFLOW	PAD MOUNTED - HORIZONTAL
EVAPORATOR FAN		
AIRFLOW (CFM)	4500	2250
ESP. (" W.G.)	2"	1.25"
MIN. OUTSIDE AIR - CFM/%	1100/24%	550/24%
VARIABLE FREQUENCY DRIVE	YES	YES
COOLING - BASED ON 95/76 (DB/WB) O.A. & 78 DB, 50% RH R.A.		
TOTAL (MBH)	173	90.9
SENSIBLE (MBH)	133	62.6
ENTER. AIR (DB/WB)	81/68	81/68
SUPPLY AIR (DB/WB)	55/54	55/54
EER	12.5	12.1
HEATING - HEAT PUMP - BASED ON 17°F O.A., 72°F R.A. CONDITIONS		
MBH	105	85
ENTER. AIR DB	55	55
SUPPLY AIR DB (MIN)	75	95
HEATING - EMERGENCY HEAT		
ENTER. AIR DB	-	55
SUPPLY AIR DB (MIN)	-	95
KW	-	27
ELECTRIC		
CIRCUIT SIZE MCA	48	78
MOCP	70	80
VOLTAGE/HZ/PHASE	460V/3φ	460V/3φ
PHYSICAL UNIT DATA		
LENGTH	122-15/16"	88-11/16"
WIDTH	86-3/4"	53-1/4"
HEIGHT - NOT INCLUDING CURB	66"	53"
MAX UNIT OP. WEIGHT (LBS.)	2700	993
UNIT OPTIONS		
ECONOMIZER HOOD	●	●
MIN. O.A. HOOD	●	●
CONSTANT AIR VOLUME		●
VARIABLE AIR VOLUME	●	
MULTI-STAGE, DUAL COMPRESSORS	●	
2-STAGE, SINGLE COMPRESSOR		●
HOT GAS REHEAT	●	●
RETURN AIR SMOKE DETECTOR	●	●
C02 SENSOR FOR D.V.C.	●	●
14" ROOF CURB ADAPTER	●	●
POWERED RELIEF FAN		
BAROMETRIC GRAVITY RELIEF DAMPER	●	●

- NOTES:
1. PROVIDE 5-YEAR COMPRESSOR WARRANTIES.
 2. PROVIDE STANDARD 2" PLEATED MERV 8 FILTERS.
 3. SEE ROOFTOP UNIT MOUNTING DETAIL
 4. COOLING COIL CONDENSATE TRAP PER DETAIL
 5. TIE SMOKE DETECTORS INTO BUILDING FIRE ALARM SYSTEM. COORDINATE MANUFACTURER/TYPE.

FAN & ROOF VENTILATOR SCHEDULE											ELECTRIC		DRIVE TYPE	MOUNTING				ACCESSORIES & OPTIONS				CONTROLS										
BASIS OF DESIGN - GREENHECK REFER TO SPECIFICATIONS FOR OTHER MANUFACTURERS											E.S.P. - EXTERNAL STATIC PRESSURE											DISCONNECT WITH FAN DISCONNECT BY E.C. VFD ECM DIRECT BELT ROOF CURB BASE/FLOOR SUSPENDED, INLINE WALL CEILING VIBRATION ISOLATION INSULATION HOUSING SLOPING ROOF CURB POWDER COAT FINISH EPOXY INTERIOR FINISH DDC CONTROLLED MANUAL ON/OFF SWITCH DIAL SPEED CONTROLLER MOTORIZED DAMPER GRAVITY DAMPER NOTES										
VFD DRIVEN MOTORS SHALL BE PROVIDED WITH SHAFT GROUNDING RINGS, VFD DUTY MOTORS. REFER TO INSTALLATION DETAILS.																																
TAG	SERVICE		DESCRIPTION	MODEL NUMBER & SIZE GREENHECK	ROOF OPENING (L x W)	CAPACITY		ELECTRICAL																								
	BUILDING	AREA				AIRFLOW (CFM)	E.S.P. (IN. W.C.)	MOTOR RPM	MOTOR HP	V/PH																						
EF-01	OPERATIONS BLDG	BREAK ROOM 206	ROOF MOUNTED DOWNBLAST CENTRIFUGAL	G-095-VG	13"x13"	200	0.35	1150	1/6	120V/1φ	●			●	●		●					●	●			●	●					
EF-02	OPERATIONS BLDG	UNISEX RR 203	ROOF MOUNTED DOWNBLAST CENTRIFUGAL	G-097-VG	15"x15"	75	0.35	950	1/4	120V/1φ	●			●	●		●					●	●				●	●				
EF-03	OPERATIONS BLDG	RRs, LOCKER, SHOWER	DIRECT DRIVE INLINE CENTRIFUGAL	SQ-100-VG	-	850	0.50	1450	1/4	120V/1φ	●			●	●			●									●	●				
EF-04	OPERATIONS BLDG	LAB 101	TUBE AXIAL DIRECT DRIVE INLINE FAN	AX-47-37-0415-VG	-	200	0.9	1350	1	120V/1φ	●			●	●			●		●								●	●			
EF-M1	MAINTENANCE BLDG	LOCKERS & RR	DIRECT DRIVE INLINE CENTRIFUGAL	SQ-100-VG	-	750	0.35	1500	1/4	120V/1φ	●			●	●			●										●	●			

- NOTES
1. DIAL SPEED CONTROLLER MOUNTED REMOTE ON WALL. REFER TO HVAC PLANS FOR LOCATION.
 2. DIAL SPEED CONTROLLER MOUNTED ON FAN FOR BALANCING.
 3. MOTORIZED DAMPER PROVIDED AND INSTALLED BY H.C., E.C. TO PROVIDE POWER TO DAMPER ACTUATOR.
 4. MANUAL ON/OFF SWITCH MOUNTED REMOTE. REFER TO ELECTRICAL PLANS FOR LOCATION.

ELECTRIC UNIT HEATER SCHEDULE													
GENERAL NOTES													
HEATING CAPACITY BASED ON 70°F ΔT AIR TEMPERATURE DIFFERENCE.													
UNIT NO.	DESCRIPTION	SERVICE		MANUFACTURER/MODEL	MOUNTING	INPUT (KW)	AIR FLOW (CFM)	APPROX. DIMENSIONS			VOLTAGE/ PHASE	AMPS	NOTES
		BUILDING	ROOM					L (IN.)	W (IN.)	D (IN.)			
EUH-1	CABINET UNIT HEATER	OPERATIONS BLDG	VESTIBULE 100	QMARK AWH4507F	VERTICAL, WALL-MTD - RECESSED	4.8	100	20	16	4	277V/1φ	17.3	1
EUH-2	CABINET UNIT HEATER	OPERATIONS BLDG	UNISEX RR 203	QMARK AWH3150F	VERTICAL, WALL-MTD - RECESSED	1.5	100	20	16	4	120V/1φ	12.5	1
EUH-3	CABINET UNIT HEATER	OPERATIONS BLDG	WOMENS LOCKER M10X	QMARK AWH3150F	VERTICAL, WALL-MTD - RECESSED	1.5	100	20	16	4	120V/1φ	12.5	1
EUH-4	CABINET UNIT HEATER	MAINTENANCE BLDG	MENS LOCKER M107	QMARK AWH3150F	VERTICAL, WALL-MTD - RECESSED	1.5	100	20	16	4	120V/1φ	12.5	1
EUH-5	PROPELLER UNIT HEATER	OPERATIONS BUILDING	MECHANICAL	TRANE UHEC-053DACA	VERTICAL, SUSPENDED	5	400	18	15	7	480V/3φ	6.1	1

- NOTES:
1. PROVIDE STEPPED CAPACITY CONTROL.

VARIABLE AIR VOLUME UNIT SCHEDULE										
GENERAL NOTES										
UNITS ARE VARIABLE AIR VOLUME, ELECTRIC REHEAT					ENTERING AIR TEMP. (DEG. F) MAX AIR PRES. DROP INCL. HEATING COIL 55 0.5" S.P.					
DESIGN BASIS- PRICE MODEL SDV										
UNITS TO INCLUDE SCR CONTROL					MAX. NC 25, WITH 10db ROOM ABSORBTION AT 1.5" SP AND MAX. AIR FLOW					
UNIT. NO.	LOCATION	INLET SIZE	COOLING MAX.(CFM)	COOLING MIN.(CFM)	HEATING CFM	MBH	KW	LAT	V/PH	SEE NOTES
1-1-1	OPEN OFFICE 102, LOCKER 110	12	1000	200	500	24.3	7.1	100	277V/1φ	
1-1-2	LAB 101	8	550	110	275	13.4	3.9	100	277V/1φ	
1-1-3	MECHANICAL ROOM 111	8	600	120	300	14.6	4.3	100	277V/1φ	
1-1-4	LOCKER & RR	5	250	50	125	6.1	1.8	100	277V/1φ	
1-2-1	BREAK ROOM 206	12	1100	220	550	26.7	7.8	100	277V/1φ	
1-2-2	ENVIRONMENTAL COORDINATOR 207	7	400	80	200	9.7	2.8	100	277V/1φ	
1-2-3	MAINTENANCE SUPERVISOR 205	6	350	70	175	8.5	2.5	100	277V/1φ	
1-2-4	OPERATIONS SUPERVISOR 204, OPEN AREA 201	6	350	70	175	8.5	2.5	100	277V/1φ	
1-2-5	PLANT MANAGER 209	7	375	75	190	9.1	2.7	100	277V/1φ	
1-2-6	CONFERENCE ROOM 202	9	700	140	350	17.0	5.0	100	277V/1φ	

NOTES:

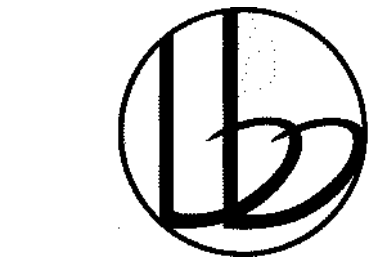


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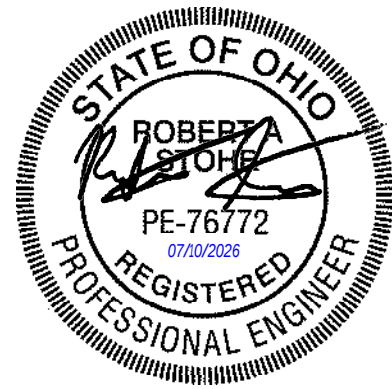
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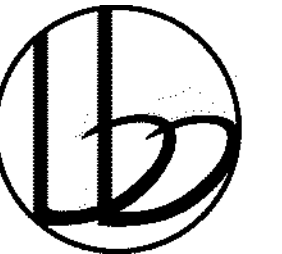
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SCHEDULES

M003



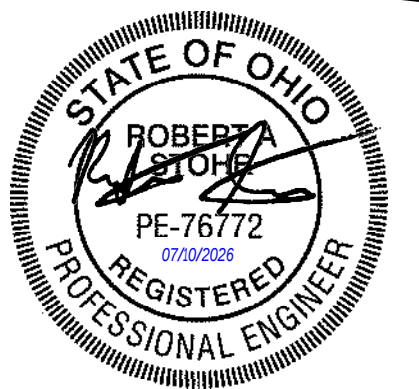
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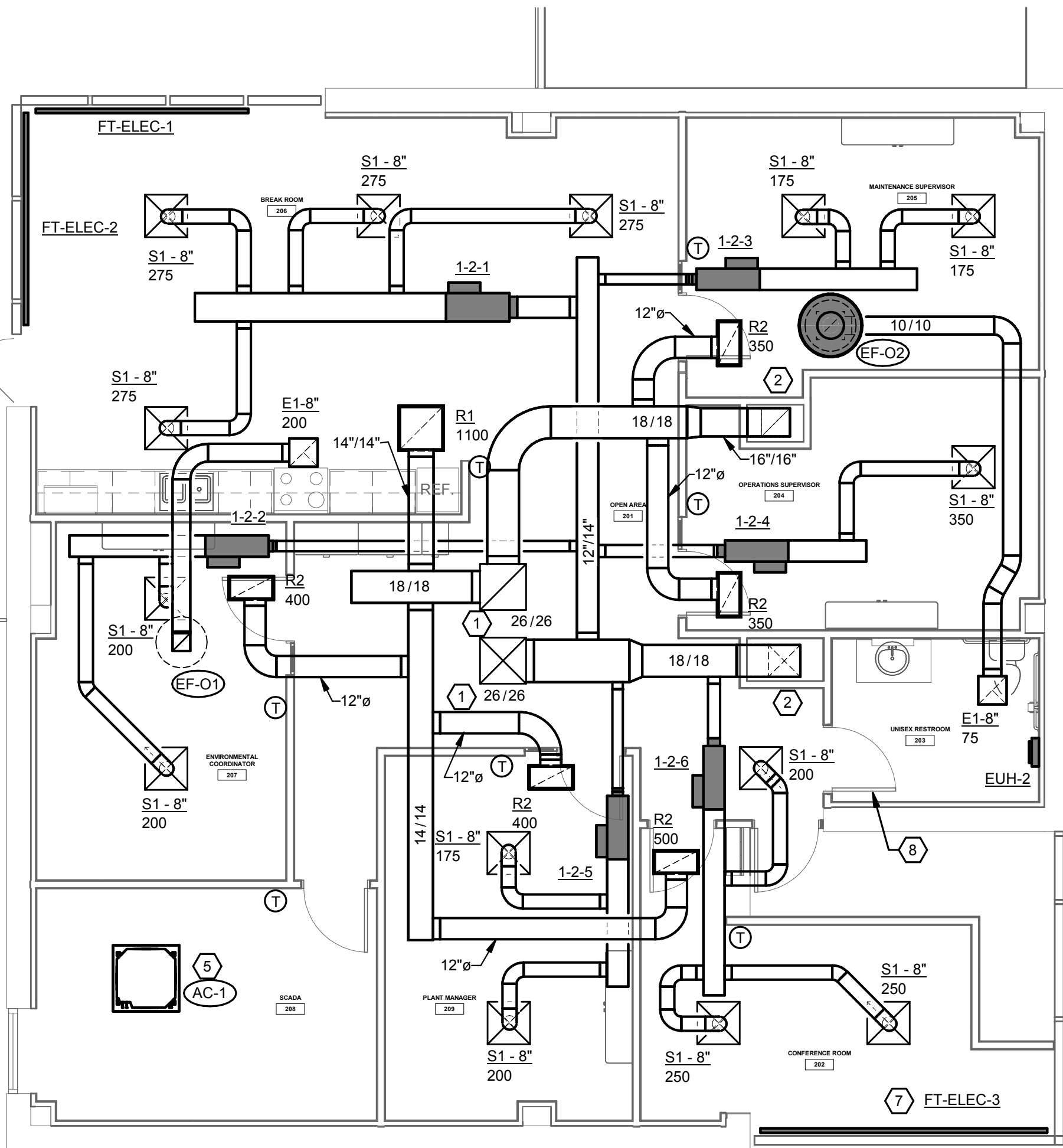
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OPS BLDG - NEW WORK

M101

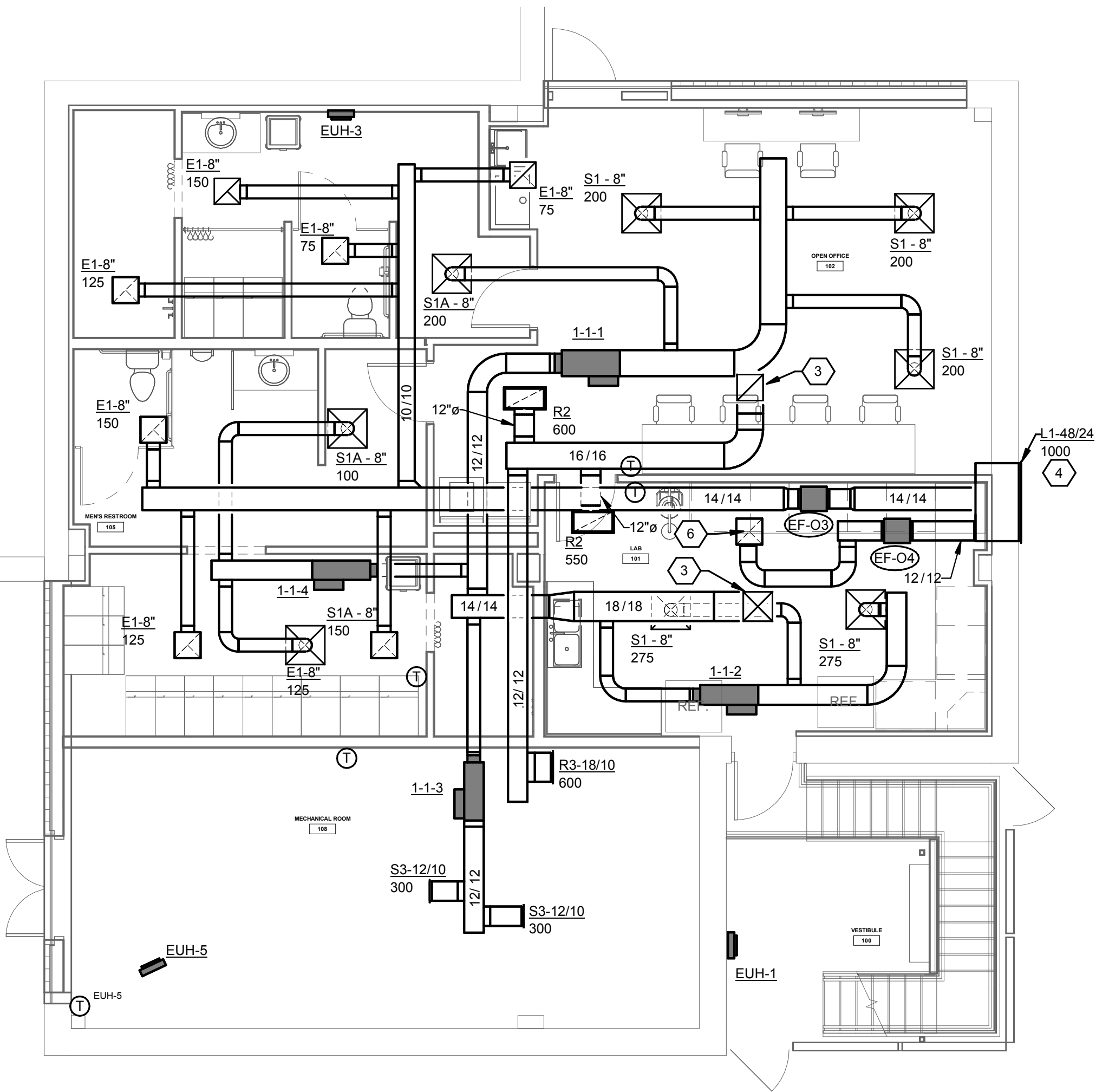
INSTALLATION NOTES:

- DUCT DOWN FROM ROOFTOP UNIT. COORDINATE PENETRATION SIZE AND LOCATION WITH STRUCTURAL.
- DROP DUCT DOWN TO FIRST FLOOR IN EXISTING CHASE, REUSE EXISTING FLOOR PENETRATION. CONFIRM PENETRATION OPENING SIZE.
- DUCT DOWN FROM 2ND FLOOR. SEE 2ND FLOOR PLAN FOR CONTINUATION.
- LOUVER TO REUSE EXISTING PENETRATION. CONFIRM PENETRATION DIMENSIONS PRIOR TO ORDERING LOUVER. LOUVER TO HAVE DARK BRONZE ANODIZED FINISH.
- 2.5-TON SCADA ROOM AC UNIT. SEE DETAIL. LOCATE CONDENSING UNIT ON ROOF.
- MONOXIVENT MOVEX ME100 EXTRACTION ARM. EXTRACTION ARM TO HAVE STANDARD HOOD. AIRFLOW RATING OF 150 CFM @ 0.7" SP. PROVIDE CEILING BRACKET MTF. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE LOCATION OF HOOD WITH OWNER.
- PROVIDE FIN TUBE ENCLOSURE TO RUN FULL LENGTH OF WINDOW. HEATING ELEMENT TO BE 10 FEET.
- GC TO PROVIDE 5/8" UNDERCUT TO DOOR TO ALLOW FOR MAKEUP/RETURN AIR PASSAGE.



SECOND FLOOR PLAN OPERATIONS BLDG

SCALE: 3/16" = 1'-0"



FIRST FLOOR PLAN OPERATIONS BLDG

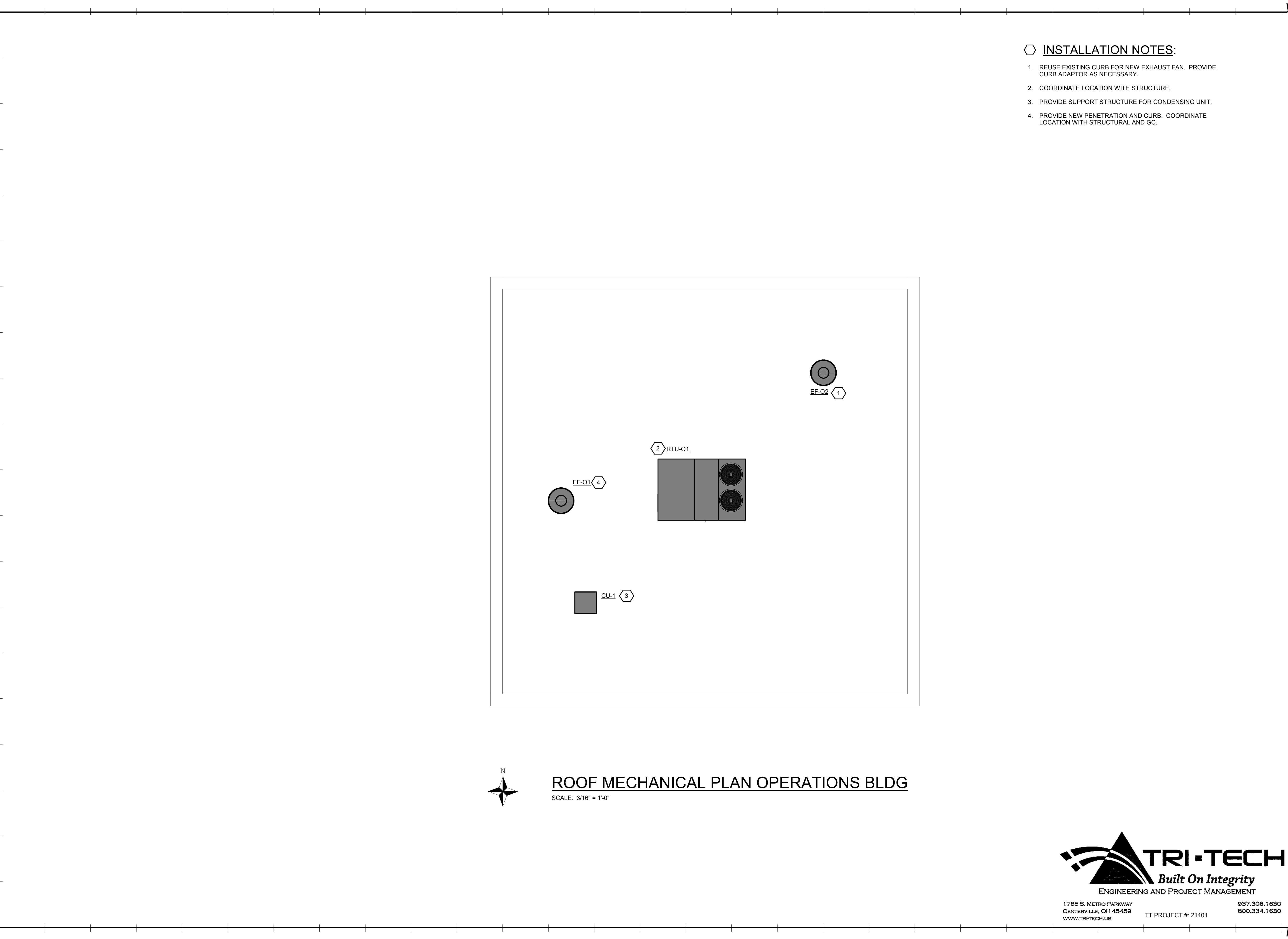
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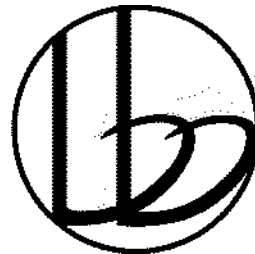
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- ⬡ **INSTALLATION NOTES:**
- 1. REUSE EXISTING CURB FOR NEW EXHAUST FAN. PROVIDE CURB ADAPTOR AS NECESSARY.
 - 2. COORDINATE LOCATION WITH STRUCTURE.
 - 3. PROVIDE SUPPORT STRUCTURE FOR CONDENSING UNIT.
 - 4. PROVIDE NEW PENETRATION AND CURB. COORDINATE LOCATION WITH STRUCTURAL AND GC.



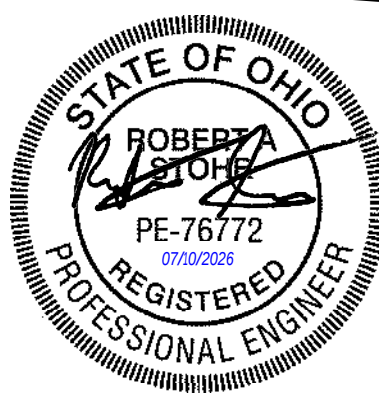
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**OPS BLDG - NEW WORK
ROOF**

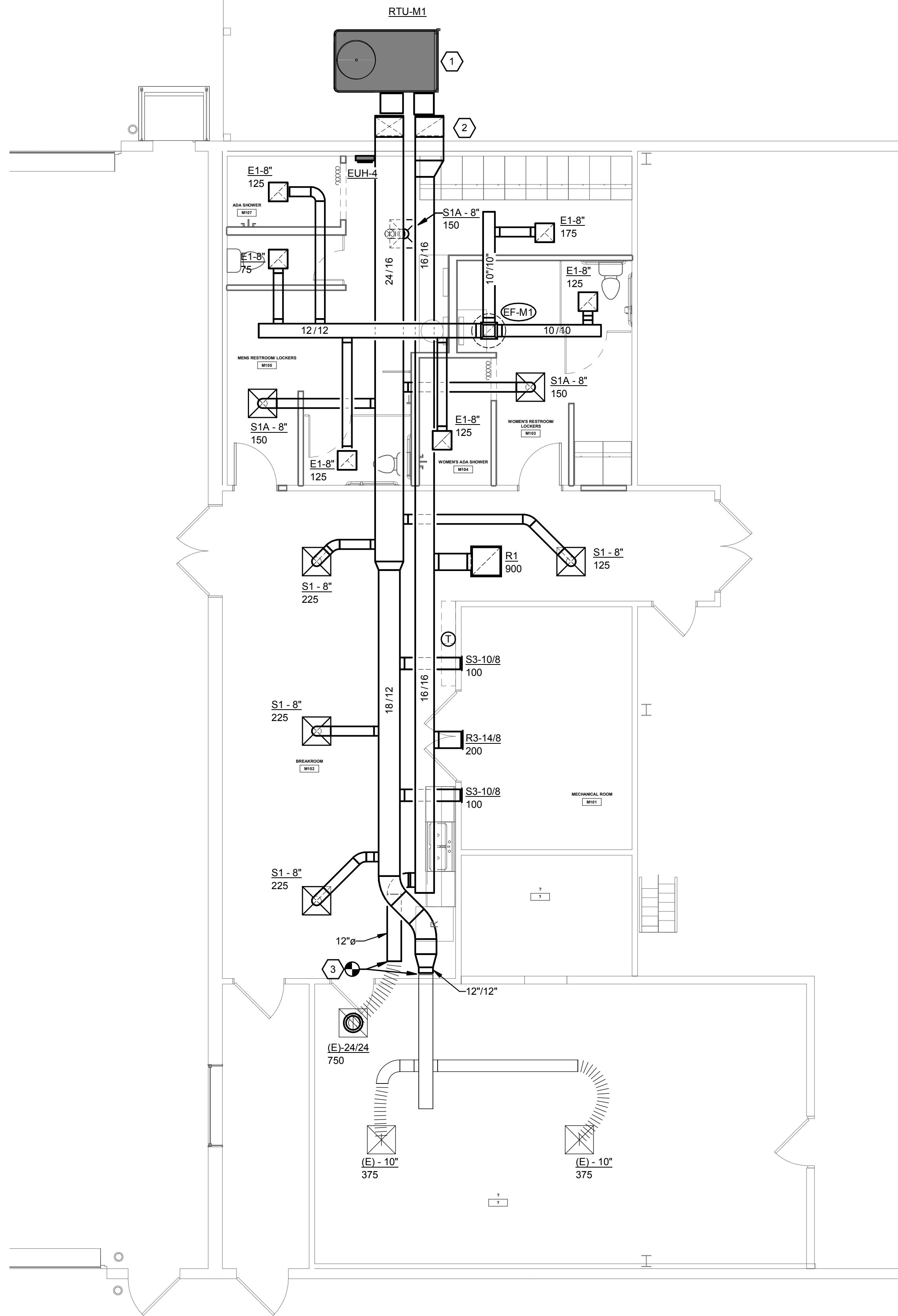
M102



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INSTALLATION NOTES:

1. ROOFTOP UNIT ON GRADE. PROVIDE 4" CONCRETE PAD.
2. DUCT UP SIDE OF BUILDING AND ABOVE CEILING. COORDINATE WALL PENETRATION WITH STRUCTURAL.
3. CONNECT TO EXISTING DUCTWORK. CONFIRM DUCT SIZE AND PROVIDE TRANSITION AS NECESSARY.



FIRST FLOOR DUCT PLAN MAINTENANCE BLDG

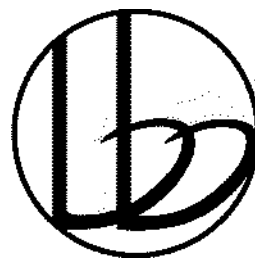
SCALE: 3/16" = 1'-0"



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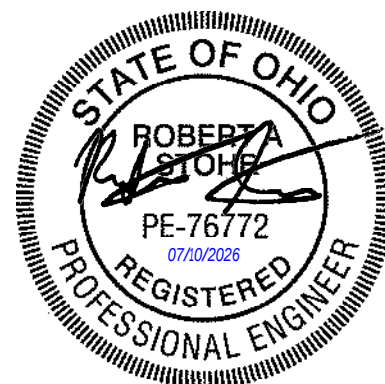
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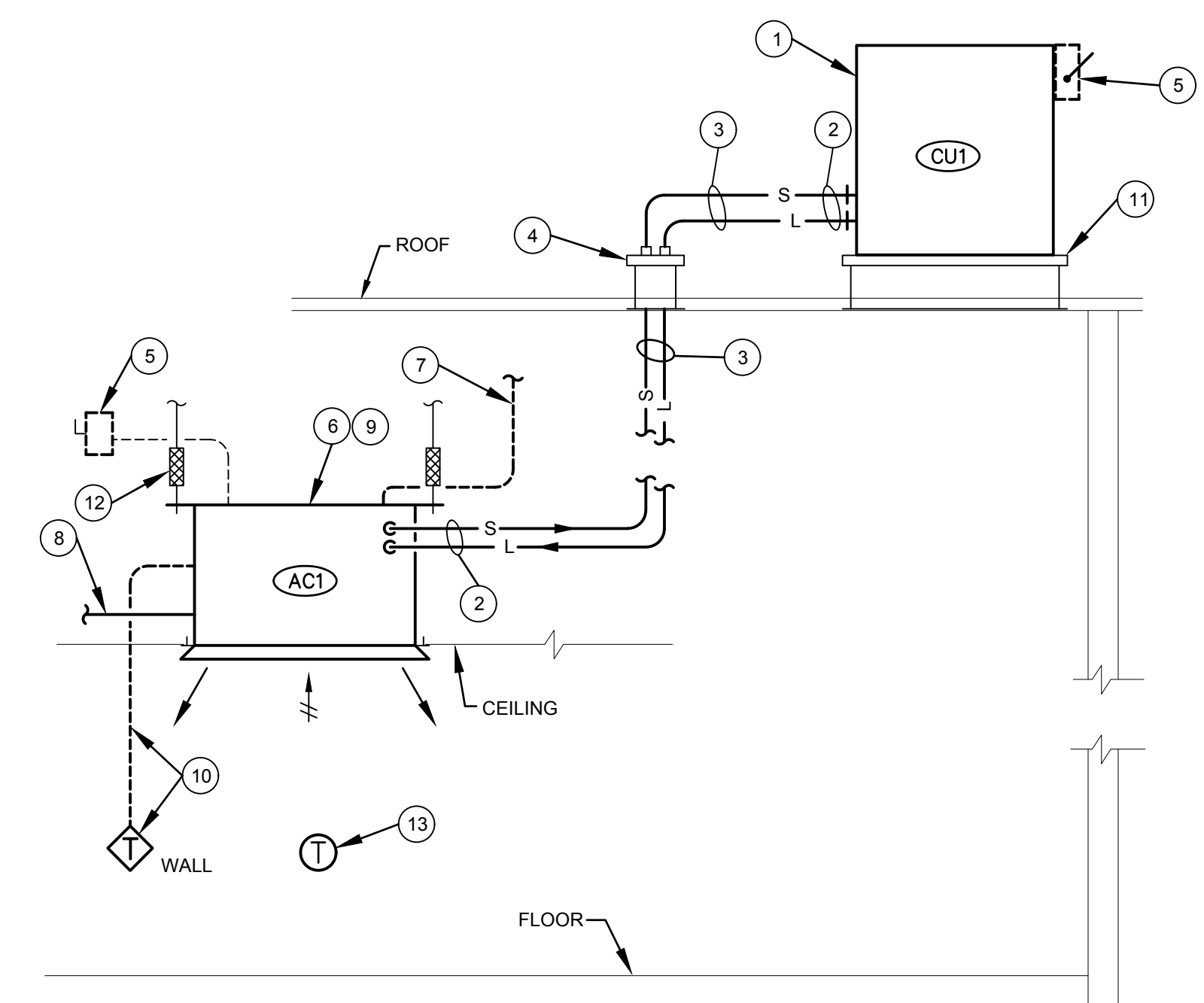
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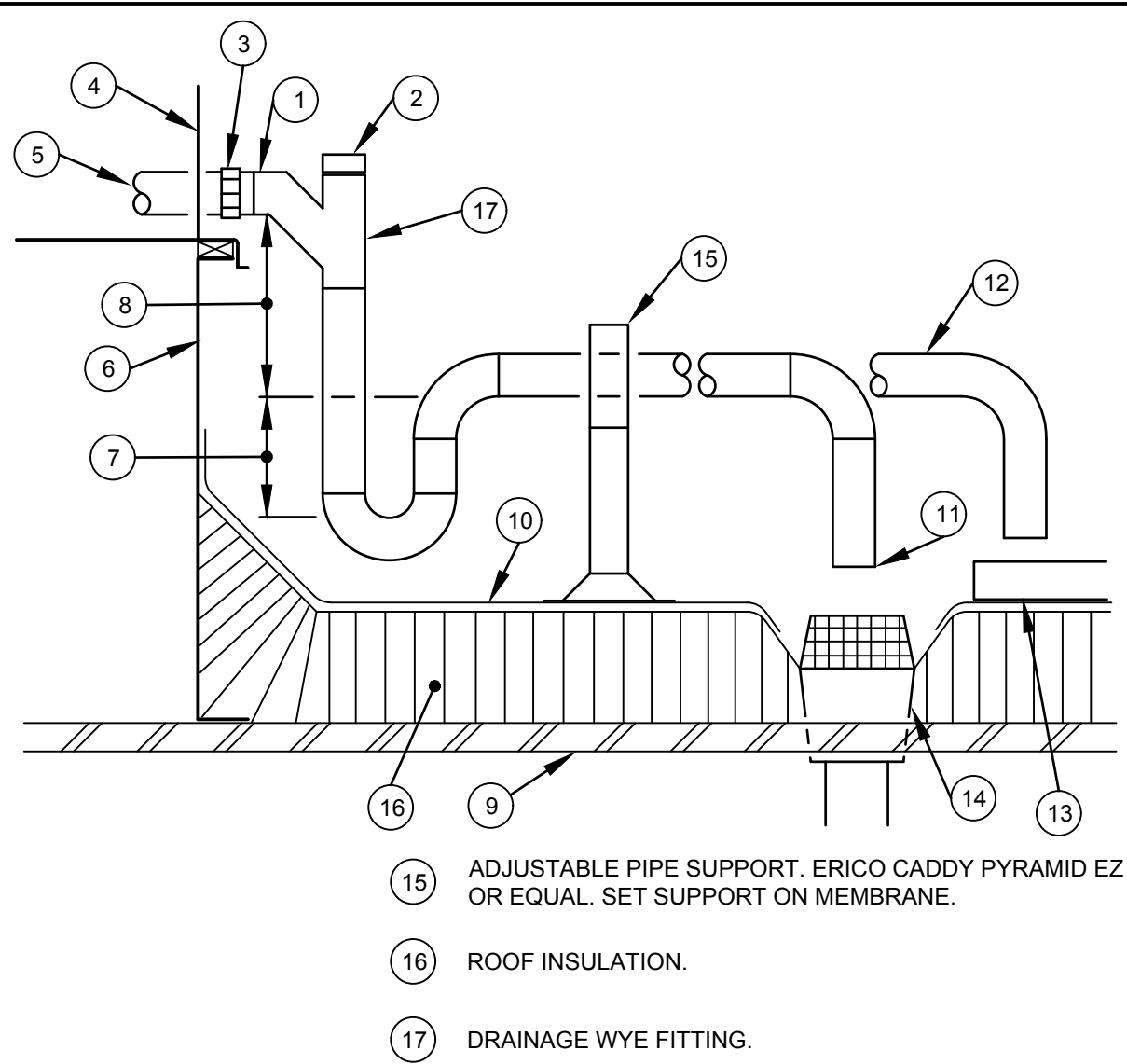
MAINTENANCE BLDG -
NEW WORK

M103

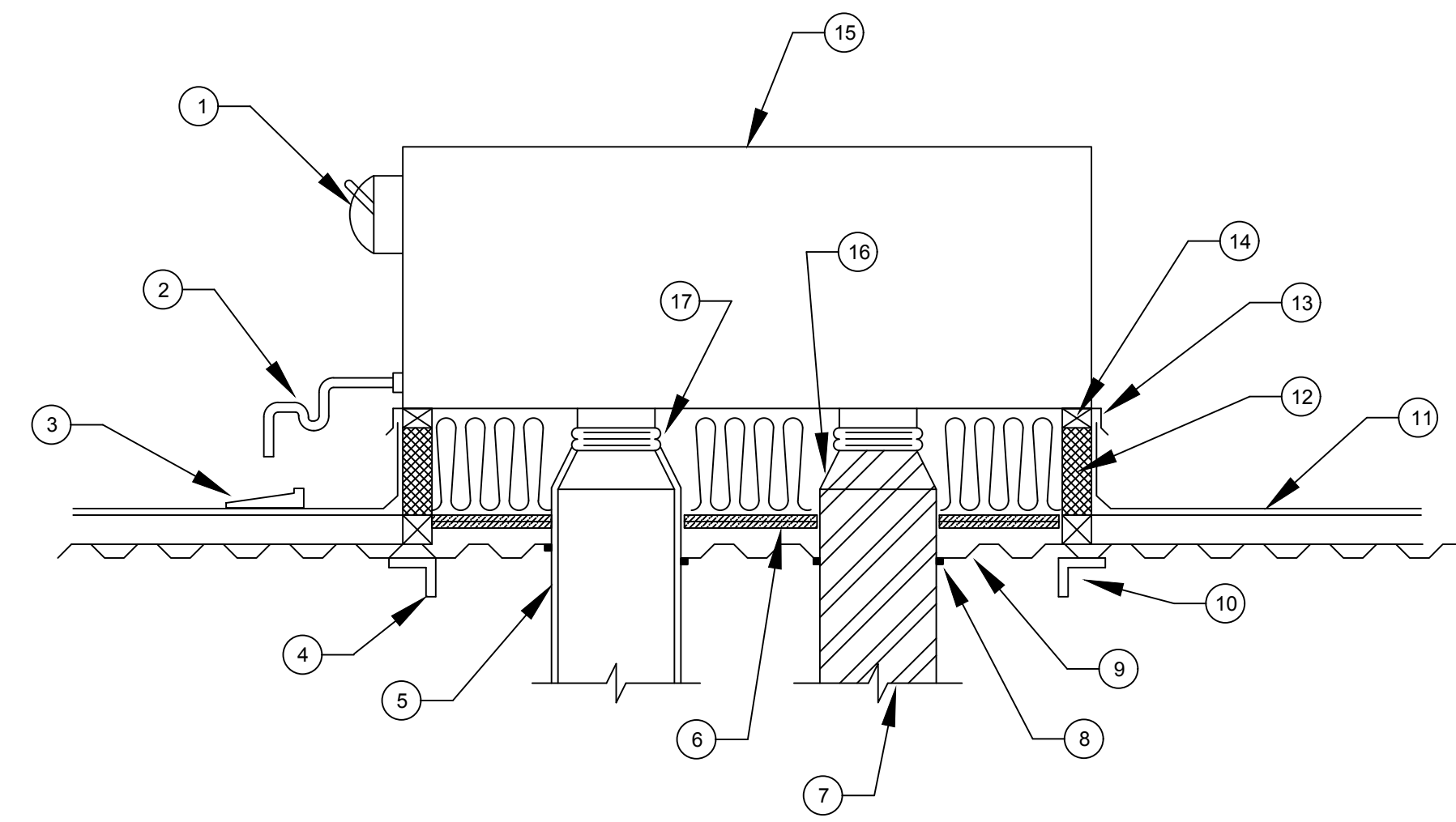


- 1 ROOF MOUNTED AIR COOLED CONDENSING UNIT
DESIGN BASIS: MITSUBISHI -PUY-A30NH3
2.5 TON CAPACITY TO MATCH EVAPORATOR UNIT.
SCROLL COMPRESSOR, CONDENSER COIL,
CONDENSER FAN, HOT-GAS BY-PASS, LIQUID LINE,
SOLENOID VALVE, LOW AMBIENT CONTROL.
ELECTRICAL: MCA-25A, MOCP-40A.
208V.-1 PH.
SEER: 13.6
- 2 INSULATED SUCTION, LIQUID REFRIGERANT PIPING
LINE SETS WITH QUICK CONNECTS.
- 3 PIPING UP TO UNIT ON ROOF.
- 4 PIPE CURB WITH FLASHING AND SELF-SEALING PIPE
OPENINGS.
- 5 DISCONNECT SWITCH, ELECTRICAL POWER FEED BY
E.C.
- 6 EVAPORATOR UNIT - CEILING MOUNTED CASSETTE
TYPE, 24"x24"
DESIGN BASIS: MITSUBISHI - PLA-A30BA
2.5 TON CAPACITY, INTEGRAL SERVICE PORTS,
FILTER/DRYER, EXPANSION VALVE, FILTER, FAN,
EVAPORATOR COIL, CONDENSATE PUMP AND DRAIN
PAN.
ELECTRICAL: MCA-1A, MOCP-15A.
208V.-1 PH.
- 7 CONTROL WIRING BETWEEN EVAPORATOR AND
CONDENSING UNIT BY H.C. ROUTE IN CONDUIT WITH
REFRIGERANT PIPING.
- 8 PUMPED CONDENSATE PIPING, 0.75" SIZE. SEE PLAN
FOR ROUTING.
- 9 PROVIDE HIGH WATER LEVEL SWITCH IN DRAIN PAN,
WIRED TO STOP UNIT.
- 10 WALL MOUNTED MICROPROCESSOR CONTROLLER
WITH LCD DISPLAY, TEMPERATURE SETPOINT
ADJUSTMENT, ALARM WITH SILENCE AND UNIT ON/OFF
SELECTION. CONCEALED WIRING BY H.C.
- 11 EQUIPMENT RAIL CURB BY H.C.
- 12 SUPPORT UNIT FROM STRUCTURE WITH THREADED
RODS & NEOPRENE VIBRATION ISOLATORS. PROVIDE
SUPPLEMENTAL ANGLES BETWEEN BAR JOISTS AS
REQUIRED.
- 13 DDC TEMP. SENSOR IN ROOM FOR MONITORING.
- APPROVED MANUFACTURERS:
MITSUBISHI
LG
SANYO

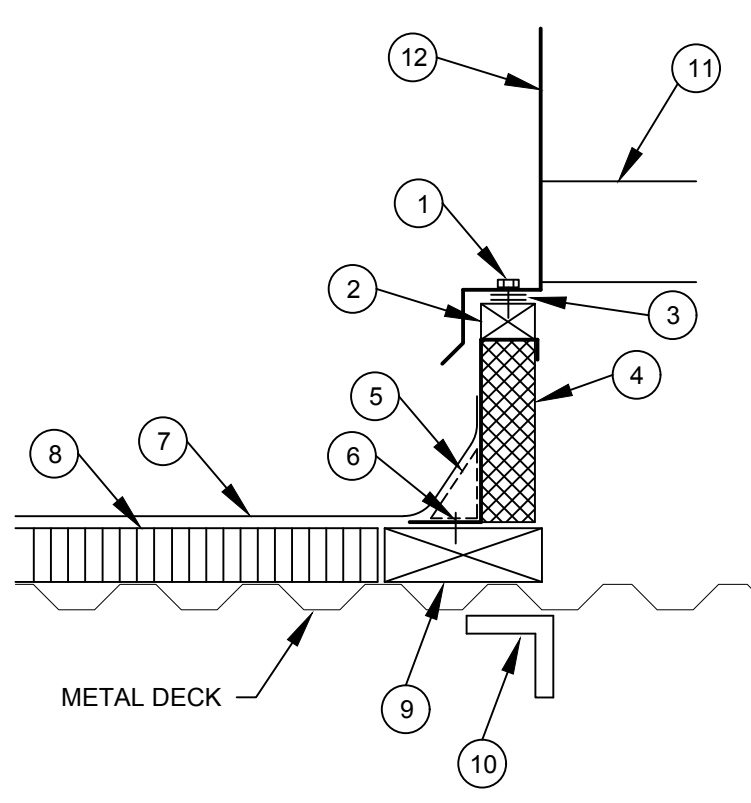
1 COMPUTER ROOM AIR CONDITIONING UNIT
N.T.S.



5 ROOFTOP COOLING COIL CONDENSATE PIPING
N.T.S.



2 ROOFTOP UNIT - RTU-01
N.T.S.



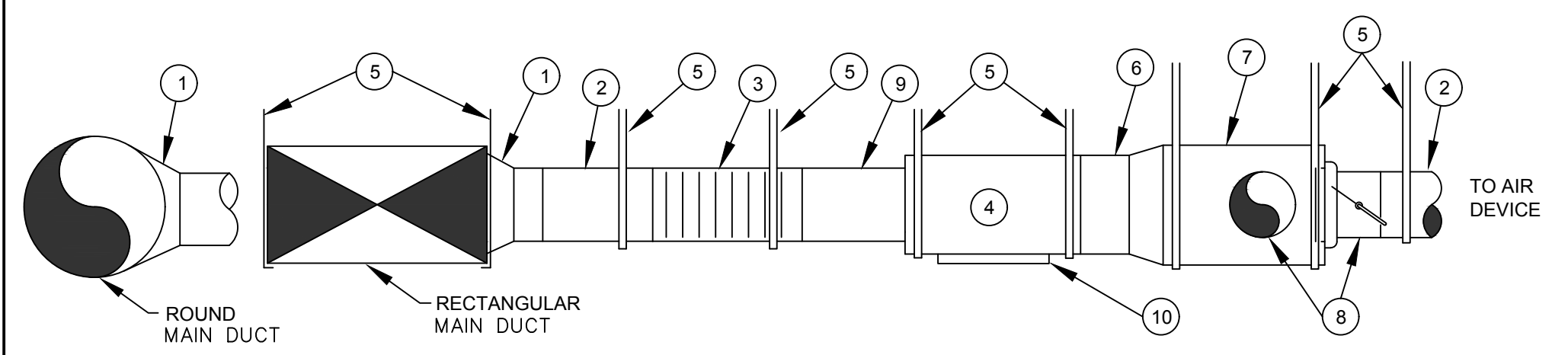
NOTE: CUT EXISTING ROOFING & INSULATION
TO INSTALL CURB. PATCH & REPAIR
INSULATION & ROOFING TO SEAL
WATERTIGHT & TO MAINTAIN ROOF
WARRANTY.

3 ROOFTOP UNIT ROOF CURB
N.T.S.

EXISTING METAL DECK

- 1 SECURE EQUIPMENT TO CURB WITH 3/8" LAG BOLTS
PER MFR. RECOMMENDATION.
- 2 PRESSURE TREATED WOOD NAILER.
- 3 GASKET PROVIDED WITH ROOFTOP UNIT.
- 4 EXISTING ROOFTOP CURB.
- 5 FLASHING, CANT STRIPS (IF REQUIRED), ROOFING
MATERIAL & ROOFING CONSTRUCTION BY
CONTRACTOR.
- 6 FASTEN CURB BASE TO BLOCKING.
- 7 EXISTING ROOFING.
- 8 EXISTING INSULATION.
- 9 PRESSURE TREATED WOOD BLOCKING BY H.C.
FASTEN TO DECK. BLOCKING TO BE SAME SIZE AS
INSULATION THICKNESS.
- 10 STEEL FRAMING BY H.C.
- 11 ROOFTOP BASE.
- 12 ROOFTOP UNIT.

- 1 ELECTRICAL DISCONNECT W/ GFI RECEPTACLE
SUPPLIED BY UNIT MANUFACTURER. POWER
CONN. BY E.C.
- 2 CONDENSATE DRAIN, REFER TO DETAIL
- 3 PROVIDE CONCRETE SPLASH BLOCK ON
NEOPRENE PAD UNDER CONDENSATE DRAIN
- 4 FILL ALL VOIDS BETWEEN ROOF DECK &
BOTTOM OF UNIT WITH UNFACED BATT
INSULATION
- 5 EXTERNALLY INSULATED SUPPLY DUCT,
REFER TO PLANS FOR SIZE
- 6 PROVIDE TWO LAYERS OF 5/8" WATER
RESISTANT GYPSUM BOARD ON ROOF DECK
- 7 INTERNALLY INSULATED RETURN DUCT,
REFER TO PLANS FOR SIZE
- 8 SEAL AROUND DUCT PENETRATIONS, TYP.
- 9 ROOF OPENINGS SHALL BE NO LARGER THAN
REQUIRED FOR DUCT PENETRATIONS.
- 10 STRUCTURAL SUPPORT BY OTHERS, TYP.
- 11 FLASING, CANT STRIPS (IF REQUIRED),
ROOFING MATERIAL & ROOF CONSTRUCTION
BY ROOFING CONTRACTOR
- 12 14" HIGH INSULATED ROOF CURB PROVIDED
BY THE H.C. SEE DETAIL.
- 13 COUNTER FLASHING BY H.C.
- 14 NAILING STRIP
- 15 ROOFTOP UNIT - REFER TO PLANS FOR
CAPACITIES
- 16 DUCT TRANSITION AS REQUIRED, TYP.
- 17 FLEXIBLE DUCT CONNECTION, TYP.



- 1 CONICAL TEE BRANCH FITTING.
- 2 ROUND SHEET METAL BRANCH DUCT. LENGTH AS REQUIRED.
INSULATED.
- 3 INSULATED FLEXIBLE DUCT, 4' MAXIMUM LENGTH. STRETCH
TO MINIMUM 90% OF FULLY EXTENDED LENGTH. DUCT SHALL
BE FLEXMASTER TL-M ALUMINUM SPIRAL LINER WITH 1.5"
INSULATION.
- 4 VAV REHEAT AIRFLOW CONTROL UNIT.
- 5 DUCT STRAP HANGER. ATTACH TO STRUCTURAL ELEMENTS.
- 6 ELECTRIC REHEAT COIL.
- 7 LOW PRESSURE RECTANGULAR SUPPLY DUCT. WHERE
NOT SIZED ON THE DRAWINGS, SIZE TO MATCH COIL
DIMENSIONS EXCEPT TRANSITION DUCT HEIGHT TO BE
2" HIGHER THAN LARGEST SPIN-IN BRANCH TAP
FITTING.
- 8 SPIN-IN BRANCH TAP FITTING, STRAIGHT SIDE WITH
MANUAL DAMPER AND INTEGRAL INSULATION GUARD
SLEEVE.
- 9 24" LONG SHEETMETAL AT BOX INLET - REDUCE LENGTH
ONLY WHERE REQUIRED BY FIELD CONDITIONS.
- 10 ACCESS DOOR. LOCATE ON UNITS WITH REHEAT COILS
ONLY.

NOTE:
COORDINATE WITH OTHER TRADES AND INSTALL VAV BOXES TO PROVIDE 18" SIDE AND UNOBSTRUCTED
BOTTOM CLEARANCE TO CONTROLLER, ACTUATORS AND VALVES FOR MAINTENANCE. COORDINATE TO
INSURE ACCESS IS PROVIDED BY SIMPLE REMOVAL OF ADJACENT UNRESTRICTED CEILING TILES (FREE
OF CEILING MOUNTED DEVICES) WITHOUT NEED TO REMOVE LIGHTS OR CEILING GRID. ACCESS DOOR
ON BOX IS FOR INSPECTION AND UPSTREAM COIL CLEANING. ACCESS DOOR USE IS RARE AND
REMOVAL OF LIGHTS OR CEILING GRID TO GAIN ACCESS IS ACCEPTABLE.

MARK DESIGNATIONS AS SHOWN ON DRAWINGS ON ALL VAV BOXES WITH 2" HIGH PAINTED STENCIL
LETTERING.

4 VARIABLE AIR VOLUME UNIT W/REHEAT COIL
N.T.S.

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STATE OF OHIO
ROBERT A. STOFFA
PE-76772
07/02/2026
REGISTERED
PROFESSIONAL ENGINEER

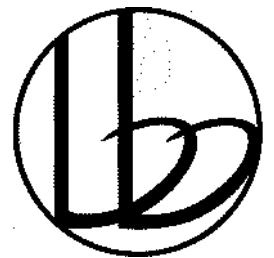
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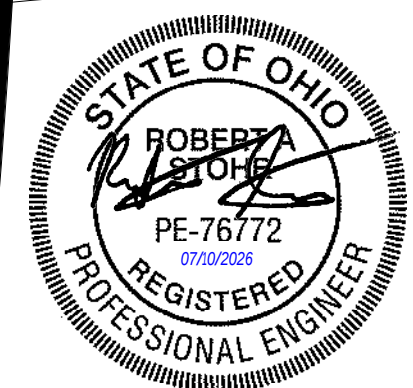
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1 EXHAUST DUCT.
2 FLEXIBLE DUCT CONNECTION
3 NEOPRENE ISOLATOR HANGERS FOR FANS UNDER 1 HP; COMBINATION SPRING/NEOPRENE FOR FANS 1 HP AND LARGER.
4 TRANSITION FROM DUCT SIZE TO FAN INLET.
5 THREADED ROD
6 EXHAUST FAN.
7 DAMPER MOTOR ON EXTERIOR OF DUCT.
8 TRANSITION TO LOUVER SIZE
9 MOTORIZED DAMPER WITH ACTUATOR TO OPEN ON FAN OPERATION
10 LOUVER AND PLENUM CONNECTION FLANGE BY G.C.
11 SUPPLEMENTAL STEEL ANGLE OR CHANNEL. SPAN ACROSS STRUCTURAL ELEMENTS.
12 DUCT IS SAME SIZE AS FAN OUTLET.
13 PLENUM FLANGE TO CONNECT ON INTERIOR OF LOUVER FLANGE ALONG BOTTOM SEAL. SEAL ALL JOINTS, ALL FOUR SIDES.
14 INSULATE EXTERIOR OF DUCT TO PREVENT COLD DUCT SURFACES INSIDE OF BLDG.

1 PLENUM - SIZE TO MATCH GRILLE. PAINT INTERIOR OF PLENUM FLAT BLACK.
2 EXHAUST/RETURN GRILLE FRAME TO MATCH CEILING CONDITION.
3 SPIN-IN FITTING WITH BALANCING DAMPER, USE FOR ALL ACCESSIBLE CEILINGS.
4 PROVIDE REMOTE BALANCING DAMPER IN BRANCH DUCT ABOVE ACCESSIBLE CEILING FOR EACH GRILLE WHERE GRILLE IS INSTALLED ABOVE INACCESSIBLE CEILING (PREFERRED).
5 PROVIDE BALANCING DAMPER AT DEVICE ONLY WHERE DUCT MOUNTED DAMPER CANNOT BE PROVIDED DUE TO INACCESSIBLE CEILING.
6 FLEXIBLE DUCT ACCEPTABLE ABOVE ACCESSIBLE CEILING ONLY. MAX. 2 FT., REFER TO CEILING DIFFUSER DETAIL FOR INSTALLATION REQUIREMENTS.
7 SHEETMETAL DUCT.
8 SUPPORT PLENUM FROM STRUCTURE WITH DUCT STRAP HANGERS.
9 FASTEN SHEETMETAL PLENUM OR DUCT TO AIR DEVICE, EACH SIDE.
10 DUCT STRAP HANGER.
11 VIEWABLE PORTION OF DUCT INTERIOR TO BE PAINTED FLAT BLACK.

2 EXHAUST/RETURN GRILLE - DUCTED

N.T.S.

1 EXHAUST DUCT.
2 FLEXIBLE DUCT CONNECTION
3 NEOPRENE ISOLATOR HANGERS FOR FANS UNDER 1 HP; COMBINATION SPRING/NEOPRENE FOR FANS 1 HP AND LARGER.
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11 SUPPLEMENTAL STEEL ANGLE OR CHANNEL. SPAN ACROSS STRUCTURAL ELEMENTS.
12 DUCT IS SAME SIZE AS FAN OUTLET.
13 PLENUM FLANGE TO CONNECT ON INTERIOR OF LOUVER FLANGE ALONG BOTTOM SEAL. SEAL ALL JOINTS, ALL FOUR SIDES.
14 INSULATE EXTERIOR OF DUCT TO PREVENT COLD DUCT SURFACES INSIDE OF BLDG.

*NOTE: SUPPLY FANS ARE SIMILAR EXCEPT PROVIDE FILTER FRAME AT INTAKE PLENUM.

15 ACCESS DOOR.
16 24" PLENUM LENGTH EXCEPT WHERE NOTED OTHERWISE.
17 FILTER FRAME (SUPPLY FAN ONLY).

1 INLINE EXHAUST FAN

N.T.S.

1 FLEXIBLE DUCT SAME DIAMETER AS DIFFUSER INLET (ABOVE ACCESSIBLE CEILING ONLY USE SHEETMETAL ONLY ABOVE INACCESSIBLE CEILING). 7 FT. MAXIMUM LENGTH. STRETCH TO MINIMUM 90% OF FULLY EXTENDED LENGTH. ADDITIONAL HANGER REQUIRED IF DUCT LENGTH EXCEEDS 4 FT.
2 SPIN-IN BRANCH TAP FITTING. STRAIGHT SIDE. WITH MANUAL DAMPER. DAMPER SHAFT IN HORIZONTAL. INTEGRAL INSULATION GUARD SLEEVE REQUIRED FOR TAP FITTING TO MAIN DUCT WITH INTERNAL INSULATION.
3 DUCT STRAP HANGER. ATTACH TO STRUCTURE. PER SMACNA.
4 90 DEGREE FLEXIBLE ELBOW SUPPORT BY FLEXRIGHT, FLEXFLOW OR SMARTFLOW. PROVIDE WITH DRAWBANDS. UL-2043 RATING.
5 SHEETMETAL DUCT. SAME DIAMETER AS DIFFUSER INLET. LONGITUDINAL OR SPIRAL LOCK SEAM. 0.50" S.P. CONSTRUCTION. PROVIDE EXTERIOR INSULATION, 1.5" THICKNESS, 0.75" DENSITY FIBERGLASS WITH FOIL/KRAFT PAPER JACKET.

3 CEILING DIFFUSER

N.T.S.

NOTES:
1. DIMENSIONS A, B, C, D, E, AND F AS INDICATED ON DRAWINGS.
2. TRANSITIONS MAY BE FLAT ON TOP, FLAT ON BOTTOM, OR CONCENTRIC.
3. SAME FOR RETURN AND EXHAUST DUCTS EXCEPT AIRFLOW IS REVERSED.
4. TAP HEIGHT DIMENSION SHOULD BE 2" SMALLER THAN MAIN DUCT HEIGHT.

4 RECTANGULAR 90° SIDE TAP

N.T.S.

NOTES:
1. DIMENSIONS W1, W2, D1, AND D2 AS INDICATED ON THE DRAWINGS.
2. FOR LOW VELOCITY DUCTWORK (1800 FPM OR LESS)
L1 = 4 x (W1-W2) OR 4 x (D1-D2) WHICHEVER IS GREATER.
L2 = 2 x (W1-W2) OR 2 x (D1-D2) WHICHEVER IS GREATER.
3. FOR MEDIUM AND HIGH VELOCITY DUCTWORK (OVER 1800 FPM)
L1 = 7 x (W1-W2) OR 7 x (D1-D2) WHICHEVER IS GREATER.
L2 = 3.5 x (W1-W2) OR 3.5 x (D1-D2) WHICHEVER IS GREATER.

5 RECTANGULAR TRANSITION

N.T.S.

NOTES:
1. DIMENSION D AS SHOWN ON THE DRAWINGS.
2. USE LONG RADIUS ELBOW ON ALL DUCTWORK SYSTEMS WHERE EVER POSSIBLE OR UNLESS OTHERWISE INDICATED.
3. ONLY WHEN IT IS IMPOSSIBLE TO USE LONG RADIUS ELBOWS, USE LARGEST POSSIBLE RADIUS WITH A MINIMUM RADIUS EQUAL TO THAT OF A SHORT RADIUS ELBOW.

6 ROUND 90° RADIUS ELBOW

N.T.S.

1 DOWNBLAST CENTRIFUGAL EXHAUST FAN. REFER TO PLANS FOR CAPACITY. FAN TO BE UL 705 LISTED FOR ELECTRICAL COMPONENTS. PROVIDE WITH POWDER COAT FINISH. COLOR SELECTED BY ARCHITECT.
2 BIRDSCREEN.
3 TOGGLE DISCONNECT SWITCH FURNISHED WITH FAN.
4 REFER TO FAN ROOF CURB DETAIL.
5 FASTEN FAN TO CURB.
6 ROOF DECK - H.C. TO CUT OPENING TO MATCH CURB OPENING.
7 ELECTRIC CONDUIT BY E.C., ROUTE UP THRU THE ROOF CURB. SEAL DUCT PENETRATION. COORDINATE ROUTE WITH DAMPER.
9 MOTORIZED DAMPER. SECURE DAMPER AND DUCT WITH SHEETMETAL SCREWS @ 6" CENTERS TO MOUNTING ANGLE. H.C. TO WIRE DAMPER MOTOR TO OPERATE WITH FAN.

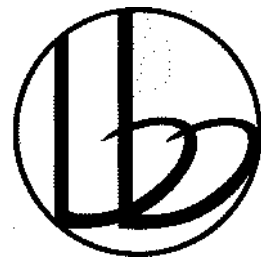
7 POWER ROOF VENTILATOR - DOWNBLAST

N.T.S.

1 6" THICK CONCRETE PAD. 3500 PSI.
2 6"x6" STEEL ROADWAY MESH.
3 CHAMFERED EDGES.
4 #4 STEEL RE-BAR. 24" ON CENTER.
5 GRADE.
6 #4 STEEL RE-BAR CONTINUOUS.
7 COMPACTED #57 CRUSHED GRAVEL FILL.

8 EXTERIOR EQUIPMENT PAD

N.T.S.



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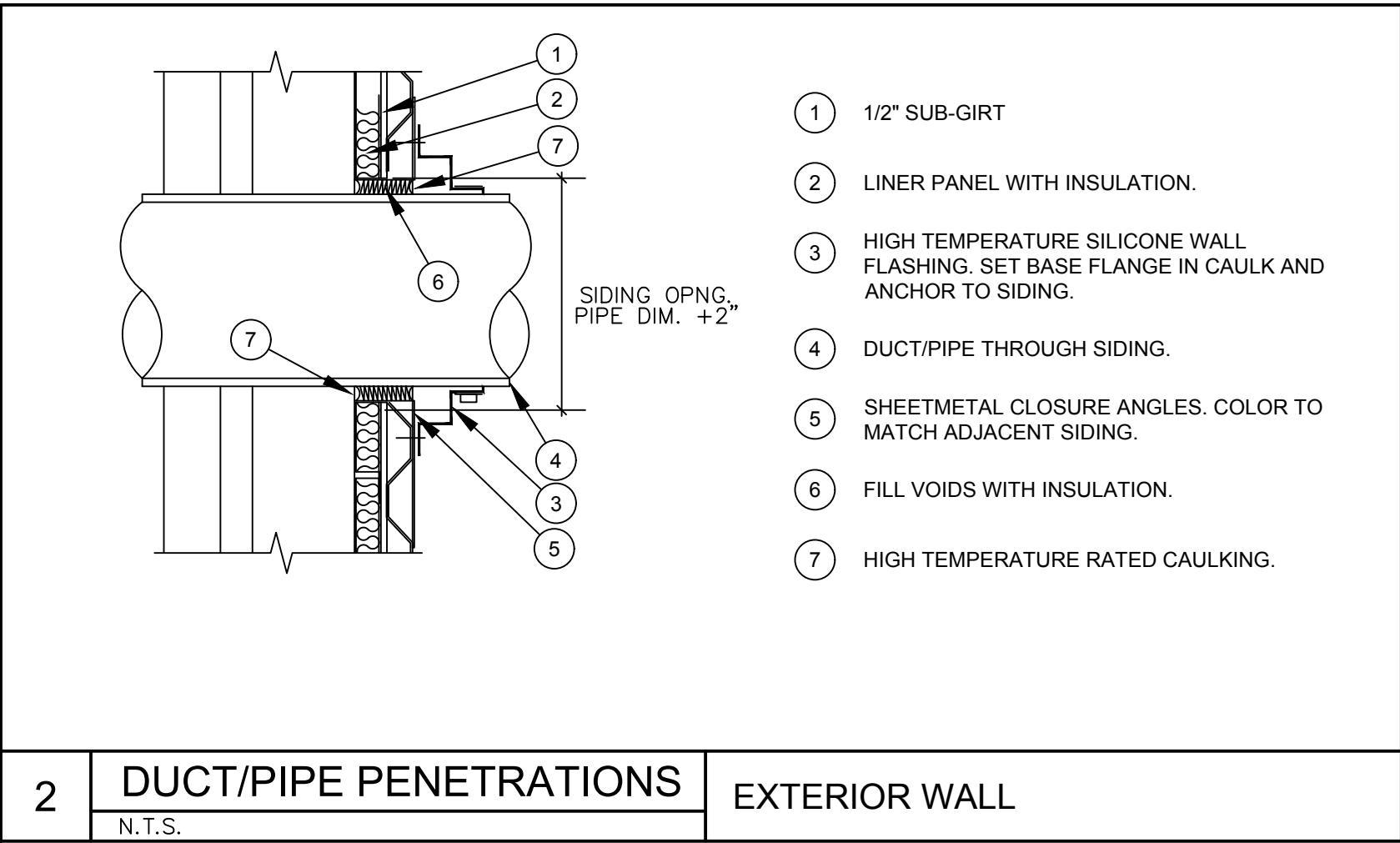
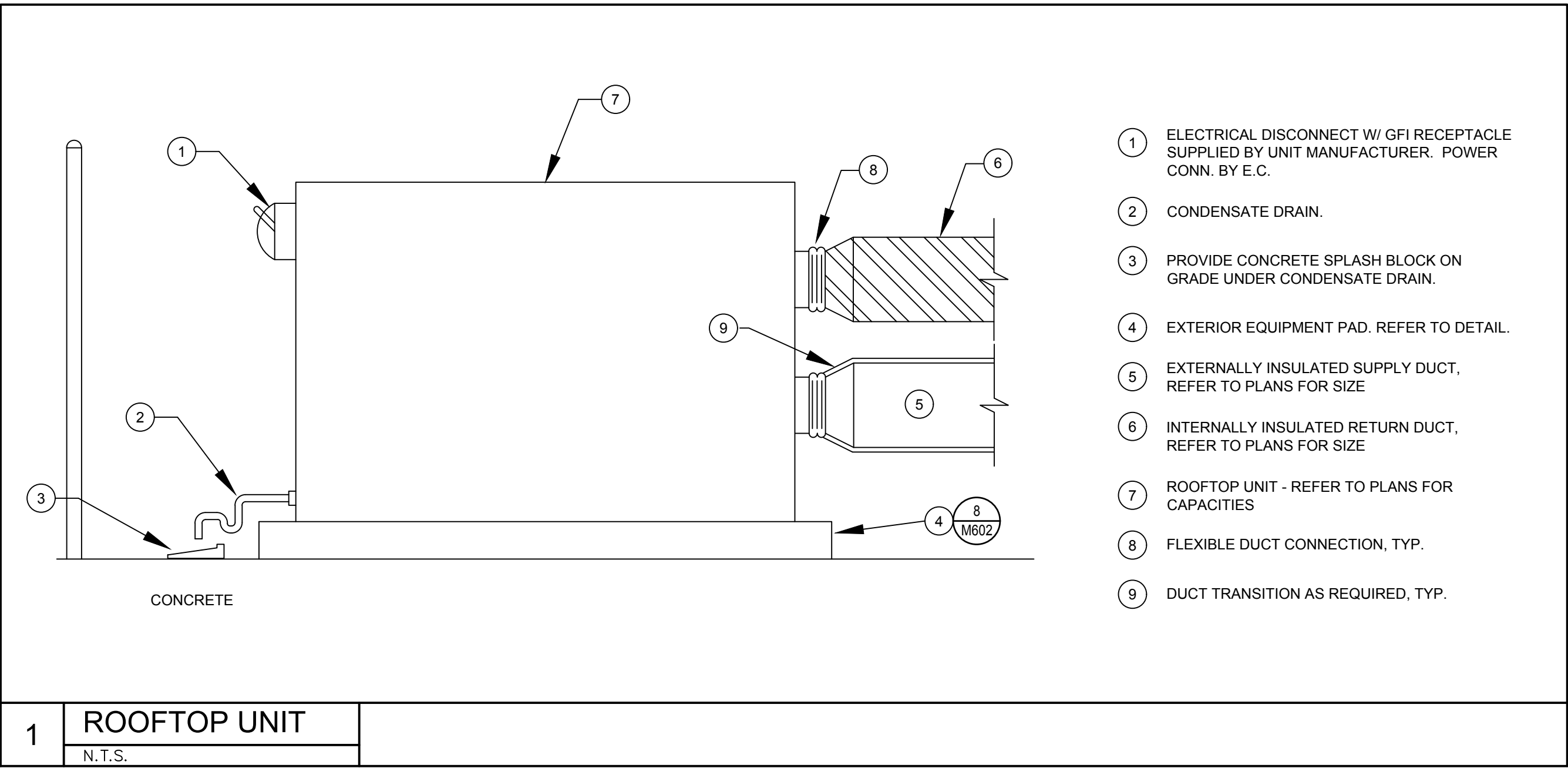
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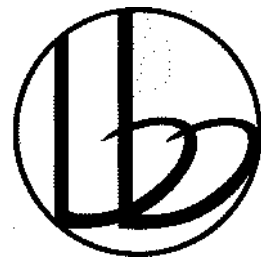
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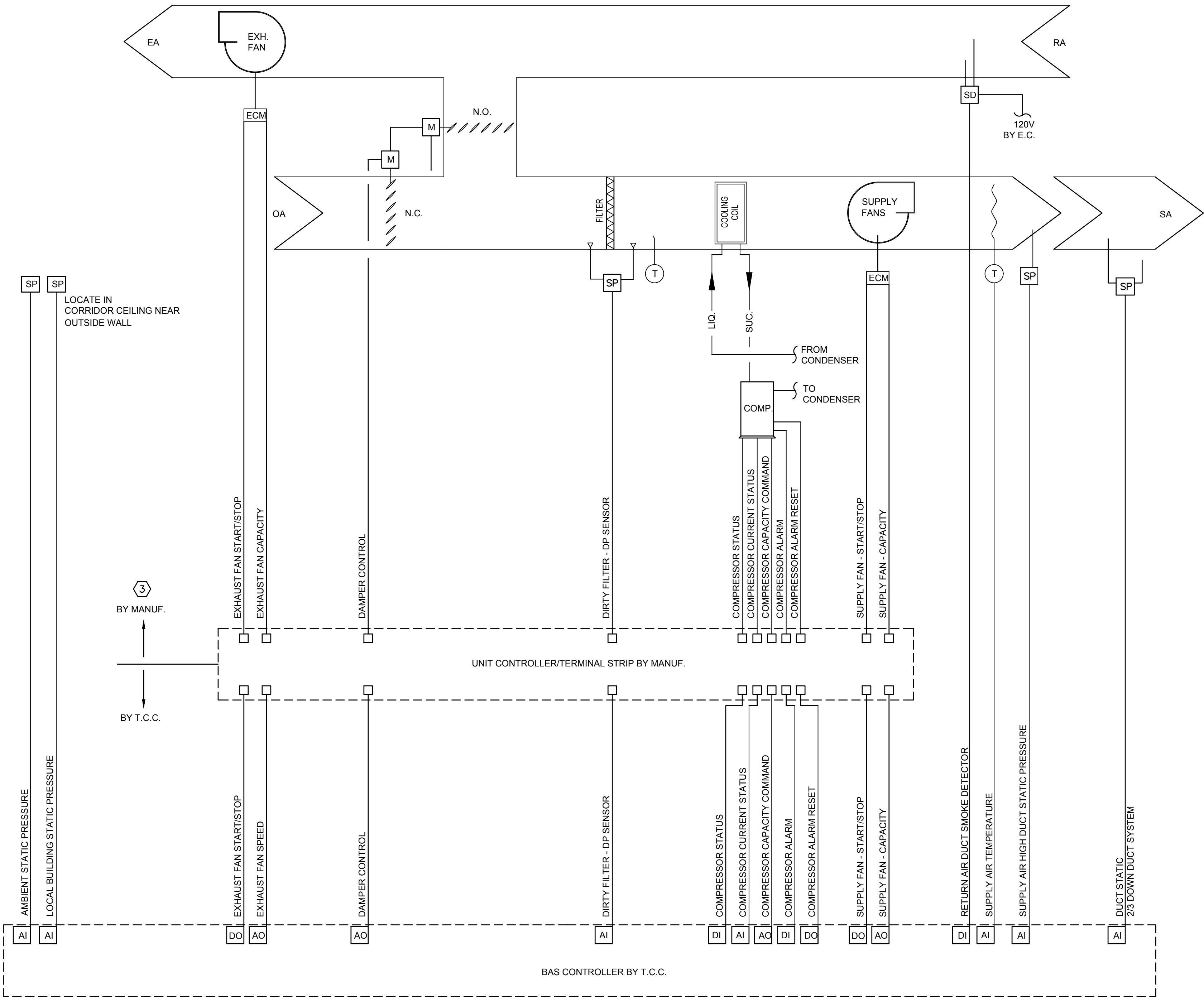
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RTU
CONTROLS

M701



ROOFTOP UNIT
CONTROL DIAGRAM - RTU-1
SCALE: NTS

SEQUENCE OF OPERATION

AIR HANDLING UNIT SYSTEMS

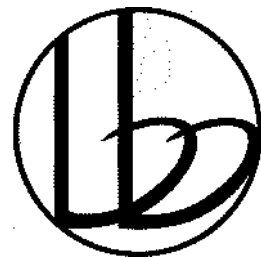
SYSTEM DESCRIPTION - THE ROOFTOP UNIT WILL PROVIDE COOLING AND VENTILATION AIR FOR AREAS VIA NEW ELECTRIC REHEAT VAV AIR TERMINAL UNITS. THE UNIT INCLUDES OUTSIDE AIR/RETURN AIR MIXING DAMPERS, A SELF-CONTAINED DX EVAPORATOR COOLING COIL, VARIABLE SPEED SUPPLY FANS. THE UNIT WILL INCLUDE A REFRIGERATION CIRCUIT CONTROLLER/TERMINAL STRIP.

CONTROL SEQUENCES (GENERAL)-

1. OCCUPIED/UNOCCUPIED MODES - THE AIR HANDLING UNIT SHALL BE SCHEDULED FOR A 24 HOUR, 7 DAY A WEEK OPERATION, INCLUDING HOLIDAY OCCUPATION. DURING THE OCCUPIED MODE, THE TEMPERATURE CONTROLS SHALL FUNCTION AS SPECIFIED. DURING THE UNOCCUPIED MODE, FANS SHALL BE OFF OR ENABLED AS REQUIRED TO SATISFY MIN/MAX OVERRIDES (SEE BELOW).
 2. MINIMUM/MAXIMUM SPACE TEMPERATURE OVERRIDES - INITIALLY SET TO 60 DEG. F/82 DEG. F. RESPECY (ATVIEDJ.). THE CONTROLS SHALL CYCLE THE UNIT FAN BASED ON ANY SPACE SENSOR REACHING HIGH OR LOW SET POINT. CYCLE FAN ON WITH VARIABLE SPEED UNDER CONTROL OF DUCT PRESSURE SENSOR WITH REHEAT BOXES FUNCTIONAL.
 3. MINIMUM OUTDOOR AIR - DURING THE OCCUPIED MODE, OPEN THE OUTDOOR AIR DAMPER TO MINIMUM POSITION AS COORDINATED WITH THE BALANCING CONTRACTOR.
 4. OUTSIDE AIR ECONOMIZER CONTROL - DURING THE OCCUPIED MODE, THE OUTSIDE AIR MAY DAMPER MAY MODULATE OPEN AS DETERMINED BY OUTSIDE AIR TEMPERATURE IN AN ECONOMIZER MODE OF OPERATION TO SATISFY THE SUPPLY AIR TEMPERATURE SET POINT. THE ECONOMIZER SHALL BE ENABLED FROM THE GLOBAL DRY BULB OUTSIDE AIR TEMPERATURE. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 68°F, THE ECONOMIZER SHALL BE ENABLED. WHEN OAT IS ABOVE 68°F THE ECONOMIZER SHALL BE DISABLED. SET POINT TO BE FULLY ADJUSTABLE.
 5. SUPPLY AIR TEMPERATURE SET POINT - INVERTER DUTY COMPRESSOR SHALL BE MODULATED TO MAINTAIN A SUPPLY AIR TEMPERATURE (SAT) SET POINT. SET POINT SHALL BE 52 DEG. F.
 6. SUPPLY FAN VOLUME CONTROL - SUPPLY FAN CAPACITY CONTROL SHALL BE THROUGH THE FAN VFD. THE VFD SHALL MODULATE TO SATISFY THE DUCT STATIC PRESSURE SENSOR LOCATED APPROXIMATELY 23 THE DISTANCE DOWNSTREAM IN THE RESPECTIVE DUCT SYSTEM. THE MINIMUM REQUIRED DUCT STATIC PRESSURE SET POINT SHALL INITIALLY BE SET TO 1.00" W.C. (ADJ.), COORDINATE WITH BALANCING CONTRACTOR TO ESTABLISH MINIMUM REQUIRED STATIC PRESSURE FOR TERMINAL UNIT OPERATION.
 7. EXHAUST FAN VOLUME CONTROL - THE EXHAUST FAN SHALL MODULATE TO MAINTAIN THE BUILDING STATIC PRESSURE SET POINT. SET POINT SHALL BE 0.01 INCHES OF WATER COLUMN. (ADJ.)
- ADDITIONAL ALARMS & MONITORING POINTS:
- HIGH DUCT STATIC PRESSURE ALARM - REDUCE SUPPLY FAN SPEED TO MAINTAIN MAX. 2" S.P. (ADJ)



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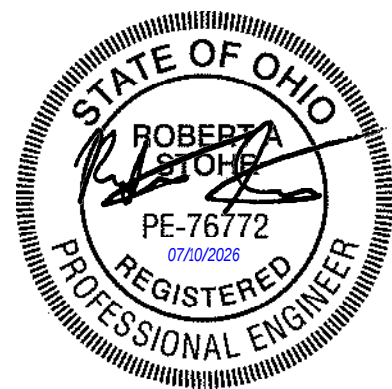
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SEQUENCE OF OPERATION

A. THE VAV BOX MANUFACTURER SHALL INCLUDE PNEUMATIC FLOW TAPS FROM THE AIR FLOW SENSOR ON THE BOX INLET AND AN INTEGRAL DAMPER WITH PROTRUDING SHAFT. ALL OTHER CONTROL COMPONENTS SHALL BE FURNISHED BY T.C.

B. EACH TERMINAL UNIT SHALL OPERATE IN AN "OCCUPIED" OR "UNOCCUPIED" MODE OF OPERATION. OCCUPIED AND UNOCCUPIED SHALL BE DETERMINED FROM THE ROOFTOP UNIT RTU-1. ROOM TEMPERATURE SET POINTS:

OCCUPIED: COOLING 72°F, HEATING 70°F

UNOCCUPIED: COOLING 82°F, HEATING 62°F

C. AS THE SPACE TEMPERATURE RISES ABOVE THE COOLING SET POINT THE AIR FLOW DAMPER SHALL MODULATE FROM THE MINIMUM TO THE MAXIMUM COOLING AIRFLOW. THE ELECTRIC REHEAT COIL SHALL BE OFF.

AS THE SPACE TEMPERATURE DROPS TOWARDS THE COOLING SET POINT THE AIR FLOW DAMPER SHALL MODULATE FROM THE MAXIMUM TO THE MINIMUM FLOW RATE.

UPON A CONTINUED DROP IN SPACE TEMPERATURE, THROUGH A DEADBAND THE TERMINAL UNIT SHALL THEN ENTER THE HEATING MODE. THE AIR FLOW SHALL BE SET AT THE MINIMUM FLOW AND THE ELECTRIC REHEAT COIL SHALL MODULATE ON. THE UNIT DISCHARGE AIR TEMPERATURE SHALL BE RESET VIA A PID LOOP FROM 55°F UP TO 95°F BASED ON ROOM TEMPERATURE BELOW THE HEATING SET POINT.

AS THE SPACE TEMPERATURE CONTINUES TO DROP THE AIR FLOW SET POINT SHALL BE INCREASED TOWARD THE HEATING

D. VAV REHEAT CONTROL (WINTER MODE) - PROVIDE FOR VAV REHEAT BOXES. PROVIDE INDEPENDENT HEATING AND COOLING SETPOINTS; THE INITIAL HEATING SETPOINT SHALL BE 70°F, AND COOLING SETPOINT SHALL BE 73°F, BOTH ADJUSTABLE. WHEN THE ROOM TEMPERATURE IS BELOW SETPOINT THE BOX DAMPER SHALL BE HELD AT THE MINIMUM AIR FLOW (TYPICALLY 50% OF BOX MAXIMUM FLOW OR AS INDICATED IN THE SCHEDULE) AND THE HEATING COIL SHALL BE TURNED ON. AS THE SPACE TEMPERATURE RISES TO HEATING SETPOINT THE COIL TO MODULATE TOWARD THE OFF POSITION. IF THE ROOM TEMPERATURE RISES ABOVE THE HEATING SETPOINT THE COIL SHALL TURN OFF. WHEN THE ROOM TEMPERATURE RISES ABOVE COOLING SETPOINT THE DAMPER SHALL MODULATE FROM MINIMUM AIR FLOW TO MAXIMUM TO MAINTAIN THE COOLING SETPOINT.

E. VAV OCCUPANCY DAMPER CONTROL - ON A SCHEDULED BASIS FOR EACH REHEAT BOX OR GROUP OF VAV BOXES SERVING COMMON AREAS (AS DIRECTED BY THE OWNER), PROVIDE CONTROL STRATEGY TO CLOSE THE VAV BOX DAMPER(S) DURING UNOCCUPIED TIMES ALLOW OTHER AREAS SERVED FROM THE SAME AH UNIT TO FUNCTION IN AN OCCUPIED MODE. OCCUPANCY DAMPER CLOSING SHALL BE OVERRIDDEN ON ALL AH UNIT VAV DAMPERS WHEN THE AH UNIT CYCLES ON IN THE UNOCCUPIED MODE TO MAINTAIN MINIMUM OR MAXIMUM SPACE TEMPERATURES IN ANY SPACE.

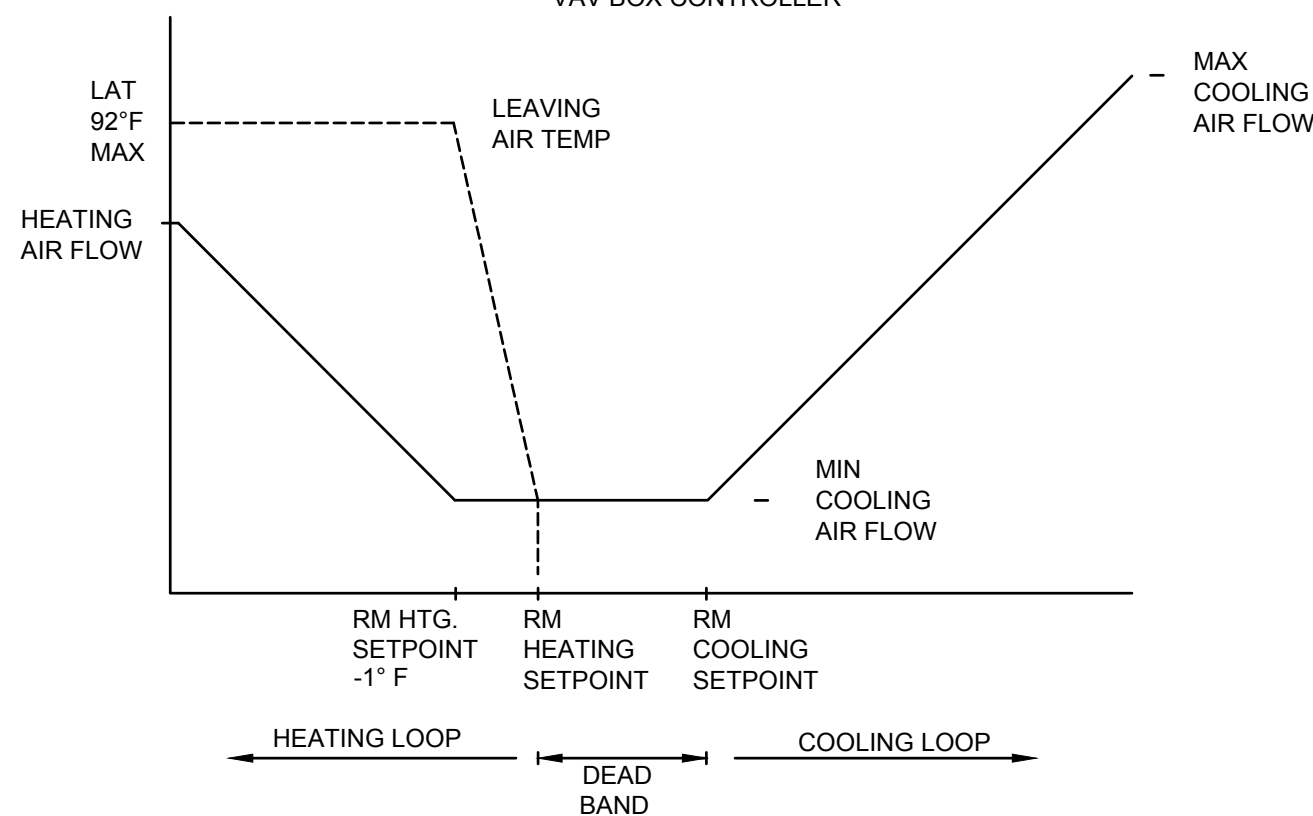
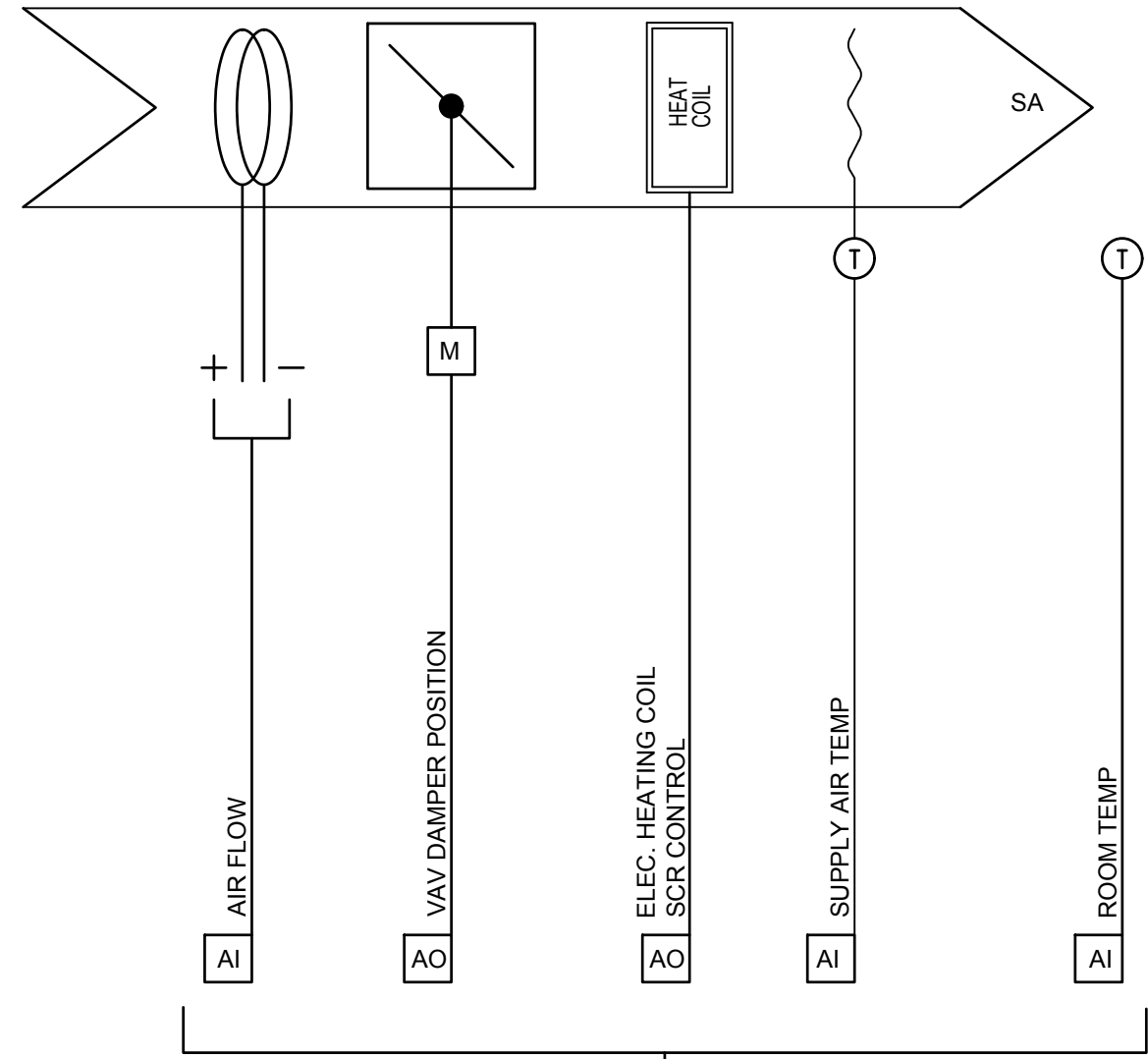
F. MORNING WARM-UP - DURING THE MORNING WARM-UP, ZONE SYSTEM VAV REHEAT BOXES SHALL OPEN TO THE HEATING CFM SETPOINT. VAV BOXES WITHOUT REHEAT COILS (USED IN CERTAIN INTERIOR ZONES) SHALL REMAIN CLOSED. THE AIR HANDLING UNIT SHALL BE MAINTAINED IN A 100% RECIRCULATION MODE WITH OUTSIDE AIR AT 0% (HEAT WHEEL UNIT SUPPLY AND EXHAUST FANS OFF) DURING THIS WARM UP PERIOD. VAV REHEAT BOXES SHALL REMAIN UNDER CONTROL OF THEIR LOCAL TEMPERATURE SENSOR.

G. ENERGY MANAGEMENT - AN OVERRIDE PUSHBUTTON SHALL BE PROVIDED AT EACH VAV BOX WALL SENSOR TO OVERRIDE THE UNOCCUPIED SCHEDULE FOR A FIXED (PROGRAMMABLE) TIME. THE DDC SYSTEM SHALL TRACK, LOG AND REPORT ON THE AMOUNT OF TIME EACH BOX WAS OVERRIDDEN.

H. DISCHARGE AIR TEMPERATURE SENSOR - PROVIDE A DISCHARGE AIR TEMPERATURE SENSOR IN THE SUPPLY DUCT (FIELD INSTALLED BY THE TEMPERATURE CONTROL SUBCONTRACTOR) FOR EACH REHEAT BOX FOR MONITORING AND TROUBLE SHOOTING PURPOSES. THE SENSOR SHALL BE A PRECISION THERMISTOR TYPE, WITH ACCURACY OF + OR - 0.5 DEG. F., MAXIMUM.

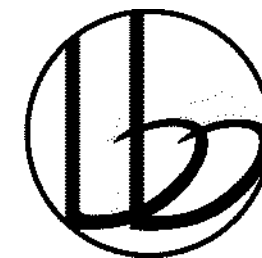
I. DISCHARGE AIR TEMPERATURE SENSOR - PROVIDE A DISCHARGE AIR TEMPERATURE SENSOR IN THE SUPPLY DUCT (FIELD INSTALLED BY THE TEMPERATURE CONTROL SUBCONTRACTOR) FOR EACH REHEAT BOX FOR MONITORING AND TROUBLE SHOOTING PURPOSES. THE SENSOR SHALL BE A PRECISION THERMISTOR TYPE, WITH ACCURACY OF + OR - 0.5 DEG. F., MAXIMUM.

REFER TO AIR TERMINAL SCHEDULE ON DRAWING
H0... FOR UNITS.
REFER TO DRAWINGS FOR LOCATIONS.



1 VAV WITH REHEAT CONTROL SEQUENCE

N.T.S.



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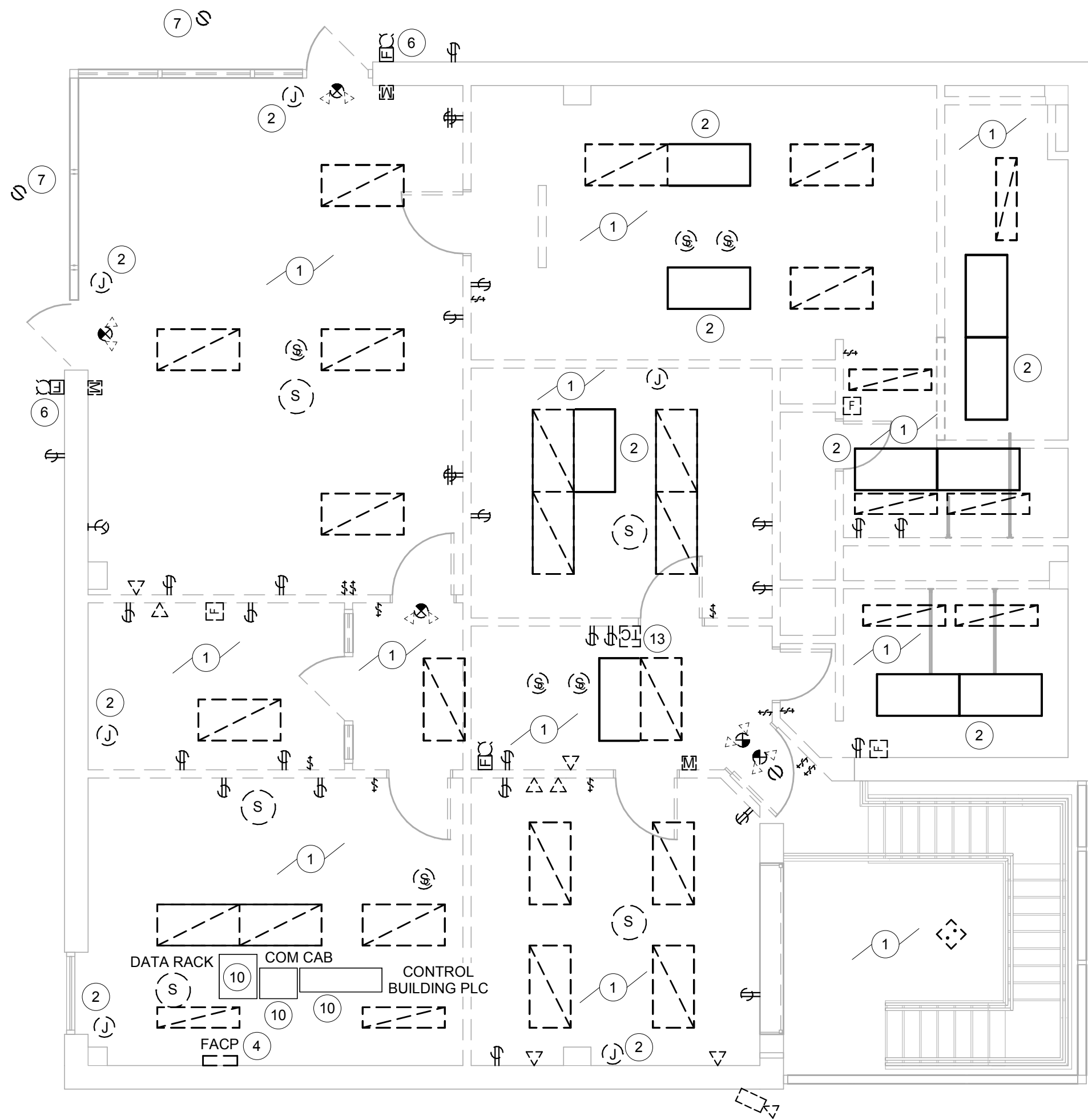
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ELECTRICAL DEMO PLANS
OPERATIONS BLDG

ED101

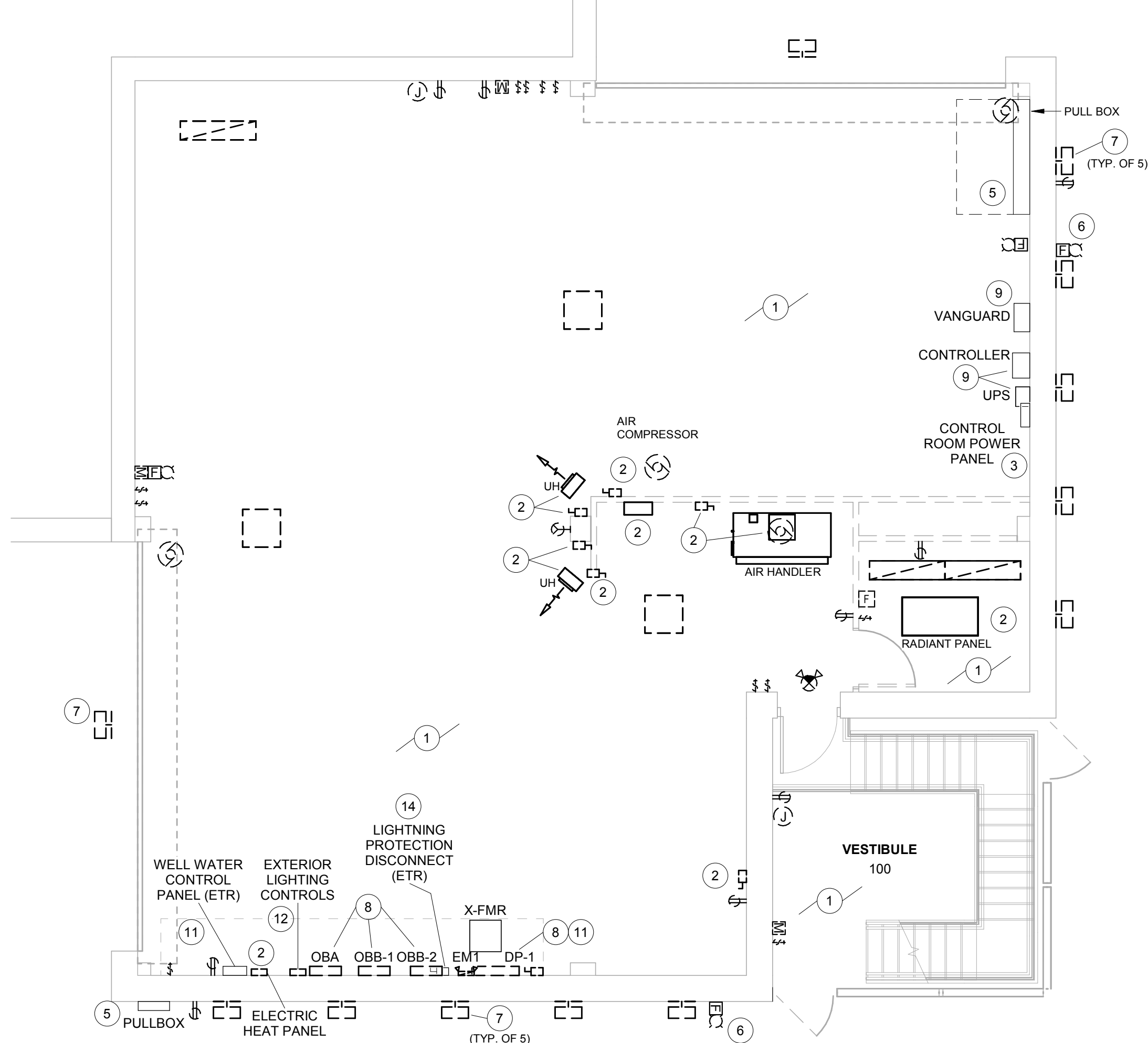
DEMOLITION NOTES:

1. REMOVE EXISTING RECEPTACLES, JUNCTION BOXES, INTERIOR LIGHTING, AND ASSOCIATED WIRING AND CONDUIT BACK TO PANEL WHERE IT ORIGINATES.
2. REMOVE EXISTING DISCONNECTS, DEVICES, WIRING, AND CONDUIT PREVIOUSLY SERVING MECHANICAL AND PLUMBING EQUIPMENT BACK TO PANEL WHERE IT ORIGINATES.
3. EXISTING CONTROL ROOM POWER PANEL TO REMAIN. PROVIDE TEMPORARY POWER TO PANEL TO ENSURE THAT POWER IS NOT INTERRUPTED. PANEL SERVES SCADA ROOM ON SECOND FLOOR AND MUST REMAIN IN USE FOR THE DURATION OF THE PROJECT. COORDINATE WITH THE OWNER FOR MORE INFORMATION.
4. REMOVE EXISTING FIRE ALARM CONTROL PANEL AND PROTECT FOR THE DURATION OF THE PROJECT. MAINTAIN EXISTING CIRCUIT FOR RECONNECTION. REINSTALL IN THE SAME LOCATION AFTER EXISTING WALL IS FURRED OUT. EXTEND CONDUIT AND WIRING TO FACE OF NEW WALL AS NECESSARY FOR A COMPLETE INSTALLATION. PROVIDE TEMPORARY POWER PRIOR TO AND AFTER REMOVAL/REINSTALLATION.
5. COMMUNICATIONS PULLBOX IS EXISTING TO REMAIN.
6. REPLACE EXISTING EXTERIOR FIRE ALARM DEVICE WITH NEW OUTDOOR RATED FIRE ALARM DEVICE IN THE SAME LOCATION.
7. REPLACE EXTERIOR LIGHT FIXTURE WITH NEW LIGHT FIXTURE IN THE SAME LOCATION. MAINTAIN EXISTING CIRCUITING FOR CONNECTION TO NEW FIXTURES. REFER TO NEW WORK LIGHTING PLAN AND LIGHTING FIXTURE SCHEDULE FOR MORE INFORMATION.
8. EXISTING PANEL TO BE REPLACED WITH NEW IN THE SAME LOCATION. DISCONNECT EXISTING BRANCH CIRCUITING AND RECONNECT AFTER NEW PANEL IS INSTALLED. UTILIZE EXISTING FEEDERS. REFER TO SINGLE LINE DIAGRAM AND PANEL SCHEDULES FOR MORE INFORMATION.
9. EXISTING COMMUNICATIONS/ANTENNA EQUIPMENT IS EXISTING TO REMAIN.
10. EXISTING SCADA EQUIPMENT EXISTING TO REMAIN. PROTECT FOR THE DURATION OF CONSTRUCTION.
11. EXISTING WELL PUMPS AND CONTROLS TO REMAIN. PROVIDE TEMPORARY POWER TO ENSURE POWER IS NOT INTERRUPTED.
12. REMOVE EXISTING LIGHTING CONTROL PANEL. REFER TO NEW WORK PLAN FOR NEW LIGHTING CONTROLS REQUIREMENTS.
13. REMOVE EXISTING TIME CLOCK AND PROTECT FOR THE DURATION OF THE PROJECT. REINSTALL IN LOCATION INDICATED ON NEW WORK PLAN.
14. EXISTING LIGHTNING PROTECTION DISCONNECT IS EXISTING TO REMAIN. SHUT DOWN SYSTEM AS NECESSARY TO FACILITATE ROOF REPLACEMENT.



SECOND FLOOR DEMO PLAN OPERATIONS BLDG

SCALE: 3/16" = 1'-0"



FIRST FLOOR DEMO PLAN OPERATIONS BLDG

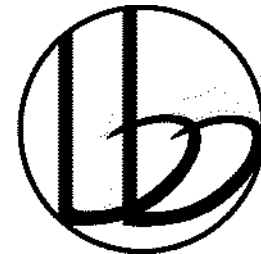
SCALE: 3/16" = 1'-0"



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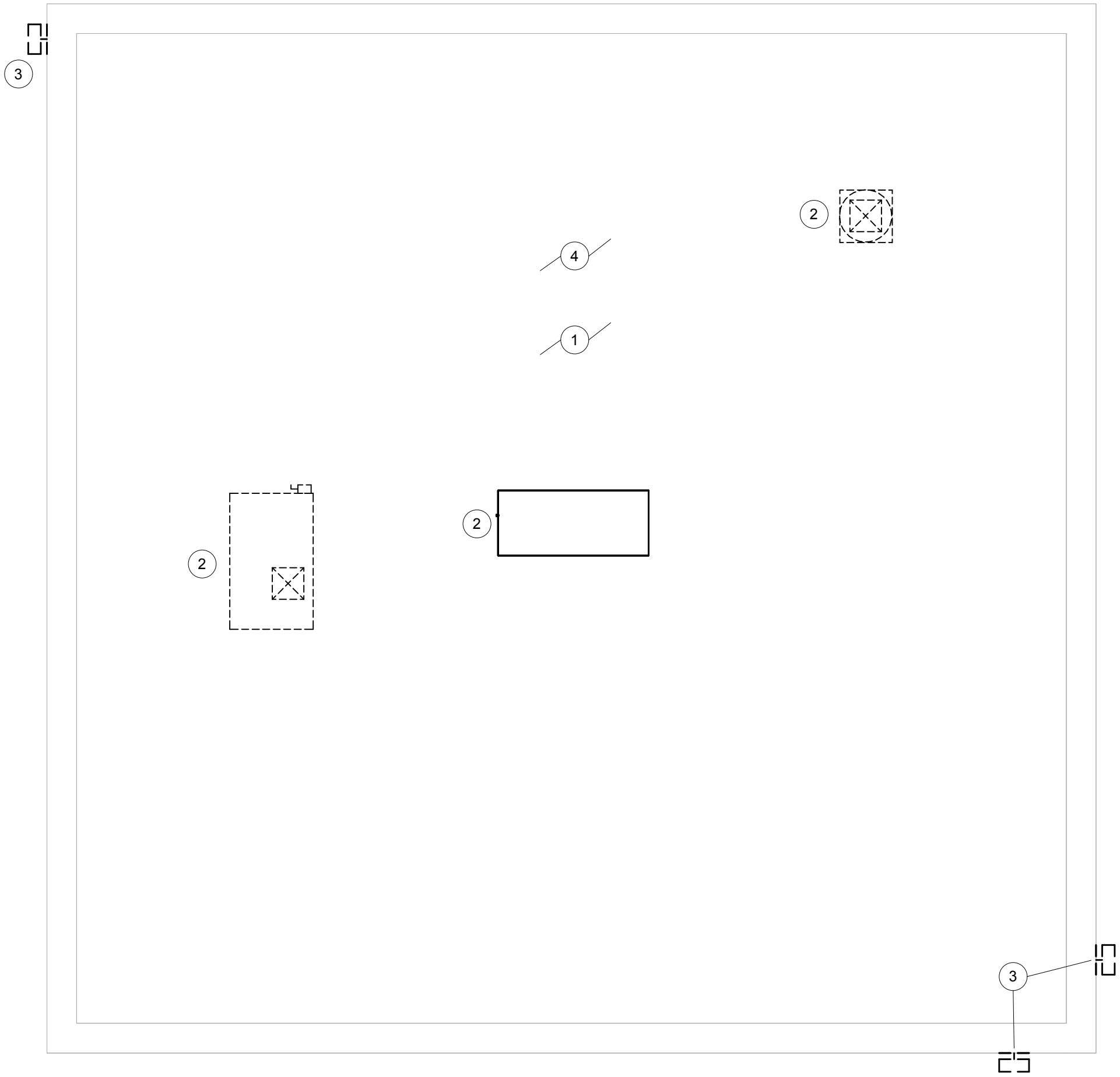
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ELECTRICAL ROOF DEMO PLANS
OPERATIONS BLDG

ED102

DEMOLITION NOTES:

1. REMOVE EXISTING RECEPTACLES, JUNCTION BOXES, AND ASSOCIATED CONDUIT FEEDING HVAC UNITS BACK TO PANEL WHERE IT ORIGINATES.
2. REMOVE EXISTING DISCONNECTS, DEVICES, WIRING, AND CONDUIT PREVIOUSLY SERVING MECHANICAL EQUIPMENT BACK TO PANEL WHERE IT ORIGINATES.
3. REPLACE EXTERIOR LIGHT FIXTURE WITH NEW LIGHT FIXTURE IN THE SAME LOCATION. MAINTAIN EXISTING CIRCUITING FOR CONNECTION TO NEW FIXTURE. REFER TO NEW WORK ROOF PLAN AND LIGHTING FIXTURE SCHEDULE FOR MORE INFORMATION.
4. REMOVE EXISTING LIGHTNING PROTECTION CONDUCTORS AND ASSOCIATED COMPONENTS AS NECESSARY TO FACILITATE ROOF REPLACEMENT. PROTECT FOR THE DURATION OF THE PROJECT. REINSTALL ON NEW ROOF ONCE CONSTRUCTION IS COMPLETE. REPLACE ANY CONDUCTORS AND ASSOCIATED COMPONENTS THAT ARE DAMAGED.



ROOF DEMO ELECTRICAL PLAN OPERATIONS BLDG

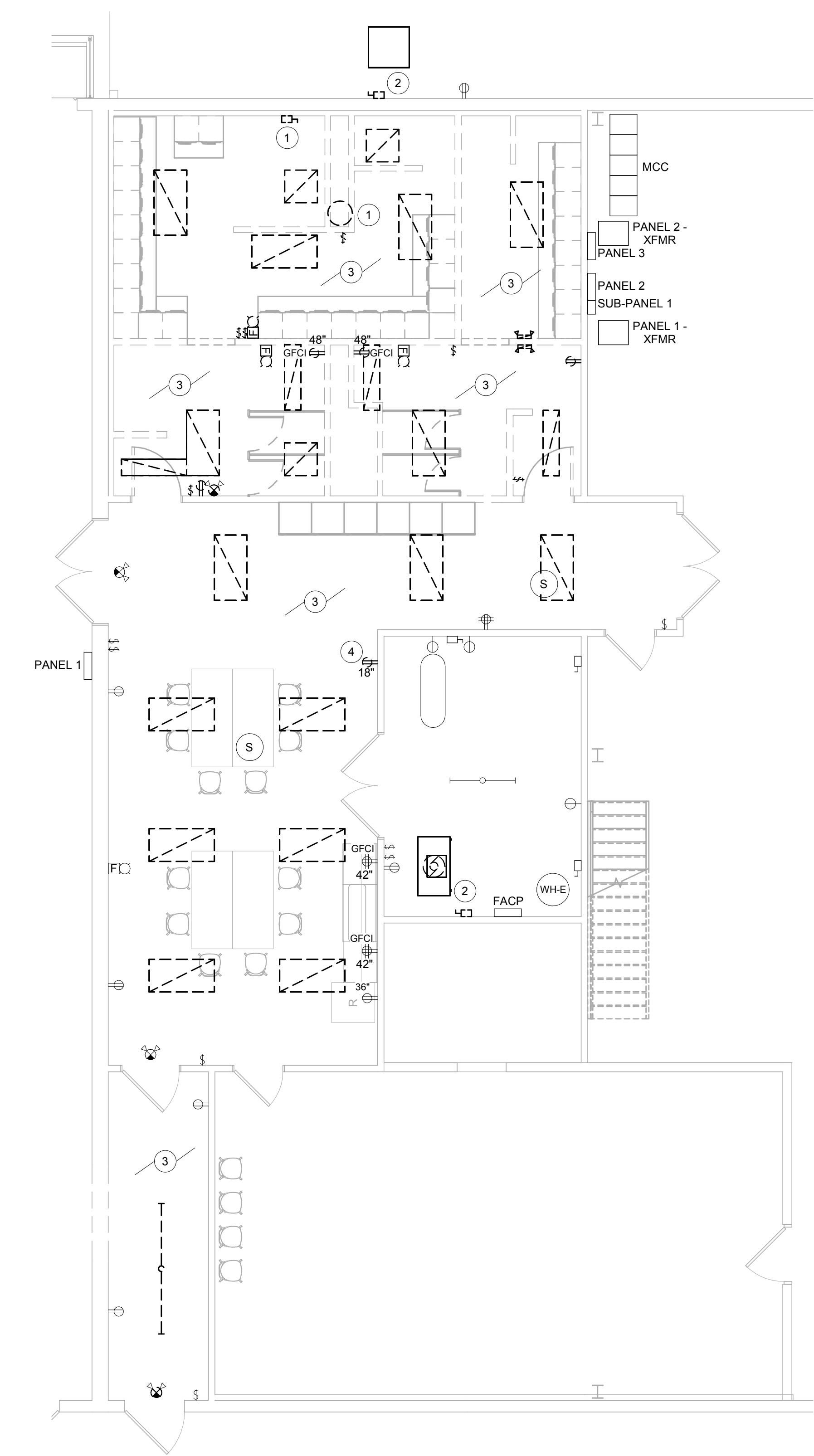
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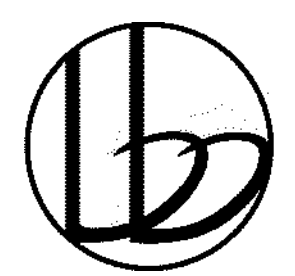
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- **DEMOLITION NOTES:**
1. DEMOLISH EXISTING ELECTRICAL CONNECTION AND DISCONNECT SERVING EXHAUST FAN.
 2. DEMOLISH EXISTING ELECTRICAL CONNECTION AND DISCONNECT SERVING HVAC UNIT. MAINTAIN EXISTING CIRCUIT FOR CONNECTION TO NEW UNIT.
 3. DEMOLISH EXISTING LIGHT FIXTURES IN THIS SPACE. MAINTAIN EXISTING CIRCUIT AND CONTROLS FOR CONNECTION TO NEW LIGHT FIXTURES.
 4. REMOVE EXISTING RECEPTACLE AND REPLACE WITH NEW GFCI RECEPTACLE AT NEW MOUNTING HEIGHT TO ACCOMMODATE GATORADE STATION. EXTEND CONDUIT AND WIRING AS NECESSARY FOR A COMPLETE INSTALLATION AT THE NEW MOUNTING HEIGHT.



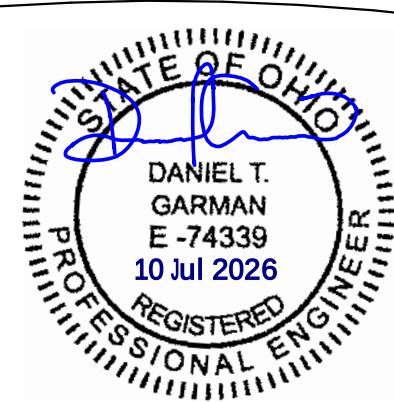
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**ELECTRICAL DEMO PLANS
MAINTENANCE BLDG**

ED103



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GENERAL ELECTRICAL NOTES:

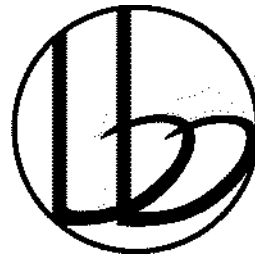
- A. EXISTING CONDITIONS SHOWN ON THIS DRAWINGS ARE TAKEN FROM ORIGINAL DRAWINGS AND FIELD INVESTIGATION. ALL EXISTING CONDITIONS MUST BE VERIFIED PRIOR TO BID. FIELD CONDITIONS SHALL GOVERN.
- B. CONCEAL ALL NEW CONDUITS UNLESS NOTED OTHERWISE.

GENERAL CABLING NOTES:

- A. PROVIDE CABLES AS SPECIFIED BELOW FOR ACCESS CONTROLS. ROUTE CABLES FROM ACCESS CONTROL LOCATION TO ROOM 208. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR DOOR HARDWARE SCHEDULE.
1. GENESIS DOOR STRIKE P/N 2114: 18/4 STRANDED COPPER WITH ORANGE PVC JACKET.
2. GENESIS CARDER READER P/N 2206: 22/6 STRANDED COPPER WITH WHITE PVC JACKET.
3. GENESIS DOOR CONTACT P/N 2102: 22/2 STRANDED COPPER WITH BLUE PVC JACKET.
4. GENESIS REQUEST TO EXIT P/N 2104: 22/4 STRANDED COPPER WITH GREEN PVC JACKET.
- B. PROVIDE YELLOW CAT-6 CABLE FOR NEW CAMERAS. PROVIDE FROM CAMERA LOCATION TO ROOM 208.
- C. PROVIDE BLUE CAT-6 CABLE FOR NEW DATA OUTLETS. PROVIDE FROM OUTLET LOCATION TO ROOM 208. PROVIDE 15' OF CABLE COILED IN ROOM 208 FOR OWNER CONNECTION TO NETWORK.

INSTALLATION NOTES:

1. MOUNT NEW FIRE ALARM DEVICE ON FIRST FLOOR WALL BELOW STAIRS.
2. PROVIDE NEW WALL MOUNTED 75KVA TRANSFORMER. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO INSTALLATION. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
3. PROVIDE NEW 200A, 208/120V, 3-PHASE, 4 WIRE PANEL IN LOCATION INDICATED. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
4. NEW PANEL IN PLACE OF EXISTING IN THE SAME LOCATION.
5. PROVIDE RECEPTACLE AT SERVER FOR NEW OWNER PROVIDED UPS. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
6. INSTALL OWNER PROVIDED PATCH PANEL. COORDINATE WITH OWNER FOR EXACT LOCATION PRIOR TO INSTALLATION.
7. CONNECT ALL VESTIBULE RECEPTACLES TO THE CIRCUIT INDICATED ON THE FIRST FLOOR PLAN.
8. CONNECT ALL EXTERIOR RECEPTACLES TO THE CIRCUIT INDICATED ON THE FIRST FLOOR PLAN.
9. INSTALL NEW OWNER PROVIDED PEDESTAL MOUNTED, DUAL PORT, LEVEL 2 CHARGING STATION. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. PROVIDE SURFACE MOUNTED CONDUIT ON EXTERIOR WALLS FROM MECHANICAL ROOM TO NEW CHARGER LOCATION.
10. REINSTALL EXISTING FACP IN THE SAME LOCATION ON FACE OF NEW FURRED OUT WALL.
11. REINSTALL EXISTING TIME CLOCK IN NEW LOCATION. PROVIDE NEW DATA CONNECTION. MOUNT NEW RECEPTACLE SERVING TIME CLOCK AT 46" ABOVE FINISHED FLOOR.
12. PROVIDE NEW LIGHTING CONTROL PANEL. LIGHTING CONTROLS SHALL OPERATE WITH PHOTOCELL CONTROLS. EXTERIOR POLE LIGHTS, BOLLARD LIGHTS, AND EXTERIOR BUILDING MOUNTED LIGHT FIXTURES SHALL TURN ON AS IT GETS DARK. ROUTE ANY EXISTING EXTERIOR LIGHTING CIRCUITS NOT IDENTIFIED THROUGH THE NEW LCP UNLESS NOTED OTHERWISE. REFER TO LIGHTING CONTROL PANEL SCHEDULE ON NEW WORK LIGHTING PLAN FOR MORE INFORMATION.
13. PROVIDE NEW JUNCTION BOX FOR ACCESS CONTROLS AND PROVIDE CABLES AS SPECIFIED BELOW FROM THIS LOCATION TO SCADA ROOM 208. REFER TO ARCHITECTURAL DRAWINGS FOR DOOR HARDWARE SCHEDULE.
14. PROVIDE NEW JUNCTION BOX WITH CABLING FROM THIS LOCATION TO SCADA ROOM 208 FOR NEW CAMERA. PROVIDE 15' OF CABLE COILED IN ROOM 208 FOR OWNER CONNECTION TO NETWORK.
15. PROVIDE NEW RECEPTACLE FOR ACCESS CONTROLS PANEL. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER AND SECURITY VENDOR PRIOR TO INSTALLATION.



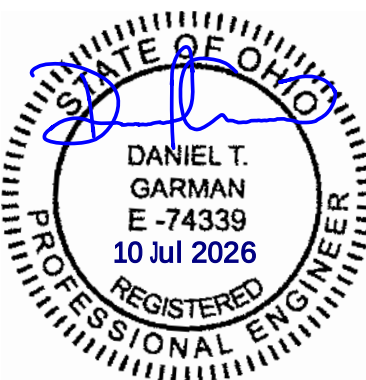
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ELECTRICAL POWER NEW WORK
PLANS OPERATIONS BLDG

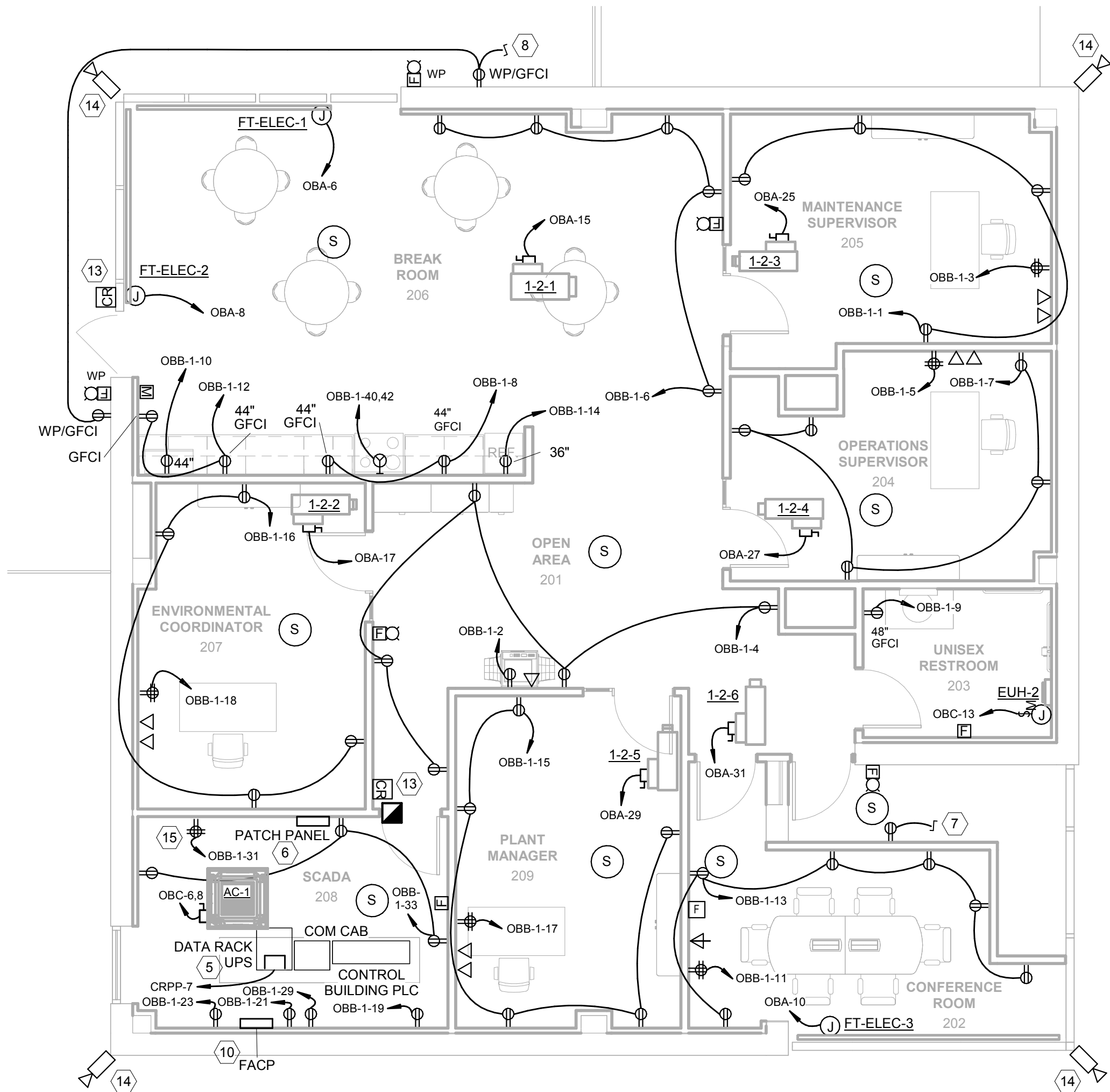
E101



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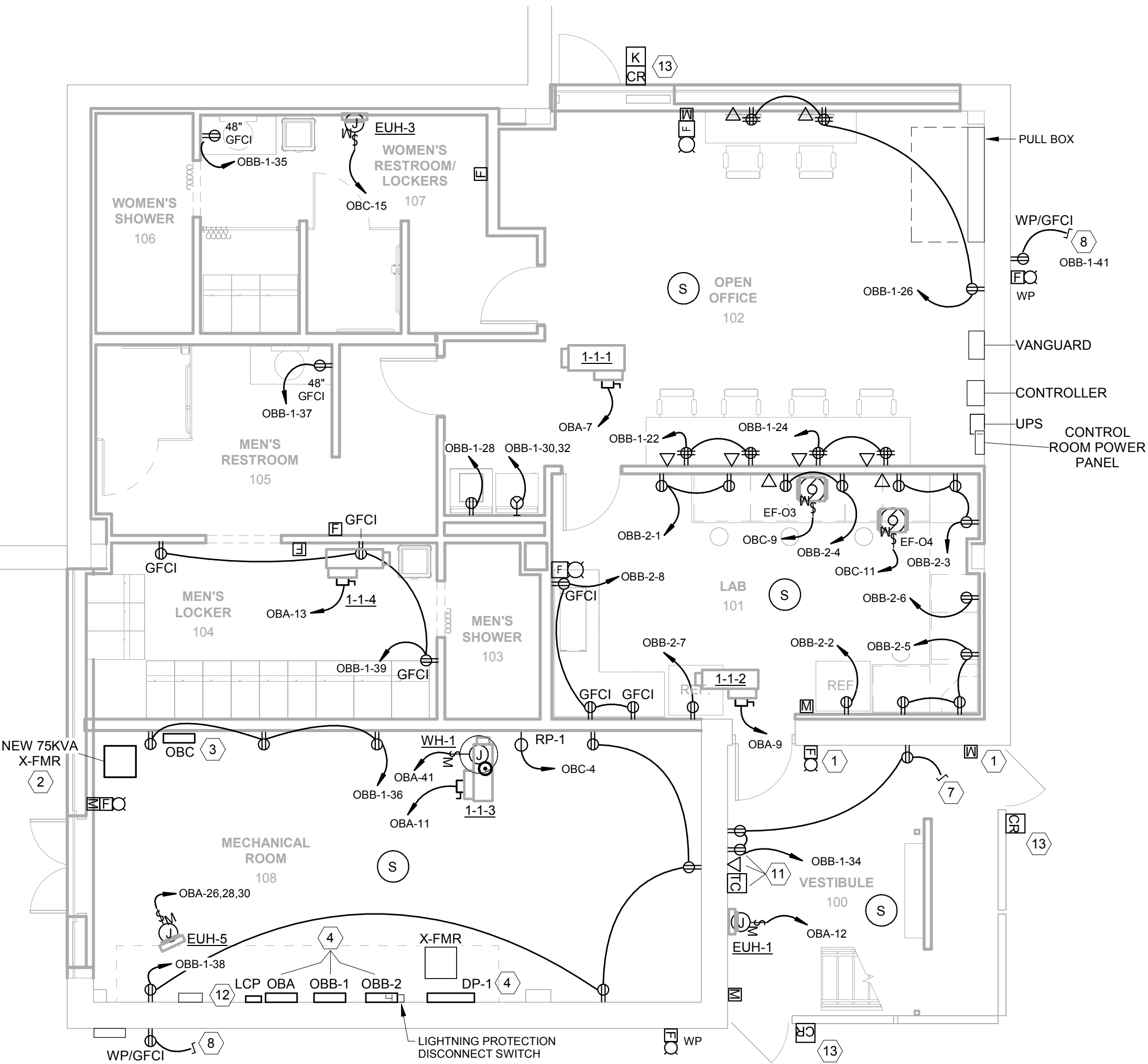
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SECOND FLOOR POWER PLAN OPERATIONS BLDG

SCALE: 3/16" = 1'-0"



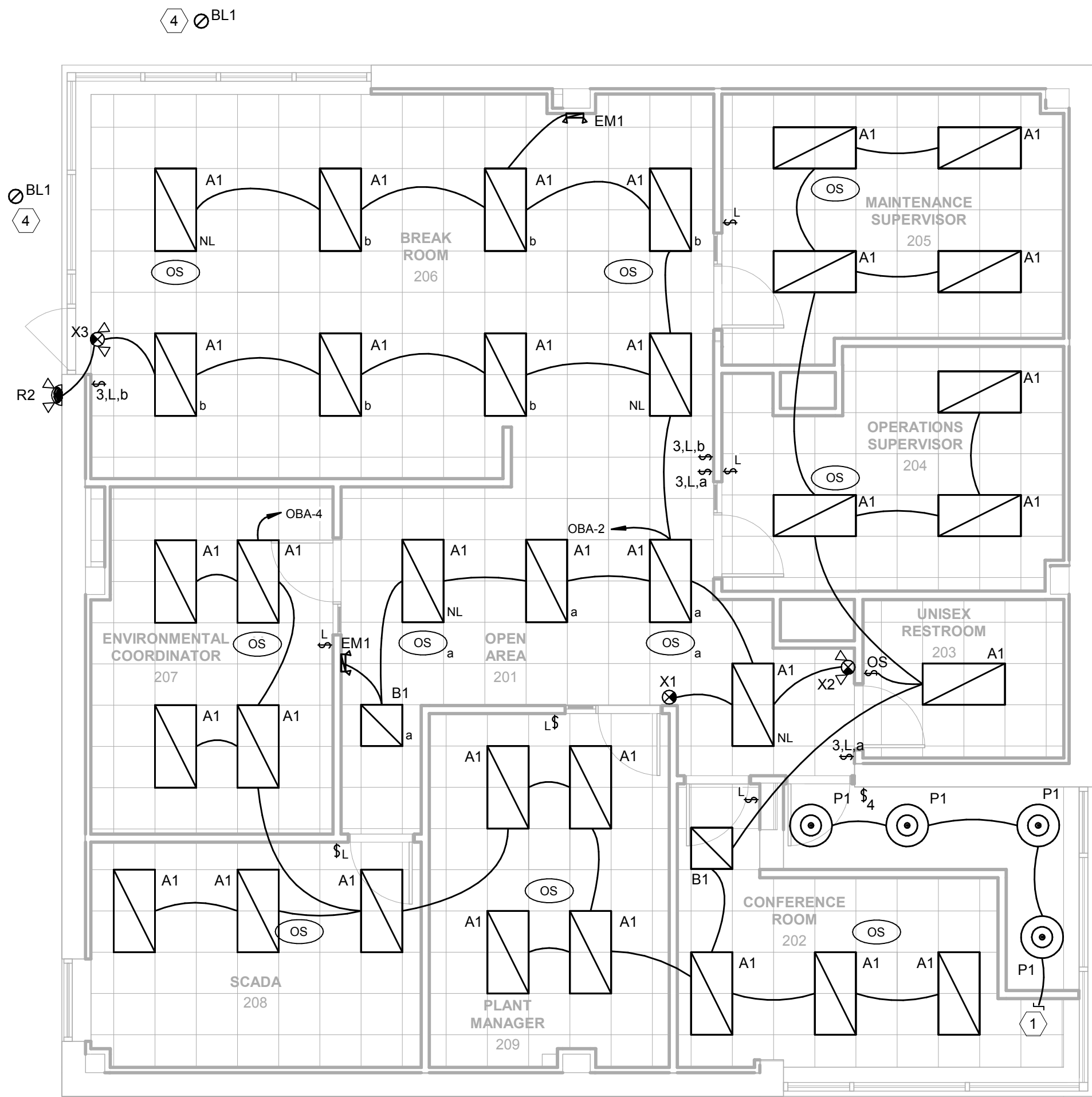
FIRST FLOOR POWER PLAN OPERATIONS BLDG

SCALE: 3/16" = 1'-0"

LIGHTING CONTROL PANEL LCP SCHEDULE							
RELAY	POLE	DIMMING	VOLTAGE	CIRCUITS	LOAD	SEQUENCE OF OPERATION	NOTES
1	1	NO	277	OBA-14	POLE LIGHTS	S1	-
2	1	NO	277	OBA-16	POLE LIGHTS	S1	-
3	1	NO	277	OBA-18	POLE LIGHTS	S1	-
4	1	NO	277	OBA-22	POLE LIGHTS	S1	-
5	1	NO	277	OBA-24	POLE LIGHTS	S1	-
6	1	NO	120	OBB-2-28	EXTERIOR BUILDING LIGHTS	S1	-
7	1	NO	120	OBB-2-29	EXTERIOR BUILDING LIGHTS	S1	-
8	1	NO	120	-	SPARE	-	-
9	1	NO	277	-	SPARE	-	-
10	1	NO	277	-	SPARE	-	-
11	1	NO	277	-	SPARE	-	-
12	1	NO	120	-	SPARE	-	-

SEQUENCE OF OPERATION:
S1 EXTERIOR LIGHTING SHALL TURN ON AS IT GETS DARK OUTSIDE, AND TURN OFF AS IT GETS LIGHT. PROVIDE OVERRIDE SWITCHES IN A LOCATION TO BE COORDINATED WITH THE OWNER.

GENERAL NOTES:
A. COORDINATE PROGRAMMING (ZONES, TIMECLOCK SETTINGS, PHOTOCELL ETC...) WITH THE OWNER.
B. PROVIDE RELAYS, CONTACTS, POWER PACKS, TIME CLOCKS, PHOTOCELLS, SENSORS ETC... FOR A COMPLETE OPERATIONAL LIGHTING CONTROL SYSTEM.
C. PROVIDE BARRIER IN RELAY PANEL BETWEEN CIRCUITS WITH DIFFERENT VOLTAGES.
D. PROVIDE AN OVERRIDE SWITCH TO BYPASS LIGHTING CONTROL. COORDINATE LENGTH OF TIME LIGHTS WILL BE BYPASSED WITH THE OWNER.

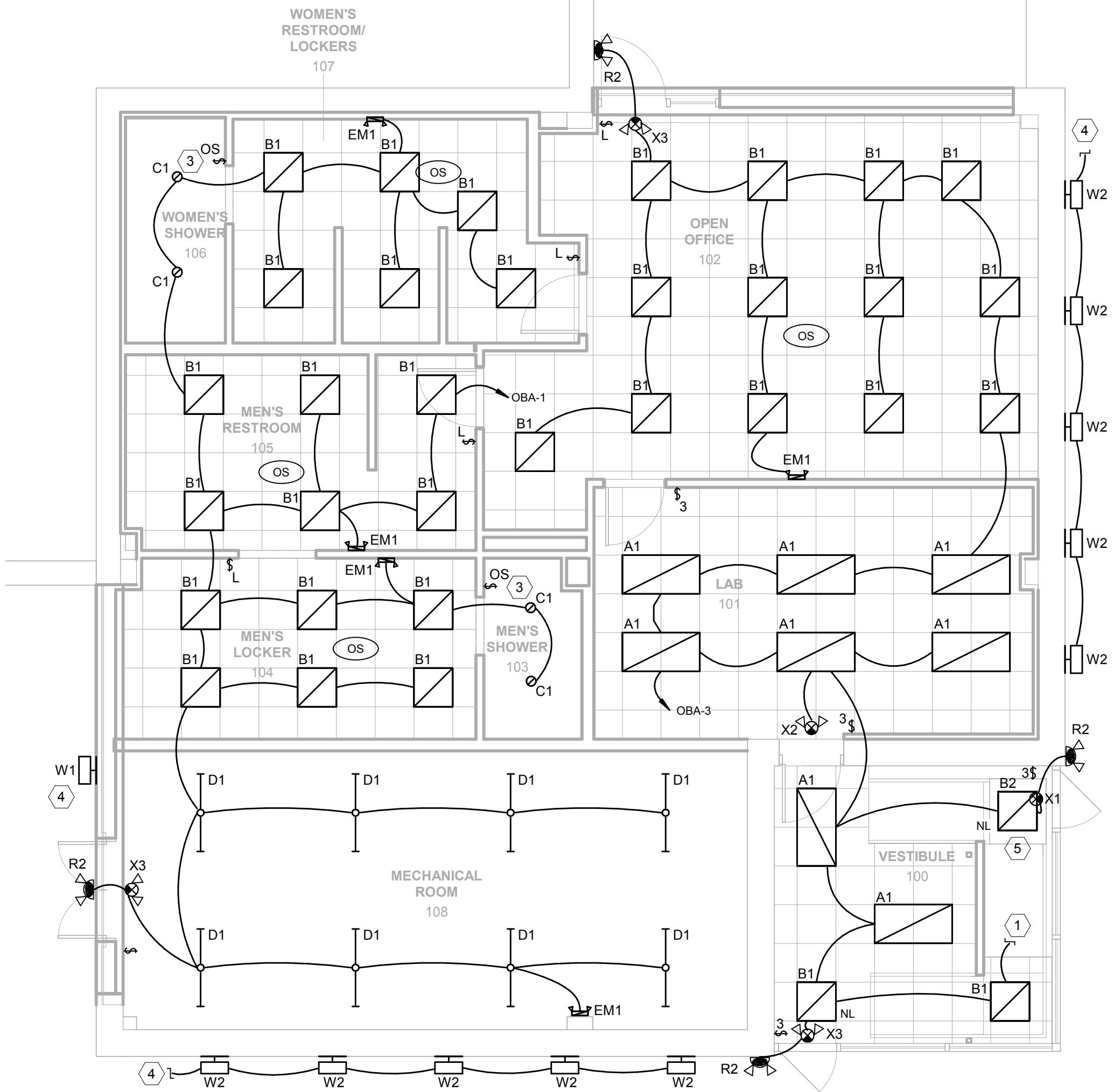


SECOND FLOOR LIGHTING PLAN OPERATIONS BLDG

SCALE: 3/16" = 1'-0"

INSTALLATION NOTES:

- CONNECT ALL VESTIBULE LIGHTING TO THE SAME CIRCUIT AND LIGHTING CONTROLS.
- PROVIDE NEW OUTDOOR RATED OCCUPANCY SENSOR AND LIGHT FIXTURES. MOUNT TO STRUCTURAL BEAMS. OCCUPANCY SENSOR TO OPERATE IN "AUTOMATIC ON" MODE.
- PROVIDE NEW WET LOCATION LISTED WALL MOUNTED OCCUPANCY SENSOR SWITCH. OCCUPANCY SENSOR TO OPERATE IN "MANUAL ON" MODE.
- CONNECT NEW LIGHTING TO EXISTING EXTERIOR LIGHTING CIRCUIT AND NEW CONTROLS.
- MOUNT NEW LIGHT FIXTURE TO UNDERSIDE OF STAIRS. COORDINATE EXACT LOCATION PRIOR TO ROUGH-IN.



FIRST FLOOR LIGHTING PLAN OPERATIONS BLDG

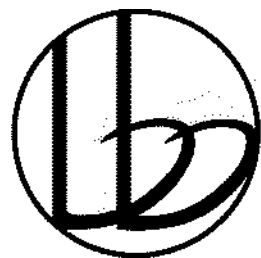
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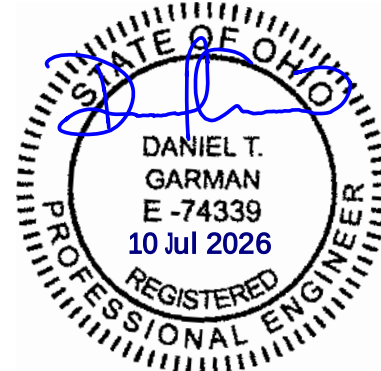
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ELECTRICAL LIGHTING NEW
WORK PLANS OPERATIONS
BLDG

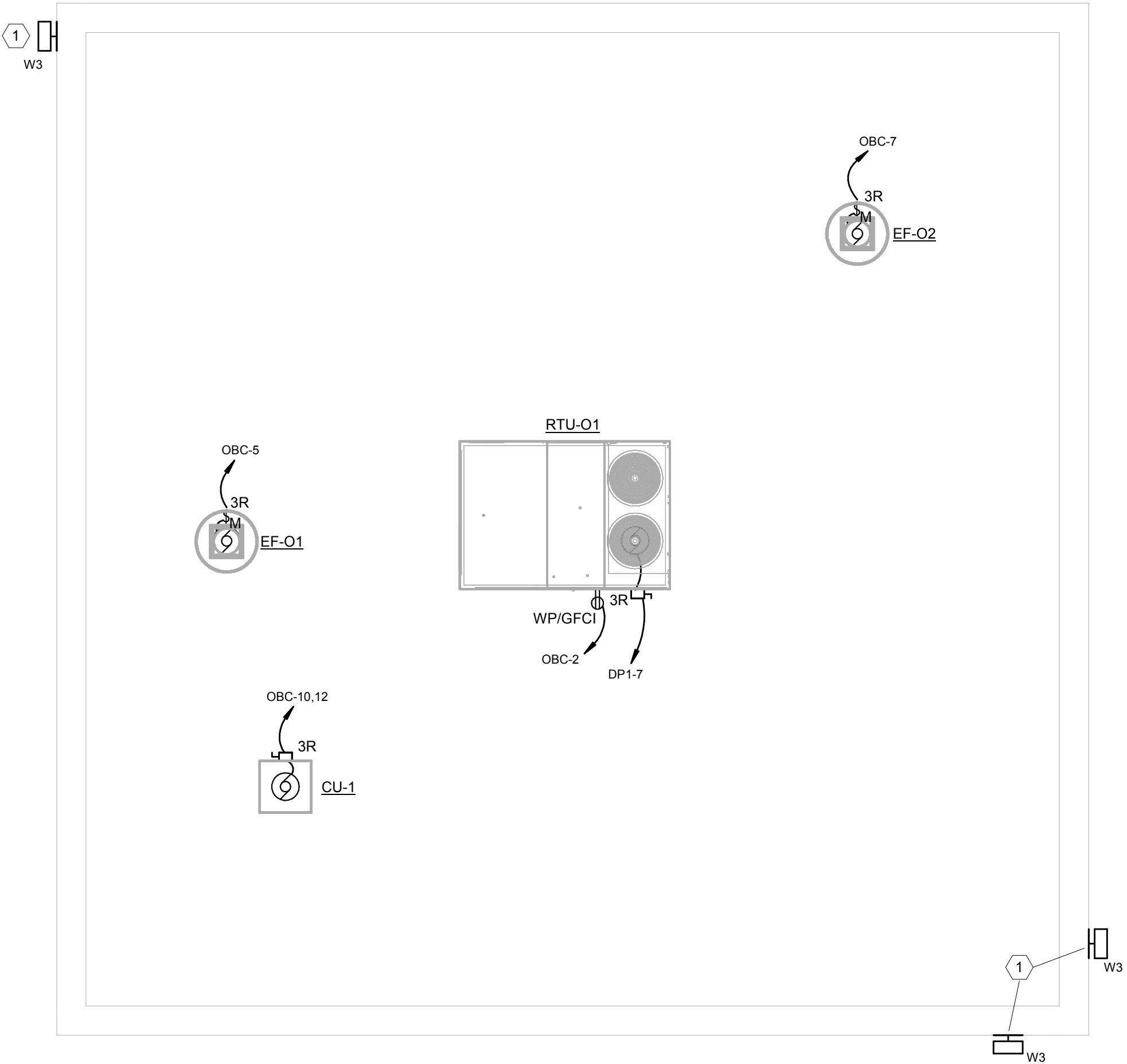
E102

GENERAL LIGHTNING PROTECTION NOTES:

- A. IF MODIFICATIONS TO THE LIGHTNING PROTECTION SYSTEM ARE REQUIRED, CONTRACTOR SHALL PROVIDE COMPLETE CERTIFIED LIGHTNING PROTECTION SYSTEM. FINAL SIZING OF CONDUCTORS AND SYSTEM COMPONENTS SHALL BE BY CERTIFIED MASTER LABEL LIGHTNING PROTECTION CONTRACTOR.
- B. ALL LIGHTNING PROTECTION EQUIPMENT MUST BE UL STAMPED FOR LIGHTNING PROTECTION USE.
- C. AIR TERMINALS MUST BE LOCATED WITH-IN 2 FT. OF THE OUTSIDE CORNER OR RIDGE END.
- D. AIR TERMINALS MUST BE SPACED A MAXIMUM OF 20 FT. APART.
- E. CABLES MUST BE FASTENED A MAXIMUM OF 36 INCHES ON CENTER.
- F. CABLE BENDS SHALL NOT BE LESS THAN 8 INCH RADIUS OR AS RECOMMENDED BY THE CABLE MANUFACTURER. WHERE THIS IS A CONFLICT, THE MOST STRINGENT SHALL APPLY.
- G. CABLES SHALL RUN HORIZONTALLY OR IN A DOWNWARD PATH TO GROUND. IF A CABLE MUST BE RUN UPHILL IT MUST BE RUN AT A 1/4" SLOPE OR LESS.

INSTALLATION NOTES:

1. CONNECT NEW LIGHTING TO EXISTING EXTERIOR LIGHTING CIRCUIT AND NEW CONTROLS.



ROOF ELECTRICAL PLAN OPERATIONS BLDG

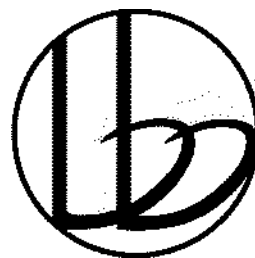
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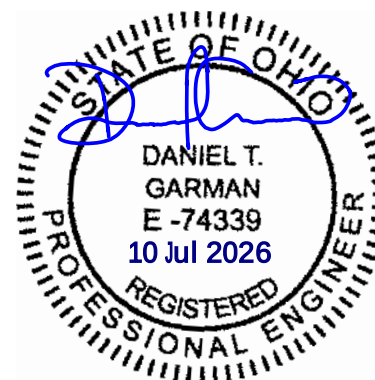
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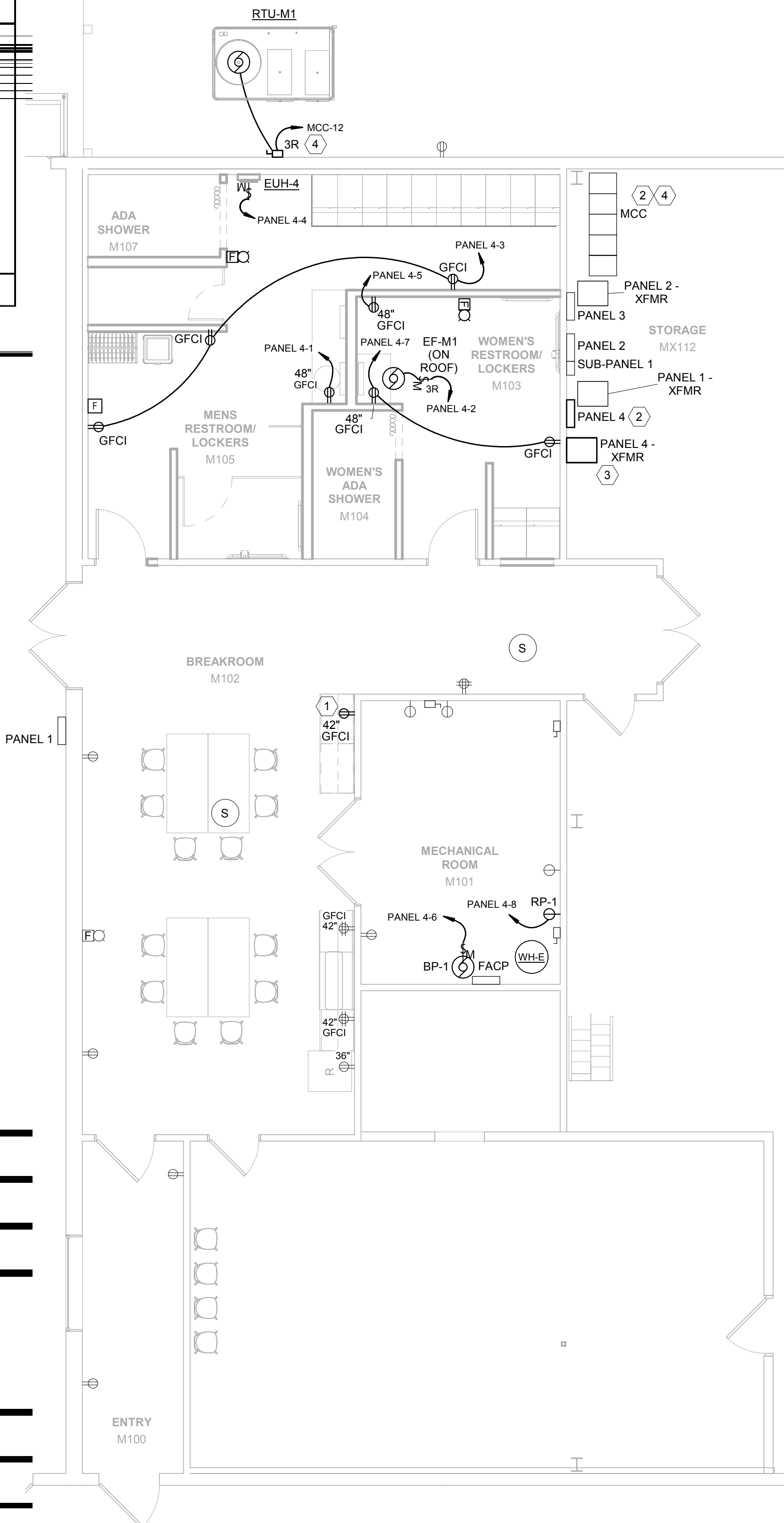
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ELECTRICAL ROOF NEW WORK
PLAN OPERATIONS BLDG

E103

Panel 1 (NEW)						Panel Load - Conn. kW - Demand kW - Demand Amps					
Ampere	100A	Voltage	120/208V			Total	5.99	5.99		16.6	
MLO/MB	MCB	Phase	3			Phase A	1.96	1.96		16.6	
Amp A/C	Verify w/ Utility	Wire	4			Phase B	2.04	2.04		17.0	
						Phase C	1.96	1.96		16.3	
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
4	20/1	0.54	1.00	0.54	REC - MENS RESTROOM/LOCKERS M107	4	20/1	1.50	1.00	1.50	REC - MENS RESTROOM/LOCKERS M107
5	20/1	1.00	1.00	1.00	REC - WOMENS RESTROOM/LOCKERS M105	6	20/1	0.96	1.00	0.96	RP-1 - MECHANICAL ROOM M101
7	20/1	0.36	1.00	0.36	REC - WOMENS RESTROOM/LOCKERS M105	8	20/1	0.05	1.00	0.05	RP-1 - MECHANICAL ROOM M101
9	20/1				SPACE	10	20/1				SPACE
11	20/1				SPACE	12	20/1				SPACE
13	20/1				SPACE	14	20/1				SPACE
15					SPACE	16					SPACE
17					SPACE	18					SPACE
19					SPACE	20					SPACE
21					SPACE	22					SPACE
23					SPACE	24					SPACE
25					SPACE	26					SPACE
27					SPACE	28					SPACE
29					SPACE	30					SPACE

Panel 1 (EXISTING)						Panel Load - Conn. kW - Demand kW - Demand Amps					
Ampere	600A	Voltage	480V			Total	468.30	473.93		570.0	
MLO/MB	MCB	Phase	3			Phase A	153.76	156.26		564.1	
Amp A/C		Wire	4			Phase B	157.31	159.19		574.7	
						Phase C	157.23	158.48		572.1	
Unit	OCP	Conn. kW	Factor	Demand kW	Description						
1	225/3	43.27		45.15	PANEL 3						
2	40/3	4.00	1.00	4.00	HOT WATER HEATER						
3					20KW AIR HANDLER (OFF)						
4	40/3	10.80	1.00	10.80	TRANSFORMER - PANEL 1						
5	60/3	10.80	1.00	10.80	TRANSFORMER - PANEL 2						
6	60/3	10.00	1.00	10.00	AIR COMPRESSOR						
7	40/3	1.99		2.04	TRANSFORMER - PANEL 4						
8		0.65	1.00	0.65	1.5 HP ROOF VENTILATOR ROOM #001						
9		0.65	1.00	0.65	1.5 HP ROOF VENTILATOR ROOM #002						
10		0.50	1.00	0.50	1.0 HP ROOF VENTILATOR ROOM #011						
11		0.50	1.00	0.50	1.0 HP ROOF VENTILATOR ROOM #011						
12	80/3	21.60	1.00	21.60	RTU-M1						
13					SPACE						
14		4.00	1.00	4.00	VMS SHOP WALL HEATERS (2) 6.0 KW						
15		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
16		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
17		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
18		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
19		3.50	1.00	3.50	FEED TO SLUDGE BUILDING						
20		4.00	1.00	4.00	VMS SHOP WALL HEATERS (2) 6.0 KW						
21		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
22		4.50	1.00	4.50	VMS SHOP WALL HEATERS (2) 6.0 KW						
23		4.00	1.00	4.00	RADIANT HEATER ROOM #01C EAST WALL (2) 6.0KW						
24		6.00	1.00	6.00	RADIANT HEATER ROOM #01C EAST WALL (2) 6.0KW						
25		6.00	1.00	6.00	RADIANT HEATER ROOM #01C EAST WALL (2) 6.0KW						
26		4.00	1.00	4.00	RADIANT HEATER ROOM #01C WEST WALL (2) 6.0KW						
27		4.00	1.00	4.00	RADIANT HEATER ROOM #01C WEST WALL (2) 6.0KW						

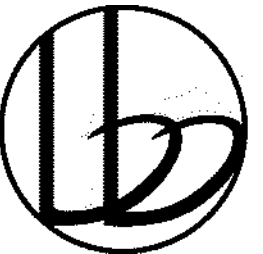


FIRST FLOOR POWER PLAN MAINTENANCE BLDG

SCALE: 3/16" = 1'-0"

INSTALLATION NOTES:

1. NEW GFCI RECEPTACLE AT NEW MOUNTING HEIGHT.
2. PROVIDE NEW 100A, 120/208V, 3-PHASE, 4-WIRE, 30-POLE PANEL IN LOCATION INDICATED. PROVIDE NEW 40A/3P BREAKER IN EXISTING MCC SPACE. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
3. PROVIDE NEW WALL MOUNTED 30kVA TRANSFORMER. COORDINATE MOUNTING REQUIREMENTS WITH OWNER PRIOR TO INSTALLATION. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
4. PROVIDE NEW 80A/3P CIRCUIT BREAKER IN EXISTING MCC SPACE TO FEED NEW HVAC UNIT.



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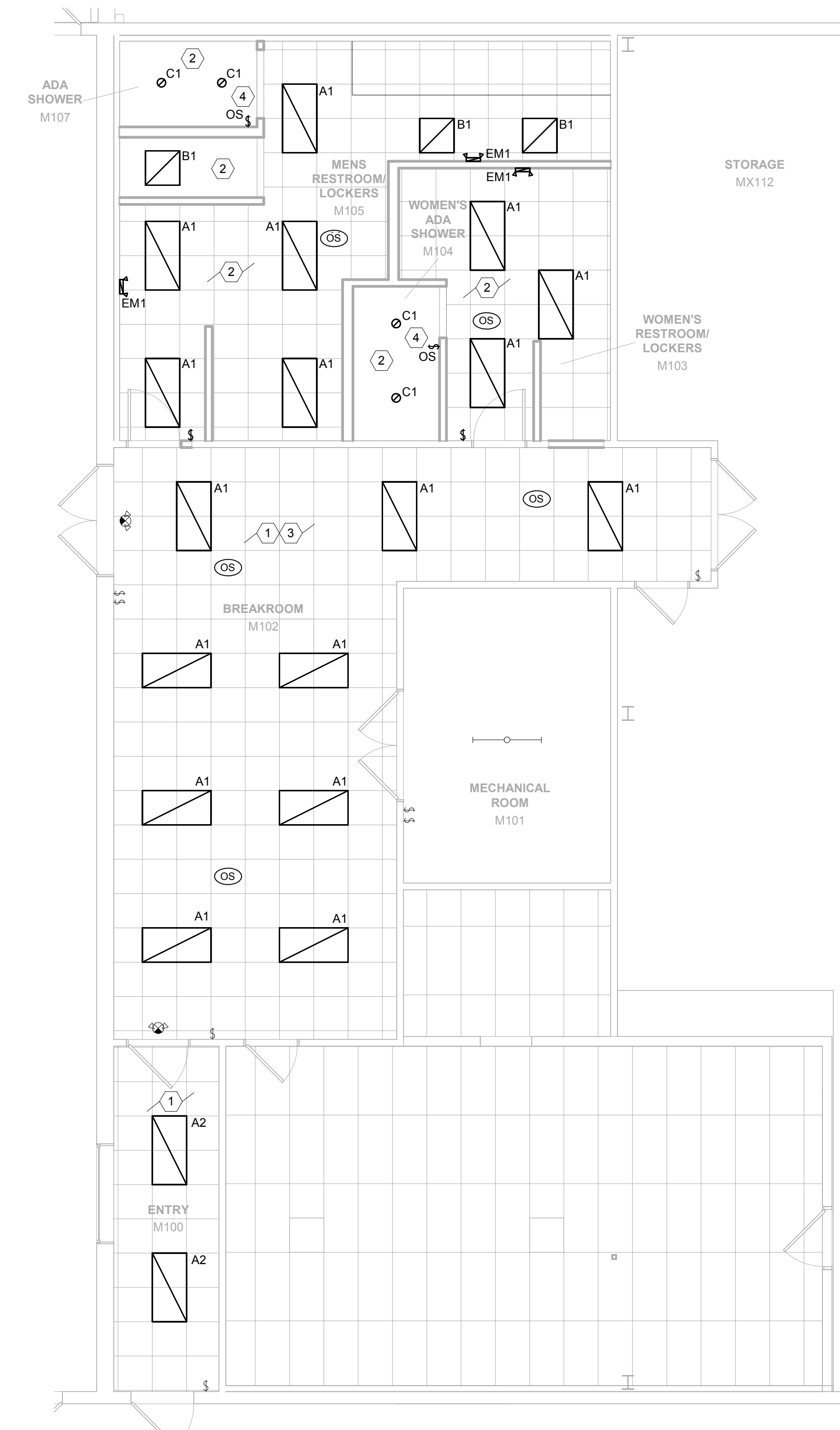
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ELECTRICAL POWER NEW WORK
PLANS MAINTENANCE BLDG

E104

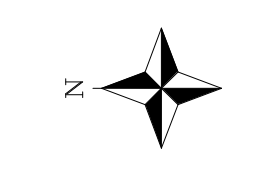


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INSTALLATION NOTES:

1. CONNECT NEW LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT AND EXISTING LIGHT SWITCHES SERVING THIS SPACE.
2. CONNECT NEW LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT AND NEW LIGHTING CONTROLS SERVING THIS SPACE.
3. PROVIDE NEW OCCUPANCY SENSORS FOR THIS SPACE AS INDICATED AND INTEGRATE INTO EXISTING WALL SWITCH CONTROLS.
4. PROVIDE NEW WET LOCATION LISTED WALL MOUNTED OCCUPANCY SENSOR SWITCH. OCCUPANCY SENSOR TO OPERATE IN "MANUAL ON" MODE.



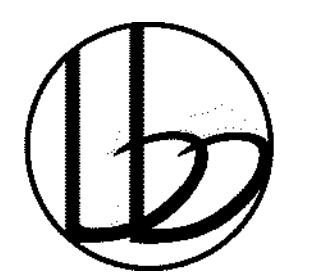
FIRST FLOOR LIGHTING PLAN MAINTENANCE BLDG
SCALE: 3/16" = 1'-0"



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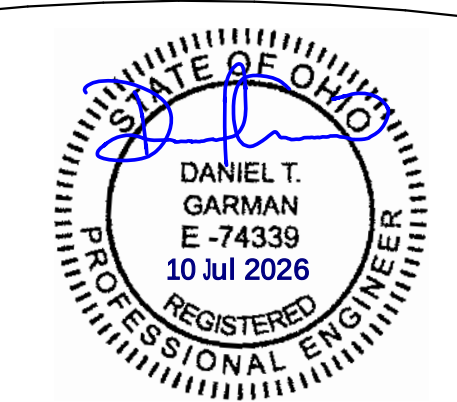


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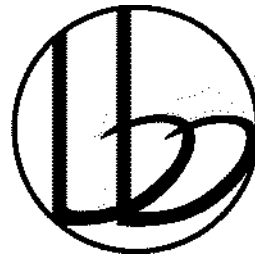
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**ELECTRICAL LIGHTING NEW
WORK PLANS MAINTENANCE
BLDG**

E105



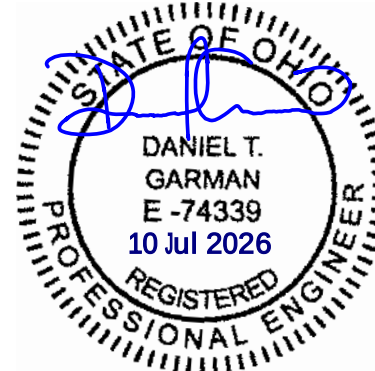
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ELECTRICAL EXISTING PANEL
SCHEDULES OPS BLDG

E601



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TT PROJECT #: 24288

Panel ID PANEL DP1 (EXISTING/DEMO)						Panel Load		Conn. kW	Demand kW	Demand Amps	
Ampere	600A	Voltage	277/480V			Total	0.00		0.00		0.0
MLO/MB	MLO	Phase	3			Phase A	0.00		0.00		0.0
Amp A/C	Verify w/	Wire	4			Phase B	0.00		0.00		0.0
	Utility					Phase C	0.00		0.00		0.0
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	20/3				ELECTR/C VALVE IN PIT #2	2	50/3				SPARE
3	50/3				SUMP PUMP #1	4	70/3				WELL PUMP #2
5	70/3				WELL PUMP #1	6	200/3				FEED PANEL OBA
7	80/3				WATER HEATER	8					SPACE
9	200/3				FEED XFMR TO PANEL OBB-2	10					SPACE
11					SPACE	12					SPACE
13					SPACE	14					SPACE
PANEL SCHEDULE SHOWN FOR REFERENCE ONLY TO INDICATE EXISTING CIRCUITING FOR PANEL REPLACEMENT.											

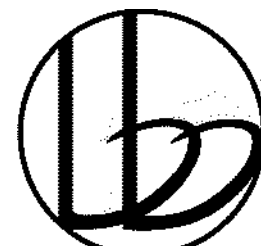
Panel ID PANEL OBB-2 (EXISTING/DEMO)						Panel Load	Conn. kW	Demand kW	Demand Amps		
Ampere	400A	Voltage	120/208V			Total	0.00	0.00	0.0		
MLO/MB	MLO	Phase	3			Phase A	0.00	0.00	0.0		
Amp A/C	Verify w/	Wire	4			Phase B	0.00	0.00	0.0		
	Utility					Phase C	0.00	0.00	0.0		
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
					SUB FEED LUGS						SUB FEED LUGS (OBB-1)
1	20/2				EXISTING (ON)	2	125/3				CONTROL RM. POWER PANEL 1PH 120/208V
3	20/2				SPARE	4	20/1				SHUNT TRIP
5	20/3				EXISTING (ON)	6	100/1				LIGHTNING PROTECTION
7	50/3				AVP-1 (OFF)	8	100/1				SPARE
9	20/1				EAST SIDE BLDG. LIGHTS	10					SPARE
11	20/1				EXISTING (ON)	12	20/1				METER PIT #2 (EXISTING)
13	20/1				EXISTING (ON)	14	20/1				EXISTING (ON)
15	20/1				EXISTING (ON)	16	20/1				PHOTO EYE AND CONTACT S. LIGHTS
17	30/3				AC UNIT	18	20/1				GARAGE AND BOLLARD BLDG. LIGHTS
						20	20/1				LIGHTNING PROTECTION
						22	20/1				LIGHTNING PROTECTION
						24	20/1				LIGHTNING PROTECTION
						26	20/1				EXISTING (ON)
						28	20/1				FIRE ALARM
						30	20/1				EXISTING (ON)
PANEL SCHEDULE SHOWN FOR REFERENCE ONLY TO INDICATE EXISTING CIRCUITING FOR PANEL REPLACEMENT.											

Panel ID PANEL OBA (EXISTING/DEMO)						Panel Load		Conn. kW		Demand kW		Demand Amps	
Ampere		200A		Voltage		277/480V		Total		0.00		0.00	
MLO/MB		MLO		Phase		3		Phase A		0.00		0.00	
Amp A/C		Verify w/		Wire		4		Phase B		0.00		0.00	
		Utility						Phase C		0.00		0.00	
CB # Brkr						Conn. kW		Factor		Demand kW		Description	
LO	1	20/3				UNIT HEATER 1ST FLOOR - NORTH							
	3	20/3				UNIT HEATER 1ST FLOOR - SOUTH							
	5	30/3				UNIT HEATER MAIN ENTRANCE							
	7	20/3				FOUNTAIN PUMP							
	9	20/1				LIGHTS - 1ST FL.							
	11	20/1				LIGHTS - 1ST FL.							
	13	20/1				LIGHTS - BREAK ROOM							
	15	20/1				HEAT PANEL - WOMENS RR							
	17	20/1				HEAT PANEL - 2ND FL. HALL							
	19	20/1				BASEBOARD HEATERS							
	21	20/1				BB HEATERS - SW BREAK ROOM							
	23	20/1				BB HEATERS - N&NW BREAK ROOM							
	25	20/1				HEAT PANEL - MENS RR							
	2	20/3				OVER-HEAD DOORS - NW							
	4	20/3				OVER-HEAD DOOR							
6	20/1				POLE LIGHTS								
8	20/1				POLE LIGHTS								
10	20/1				POLE LIGHTS								
12	20/1				EXISTING (ON)								
14	20/1				POLE LIGHTS								
16	20/1				POLE LIGHTS								
18	20/1				LIGHTS - 2ND FL.								
20	20/1				LIGHTS - 2ND FL. ROOMS								
22	20/1				HEAT PANEL - MENS SHOWER AREA								
24	20/1				HEAT PANEL - LOCKER ROOM								
26	20/1				BASEBOARD HEATERS								
28	20/1				BASEBOARD HEATER - COMP. ROOM								
30	20/1				EXISTING (ON)								
32	20/1				SPARE								
34	20/1				LIGHTS - STAIRWELL								
PANEL SCHEDULE SHOWN FOR REFERENCE ONLY TO INDICATE EXISTING CIRCUITING FOR PANEL REPLACEMENT.													

Panel ID PANEL OBB-1 (EXISTING/DEMO)						Panel Load	Conn. kW	Demand kW	Demand Amps		
Ampere	400A	Voltage	120/208V			Total	0.00	0.00	0.0		
MLO/MB	MLO	Phase	3			Phase A	0.00	0.00	0.0		
Amp A/C	Verify w/	Wire	4			Phase B	0.00	0.00	0.0		
	Utility					Phase C	0.00	0.00	0.0		
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	20/1				REC - 1ST FL. RMS. 01.04.05.06 WTR. COOLER	2	20/1				REC - W.P. S. WALL, REC - RM. 02 S. WALL
3	20/1				REC - RM. 03 WIREMOLD W. WALL	4	20/1				REC - RM. 102 REF.
5	20/1				REC - RM. 03 WIREMOLD N. WALL	6	20/1				REC - RM. 03 N. WALL
7	20/1				REC - RM. 03 WIREMOLD W. WALL	8	20/1				REC - RM. 102 OVER COUNTER
9	20/1				REC - 2ND FL. RMS. 106, 107, 101	10	15/1				REC - RM. 109 N. WALL, FLOW RECORDER W.
11	20/1				REC - 2ND FL. HALL, RM. 101 N&W, RM. 109 E.	12	20/1				REC - 2ND FL. RMS. 103, 104 N. & W. WALLS
13	20/1				REC - TELEPHONE BOARD	14	20/1				EXHAUST FANS - RESTROOMS
15	20/1				LTG - 2ND FL. RMS. 105, 106, 107	16	20/2				AIR COMPRESSOR
17	20/1				DRYER FOR AIR COMPRESSOR	18	/				
19	20/1				REC - RM. 102 N. & W. WALL, TIME CLOCK	20	20/1				FOUNTAIN CLOCK & LIGHTS
21	20/2				SPARE	22	20/1				REC - BREAKROOM S. WALL
23	/					24	60/2				REC - WELDER
25	20/1				REC - OUTSIDE WEST POLE	26	/				
27	20/1				REC - OUTSIDE EAST POLE	28	/				
29	40/2				INSTANTANEOUS WATER HEATER	30	30/3				A/C COMPUTER RM. ROOF
31	/					32	/				
33	40/2				INSTANTANEOUS WATER HEATER	34	40/2				INSTANTANEOUS WATER HEATER
35	/					36	/				
37	40/2				INSTANTANEOUS WATER HEATER	38	30/2				OVEN
39	/					40	/				
41					SPACE	42					SPACE
PANEL SCHEDULE SHOWN FOR REFERENCE ONLY TO INDICATE EXISTING CIRCUITING FOR PANEL REPLACEMENT.											

GENERAL ELECTRICAL NOTES:

- A. CIRCUITS HIGHLIGHTED IN YELLOW ARE MADE SPARE BY DEMOLITION. CONTRACTOR SHALL VERIFY ALL ELECTRICAL ITEMS ARE REMOVED FROM EACH CIRCUIT BEFORE MAKING IT OBSOLETE AND REPLACING WITH A NEW CIRCUIT.



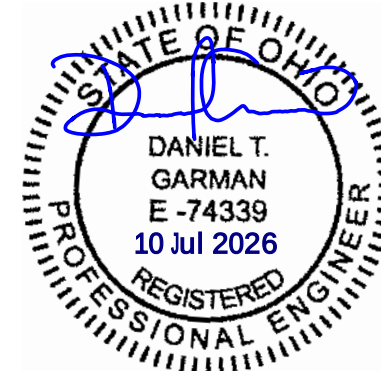
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ELECTRICAL PANEL SCHEDULES
OPS BLDG

E602



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800.394.1630
TT PROJECT #: 24288

Panel ID PANEL DP1 (NEW)					Panel Load	Conn. kW	Demand kW	Demand Amps			
Ampere	600A	Voltage	277/480V		Total	402.63	408.70	491.6			
MLO/MB	MLO	Phase	3		Phase A	131.81	133.39	481.5			
Amp AIC	Verify w/ Utility	Wire	4		Phase B	134.90	137.37	495.9			
					Phase C	135.92	137.94	498.0			
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	/	4.43	1.00	4.43	ELECTRIC VALVE IN PIT #2	2					SPACE
	20/3	4.43	1.00	4.43							
	/	4.43	1.00	4.43							
3	50/3	10.38	1.00	10.38	SUMP PUMP #1	4	/	14.00	1.00	14.00	WELL PUMP #2
	/	10.38	1.00	10.38		70/3		14.00	1.00	14.00	
	/	10.38	1.00	10.38		/		38.40		39.60	
5	70/3	14.00	1.00	14.00	WELL PUMP #1	6	200/3	31.78		33.88	FEED PANEL OBA
	/	14.00	1.00	14.00		/		36.05		37.59	
	/	17.72	1.00	17.72		/		8.36		8.36	
7	50/3	17.72	1.00	17.72	RTU-01	8	125/3	10.73		10.73	FEED XFMR TO PANEL OBC
	/	17.72	1.00	17.72		/		5.06		5.06	
	/	24.52		24.90		10					
9	200/3	31.86		32.24	FEED XFMR TO PANEL OBB-2	12					
	/	34.28		34.76		14					
11						SPACE					
					SPACE						
					SPACE						
13					SPACE	14					SPACE

Panel ID PANEL OBB-2 (NEW)						Panel Load	Conn. kW	Demand kW	Demand Amps		
Ampere	400A	Voltage	120/208V			Total	90.66	91.89	255.0		
MLO/MB	MLO	Phase	3			Phase A	24.52	24.90	207.5		
Amp AIC	Verify w/ Utility	Wire	4			Phase B	31.86	32.24	268.6		
						Phase C	34.28	34.76	289.6		
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	20/1	0.70	1.00	0.70	REC - LAB 101	2	20/1	1.20	1.00	1.20	REFRIGERATOR - LAB 101
3	20/1	1.00	1.00	1.00	COUNTER REC - LAB 101	4	20/1	1.00	1.00	1.00	COUNTER REC - LAB 101
5	20/1	1.00	1.00	1.00	COUNTER REC - LAB 101	6	20/1	1.00	1.00	1.00	COUNTER REC - LAB 101
7	20/1	1.20	1.00	1.20	REFRIGERATOR - LAB 101	8	20/1	1.00	1.00	1.00	COUNTER REC - LAB 101
9	20/2	1.66	1.00	1.66	EXISTING (ON)	10	/	7.40		7.40	CONTROL RM. POWER PANEL 1PH 120/208V
11	/	1.66	1.00	1.66		12	125/3	8.62		8.87	
13	20/1					14	/				
15	20/1				SPARE	16	20/1	1.00	1.00	1.00	LIGHTNING PROTECTION
17	/	1.50	1.00	1.50	SPARE	18	20/1				SPARE
19	20/3	1.50	1.00	1.50	EXISTING (ON)	20	20/1				SPARE
21	/	1.50	1.00	1.50		22	20/1				SPARE
23						24	20/1	1.20	1.00	1.20	METER PIT #2
25					SPACE	26	20/1	1.92	1.00	1.92	EXISTING (ON)
27					SPACE	28	20/1	1.50	1.25	1.88	LIGHTING CONTROL PANEL
29	20/1	1.50	1.25	1.88	EAST SIDE BLDG. LIGHTS	30	20/1	1.40	1.25	1.25	GARAGE AND BOLLARD BLDG. LIGHTS
31	20/1	1.50	1.00	1.50	EXISTING (ON)	32	20/1	1.00	1.00	1.00	LIGHTNING PROTECTION
33	20/1	1.50	1.00	1.50	EXISTING (ON)	34	20/1	1.00	1.00	1.00	LIGHTNING PROTECTION
35	20/1	1.50	1.00	1.50	EXISTING (ON)	36	20/1	1.00	1.00	1.00	LIGHTNING PROTECTION
37					SPACE	38	20/1	1.92	1.00	1.92	EXISTING (ON)
39					SPACE	40	20/1	1.30	1.00	1.30	FIRE ALARM
41					SPACE	42	20/1	1.00	1.00	1.00	EXISTING (ON)
PANEL OBB-2 FEEDS PANEL OBB-1. TOTAL LOAD INDICATED ON THIS SCHEDULE.											

Panel ID PANEL OBC (NEW)					Panel Load		Conn. kW		Demand kW		Demand Amps	
Ampere	200A	Voltage	120/208V		Total		24.15		24.15		67.0	
MLO/MB	MCB	Phase	3		Phase A		8.36		8.36		69.7	
Amp AIC	Verify w/ Utility	Wire	4		Phase B		10.73		10.73		89.4	
					Phase C		5.06		5.06		42.2	

CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	70/2	6.00	1.00	6.00	EV CHARGER	2	20/1	0.18	1.00	0.18	ROOFTOP RECEPTACLE
3		6.00	1.00	6.00		4	20/1	0.05	1.00	0.05	RP-1
5	15/1	0.42	1.00	0.42	EF-O1	6	15/2	0.10	1.00	0.10	AC-1
7	15/1	0.58	1.00	0.58	EF-O2	8		0.10	1.00	0.10	
9	15/1	0.58	1.00	0.58	EF-O3	10	40/2	2.60	1.00	2.60	CU-1
11	25/1	1.94	1.00	1.94	EF-O4	12		2.60	1.00	2.60	
13	20/1	1.50	1.00	1.50	EUH-2	14	20/1				SPARE
15	20/1	1.50	1.00	1.50	EUH-3	16	20/1				SPARE
17	20/1				SPARE	18	20/1				SPARE
19	20/1				SPARE	20					SPACE
21	20/1				SPARE	22					SPACE
23					SPACE	24					SPACE
25					SPACE	26					SPACE
27					SPACE	28					SPACE
29					SPACE	30					SPACE
31					SPACE	32					SPACE
33					SPACE	34					SPACE
35					SPACE	36					SPACE
37					SPACE	38					SPACE
39					SPACE	40					SPACE
41					SPACE	42					SPACE

Panel ID PANEL OBA (NEW)						Panel Load	Conn. kW	Demand kW	Demand Amps		
Ampere	200A	Voltage	277/480V			Total	106.23	111.07	133.6		
MLO/MB	MLO	Phase	3			Phase A	38.40	39.60	143.0		
Amp AIC	Verify w/ Utility	Wire	4			Phase B	31.78	33.88	122.3		
						Phase C	36.05	37.59	135.7		
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	20/1	1.10	1.25	1.38	LIGHTS 1ST FLOOR - RESTROOMS, MECH RM	2	20/1	0.71	1.25	0.89	LIGHTS 2ND FLOOR - BREAK RM, OPEN AREA
3	20/1	1.14	1.25	1.43	LIGHTS 1ST FLOOR - OPEN OFFICE, LAB, VES	4	20/1	1.25	1.25	1.56	LIGHTS 2ND FLOOR - OFFICES, CONF RM, RR
5	20/1	0.17	1.25	0.21	LIGHTS - COVERED PARKING AREA	6	20/1	3.50	1.00	3.50	FT-ELEC-1
7	35/1	7.10	1.00	7.10	VAV 1-1-1	8	20/1	3.50	1.00	3.50	FT-ELEC-2
9	20/1	3.90	1.00	3.90	VAV 1-1-2	10	20/1	3.50	1.00	3.50	FT-ELEC-3
11	20/1	4.30	1.00	4.30	VAV 1-1-3	12	25/1	4.79	1.00	4.79	EUH-1
13	20/1	1.80	1.00	1.80	VAV 1-1-4	14	20/1	3.00	1.25	3.75	POLE LIGHTS
15	35/1	7.80	1.00	7.80	VAV 1-2-1	16	20/1	3.00	1.25	3.75	POLE LIGHTS
17	20/1	2.80	1.00	2.80	VAV 1-2-2	18	20/1	3.00	1.25	3.75	POLE LIGHTS
19	/	4.00	1.00	4.00	FOUNTAIN PUMP	20	20/1	4.00	1.00	4.00	EXISTING (ON)
21	20/3	4.00	1.00	4.00		22	20/1	3.00	1.25	3.75	POLE LIGHTS
23	/	4.00	1.00	4.00		24	20/1	3.00	1.25	3.75	POLE LIGHTS
25	20/1	2.50	1.00	2.50	VAV 1-2-3	26		1.69	1.00	1.69	
27	20/1	2.50	1.00	2.50	VAV 1-2-4	28	20/3	1.69	1.00	1.69	EUH-5
29	20/1	2.70	1.00	2.70	VAV 1-2-5	30		1.69	1.00	1.69	
31	25/1	5.00	1.00	5.00	VAV 1-2-6	32					SPACE
33					SPACE	34					SPACE
35					SPACE	36					SPACE
37					SPACE	38	20/1	4.00	1.00	4.00	EXISTING (ON)
39					SPACE	40					SPACE
41	30/1	6.10	1.00	6.10	WH-1	42					SPACE

Panel ID PANEL OBB-1 (NEW)					Panel Load Conn. kW Demand kW Demand Amps						
Ampere	400A	Voltage	120/208V		Total	38.48		38.86	107.9		
MLO/MB	MLO	Phase	3		Phase A	12.58		12.96	108.0		
Amp AIC	Verify w/ Utility	Wire	4		Phase B	13.00		13.00	108.3		
					Phase C	12.90		12.90	107.5		
CB #	Brkr	Conn. kW	Factor	Demand kW	Description	CB #	Brkr	Conn. kW	Factor	Demand kW	Description
1	20/1	0.72	1.00	0.72	REC - MAINTENANCE SUPERVISOR 205	2	20/1	1.00	1.00	1.00	REC - OPEN AREA 201
3	20/1	0.36	1.00	0.36	REC - MAINTENANCE SUPERVISOR 205	4	20/1	0.90	1.00	0.90	COPIER - OPEN AREA 201
5	20/1	0.36	1.00	0.36	REC - OPERATIONS SUPERVISOR 204	6	20/1	0.90	1.00	0.90	REC - BREAK ROOM 206
7	20/1	0.72	1.00	0.72	REC - OPERATIONS SUPERVISOR 204	8	20/1	1.00	1.00	1.00	COUNTER REC - BREAK ROOM 206
9	20/1	0.18	1.00	0.18	REC - UNISEX RESTROOM 203	10	20/1	1.20	1.00	1.20	COUNTER REC - BREAK ROOM 206
11	20/1	0.36	1.00	0.36	REC - CONFERENCE ROOM 202	12	20/1	1.00	1.00	1.00	MICROWAVE - BREAK ROOM 206
13	20/1	1.08	1.00	1.08	REC - CONFERENCE ROOM 202	14	20/1	1.00	1.00	1.00	REFRIGERATOR - BREAK ROOM 206
15	20/1	1.08	1.00	1.08	REC - PLANT MANAGER 209	16	20/1	0.72	1.00	0.72	REC - ENVIRONMENTAL COORD. 207
17	20/1	0.90	1.00	0.90	REC - PLANT MANAGER 209	18	20/1	0.36	1.00	0.36	REC - ENVIRONMENTAL COORD. 207
19	20/1	0.18	1.00	0.18	REC - SCADA 208	20	20/1	1.50	1.25	1.88	FOUNTAIN CLOCK & LIGHTS
21	20/1	0.18	1.00	0.18	REC - SCADA 208	22	20/1	0.72	1.00	0.72	REC - OPEN OFFICE 102
23	20/1	0.18	1.00	0.18	REC - SCADA 208	24	20/1	0.72	1.00	0.72	REC - OPEN OFFICE 102
25	20/1	0.72	1.00	0.72	REC - OUTSIDE WEST POLE (EXISTING)	26	20/1	0.90	1.00	0.90	REC - OPEN OFFICE 102
27	20/1	0.54	1.00	0.54	REC - OUTSIDE EAST POLE (EXISTING)	28	20/1	1.50	1.00	1.50	WASHER
29	20/1	0.18	1.00	0.18	REC - SCADA 208	30		2.50	1.00	2.50	DRYER
31	20/1	0.36	1.00	0.36	REC - SCADA 208	32		2.50	1.00	2.50	
33	20/1	0.54	1.00	0.54	REC - SCADA 208	34	20/1	0.54	1.00	0.54	REC - VESTIBULE 100
35	20/1	0.18	1.00	0.18	REC - WOMEN'S RR/LOCKERS 107	36	20/1	0.54	1.00	0.54	REC - MECHANICAL ROOM 108
37	20/1	0.18	1.00	0.18	REC - MEN'S RESTROOM 105	38	20/1	0.72	1.00	0.72	REC - MECHANICAL ROOM 108
39	20/1	0.54	1.00	0.54	REC - MEN'S LOCKERS 104	40		4.00	1.00	4.00	
41	20/1	0.72	1.00	0.72	EXTERIOR RECEPTACLES	42	50/2	4.00	1.00	4.00	RANGE - BREAK ROOM 206

PANEL OBB-2 FEEDS PANEL OBB-1.



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WESTERN REGIONAL WATER RECLAMATION FACILITY OPERATIONS AND MAINTENANCE BUILDINGS RENOVATION

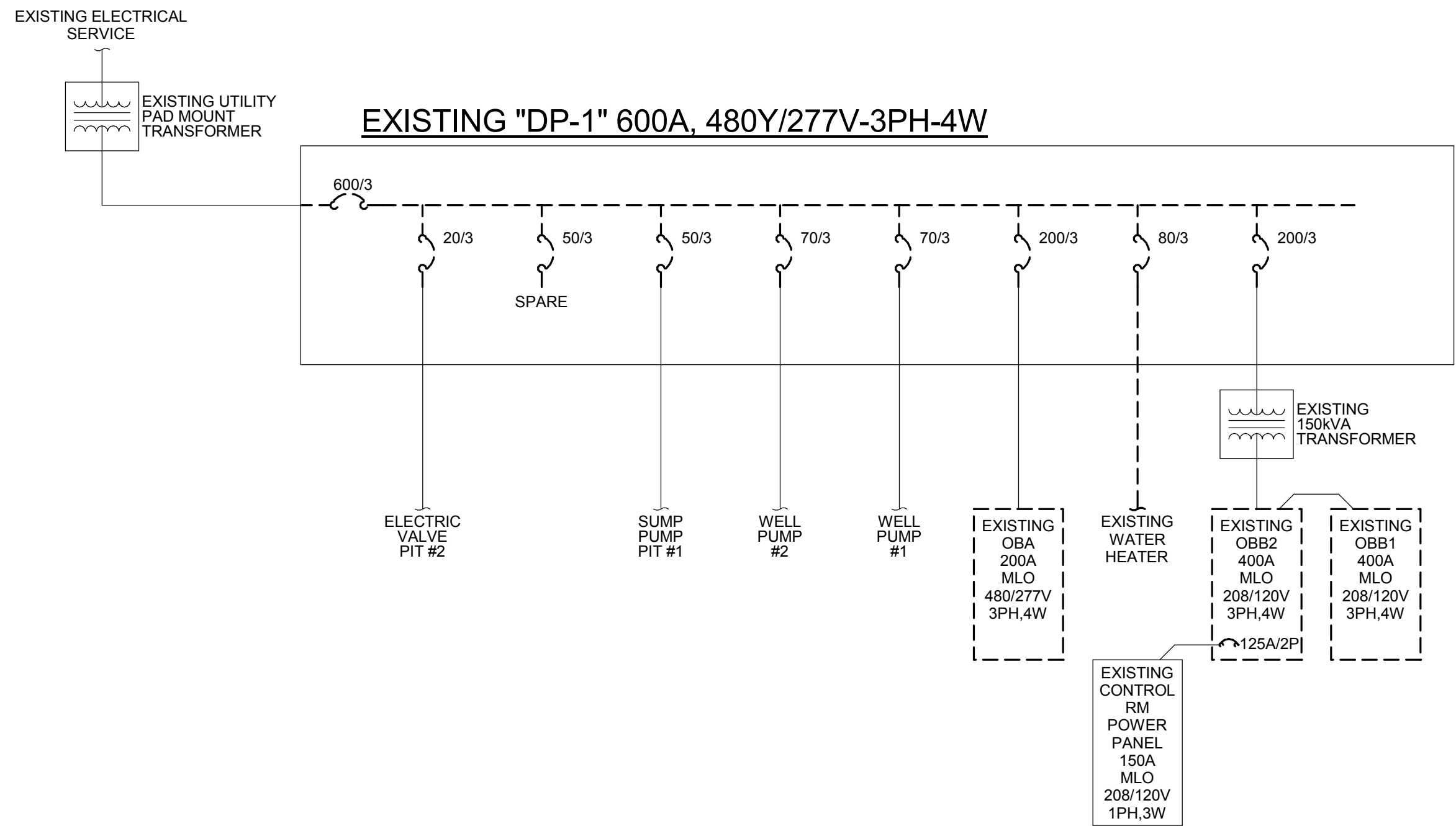
**4117 HYDRAULIC RD
DAYTON, OHIO 45449**



ELECTRICAL SINGLE LINE DIAGRAMS

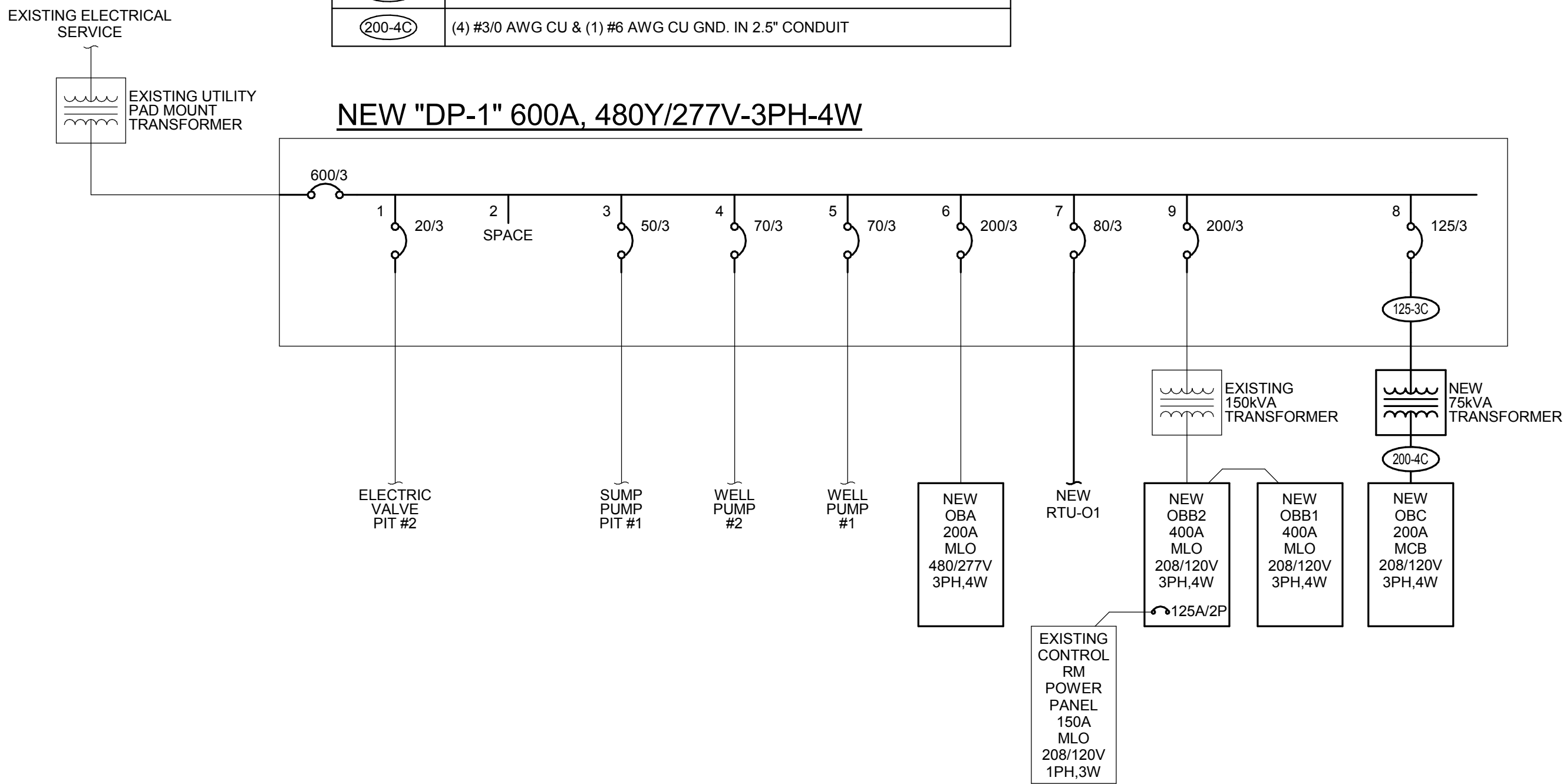
E603

	FEEDER SCHEDULE
DESCRIPTION	WIRE AND CONDUIT SIZE
40-3C	(3) #8 AWG CU & (1) #10 AWG CU GND. IN 0.75" CONDUIT
100-4C	(4) #1 AWG CU & (1) #6 AWG CU GND. IN 2" CONDUIT
125-3C	(3) #1/0 AWG CU & (1) #6 AWG CU GND. IN 2" CONDUIT
200-4C	(4) #3/0 AWG CU & (1) #6 AWG CU GND. IN 2.5" CONDUIT



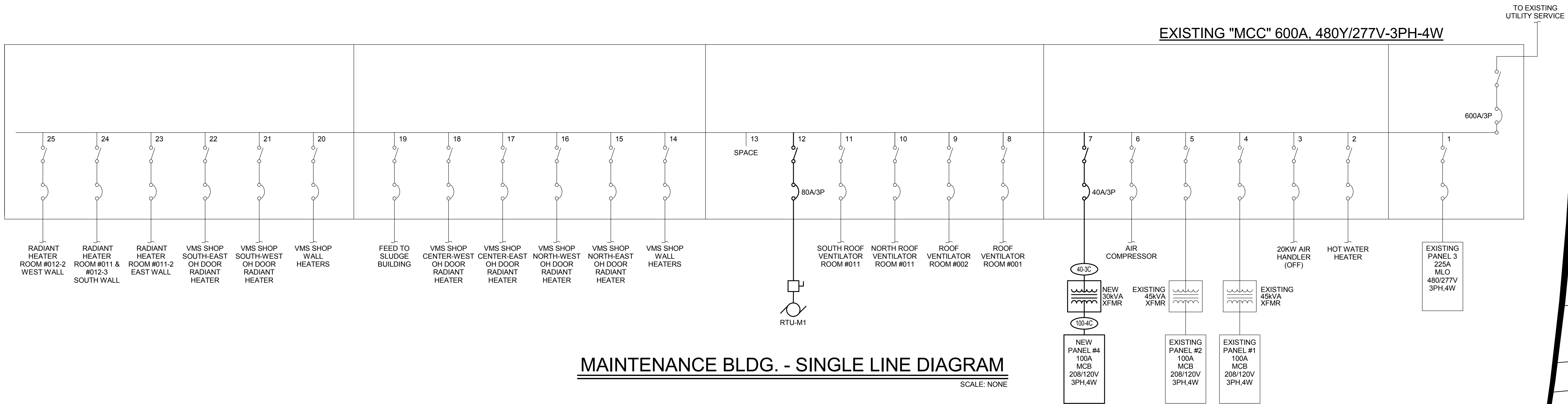
OPERATIONS BLDG. - DEMO SINGLE LINE DIAGRAM

SCALE: NONE



OPERATIONS BLDG. - NEW SINGLE LINE DIAGRAM

SCALE: NONE



MAINTENANCE BLDG. - SINGLE LINE DIAGRAM

SCALE: NONE



1785 S. METRO PARKWAY
CENTERVILLE, OH 45459
WWW.TRI-TECH.US

TT PROJECT #: 24288

937.306.1 63C
800.334.1 63C

800.334.1630

MOTORS, STARTERS, DISCONNECTS, AND CONTROLS																																																	
MOTOR										STARTER										DISCONNECT MEANS										CONTROL					FEEDER				NOTES										
MOTOR NUMBER	SERVICE	CHARACTERISTICS							BUILDING	LOCATION	NEMA SIZE	TYPE							LOCATION					FURNISHED BY	TYPE					LOCATION					FURNISHED BY	INTERLOCK WITH MOTOR NO. BY E.C.	MANUAL AT STARTER	LEVEL CONTROL PANEL		BY H.C.	SEE NOTE	# OF CONDUCTORS	WIRE SIZE	GROUND SIZE	CONDUCT SIZE				
		HP (KVA OR FLA)	120VAC - 1Ø	240VAC - 1Ø	208VAC - 1Ø	208VAC - 3Ø	277VAC - 1Ø	480VAC - 1Ø				480VAC - 3Ø	MANUAL	MAGNETIC BRIDGE	MOTOR OVERLOAD	2 SPEED 2 WINDING	MAGNETIC REVERSING	VFD	SEE NOTE	NEAR MOTOR	MOTOR CONTROL CENTER	EQUIPMENT CONTROL CENTER	ON COLUMN IN ROOM NUMBER		SEE NOTE	DISCONNECT SWITCH	MANUAL STARTER	RECEPTACLE	FEEDER SWITCH ON BREAKER	VFD	NEAR MOTOR	MOTOR CONTROL CENTER	EQUIPMENT CONTROL CENTER	PANEL BOARD												SEE NOTE			
AC-1	AIR CONDITIONING UNIT #1	1 MCA			X				OPERATIONS BUILDING	SCADA 208				X				X								HC	X						X					EC					X		2	12	12	0.75	
BP-1	BOOSTER PUMP #1	8 MCA	X						MAINTENANCE BUILDING	MECH. RM. M103				X				X									HC	X					X				EC					X		2	12	12	0.75		
CU-1	CONDENSING UNIT #1	25 MCA			X				OPERATIONS BUILDING	ROOF				X				X									HC	X					X				EC				X		2	8	10	0.75	1		
EF-O1	EXHAUST FAN #O1	3.5 MCA	X						OPERATIONS BUILDING	ROOF				X				X									HC	X					X				EC				X		2	12	12	0.75	1,3		
EF-O2	EXHAUST FAN #O2	4.8 MCA	X						OPERATIONS BUILDING	ROOF				X				X									HC	X					X				EC				X		2	12	12	0.75	1,3		
EF-O3	EXHAUST FAN #O3	4.8 MCA	X						OPERATIONS BUILDING	LAB 101				X				X									HC	X					X				EC				X		2	12	12	0.75	3		
EF-O4	EXHAUST FAN #O4	16.2 MCA	X						OPERATIONS BUILDING	LAB 101				X				X									HC	X					X				EC				X		2	10	10	0.75	3		
EF-M1	EXHAUST FAN #M1	4.8 MCA	X						MAINTENANCE BUILDING	ROOF				X				X									HC	X					X				EC				X		2	12	12	0.75	1,3		
EUH-1	ELECTRIC UNIT HEATER #1	17.3 MCA					X		OPERATIONS BUILDING	VESTIBULE 100				X				X									HC	X					X				EC				X		2	10	10	0.75			
EUH-2	ELECTRIC UNIT HEATER #2	12.5 MCA	X						OPERATIONS BUILDING	UNISEX RR 203				X				X									HC	X					X				EC				X		2	12	12	0.75	3		
EUH-3	ELECTRIC UNIT HEATER #3	12.5 MCA	X						OPERATIONS BUILDING	WOMEN'S RR/ LOCKERS 107				X				X									HC	X					X				EC				X		2	12	12	0.75	3		
EUH-4	ELECTRIC UNIT HEATER #4	12.5 MCA	X						MAINTENANCE BUILDING	MEN'S RR/ LOCKERS M107				X				X									HC	X					X				EC				X		2	12	12	0.75	3		
EUH-5	ELECTRIC UNIT HEATER #5	6.1 MCA						X	OPERATIONS BUILDING	MECH. RM. 108				X				X									HC	X					X				EC				X		3	12	12	0.75			
FT-ELEC-1	ELECTRIC FIN TUBE #1	3.5 KW					X		OPERATIONS BUILDING	BREAK ROOM 206				X				X									HC	X					X				EC				X		2	12	12	0.75			
FT-ELEC-2	ELECTRIC FIN TUBE #2	3.5 KW					X		OPERATIONS BUILDING	BREAK ROOM 206				X				X									HC	X					X				EC				X		2	12	12	0.75			
FT-ELEC-3	ELECTRIC FIN TUBE #3	3.5 KW					X		OPERATIONS BUILDING	CONFERENCE RM 202				X				X									HC	X					X				EC				X		2	12	12	0.75			
RP-1	RECIRCULATION PUMP #1	0.38 FLA	X						BOTH BUILDINGS	MECH. RM.108 & M103				X				X									HC			X		X				EC				X		2	12	12	0.75				
RTU-O1	ROOF TOP UNIT #O1	64 MCA						X	OPERATIONS BUILDING	ROOF				X				X									HC	X					X				EC				X		3	6	10	1.25	1		
RTU-M2	ROOF TOP UNIT #M2	78 MCA						X	MAINTENANCE BUILDING	OUTSIDE				X				X									HC	X					X				EC				X		3	3	8	1.25	1		
WH-1	WATER HEATER #1	6.1 KW					X		OPERATIONS BUILDING	MECH. RM. 108				X				X									HC				X				X		EC				X		2	10	10	0.75			
1-1-1	VAV UNIT #1-1-1	7.1 KW					X		OPERATIONS BUILDING	OPEN OFFICE 102				X				X									HC	X					X				EC				X		2	8	10	0.75			
1-1-2	VAV UNIT #1-1-2	3.9 KW					X		OPERATIONS BUILDING	LAB 101				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-1-3	VAV UNIT #1-1-3	4.3 KW					X		OPERATIONS BUILDING	MECH. RM. 108				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-1-4	VAV UNIT #1-1-4	1.8 KW					X		OPERATIONS BUILDING	MEN'S LOCKER 104				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-2-1	VAV UNIT #1-2-1	7.8 KW					X		OPERATIONS BUILDING	BREAK ROOM 206				X				X									HC	X					X				EC				X		2	8	10	0.75			
1-2-2	VAV UNIT #1-2-2	2.8 KW					X		OPERATIONS BUILDING	ENVIRON. COORD. 207				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-2-3	VAV UNIT #1-2-3	2.5 KW					X		OPERATIONS BUILDING	MAINTENANCE SUPERVISOR 205				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-2-4	VAV UNIT #1-2-4	2.5 KW					X		OPERATIONS BUILDING	OPERATIONS SUPERVISOR 204				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-2-5	VAV UNIT #1-2-5	2.7 KW					X		OPERATIONS BUILDING	PLANT MANAGER 209				X				X									HC	X					X				EC				X		2	12	12	0.75			
1-2-6	VAV UNIT #1-2-6	5.0 KW					X		OPERATIONS BUILDING	OPEN AREA 201				X				X									HC	X					X				EC				X		2	10	10	0.75			
NOTES:																																																	
										1. NEMA 3R DISCONNECT.																																							
										2. REFER TO MECHANICAL DRAWINGS FOR CONTROLS.																																							
										3. TOGGLE TYPE DISCONNECT.																																							