

GREENVILLE - SPARTANBURG INTERNATIONAL AIRPORT

TERMINAL AHU REPLACEMENT

500 AVIATION PARKWAY, GREER, SC. 29651

DRAWING INDEX

PROJECT IMAGE

LOCATION PLAN

GENERAL

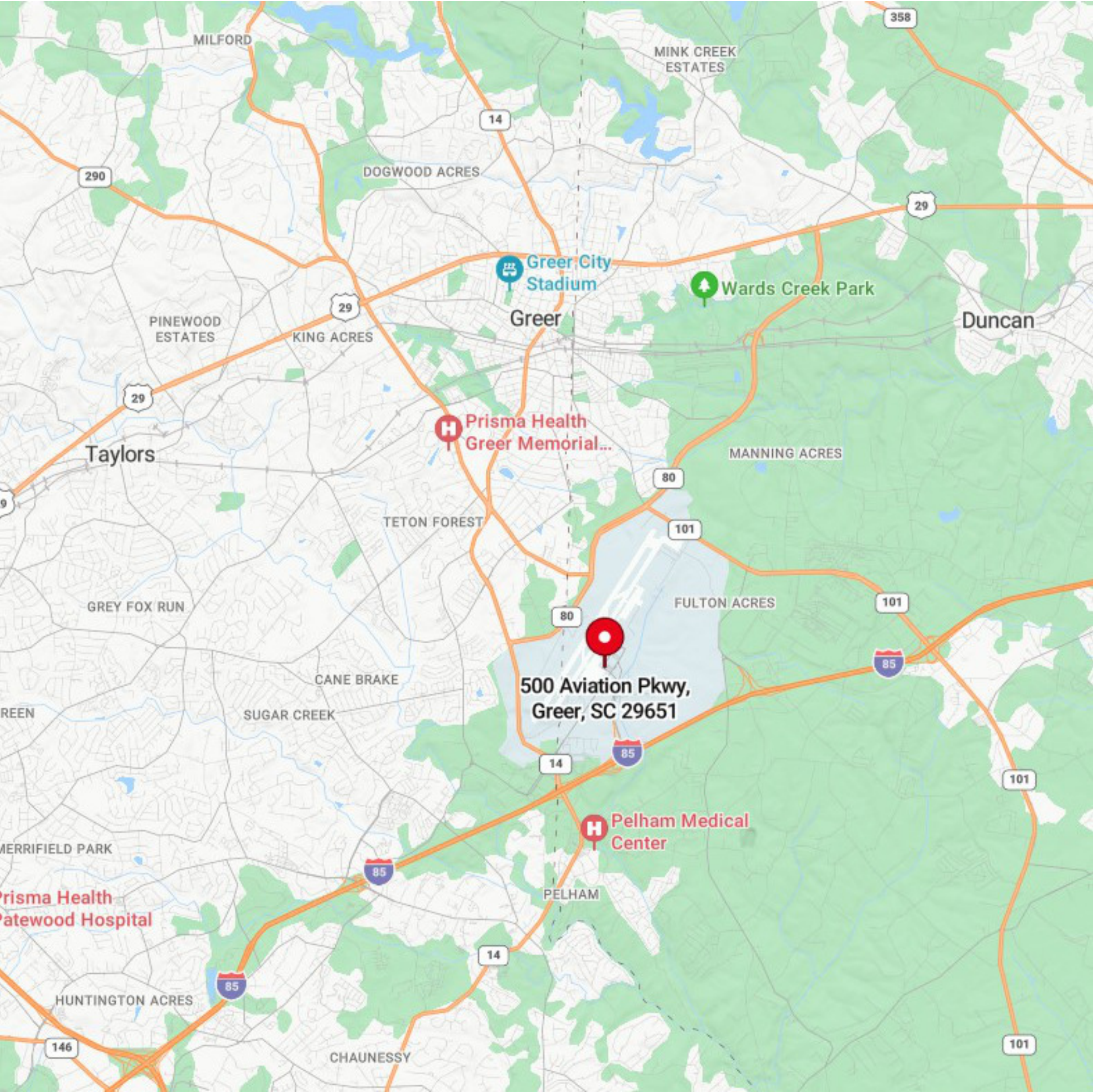
G000 - COVER SHEET

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SUBMISSION

DATE

BID DOCUMENTS

04/23/2025

Stamps:

Electrical:

Mechanical:



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HVAC LEGEND											
DUCT SYMBOL		DESCRIPTION		DUCT SYMBOL		DESCRIPTION		DUCT SYMBOL		DESCRIPTION	
	DUCT - UP THRU ROOF - POSITIVE PRESSURE		DUCT - UP THRU ROOF - NEGATIVE PRESSURE		DUCT - UP - POSITIVE PRESSURE		DUCT - UP - NEGATIVE PRESSURE		DUCT - DOWN - POSITIVE PRESSURE		DUCT - DOWN - NEGATIVE PRESSURE
	DUCT SIZE - FIRST FIGURE IS SIZE SHOWN		FLEXIBLE CONNECTION		ACOUSTICALLY LINED DUCTWORK		FLEXIBLE DUCT		VOLUME DAMPER		FIRE DAMPER
	SMOKE DAMPER		FIRE/SMOKE DAMPER		DUCT SMOKE DETECTOR		CAPPED DUCT		RECTANGULAR ELBOW WITH TURNING VANES		RADIUS ELBOW (MIN R/W = 1.5)
	SQUARE TO ROUND BRANCH DUCT		DUCT TRANSITION FROM RECTANGULAR TO ROUND		DUCT TRANSITION FROM RECTANGULAR TO RECTANGULAR		CEILING GRILLE (G) REGISTER (R)		CEILING DIFFUSER (D)		LINEAR DIFFUSER (D)
	DOOR LOUVER OR UNDERCUT		ROOF EXHAUST FAN		NON-POWERED ROOF VENTILATOR		THERMOSTAT		TEMPERATURE SENSOR		REMOVE EXISTING EQUIPMENT
	EXISTING EQUIPMENT TO REMAIN		NEW EQUIPMENT		FIN TUBE RADIATION WITH ENCLOSURE		FIN TUBE RADIATION BARE ELEMENT		VIBRATION ISOLATOR		UNIT HEATER
	POINT OF CONNECTION/DISCONNECTION		WALL REGISTER OR GRILLE		AIR FLOW		PIPE RISER		PIPE DROP		BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION		FLANGE CONNECTION		UNION CONNECTION		PIPE ANCHOR		PIPE GUIDE		PREMANUFACTURED EXPANSION LOOP
	FLEXIBLE CONNECTOR		DIRECTION OF FLUID FLOW		PITCH PIPING DOWN		PIPING REDUCER - CONCENTRIC		PIPING REDUCER - ECCENTRIC		PIPE CAP/ PLUG
	THERMOMETER		VACUUM BREAKER		2-WAY CONTROL VALVE		SOLENOID - ELECTRIC - ON/OFF		GATE VALVE		GLOBE VALVE
	TRIPLE DUTY VALVE		OPEN BUTTERFLY VALVE		CLOSED BUTTERFLY VALVE		PRESSURE REDUCING VALVE		STRAINER		FUSIBLE LINK VALVE
	BALANCE VALVE		CIRCULATING PUMP		AQUASTAT		PRESSURE GAUGE		PRESSURE SENSOR		PRESSURE SWITCH
	DIAL THERMOMETER		MANUAL AIR VENT		AUTOMATIC AIR VENT		FLOW METER		TEMPERATURE WELL		PRESSURE/TEMPERATURE PLUG
	BACKFLOW PREVENTER		STEAM TRAP		BALL VALVE - OPEN		BALL VALVE - CLOSED		CHECK VALVE		RELIEF VALVE
	3-WAY CONTROL VALVE (DIVERTING APPLICATION)		3-WAY CONTROL VALVE (MIXING APPLICATION)		FLOW SWITCH						
ABBREVIATION		DESCRIPTION		ABBREVIATION		DESCRIPTION		ABBREVIATION		DESCRIPTION	
AAD	AUTOMATIC DAMPER	DIA.	DIAMETER	FPM	FEET PER MINUTE	MAU	MAKE UP AIR UNIT	ATV	ATMOSPHERIC VENT		
ACU	AIR CONDITIONING UNIT	DN	DOWN	FSD	FIRE-SMOKE DAMPER (WITH ACCESS DOOR)	MAX	MAXIMUM	BBD	BOILER BLOW DOWN		
AD	ACCESS DOOR	DWG	DRAWING	FT or '	FEET (OF HEAD)	MBH	THOUSAND BTUH	CD	CONDENSATE DRAIN		
AFF	ABOVE FINISH FLOOR	DX	DIRECT EXPANSION	FTR	FIN TUBE RADIATION	MC	MECHANICAL CONTRACTOR	G	NATURAL GAS		
AHU	AIR HANDLING UNIT	(E)	EXISTING	G	GRILLE	MCA	MINIMUM CIRCUIT AMPACITY	HWS	HOT WATER SUPPLY		
APD	AIR PRESSURE DROP IN. WG	EA	EXHAUST AIR	GAL	GALLONS	MIN	MINIMUM	HWR	HOT WATER RETURN		
ATU	AIR TERMINAL UNIT	EAT	ENTERING AIR TEMPERATURE (°F)	GC	GENERAL CONSTRUCTION CONTRACTOR	NC	NORMALLY CLOSED	MU	MAKE UP WATER		
AWT	AVERAGE WATER TEMPERATURE	EC	ELECTRICAL CONTRACTOR	GPH	GALLONS PER HOUR	NIC	NOT IN CONTRACT	PD	PUMPED DISCHARGE		
BAS	BUILDING AUTOMATION SYSTEM	EDB	ENTERING DRY BULB	GPM	GALLONS PER MINUTE	NO	NORMALLY OPEN	RS	REFRIGERANT SUCTION		
BDD	BACK DRAFT DAMPER	EF	EXHAUST FAN	HP	HORSEPOWER	NTS	NOT TO SCALE	RL	REFRIGERANT LIQUID		
BFS	BOILER FEED STATION	EFF	EFFICIENCY	HWR	HOT WATER RETURN	OA	OUTDOOR AIR	GWS	GLYCOL WATER SUPPLY		
BHP	BRAKE HORSEPOWER	ESP	EXTERNAL STATIC PRESSURE	HWS	HOT WATER SUPPLY	PC	PLUMBING CONTRACTOR	GWR	GLYCOL WATER RETURN		
BTU	BRITISH THERMAL UNIT	EWB	ENTERING WET BULB (°F)	KW	KILOWATTS	PD	PRESSURE DROP	CHWS	CHILLED WATER SUPPLY		
BTUH	BRITISH THERMAL UNITS PER HOUR	EWT	ENTERING WATER TEMPERATURE (°F)	L	LOUVER	PRV	PRESSURE REDUCING VALVE	CHWR	CHILLED WATER RETURN		
CFM	CUBIC FEET PER MINUTE	F	FAN	LAT	LEAVING AIR TEMPERATURE (°F)	PSI	POUNDS PER SQUARE INCH				
CIR	CAST IRON RADIATION	°F	DEGREES FAHRENHEIT	LBS	POUNDS	RA	RETURN AIR / RELIEF AIR				
CU	CONDENSING UNIT	FA	FREE AREA (SQ. FT.)	LD	LOUVER/DAMPER	RTU	ROOF TOP UNIT				

GSP SAFETY AND SECURITY GUIDELINES
CONTRACTOR MUST COMPLY WITH GSP SAFETY AND SECURITY GUIDELINES MANUAL.

CONTRACTOR MUST COMPLY WITH GSP SAFETY AND SECURITY GUIDELINES MANUAL.

GENERAL NOTES:

1. THESE GENERAL MECHANICAL NOTES SHALL APPLY TO ALL M SERIES DRAWINGS, IN COORDINATION WITH DIVISION 23 SECTIONS, AND FRONT END (DIVISION 0 AND 1) REQUIREMENTS. ALL WORK ASSOCIATED WITH THE M SERIES DRAWINGS SHALL BE COORDINATED WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. ALL WORK SHALL BE PERFORMED IN COOPERATION WITH THE OWNER (AND/OR OWNER'S REPRESENTATIVE) AND THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE CONSTRUCTION SCHEDULE ESTABLISHED BY THE OWNER AND ARCHITECT, AND SHALL IMMEDIATELY REPORT ANY DELAYS IN MATERIALS RECEIPT INCLUDING CIRCUMSTANCES CAUSING DELAYS.
3. CONTRACT DRAWINGS FOR THE MECHANICAL WORK ARE DIAGRAMMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND TO INDICATE THE GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EQUIPMENT, DUCTWORK, PIPING, AND ACCESSORIES. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND VERIFYING ALL CONDITIONS, DIMENSIONS, AND LOCATIONS PRIOR TO BIDDING PROJECT. CHECK PROJECT DRAWINGS PRIOR TO INSTALLATION FOR INTERFERENCES WITH OTHER TRADES. SHOULD THE CONTRACTOR FIND SUCH INTERFERENCES, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING HIS WORK WITH OTHERS. THE OWNER RESERVES THE RIGHT TO MAKE REASONABLE CHANGES PRIOR TO ROUGH-IN WITHOUT ADDITIONAL EXPENSE. * UNLESS OTHERWISE NOTED, CONTRACTORS ARE SUBJECT TO VERIFICATION OF EXACT SITE CONDITIONS AT THE TIME OF INSTALLATION.
 - THE CONTRACTOR SHALL INSTALL ALL DUCTWORK, PIPING, EQUIPMENT, ETC. IN A WORKMAN MANNER WITH QUALIFIED CONTRACTORS.
4. ALL MECHANICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MECHANICAL CODE, PLUMBING CODE, HEALTH CODE, FIRE CODE, ENERGY CONSERVATION CODE, AND BUILDING CODE. ALL WORK SHALL COMPLY WITH LOCAL, STATE AND FEDERAL REGULATIONS AND OTHER AUTHORITIES HAVING JURISDICTION.
5. CONTRACTOR RESPONSIBLE FOR PAYING FOR ALL FEES ASSOCIATED WITH OBTAINING PERMITS, INSPECTIONS, ETC.
6. THE MECHANICAL CONTRACTOR SHALL BE LICENSED IN THE LOCAL JURISDICTION PRIOR TO BIDDING ON PROJECT. CONTRACTOR TO CONTACT CITY/TOWNSHIP TO VERIFY LICENSE TO ENSURE THEY ARE CURRENT.
7. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. ANY CONFLICTS WITH INSTALLATION AND MANUFACTURER RECOMMENDATIONS SHALL BE REPORTED TO ENGINEER.
8. CUTTING AND PATCHING
 - CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING THROUGH WALLS, CEILING, ETC. AND FINISHING OF AFFECTED SURFACES, UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THEIR SUBCONTRACTORS.
 - IF, AFTER WORK COMPLETION, AN OPENING IS REQUIRED IN A FINISHED SURFACE DUE TO LACK OF COORDINATION, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CUTTING AND PATCHING AND FOR RESTORING THE FINISHED SURFACE TO ITS PREVIOUS CONDITION.
 - CONTRACTOR IS RESPONSIBLE FOR CUTTING OPENING, REMOVAL OF EXISTING EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SUPPLIED UNDER THE CONTRACT AND PATCHING AND RESTORING THE FINISHED SURFACE TO ITS PREVIOUS CONDITION.
9. FURNISH AND INSTALL ALL NEW EQUIPMENT AND MATERIALS AS DESCRIBED HEREIN. ANY MATERIAL, OPERATION, METHOD, OR DEVICE MENTIONED, LISTED OR NOTED WITHIN THIS SPECIFICATION SHALL BE FURNISHED BY THIS CONTRACTOR UNLESS SPECIFICALLY MENTIONED AS BEING FURNISHED OR INSTALLED BY OTHERS.
10. ALL PIPING AND DUCT PENETRATING ALL FIRE-RATED WALLS, CEILING, FLOORS, ROOFS, ETC. SHALL BE FIRE STOPPED IN ACCORDANCE WITH DIVISION 7.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE COMPLETE AND OPERABLE SYSTEMS, INCLUDING OPERATIONAL PROPERTIES TO THE EXTEND NECESSARY TO LINK MULTIPLE COMPONENTS OF THE SYSTEMS TOGETHER AND TO INTERFACE WITH SYSTEMS PROVIDED BY OTHERS. THE MECHANICAL CONTRACTOR SHALL GUARANTEE ALL SYSTEMS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
 - THE CONTRACTOR SHALL PROVIDE OWNER WITH ALL NECESSARY OPERATION AND MAINTENANCE MANUALS, SHOP DRAWINGS, WIRING DIAGRAMS, AS-BUILT DRAWINGS, AND WARRANTY PAPERWORK UPON COMPLETION OF THE PROJECT.
12. THE CONTRACTOR IS RESPONSIBLE FOR TESTING, AND ADJUSTING ALL MECHANICAL EQUIPMENT INDICATED IN THE MECHANICAL DRAWINGS.
13. ALL PIPING PENETRATIONS THROUGH EXPOSED WALLS SHALL BE PROVIDED WITH CHROME SCAFFTUCHONS AND SEAL TO WALL OR CEILING.
14. EQUIPMENT CONNECTIONS:
 - ALL EQUIPMENT SHALL BE PROVIDED WITH UNIONS AND SHUT-OFF VALVES WHETHER DETAILLED OR NOT.
 - ALL MECHANICAL HYDRONIC OR REFRIGERANT EQUIPMENT SHALL BE PROVIDED WITH SHUT OFF VALVES.
15. ALL PENETRATIONS THROUGH ROOFING MEMBRANE AND ROOF DECKING SHALL BE PERFORMED BY AN INSTALLER CERTIFIED BY THE ROOFING SYSTEM MANUFACTURER TO MAINTAIN ROOF SYSTEM WARRANTY.
16. ROOFING PROOFING - IN OR ON STRUCTURES WHERE OPENINGS HAVE BEEN MADE IN FLOORS, CEILING, OR WALLS FOR THE PASSAGE OF DUCT OR PIPE, SUCH OPENINGS SHALL BE CLOSED AND PROTECTED WITH APPROVED METAL COLLARS THAT ARE SECURELY FASTENED TO THE ADJOINING STRUCTURE.
17. STRUCTURAL SAFETY - IN THE PROCESS OF INSTALLING OR REPAIRING ANY PART OF A MECHANICAL SYSTEM, THE FINISHED FLOOR, WALLS, CEILING, TILE OR ANY OTHER PART OF THE BUILDING OR PREMISES THAT MUST BE CHANGED OR REPLACED SHALL REMAIN IN A STRUCTURALLY SAFE CONDITION IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE.
18. PROTECTION OF DUCTS, PIPES AND MECHANICAL SYSTEM COMPONENTS - PIPING, DUCT AND OTHER SYSTEM COMPONENTS SHALL BE INSTALLED IN SUCH A MANNER SO AS TO PREVENT CORROSION, BREAKAGE, FREEZING, AND PHYSICAL DAMAGE BY OTHER BUILDING COMPONENTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE.
19. CONTROL CONTRACTOR RESPONSIBLE FOR ALL ELECTRICAL CIRCUITS TO POWER ALL CONTROL PANELS AND DEVICES.

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AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	SUPPLY AIR C.F.M. COOLING/HEATING	MIN. O.A. C.F.M.	COOLING COIL MBH SENS./TOTAL	HEATING COIL MBH	COOLING COIL EAT/LAT	HEATING COIL MAT/LAT	COOLING COIL GPM	HEATING COIL GPM	SUPPLY FAN								ARRANGEMENT	MOUNTING	PHYSICAL PROPERTIES				DESIGN BASIS	NOTES	
										VOLT/PHASE	QTY.	H.P.	B.H.P.	FAN R.P.M.	E.S.P.	T.S.P.	UNIT MCA			UNIT MOP	LENGTH*	WIDTH*	HEIGHT*			WEIGHT LBS.
AHU-4	CA1004	17,208	-	474.22/668.61	839.79	80/55	45/90	89.0	84.0	460/3	2	10	15.6	1,927	2.0	3.69	35	60	MODULAR	FLOOR	139.2	100.0	70.8	4,188	TRANE CSAA035	1
AHU-5	CA1003	16,270	-	448.37/633.15	794.02	80/55	45/90	84.0	79.5	460/3	2	7.5	14.0	1,859	2.0	3.57	26.25	45	MODULAR	FLOOR	139.2	100.0	70.8	4,120	TRANE CSAA035	1
AHU-6	CA1002	17,208	-	440.87/622.85	839.79	80/55	45/90	89.0	84.0	460/3	2	7.5	13.6	1,927	2.0	3.69	35	60	MODULAR	FLOOR	139.2	100.0	70.8	4,188	TRANE CSAA035	1
AHU-7	CA1001	13,540	-	373.14/528.20	660.79	80/55	45/90	70.0	66.0	460/3	1	15	10.8	1,593	2.0	3.54	26.25	45	MODULAR	FLOOR	138.57	93.5	65.5	3,317	TRANE CSAA030	1
AHU-14	CB1001	13,633	-	375.7/531.79	665.32	80/55	45/90	71.0	66.5	460/3	1	15	10.9	1,601	2.0	3.55	26.25	45	MODULAR	FLOOR	138.57	93.5	65.5	3,317	TRANE CSAA030	1
AHU-15	CB1002	16,270	-	448.37/633.15	794.02	80/55	45/90	84.0	79.5	460/3	2	7.5	14.0	1,855	2.0	3.54	26.25	45	MODULAR	FLOOR	139.2	100.0	70.8	4,152	TRANE CSAA035	1
AHU-16	CB1003	16,039	-	442.00/624.41	782.74	80/55	45/90	83.0	78.0	460/3	2	7.5	13.7	1,839	2.0	3.51	26.25	45	MODULAR	FLOOR	139.2	100.0	70.8	4,150	TRANE CSAA035	1
AHU-17	CB1004	17,099	-	471.21/664.49	834.47	80/55	45/90	88.5	83.5	460/3	2	10	15.4	1,915	2.0	3.64	35	60	MODULAR	FLOOR	139.2	100.0	70.8	4,219	TRANE CSAA035	1
AHU-24	CA1005	19,140	-	527.46/747.67	934.08	80/55	45/90	99.5	93.5	460/3	2	10	16.0	1,671	2.0	3.69	35	60	MODULAR	FLOOR	141.9	112.5	70.8	4,599	TRANE CSAA040	1
AHU-25	CA1006	19,140	-	527.46/747.67	934.08	80/55	45/90	99.5	93.5	460/3	2	10	15.7	1,660	2.0	3.60	35	60	MODULAR	FLOOR	142.0	112.5	70.8	4,635	TRANE CSAA040	1

NOTE:
1. PROVIDE UNIT WITH FACTORY MOUNTED VFD's AND SINGLE POINT POWER CONNECTION.



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SEAL

BID
DOCUMENTS

CLIENT: GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT

500 AVIATION PARKWAY, GREER, SC 29651

PROJECT: TERMINAL AHU REPLACEMENT

DRAWN WAH
DESIGNED MRM
CHECKED MRM
SCALE AS NOTED
DATE 04/23/2025
PROJECT Project Number

NO. DATE REVISIONS

DRAWING TITLE

SCHEDULES

DRAWING NUMBER

M001



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SEAL

BID
DOCUMENTS

CLIENT: GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT

500 AVIATION PARKWAY, GREER, SC 29651

PROJECT: TERMINAL AHU REPLACEMENT

CLIENT:

DRAWN WAH
DESIGNED MRM
CHECKED MRM
SCALE AS NOTED
DATE 04/23/2025
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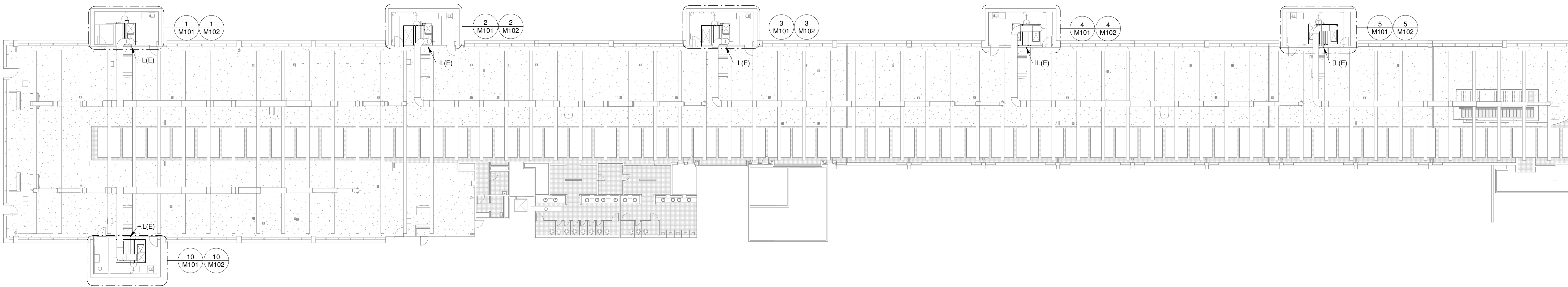
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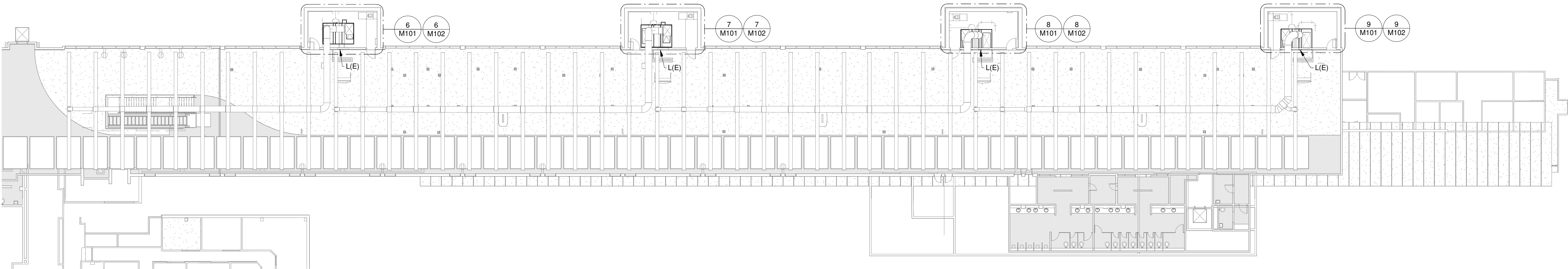
LEVEL 2
MECHANICAL
RENOVATION

DRAWING NUMBER

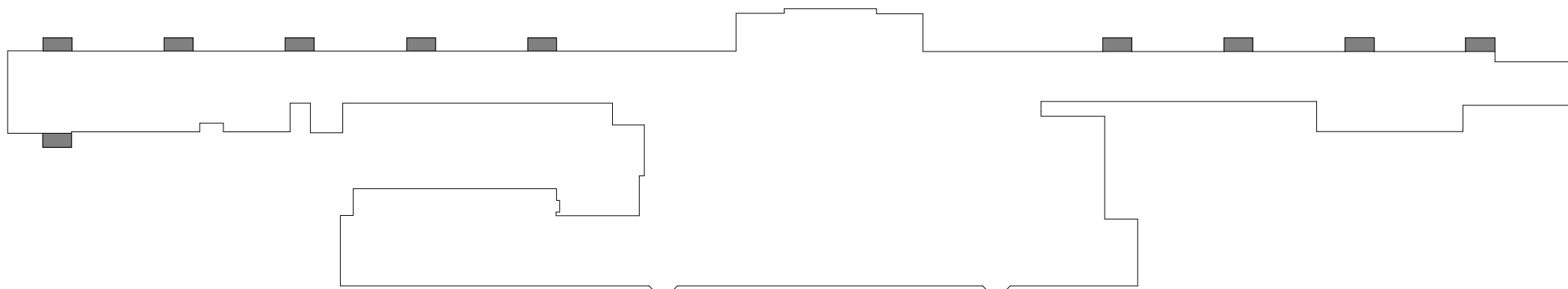
M100



① Level 2 MECHANICAL RENOVATION AREA A
1" = 20'-0"

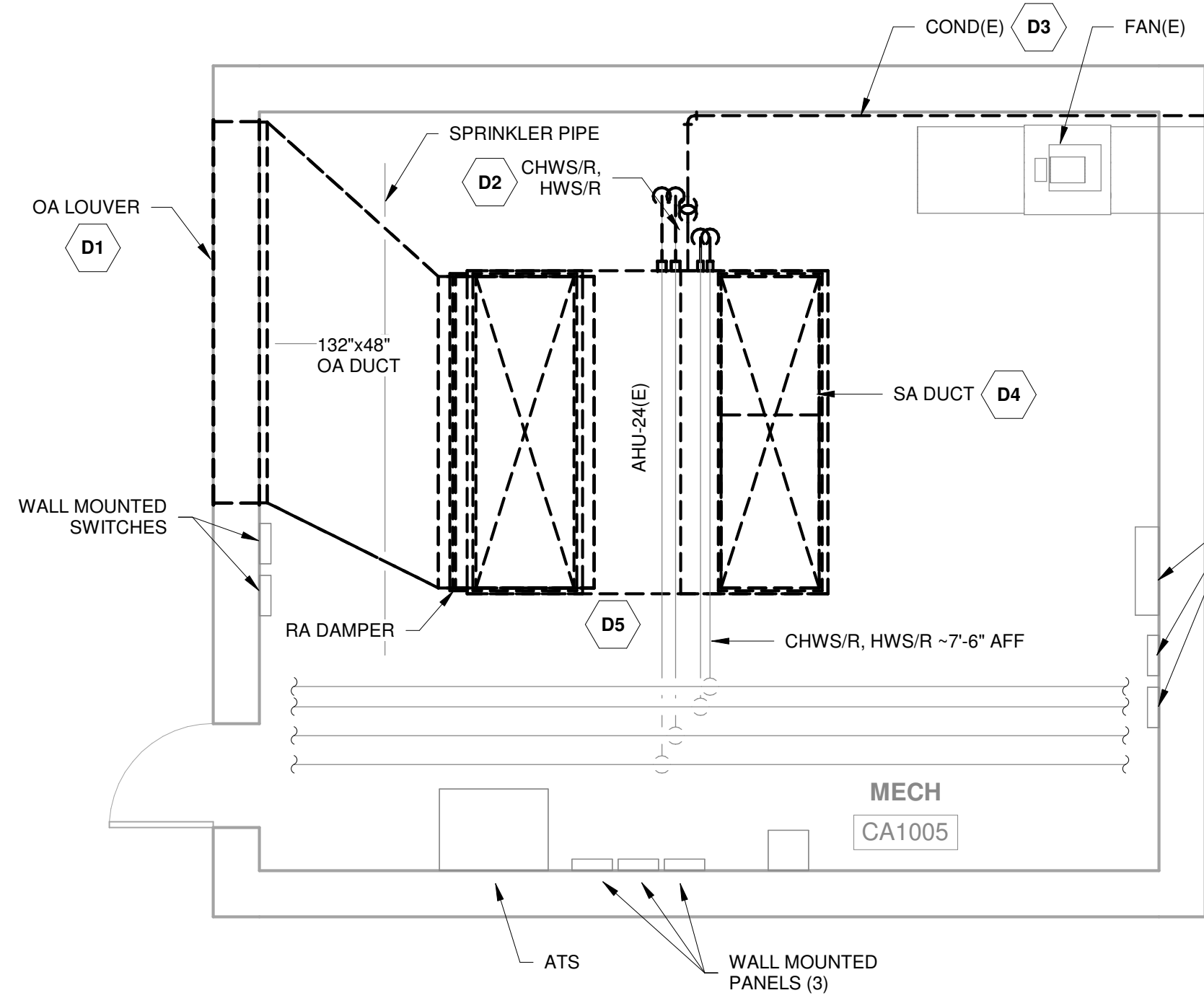


② Level 2 MECHANICAL RENOVATION AREA B
1" = 20'-0"

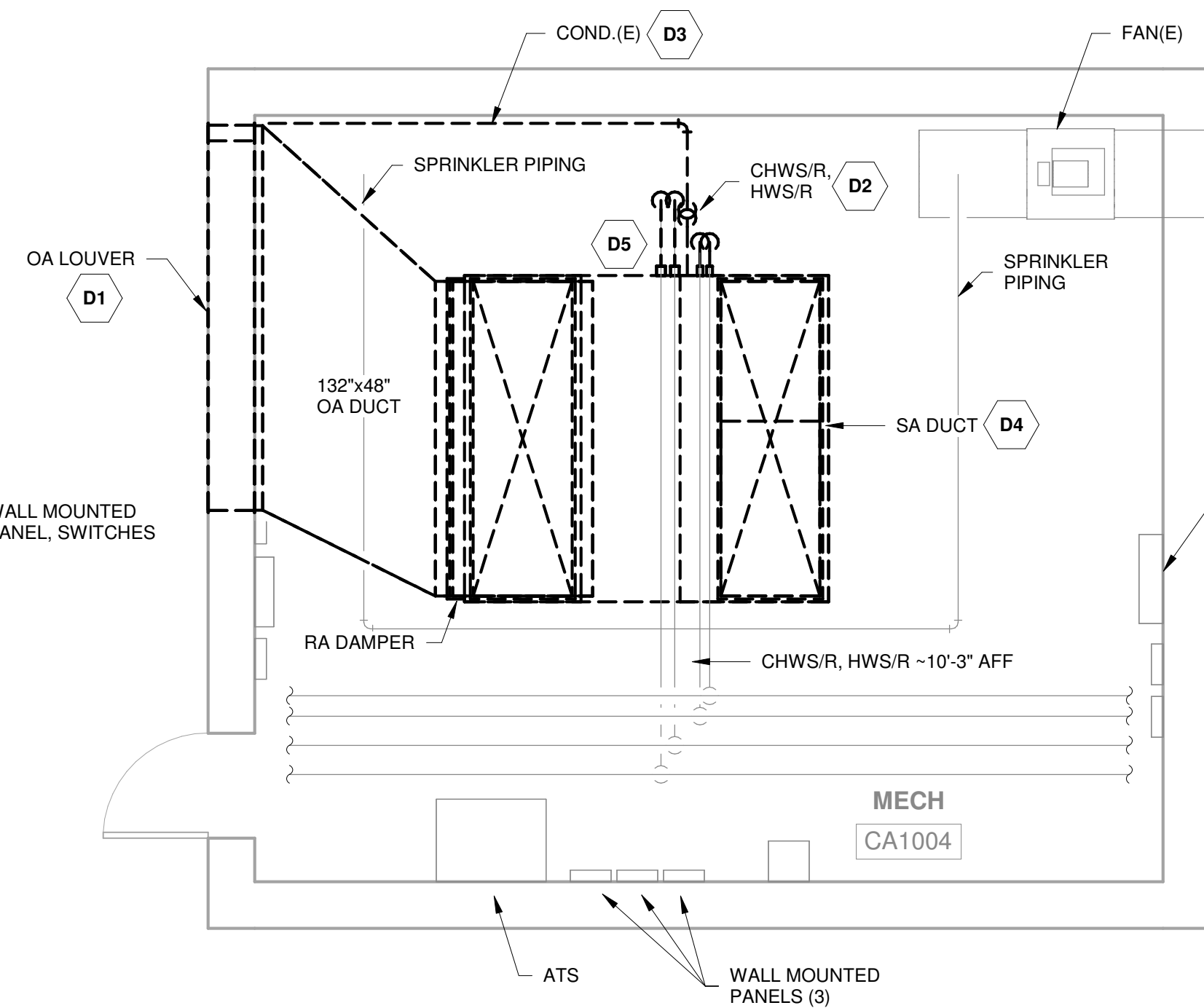


KEY PLAN

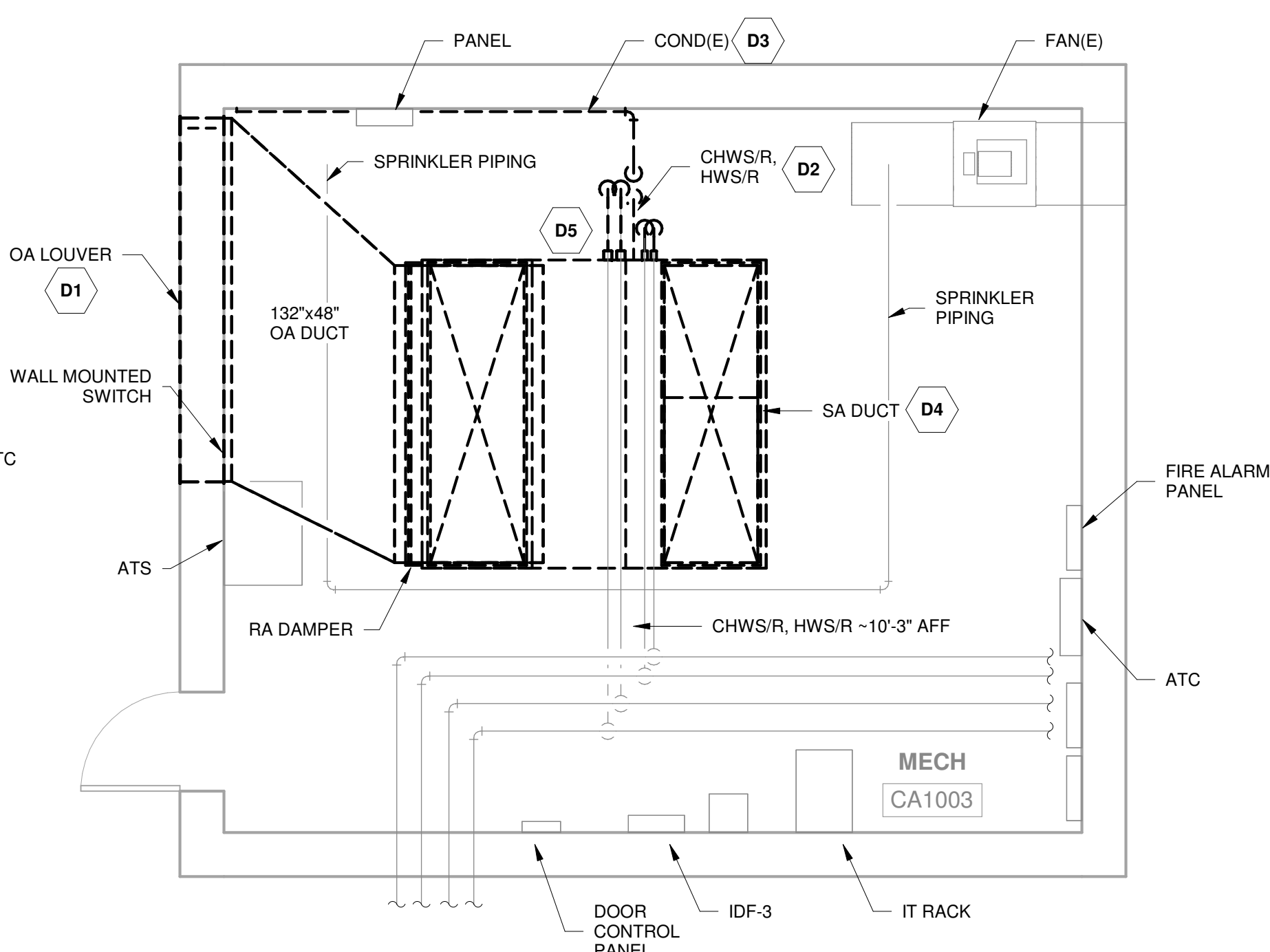
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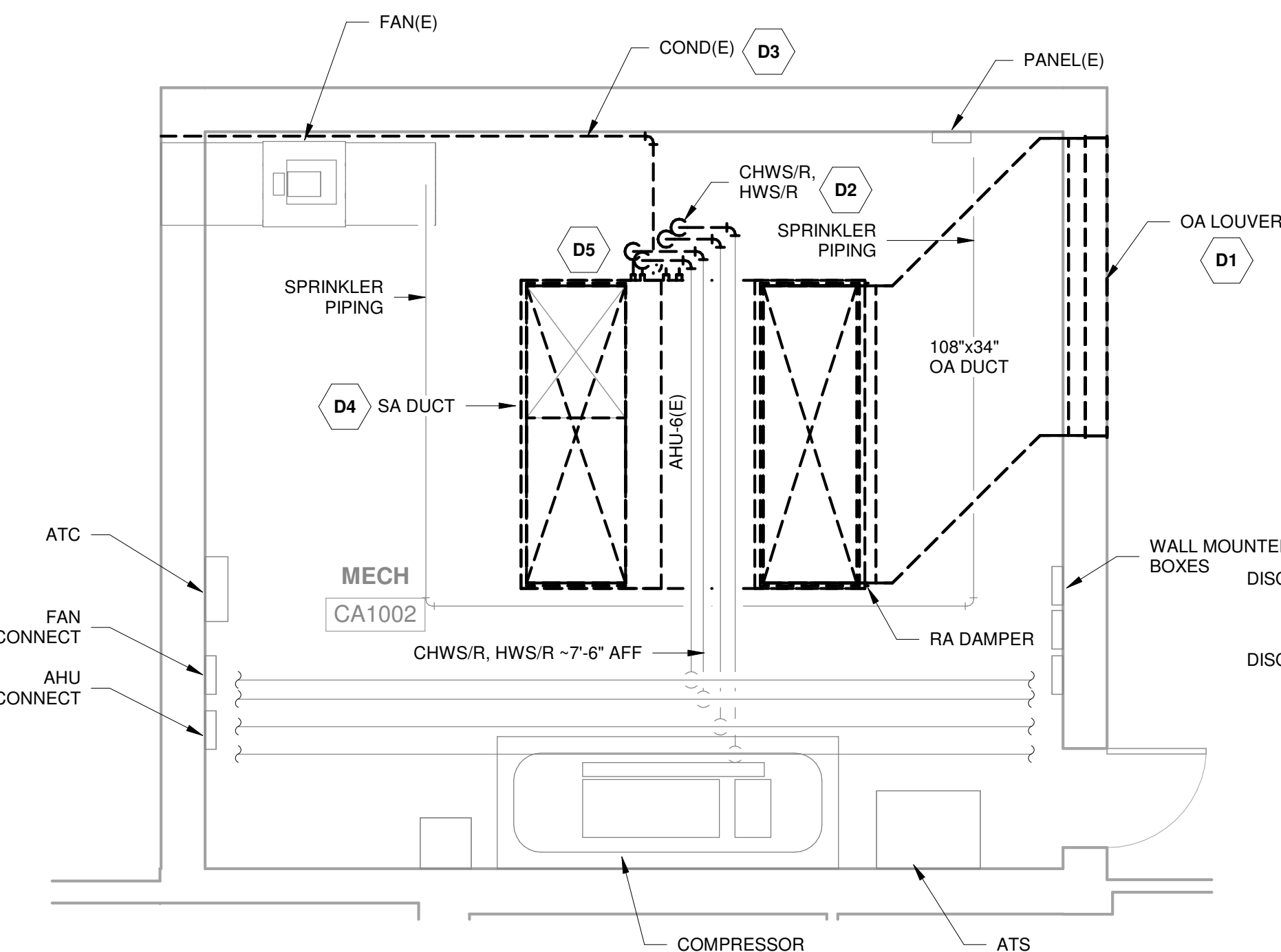
① Level 1 MECHANICAL DEMOLITION - AHU-24(E)
1/4" = 1'-0"



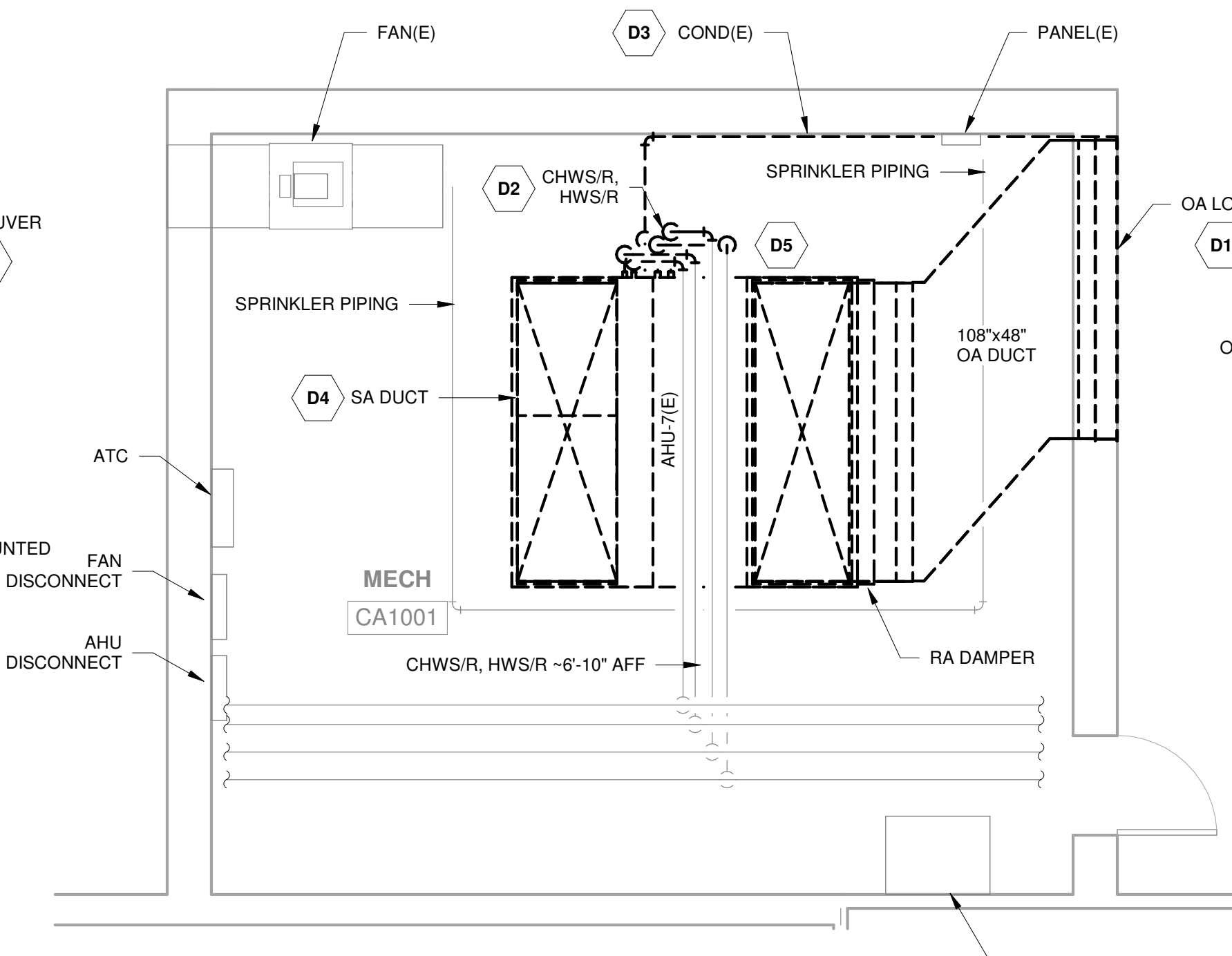
② Level 1 MECHANICAL DEMOLITION - AHU-4(E)
1/4" = 1'-0"



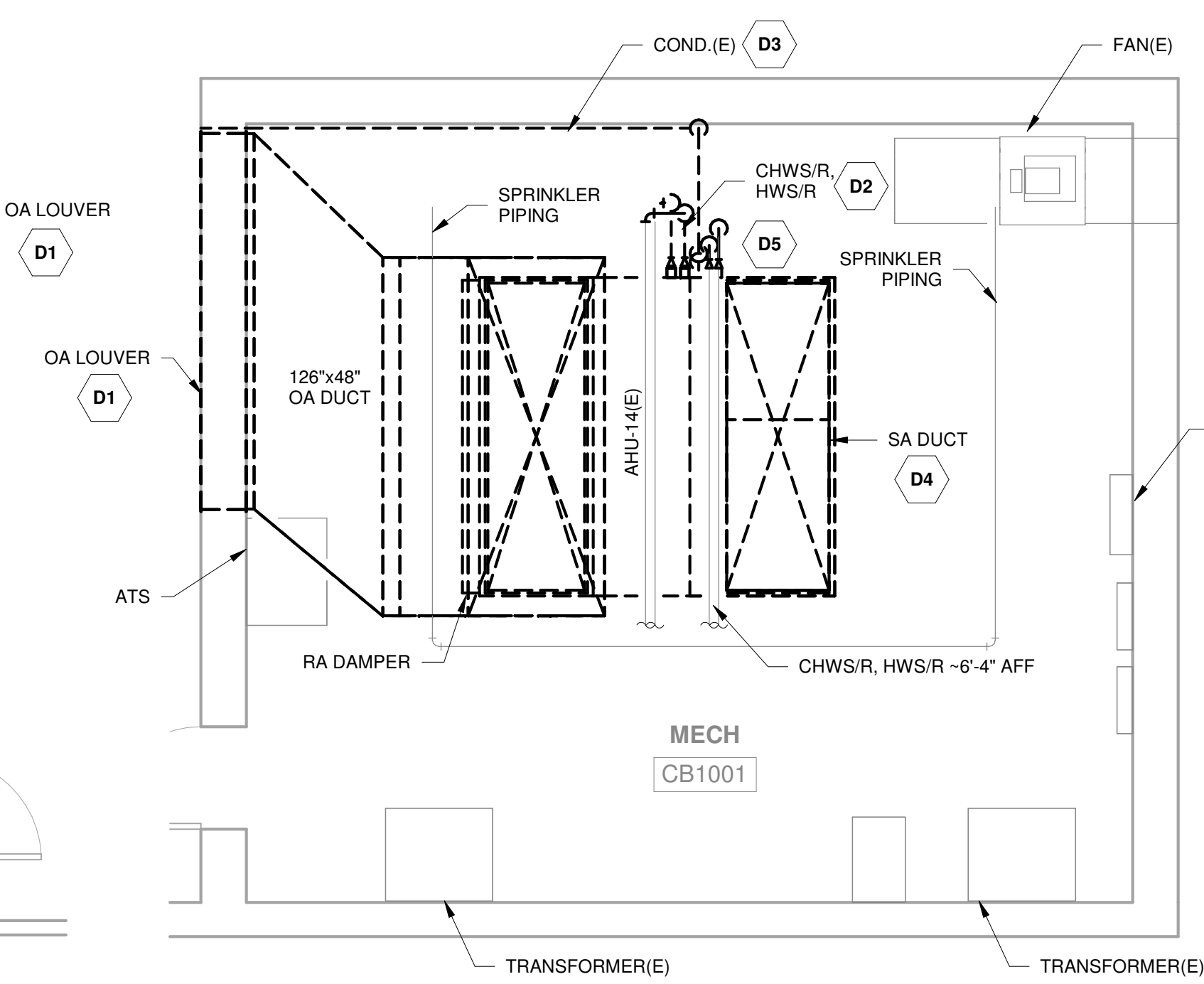
③ Level 1 MECHANICAL DEMOLITION - AHU-5(E)
1/4" = 1'-0"



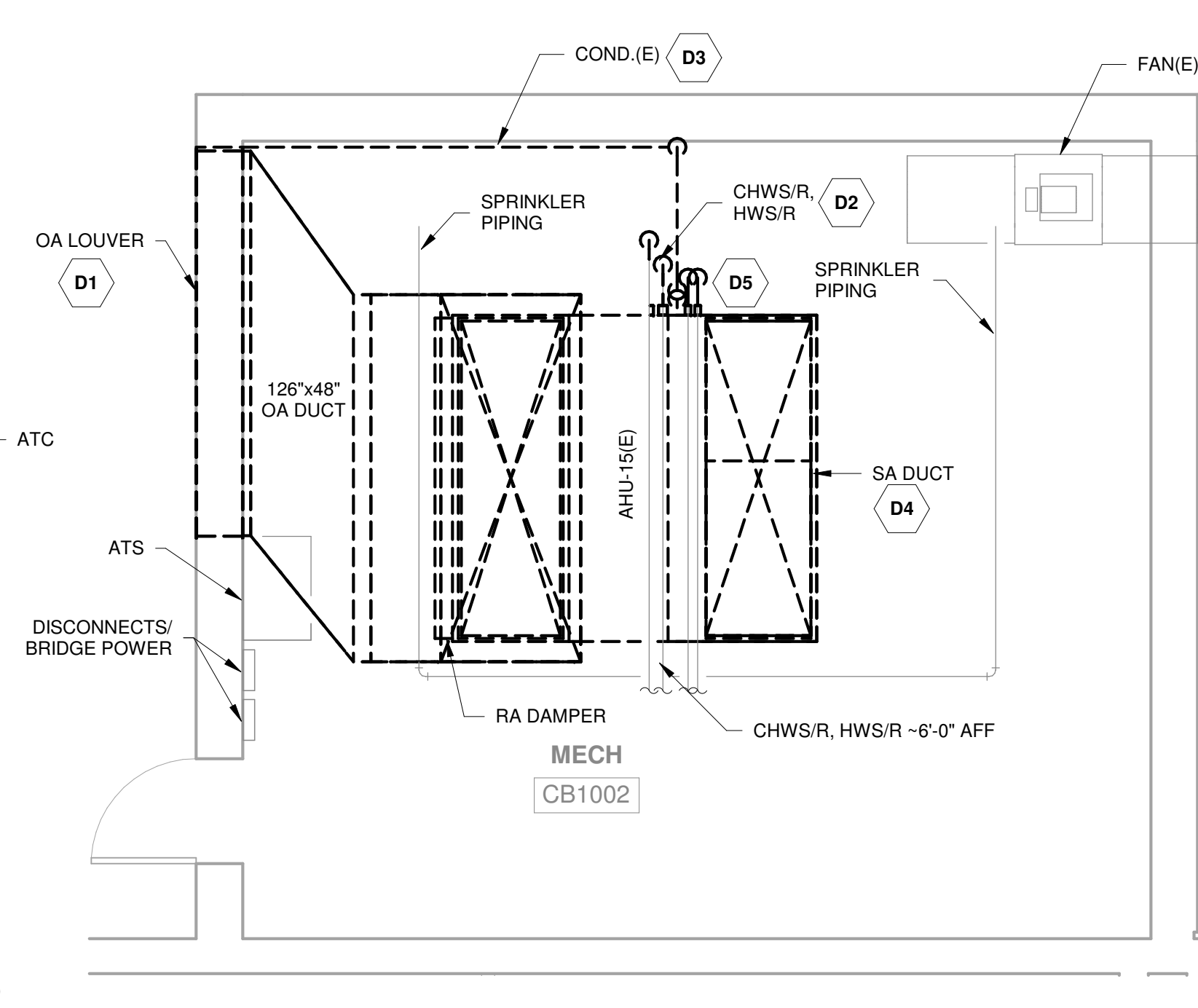
④ Level 1 MECHANICAL DEMOLITION - AHU-6(E)
1/4" = 1'-0"



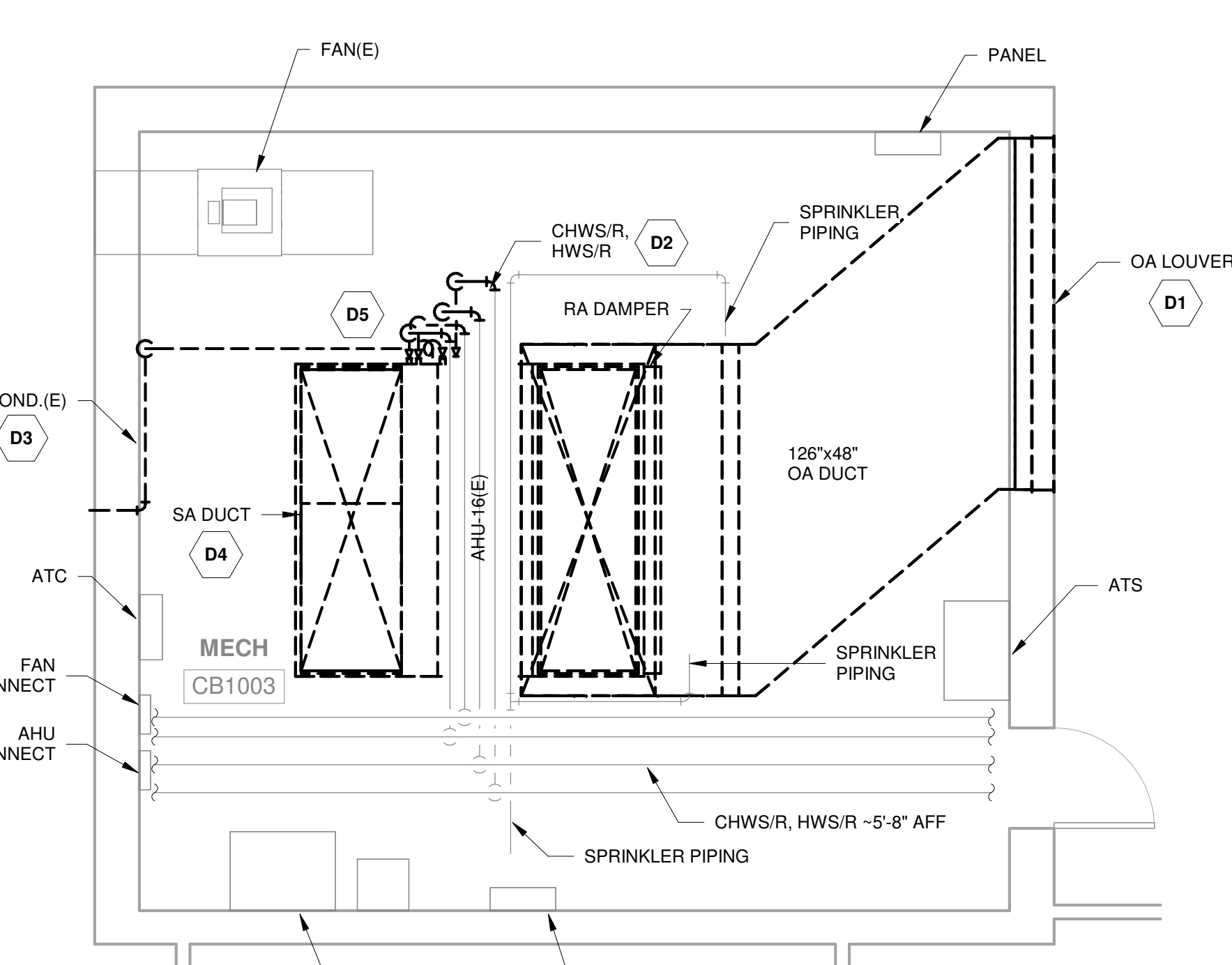
⑤ Level 1 MECHANICAL DEMOLITION - AHU-7(E)
1/4" = 1'-0"



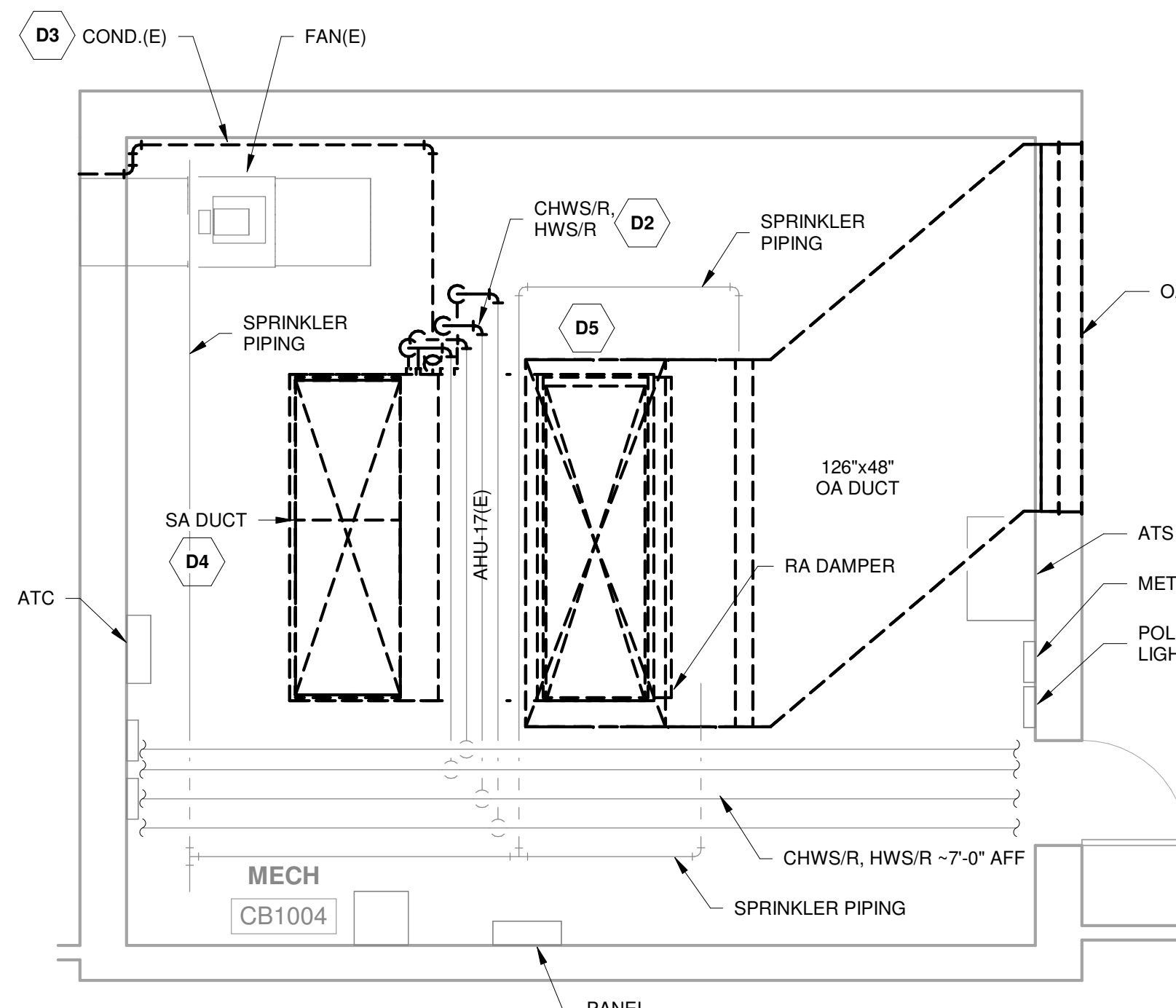
⑥ Level 1 MECHANICAL DEMOLITION - AHU-14(E)
1/4" = 1'-0"



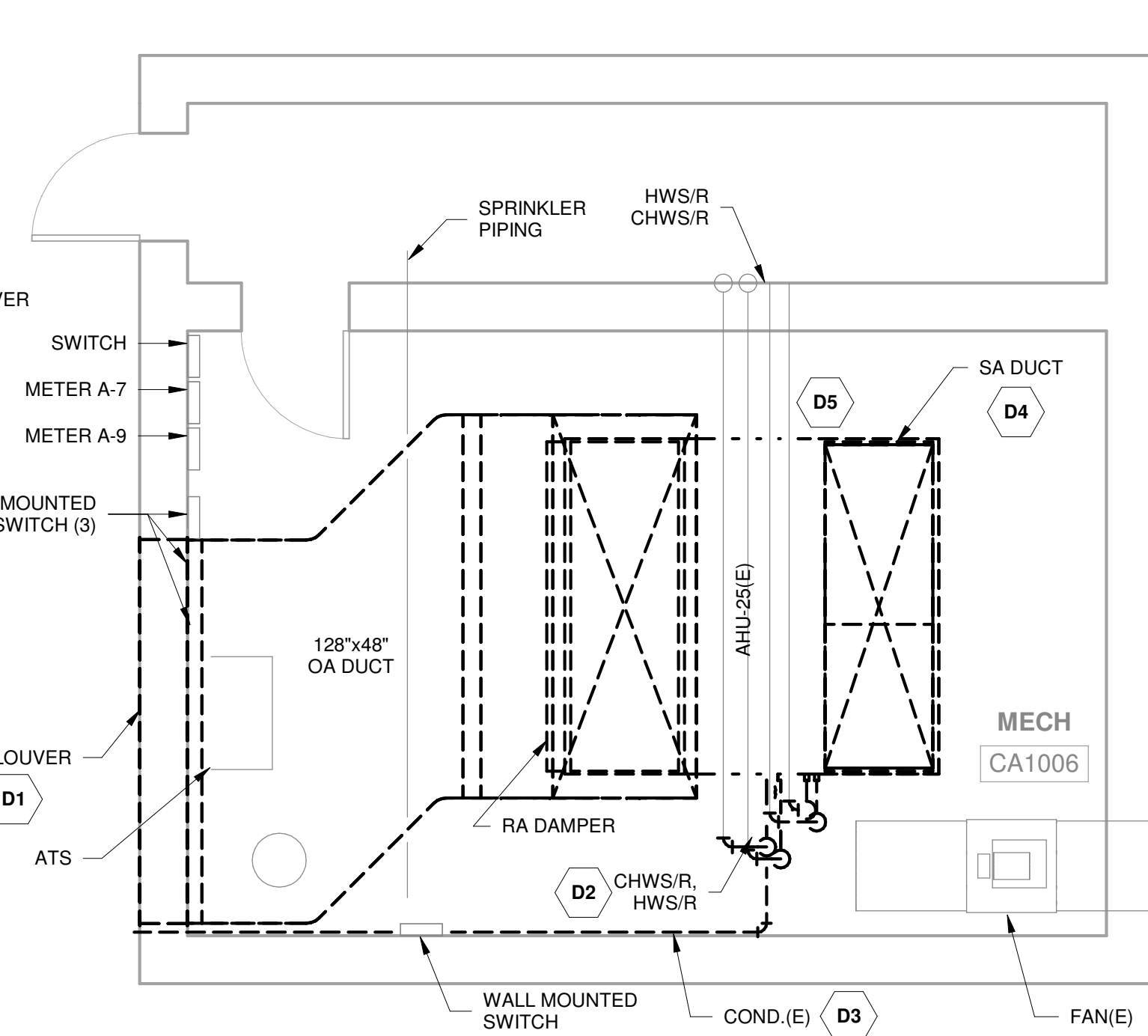
⑦ Level 1 MECHANICAL DEMOLITION - AHU-15(E)
1/4" = 1'-0"



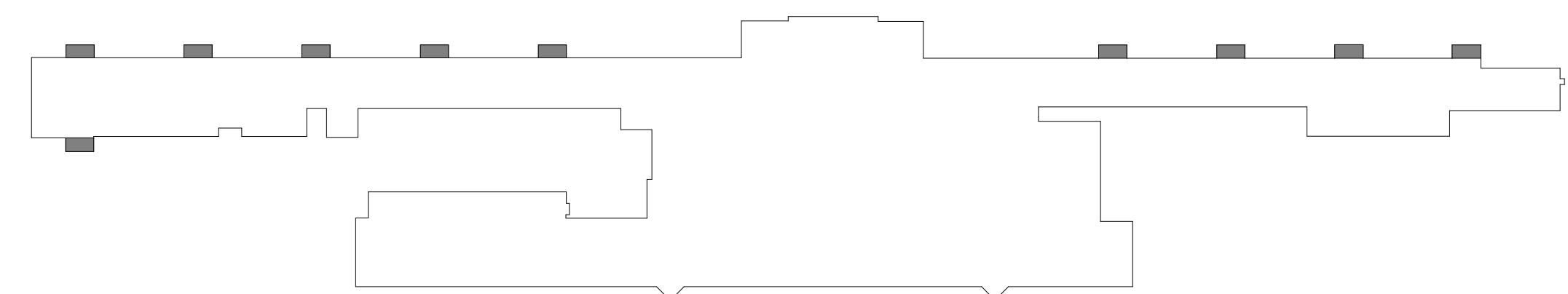
⑧ Level 1 MECHANICAL DEMOLITION - AHU-16(E)
1/4" = 1'-0"



⑨ Level 1 MECHANICAL DEMOLITION - AHU-17(E)
1/4" = 1'-0"



⑩ Level 1 MECHANICAL DEMOLITION - AHU-25(E)
1/4" = 1'-0"



KEY PLAN

MECHANICAL DEMOLITION NOTES

- D1** REMOVE EXTERIOR LOUVER AND PORTION OF WALL BEHIND TO GAIN ACCESS TO UNIT FOR REMOVAL. DISCONNECT AND REMOVE OUTDOOR AIR DUCTING IN ITS ENTIRETY.
- D2** DISCONNECT AND REMOVE CHILLED WATER SUPPLY AND RETURN AND HOT WATER SUPPLY RETURN PIPING BACK TO ISOLATION VALVES. MAINTAIN PIPING LEFT FROM REMOVALS FOR NEW WORK.
- D3** DISCONNECT AND REMOVE CONDENSATE PIPING.
- D4** DISCONNECT AND REMOVE DUCTING TO MINIMUM EXTENT NECESSARY FOR UNIT REMOVAL. MAINTAIN EXISTING DUCTING LEFT FROM REMOVALS FOR NEW WORK.
- D5** DISCONNECT AND REMOVE AHU IN ITS ENTIRETY. MAINTAIN PIPING AND DUCTING LEFT FROM REMOVALS FOR NEW WORK CONNECTIONS.



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SEAL

**BID
DOCUMENTS**

GREENVILLE - SPARTANBURG INTERNATIONAL AIRPORT 500 AVIATION PARKWAY, GREER, SC 29651

TERMINAL AHU REPLACEMENT

CLIENT:

PROJECT:

DRAWN	Author
DESIGNED	Designer
CHECKED	Checker
SCALE	AS NOTED
DATE	04/23/2025
PROJECT	Project Number

NO. DATE REVISIONS

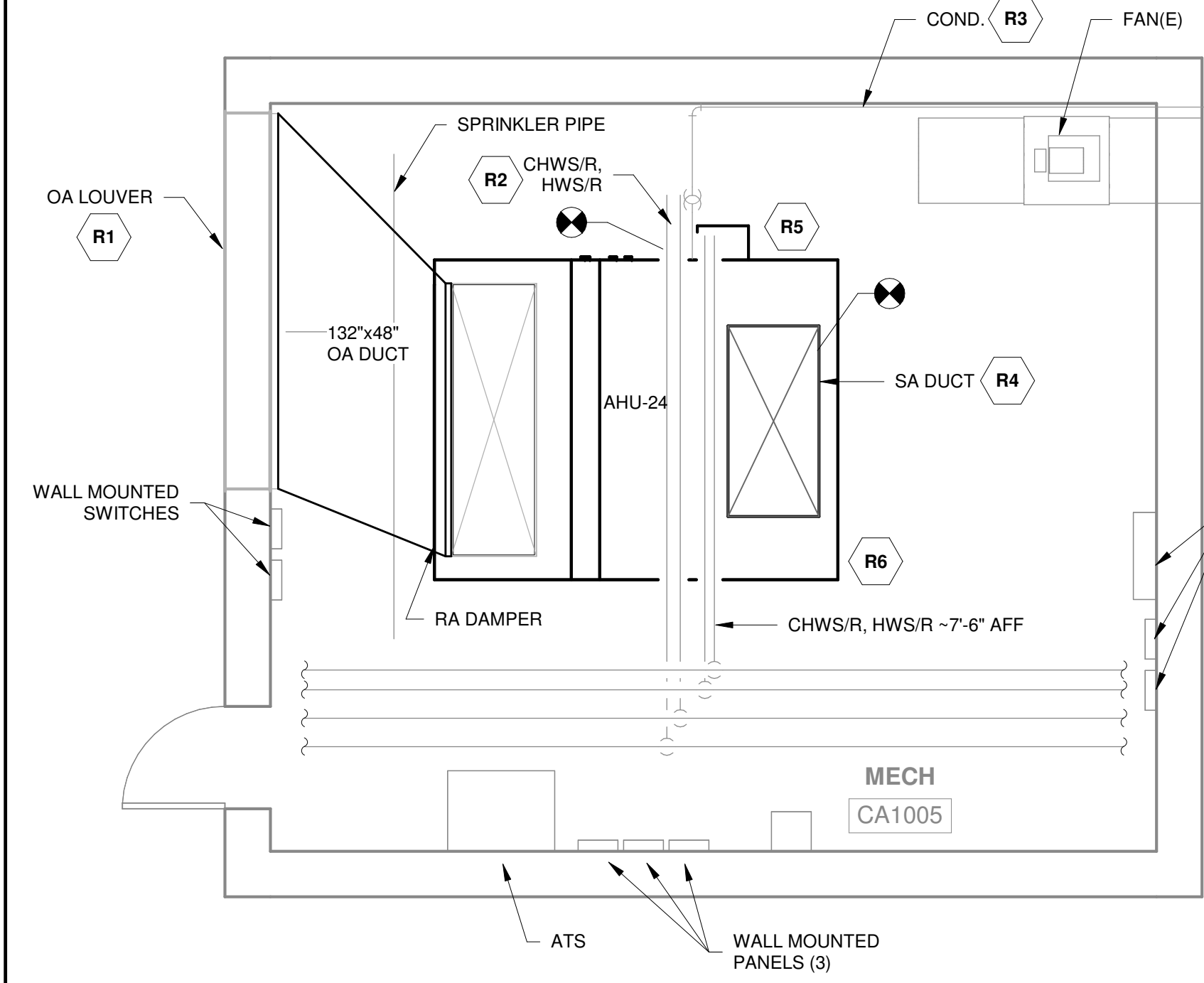
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**ENLARGED
PLANS**

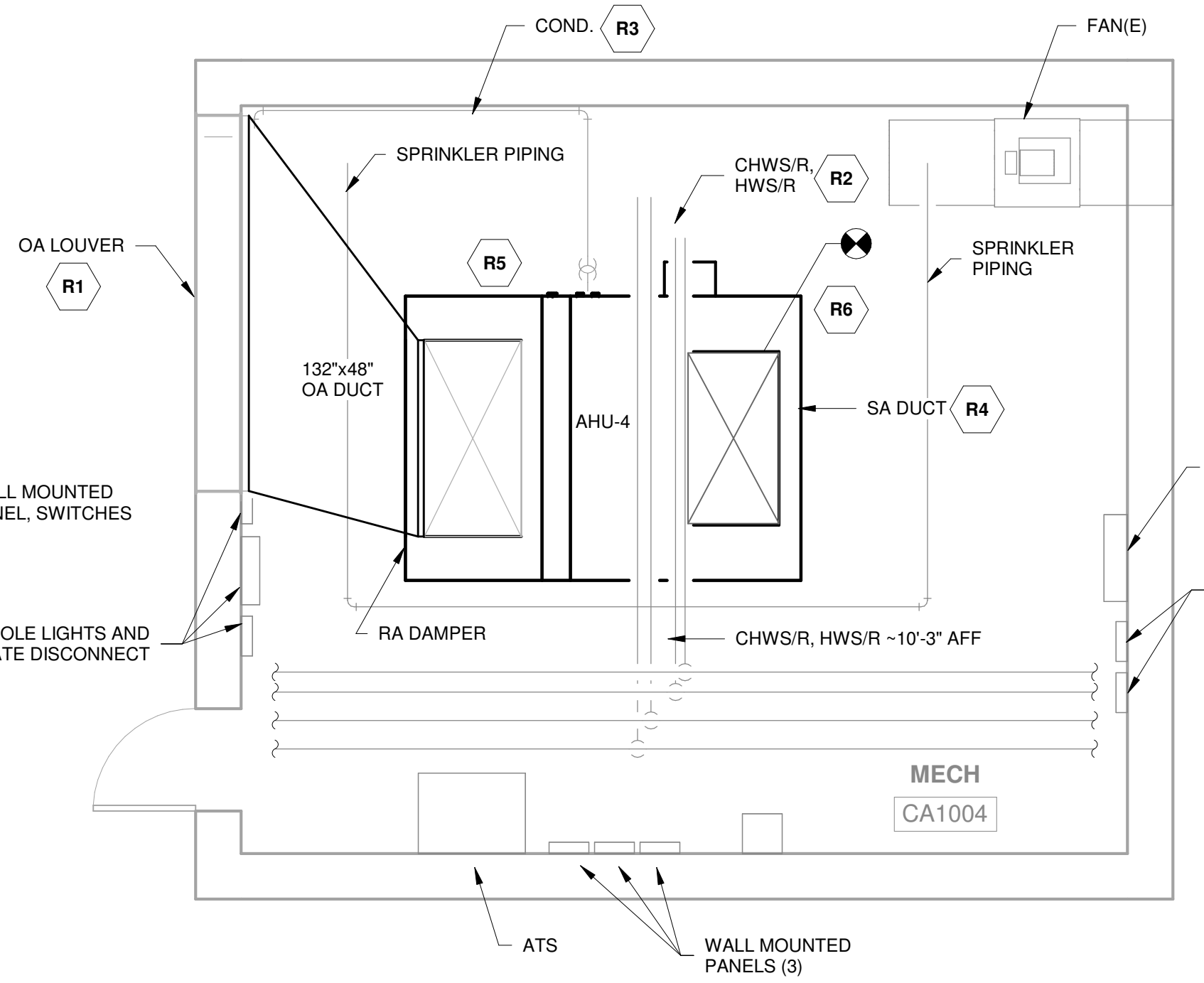
DRAWING NUMBER

M101

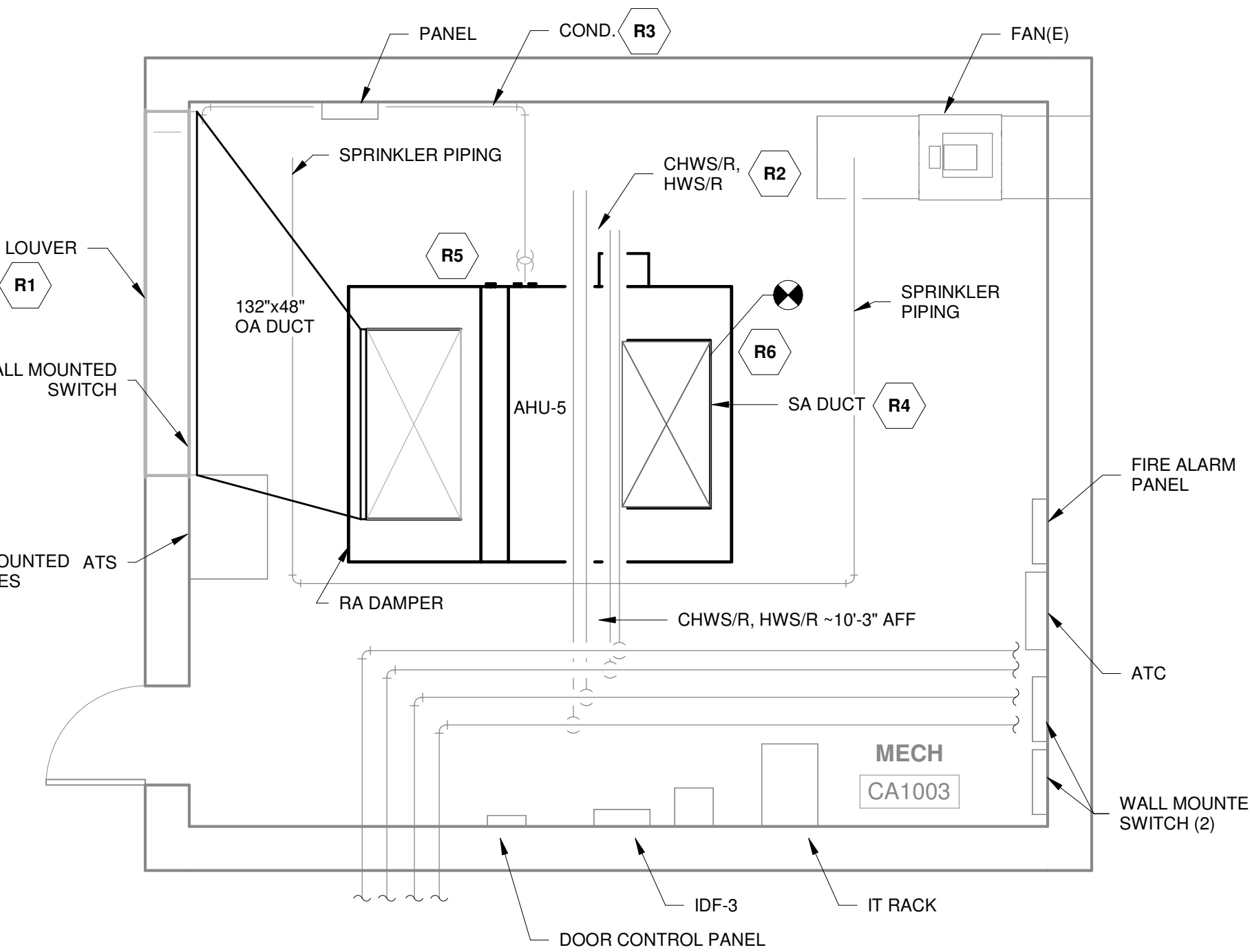
Autodesk Docs (PDF) Terminal RFP110203.02 Greenville-Spartanburg International Airport Terminal RFP110203.02



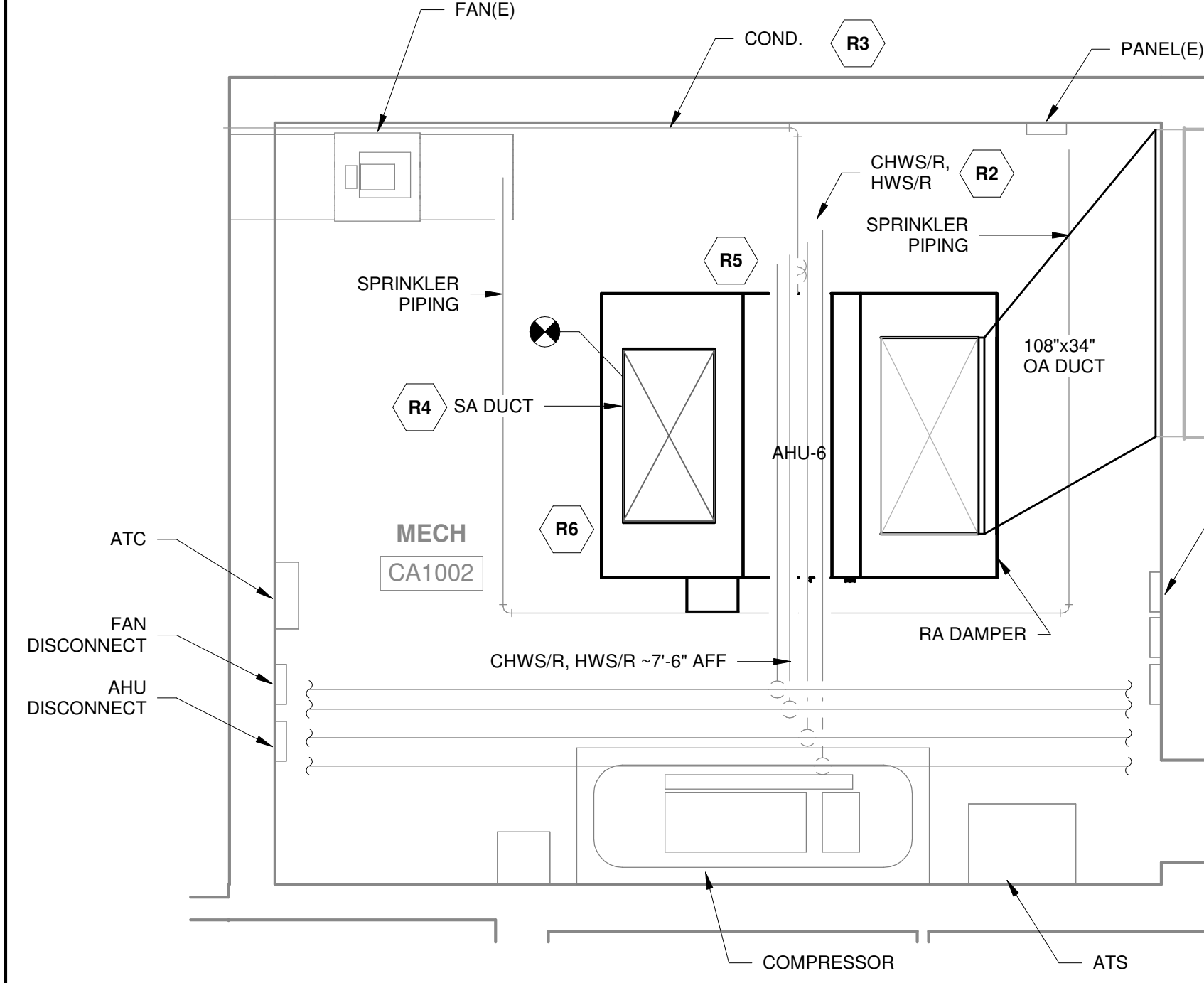
1 Level 1 MECHANICAL RENOVATION - AHU-24
1/4" = 1'-0"



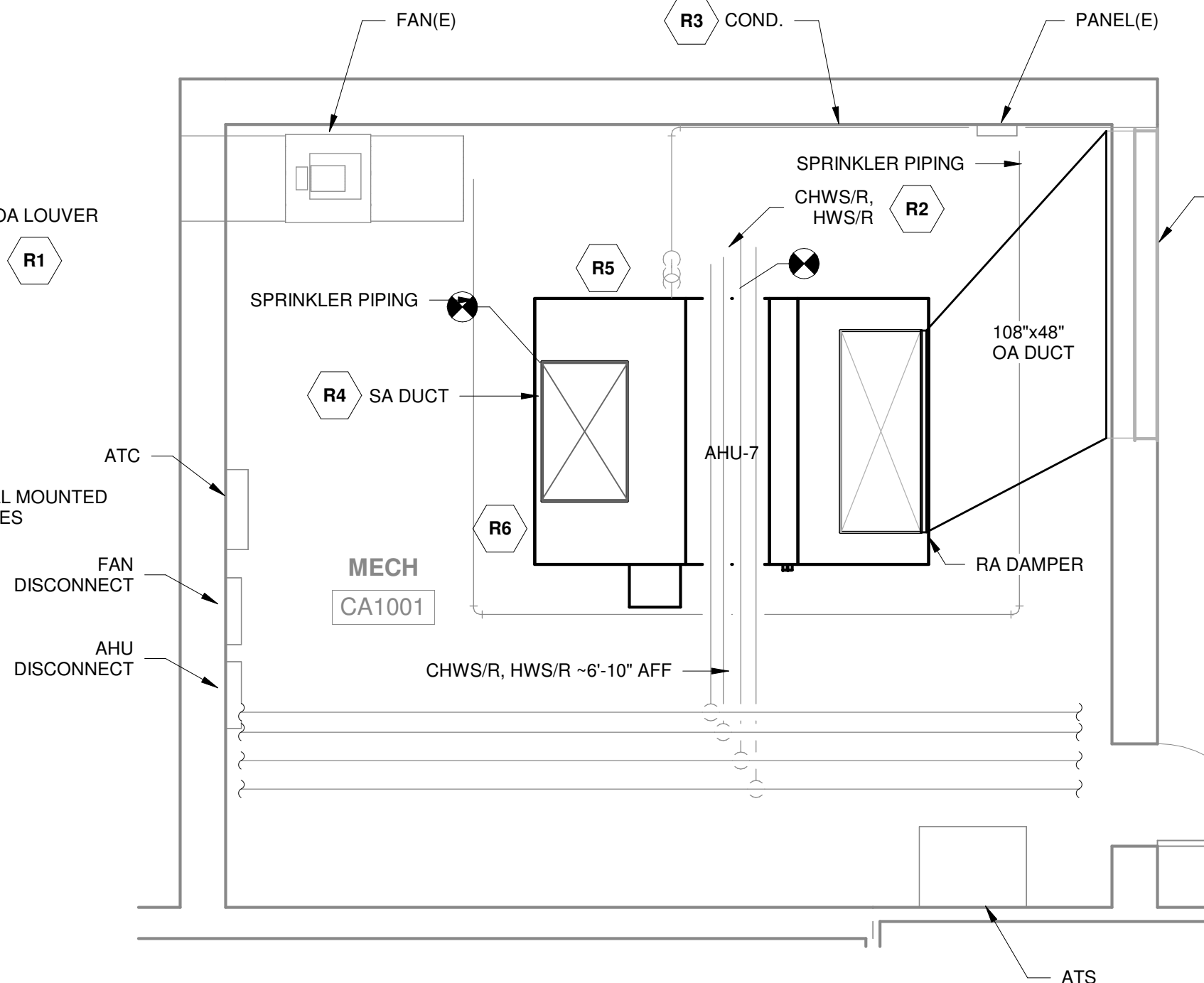
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1/4" = 1'-0"



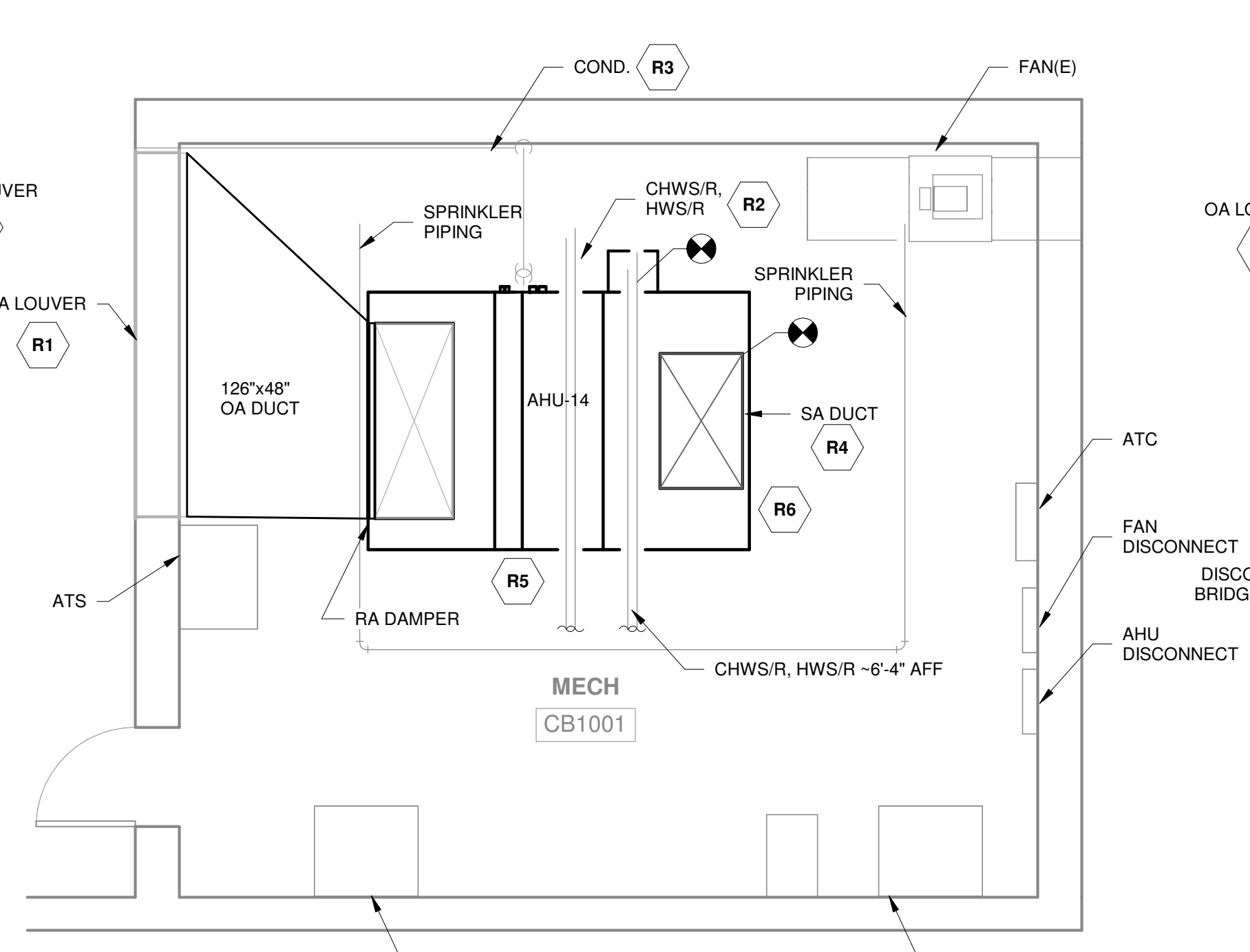
3 Level 1 MECHANICAL RENOVATION - AHU-5
1/4" = 1'-0"



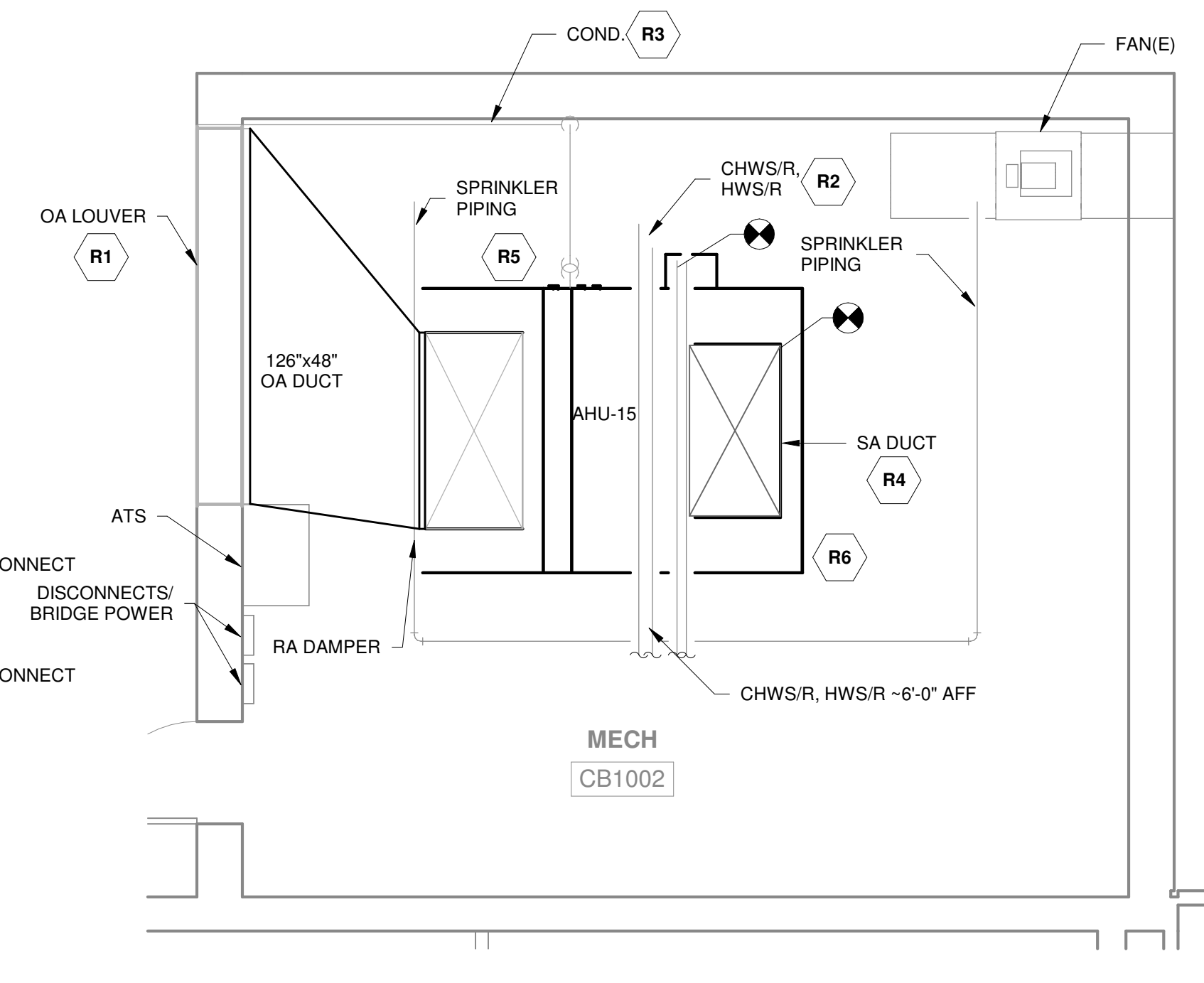
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1/4" = 1'-0"



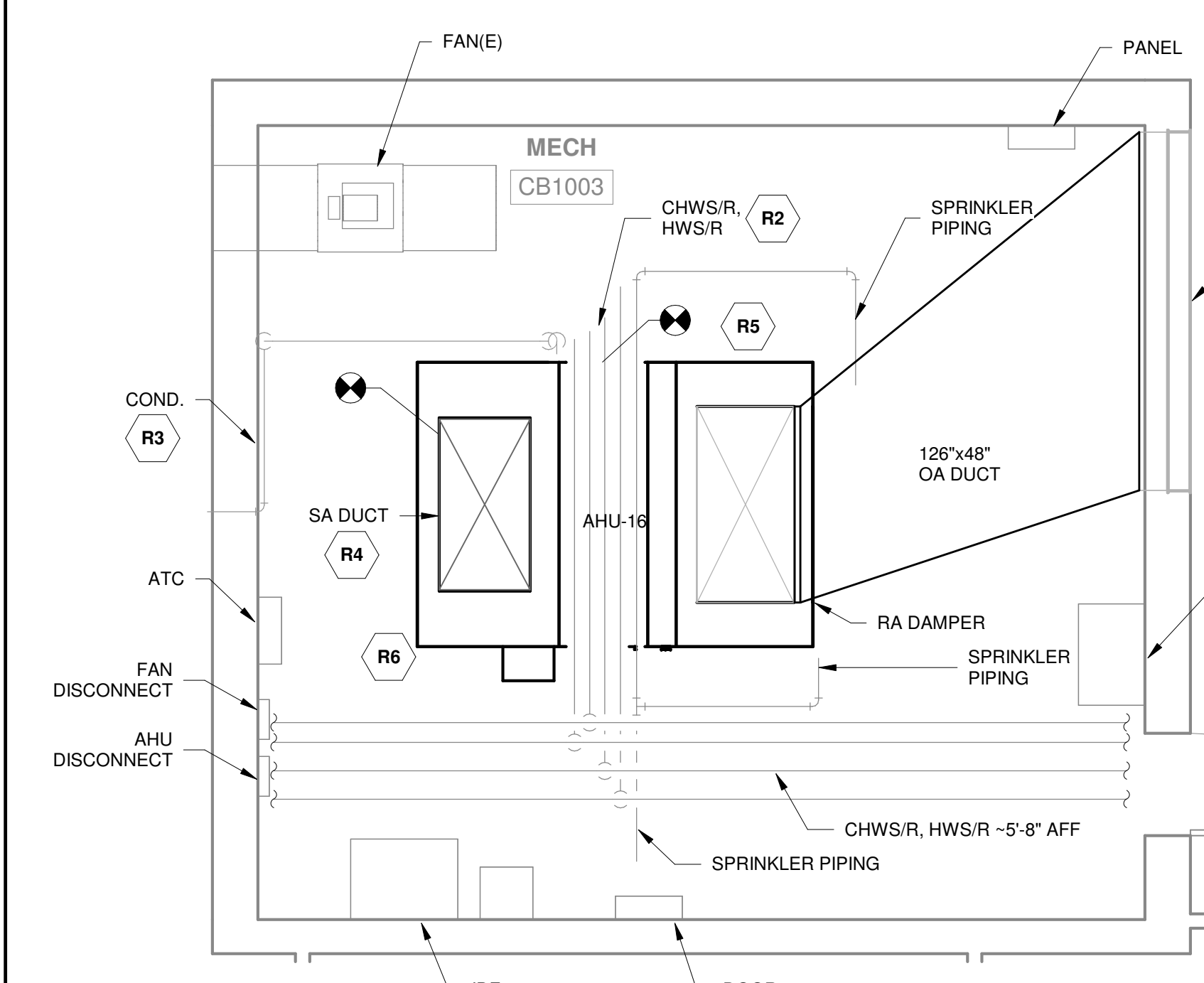
5 Level 1 MECHANICAL RENOVATION - AHU-7
1/4" = 1'-0"



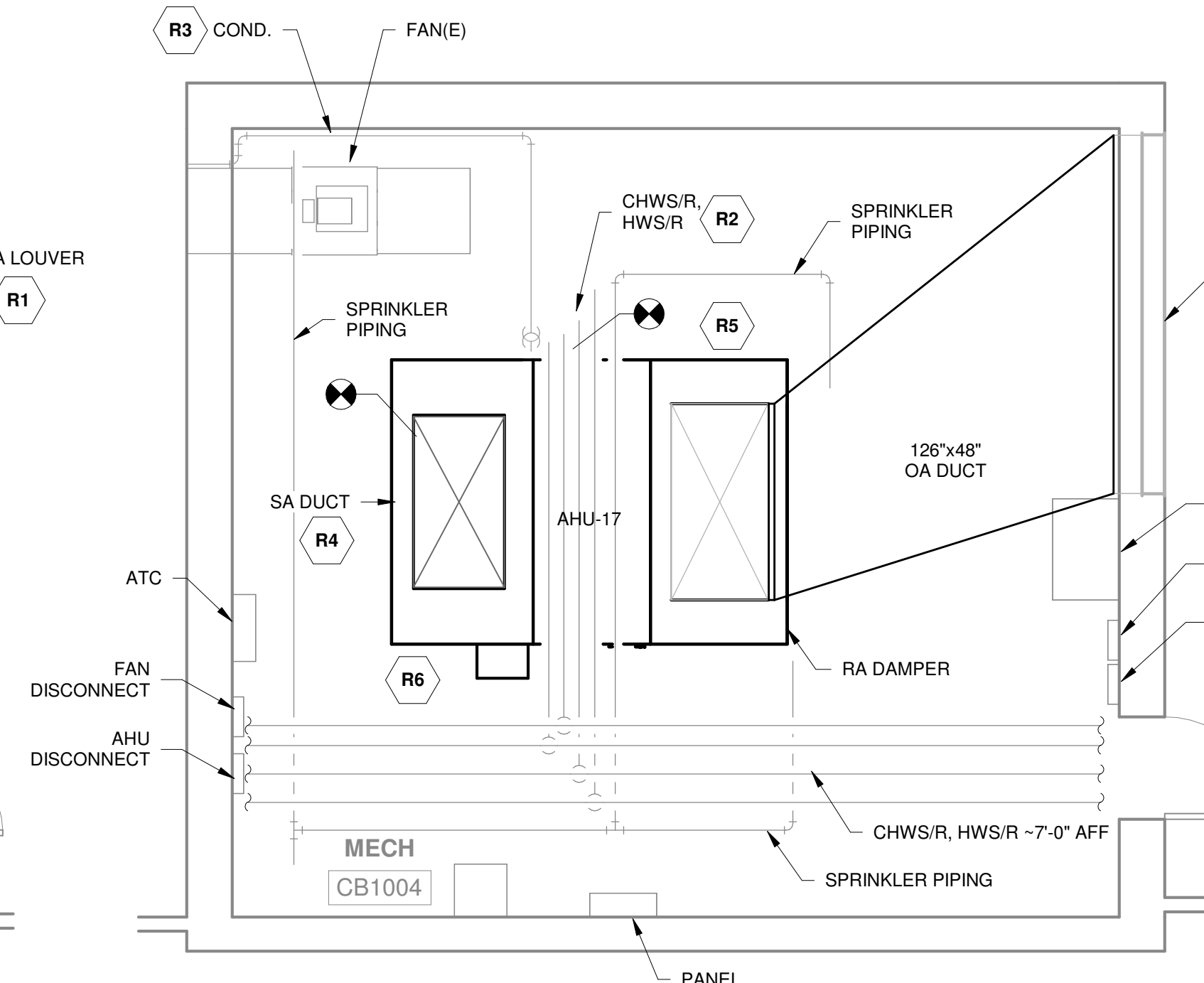
6 Level 1 MECHANICAL RENOVATION - AHU-14
1/4" = 1'-0"



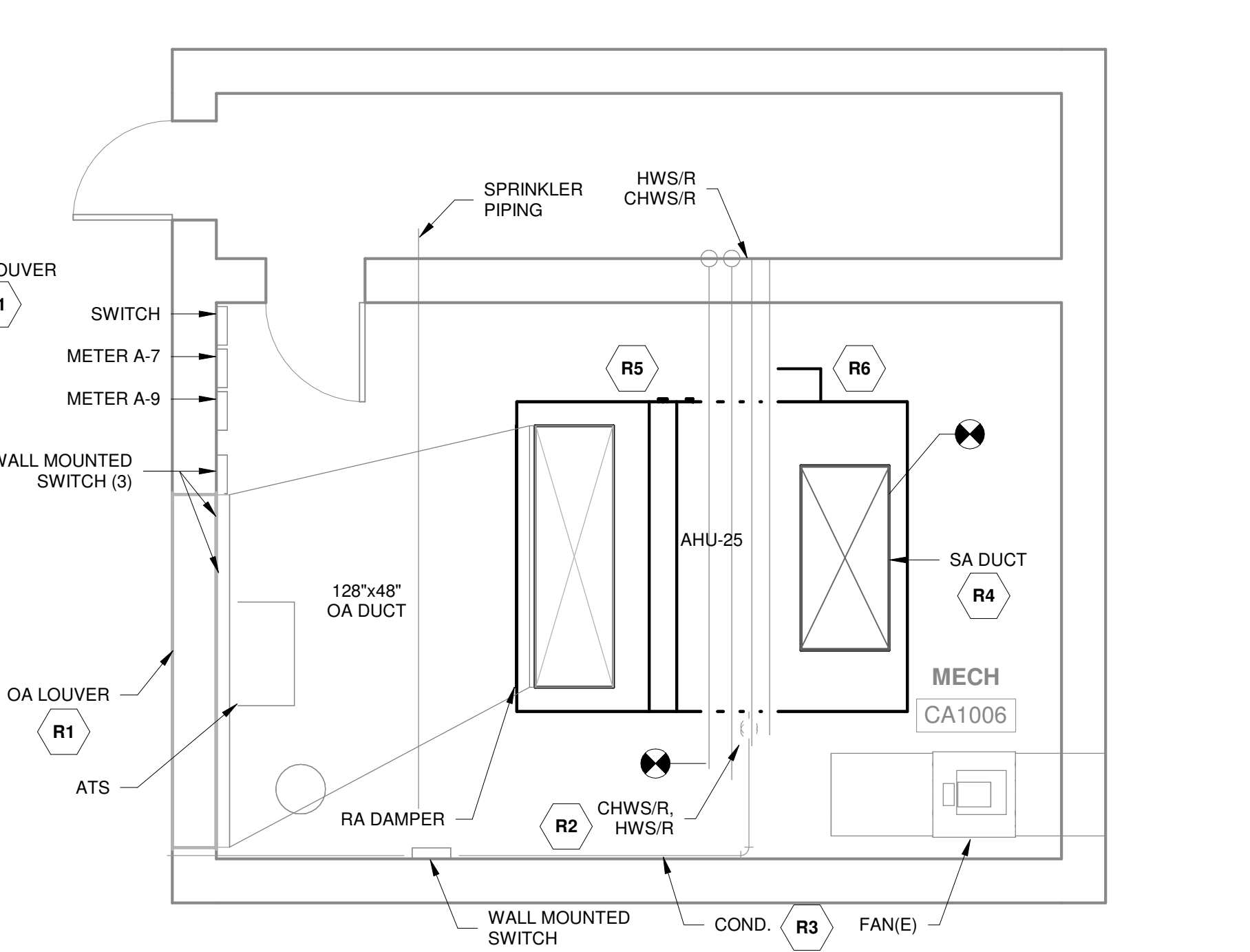
7 Level 1 MECHANICAL RENOVATION - AHU-15
1/4" = 1'-0"



8 Level 1 MECHANICAL RENOVATION - AHU-16
1/4" = 1'-0"



9 Level 1 MECHANICAL RENOVATION - AHU-17
1/4" = 1'-0"



10 Level 1 MECHANICAL RENOVATION - AHU-25
1/4" = 1'-0"



KEY PLAN

MECHANICAL RENOVATION NOTES

- R1** INSTALL EXTERIOR LOUVER, PROVIDE OUTDOOR AIR DUCT SIZED AS INDICATED ON DRAWING. INFILL AREA WITH INSULATED STUD WALL BEHIND UNUSED PORTION OF LOUVER.
- R2** EXTEND CHILLED WATER SUPPLY AND RETURN AND HOT WATER SUPPLY RETURN PIPING LEFT FROM REMOVALS AND CONNECT TO NEW UNIT. PROVIDE NEW 3-WAY CONTROL VALVE FOR CHILLED WATER AND HOT WATER COILS.
- R3** PROVIDE CONDENSATE PIPING FROM UNIT. EXTEND TO EXTERIOR AND TERMINATE WITH DOWNTURNED ELBOW AND INSECT SCREEN.
- R4** PROVIDE SUPPLY DUCTING AND CONNECT TO EXISTING SUPPLY DUCTING LEFT FROM REMOVALS.
- R5** PROVIDE AHU AND ALL ASSOCIATED ACCESSORIES. PROVIDE CONNECTIONS TO EXISTING PIPING AND DUCTING LEFT FROM REMOVALS.
- R6** EXTEND EXISTING HOUSEKEEPING PAD TO ACCOMMODATE NEW UNIT. MAINTAIN A MINIMUM OUTSIDE DIMENSION OF 4" ALL AROUND. PROVIDE 1" NEOPRENE SLIP SHEET FOR VIBRATION ISOLATION UNDER NEW UNIT.



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**BID
DOCUMENTS**

**GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT**
500 AVIATION PARKWAY, GREER, SC 29651

CLIENT:

PROJECT:

TERMINAL AHU REPLACEMENT

DRAWN Author
DESIGNED Designer
CHECKED Checker
SCALE AS NOTED
DATE 04/23/2025
PROJECT Project Number

NO. DATE REVISIONS

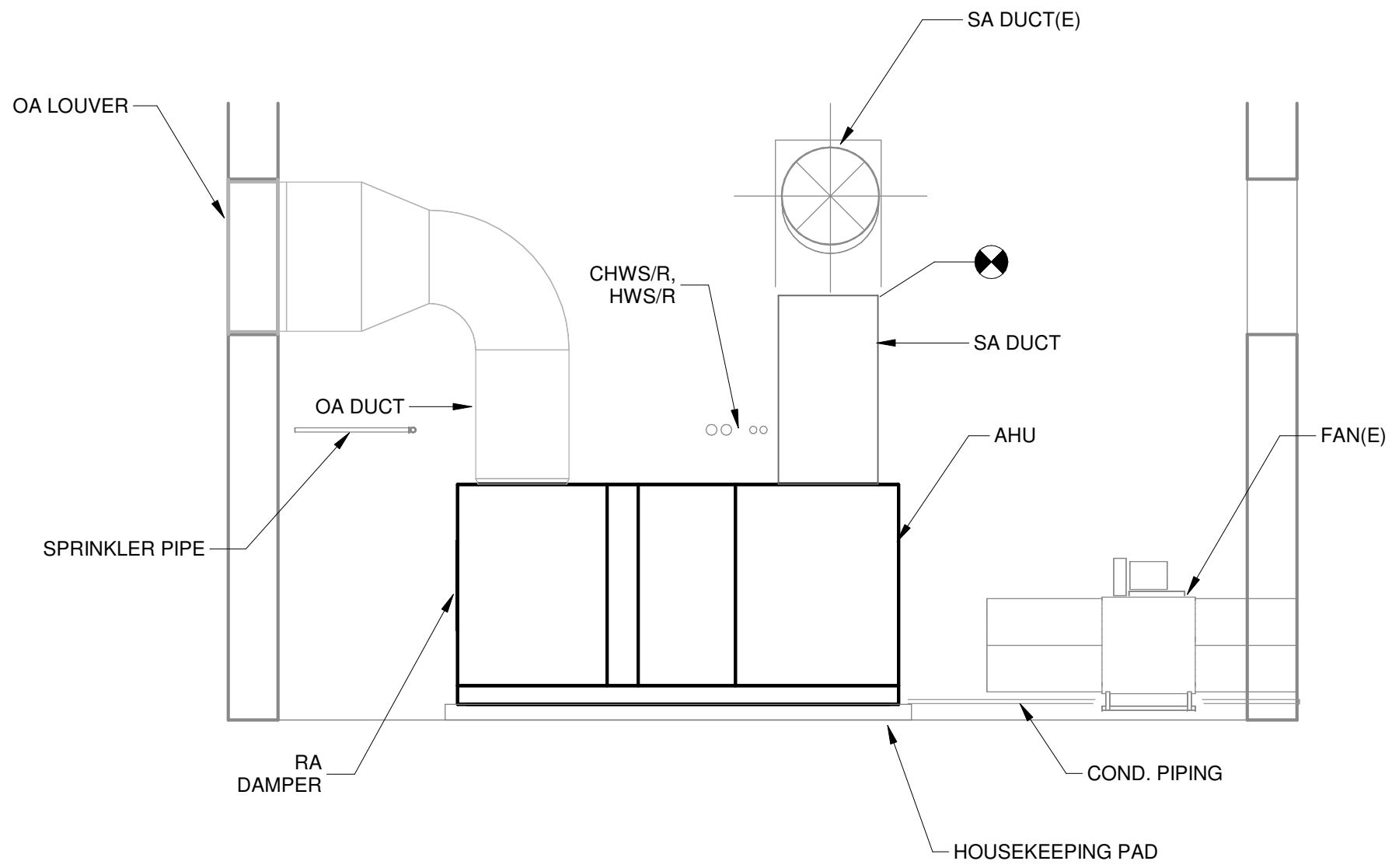
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**ENLARGED
PLANS**

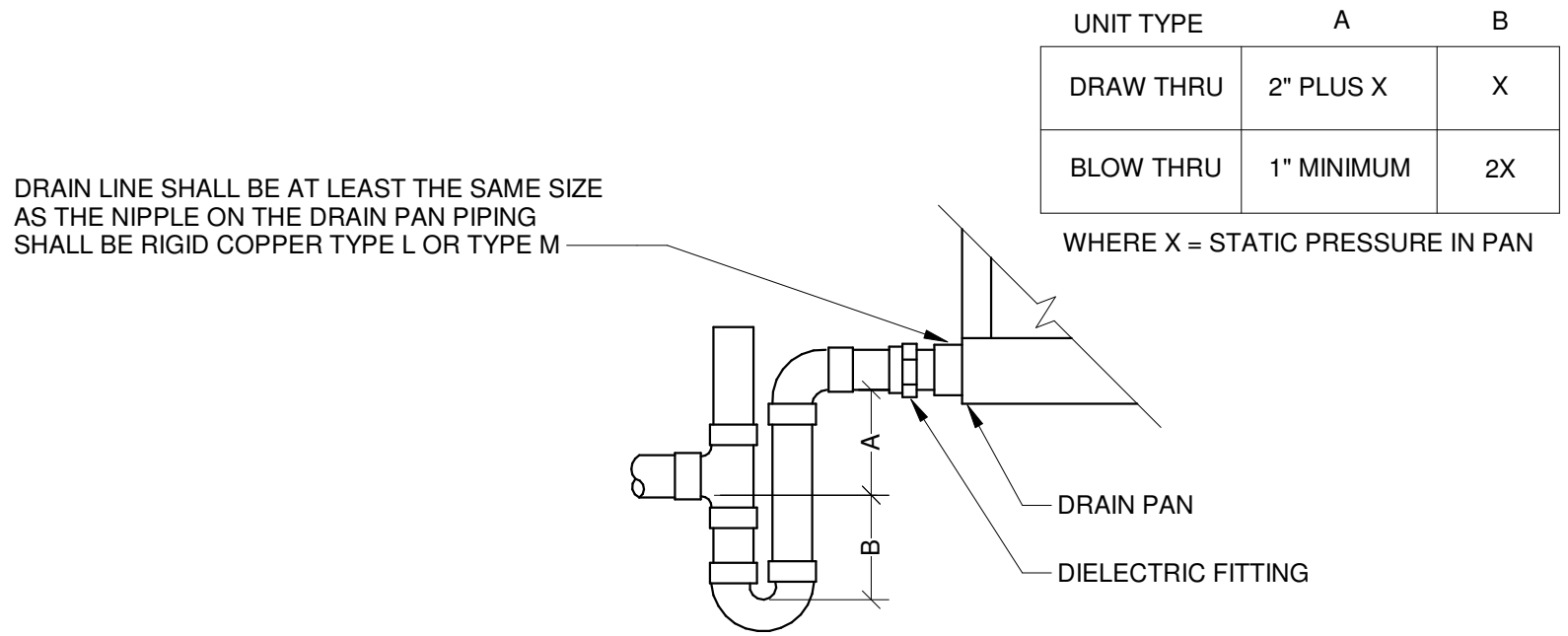
DRAWING NUMBER

M102

Autodesk Docs: CDP Terminal RFP11928.00 Greenville Spartanburg Terminal RFP - M400.rvt

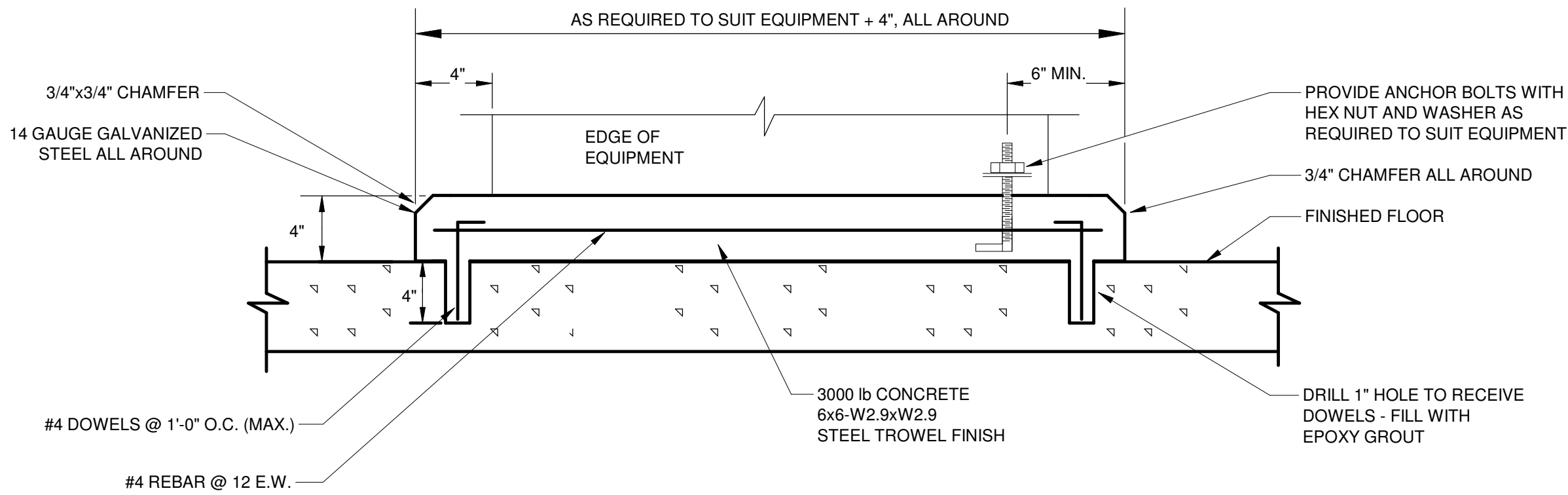


1 TYPICAL DETAIL
1/4" = 1'-0"

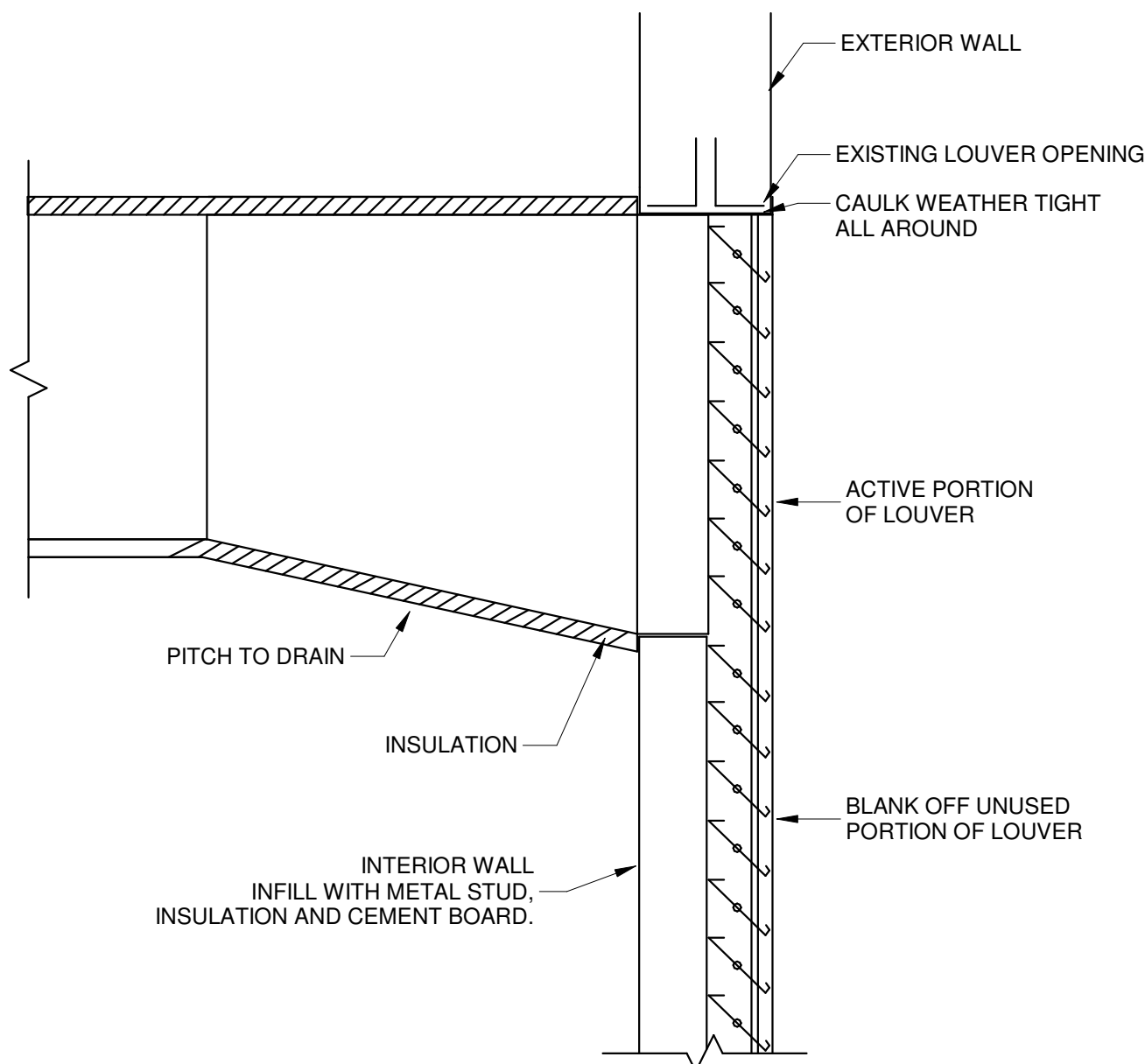


NOTE:
1. DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.

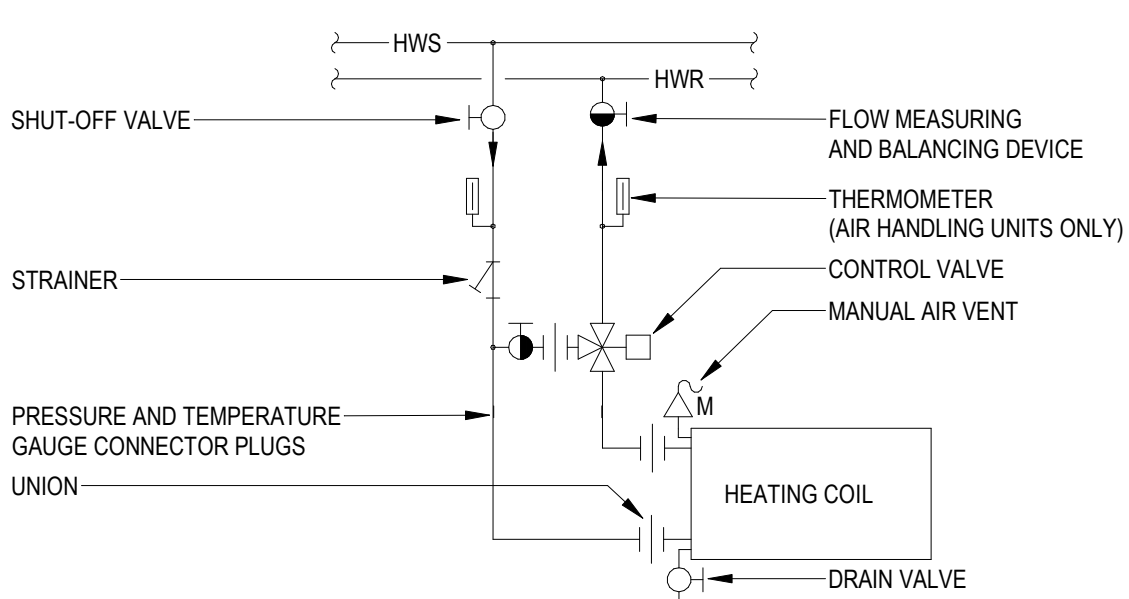
2 COIL CONDENSATE DRAIN DETAIL
SCALE - NONE



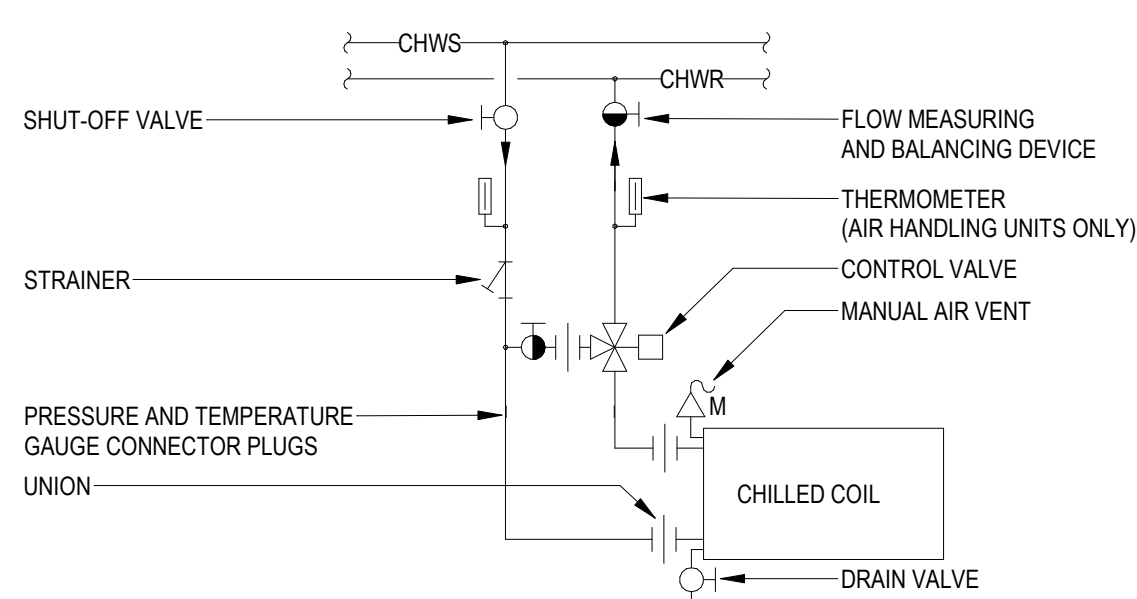
3 INTERIOR HOUSEKEEPING PAD DETAIL
SCALE - NONE



4 LOUVER DETAIL
SCALE - NONE

















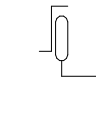


6 HOT WATER COIL PIPING DETAIL W/3-WAY VALVE
SCALE - NONE



5 CHILLED WATER COIL PIPING DETAIL W/3-WAY VALVE
SCALE - NONE

CONTROL LEGEND

BI	Binary Input	SA	Supply Air		Circulating Pump		Variable Frequency Drive
BO	Binary Output	RA	Return Air				Two-Way Control Valve
AI	Analog Input	EA	Exhaust Air		Freezestat		Three-Way Control Valve
AO	Analog Output	OA	Outside Air				
N.O.	Normally Open						
N.C.	Normally Closed						
	Water Temperature Sensor		Airflow Sensor		Water Flow Meter		Zone Sensor
			Motorized Damper		Motor		
	Air Temperature Sensor				CT		CO2
	Differential Pressure Sensor		Smoke Detector		Outside Air Temperature Sensor with Sun Shield		

Single Zone Unit

The AHU Controls shall be integrated into the automated logic control system. The existing equipment schedules shall be reviewed with the owner and adjusted as needed.

Run Conditions - Scheduled:
The unit shall run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit shall maintain
 - A 7°F (adj.) cooling setpoint.
 - A 70°F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit shall maintain
 - A 80°F (adj.) cooling setpoint.
 - A 65°F (adj.) heating setpoint.

Alarms shall be provided as follows:

- High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.).
- Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable amount (adj.).

Zone Setpoint Adjust:

Temperature adjustment and schedule modifications shall be done by the authorized personnel at the head end computer interface.

Zone Optimal Start:

The unit shall use an optimal start algorithm for morning start-up. This algorithm shall minimize the unoccupied warm-up or cool-down period while still achieving comfort conditions by the start of scheduled occupied period.

Freeze Protection:

The unit shall shut down and generate an alarm upon receiving a freezestat status.

Supply and Return Air Smoke Detection:

The unit shall shut down and generate an alarm upon receiving a signal from a smoke detector.

Supply Fan:

The supply fan shall run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan shall have a user definable (adj.) minimum runtime.

Economizer:

The controller shall measure the zone temperature and modulate the economizer dampers in sequence to maintain a setpoint 2°F less than the zone cooling setpoint. The outside air dampers shall maintain a minimum adjustable position of 20% (adj.) open whenever occupied.

Heating coil:

- Upon a call for heat the coil 3-way valve shall modulate to maintain zone set point.

Cooling coil:

- Upon a call for cooling the coil 3-way valve shall modulate to maintain zone set point.

Economizer shall close whenever:

- The economizer shall operate based on the existing enthalpy set points that are already established by the owner.
- The existing exhaust/relief air fan in each mechanical room shall energize and modulate their speed to maintain building pressure and/or the speed shall modulate to track the OA damper position at the AHU's.

Minimum Outside Air Ventilation - Fixed Percentage:

The outside and exhaust air dampers shall close and the return air damper shall open when the unit is off. If Optimal Start Up is available, the mixed air damper shall operate as described in the occupied mode except that the outside air damper shall modulate to fully closed.

Mixed Air Temperature:

The controller shall monitor the mixed air temperature and use as required for economizer control or preheating control.

Alarms shall be provided as follows:

- High Mixed Air Temp: If the mixed air temperature is greater than 90°F (adj.).
- Low Mixed Air Temp: If the mixed air temperature is less than 45°F (adj.).

Return Air Humidity:

The controller shall monitor the return air humidity and use as required for economizer control or humidity control.

Alarms shall be provided as follows:

- High Return Air Humidity: If the return air humidity is greater than 70% (adj.).
- Low Return Air Humidity: If the return air humidity is less than 35% (adj.).

Return Air Temperature:

The controller shall monitor the return air temperature and use as required for economizer control.

Alarms shall be provided as follows:

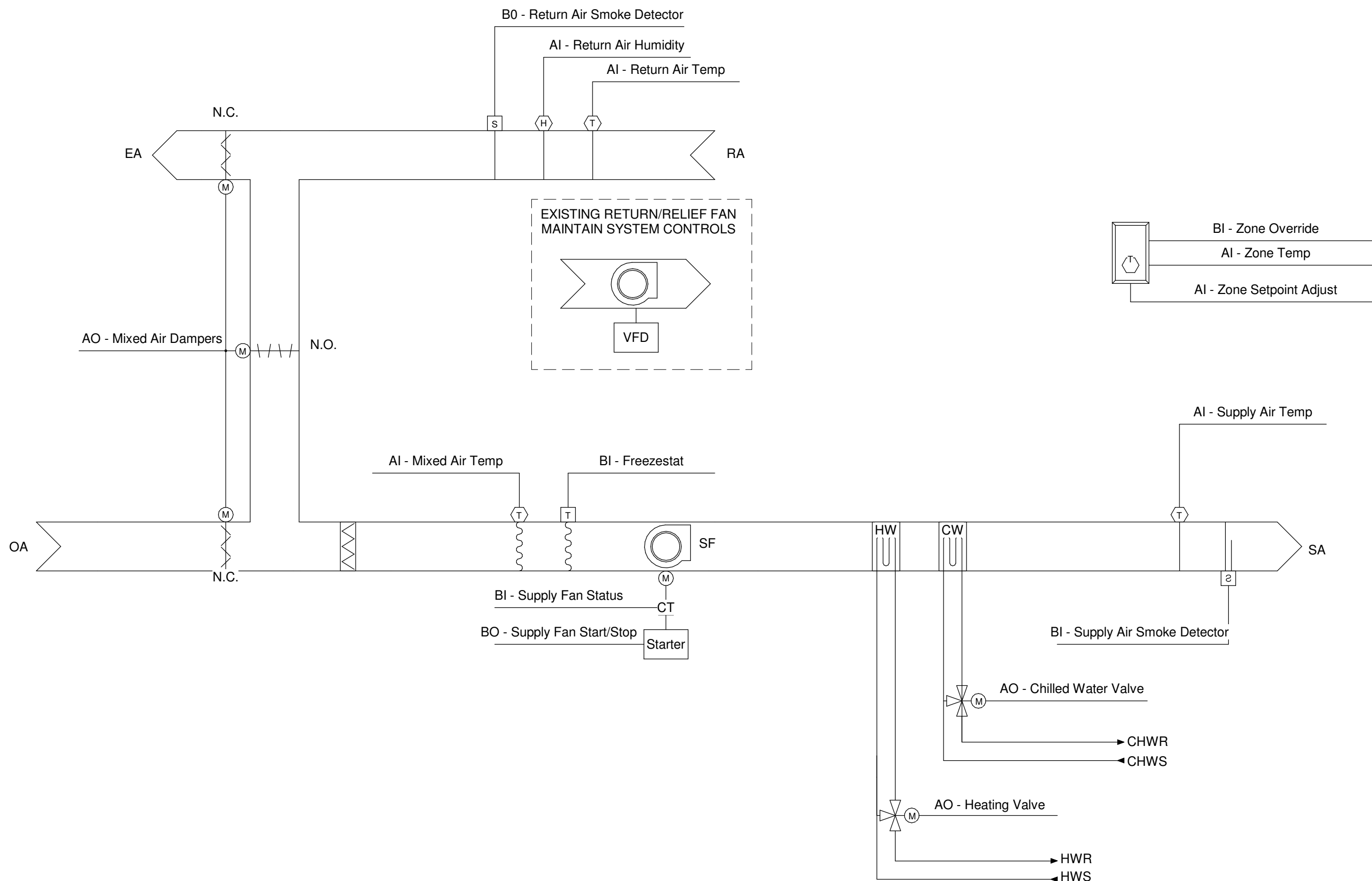
- High Return Air Temp: If the return air temperature is greater than 90°F (adj.).
- Low Return Air Temp: If the return air temperature is less than 45°F (adj.).

Supply Air Temperature:

The controller shall monitor the supply air temperature.

Alarms shall be provided as follows:

- High Supply Air Temp: If the supply air temperature is greater than 120°F (adj.).
- Low Supply Air Temp: If the supply air temperature is less than 45°F (adj.).



8 AHU HW 3-WAY CONTROLS
SCALE - NONE



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SEAL

**BID
DOCUMENTS**

CLIENT: **GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT**

PROJECT: **TERMINAL AHU REPLACEMENT**
500 AVIATION PARKWAY, GREER, SC 29651

CLIENT:

PROJECT:

DRAWN **WAH**

DESIGNED **MRM**

CHECKED **MRM**

SCALE **AS NOTED**

DATE **04/23/2025**

PROJECT **Project Number**

NO. DATE REVISIONS

DRAWING TITLE

**MECHANICAL
DETAILS AND
CONTROLS**

DRAWING NUMBER

M400

CLEARANCE NOTE
ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED WITH NEC REQUIRED WORKING CLEARANCES. TYPICAL FOR ENTIRE PROJECT.
COORDINATION NOTES
CONTRACTOR TO COORDINATE ALL FINAL LOCATIONS, ANY TYPES OF DEVICES, AND EQUIPMENT WITH ARCHITECT PRIOR TO BID AND ROUGH-IN
CONTRACTOR TO COORDINATE VARIOUS TRADES TO AVOID ABOVE CEILING CONFLICTS.
GSP SAFETY AND SECURITY GUIDELINES
CONTRACTOR MUST COMPLY WITH GSP SAFETY AND SECURITY GUIDELINES MANUAL

1. RFIS: CONTRACTOR SHALL SUBMIT RFIS WITH HIS PROPOSED SOLUTION IN A TIMELY MANNER. CONTRACTOR RECOGNIZES THE CONSULTANT SHALL REQUIRE UP TO 10 WORKING DAYS TO RESPOND.
2. SUBMITTALS AND PRODUCT DATA: CONTRACTOR SHALL PREPARE A SUBMITTAL SCHEDULE FOR APPROVAL BY THE A/E. THE CONTRACTOR RECOGNIZES THE CONSULTANT SHALL REQUIRE UP TO 10 WORKING DAYS TO REVIEW SUBMITTALS. ALL SUBMITTALS, PROJECT DATA, AND PRODUCT DATA SHALL BE CLEARLY STAMPED AND INDICATED APPROVED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE CONSULTANT.
3. SHOP DRAWINGS: CONTRACTOR SHALL PREPARE SHOP DRAWINGS REQUIRING SPECIAL REVIEW AND APPROVAL BY THE A/E. CONTRACTOR RECOGNIZES THE CONSULTANT SHALL REQUIRE UP TO 10 WORKING DAYS TO REVIEW SHOP DRAWINGS. ALL SHOP DRAWINGS SHALL BE CLEARLY STAMPED AND INDICATED APPROVED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE CONSULTANT.
4. LAYOUT AND COORDINATION DRAWINGS: CONTRACTOR SHALL PREPARE SCALED COMPREHENSIVE COORDINATED LAYOUT DRAWINGS, PROVIDE SECTION GENERAL ARRANGEMENTS, ELEVATIONS INCLUDING ALL DISCIPLINES FOR HIS PROPOSED LAYOUT AND ROUTING PRIOR TO FABRICATION, SUBMIT TO OWNER AND A/E FOR REVIEW AND GENERAL CONFORMANCE. PROVIDE DRAWINGS THAT DEMONSTRATE VIA COORDINATED ELEMENTS AND SYSTEMS THAT THE CONTRACTOR'S PROPOSED SYSTEMS WILL FIT, FUNCTION AS INTENDED, BE FREE OF INTERFERENCES AND CONFORM TO REQUIRED CODE AND MANUFACTURER WORKING AND MAINTENANCE CLEARANCES.
5. DEVIATIONS FROM BASIS FOR DESIGN SYSTEMS SHALL BE CLEARLY IDENTIFIED ON ALL SUBMISSIONS.
6. SUBSTITUTIONS:
 - A. CONTRACTOR SHALL PREPARE REQUESTS WITH COMPLETE COORDINATION INFORMATION, INCLUDE ALL CHANGES REQUIRED TO OTHER ELEMENTS OF THE WORK TO ACCOMMODATE THE SUBSTITUTION INCLUDING WORK PERFORMED BY THE OWNER AND THE SEPARATE CONTRACTORS.
 - B. PROVIDE COMPLETE SUPPORTING DATA QUALIFYING THE SUBSTITUTION COMPARED TO THE BASIS OF DESIGN SYSTEM. PROVIDE A DETAILED LIST OF ANY VARIANCES, PHYSICAL OR SPATIAL LAYOUTS, DIMENSIONS, ETC. TO THE BASIS OF DESIGN.
 - C. PROVIDE A STATEMENT INDICATING THE EFFECT THE SUBSTITUTION WILL HAVE ON THE WORK SCHEDULE IN COMPARISON TO THE SCHEDULE WITHOUT APPROVAL OF THE PROPOSED SUBSTITUTION, INCLUDE INFORMATION REGARDING THE EFFECT OF THE PROPOSED SUBSTITUTION ON THE PROJECT SCHEDULE.
 - D. PROVIDE CERTIFICATION BY THE CONTRACTOR TO THE EFFECT THAT, IN THE CONTRACTOR'S OPINION, AFTER THOROUGH EVALUATION, THE PROPOSED SUBSTITUTION WILL RESULT IN WORK THAT IN EVERY RESPECT IS EQUIVALENT TO OR BETTER THAN THAT OF THE WORK SHOWN ON THE CONTRACT DOCUMENTS AND THAT IT WILL PERFORM ADEQUATELY IN THE APPLICATION INDICATED.
 - E. CONSULTANT'S EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED BY THE CONTRACTOR OR APPROVED BY THE OWNER SHALL BE COMPENSATED TO THE CONSULTANT BY THE CONTRACTOR.
7. AS-BUILT DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AND PREPARE A COMPLETE AND ACCURATE SET OF AS-BUILT DRAWINGS DURING THE PROJECT AND ISSUE TO THE A/E AND OWNER AT PROJECT CLOSEOUT. DURING THE COURSE OF THE PROJECT, THE CONTRACTOR SHALL ISSUE SKETCHES OR SCALED DRAWINGS FOR FIELD CHANGES THAT ARE APPROVED OR MADE WHICH ARE FROM THE BASIS OF DESIGN DOCUMENTS, ANY EXPENSES THAT ARE INCURRED DUE TO SERVICES OR REVISIONS REQUIRED BY BUILDING DEPARTMENT, THE CONTRACTOR, AND/OR MANUFACTURER SHALL BE COMPENSATED TO THE CONSULTANT BY THE CONTRACTOR.
8. INSTALLATION: TESTING AND BALANCING, START UP: COMMISSIONING AND PERFORMANCE DEMONSTRATION OF ALL EQUIPMENT: CONTRACTOR RECOGNIZES HE IS SOLELY RESPONSIBLE FOR PERFORMANCE AND COMPLETION OF THESE SERVICES AS PART OF THE PROJECT REQUIREMENTS. DURING THE COURSE OF THE PROJECT, THE CONTRACTOR SHALL DOCUMENT THE SERVICES COMPLETED TO THE ENGINEER'S SATISFACTION. ALL EQUIPMENT THAT ARE REQUIRED TO BE RUN BY FORMING SERVICES OR TRADES SHALL BE COORDINATED WITH THE DEPARTMENT, OWNER, CONTRACTOR, AND MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEMONSTRATION.
9. CONTRACTOR REQUIRED SUBMITTALS BY ENGINEER - CONTRACTOR IS ASSIGNED TO PROVIDE DESIGN/BUILD REVISIONS OR DELEGATED/SUCCESSOR DESIGN PROFESSIONAL, ENGINEER SHALL COMPLY WITH ALL M/J RFIS ACROSS ALL DISCIPLINES, AND BECOME THE DESIGNATED SLOE SYSTEM A/E FOR ACCEPTANCE AND PLUMBING RESPONSIBILITIES.

CONTRACTOR BIDDING SUPPLEMENTAL NOTES	
CONTRACTOR SHALL ISSUE AN RFI FOR ANY MISSING CIRCUITS IN APPROPRIATE TIME FOR MJ TO RESPOND. IF NO RESPONSE IS PROVIDED, CONTRACTOR SHALL PROVIDE A CIRCUIT AND BREAKER FOR ANY DEVICE THAT IS NOT CIRCUITED ON THE MJ DRAWINGS.	
CONTRACTOR SHALL REVIEW ALL EQUIPMENT AND PROVIDE A LOCAL CIRCUIT BREAKER. OSHA REQUIRED SAFETIES AND INTERLOCKING, IF NOT INTEGRATED WITH THE EQUIPMENT. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL TO INSTALL SUCH SYSTEMS IF NOT INDICATED ON THE MJ DRAWINGS.	
CONTRACTOR SHALL PROVIDE CIRCUIT BREAKERS AND UL LISTED AND LABELED BREAKER LOCK OUT DEVICES FOR ALL CIRCUITS SERVING EQUIPMENT.	

UL LISTING AND NRTL CERTIFICATIONS NOTE

CONTRACTOR/MANUFACTURER SHALL PROVIDE COMPLETE DOCUMENTATION AND CERTIFICATIONS FOR ANY EQUIPMENT THAT HE PROPOSES WITH A NRTL (NATIONALLY RECOGNIZED TESTING LAB) LISTING AND LABELING EQUIVALENT TO THE BASIS OF DESIGN UL LISTING.
























































IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM ACCEPTABILITY BY THE LOCAL AHJ AND AGENCIES FOR THE NRTL LISTING AND CERTIFICATION FOR THE PRODUCTS HE PROPOSES AND DEMONSTRATE SUCH AS PART OF THE PRODUCT DATA SUBMISSION AND INSTALLATION.

WIRING NOTES

1. ABSOLUTELY NO FLEXIBLE CONDUIT IS PERMITTED IN DEMISING WALLS; FLEXIBLE CONDUIT IS PERMITTED FOR SHORT, FINAL CONNECTIONS ONLY (6'-0" OR LESS). ALL HOWE RUNS IN EMT.
2. CABLE TYPES AC AND NM CABLES ARE NOT ACCEPTABLE. TYPE MC CABLE, ELECTRIC METALLIC TUBING (EMT) AND RIGID GALVANIZED CONDUIT ARE PERMITTED. FLEXIBLE CONDUIT IS NOT PERMITTED WITHIN DEMISING WALLS.
3. CONDUIT CONNECTIONS TO TRANSFORMERS, VIBRATING AND/OR ROTATING EQUIPMENT, SHALL BE MADE WITH FLEXIBLE METAL CONDUIT OR "SEALIGHT."
4. TWO OR THREE CONDUCTORS SHARING THE SAME NEUTRAL SHALL HAVE PROTECTION DEVICES WITH TIES. DISCONNECTION SHALL BE ACCOMPLISHED BY A SINGLE MOVEMENT.

GENERAL ELECTRICAL NOTES	
1.	DO NOT SCALE THE ELECTRICAL DRAWINGS, REFER TO THE ARCHITECTURAL PLAN AND ELEVATIONS FOR EXACT LOCATION OF ALL EQUIPMENT AND CONFIRM WITH OWNERS REPRESENTATIVES. CONTRACTOR SHALL REFER TO THE ENTIRE SET OF CONTRACT DOCUMENTS FOR PROJECT COORDINATION.
2.	ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE EDITIONS CURRENTLY ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION OF THE FOLLOWING: THE NATIONAL ELECTRICAL CODE (NFPA 70), NFPA 72, NFPA 75, THE FIRE PREVENTION CODE NFPA 1 & NFPA 101, NFPA 110, AND THE FBC, AND THE FPPC.
3.	UNLESS OTHERWISE NOTED, ALL CONDUCTORS SHALL BE COPPER, WITH THHN INSULATION FOR SIZE #10 AND SMALLER, CONDUCTORS LARGER THAN #10 SHALL HAVE "THWN" INSULATION. ALL CONDUCTORS IN WET LOCATIONS MUST HAVE "THWN" INSULATION. ALL CONDUCTORS #10 AND SMALLER MAY BE SOLD. ALL CONDUCTORS #8 OR LARGER SHALL BE STRANDED. ALL CONDUCTORS MUST COMPLY WITH ARTICLE 310 OF THE NEC.
4.	OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN WET LOCATIONS AND SPECIAL ENCLOSURES FOR OTHER CLASSIFIED AREAS.
5.	DISCONNECT SWITCHES SHALL BE H.P. RATED, HEAVY DUTY, QUICK MAKE, QUICK BREAK, WITH ENCLOSURES AS REQUIRED BY EXPOSURE.
6.	THESE PLANS DO NOT SHOW EVERY MINOR DETAIL OF CONSTRUCTION, THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND MEET ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
7.	THE ELECTRICAL SYSTEM SHALL BE COMPLETELY AND EFFECTIVELY GROUNDING AS REQUIRED IN ARTICLE 250, NATIONAL ELECTRICAL CODE. THE GROUNDING SYSTEM SHALL BE TESTED AND SHALL BE PROVIDED TO MEASURE A MAXIMUM OF 25 OHMS. PROVIDE A COPY OF THE TEST REPORT TO ENGINEER.
8.	ALL MATERIALS SHALL BE NEW AND SHALL BEAR U.L. LABELS WHERE APPLICABLE.
9.	ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANSHIP MANNER, THE COMPLETE SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTANCE BY ENGINEER/ARCHITECT MUST BE A CONDITION OF THE SUBCONTRACTOR.
10.	THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER, LIGHT COMPANY, TELEPHONE COMPANY, AND BROADBAND PROVIDER.
11.	SEE NOTES ON PLANS FOR OTHER REQUIREMENTS.
12.	ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROCESS OF CONSTRUCTION.
13.	CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY PHASE OF THE INSTALLATION WHICH MAY BE DAMAGED.
14.	ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
15.	CHECK ALL EQUIPMENT FOR PROPER VOLTAGE, PHASE, AND CURRENT BEFORE CONNECTION TO CIRCUITS AND START UP.
16.	ELECTRICAL CONTRACTOR SHALL CHECK AND VERIFY EQUIPMENT FURNISHED AGAINST THOSE SPECIFIED OR INTENDED AND REVISE BRANCH CIRCUITS AS MAY BE REQUIRED WITH PRIOR APPROVAL OF ENGINEER/ARCHITECT.
17.	ALL SYSTEMS AND ROUGH-IN SHALL BE CONCEALED IN FINISHED AREAS, COORDINATE WITH ARCHITECT.
18.	THE ELECTRICAL PORTION OF THE CONTRACT DOCUMENTS ARE COORDINATED WITH THE BASIS OF DESIGN EQUIPMENT SPECIFIED BY DIVISION 16 AND OTHER DIVISIONS. WHERE THE CONTRACTOR ELECTS TO SUBSTITUTE A PRODUCT IN LIEU OF PROVIDING THE DESIGN BASIS, AND SAID SUBSTITUTIONS IS ACCEPTED BY THE A/E AND OWNER, THE CONTRACTOR SHALL MAKE ALL CORRECTIONS TO THE ELECTRICAL SYSTEM NECESSARY IN ORDER TO ENSURE A COMPLETE AND OPERATIONAL INSTALLATION OF THE EQUIPMENT AT NO ADDITIONAL COST. WHERE THE CONTRACTORS DECISION TO SUBSTITUTE PRODUCTS OR MODIFY DESIGN REQUIRING A/E SERVICES, THE A/E RESERVES THE RIGHT TO REQUEST COMPENSATION FROM THE CONTRACTOR FOR SAID SERVICES.
19.	CONTRACTOR SHALL PROVIDE A CONTROLS TRADE SUBCONTRACTOR TO DESIGN AND INSTALL ALL CONTROLS TO MEET THE PROJECT REQUIREMENTS.
<u>AIR CONDITIONING EQUIPMENT</u>	
1.	ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONTROL, RACEWAY (CONDUIT), WIRE INSTALLATION, CONNECTIONS ETC. IN ACCORDANCE WITH WIRING DIAGRAMS ON AIR EQUIPMENT.
2.	A/C / ELECTRICAL PLANS OR DIAGRAMS FURNISHED BY MANUFACTURER OF THE EQUIPMENT.
3.	ALL POWER WIRING FOR THE AIR CONDITIONING EQUIPMENT SHALL BE FURNISHED, INSTALLED AND CONNECTED UNDER THIS SECTION OF THE SPECIFICATION.
4.	AHU UNITS ARE EQUIPPED WITH A FACTORY MOUNTED DRIVE, HAVING A SINGLE POINT OF POWER CONNECTION.

SHORT CIRCUIT CURRENT RATING NOTE
CONTRACTOR AND MANUFACTURER SHALL PROVIDE ALL ELECTRICAL SYSTEMS FOR ALL EQUIPMENT, INCLUDING MECHANICAL AND PLUMBING EQUIPMENT WITH INTEGRAL DISCONNECTS, INTEGRAL BREAKERS, INTEGRAL MOTOR STARTERS, VFDs, CHILLER PANELS, PACKAGED UNIT PANELS, ETC., SHALL BE RATED WITH A SHORT CIRCUIT CURRENT RATING AT LEAST EQUAL TO THE IMMEDIATE UPSTREAM ELECTRIC OVERCURRENT PROTECTIVE DEVICE SHORT CIRCUIT RATING.

POWER LEGEND	
	NEMA 5-20 DUPLEX RECEPTACLE
	NEMA 5-20 DUPLEX RECEPTACLE - GFI
	NEMA 5-20 DUPLEX RECEPTACLE - WEATHERPROOF, GFI
	NEMA 5-20 DUPLEX RECEPTACLE, ABOVE COUNTER
	NEMA 5-20 DUPLEX RECEPTACLE, ABOVE COUNTER, GFI
	SPECIAL PURPOSE RECEPTACLE, REFER TO PLANS FOR CONFIGURATION
	QUADRUPLX RECEPTACLE
	MANUAL MOTOR STARTER
	FUSIBLE DISCONNECT SWITCH (a,b,c) - (POLES, AMPERAGE, FUSE)
	JUNCTION BOX
	POWER POLE - QUAD, RECEPT. / DUPLEX RECEPT.
	FLOOR BOX - QUAD RECEPT. / DUPLEX RECEPT.
	VARIABLE FREQUENCY DRIVE
	COMBINATION MOTOR STARTER: (a,b,c) - (POLES, NEMA SIZE, FUSE SIZE)
	NON-FUSIBLE DISCONNECT SWITCH (a,b) - (POLES, SIZE)
SECURITY LEGEND	
	DOOR CONTACT
	CARD READER
	LOCAL ALARM/SIREN (AUDIBLE)
	REQUEST-TO-EXIT MOTION SENSOR
	FIXED DOME IP CAMERA
	PTIZ IP CAMERA
LOW-VOLTAGE LEGEND	
	DATA JACK - SINGLE PORT
	DATA JACK - (#) = NUMBER OF PORTS
	WIRELESS ACCESS POINT
	TELEPHONE JACK - WALL MOUNT
	FLOOR BOX ASSEMBLY - DATA JACK (#) PORTS
	CLOCK
	PUBLIC ADDRESS SPEAKER
FIRE ALARM LEGEND	
	SPRINKLER FLOW SWITCH
	SPRINKLER TAMPER SWITCH
	PRESSURE SWITCH
	ADDRESSABLE INPUT MODULE (MONITORING)
	ADDRESSABLE OUTPUT MODULE (RELAY)
	MAGNETIC HOLD OPEN
	MANUAL PULL STATION
	NOTIFICATION DEVICE - SPEAKER/STROBE
	NOTIFICATION DEVICE - STROBE
	NOTIFICATION DEVICE - CARBON MONOXIDE STROBE
	SMOKE DETECTOR (L = LOBBY SMOKE DETECTOR)
	HEAT DETECTOR
	DUCT SMOKE DETECTOR
	CARBON MONOXIDE DETECTOR
	SPRINKLER ALARM BELL
	FIRE ALARM QSD - OPEN AREA SMOKE IMAGE DETECTOR - EMITTER
	FIRE ALARM QSD - OPEN AREA SMOKE IMAGE DETECTOR - IMAGER, # = FIELD OF VIEW RANGE
LIGHTING LEGEND	
	LIGHT FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE
	CEILING MOTION SENSOR - DUAL TECH.
	CORNER MOUNT MOTION SENSOR - DUAL TECH.
	SINGLE POLE LIGHT SWITCH
	3-WAY LIGHT SWITCH
	DIMMER SWITCH
	MOTION SENSOR SWITCH (DUAL TECH.)
	MOTION SENSOR SWITCH (INFRARED)
	DIMMING MOTION SENSOR SWITCH (DUAL TECH.)
	DIGITAL NETWORK MULTI-BUTTON SWITCH
	PILOT LIGHT SWITCH
	EXIT SIGN - SINGLE SIDED
	EXIT SIGN - DOUBLE SIDED
	EXIT SIGN - TRIANGLES INDICATE DIRECTION ARROWS
	TIME CLOCK
	PHOTOCELL
LINE TYPE LEGEND	
	EXISTING TO REMAIN
	DEMOLITION / REMOVAL
	RENOVATION / NEW

ABBREVIATIONS									
ADA	AMERICAN DISABILITIES ACT	DEMO	DEMOLISH	HH	HANDHOLE	OD	OUTSIDE DIAMETER	UE	UNDERGROUND ELECTRIC
ADJ	ADJACENT	DIA	DIAMETER	HP	HORSEPOWER / HEAT PUMP	OHD	OVERHEAD DOOR	UG	UNDERGROUND
AFF	ABOVE FINISHED FLOOR	DN	DOWN	HVAC	HEATING, VENTILATING, AIR CONDITIONING	PC	PLUMBING CONTRACTOR	UH	UNIT HEATER
AHU	AIR HANDLING UNIT	DWG	DRAWING	DWH	HOT WATER HEATER	PNL	PANEL	UT	UNDERGROUND TELECOMMUNICATIONS
ALT	ALTERNATE	DWH	DOMESTIC WATER HEATER	ID	INSIDE DIAMETER	PLYWD	PLYWOOD	UV	UNIT VENTILATOR
ALUM	ALUMINUM	EA	EACH	IN	INCHES	PVC	POLYVINYL CHLORIDE	V	VOLT
AMP	AMPERE	EC	ELECTRICAL CONTRACTOR	INCL	INCLUDE	RECEPT	RECEPTACLE	VIF	VERIFY IN FIELD
AP	ACCESS PANEL	EF	EXHAUST FAN	JB	JUNCTION BOX	REQD	REQUIRED	W/	WITH
APPROX	APPROXIMATELY	ELEC	ELECTRIC(AL)	KW	KILOWATT	RGS	RIGID GALVANIZED STEEL	XFMR	TRANSFORMER
ARCH	ARCHITECTURAL	ELEV	ELEVATOR	KV	KILOVOLT	RMC	RIGID METAL CONDUIT		
AUTO	AUTOMATIC	EMH	ELECTRICAL MANHOLE	KVA	KILOVOLT-AMPERE	RTU	ROOFTOP UNIT		
BLDG	BUILDING	EMT	ELECTRICAL METALLIC TUBING	LF	LINEAR FOOT	SCHED	SCHEDULE		
BOO	BASIS OF DESIGN	EQ	EQUIPMENT	MAX	MAXIMUM	SPEC	SPECIFICATION(S)		
BSMT	BASEMENT	EWC	ELECTRIC WATER COOLER	MEZZ	MEZZANINE	SS	STAINLESS STEEL		
C	CONDUIT	EXIST	EXISTING	MFR	MANUFACTURER	SURF	SURFACE		
CATV	CABLE TELEVISION	FA	FIRE ALARM	MIN	MINIMUM	TBD	TO BE DETERMINED		
CB	CIRCUIT BREAKER	FC	FLEXIBLE METAL CONDUIT	G	GROUND	TC	TIME CLOCK		
CL	CENTER LINE	FT	FEET	GC	GENERAL CONTRACTOR	TYP	TYPICAL		
CLG	CEILING	G	GROUND	GFIC	GROUND FAULT CIRCUIT INTERRUPTER				
CMU	CONCRETE MASONRY UNIT	GT	GYPSUM WALL BOARD	GND	GROUND				
CP	CIRCULATION PUMP	GWB		NTS	NORMALLY OPEN				
CUH	CABINET UNIT HEATER				NORMALLY CLOSED				
					NATIONAL ELECTRIC CODE				
					NEUTRAL				
					NORMALLY OPEN				
					NOT TO SCALE				



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SEAL

BID DOCUMENT

CLIENT: GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT
500 AVIATION PARKWAY, GREER, SC 29651

PROJECT: TERMINAL AHU REPLACEMENT

DRAWN VICTOR HERNANDEZ

DESIGNED R.ALAVEZ

CHECKED R.ALAVEZ

SCALE AS NOTED

DATE 4/23/2025

PROJECT

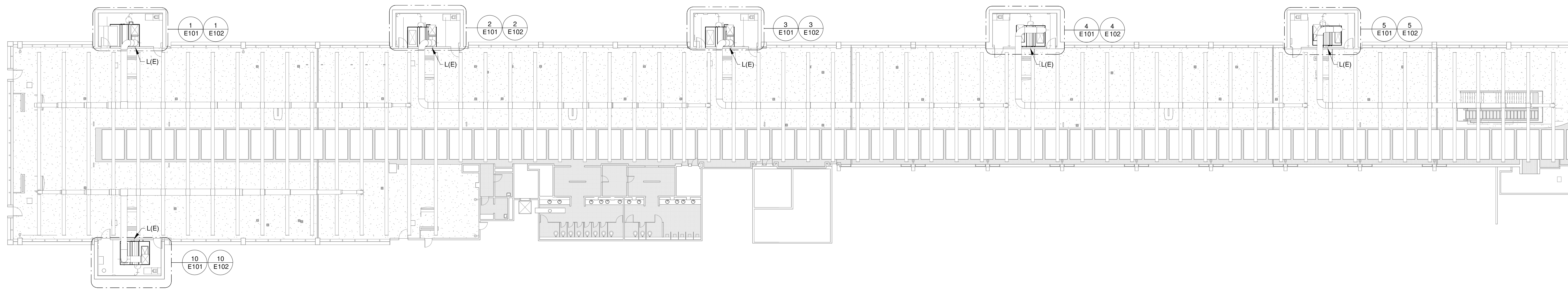
NO. DATE REVISIONS

DRAWING TITLE

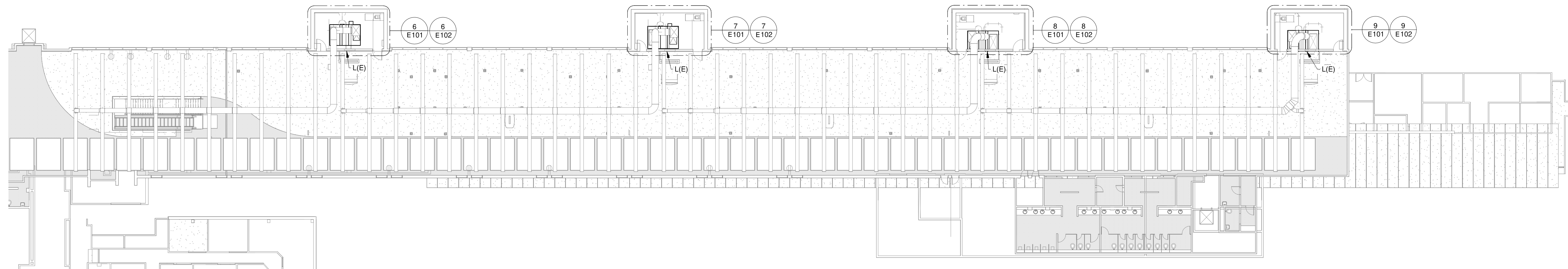
LEVEL 2
ELECTRICAL
RENOVATION

DRAWING NUMBER

E100



① Level 2 ELECTRICAL RENOVATION AREA A
1" = 20'-0"



② Level 2 ELECTRICAL RENOVATION AREA B
1" = 20'-0"



KEY PLAN



BID DOCUMENT

**GREENVILLE - SPARTANBURG
INTERNATIONAL AIRPORT**
500 AVIATION PARKWAY, GREER, SC 29665

PROJECT:

PROJECT _____

DRAWING TITLE

DRAWING NUMBER

E101

- ① DISCONNECT AND REMOVE ALL ELECTRICAL AND CONTROL WIRES ASSOCIATED TO THE AHU.
- ② DISCONNECT AND REMOVE THE DUCT SMOKE DETECTOR, IF APPLICABLE.
- ③ DISCONNECT AND REMOVE THE ATS PANEL, IN CASE OF OBSTRUCTION, FOR THE PROPOSED WORK.
- ④ DISCONNECT AND REMOVE THE EXISTING VFD ASSOCIATED TO THE AHU.

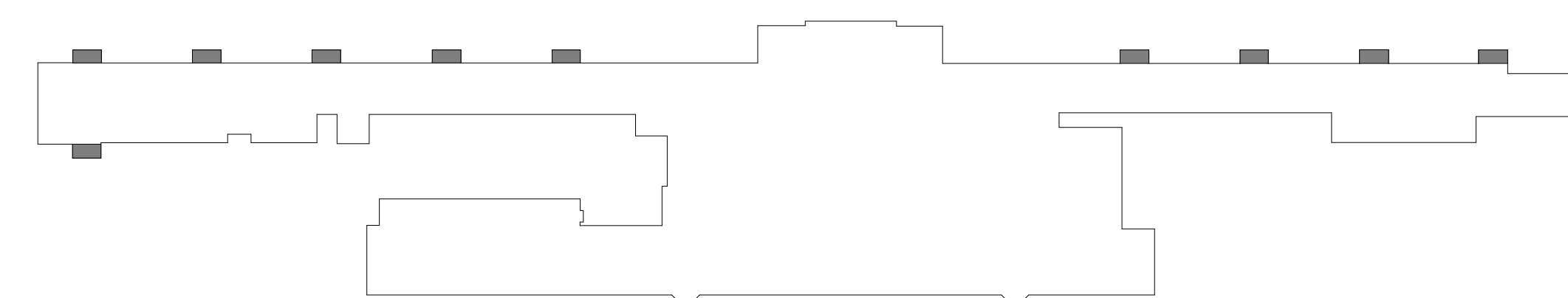


IMPORTANT NOTES:

1. -USE RECOMMENDED MANUFACTURER MAX FUSE AS A PROTECTIVE DEVICE.

2. -IN CASE OF USING INVERSE TIME CIRCUIT BREAKER FOR BRANCH CIRCUIT, THE BREAKER SHALL BE IN COMPLIANCE WITH NEC 430.53 (4).

AHU	ELECTRICAL INTERFERENCES				
	METER	ATS	SWITCHES	J.BOX	CONDUITS
AHU # 4	NO	NO	NO	NO	YES
AHU # 5	NO	NO	NO	NO	YES
AHU # 6	NO	NO	NO	NO	YES
AHU # 7	NO	NO	NO	NO	YES
AHU # 14	NO	NO	NO	NO	YES
AHU # 15	NO	NO	NO	NO	YES
AHU # 16	NO	NO	NO	NO	YES
AHU # 17	NO	NO	NO	NO	YES
AHU # 24	NO	NO	YES	NO	YES
AHU # 25	NO	YES	YES	NO	YES



KEY PLAN

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BID DOCUMENT

PROJECT:

PROJECT _____

ENLARGED PLANS

E1 02

- ① RECONNECT ALL ELECTRICAL AND CONTROL WIRES ASSOCIATED TO THE NEW AHU.
- ② INSTALL AND RECONNECT THE DUCT SMOKE DETECTOR, IF APPLICABLE.
- ③ INSTALL AND RECONNECT THE ATS PANEL.
- ④ CONNECT THE NEW VFD ASSOCIATED TO THE AHU. ELECTRICAL CONTRACTOR TO DOUBLE CHECK MANUFACTURER TECHNICAL SHEET FOR FINAL LOCATION.



IMPORTANT NOTES:

1. -USE RECOMMENDED MANUFACTURER MAX FUSE AS A PROTECTIVE DEVICE.

2.-IN CASE OF USING INVERSE TIME CIRCUIT BREAKER FOR BRANCH CIRCUIT, THE BREAKER SHALL BE IN COMPLIANCE WITH NEC 430.53 (4).

