

System Sizing and Ventilation Air Calculations

No.	Room Name	Floor Area (ft²)	CFM per Person	CFM per ft²	People per 1000 ft²	Exhaust CFM*	ZADE 0.8	Outdoor Air (CFM)	2017 OMC Table 403.3 Occupancy Classification	HVAC System	System 1		System 2		System 3		System 4		System 5											
											Supply CFM	Outdoor CFM	Supply CFM	Outdoor CFM	Supply CFM	Outdoor CFM	Supply CFM	Outdoor CFM	Supply CFM	Outdoor CFM										
100A	Corridor	157	0	0.06	0	0	0.8	12	Public Spaces, Corridors	1	45	12	-	-	-	-	-	-	-	-	-									
100B	Hostess Area	38	5	0.06	10	0	0.8	5	Offices, Main entry lobbies	1	20	5	-	-	-	-	-	-	-	-	-									
100C	Bar Area C	129	7.5	0.18	100	0	0.8	150	Food & Bev, Bars, cocktail lounges	1	515	150	-	-	-	-	-	-	-	-	-									
100D	Bar Seating Area D	82	7.5	0.18	100	0	0.8	95	Food & Bev, Bars, cocktail lounges	1	325	95	-	-	-	-	-	-	-	-	-									
100E	Seating Area E	36	7.5	0.18	100	0	0.8	42	Food & Bev, Bars, cocktail lounges	1	145	42	-	-	-	-	-	-	-	-	-									
100F	Seating Area F	218	7.5	0.18	100	0	0.8	253	Food & Bev, Bars, cocktail lounges	1	865	253	-	-	-	-	-	-	-	-	-									
105	Banquet Sales Office	233	5	0.06	5	0	0.8	25	Offices, Office spaces	1	85	25	-	-	-	-	-	-	-	-	-									
109A	Corridor	357	0	0.06	0	0	0.8	27	Public Spaces, Corridors	2	-	-	145	27	-	-	-	-	-	-	-									
109B	Seating Area B	103	7.5	0.18	70	0	0.8	91	Food & Bev, Dining rooms	2	-	-	490	91	-	-	-	-	-	-	-									
109C	Seating Area C	94	7.5	0.18	70	0	0.8	83	Food & Bev, Dining rooms	2	-	-	450	83	-	-	-	-	-	-	-									
109D	Seating Area D	109	7.5	0.18	70	0	0.8	96	Food & Bev, Dining rooms	2	-	-	515	96	-	-	-	-	-	-	-									
108A	Corridor	111	0	0.06	0	0	0.8	8	Public Spaces, Corridors	3	-	-	-	-	30	8	-	-	-	-	-									
108B	Private Dining Rm	385	7.5	0.18	70	0	0.8	339	Food & Bev, Dining rooms	3	-	-	-	-	1,170	339	-	-	-	-	-									
110A	Corridor	220	0	0.06	0	0	0.8	16	Public Spaces, Corridors	4	-	-	-	-	75	16	-	-	-	-	-									
110B	Seating Area B	122	7.5	0.18	70	0	0.8	116	Food & Bev, Dining rooms	4	-	-	-	-	525	116	-	-	-	-	-									
110C	Seating Area C	151	7.5	0.18	70	0	0.8	133	Food & Bev, Dining rooms	4	-	-	-	-	600	133	-	-	-	-	-									
110D	Warewashing Area	267	0	0	0	187	0.8	176	Food & Bev, Kitchens (no cooking)	4	-	-	-	-	400	176	-	-	-	-	-									
111A	Kitchen Area	553	0	0	0	387	0.8	372	Food & Bev, Kitchens (cooking)	5	-	-	-	-	-	-	-	-	2,000	372	-									
111B	Walk-in Cooler	124	0	0	0	0	0.8	0	Unoccupied	-	-	-	-	-	-	-	-	-	-	-	-									
Totals											3,499																			

Note: Return air is approximately equal to supply air.
 * Minimum required exhaust shown. Actual is larger. See air balance schedule.

Air Balance Schedule

Equipment	Intake (CFM)	Exhaust (CFM)
Kitchen Hood 1	-	2,200
Kitchen Hood 2	-	1,942
Kitchen Hood 3	-	1,850
HVAC System 1	140	-
HVAC System 2	140	-
HVAC System 3	260	-
HVAC System 4	140	-
HVAC System 5	160	-
Hood MUA System	6,000	-
TOTALS	6,840	5,992

14% Positive

General Project Notes

- New work under this contract is shown in bold line weight. Existing duct work (if any) is shown in dark gray fashion. Other elements are shown in light gray.
- This drawing shall not be used for construction unless it bears both the seal and signature of the engineer. Blue line reproductions are not approved for construction. Use only the most current revision. All work shall be coordinated with other trades. Gravity drainage takes precedence, followed by HVAC ductwork, and then electrical. Plans are essentially diagrammatic in nature, and do not necessarily reflect all pre-existing conditions, obstacles or ancillary work. This contractor shall conduct his own survey of the job site, and report any material deviations to the engineer prior to commencing work.

Mechanical Plan Notes

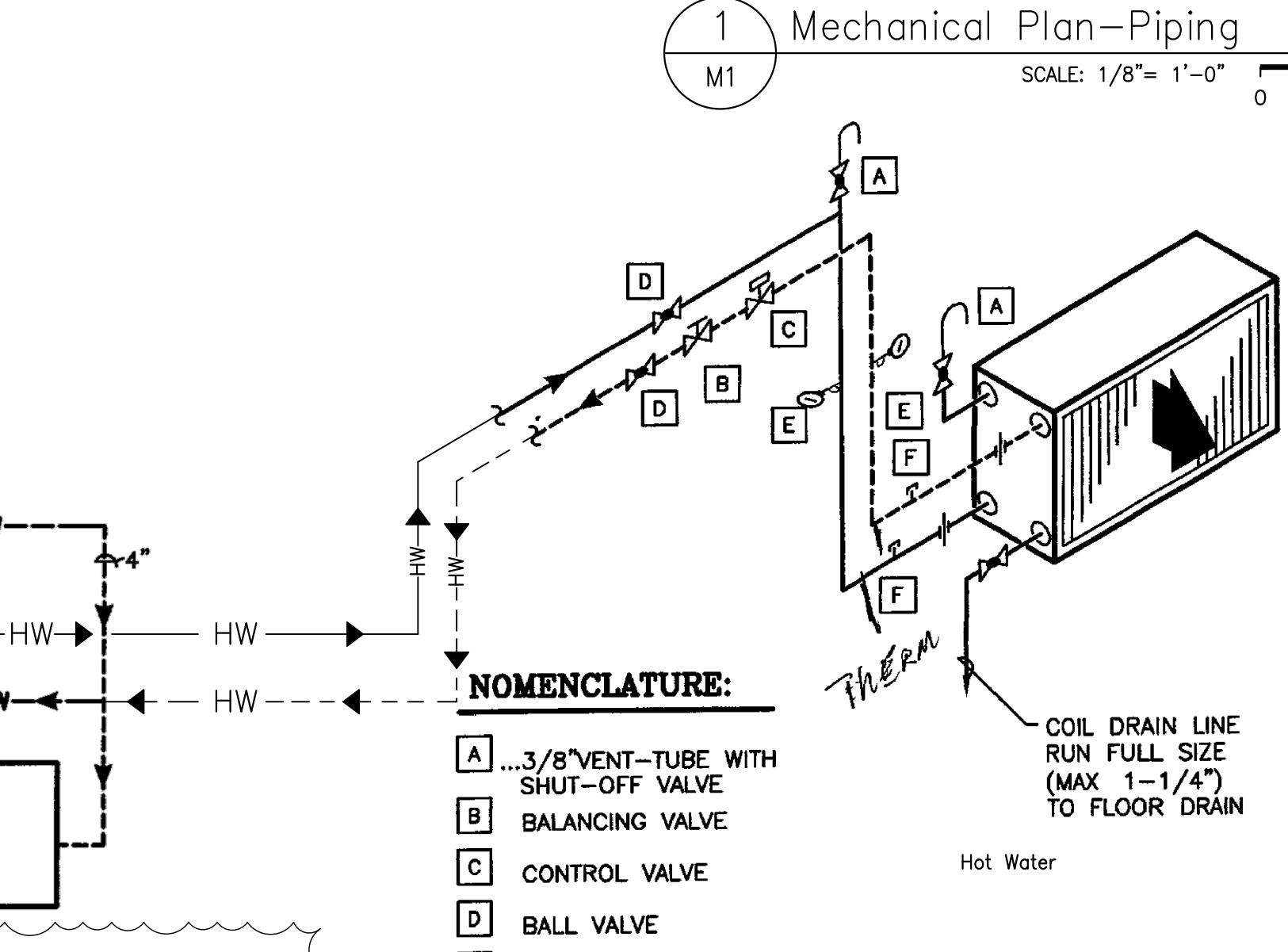
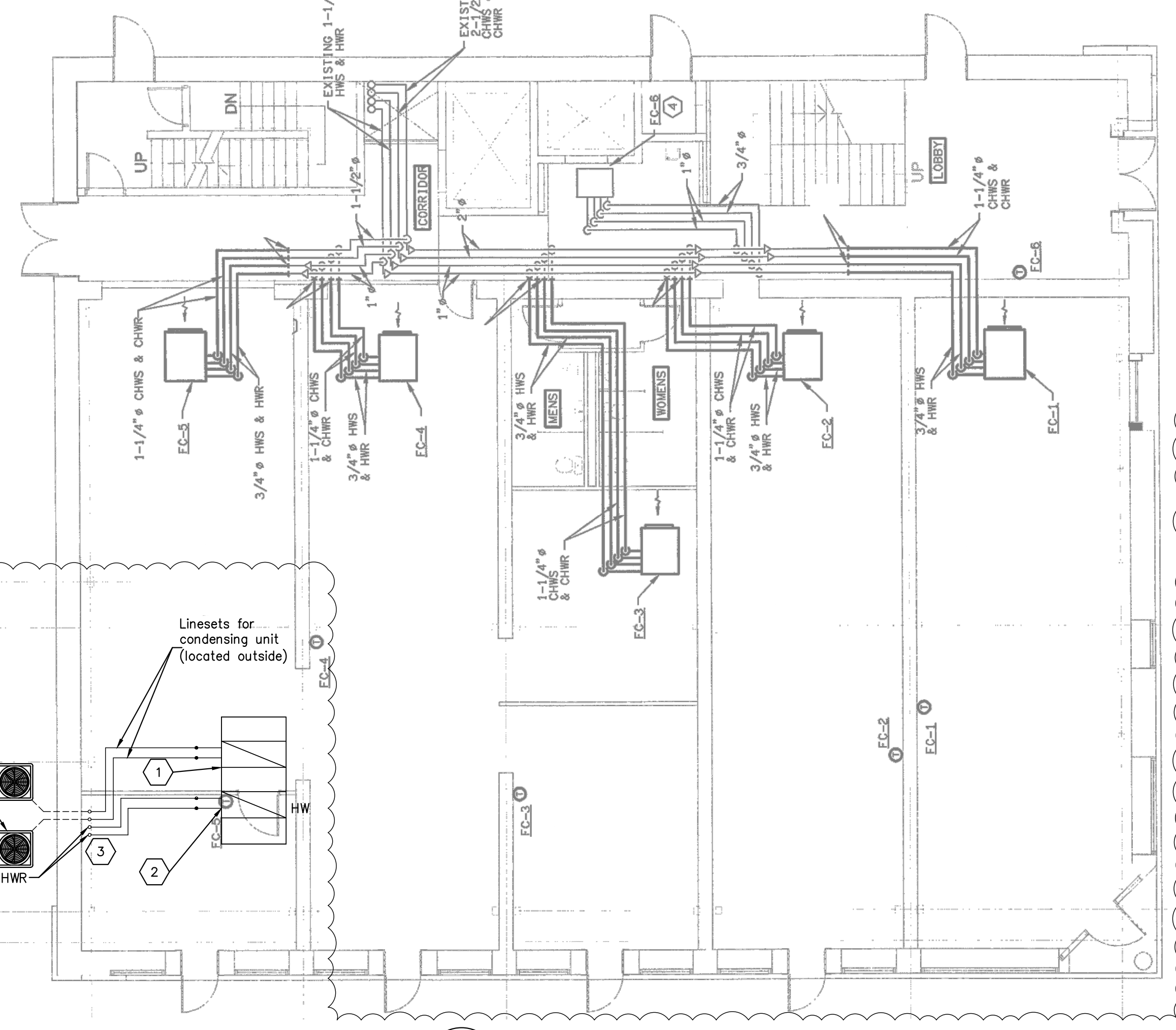
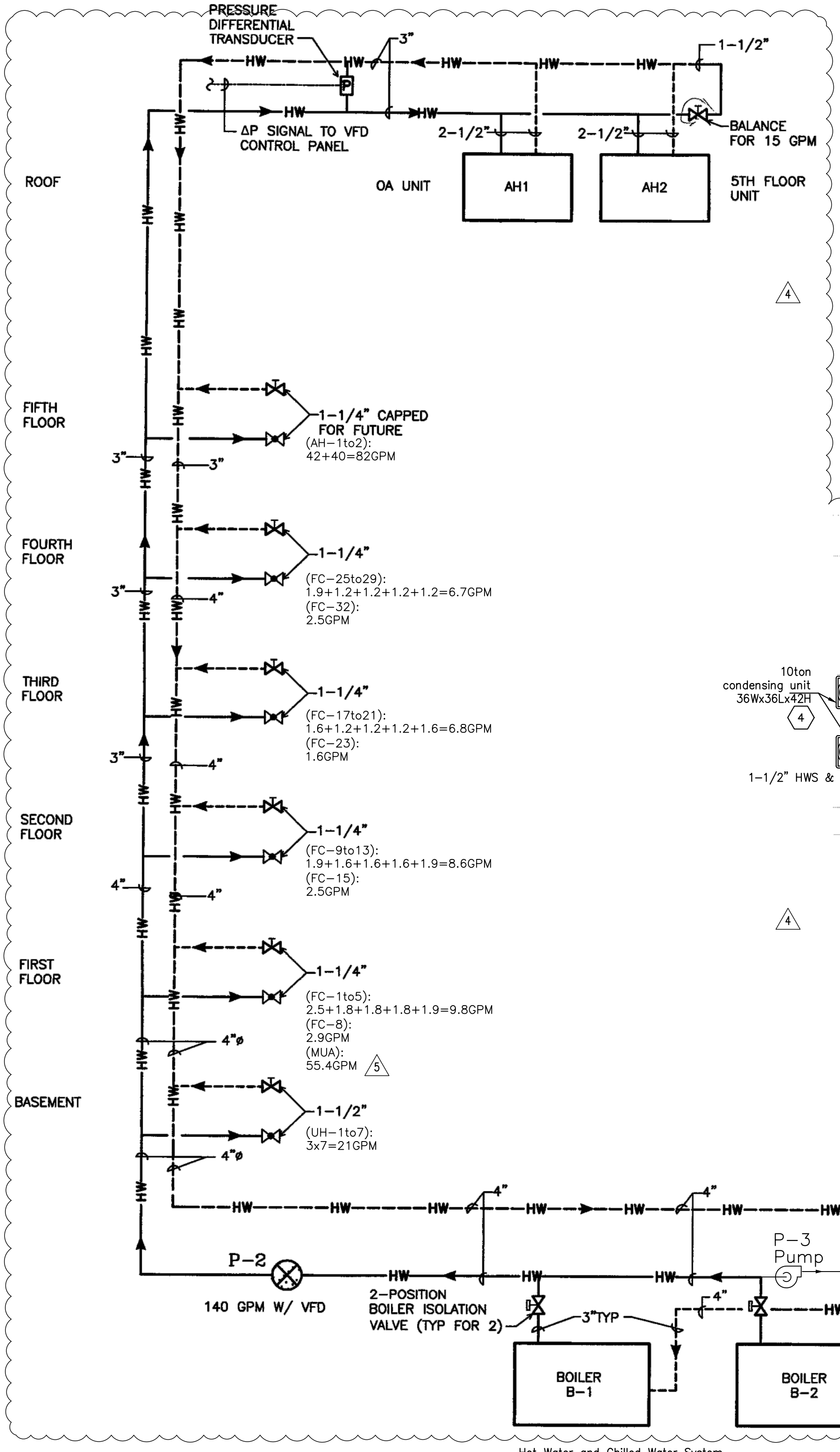
- Field run 1" condensate drain by gravity to nearest floor sink and discharge via air gap.
- Connect coils per Fan Coil Unit Piping Diagram this sheet.
- Connect to existing HW piping by tee or hot tap approximately where shown and extend piping as shown to makeup air handler. All piping to match material, insulation, fittings, and supports of existing building. Typical (2) pieces.
- See Mechanical Plan Sheet M2 for property line location.

HVAC Plan Symbol Legend

- Point of connection to existing system elements.
- 24 x 12 Rectangular metal ductwork (Width x Depth" of air passage size). Bottom of duct at 9" A.F.F. unless otherwise noted.
- 12ø Round ductwork and size (inches diameter of air passage size).
- 8ø Flexible ductwork and size (inches diameter of air passage size).
- ⊠ Ceiling mounted supply air diffuser, register, or exhaust grille. Refer to identifier.
- ⊠ Ceiling mounted return air grille. Refer to identifier.
- ⊠ Exhaust Fan
- ⊠ 7 day programmable thermostat, mounted on wall at 60" A.F.F. Provide clear plastic key lock cover with ventilation slots.
- ⊠ Device identifier. See mechanical specifications. RL = Relocate, EX=Existing Balance or rebalance to CFM or GPM shown.
- ⊠ Room Identifier. See Outdoor Air Calculation Table.
- ⊠ Duct smoke detector. Interlock to shutoff supply fan upon detection of smoke. Interlock similarly with all other detectors.
- ⊠ 7 day programmable thermostat, mounted on wall at 60" A.F.F. Provide clear plastic key lock cover with ventilation slots.
- FD Fire damper. See installation detail for mounting requirements.
- BD Manual set balance damper with locking quadrant operator handle.

Seal:

Plumetric
 Plumbing, Mechanical Electrical Engineering"
 1550 Magnolia Drive
 Cincinnati, Ohio 45215
 (513) 842-1144 Office
 (513) 617-2263 Mobile



PUMP TYPE (choose one)

- Oe Pumps (Pump+ECM Motor+VFD)
- SelfSensing Variable Speed Pump
- Standard Pump
- High Efficiency ECM

SEARCH (Standard Pump)

Design Flow: 55.4 gpm
 Design Head: 24 ft
 Min Eff: 0 %

OPTIONS (Standard Pump)

Select Fluid below or enter custom fluid options
 Water @ 180 F

RPM: All Motor
 Units: # of Pumps
 US 1
 Performance Cu Only:

Choose Pumps (Standard Pump)

End Suction: FI Frame Mounted, CI Close Coupled, KV Close Coupled, KS Split Coupled, Horizontal Split Case, TA, GT & HS, Vertical Split Case, TC, TS

Inline Circulators: 2400 Series, 1600 Series, 1900 Series, 100 Series, 00 Series, LoadMatch®

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Pump Details IL133

Specifications: Flow: 55.4, Head: 24, HP: 0.728, Volt/Ph/Hz: 480/3/60

Water @ 180 F Curve: (Graph showing Total Head vs Flow)

Water @ 60 F Curve: (Graph showing Total Head vs Flow)

Project Builder PB

Add to New Project
 Project name: Carmelo's
 Pump added to project
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Pump Schedule

System	Type	Type
1.. Hot water heating	3.. Base mounted centrifugal	7.. See electrical drawings
2.. Chilled water cooling	4.. In-line centrifugal	8.. Variable frequency drive
	5.. Horizontal split case	9.. High efficiency motor
	6.. Rotary gear	10..460/3/60

Mark	System	MFR. (See Specs)	Model/ Series No.	Capacity		
				GPM	TDH	Fluid Sp. Gr.
P-3	HW	Taco	IL133/100 Series	55.4	24 ft	1.00

Interior MEP Renovation for:
Carmelo's
 434 Madison Avenue
 Covington, Kentucky 41011

Issued For:	Date:	By:
1 Plumbing Permit Revision	09 Jul 2024	M. Miller
2 Electric Permit & Constr.	12 Jul 2024	M. Miller
3a Plumb+HVAC Permit Rev	09 Aug 2024	M. Miller
4 HVAC & Hood Coordin.	12 Aug 2024	M. Miller
5 Permit Revision	16 Aug 2024	M. Miller
6 Plumbing Permit Revision	20 Aug 2024	M. Miller
7 Client Review	27 Aug 2024	M. Miller

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 28 May 2024

Piping Plan Details

Sheet: **M1**

