



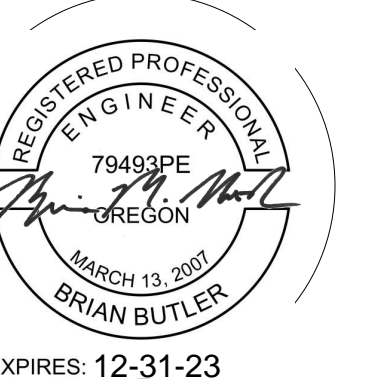
Project

Consultant

Revisions

No. Description Date

Stamp



Issuance

**100% CD**

Date

**07.28.23**

Project Number

**22093**

EDA Award Number 07-79-07767

URI 116720

Drawing Title

**GENERAL NOTES  
AND  
ABBREVIATIONS**

Sheet No

**M001**

**GENERAL MECHANICAL NOTES:**

- A. INSTALL EQUIPMENT TO PROVIDE SERVICE CLEARANCE AS RECOMMENDED BY THE MANUFACTURER, AND AS REQUIRED BY CODE AND LOCAL INSPECTOR. PROVIDE CLEAR LABELING OF FILTER PANELS TO VERIFY ADEQUATE ACCESS FOR MAINTENANCE.
- B. TEST HVAC CONTROL DEVICES, COMPONENTS, EQUIPMENT AND SYSTEMS TO ENSURE THEY ARE CALIBRATED, ADJUSTED AND OPERATE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. SEQUENCES OF OPERATION SHALL BE FUNCTIONALLY TESTED TO ENSURE THEY OPERATE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. A COMPLETE REPORT OF THE TEST PROCEDURES AND RESULTS SHALL BE PREPARED AND FILED WITH THE OWNER PRIOR TO OCCUPANCY.
- C. PROVIDE RECORD DRAWINGS OF ACTUAL INSTALLATION WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE TO BUILDING OWNER. PROVIDE OPERATING AND MAINTENANCE MANUAL CONTAINING SUBMITTAL DATA AND OTHER INFORMATION REQUIRED BY SPECIFICATIONS AND ENERGY CODE.
- D. COORDINATE FINAL LOCATION OF EQUIPMENT, DUCTS, DIFFUSERS, AND GRILLES WITH STRUCTURE, REFLECTED CEILING PLANS, AND THE LIGHTING LAYOUT PRIOR TO ROUGH-IN. FOLLOW ARCHITECTURAL RCP FOR ALL FINAL GRILLE & DIFFUSER LOCATIONS.
- E. PROVIDE VOLUME DAMPERS IN BRANCH DUCTS TO SUPPLY, EXHAUST, AND RETURN GRILLES, AND LOCATE DAMPERS AS CLOSE TO BRANCH CONNECTION AS POSSIBLE. PROVIDE CONCEALED DAMPER OPERATOR IN LOCATIONS WHERE DAMPER IS INACCESSIBLE.
- F. ALL DUCTWORK TO BE MINIMUM 24 GAUGE SHEET METAL WHEN TRAVELLING BETWEEN RATED OCCUPANCY SEPARATIONS, AREA SEPARATIONS, OR COVER RATED EXIT CORRIDORS AND PASSAGEWAYS.
- G. MOUNT ALL SENSORS, SWITCHES, AND THERMOSTATS PER ARCHITECTURAL DETAILS.
- H. TRANSITION FROM DUCT SIZES SHOWN TO DIFFUSER NECK SIZES SHOWN A MINIMUM OF 2 FEET BEFORE OUTLET, OR INSTALL A DUCT THE SAME SIZE AS THE GRILLE NECK, AT CONTRACTORS OPTION.
- I. ANCHOR ALL MECHANICAL UNITS IN EXCESS OF 400 LBS. TO STRUCTURE, AND PROVIDE THE DESIGN OF THIS ANCHORAGE AS A DEFERRED SUBMITTAL IN ACCORDANCE WITH THE DIVISION 23 SPECIFICATIONS. PROVIDE A SEISMIC BRACING DESIGN FOR ANY SUSPENDED APPLIANCE OR PIECE OF EQUIPMENT WEIGHING 75 LBS. OR MORE AS WELL. ALL DRAWINGS AND CALCULATIONS SUBMITTED FOR THIS WORK SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OREGON.
- J. CONSTRUCT AND SEAL ALL DUCTWORK PER IMC REQUIREMENTS. ALL DUCTWORK ON THIS PROJECT FALLS UNDER THE LOW PRESSURE CLASSIFICATION.

**HVAC CONTROL SYMBOLS**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GATE VALVE		ROOM OR ZONE THERMOSTAT
	GLOBE VALVE		DUCT THERMOSTAT
	GAS COCK		THERMOMETER
	SOLENOID VALVE		EXPANSION VALVE
	CONTROL VALVE , 2-WAY		DAMPER MOTOR
	PRESSURE REDUCING VALVE		DAMPER
	CHECK VALVE		MOTOR
	CENTRIFUGAL FAN		PLUG VALVE
	FLOW SWITCH		PRESSURE GAGE
	FIRE SAFETY SWITCH		PRESSURE SWITCH
	REHEAT COIL		PUMP
	HUMIDISTAT, ROOM		RELAY
	HUMIDISTAT, DUCT		PRESS./TEMP. RELIEF VALVE
	BALL VALVE		SMOKE DETECTOR
	CONTROL VALVE , 3-WAY		CONTROL WIRING
	FLOW SWITCH		STATIC PRESSURE CONTROLLER
	STEAM TRAP		

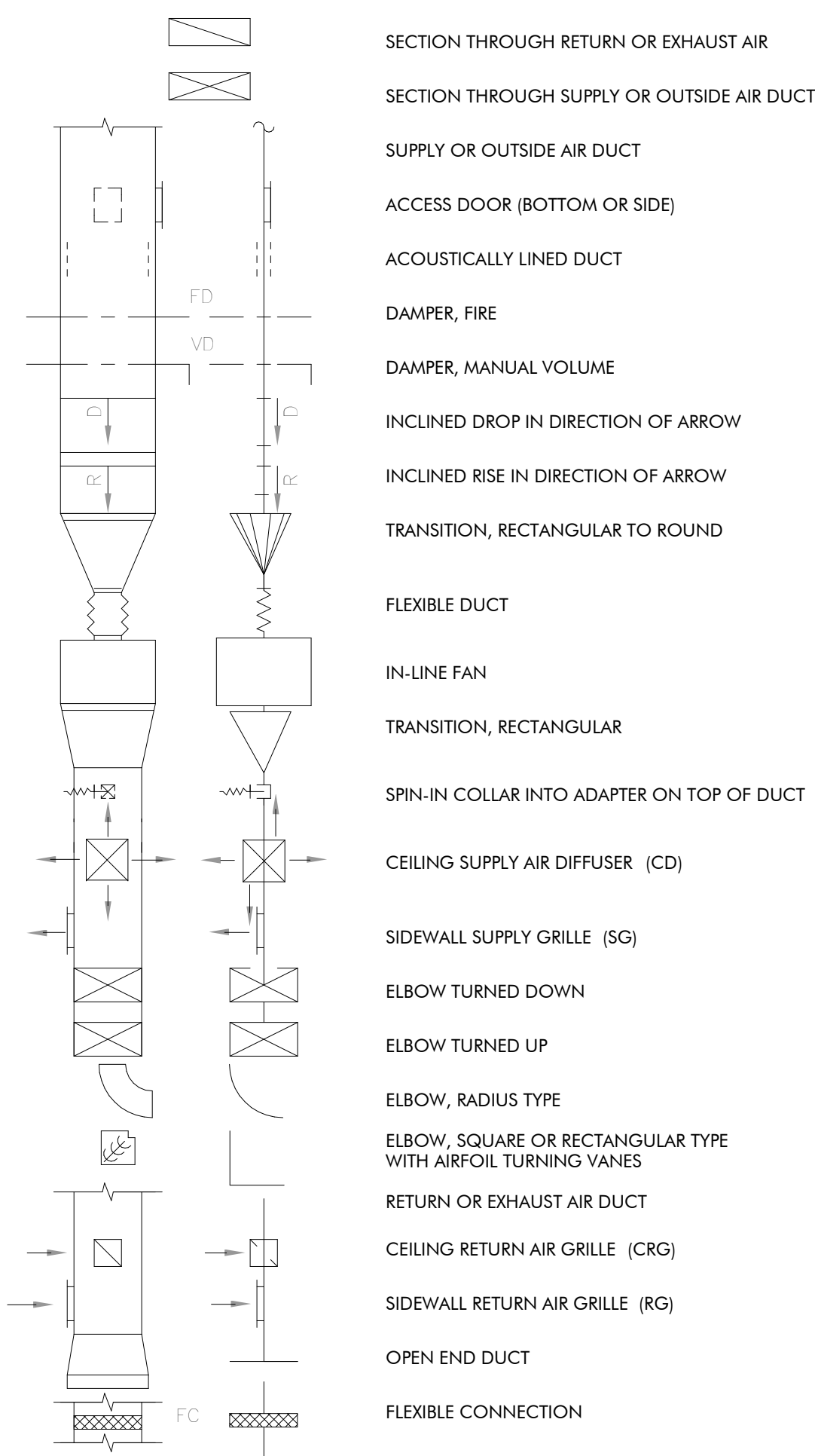
**PIPING SYSTEM SYMBOLS**

	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION

**ABBREVIATIONS**

AC AIR CONDITIONING UNIT	ESP EXTERNAL STATIC PRESSURE	NC NORMALLY CLOSED
AD ACCESS DOOR	ET EXPANSION TANK	NO NORMALLY OPEN
AFF ABOVE FINISHED FLOOR	EWT ENTERING WATER TEMPERATURE	NIC NOT IN CONTRACT
AH AIR HANDLER (SPLIT REFRIG)	EWC ELECTRIC WATER COOLER	NK NECK
AHU AIR HANDLING UNIT	FA FREE AREA	OA OUTSIDE AIR
AL ACOUSTICAL LINING	FX FLEXIBLE CONNECTION	OAI OUTSIDE AIR INTAKE
AP ACCESS PANEL	FC FAN COIL UNIT	OAT OUTSIDE AIR TEMPERATURE
BB ELECTRIC BASEBOARD RADIATION	FD FIRE DAMPER	OC ON CENTER
B BOILER	FLR FLOOR	OD OUTSIDE DIAMETER
BDD BACK DRAFT DAMPER	FOB FLAT ON BOTTOM	OBD OPOSED BLADE DAMPER
BFC BELOW FINISHED CEILING	FOT FLAT ON TOP	PBD PARALLEL BLADE DAMPER
BOB BOTTOM OF BEAM	FOP FUEL OIL PUMP	PRV PRESSURE REDUCING VALVE
BOD BOTTOM OF DUCT	FP FIRE PUMP	PTAC PACKAGED TERMINAL AIR CONDITIONER
BOP BOTTOM OF PIPE	FM FEET PER MINUTE	RA RETURN AIR
C CHILLER	FTR FINNED TUBE RADIATION	RAG RETURN AIR GRILLE
CD CEILING DIFFUSER	GC GENERAL CONTRACTOR	RAR RETURN AIR REGISTER
CFM CUBIC FEET PER MINUTE	GRH GALLONS PER HOUR	RRC REFLECTED CEILING PLAN
CHWP CHILLED WATER PUMP	GRM GALLONS PER MINUTE	RHC REHEAT COIL
CHWR CHILLED WATER RETURN	HD HAND DAMPER	RF RETURN FAN
CHWS CHILLED WATER SUPPLY	HP HEAT PUMP	SA SUPPLY AIR
CO CLEAN OUT	HV HEATING AND VENTILATING UNIT	SAR SUPPLY AIR REGISTER
CP CONDENSATE PUMP	HWC HOT WATER CONVERTER	SCG SMOKE CONTROL GRILLE
CWR CONDENSER WATER RETURN	HWP HOT WATER PUMP	SD SMOKE DAMPER
CWS CONDENSER WATER SUPPLY	HWR HEATING HOT WATER RETURN	SEF SMOKE EXHAUST FAN
CT COOLING TOWER	HWS HEATING HOT WATER SUPPLY	SF SUPPLY FAN
CU CONDENSING UNIT	HX HEAT EXCHANGER	SP STATIC PRESSURE
CUH CABINET UNIT HEATER	HZ HERTZ	TG TRANSFER GRILLE
CVB CONSTANT VOLUME BOX	ID INSIDE DIAMETER	TYP TYPICAL
CWP CONDENSER WATER PUMP	LAT LEAVING AIR TEMPERATURE	UH UNIT HEATER
DB DRY BULB	LWT LEAVING WATER TEMPERATURE	UON UNLESS OTHERWISE NOTED
DS DUCT SILENCER	LD LINEAR DIFFUSER	VAV VARIABLE AIR VOLUME UNIT
DWP DOMESTIC WATER PUMP	LF LINEAR FEET	VD VOLUME DAMPER
EAT ENTERING AIR TEMPERATURE	MC MECHANICAL CONTRACTOR	VTR VENT THRU ROOF
EC ELECTRICAL CONTRACTOR	MTD MOUNTED	WB WET BULB
EF EXHAUST FAN	MOD MOTOR OPERATED DAMPER	WMS WIRE MESH SCREEN
EJ EXPANSION JOINT	MUA MAKE-UP AIR UNIT	
ER EXHAUST REGISTER		

**DUCTWORK SYMBOLS**

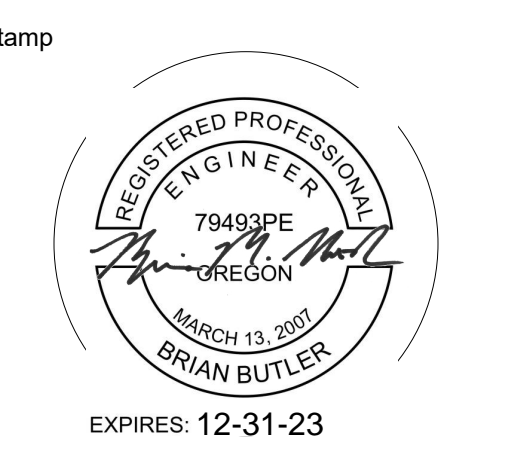




Project

Consultant

Revisions	No.	Description	Date



Issuance  
**100% CD**

Date  
**07.28.23**

Project Number  
**22093**  
EDA Award Number 07-79-07767  
URI 116720

Drawing Title  
**PARTIAL MECHANICAL FLOOR PLAN**

Sheet No  
**M401**

2022 OREGON MECHANICAL SPECIALTY CODE OUTSIDE AIR VENTILATION SCHEDULE

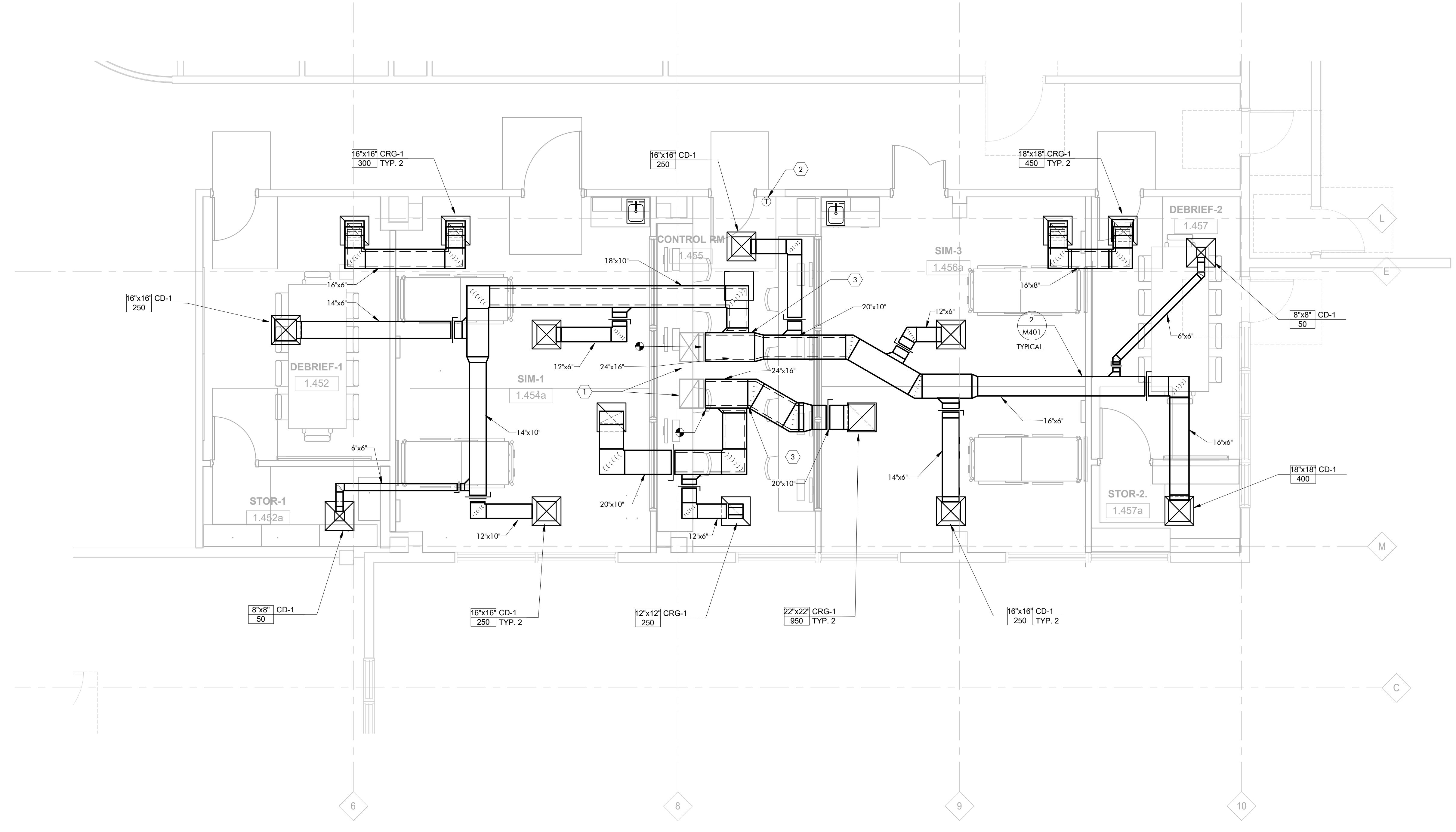
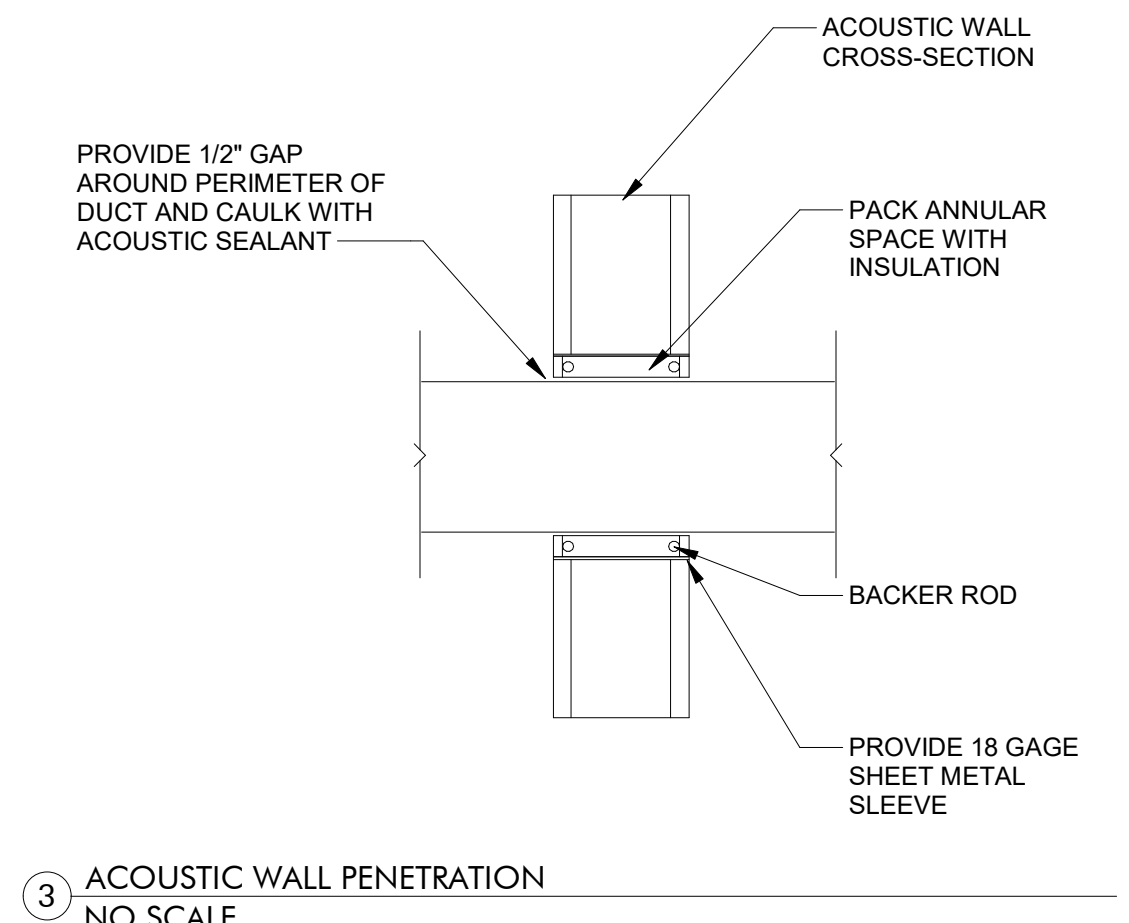
ZONE	UNIT	ROOM NAME	OCCUPANT LOAD	PEOPLE OUTDOOR AIR RATE	AREA OUTDOOR AIR RATE	ZONE POPULATION (AVERAGE)	ACTUAL ZONE POPULATION	ZONE FLOOR AREA	BREATHING ZONE OUTDOOR AIRFLOW <sub>a</sub>	ZONE AIR DISTRIBUTION EFFECTIVENESS <sub>b</sub>	ZONE OUTDOOR AIRFLOW REQUIRED <sub>c</sub>	ZONE OUTDOOR AIRFLOW PROVIDED	EXHAUST AIRFLOW RATE	EXHAUST AIRFLOW RATE	ZONE FIXTURE COUNT	ZONE EXHAUST AIRFLOW REQUIRED	ZONE EXHAUST AIRFLOW PROVIDED
			people/1000 ft <sup>2</sup>	R <sub>p</sub> cfm/person	R <sub>a</sub> cfm/ft <sup>2</sup>	PZ people	people	AZ ft <sup>2</sup>	V <sub>bz</sub> cfm	EZ	VOZ cfm	cfm	cfm	cfm/ft <sup>2</sup>	cfm/fixture	#	cfm
NURSING SIMULATION LAB	EXISTING RTU	DEBRIEF 1	50	5	0.06	7	10	280	67	0.8	84	90	-	-	-	0	0
		STORAGE A180	-	-	0.12	0	0	90	11	0.8	14	20	-	-	-	0	0
		STORAGE A182	-	-	0.12	0	0	90	11	0.8	14	20	-	-	-	0	0
		SIM ROOM	25	10	0.12	7	4	500	100	0.8	125	130	-	-	-	0	0
		CONTROL ROOM	5	5	0.06	1	8	260	56	0.8	70	70	-	-	-	0	0
		SIM ROOM	25	10	0.12	7	4	500	100	0.8	125	130	-	-	-	0	0
		DEBRIEF 2	50	5	0.06	7	10	280	67	0.8	84	90	-	-	-	0	0

NOTES:  
CALCULATION IS BASED ON 2022 OR MECH CODE VENTILATION RATE PROCEDURE (VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY). ALL FORMULAS, VARIABLES, AND TERMINOLOGY USED IN THE CALCULATION TABLES ARE REPRESENTATIVE OF THOSE USED IN 2022 OR MECH CODE  
a. BREATHING ZONE OUTDOOR AIRFLOW:  $V_{bz} = R_p P_z + R_a A_z$   
b. ZONE AIR DISTRIBUTION EFFECTIVENESS IS DETERMINED USING TABLE IN 2022 OR MECH CODE.  
c. ZONE OUTDOOR AIRFLOW:  $V_{oz} = V_{bz} / E_z$ .  $V_{oz}$  REPRESENTS THE OUTDOOR AIRFLOW THAT MUST BE SUPPLIED TO THE ZONE BY THE SUPPLY AIR DISTRIBUTION SYSTEM.  
d. TOTAL OUTDOOR INTAKE FOR 100% OUTDOOR AIR SYSTEMS:  $V_{ot} = \sum \text{all zones } V_{oz}$

DIFFUSER, REGISTER AND GRILLE SCHEDULE

SYMBOL	TYPE	FACE	FRAME	DAMPER	FINISH	BASIS OF DESIGN	NOTES
CD-1	CEILING DIFFUSER	LOUVER	SURFACE	NONE	WHITE	TITUS TDC	-
SG-1	SIDEWALL SUPPLY GRILLE	DOUBLE DEFLECTION	1/4" BORDER	NONE	WHITE	TITUS 300RL	-
RG-1	RETURN GRILLE	FIXED BAR	1/4" BORDER	NONE	WHITE	TITUS 350RL	-
CRG-1	CEILING RETURN GRILLE	PERFORATED	SURFACE	NONE	WHITE	TITUS PAR	1
CRG-2	CEILING RETURN GRILLE	PERFORATED	LAY-IN	NONE	WHITE	TITUS PAR	1

NOTES:  
1 PROVIDE 12X12 GRILLE FACE FOR 6" ROUND NECK SIZE, AND PROVIDE 24X24 GRILLE OTHERWISE.



1 Mechanical Floor Plan  
1/4" = 1'-0"

DATE: 8/5/2023 10:41:09 AM  
FILE PATH: AutoCAD Dwg://Columbia Gorge CC Nursing Lab T123-011 CCCC Nursing Lab - IMP - R22.rvt  
copyright © 2018



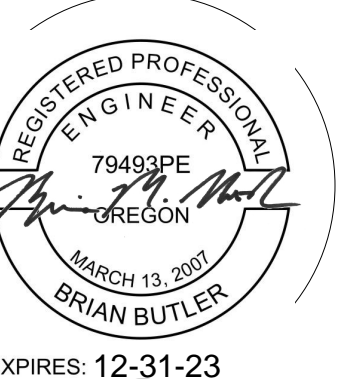
Project

Consultant

Revisions

No.	Description	Date

Stamp



Issuance

**100% CD**

Date

**07.28.23**

Project Number

**22093**  
EDA Award Number 07-79-07767  
URI 116720

Drawing Title

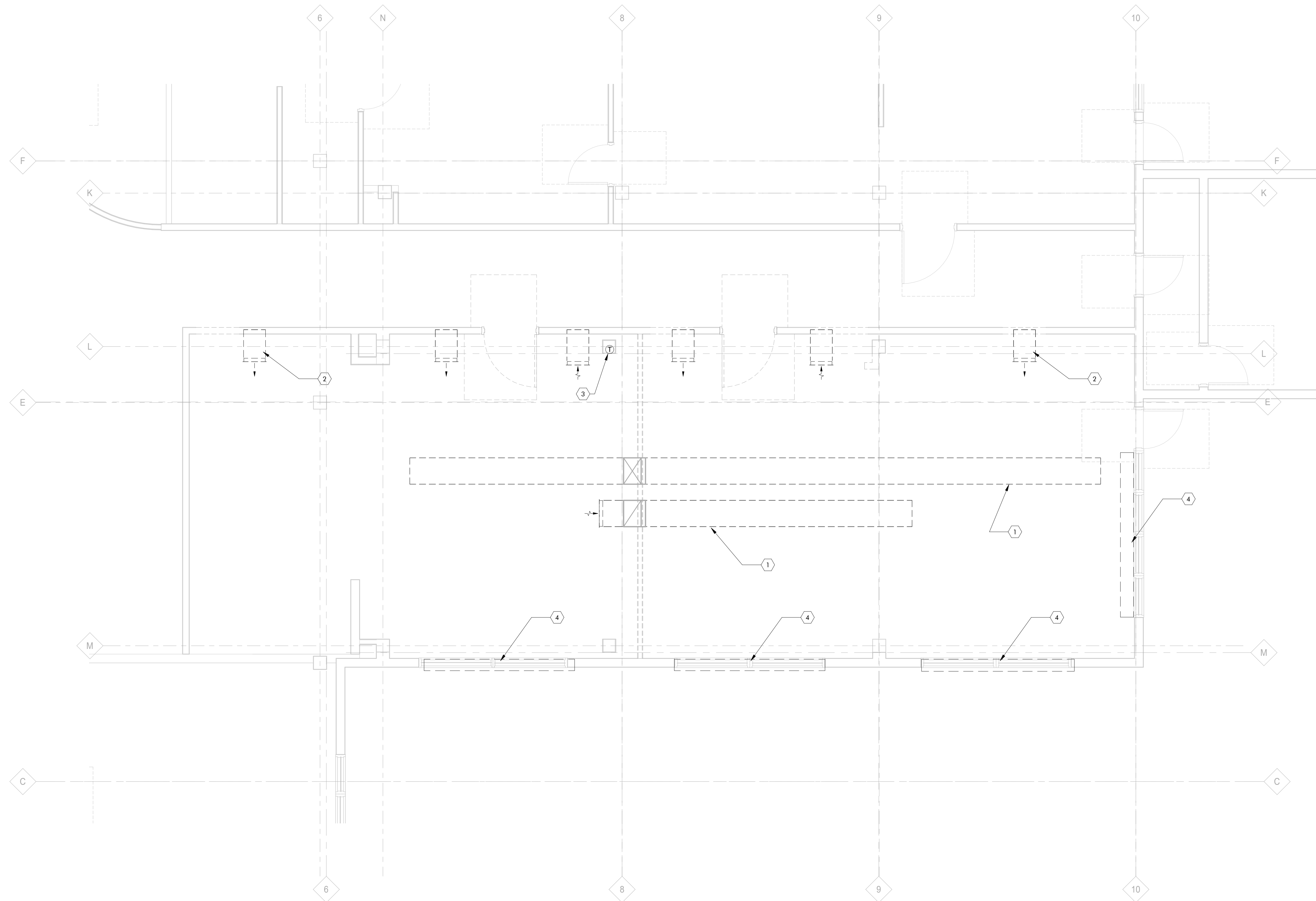
**PARTIAL  
MECHANICAL DEMO  
FLOOR PLAN**

Sheet No

**M402**

**SHEET KEYNOTES**

- 1 DEMOLISH EXISTING DUCTWORK BACK TO DROPS FROM EXISTING ROOFTOP UNIT INCLUDING DAMPERS, DUCT MOUNTED DIFFUSERS, HANGERS, AND ACCESSORIES, TYPICAL.
- 2 DEMOLISH EXISTING SUPPLY AND EXHAUST DUCTWORK AND GRILLES IN SOFFIT, AND CAP DUCTS ABOVE CORRIDOR CEILING, TYPICAL OF 6.
- 3 RELOCATE EXISTING T-STAT TO NEW LOCATION SHOWN, AND EXTEND EXISTING CONTROL WIRING AS NEEDED.
- 4 DEMOLISH EXISTING PERIMETER FINNED TUBE RADIATORS INCLUDING ASSOCIATED VALVES, PIPING, & CONTROLS, AND CAP PIPING BEHIND WALL, TYPICAL. COORDINATE PATCHING OF WALL WITH THE G.C.



1 Mechanical Demo Floor Plan  
1/4" = 1'-0"