



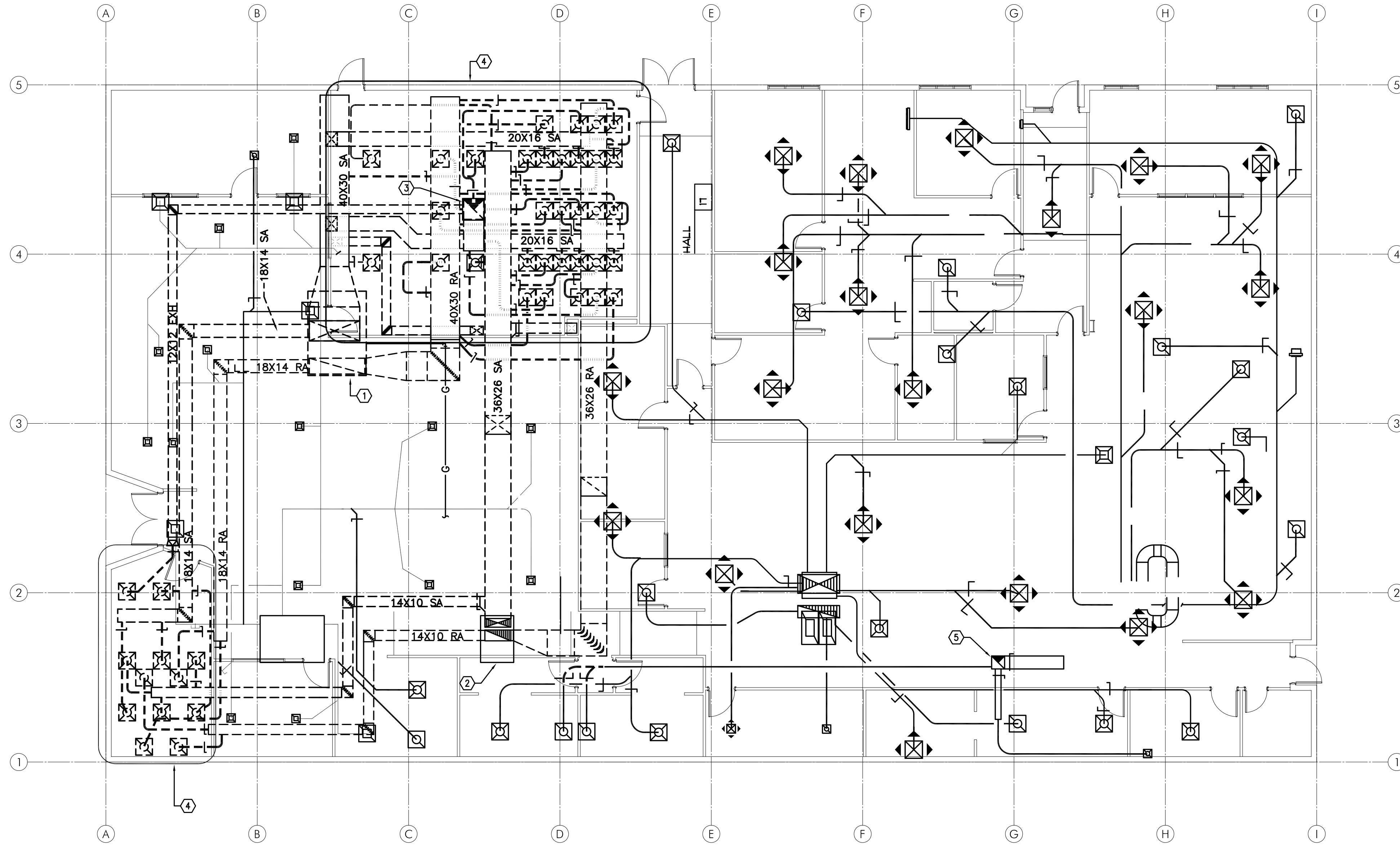
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PROJECT # 20XX-XX
DATE: 06/14/2016

REVISIONS

SERVER ROOM UPGRADE FOR:
**SALEM-KEIZER SCHOOL DISTRICT
TECHNOLOGY & INFORMATION SERVICES BUILDING**
1340 STATE STREET, SALEM, OREGON 97301



KEYED NOTES: #

1. REMOVE (E)RTU-5 ON ROOF AND RETURN TO OWNER. REMOVE ALL ASSOCIATED CONTROLS. EXISTING CURB TO REMAIN AND BE CAPPED FOR INSTALLATION OF NEW EQUIPMENT
2. (E)15 RTU TO REMAIN FOR FUTURE USE. CAP OFF SA/RA DUCT BELOW ROOF.
3. (E)EF-1 TO REMAIN. CAP OFF DUCTWORK BELOW ROOF.
4. REMOVE ALL (E)SA/RA/EXH GRILLES AND DUCTWORK IN THIS ROOM.
5. (E)EXH FAN ON ROOF TO REMAIN FOR FUTURE USE.

M1.0 MECHANICAL DEMO PLAN
1/8"=1'-0"

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M1.0

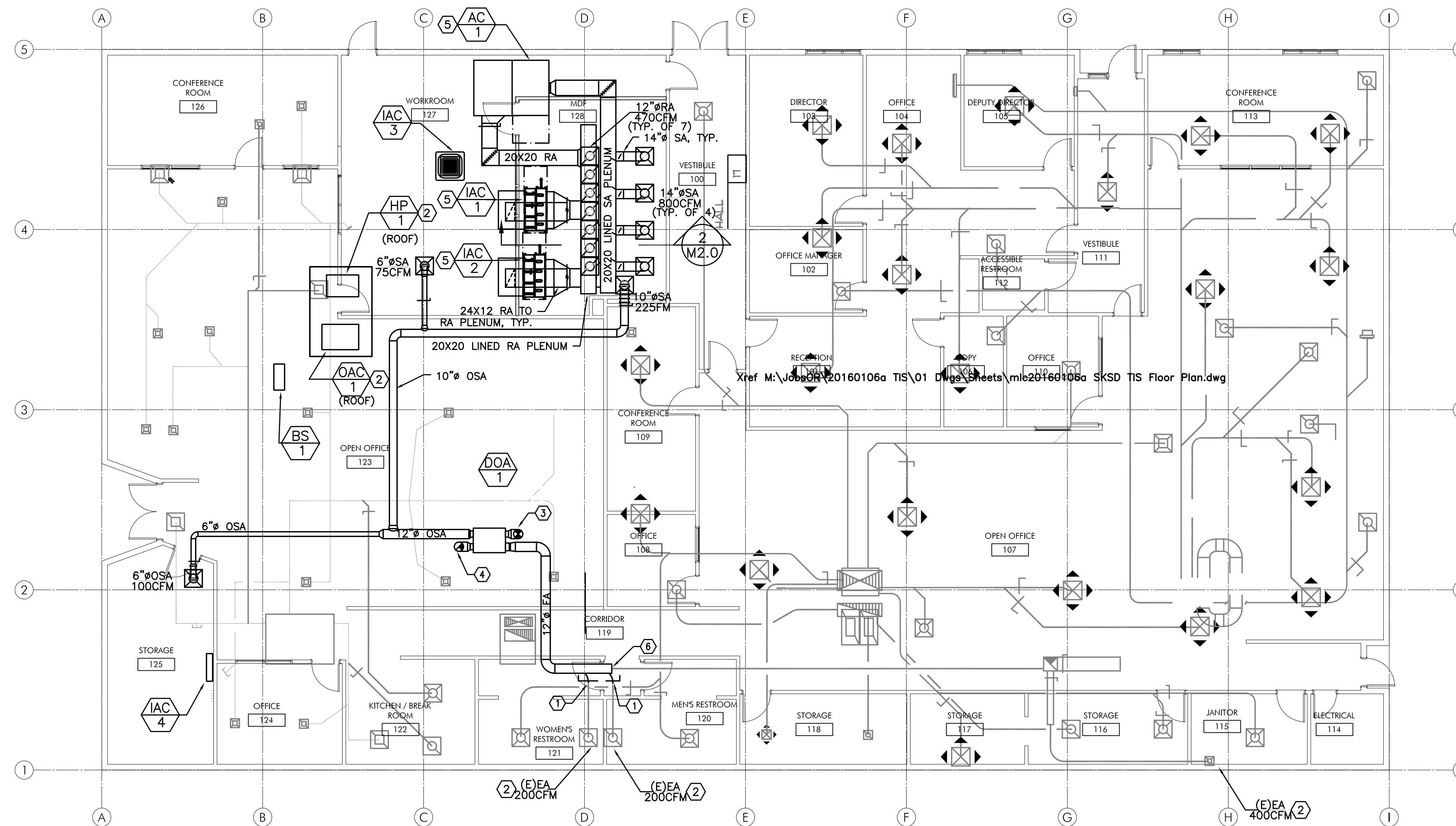


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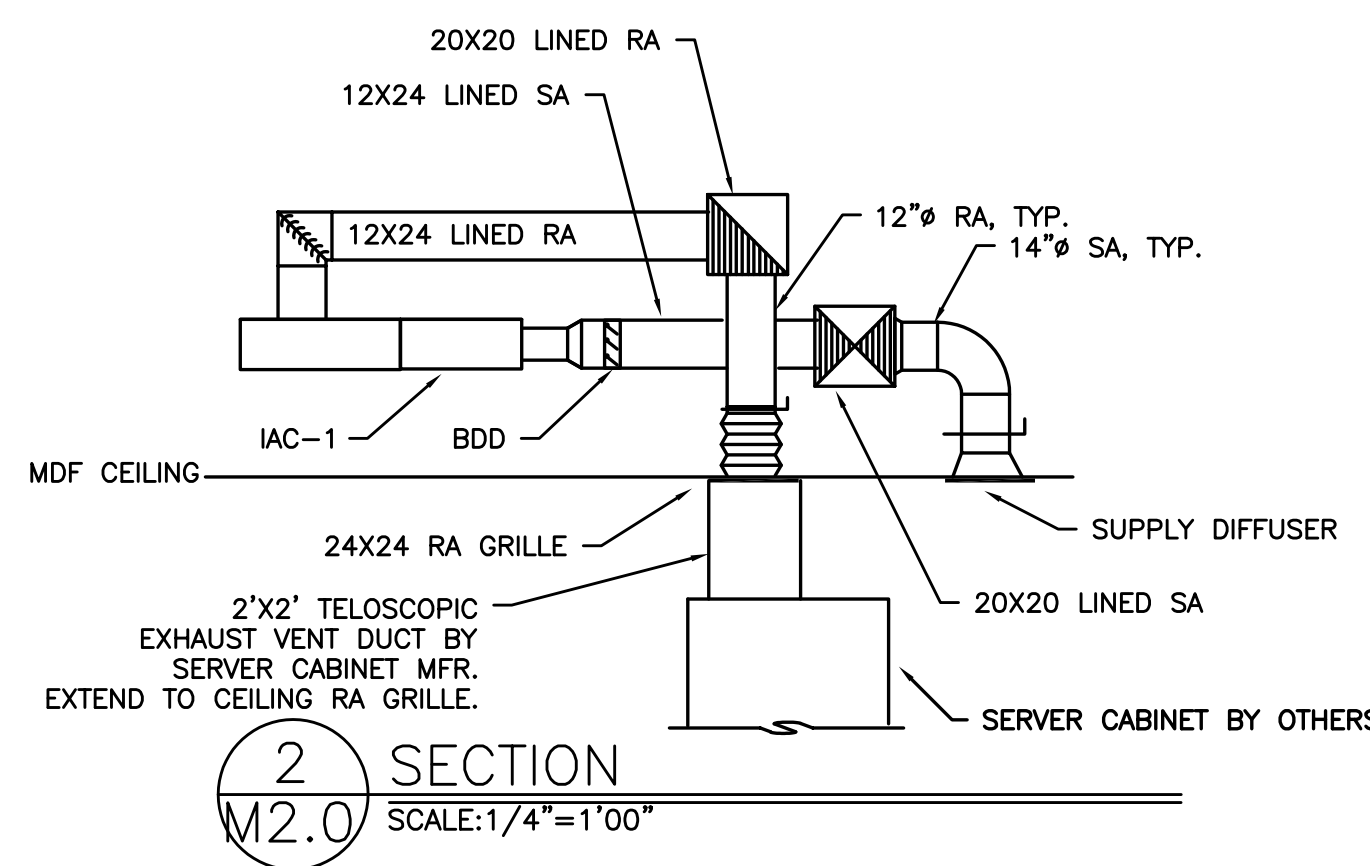
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- KEYED NOTES: (#)
1. ROTATE (E)TURNING ELBWOS TO THE OPPOSITE AIRFLOW DIRECTION.
 2. INSTALL ON (E)CURB. SEE 4/M6.1.
 3. 12" Ø OSA UP THRU ROOF. SEE 5/M6.1.
 4. 12" EXH DUCT UP THRU ROOF. SEE 5/M6.1.
 5. SEE 6/M6.1 FOR INSTALLATION DETAIL.
 6. (E)EA 12" Ø EA TO EXISTING.

1 MECHANICAL PLAN
M2.0 SCALE: 1/8" = 1'-0"



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M2.0



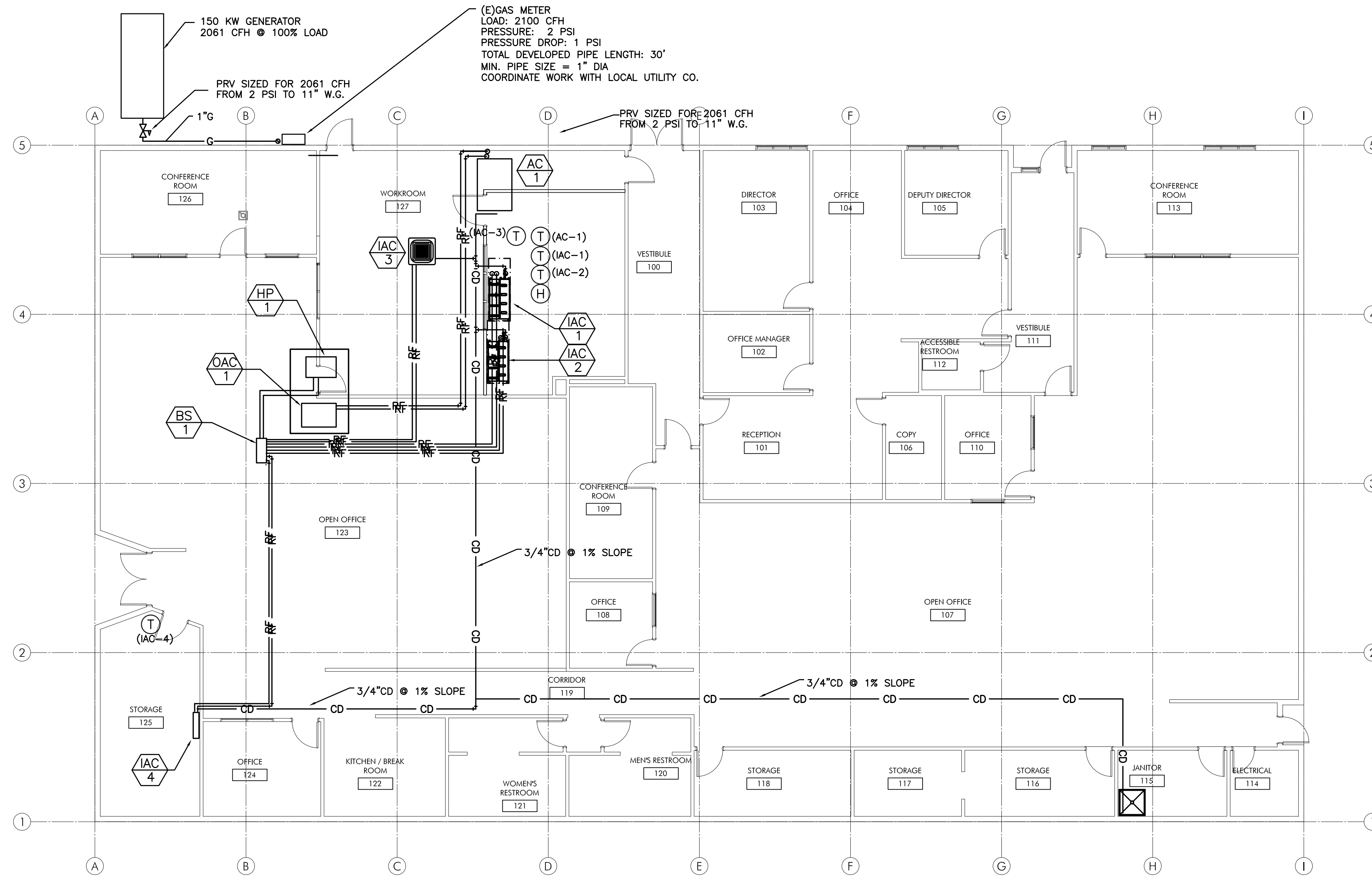
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 **1** MECHANICAL PIPING PLAN
M2.1 SCALE: 1/8" = 1'-0"

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M2.1



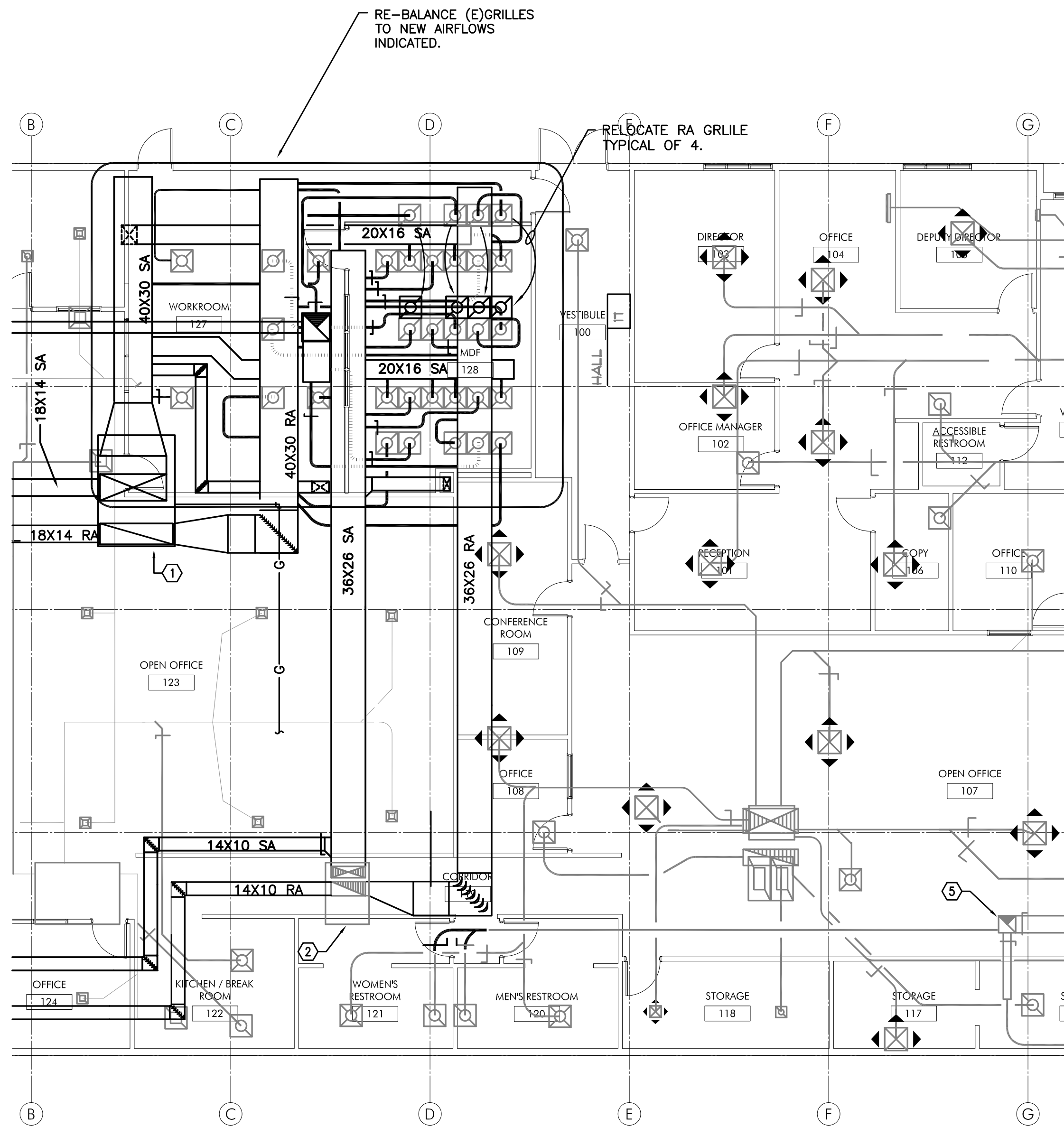
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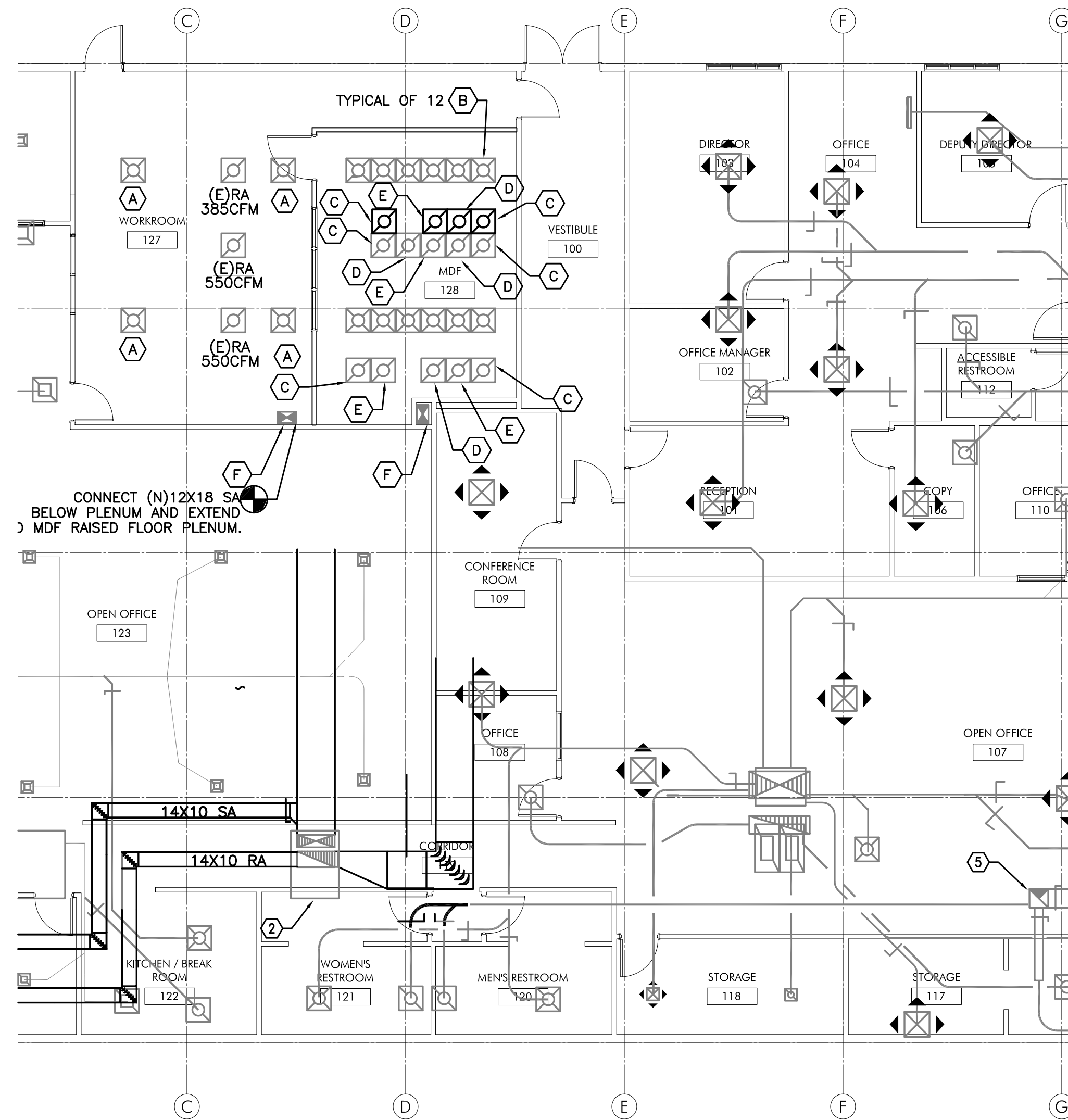
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1 MECHANICAL PLAN - ALTERNATE #1
M2.0A SCALE: 1/8" = 1'-0"

ALTERNATE #1:
ALL HVAC EQUIPMENTS TO REMAIN.
RELOCATE RA GRILLES INDICATED TO NEW SERVER AREA AND RE-BALANCE ALL CEILING SUPPLY AND RETURN GRILLES IN THE WORK ROOM AND MDF ROOM.



2 MECHANICAL CEILING PLAN - ALTERNATE #1
M2.0A SCALE: 1/8" = 1'-0"

KEYED NOTES:

- (A) - BALANCE (E)DIFFUSER TO (E)SA 275CFM
- (B) - BALANCE (E)GRILLE TO (E)SA 750CFM
- (C) - BALANCE (E)GRILLE TO (E)RA 1005CFM
- (D) - BALANCE (E)GRILLE TO (E)RA 1135CFM
- (E) - BALANCE (E)GRILLE TO (E)RA 955CFM
- (F) - BALANCE (E)DUCT TO 800 CFM.

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M2.0A

MECHANICAL LEGEND

	SUPPLY AIR DIFFUSER	AFF	ABOVE FINISH FLOOR
	RETURN AIR GRILLE	AHU	AIR HANDLING UNIT
	EXHAUST AIR GRILLE	B.D.	BOTTOM OF DUCT
	PERFORATED RETURN AIR PANEL	BHP	BRAKE HORSEPOWER
	DIRECTIONAL AIR FLOW	BTU	BRITISH THERMAL UNITS
	MANUAL VOLUME DAMPER	CFM	CUBIC FEET PER MINUTE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	CONN.	CONNECTION
	RETURN AIR DUCT UP & DOWN	CONT.	CONTINUATION
	EXHAUST AIR DUCT UP & DOWN	CW	DOMESTIC COLD WATER
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	DB	DRY BULB
	RETURN AIR DUCT UP & DOWN	DIA.	DIAMETER
	EXHAUST AIR DUCT UP & DOWN	DIST.	DISTRIBUTION
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	EDB	ENTERING DRY BULB TEMPERATURE
	RETURN AIR DUCT UP & DOWN	EWB	ENTERING WET BULB TEMPERATURE
	EXHAUST AIR DUCT UP & DOWN	EWT	ENTERING WATER TEMPERATURE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	FF	FINISH FLOOR
	RETURN AIR DUCT UP & DOWN	FIXT.	FIXTURE
	EXHAUST AIR DUCT UP & DOWN	FPM	FEET PER MINUTE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	FPS	FEET PER SECOND
	RETURN AIR DUCT UP & DOWN	FT.	FEET / FOOT
	EXHAUST AIR DUCT UP & DOWN	GA.	GAUGE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	GPM	GALLONS PER MINUTE
	RETURN AIR DUCT UP & DOWN	H	HEIGHT
	EXHAUST AIR DUCT UP & DOWN	HP	HORSEPOWER
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	I.D.	INSIDE DIAMETER
	RETURN AIR DUCT UP & DOWN	IN.	INCHES
	EXHAUST AIR DUCT UP & DOWN	L	LENGTH
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	LBS.	POUNDS
	RETURN AIR DUCT UP & DOWN	LD	LEAVING DRY BULB
	EXHAUST AIR DUCT UP & DOWN	LWB	LEAVING WET BULB
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	LWT	LEAVING WATER TEMPERATURE
	RETURN AIR DUCT UP & DOWN	MAX.	MAXIMUM
	EXHAUST AIR DUCT UP & DOWN	MBH	THOUSANDS OF BTUs PER HOUR
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	MIN.	MINIMUM
	RETURN AIR DUCT UP & DOWN	NC	NOISE CRITERIA
	EXHAUST AIR DUCT UP & DOWN	N.C.	NORMALLY CLOSED
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	N.I.M.	NOT IN MECHANICAL
	RETURN AIR DUCT UP & DOWN	NO.	NUMBER
	EXHAUST AIR DUCT UP & DOWN	N.O.	NORMALLY OPEN
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	O.A.	OUTSIDE AIR
	RETURN AIR DUCT UP & DOWN	P	PERSON
	EXHAUST AIR DUCT UP & DOWN	PSI	POUNDS PER SQUARE INCH
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	P/T	PRESSURE / TEMPERATURE
	RETURN AIR DUCT UP & DOWN	R.A.	RETURN AIR
	EXHAUST AIR DUCT UP & DOWN	RECT.	RECTANGULAR
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	REQ'D	REQUIRED
	RETURN AIR DUCT UP & DOWN	S.A.	SUPPLY AIR
	EXHAUST AIR DUCT UP & DOWN	S.P.	STATIC PRESSURE
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	SQ.	SQUARE
	RETURN AIR DUCT UP & DOWN	TEMP.	TEMPERATURE
	EXHAUST AIR DUCT UP & DOWN	TYP.	TYPICAL
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	VAV	VARIABLE AIR VOLUME
	RETURN AIR DUCT UP & DOWN	W	WIDTH
	EXHAUST AIR DUCT UP & DOWN	WB	WET BULB
	SUPPLY OR OUTSIDE AIR DUCT UP & DOWN	WPD	WATER PRESSURE DROP
	RETURN AIR DUCT UP & DOWN	Ø	DIAMETER
	PRESSURE GAUGE	(E)	EXISTING
	PETE'S PLUG	(D)	DEMOLISH
	DOUBLE CHECK ASSEMBLY	—	NEW WORK
	PRESSURE REDUCING VALVE	HWS	(HWS) HEATING WATER SUPPLY
	UNION	HWR	(HWR) HEATING WATER RETURN
	2-WAY CONTROL VALVE		FIRE DAMPER
	3-WAY CONTROL VALVE		FIRE / SMOKE DAMPER
	CAP		SMOKE DAMPER
	SMOKE DETECTOR	SEISMIC BRACING	
	MOTORIZED DAMPER		LATERAL BRACING
			LONGITUDINAL BRACING
			LONGITUDINAL & LATERAL BRACING

DEDICATED OSA UNIT W/ENERGY RECOVERY

MARK NUMBER	DOA 1
TYPE	INDOOR
TOTAL SA CFM	400 CFM
OSA	100 %
MOTOR HP	90 WATTS
EXTERNAL SP. ("H2O)	0.5" W.G.
SPEED CONTROL ***	CONSTANT
TOTAL EXHAUST CFM	400
MOTOR HP	90 WATTS
EXTERNAL SP. ("H2O)	0.50"
SPEED CONTROL	CONSTANT
FILTER VELOCITY	500 FPM MAX
FILTER TYPE - PRE FILTER	2" - MERV 7
HEAT EXCHANGER:	
TEMP RECOVERY EFFICIENCY (%) CLG/HTG	68%/66%
ENTHALPY RECOVERY EFFICIENCY (%) CLG/HTG	45%/59%
DESIGN WEIGHT (LBS.)	75 #
BASIS OF DESIGN: DAIKIN	VAM470GVJU

BRANCH SELECTOR BOXES

MARK NUMBER	BS 1
MODEL: (DAIKIN)	BS12Q54TVJ
OF PORTS	12
PHYSICAL DIMENSION(HXWXD)	12"x32.5"x19"
WEIGHT	140
POWER (V/PH)	208/1

COMPUTER ROOM UNITS

MARK NUMBER	AC 1
SYSTEM	MDF
TYPE	HORIZONTAL
CFM	3000 CFM
OUTSIDE AIR	DIRECT ROOM SUPPLY
MOTOR H.P.	5 HP
MOTOR DRIVE	BELT DRIVE
ESP (" W.G.)	0.50"
EAT DB/WB *F	72/60 *F
LAT DB/WB *F	51.0/49.1 *F
TOTAL CAPACITY (BTUH) *	88,400 BTUH
SENSIBLE CAPACITY (BTUH) *	68,000 BTUH
FACE VELOCITY(FPM)	246
MIN ROWS	4
FPI	12
FILTER TYPE	MERV 8- 4" FILTER
TYPE	STEAM GENERATOR
LB/HR	10 LB/HR
KW	3.4 KW
SET POINT (% RH)	50%
TYPE	SCROLL
QTY	2
HOT GAS BY-PASS (QTY)	2
RE-HEAT (KW)	15 KW
EFFICIENCY (SEER)	13
DESIGN WEIGHT (LBS)	1100 LBS
CONDENSATE PUMP	YES (MIN 18" LIFT)
BASIS OF DESIGN	DATA AIRE DALA-0832-CO-D
OUTDOOR CONDENSING UNIT	OAC 1
NOMINAL TONNAGE	9T
REFRIGERANT	410-A
DESIGN WEIGHT (LBS)	400 #
BASIS OF DESIGN	DATA AIRE DARC-0932

* PROVIDE EMERGENCY POWER

OUTDOOR UNITS - VRV HEAT RECOVERY SYSTEM

MARK NUMBER	HP 1
SYSTEM - VRV - HEAT RECOVERY	ROOF MOUNTED
TYPE	HEAT RECOVERY HEAT PUMP
POWER (VOLT/PH)	208/3
BASIS OF DESIGN:	DAIKIN REYQ168TTJU
NOMINAL COOLING CAPACITY	14 TONS
NOMINAL HEATING CAPACITY	156,000 BTUH
REFRIGERANT	410 A
OUTDOOR DESIGN TEMPS	95/0 *F
EFFICIENCY (IEER/COP@17°F)	19.5/2.2
WEIGHT	780
INDOOR UNITS:	SEE INDOOR UNITS SCHEDULE

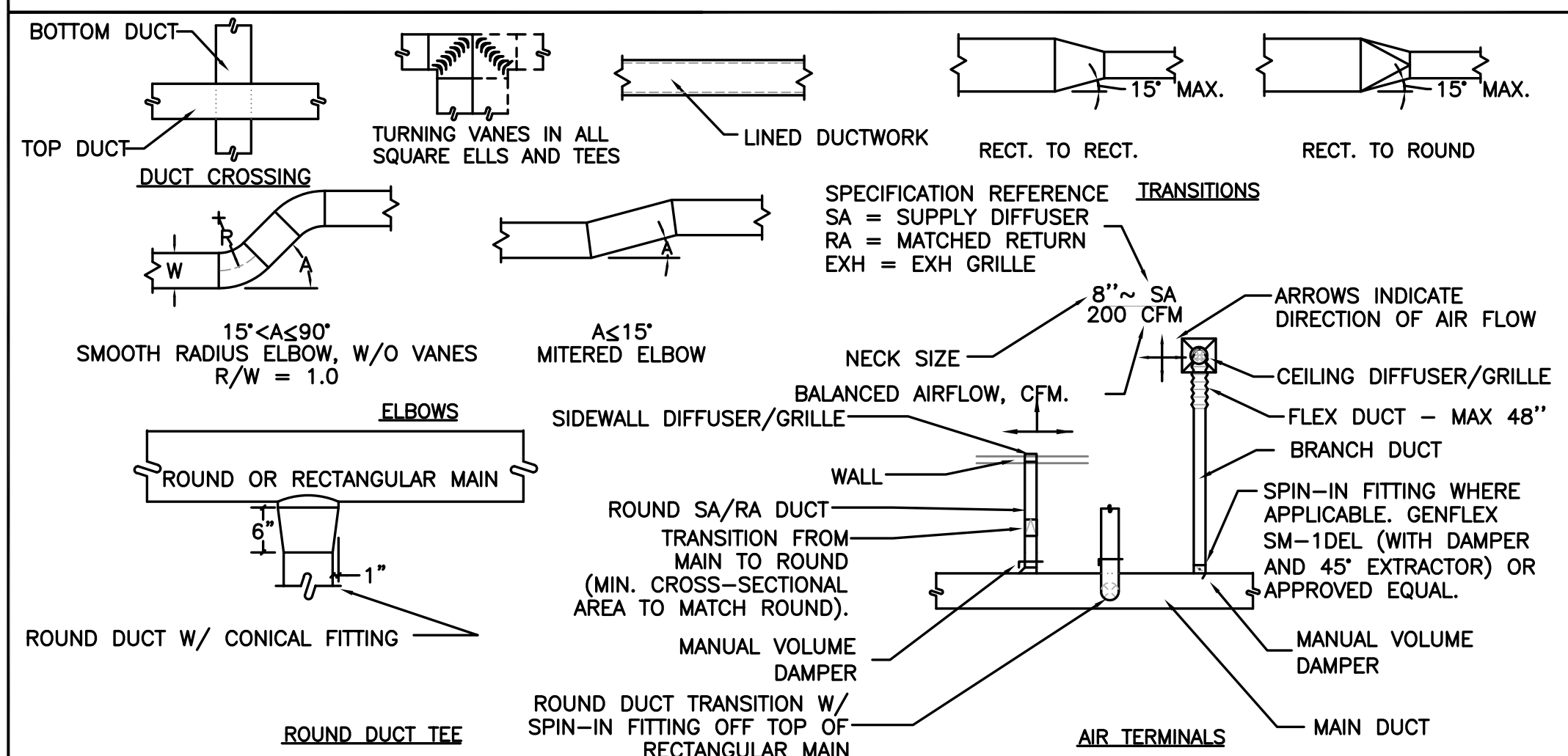
VRV INDOOR UNITS

TAG #	Heat Pump Unit	BOD: Mitsubishi	Airflow (CFM)	ESP ("W.G.)	Nominal Cooling (BTUH)	Nominal Heating (BTUH)	Weight (LBS)	Electrical V/PH	Notes
IAC-1	HP-1	FXMQ54PBVJU	1624	0.50	54,000	67,000	104	208/1	1,2,3
IAC-2	HP-1	FXMQ54PBVJU	1624	0.50	54,000	67,000	104	208/1	1,2,3
IAC-3	HP-1	FXFQ36TVJU	1165	-	36,000	44,680	57	208/1	5
IAC-4	HP-1	FXZQ12MVJU9	335	-	12,000	14,766	42	208/1	4
TOTAL	HP-1				156,000	193,446			

Notes

- DUCTED FAN COIL
- PROVIDE INTEGRAL CONDENSATE DRAIN PAN, FLOAT AND ALARM. PROVIDE EXTERNAL CONDENSATE PUMP. (MIN. LIFT 18")
- PROVIDE FIELD FABRICATED 2" MERV 8 FILTER RACK AND FILTER WITH MAXIMUM 0.15" WC PRESSURE DROP.
- 24"x24" CEILING CASSETTE (4-WAY) WITH CONDENSATE PUMP
- 36"x36"X CEILING CASSETTE WITH CONDENSATE PUMP

AIR DISTRIBUTION DETAILS



VENTILATION AIR SCHEDULE -

ROOM NUMBER AND NAME	AREA (SQ. FT.)	OCCUPANT LOAD (#/1000 SQ. FT.)	NUMBER OF OCCUPANTS	OUTSIDE AIR REQUIREMENT (CFM/P)	OUTSIDE AIR REQUIREMENT (CFM/SQ FT.)	OUTSIDE AIR REQUIRED (CFM)	ACTUAL OSA (CFM)	AIR SYSTEMS
	Az		Pz	Rp	Ra	Vbz	Voz	
STORAGE	270	50	14	5	0.06	86	100	DOA-1
MDF	245	0	0	0	0.12	29	225	DOA-1
WORK ROOM	725	5	4	5	0.06	64	75	DOA-1
TOTAL	1240		18			179	400	

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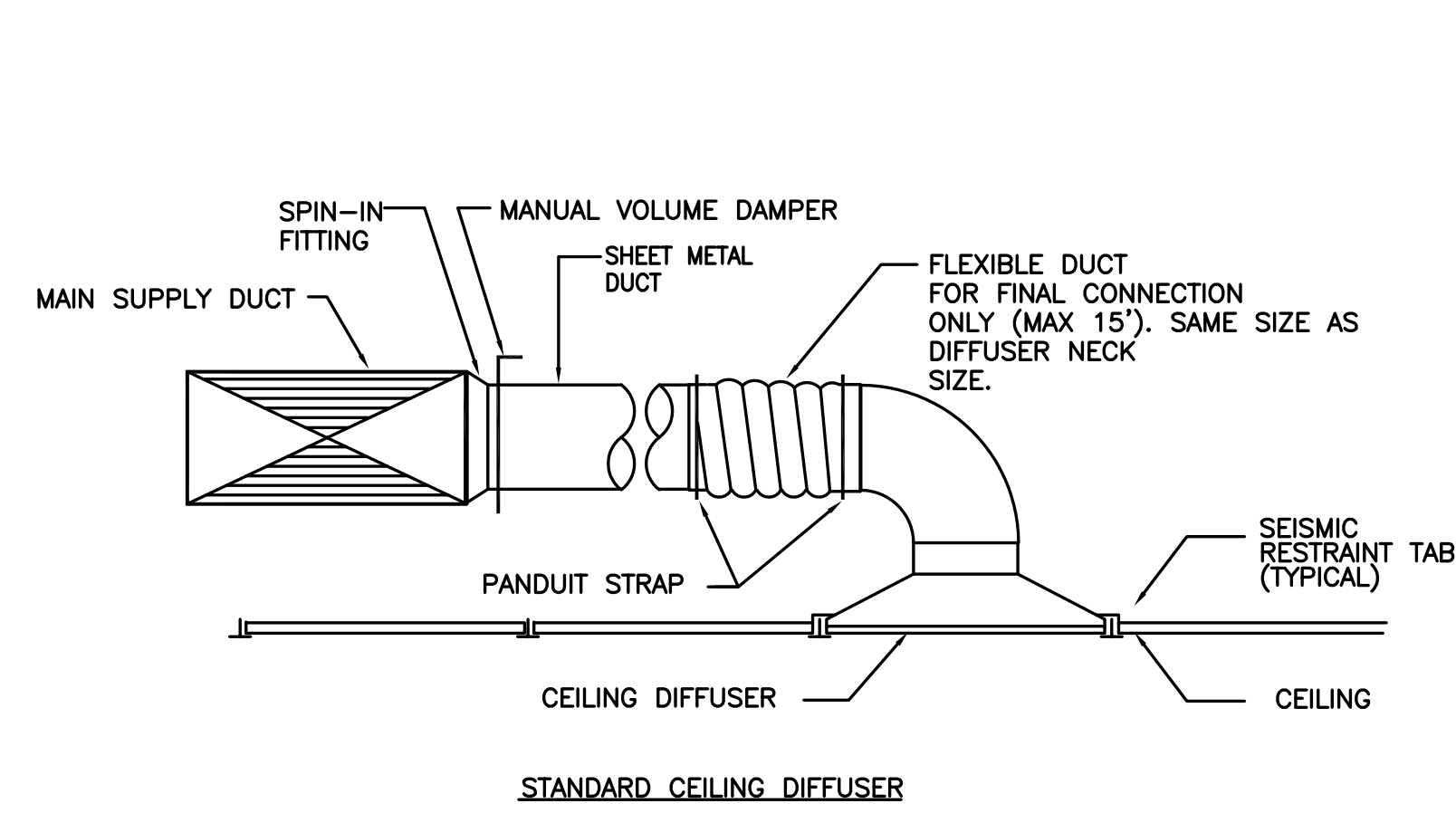
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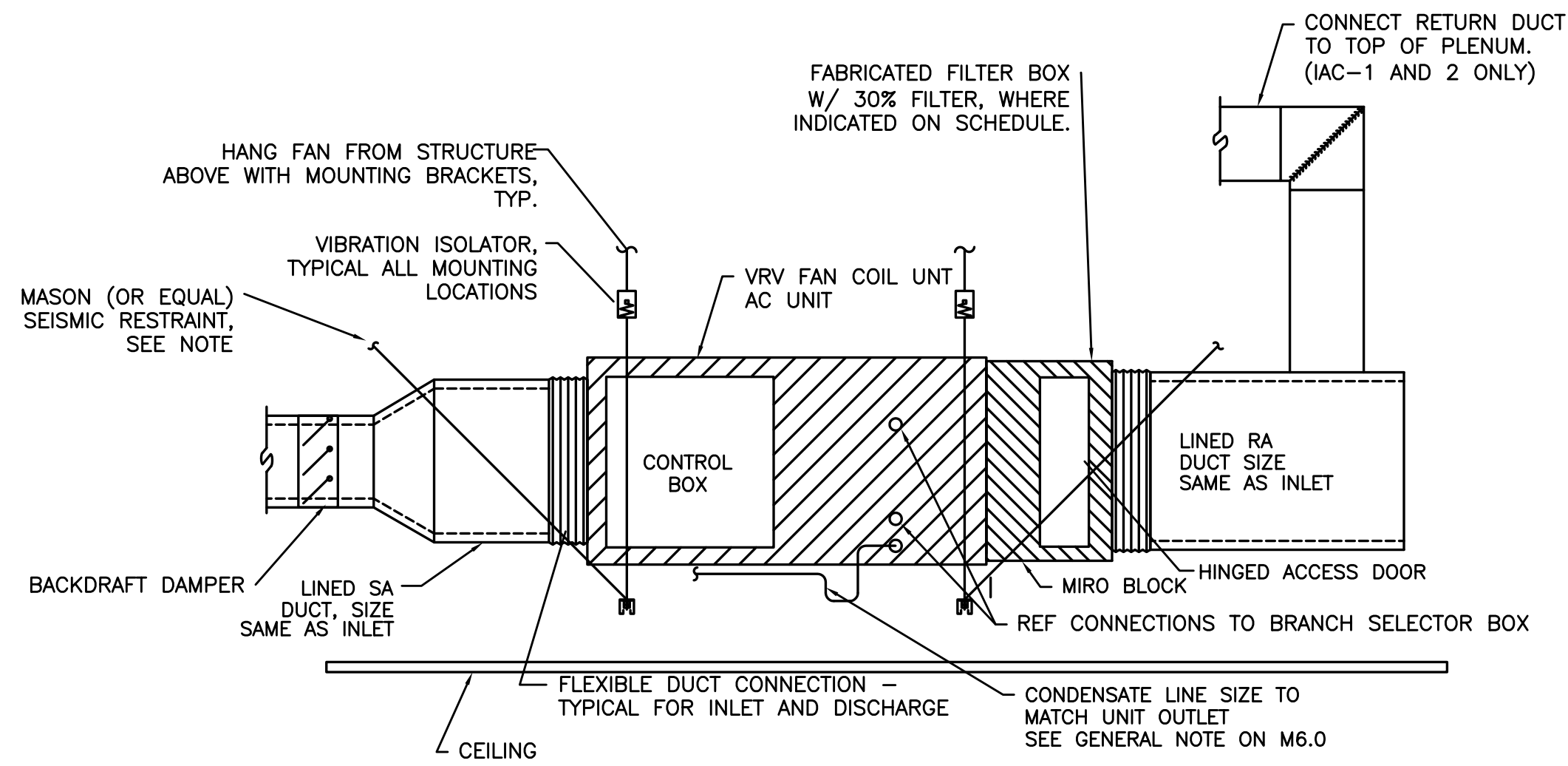
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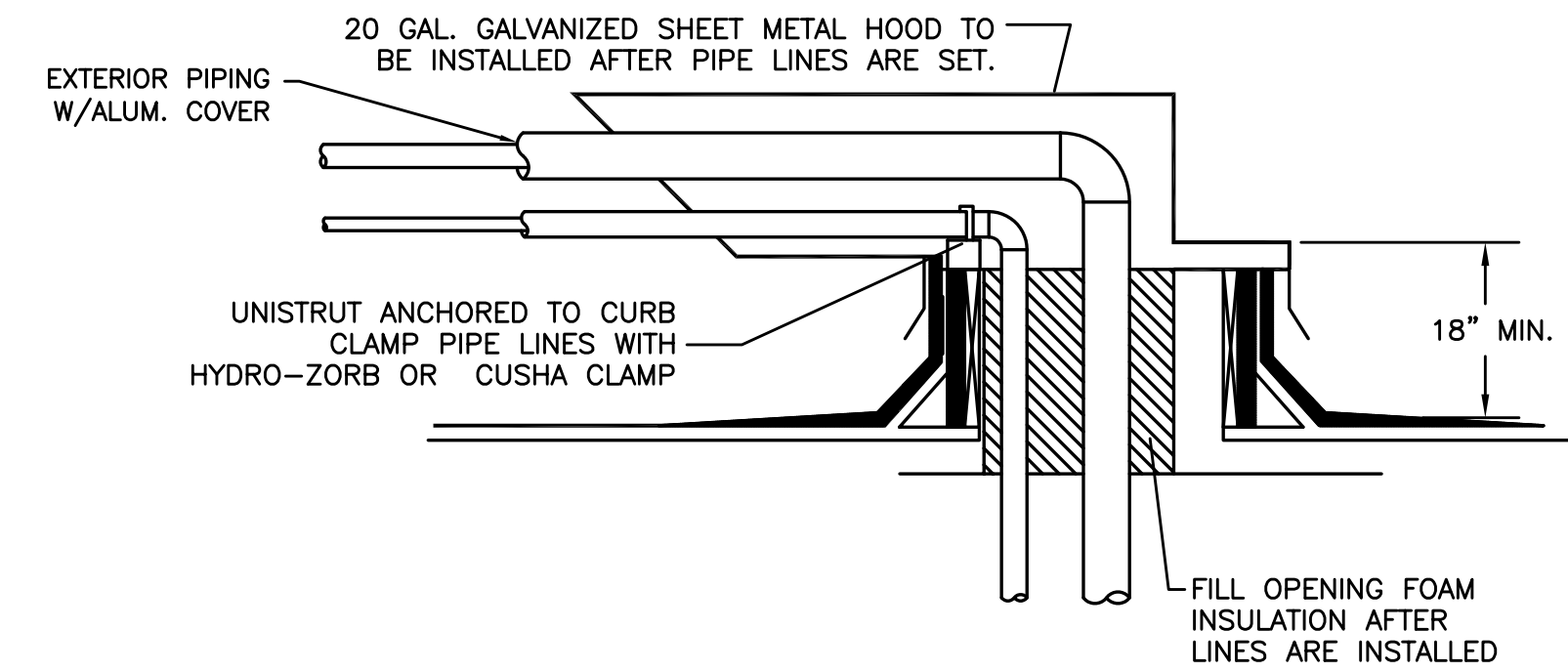
1 DIFFUSERS/GRILLES SCALE: DETAIL



NOTE: LOCATE SUPPORT & SIESMIC TO MAINTAIN UNHINDERED ACCESS FOR MAINTENANCE OF UNIT.

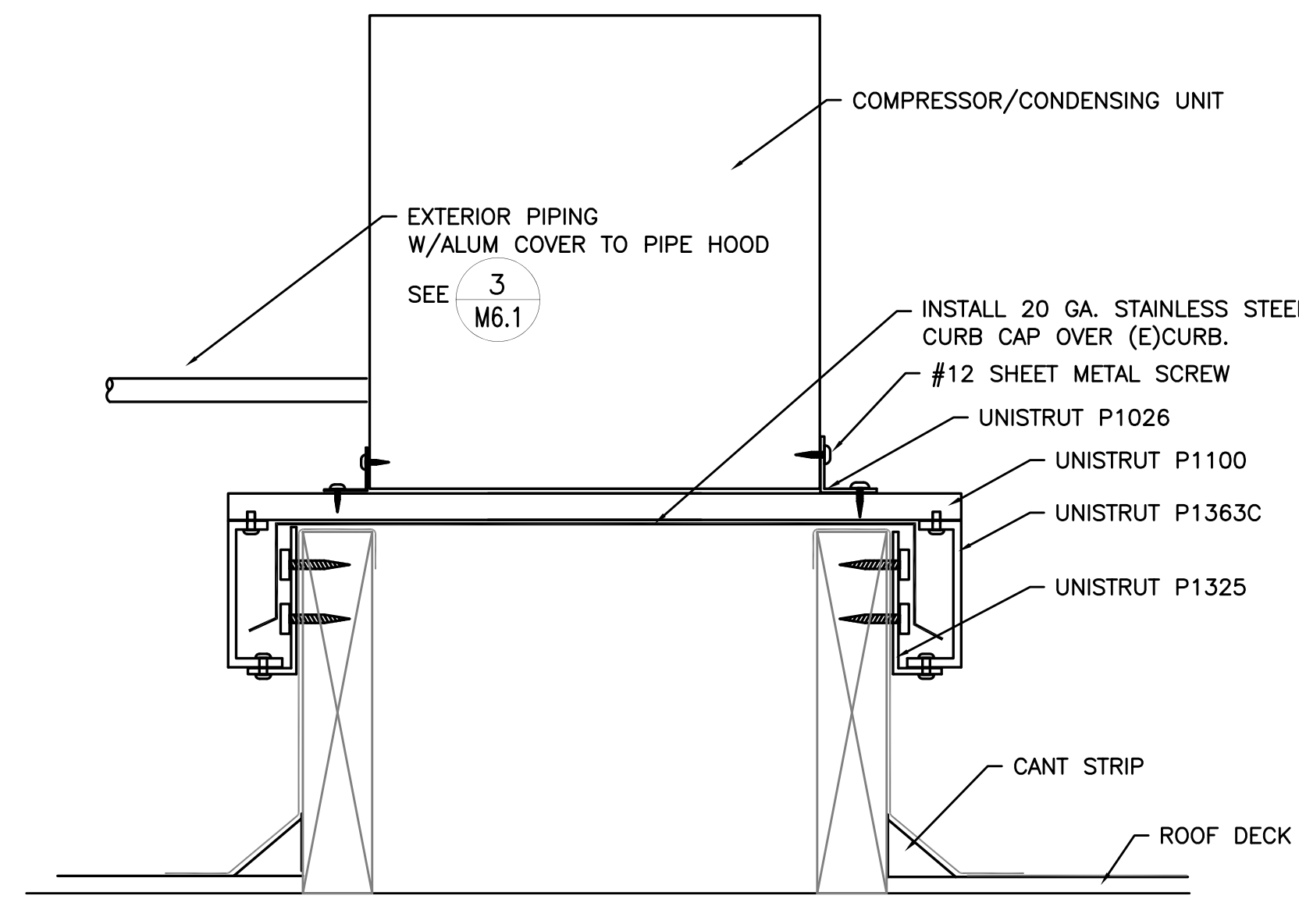
PROVIDE INDEPENDENT HANGERS, ISOLATORS AND RESTRAINTS FOR STACKED UNITS(IAC-1 AND 2)

2 IAC 1 & 2, AC-1 DETAIL SCALE: DETAIL



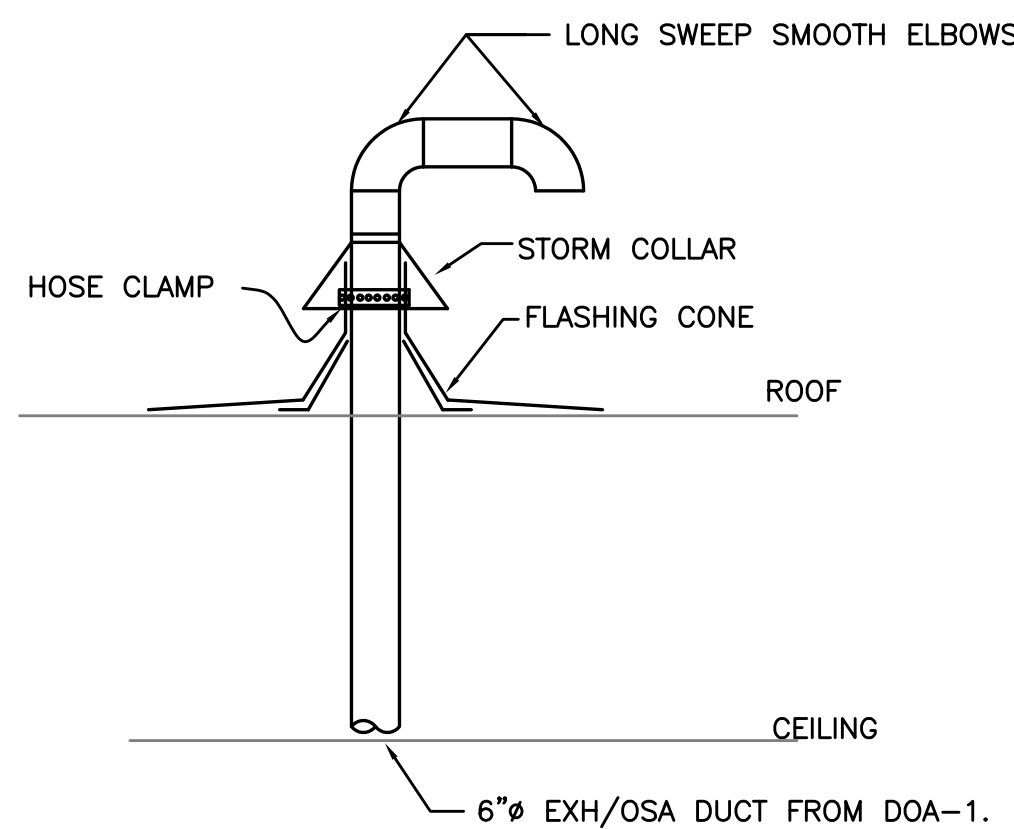
FOR REGRIGERANT LINE PENETRATIONS THRU ROOF

3 PIPE HOOD DETAIL SCALE: DETAIL

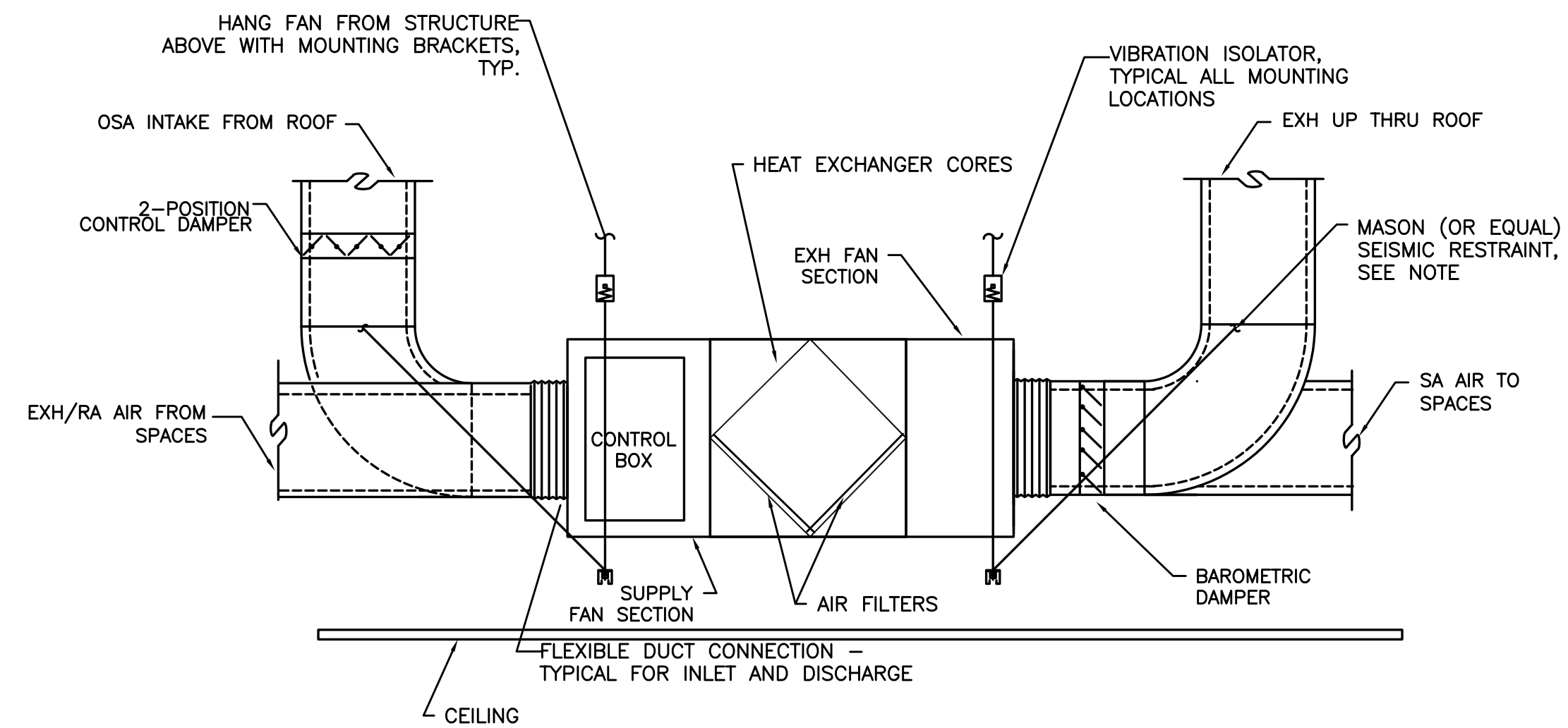


DO NOT ATTACHED UNIT DIRECTLY TO CURB CAP

4 CONDENSING UNIT ON (E)CURB SCALE: DETAIL



5 OSA/EXH ROOF PENETRATION SCALE: DETAIL



NOTE: LOCATE SUPPORT & SIESMIC TO MAINTAIN UNHINDERED ACCESS FOR MAINTENANCE OF UNIT.

PROVIDE INDEPENDENT HANGERS, ISOLATORS AND RESTRAINTS FOR STACKED UNITS(IAC-1 AND 2)

6 DOA-1 DETAIL SCALE: DETAIL

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