Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 07/03/2024

Completed By: National TAB

PROJECT

Indian Hill Middle School (Cincinnati, OH)

6845 Drake Rd

Cincinnati, OH 45246

Client

Feldkamp Enterprises

3642 Muddy Creek Rd

Cincinnati, OH 45238

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

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CERTIFICATION

PROJECT: Indian Hill Middle School (Cincinnati, OH)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems.* Any variances from design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM:	National TAB
REGISTRATION NO:	3629
CERTIFIED BY:	Joe Hertenstein
DATE:	11/1/2024

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM:	National TAB
REGISTRATION NO:	3629
CERTIFIED BY:	Joe Hertenstein
DATE:	11/1/2024

Submitted and Certified by:

NEBB TAB FIRM:	National TAB
TAB PROFESSIONAL:	Joe Hertenstein
SIGNATURE:	Joe Hertenstein
REGISTRATION NO:	3629
CERTIFICATION EXP:	12/31/2024

National TAB

Testing, Adjusting, and Balancing Equipment

Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Shortridge ADM-880C S/N M05066	10/15/2024	10/15/2025
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Shortridge ADM-880C S/N M05066	10/15/2024	10/15/2025
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 3 % +/- 7 cfm	Shortridge Flow Hood	10/15/2024	10/15/2025
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	10/15/2024	10/15/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	10/15/2024	10/15/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/15/2024	10/15/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	10/15/2024	10/15/2025
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 090315046	10/15/2024	10/15/2025
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/15/2024	10/15/2025
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/15/2024	10/15/2025
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Dwyer TAC-L - S/N S1100123	10/15/2024	10/15/2025
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/3/2024	6/3/2025
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Dwyer 490W-6 - S/N 01L6NK	6/3/2024	6/3/2025
DALT	DUCT LEAKAGE	-10"- +10" wc	±1% of reading +/- 0.004" wc	Kanomax DALT 6900 S/N: 080439	3/2024	3/1/2025

Abbreviation List

A = Area (ft^2)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A_k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T_{ma} = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T_{oa} = Outside Air Temperature
CD = Ceiling Diffuser	T_{ra} = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO2 = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C_v = Flow Constant	K_v = Flow constant (SI)
d = Diameter (in.) IP	kW = Kilowatt = 1000 Watts
Δ = Difference or Change (Final - Initial)	LAT = Leaving Air Temperature
DB = Dry Bulb	lb = Pounds
EA = Exhaust Air	LWT = Leaving Water Temperature
EAT = Entering Air Temperature	ma = Mixed Air
EF = Exhaust Fan	MIN = Minimum
Eff = Efficiency	MAX = Maximum
EG = Exhaust Grille	N/A = Not Applicable
ESP = External Static Pressure	NA = No Access
EWT = Entering Water Temperature	NL = Not Listed
°F = Degrees Fahrenheit, °F	NPSHA = Net Positive Suction Head Available
FPB = Fan Powered Box	NS = Not Specified
FLA = Full Load Amps	OA = Outside Air
fpm = Feet per Minute (fpm)	OAT = Outside Air Temperature
ft = Foot	PD = Sheave Pitch Diameter
gal = Gallons	P.D. = Pressure Drop
GPM = Gallons Per Minute (GPM)	PF = Power Factor
h = Enthalpy (BTU/lb dry air)	SG = Supply Grille
P = Pressure	SR = Supply Register
ppm = parts per million	TP = Total Pressure
psi = Pounds Per Square Inch	T_{ra} = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
$\%_{ra}$ = % of Return Air	V = Velocity
RA = Return Air	VAV = Variable Air Volume
RAT = Return Air Temperature	VD = Volume Damper
RF = Return Fan	VFD = Variable Frequency Drive
RG = Return Grille	W = Watt
RH = Relative Humidity	WB = Wet Bulb
RPM = Revolutions Per Minute	wg = wc = water gauge = water column
RTU = Roof Top Unit	WHP = Water Horsepower (IP)
SA = Supply Air	ω = Humidity Ratio

Indian Hills Middle School

6845 Drake Rd, Cincinnati, OH 45243

TAB Report Summary

NationalTAB Int.

Air Balance

(4) Variable volume AHUs were balanced by first calibrating each VAV in max cooling. Once VAVs were calibrated, all were driven to max cooling CFM via TCC. Fan speeds at the AHUs were then increased gradually until all VAVs were satisfied on flow set point. This is where the 2/3 pressure setpoint is recorded and set. Once complete, final performance data is obtained and reported before the AHU is released to operate in automatic conditions.

Exhaust fans were balanced by summing each total via Hood readings and setting each fan speed accordingly either at the unit potentiometer or with TCC. Kitchen MUA verified through intake reading.

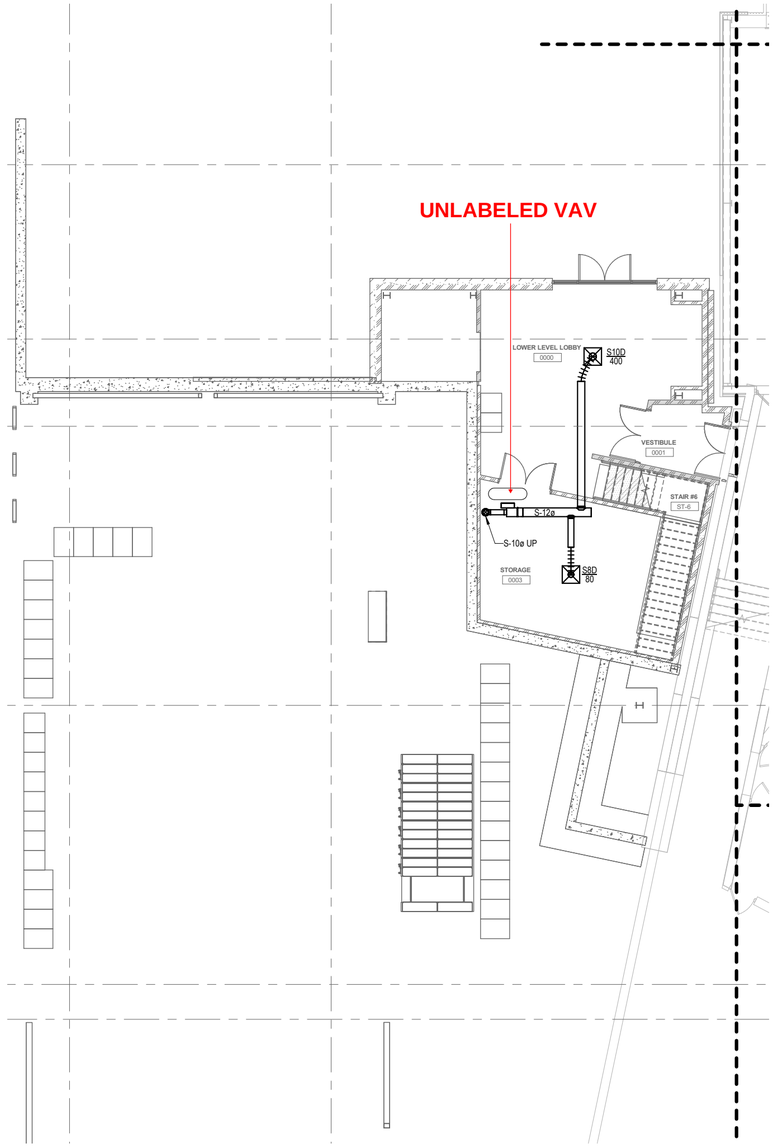
Water Balance

Existing pumps were not part of scope. After all VAV and AHU control valves (in the middle school scope) were commanded open, the pumps were visited by TAB to verify; All shutoff-valves at pump and header are 100% open, there is no bypass/ no backflow through backup pump, proper motor rotation, and VFDs were at 60hz. Flow was then recorded at each respective coil listed below in the report. Control valves and pumps were then released to operate in automatic conditions.

The following was recorded for TCC pump 2/3 setpoint:

Hot Water System 12.8 PSI

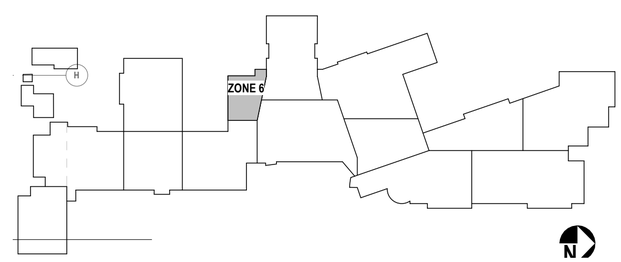
Chilled Water System 13.5 PSI



1 MS2.10 ZONE 6 - LOWER LEVEL MECHANICAL SHEET METAL CONSTRUCTION PLAN

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

MISSING HYDRONICS FOR THIS PAGE

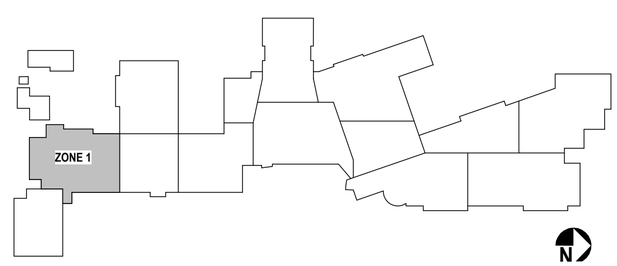


Indian Hill Middle School (Cincinnati, OH)

⟨X⟩ GENERAL NOTES:

1. NEW TERMINAL UNIT TO REPLACE EXSISTING TERMINAL UNIT. MAINTAIN AS MUCH EXISTING DUCTWORK AND PIPING CONNECTING TO THE VAV.
2. 20" X 10" EXHAUST DUCT UP TO EXHAUST FAN CONNECT TO DISHWASHER HOOD. PROVIDE ALL NECESSARY FITTINGS.
3. 4" DRYER VENT TO ROOF. TERMINATE IN DRYER VENT BACKDRAFT OUTLET IN SQUARE DUCT.
4. PROVIDE TEMPERATURE SENSOR IN ROOM.
5. ROUTE LASER CUTTER EXHAUST THROUGH CEILING AND UP THROUGH ROOF. CAP EXAHUST WITH GOOSENECK AND COVER WITH BIRD SCREEN. VERIFY EXACT LOCATION WITH ARCHITECT BEFORE INSTALLATION OF PENETRATION AS DUCT IS TO BE ROUTED VERTICALLY DIRECTLY FROM UNIT TO PENETRATION TO ENSURE PROPER FAN OPERATION.

1 / MS2.11 ZONE 1 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



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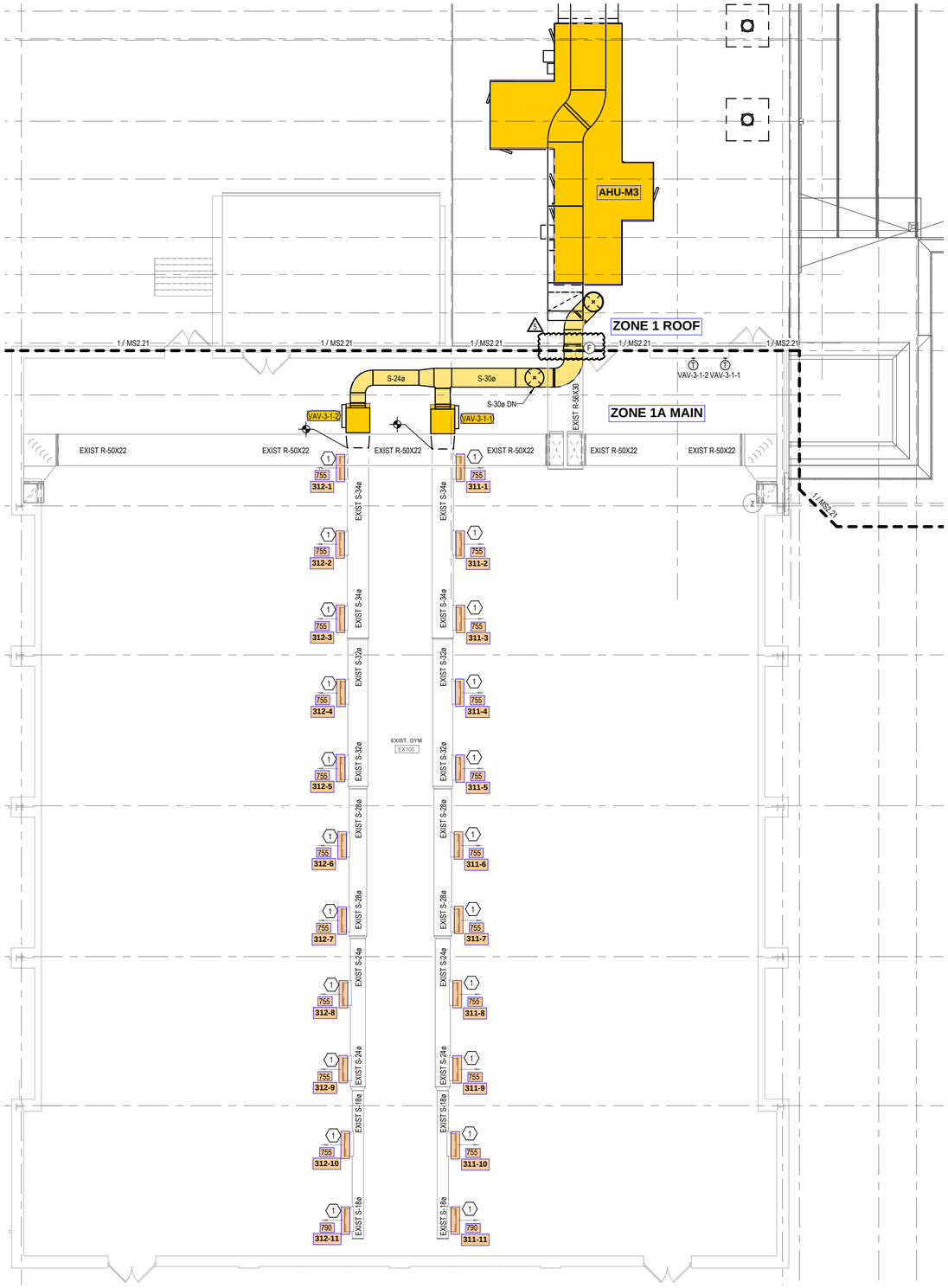
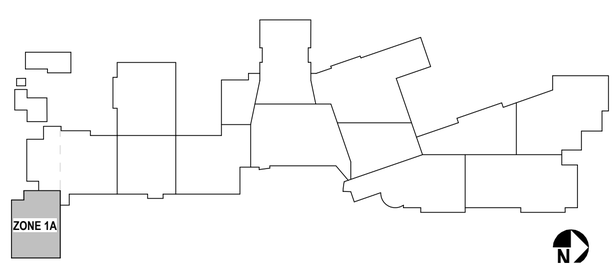


1 MS2.20 ZONE 1 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

KEYNOTES:

1. REBALANCE EXISTING GRILLE TO CFM INDICATED.

ACTUALLY ZONE 1A (MISSING HYDRONICS FOR THIS PAGE

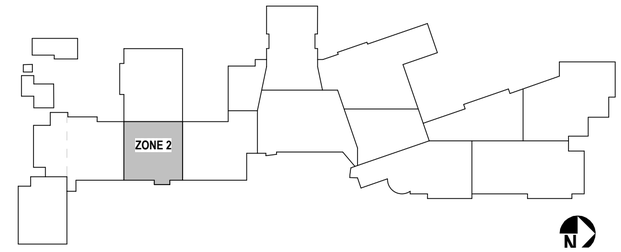


KEYED NOTES:

1. WALL SEAPARATING STORAGE 136 AND CORRIDOR 146E TO NOT BE TO DECK TO ALLOW FOR PLENUM TO EXTEND INTO STORAGE 136.

2. TRANSFER DUCT TO BE SOUND LINED AND HAVE TOP MOUNTED GRILLES THE FULL SIZE OF THE TRANSFER DUCT IN LIEU OF A BOOT.

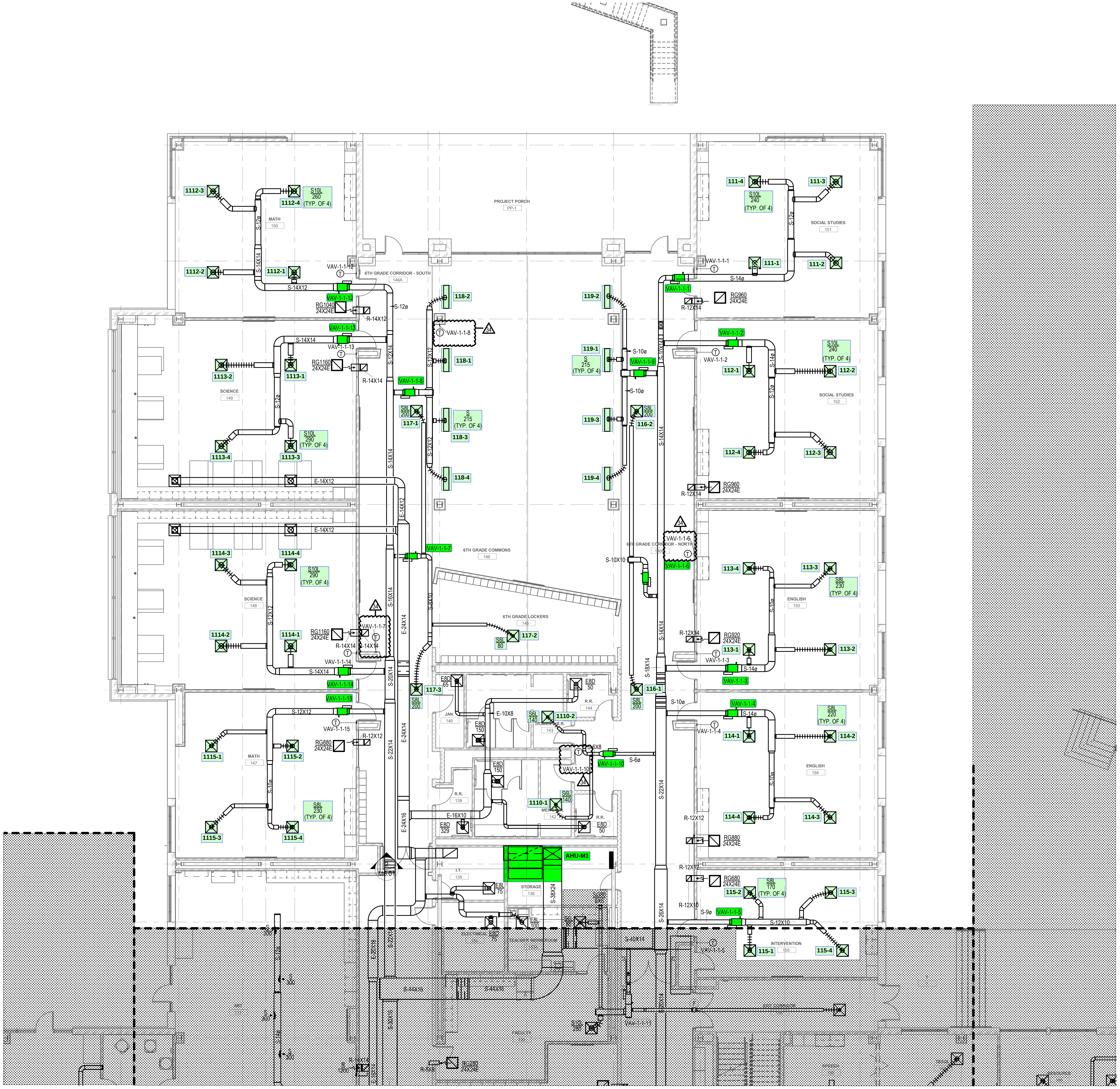
1 MS2.12 ZONE 2 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



Indian Hill Middle School (Cincinnati, OH)

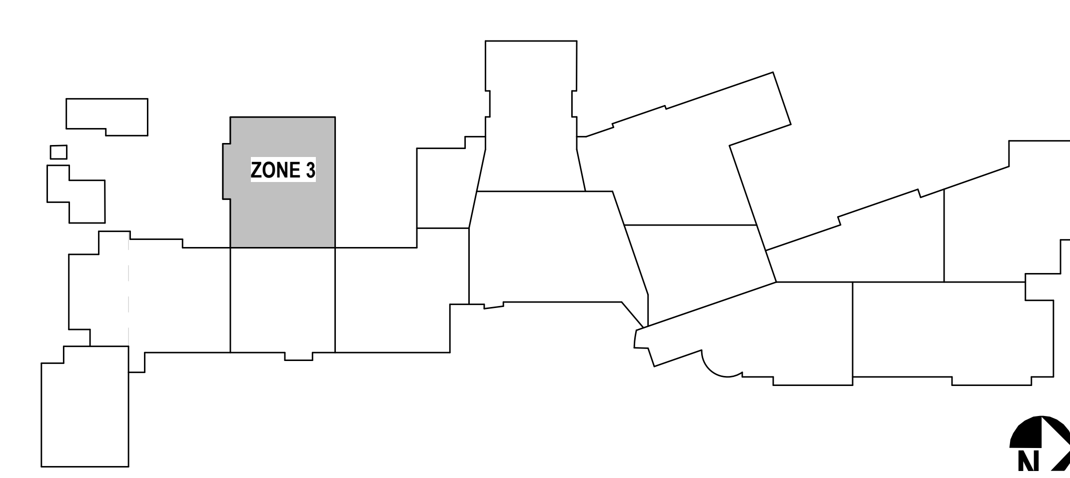
GENERAL NOTES:

1. NO GENERAL NOTES ON THIS PLAN

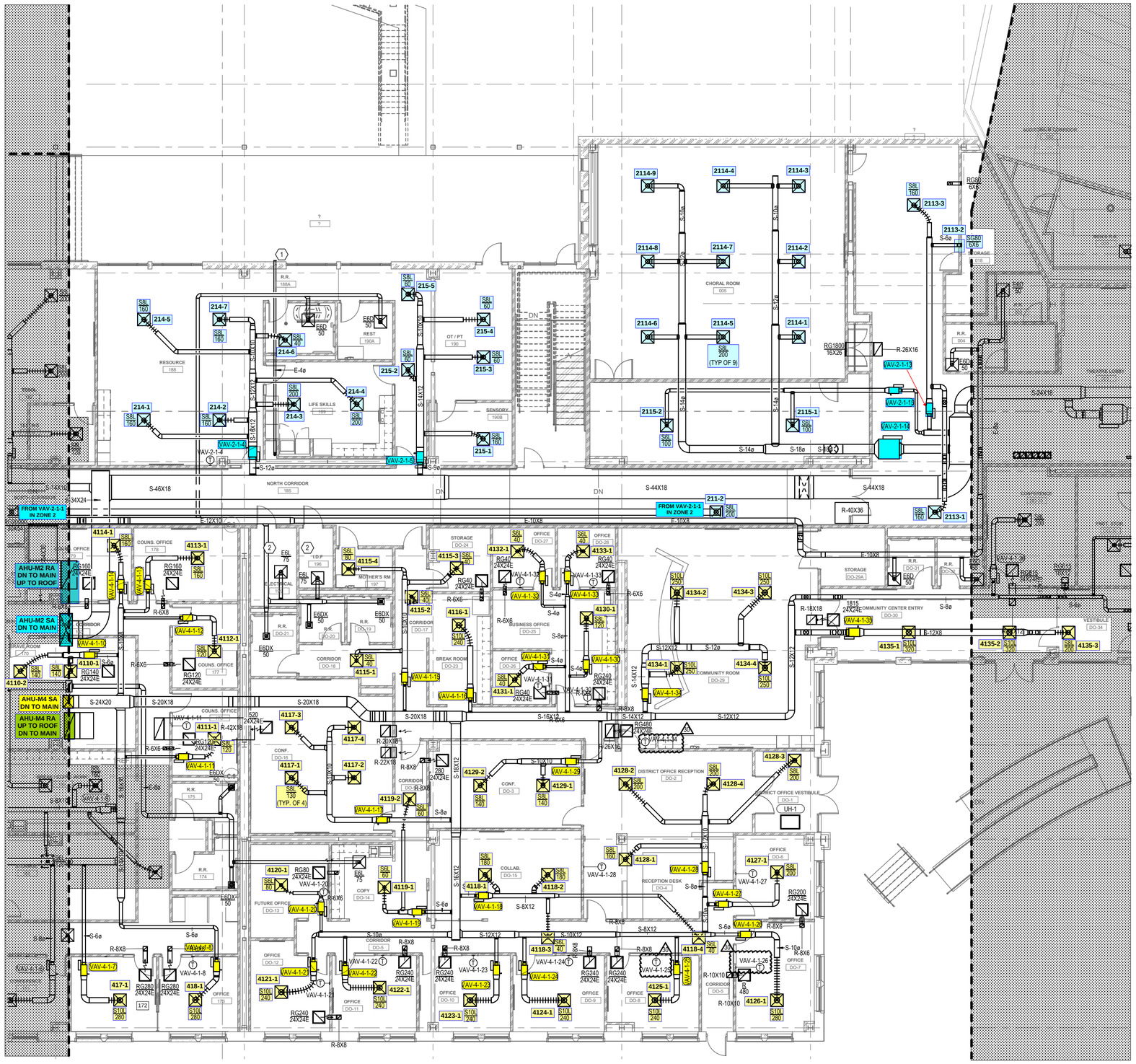


ZONE 3 - MAIN LEVEL NEW FLOOR PLAN

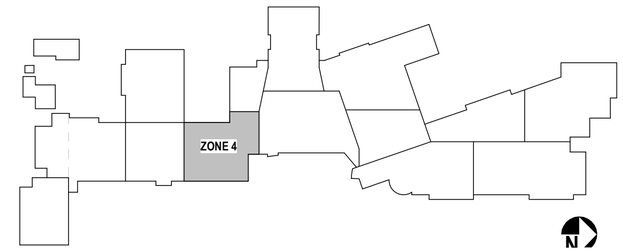
1 MS2.13 SCALE: 1/8" = 1'-0"



Indian Hill Middle School (Cincinnati, OH)



1 MS2.14 ZONE 4 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



Indian Hill Middle School (Cincinnati, OH)

SUPPLIED BY EXISTING EX-RTU
LISTED IN SCHEDULE WITHOUT ANY INFO

SUPPLIED BY UNKNOWN

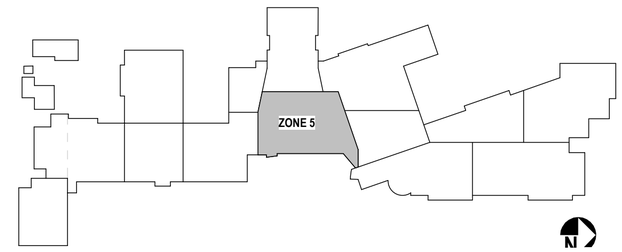
EST 300 CFM EA FOR THE
8 LD'S WITHOUT ANY INFO

VAV-2-1-12A NOT LISTED IN
SCHEDULE OR SUBMITTAL

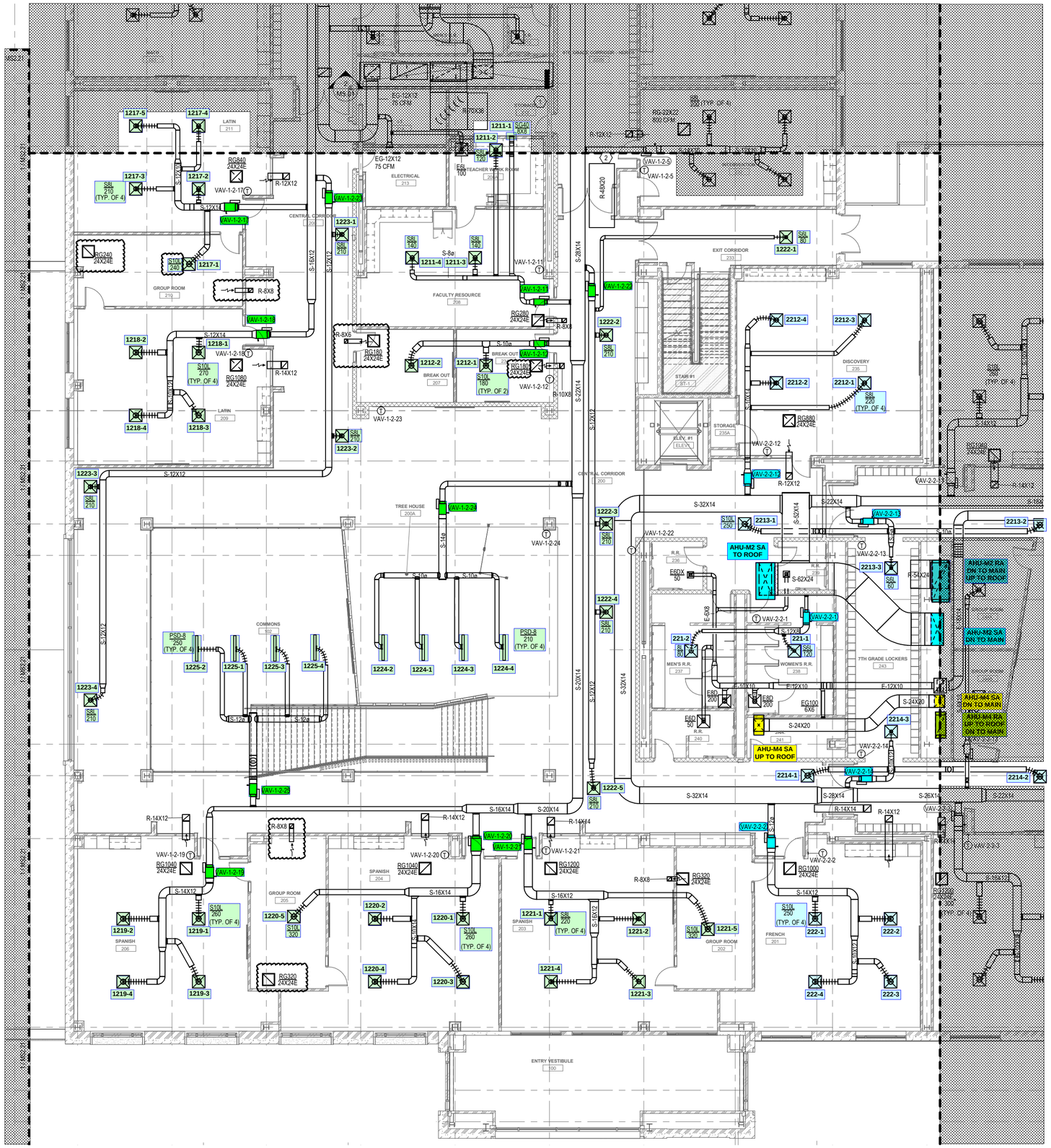
MIGHT THIS BE FPVAV4-1 WHICH
IS LISTED ON THE SCHEDULE AS
SERVING THIS AREA?

DIFFUSER TOTAL IS 1980 CFM

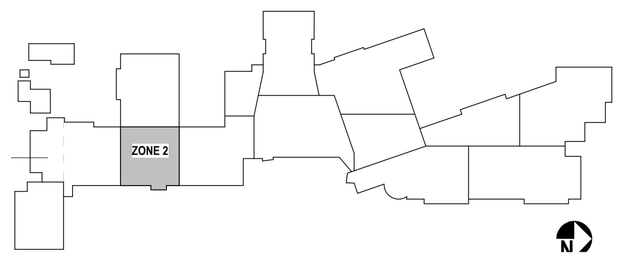
1 MS2.15 ZONE 5 - MAIN LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"

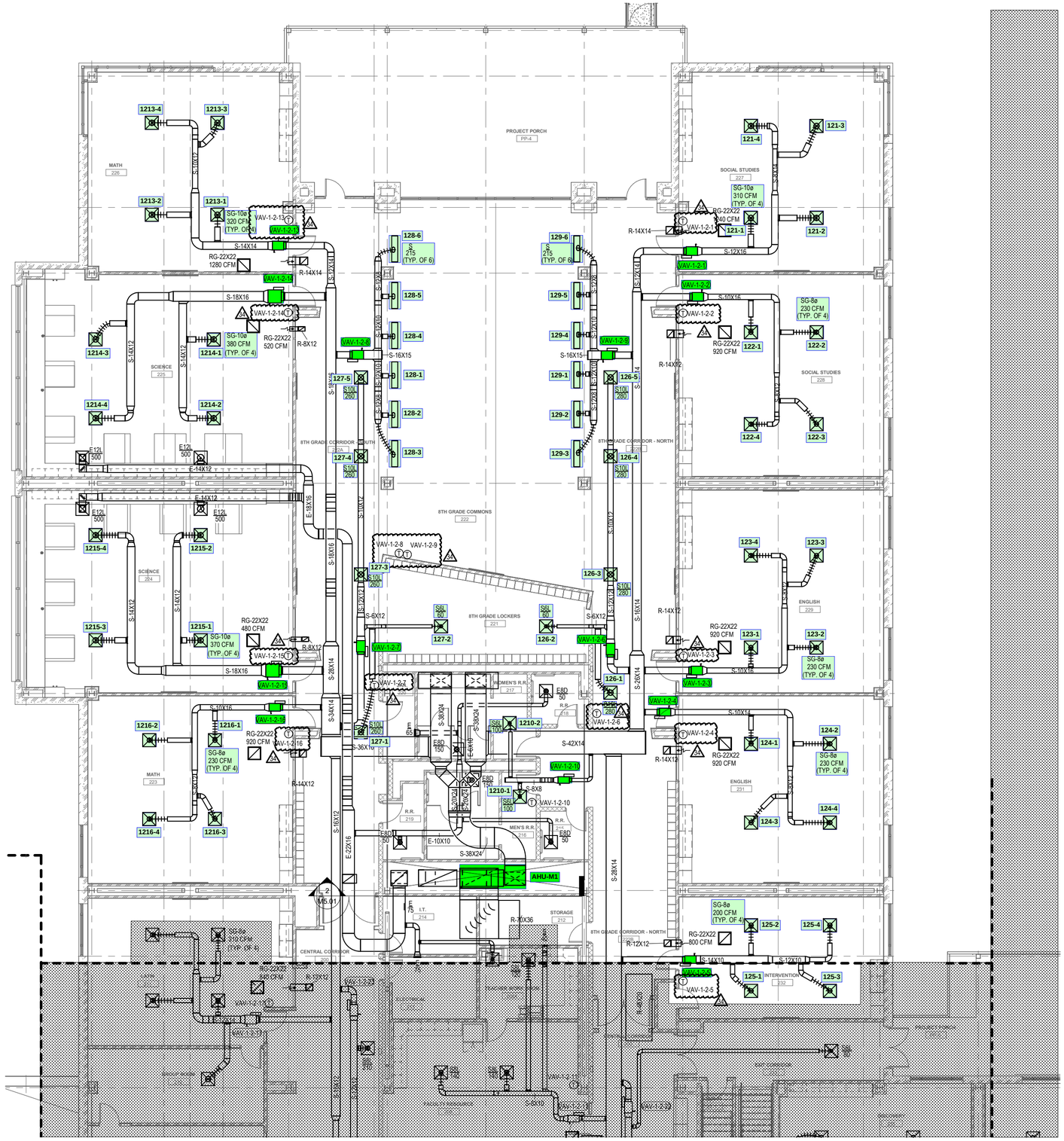


Indian Hill Middle School (Cincinnati, OH)



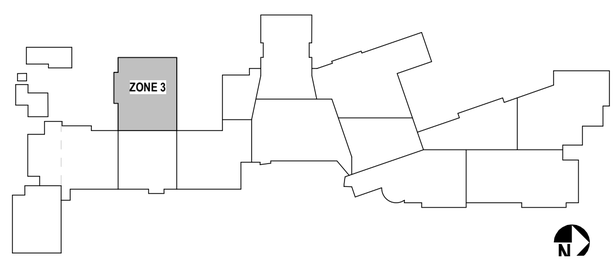
1 MS2.22 ZONE 2 - UPPER LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



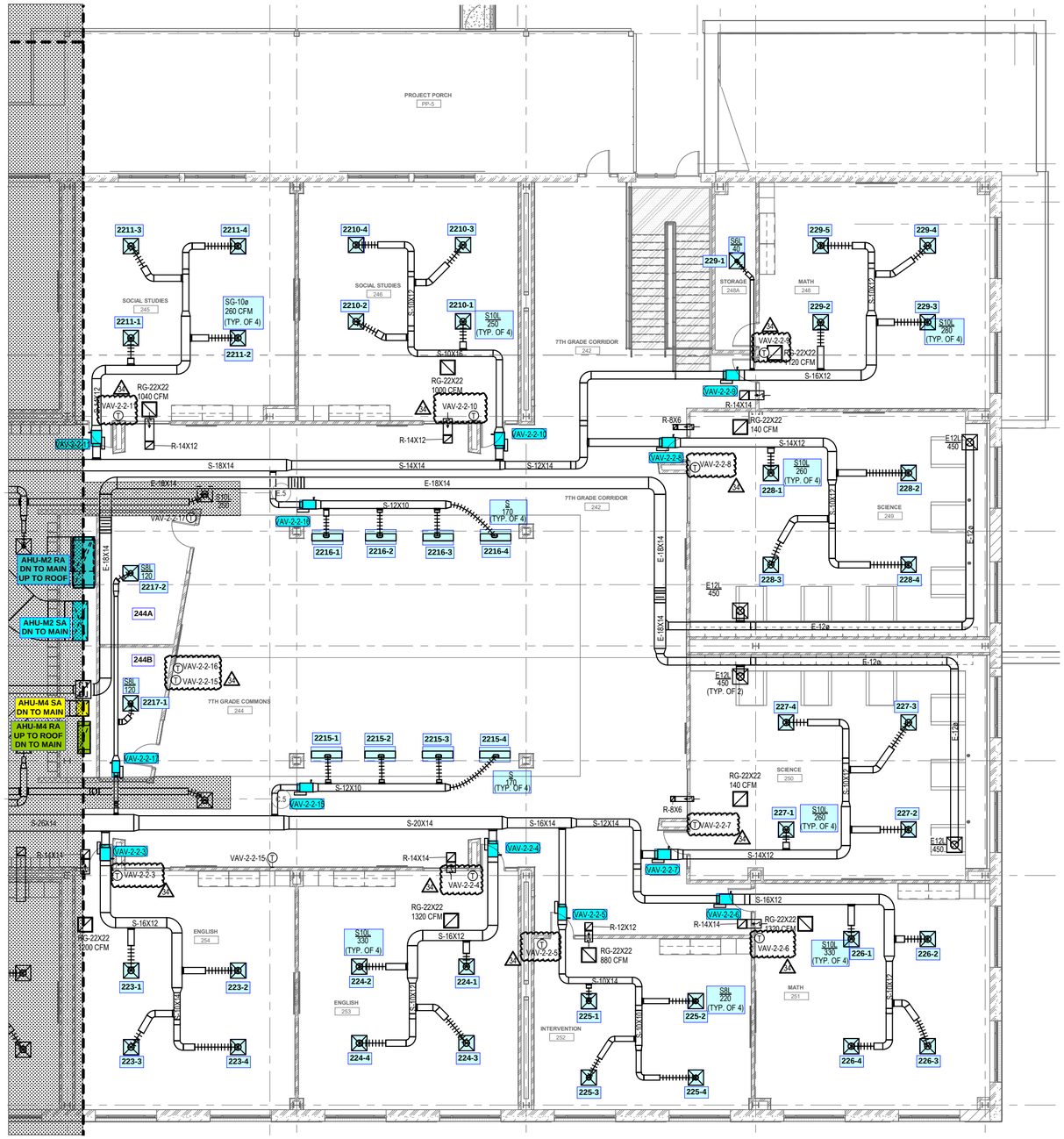


1 MS2.23 ZONE 3 - UPPER LEVEL NEW FLOOR PLAN

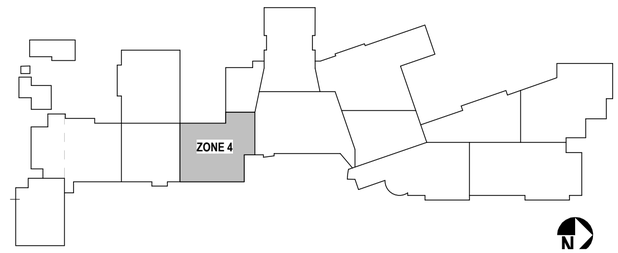
SCALE: 1/8" = 1'-0"



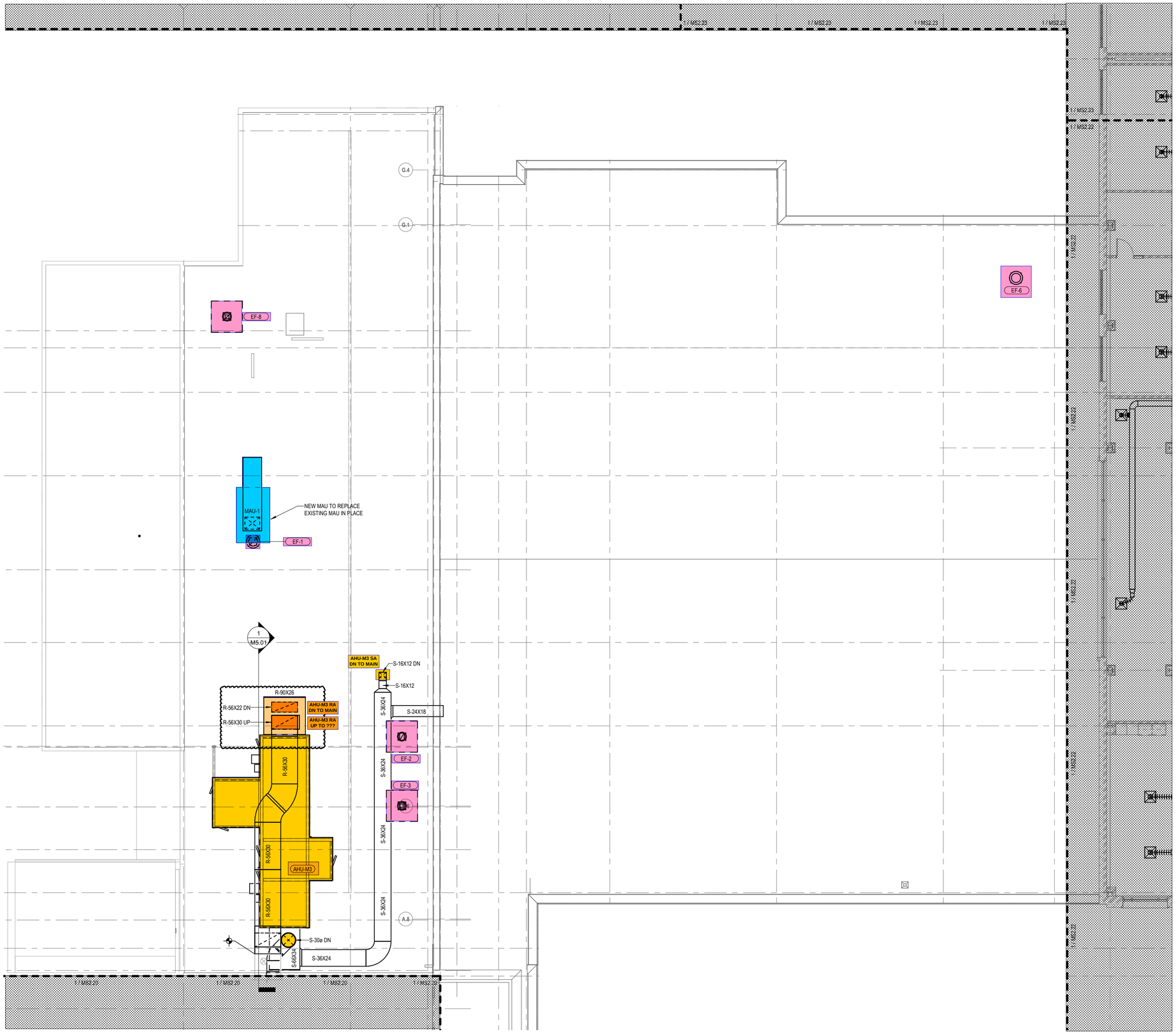
Indian Hill Middle School (Cincinnati, OH)



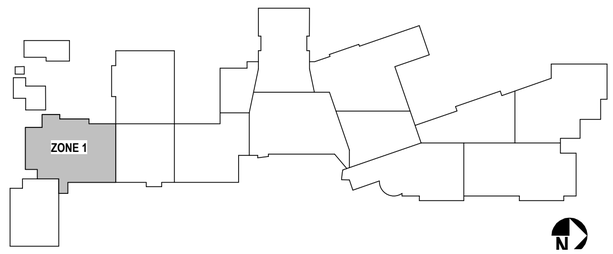
1 MS2.24 ZONE 4 - UPPER LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



Indian Hill Middle School (Cincinnati, OH)

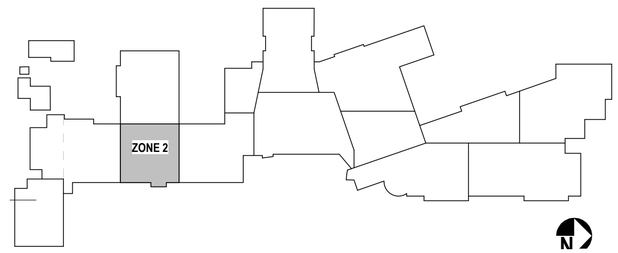


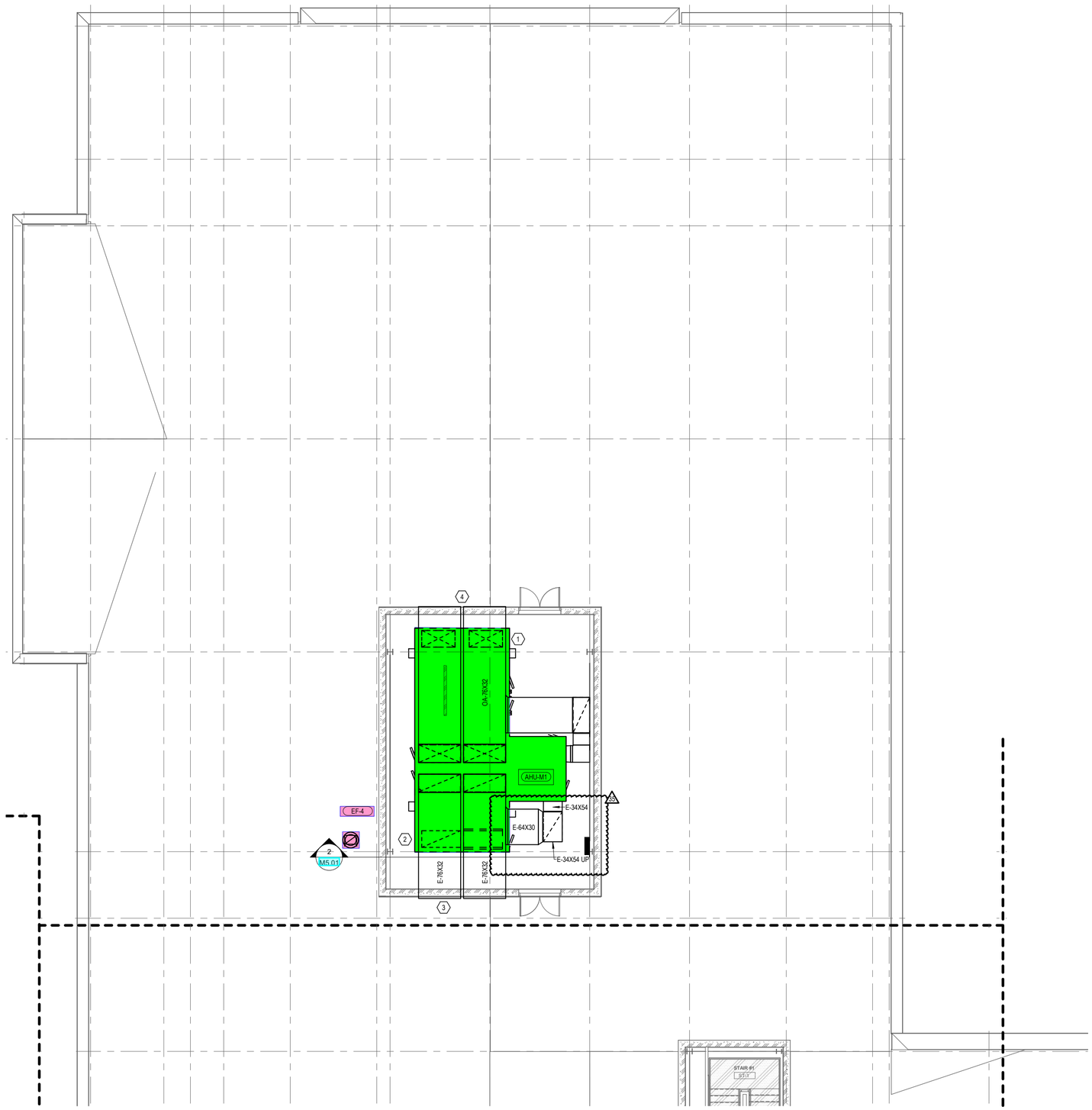
1 MS2.21 ZONE 1 - ROOF PLAN
SCALE: 1/8" = 1'-0"



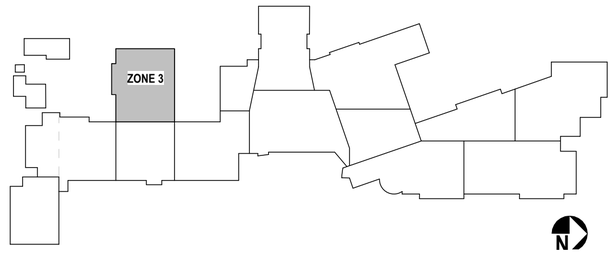
Indian Hill Middle School (Cincinnati, OH)

1 MS2.32 ZONE 2 - PENTHOUSE LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"





1 MS2.33 ZONE 3 - PENTHOUSE LEVEL NEW FLOOR PLAN
SCALE: 1/8" = 1'-0"



National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: AHU-DUAL FAN

Asset: AHU-M1 AREA:100

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	NA	MILLER-PICKING
Model Number	NA	MPI-123x273
Serial Number	-	TBLM181740
No. Pre-Filters / Size (1)	24X24X4 / 24	24X24X4 / 24
No. Pre-Filters / Size (2)	24X12X4 / 4	24X12X4 / 4

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR / 254
Horsepower / RPM	8@ 15.0 / 3600
Rated Volts / Phase	460 / 3
Rated Amperage / SF	17.50 / 1.15

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	50000	47562
OA CFM	25000	24556
VFD Speed	-	52.7 HZ
RL Voltage	460	470 VFD
RL Amperage	140	114.8 VFD
Motor B.H.P.	94.16	98.57

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Static Pressure Stpt	-	1.3"
Suction S.P.	-	1.63
Discharge S.P.	-	3.67
Total S.P.	7.00	5.3
Chilled Water Coil P.D.	-	0.65
Pre Heat Coil P.D.	-	0.14
Heat Wheel P.D.	-	0.09
Pre-Filters P.D.	-	0.61
Total ESP	2.20	4.48

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	BALDOR / 215
Horsepower / RPM	8@ 5.0 / 1200
Rated Volts / Phase	460 / 3
Rated Amperage / SF	7.20 / 1.15

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	50000	46579
VFD Speed	-	66 HZ
RL Voltage	460	477 VFD
RL Amperage	57.6	35.6
Motor B.H.P.	40	24.72

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	0.81
Discharge S.P.	-	0.17
Total S.P.	-	0.98

Completed By: Nick Payne on 02/16/2024

AHU-DUAL FAN

VAV - Single Duct

AHU-M1/100

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
VAV-1-1-1	PRICE	SDV	REHEAT	12	960	935	910	922	960	945	1.993
VAV-1-1-2	PRICE	SDV	REHEAT	12	960	1007	915	930	960	947	2.058
VAV-1-1-3	PRICE	SDV	REHEAT	12	920	929	920	930	920	933	2.189
VAV-1-1-4	PRICE	SDV	REHEAT	12	920	894	900	915	920	901	2.304
VAV-1-1-5	PRICE	SDV	REHEAT	9	680	704	300	310	680	677	2.428
VAV-1-1-6	PRICE	SDV	REHEAT	7	400	411	240	248	480	469	2.346
VAV-1-1-7	PRICE	SDV	REHEAT	7	480	473	255	261	400	417	2.506
VAV-1-1-8	PRICE	SDV	REHEAT	10	860	877	545	526	545	268	1.326
VAV-1-1-9	PRICE	SDV	REHEAT	10	860	852	545	557	860	872	2.606
VAV-1-1-10	PRICE	SDV	REHEAT	6	280	282	280	290	280	285	2.215
VAV-1-1-11	PRICE	SDV	REHEAT	7	520	501	260	271	440	448	5.997
VAV-1-1-12	PRICE	SDV	REHEAT	12	1040	1045	910	919	960	929	0.636
VAV-1-1-13	PRICE	SDV	REHEAT	12	1160	1200	1070	1077	1160	1152	1.934
VAV-1-1-14	PRICE	SDV	REHEAT	12	1160	1150	1070	1079	1160	1141	1.987
VAV-1-1-15	PRICE	SDV	REHEAT	12	920	955	890	895	920	938	2.142
VAV-1-1-16	PRICE	SDV	REHEAT	6	320	299	320	299	320	305	2.901
VAV-1-1-17	PRICE	SDV	REHEAT	12	1200	1155	1180	1133	1200	1217	2.019
VAV-1-1-18	PRICE	SDV	REHEAT	14	1400	1402	1345	1385	1400	1392	1.843
VAV-1-1-19	PRICE	SDV	REHEAT	12	1160	1218	1030	1058	1160	1144	2.341
VAV-1-1-20	PRICE	SDV	REHEAT	12	1200	1208	1050	1055	1200	1162	2.515
VAV-1-1-21	PRICE	SDV	REHEAT	16	2250	2251	1700	1744	2250	2108	2.298
VAV-1-1-22	PRICE	SDV	REHEAT	9	660	649	365	371	660	635	1.760
VAV-1-1-23	PRICE	SDV	REHEAT	9	660	643	365	378	660	648	2.230
VAV-1-1-24	PRICE	SDV	REHEAT	12	920	912	460	468	660	668	2.368
VAV-1-1-25	PRICE	SDV	REHEAT	12	960	987	890	894	890	919	1.942
VAV-1-1-26	PRICE	SDV	REHEAT	12	1080	1105	890	899	1080	1082	2.40
VAV-1-1-27	PRICE	SDV	REHEAT	9	720	745	325	313	640	649	2.082
VAV-1-1-28	PRICE	SDV	REHEAT	7	480	494	460	452	480	460	2.506
VAV-1-1-18A1	PRICE	SDV	REHEAT	5	160	170	112	115	160	152	1.168
VAV-1-2-1	PRICE	SDV	REHEAT	12	1240	1236	910	933	1240	1255	1.986
VAV-1-2-2	PRICE	SDV	REHEAT	12	920	963	915	920	920	909	1.995
VAV-1-2-3	PRICE	SDV	REHEAT	12	920	968	920	913	920	947	2.092
VAV-1-2-4	PRICE	SDV	REHEAT	12	920	915	895	904	920	910	1.978
VAV-1-2-5	PRICE	SDV	REHEAT	10	800	837	290	299	800	810	2.443
VAV-1-2-6	PRICE	SDV	REHEAT	12	1180	1158	275	282	1180	1170	2.360
VAV-1-2-7	PRICE	SDV	REHEAT	12	1100	1028	230	247	245	262	2.024
VAV-1-2-8	PRICE	SDV	REHEAT	12	1290	1265	315	322	1290	1299	1.895
VAV-1-2-9	PRICE	SDV	REHEAT	12	1290	1253	315	320	1290	1288	2.167
VAV-1-2-10	PRICE	SDV	REHEAT	5	200	200	200	202	200	210	1.787
VAV-1-2-11	PRICE	SDV	REHEAT	7	440	451	220	227	440	448	1.845
VAV-1-2-12	PRICE	SDV	REHEAT	7	360	361	130	129	360	362	2.264
VAV-1-2-13	PRICE	SDV	REHEAT	12	1280	1264	910	919	1280	1289	1.870
VAV-1-2-14	PRICE	SDV	REHEAT	14	1520	1538	1070	1092	1520	1499	1.845
VAV-1-2-15	PRICE	SDV	REHEAT	14	1480	1503	1070	1117	1480	1469	1.813
VAV-1-2-16	PRICE	SDV	REHEAT	12	920	963	895	910	920	905	1.810
VAV-1-2-17	PRICE	SDV	REHEAT	12	1080	1094	975	990	1080	1092	1.880
VAV-1-2-18	PRICE	SDV	REHEAT	12	1080	1065	850	882	1080	1058	2.069
VAV-1-2-19	PRICE	SDV	REHEAT	12	1040	1047	885	890	1040	1043	1.985
VAV-1-2-20	PRICE	SDV	REHEAT	14	1360	1405	1170	1188	1360	1344	1.758
VAV-1-2-21	PRICE	SDV	REHEAT	12	1200	1269	1170	1177	1200	1218	1.682
VAV-1-2-22	PRICE	SDV	REHEAT	12	920	946	400	421	920	919	1.812
VAV-1-2-23	PRICE	SDV	REHEAT	10	840	845	400	409	840	829	1.590
VAV-1-2-24	PRICE	SDV	REHEAT	10	840	867	420	414	840	810	1.615
VAV-1-2-25	PRICE	SDV	REHEAT	12	1000	1011	690	699	1000	1011	1.705

Diffuser Supply (GRD)

VAV-1-1-1/151

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
111-1	151	S10L	10	240	223	229	95.4
111-1	151	S10L	10	240	325	232	96.7
111-3	151	S10L	10	240	233	239	99.6
111-4	151	S10L	10	240	296	235	97.9
Total				960	1077	935	97.4%

VAV-1-1-10/142, 143

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1110-1	143	S6L	6	140	128	147	105.0
1110-1	142	S6L	6	140	114	135	96.4
Total				280	242	282	100.71%

VAV-1-1-11/150

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1111-1	133	S10L	10	280	213	274	97.9
1111-1	156	S6L	6	80	84	74	92.5
1111-3	133A	S6L	6	80	55	75	93.8
1111-4	136	SG	6X6	80	22	78	97.5
Total				520	374	501	96.35%

VAV-1-1-12/150

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1112-1	150	S10L	10	260	325	242	93.1
1112-1	150	S10L	10	260	288	259	99.6
1112-3	150	S10L	10	260	313	269	103.5
1112-4	150	S10L	10	260	303	275	105.8
Total				1040	1229	1045	100.48%

VAV-1-1-13/149

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1113-1	149	S10L	10	290	319	284	97.9
1113-1	149	S10L	10	290	339	299	103.1
1113-3	149	S10L	10	290	312	315	108.6
1113-4	149	S10L	10	290	322	302	104.1
Total				1160	1292	1200	103.45%

VAV-1-1-14/148

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1114-1	148	S10L	10	290	215	276	95.2
1114-1	148	S10L	10	290	262	284	97.9
1114-3	148	S10L	10	290	237	291	100.3
1114-4	148	S10L	10	290	240	299	103.1
Total				1160	954	1150	99.14%

VAV-1-1-15/132

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1115-1	147	S8L	8	230	207	237	103.0
1115-1	147	S8L	8	230	158	242	105.2
1115-3	147	S8L	8	230	162	245	106.5
1115-4	147	S8L	8	230	193	231	100.4
Total				920	720	955	103.8%

VAV-1-1-16/132

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1116-1	132	S10L	10	320	299	319	99.7
Total				320	299	319	99.69%

VAV-1-1-17/131

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1117-1	131	SG	12X8	300	210	287	95.7
1117-1	131	SG	12X8	300	277	292	97.3
1117-3	131	SG	12X8	300	255	285	95.0
1117-4	131	SG	12X8	300	262	291	97.0
Total				1200	1004	1155	96.25%

VAV-1-1-18/130

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1118-1	130	SG	12X8	350	302	368	105.1
1118-1	130	SG	12X8	350	256	355	101.4
1118-3	130	SG	12X8	350	294	337	96.3
1118-4	130	SG	12X8	350	105	342	97.7
Total				1400	957	1402	100.14%

VAV-1-1-18A1/130A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1118A-1	130B	SG	8X8	80	116	83	103.8
1118A-1	130A	SG	10X3	80	142	87	108.8
Total				160	258	170	106.25%

VAV-1-1-19/125

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1119-1	125	S10L	10	290	215	317	109.3
1119-1	125	S10L	10	290	262	309	106.6
1119-3	125	S10L	10	290	285	290	100.0
1119-4	125	S10L	10	290	204	302	104.1
Total				1160	966	1218	105%

VAV-1-1-2/152

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
112-1	152	S10L	10	240	275	245	102.1
112-1	152	S10L	10	240	0	252	105.0
112-3	152	S10L	10	240	289	261	108.8
112-4	152	S10L	10	240	226	249	103.8
Total				960	790	1007	104.9%

VAV-1-1-20/103E

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1120-1	104	S	8	200	154	208	104.0
1120-1	104	S	8	200	162	195	97.5
1120-3	104	S	8	200	177	214	107.0
1120-4	104	S	8	200	184	194	97.0
1120-5	104	S	8	200	203	202	101.0
1120-6	104	S	8	200	171	205	102.5
Total				1200	1051	1218	101.5%

VAV-1-1-21/103

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1121-1	103A	S8L	6	40	105	42	105.0
1121-1	103A	S8L	6	80	88	78	97.5
1121-3	103	S10L	10	310	252	305	98.4
1121-4	103	S10L	10	310	303	325	104.8
1121-5	103	S10L	10	310	274	317	102.3
1121-6	103	S10L	10	310	215	312	100.6
1121-7	103	S10L	10	310	262	302	97.4
1121-8	103C	S8L	8	160	188	161	100.6
1121-9	103D	S8L	8	160	192	165	103.1
1121-10	103E	S8L	8	260	170	244	93.8
Total				2250	2049	2251	100.04%

VAV-1-1-22/101

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1122-1	101	S10L	10	330	405	318	96.4
1122-1	101	S10L	10	330	416	331	100.3
Total				660	821	649	98.33%

VAV-1-1-23/102

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1123-1	102	S10L	10	330	268	313	94.8
1123-1	102	S10L	10	330	245	330	100.0
Total				660	513	643	97.42%

VAV-1-1-24/157

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1124-1	157	S10L	10	230	55	237	103.0
1124-1	157	S10L	10	230	185	225	97.8
1124-3	157	S10L	10	230	285	228	99.1
1124-4	157	S10L	10	230	255	222	96.5
Total				920	780	912	99.13%

VAV-1-1-25/106

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1125-1	107	S10L	10	240	145	248	103.3
1125-1	107	S10L	10	240	135	245	102.1
1125-3	107	S10L	10	240	68	258	107.5
1125-4	107	S10L	10	240	194	236	98.3
Total				960	542	987	102.81%

VAV-1-1-26/106

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1126-1	106	S10L	10	270	255	278	103.0
1126-1	106	S10L	10	270	262	282	104.4
1126-3	106	S10L	10	270	234	266	98.5
1126-4	106	S10L	10	270	240	279	103.3
Total				1080	991	1105	102.31%

VAV-1-1-27/126

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1127-1	127	S8L	8	160	165	172	107.5
1127-1	127	S8L	8	160	142	169	105.6
1127-3	127A	S8L	6	80	108	85	106.3
1127-4	127	S8L	8	160	95	155	96.9
1127-5	127	S8L	8	160	92	164	102.5
Total				720	602	745	103.47%

VAV-1-1-28/130B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1128-1	126	S8L	8	120	105	126	105.0
1128-1	126	S8L	8	120	117	122	101.7
1128-3	126	S8L	8	120	111	117	97.5
1128-4	126	S8L	8	120	42	129	107.5
Total				480	375	494	102.92%

VAV-1-1-3/154

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
113-1	153	S8L	8	230	140	215	93.5
113-1	153	S8L	8	230	168	238	103.5
113-3	153	S8L	8	230	154	249	108.3
113-4	153	S8L	8	230	122	227	98.7
Total				920	584	929	100.98%

VAV-1-1-4/146A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
114-1	154	S8L	8	220	175	215	97.7
114-1	154	S8L	8	220	152	222	100.9
114-3	154	S8L	8	220	185	227	103.2
114-4	154	S8L	8	220	122	230	104.5
Total				880	634	894	101.59%

VAV-1-1-5/146B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
115-1	155	S8L	8	170	215	174	102.4
115-1	155	S8L	8	170	205	181	106.5
115-3	155	S8L	8	170	206	177	104.1
115-4	155	S8L	8	170	189	172	101.2
Total				680	815	704	103.53%

VAV-1-1-6/146B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
116-1	146B	S8L	8	200	249	209	104.5
116-1	146B	S8L	8	200	235	202	101.0
Total				400	484	411	102.75%

VAV-1-1-7/146A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
117-1	146A	S8L	8	200	145	205	102.5
117-1	145	S6L	6	80	108	84	105.0
117-3	146A	S8L	8	200	177	184	92.0
Total				480	430	473	98.54%

VAV-1-1-8/146

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
118-1	146	S	8	215	258	225	104.7
118-1	146	S	8	215	262	209	97.2
118-3	146	S	8	215	294	211	98.1
118-4	146	S	8	215	293	232	107.9
Total				860	1107	877	101.98%

VAV-1-1-9/143

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
119-1	146	S	8	215	175	218	101.4
119-1	146	S	8	215	12	205	95.3
119-3	146	S	8	215	155	209	97.2
119-4	146	S	8	215	198	220	102.3
Total				860	540	852	99.07%

VAV-1-2-1/227

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
121-1	227	SG	10	310		298	96.1
121-1	227	SG	10	310		305	98.4
121-3	227	SG	10	310		313	101.0
121-4	227	SG	10	310		320	103.2
Total				1240	0	1236	99.68%

VAV-1-2-10/208

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1210-1	216	S6L	6	100	118	103	103.0
1210-1	217	S6L	6	100	80	97	97.0
Total				200	198	200	100%

VAV-1-2-11/208

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1211-1	212	SG	8X8	40	100	42	105.0
1211-1	208A	S8L	8	120	132	126	105.0
1211-3	208	S8L	8	140	108	138	98.6
1211-4	208	S8L	8	140	125	145	103.6
Total				440	465	451	102.5%

VAV-1-2-13/226

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1213-1	226	SG	10	320		303	94.7
1213-1	226	SG	10	320		317	99.1
1213-3	226	SG	10	320		325	101.6
1213-4	226	SG	10	320		319	99.7
Total				1280	0	1264	98.75%

VAV-1-2-14/225

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1214-1	225	SG	10	380		388	102.1
1214-1	225	SG	10	380		368	96.8
1214-3	225	SG	10	380		372	97.9
1214-4	225	SG	10	380		410	107.9
Total				1520	0	1538	101.18%

VAV-1-2-15/224

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1215-1	224	SG	10	370		365	98.6
1215-1	224	SG	10	370		382	103.2
1215-3	224	SG	10	370		379	102.4
1215-4	224	SG	10	370		377	101.9
Total				1480	0	1503	101.55%

VAV-1-2-16/211

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1216-1	223	SG	8	230		245	106.5
1216-1	223	SG	8	230		238	103.5
1216-3	223	SG	8	230		248	107.8
1216-4	223	SG	8	230		232	100.9
Total				920	0	963	104.67%

VAV-1-2-17/209

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1217-1	211	S8L	8	210		217	103.3
1217-1	210	S10L	10	240		229	95.4
1217-3	211	S8L	8	210		209	99.5
1217-4	211	S8L	8	210		219	104.3
1217-5	211	S8L	8	210		220	104.8
Total				1080	0	1094	101.3%

VAV-1-2-18/206

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1218-1	209	S10L	10	270		255	94.4
1218-1	209	S10L	10	270		262	97.0
1218-3	209	S10L	10	270		270	100.0
1218-4	209	S10L	10	270		278	103.0
Total				1080	0	1065	98.61%

VAV-1-2-2/228

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
122-1	228	SG	8	230		244	106.1
122-1	228	SG	8	230		237	103.0
122-3	228	SG	8	230		250	108.7
122-4	228	SG	8	230		232	100.9
Total				920	0	963	104.67%

VAV-1-2-20/202

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1220-1	204	S10L	10	260		275	105.8
1220-1	204	S10L	10	260		282	108.5
1220-3	204	S10L	10	260		269	103.5
1220-4	204	S10L	10	260		266	102.3
1220-5	205	S10L	10	320		313	97.8
Total				1360	0	1405	103.31%

VAV-1-2-21/203

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1221-1	203	S8L	8	220		237	107.7
1221-1	203	S8L	8	220		217	98.6
1221-3	203	S8L	8	220		240	109.1
1221-4	203	S8L	8	220		228	103.6
1221-5	202	S10L	10	320		347	108.4
Total				1200	0	1269	105.75%

VAV-1-2-22/200

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1222-1	233	S6L	6	80	92	81	101.3
1222-1	200	S8L	8	210	242	212	101.0
1222-3	200	S8L	8	210	230	216	102.9
1222-4	200	S8L	8	210	189	208	99.0
1222-5	200	S8L	8	210	267	229	109.0
Total				920	1020	946	102.83%

VAV-1-2-23/200

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1223-1	200	S8L	8	210		219	104.3
1223-1	200	S8L	8	210		204	97.1
1223-3	200	S8L	8	210		209	99.5
1223-4	200	S8L	8	210		213	101.4
Total				840	0	845	100.6%

VAV-1-2-24/200A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1224-1	200A	PSD-8	8	210		204	97.1
1224-1	200A	PSD-8	8	210		218	103.8
1224-3	200A	PSD-8	8	210		225	107.1
1224-4	200A	PSD-8	8	210		220	104.8
Total				840	0	867	103.21%

VAV-1-2-25/102

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1225-1	102	PSD-8	8	250	277	255	102.0
1225-1	102	PSD-8	8	250	299	245	98.0
1225-3	102	PSD-8	8	250	282	259	103.6
1225-4	102	PSD-8	8	250	266	252	100.8
Total				1000	1124	1011	101.1%

VAV-1-2-3/229

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
123-1	229	SG	8	230		242	105.2
123-1	229	SG	8	230		237	103.0
123-3	229	SG	8	230		251	109.1
123-4	229	SG	8	230		238	103.5
Total				920	0	968	105.22%

VAV-1-2-4/231

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
124-1	231	SG	8	230		232	100.9
124-1	231	SG	8	230		217	94.3
124-3	231	SG	8	230		240	104.3
124-4	231	SG	8	230		226	98.3
Total				920	0	915	99.46%

VAV-1-2-5/232

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
125-1	232	SG	8	200		216	108.0
125-1	232	SG	8	200		207	103.5
125-3	232	SG	8	200		212	106.0
125-4	232	SG	8	200		202	101.0
Total				800	0	837	104.62%

VAV-1-2-6/222B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
126-1	222B	S10L	10	280	197	284	101.4
126-1	221	S6L	6	60	126	62	103.3
126-3	222B	210L	10	280	235	275	98.2
126-4	222B	S10L	10	280	258	271	96.8
126-5	222B	S10L	10	280	220	266	95.0
Total				1180	1036	1158	98.14%

VAV-1-2-7/222A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
127-1	222A	S10L	10	260	395	315	121.2
127-1	221	S6L	6	60	48	70	116.7
127-3	222A	S10L	10	260	424	326	125.4
127-4	222A	S10L	10	260	416	317	121.9
127-5	222A	S10L	10	260	0	0	0.0
Total				1100	1283	1028	93.45%

VAV-1-2-8/222

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
128-1	222	S	8	215		205	95.3
128-1	222	S	8	215		216	100.5
128-3	222	S	8	215		209	97.2
128-4	222	S	8	215		206	95.8
128-5	222	S	8	215		210	97.7
128-6	222	S	8	215		219	101.9
Total				1290	0	1265	98.06%

VAV-1-2-12/226

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2121-1	207	S10L	10	180	160	175	97.2
2121-1	234	S10L	10	180	220	186	103.3
Total				360	380	361	100.28%

VAV-1-2-9/222

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	222	S		215		223	103.7
SGRD1	222	S		215		209	97.2
SGRD3	222	S		215		219	101.9
SGRD4	222	S		215		199	92.6
SGRD5	222	S		215		195	90.7
SGRD6	222	S		215		208	96.7
Total				1290	0	1253	97.13%

VAV-1-2-19/205

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-1-2-19-SGRD1	206	S10L	10	260	145	262	100.8
VAV-1-2-19-SGRD2	206	S10L	10	260	185	253	97.3
VAV-1-2-19-SGRD3	206	S10L	10	260	162	267	102.7
VAV-1-2-19-SGRD4	206	S10L	10	260	195	265	101.9
Total				1040	687	1047	100.67%

Asset	Notes	Date	Written By
VAV-1-1-6	Connected Load = 400cfm.	01/27/2024	Nick Payne
VAV-1-2-7	Diffuser #1 not installed. VAV total maintained through remaining hallway diffusers.	03/12/2024	Nick Payne

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: AHU-DUAL FAN

Asset: AHU-M2 AREA:185

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	NA	MILLER-PICKING
Model Number	NA	MPI-123x228
Serial Number	-	TCLM181730
No. Pre-Filters / Size (1)	24X24X4 / 16	24X24X4 / 16
No. Pre-Filters / Size (2)	12X24X4 / 4	12X24X4 / 4

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR / 254
Horsepower / RPM	6@ 15.0 / 3600
Rated Volts / Phase	460 / 3
Rated Amperage / SF	17.50 / 1.15

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	26880	26152
OA CFM	17500	16428
VFD Speed	-	56 HZ
RL Voltage	460	451 VFD
RL Amperage	105	102.6
Motor B.H.P.	90	87.3

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Static Pressure Stpt	-	2.6"
Suction S.P.	-	-2.51
Discharge S.P.	-	4.3
Total S.P.	7.00	6.81
Chilled Water Coil P.D.	-	0.81
Pre Heat Coil P.D.	-	0.12
Heat Wheel P.D.	-	0.4
Pre-Filters P.D.	-	0.65
Total ESP	2.39	5.5

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	BALDOR / 184
Horsepower / RPM	6@ 5.0 / 1800
Rated Volts / Phase	460 / 3
Rated Amperage / SF	6.70 / 1.15

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	26880	24668
VFD Speed	-	56 HZ
RL Voltage	460	410 VFD
RL Amperage	40.2	28.8 VFD
Motor B.H.P.	30	21

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	-1.19
Discharge S.P.	-	0.1
Total S.P.	2.98	1.29

Completed By: Nick Payne on 02/15/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

AHU-DUAL FAN

VAV - Single Duct

AHU-M2/185

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
VAV-2-1-1	PRICE	SDV	REHEAT	7	400	423	345	348	400	410	2.502
VAV-2-1-2	PRICE	SDV	REHEAT	7	480	493	475	488	480	490	2.847
VAV-2-1-3	PRICE	SDV	REHEAT	8	520	530	490	495	520	513	2.329
VAV-2-1-4	PRICE	SDV	REHEAT	12	1080	1079	660	666	1080	1095	2.128
VAV-2-1-5	PRICE	SDV	REHEAT	7	400	401	165	170	400	405	3.701
VAV-2-1-6	PRICE	SDV	REHEAT	24X16	3000	2958	550	555	3000	2912	2.715
VAV-2-1-7	PRICE	SDV	REHEAT	8	560	546	120	124	120	140	2.124
VAV-2-1-8	PRICE	SDV	REHEAT	10	720	745	370	377	370	362	1.715
VAV-2-1-9	PRICE	SDV	REHEAT	5	200	205	35	37	200	209	1.860
VAV-2-1-10	PRICE	SDV	REHEAT	16	1600	1594	580	599	1600	1616	2.412
VAV-2-1-11	PRICE	SDV	REHEAT	4	120	122	45	48	120	125	2.019
VAV-2-1-12	PRICE	SDV	REHEAT	7	400	394	145	144	400	408	2.917
VAV-2-1-13	PRICE	SDV	REHEAT	7	400	402	150	155	160	162	3.216
VAV-2-1-14	PRICE	SDV	REHEAT	16	1800	1835	1500	1566	1200	1244	1.782
VAV-2-1-15	PRICE	SDV	REHEAT	5	200	196	100	105	200	205	2.160
VAV-2-2-1	PRICE	SDV	REHEAT	5	200	207	0	0	200	202	1.785
VAV-2-2-2	PRICE	SDV	REHEAT	12	1000	974	870	876	1000	982	1.662
VAV-2-2-3	PRICE	SDV	REHEAT	12	1200	1136	895	902	1200	1211	2.25
VAV-2-2-4	PRICE	SDV	REHEAT	12	1320	1279	895	877	1320	1313	2.24
VAV-2-2-5	PRICE	SDV	REHEAT	10	880	914	810	812	880	899	1.960
VAV-2-2-6	PRICE	SDV	REHEAT	12	1320	1341	900	919	1320	1322	0.471
VAV-2-2-7	PRICE	SDV	REHEAT	12	1040	1100	1020	1037	1040	1048	2.042
VAV-2-2-8	PRICE	SDV	REHEAT	12	1040	1003	1020	1017	1040	1022	2.223
VAV-2-2-9	PRICE	SDV	REHEAT	12	1160	1144	905	917	1160	1138	2.081
VAV-2-2-10	PRICE	SDV	REHEAT	12	1040	1013	895	899	1040	1028	2.076
VAV-2-2-11	PRICE	SDV	REHEAT	12	1040	1016	895	909	1000	1011	2.07
VAV-2-2-12	PRICE	SDV	REHEAT	10	880	844	690	703	880	866	2.53
VAV-2-2-13	PRICE	SDV	REHEAT	8	560	552	310	318	310	305	2.717
VAV-2-2-14	PRICE	SDV	REHEAT	8	560	577	260	266	560	552	2.227
VAV-2-2-15	PRICE	SDV	REHEAT	9	680	700	510	516	680	708	2.761
VAV-2-2-16	PRICE	SDV	REHEAT	9	680	699	510	515	680	672	2.115
VAV-2-2-17	PRICE	SDV	REHEAT	5	240	251	130	133	240	247	1.59
VAV-4-1-1	PRICE	SDV	REHEAT	5	160	167	160	162	160	158	1.475

Diffuser Supply (GRD)

VAV-2-1-1/185

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
211-1	185	S8L	8	200	347	217	108.5
211-1	185	S8L	8	200	88	206	103.0
Total				400	435	423	105.75%

VAV-2-1-10/HALL

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2110-1	HALL	S8L	8	200	178	205	102.5
2110-1	HALL	S8L	8	200	184	184	92.0
2110-3	HALL	S8L	8	200	185	195	97.5
2110-4	HALL	S8L	8	200	162	196	98.0
2110-5	HALL	S8L	8	200	174	206	103.0
2110-6	HALL	S8L	8	200	192	216	108.0
2110-7	HALL	S8L	8	200	188	204	102.0
2110-8	HALL	S8L	8	200	166	188	94.0
Total				1600	1429	1594	99.62%

VAV-2-1-11/035

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2111-1	034	S8L	8	120	137	121	100.8
Total				120	137	121	100.83%

VAV-2-1-12/035

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2112-1	035	S8L	8	200	108	189	94.5
2112-1	035	S8L	8	200	185	205	102.5
Total				400	293	394	98.5%

VAV-2-1-13/005

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2113-1	185	S8L	8	160	72	165	103.1
2113-1	185	SG	6X6	80	115	85	106.3
2113-3	185	S8L	8	160	209	152	95.0
Total				400	396	402	100.5%

VAV-2-1-14/005

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2114-1	005	S8L	8	200	226	189	94.5
2114-1	005	S8L	8	200	248	192	96.0
2114-3	005	S8L	8	200	150	195	97.5
2114-4	005	S8L	8	200	237	216	108.0
2114-5	005	S8L	8	200	285	208	104.0
2114-6	005	S8L	8	200	261	210	105.0
2114-7	005	S8L	8	200	213	205	102.5
2114-8	005	S8L	8	200	209	209	104.5
2114-9	005	S8L	8	200	188	211	105.5
Total				1800	2017	1835	101.94%

VAV-2-1-15/RM EAST OF 005

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2115-1	RM EAST OF 005	S6L	6	100	53	95	95.0
2115-1	RM EAST OF 005	S6L	6	100	166	101	101.0
Total				200	219	196	98%

VAV-2-1-2/187

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
212-1	186	S8L	8	120	79	125	104.2
212-1	186	S8L	8	120	144	118	98.3
212-3	186	S8L	8	120	117	120	100.0
212-4	186	S8L	8	120	97	130	108.3
Total				480	437	493	102.71%

VAV-2-1-3/187

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
213-1	187A	S8L	8	120	208	124	103.3
213-1	187	S8L	8	200	44	198	99.0
213-3	187	S8L	8	200	251	208	104.0
Total				520	503	530	101.92%

VAV-2-1-4/188

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
214-1	188	S8L	8	160	42	165	103.1
214-1	188	S8L	8	160	110	162	101.3
214-3	189	S8L	8	200	266	189	94.5
214-4	189	S8L	8	200	155	182	91.0
214-5	188	S8L	8	160	264	174	108.8
214-6	188A	S8L	8	40	208	41	102.5
214-7	188	S8L	8	160	212	166	103.8
Total				1080	1257	1079	99.91%

VAV-2-1-5/185

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
215-1	190B	S8L	8	160	122	156	97.5
215-1	185	S8L	8	60	76	62	103.3
215-3	190	S8L	8	60	82	65	108.3
215-4	190	S8L	8	60	50	58	96.7
215-5	185	S8L	8	60	12	60	100.0
Total				400	342	401	100.25%

VAV-2-1-6/001

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
216-1	001	LD		300	217	287	95.7
216-1	001	LD		300	233	279	93.0
216-3	001	LD		300	159	272	90.7
216-4	001	S		200	206	215	107.5
216-5	001	LD		300	188	305	101.7
216-6	001	S		200	194	194	97.0
216-7	001	LD		300	248	292	97.3
216-8	001	S		200	252	216	108.0
216-9	001	LD		300	269	316	105.3
216-10	001	LD		300	205	288	96.0
216-11	001	LD		300	255	294	98.0
Total				3000	2426	2958	98.6%

VAV-2-1-7/020

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
217-1	020	S10L	10	280	70	269	96.1
217-1	020	S10L	10	280	460	277	98.9
Total				560	530	546	97.5%

VAV-2-1-8/060

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
218-1	059	S6L	6	120	65	124	103.3
218-1	058	S8L	8	200	244	208	104.0
218-3	060	S8L	8	200	188	218	109.0
218-4	060	S8L	8	200	355	195	97.5
Total				720	852	745	103.47%

VAV-2-1-9/061

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
219-1	061	S8L	8	200	237	205	102.5
Total				200	237	205	102.5%

VAV-2-2-1/201

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
221-1	237	8L		80	160	82	102.5
221-1	238	S6L	6	120	88	125	104.2
Total				200	248	207	103.5%

VAV-2-2-10/246

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2210-1	246	S10L	10	250	340	252	100.8
2210-1	246	S10L	10	250	317	262	104.8
2210-3	246	S10L	10	250	55	258	103.2
2210-4	246	S10L	10	250	317	241	96.4
Total				1000	1029	1013	101.3%

VAV-2-2-11/235

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2211-1	245	SG	10	260	218	248	95.4
2211-1	245	SG	10	260	222	262	100.8
2211-3	245	SG	10	260	252	255	98.1
2211-4	245	SG	10	260	203	251	96.5
Total				1040	895	1016	97.69%

VAV-2-2-12/243

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2212-1	235	S8L	8	220	178	218	99.1
2212-1	235	S8L	8	220	208	202	91.8
2212-3	235	S8L	8	220	188	215	97.7
2212-4	235	S8L	8	220	194	209	95.0
Total				880	768	844	95.91%

VAV-2-2-13/200

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2213-1	200	S10L	10	250	349	390	156.0
2213-1	200	S10L	10	250	0	0	0.0
2213-3	243	S6L	6	60	125	162	270.0
Total				560	474	552	98.57%

VAV-2-2-14/244

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2214-1	200	S10L	10	250		257	102.8
2214-1	200	S10L	10	250		262	104.8
2214-3	243	S6L	6	60		58	96.7
Total				560	0	577	103.04%

VAV-2-2-15/244

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2215-1	244	S	8	170	195	172	101.2
2215-1	244	S	8	170	182	177	104.1
2215-3	244	S	8	170	199	180	105.9
2215-4	244	S	8	170	205	171	100.6
Total				680	781	700	102.94%

VAV-2-2-16/244A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2216-1	244	S	8	170		179	105.3
2216-1	244	S	8	170		174	102.4
2216-3	244	S	8	170		171	100.6
2216-4	244	S	8	170		175	102.9
Total				680	0	699	102.79%

VAV-2-2-17/244B

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2217-1	244A	S8L	8	120	144	127	105.8
2217-1	244B	S8L	8	120	178	124	103.3
Total				240	322	251	104.58%

VAV-2-2-2/201

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
222-1	201	S10L	10	250	163	246	98.4
222-1	201	S10L	10	250	520	265	106.0
222-3	201	S10L	10	250	69	237	94.8
222-4	201	S10L	10	250	466	226	90.4
Total				1000	1218	974	97.4%

VAV-2-2-3/253

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
223-1	254	CD	10	300	244	287	95.7
223-1	254	CD	10	300	256	292	97.3
223-3	254	CD	10	300	277	285	95.0
223-4	254	CD	10	300	282	272	90.7
Total				1200	1059	1136	94.67%

VAV-2-2-4/253

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
224-1	253	S10L	10	330	255	305	92.4
224-1	253	S10L	10	330	262	315	95.5
224-3	253	S10L	10	330	233	333	100.9
224-4	253	S10L	10	330	287	326	98.8
Total				1320	1037	1279	96.89%

VAV-2-2-5/252

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
225-1	252	S8L	8	220	75	239	108.6
225-1	252	S8L	8	220	309	236	107.3
225-3	252	S8L	8	220	268	225	102.3
225-4	252	S8L	8	220	278	214	97.3
Total				880	930	914	103.86%

VAV-2-2-6/250

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
226-1	251	S10L	10	330	525	343	103.9
226-3	251	S10L	10	330	541	358	108.5
226-4	251	S10L	10	330	508	322	97.6
SGRD1	251	S10L	10	330	477	318	96.4
Total				1320	2051	1341	101.59%

VAV-2-2-8/248

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
228-1	249	S10L	10	260	245	262	100.8
228-1	249	S10L	10	260	125	251	96.5
228-3	249	S10L	10	260	166	248	95.4
228-4	249	S10L	10	260	217	242	93.1
Total				1040	753	1003	96.44%

VAV-2-2-9/248A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
229-1	248	S10L	10	280	258	272	97.1
229-1	248A	S6L	6	40	100	41	102.5
229-3	248	S10L	10	280	242	265	94.6
229-4	248	S10L	10	280	308	277	98.9
229-5	248	S10L	10	280	322	289	103.2
Total				1160	1230	1144	98.62%

VAV-2-2-7/249

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	250	S10L	10	260	270	267	102.7
SGRD1	250	S10L	10	260	249	282	108.5
SGRD3	250	S10L	10	260	295	274	105.4
SGRD4	250	S10L	10	260	297	277	106.5
Total				1040	1111	1100	105.77%

VAV-4-1-1/185

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	185	S6L	6	80	40	82	102.5
SGRD1	185	S6L	6	80	140	85	106.3
Total				160	180	167	104.38%

Asset	Notes	Date	Written By
VAV-2-2-13	Diffuser #2 not installed in front of restrooms. Total maintained through remaining 2 diffusers.	03/12/2024	Nick Payne
VAV-2-2-14	Diffuser #2 not installed near jan241. Total maintained through remaining diffusers.	03/12/2024	Nick Payne

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: AHU-DUAL FAN

Asset: AHU-M3 AREA:108

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	NA	MILLER-PICKING
Model Number	NA	MPO-123x261
Serial Number	-	TBLM181760
No. Pre-Filters / Size (1)	24X24X4 / 16	24X24X4 / 16

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR / 254
Horsepower / RPM	6@ 15.0 / 3600
Rated Volts / Phase	460 / 3
Rated Amperage / SF	17.50 / 1.15

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	30000	28977
OA CFM	15000	14895
VFD Speed	-	42.6 HZ
RL Voltage	460	366 VFD
RL Amperage	105	67.7 VFD
Motor B.H.P.	55.56	58.7

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Static Pressure Stpt	-	1.6"
Suction S.P.	-	1.51
Discharge S.P.	-	3.41
Total S.P.	-	4.92
Chilled Water Coil P.D.	-	0.70
Pre Heat Coil P.D.	-	0.08
Final Filters P.D.	-	0.28
Heat Wheel P.D.	-	0.11
Total ESP	-	4.19

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	BALDOR / 184
Horsepower / RPM	6@ 5.0 / 1800
Rated Volts / Phase	460 / 3
Rated Amperage / SF	6.70 / 1.15

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	30000	27655
VFD Speed	-	74.9 HZ
RL Voltage	460	467 VFD
RL Amperage	40.2	24.1 VFD
Motor B.H.P.	28.2	18.1

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	-0.78
Discharge S.P.	-	0.33
Total S.P.	-	1.11

Completed By: Nick Payne on 02/19/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

AHU-DUAL FAN

VAV - Single Duct

AHU-M3/108

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
VAV-3-1-1	PRICE	SDV	REHEAT	24X16	8340	8608	4305	4410	8340	8305	2.140
VAV-3-1-2	PRICE	SDV	REHEAT	24X16	8340	8471	4305	4391	8340	8318	2.722
VAV-3-1-3	PRICE	SDV	REHEAT	7	440	462	440	448	440	444	1.528
VAV-3-1-4	PRICE	SDV	REHEAT	7	480	510	480	499	480	490	1.315
VAV-3-1-5	PRICE	SDV	REHEAT	6	280	282	85	81	280	271	2.252
VAV-3-1-6	PRICE	SDV	REHEAT	10	720	725	200	206	720	717	2.055
VAV-3-1-7	PRICE	SDV	REHEAT	10	880	903	0	0	800	811	2.134
VAV-3-1-8	PRICE	SDV	REHEAT	4	120	122	30	33	120	125	1.311
VAV-3-1-9	PRICE	SDV	REHEAT	4	120	122	85	89	120	125	0.659
VAV-3-1-10	PRICE	SDV	REHEAT	7	440	447	85	88	440	432	2.642
VAV-3-1-11	PRICE	SDV	REHEAT	8	480	495	0	0	480	488	2.181
VAV-3-1-12	PRICE	SDV	REHEAT	5	160	166	80	84	160	169	1.500
VAV-3-1-13	PRICE	SDV	REHEAT	24X16	3780	3843	3110	3206	3780	3699	1.814
VAV-3-1-14	PRICE	SDV	REHEAT	24X16	4180	4243	3295	3308	4180	4099	1.896
VAV-3-1-15	PRICE	SDV	REHEAT	7	400	397	184	190	400	405	2.552
VAV-3-1-10B1	PRICE	SDV	REHEAT	8	560	585	365	369	560	552	1.887

VAV-Fan Powered Box

AHU-M3/108

Asset											
Asset Name	MFG	Model Num	Service	Type	Inlet Size	Design Max Cool CFM	Max Cool CFM	Design Min Cool CFM	Min Cool CFM	Design Fan CFM (Heat)	Fan CFM (Heat)	Ak (max)
FPVAV-1	PRICE	FDC			6	320	312	65	64	320	315	2.649

Diffuser Supply (GRD)

VAV-3-1-9/123

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3-1-9-1	EX120	S6L	6	60	100	58	96.7
3-1-9-1	EX120	S6L	6	60	111	64	106.7
Total				120	211	122	101.67%

VAV-3-1-2/EX100

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
311-1	EX100	EXISTING	EXISTING	755	625	725	96.0
311-1	EX100	EXISTING	EXISTING	755	616	788	104.4
311-3	EX100	EXISTING	EXISTING	755	685	748	99.1
311-4	EX100	EXISTING	EXISTING	755	692	792	104.9
311-5	EX100	EXISTING	EXISTING	755	714	762	100.9
311-6	EX100	EXISTING	EXISTING	755	752	785	104.0
311-7	EX100	EXISTING	EXISTING	755	707	781	103.4
311-8	EX100	EXISTING	EXISTING	755	611	777	102.9
311-9	EX100	EXISTING	EXISTING	755	692	795	105.3
311-10	EX100	EXISTING	EXISTING	755	658	752	99.6
311-11	EX100	EXISTING	EXISTING	790	618	766	97.0
Total				8340	7370	8471	101.57%

VAV-3-1-10/124

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3110-1	124	S6L	6	150	162	152	101.3
3110-1	112A	S6L	6	40	100	42	105.0
3110-3	124	S6L	6	150	108	148	98.7
3110-4	124A	S6L	6	100	101	105	105.0
Total				440	471	447	101.59%

VAV-3-1-10B1/123

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3110B-1	123	SG	12X6	140	145	148	105.7
3110B-1	123	SG	12X6	140	158	142	101.4
3110B-3	123	SG	12X6	140	162	145	103.6
3110B-4	123	SG	12X6	140	157	150	107.1
Total				560	622	585	104.46%

VAV-3-1-11/111

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3111-1	111	S8L	8	120	145	126	105.0
3111-1	111	S8L	8	120	162	119	99.2
3111-3	111	S8L	8	120	155	128	106.7
3111-4	111	S8L	8	120	128	122	101.7
Total				480	590	495	103.12%

VAV-3-1-12/113

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3112-1	113	S8L	8	160	192	166	103.8
Total				160	192	166	103.75%

VAV-3-1-13/109

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3113-1	109	S	8	210	195	228	108.6
3113-1	109	S	8	210	188	205	97.6
3113-3	109	S	8	210	174	217	103.3
3113-4	109	S	8	210	162	211	100.5
3113-5	109	S	8	210	158	207	98.6
3113-6	109	S	8	210	184	220	104.8
3113-7	109	S	8	210	184	205	97.6
3113-8	109	S	8	210	162	198	94.3
3113-9	109	S	8	210	199	211	100.5
3113-10	109	S	8	210	202	219	104.3
3113-11	109	S	8	210	175	212	101.0
3113-12	109	S	8	210	182	224	106.7
3113-13	109	S	8	210	168	208	99.0
3113-14	109	S	8	210	155	219	104.3
3113-15	109	S	8	210	200	222	105.7
3113-16	109	S	8	210	204	206	98.1
3113-17	109	S	8	210	195	216	102.9
3113-18	1091	S	8	210	198	215	102.4
Total				3780	3285	3843	101.67%

VAV-3-1-15/105

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3115-1	105	S8L	8	200	105	190	95.0
3115-1	109	S8L	8	200	288	207	103.5
Total				400	393	397	99.25%

VAV-3-1-1/119

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
312-1	EX100	EXISTING	EXISTING	755	816	788	104.4
312-1	EX100	EXISTING	EXISTING	755	722	792	104.9
312-3	EX100	EXISTING	EXISTING	755	625	745	98.7
312-4	EX100	EXISTING	EXISTING	755	928	762	100.9
312-5	EX100	EXISTING	EXISTING	755	715	785	104.0
312-6	EX100	EXISTING	EXISTING	755	605	779	103.2
312-7	EX100	EXISTING	EXISTING	755	622	791	104.8
312-8	EX100	EXISTING	EXISTING	755	608	748	99.1
312-9	EX100	EXISTING	EXISTING	755	529	795	105.3
312-10	EX100	EXISTING	EXISTING	755	745	808	107.0
312-11	EX100	EXISTING	EXISTING	790	511	815	103.2
Total				8340	7426	8608	103.21%

VAV-3-1-5/EX111

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
315-1	119	S8L	8	120	105	127	105.8
315-1	120	S8L	8	160	111	155	96.9
Total				280	216	282	100.71%

VAV-3-1-6/117

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
316-1	EX120	S10L	10	300	208	310	103.3
316-1	117	S10L	10	300	308	288	96.0
316-3	EX111	S8L	8	120	77	127	105.8
Total				720	593	725	100.69%

VAV-3-1-7/114

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
317-1	112	S8L	8	200	178	205	102.5
317-1	112B	S6L	6	80	75	87	108.8
317-3	112	S8L	8	200	189	194	97.0
317-4	112	S8L	8	200	178	211	105.5
317-5	112	S8L	8	200	200	206	103.0
Total				880	820	903	102.61%

VAV-3-1-8/114

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
318-1	114	S6L	6	120	145	122	101.7
Total				120	145	122	101.67%

FPVAV-1/108

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
FP1-1	108	S8L	8	320	270	312	97.5
Total				320	270	312	97.5%

VAV-3-1-14/109

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	109A	S6L	6	100	110	104	104.0
SGRD1	109A	S6L	6	100	125	109	109.0
SGRD3	109	S	8	210	166	195	92.9
SGRD4	109	S	8	210	184	208	99.0
SGRD5	109	S	8	210	192	205	97.6
SGRD6	109A	S6L	6	100	205	211	211.0
SGRD7	109	S	8	210	116	216	102.9
SGRD8	109	S	8	210	208	207	98.6
SGRD9	109	S	8	210	194	225	107.1
SGRD10	109	S	8	210	184	217	103.3
SGRD11	109	S	8	210	177	206	98.1
SGRD12	109	S	8	210	202	220	104.8
SGRD13	109	S	8	210	206	204	97.1
SGRD14	109A	S6L	86	100	215	97	97.0
SGRD15	109	S	8	210	225	190	90.5
SGRD16	109	S	8	210	144	217	103.3
SGRD17	109	S	8	210	198	195	92.9
SGRD18	109	S	8	210	162	199	94.8
SGRD19	109	S	8	210	175	211	100.5
SGRD20	109	S	8	210	205	196	93.3
SGRD21	109	S	8	210	210	206	98.1
SGRD22	109	S	8	210	220	205	97.6
Total				4180	4023	4243	101.51%

Asset	Notes	Date	Written By
VAV-3-1-3	Calibrated with JCI directly inputting k-factor.	04/25/2024	Nick Payne
VAV-3-1-5	This VAV serves 2 offices. The thermostat is located outside the offices in the hallway. Recomm end relocate stat into one of the offices.	04/25/2024	Nick Payne

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: AHU-DUAL FAN

Asset: AHU-M4 AREA:DISTRICT & MS OFFICCE

UNIT DATA - SUPPLY		
	Design	**Actual**
Manufacturer	NA	MILLER-PICKING
Model Number	NA	MPI-71x168
Serial Number	-	TALM181750
No. Pre-Filters / Size (1)	24X24X4 / 4	24X24X4 / 4
No. Pre-Filters / Size (2)	12X24X4 / 2	12X24X4 / 2

MOTOR DATA - SUPPLY	
	Actual
Motor MFG / Frame	BALDOR / 215
Horsepower / RPM	2@ 10.0 / 3600
Rated Volts / Phase	460 / 3
Rated Amperage / SF	11.60

TEST DATA - SUPPLY		
	Design	**Actual**
Total CFM	10000	10126
OA CFM	4000	4086
VFD Speed	-	66 HZ
RL Voltage	460	460 VFD
RL Amperage	23.2	20.9 VFD
Motor B.H.P.	18.5	18.1

PERFORMANCE DATA - SUPPLY		
	Design	**Actual**
Static Pressure Stpt	-	0.75
Suction S.P.	-	-2.48
Discharge S.P.	-	2.43
Total S.P.	7	4.91
Reheat Coil P.D.	-	0.28
Chilled Water Coil P.D.	-	0.34
Pre Heat Coil P.D.	-	0.20
Heat Wheel P.D.	-	0.13
Pre-Filters P.D.	-	0.69
Total ESP	2.01	3.64

MOTOR DATA - EXHAUST/RETURN	
	Actual
Motor MFG / FRAME	BALDOR / 213
Horsepower / RPM	2@ 7.5 / 3600
Rated Volts / Phase	460 / 3
Rated Amperage / SF	9.00

TEST DATA - EXHAUST/RETURN		
	Design	**Actual**
Total CFM	10000	9754
VFD Speed	-	60 HZ
RL Voltage	460	458 VFD
RL Amperage	18	14.2 VFD
Motor B.H.P.	10.5	11.8

PERFORMANCE DATA - EXHAUST/RETURN		
	Design	**Actual**
Suction S.P.	-	-1.17
Discharge S.P.	-	0.16
Total S.P.	3.00	1.33

Completed By: Nick Payne on 02/15/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

AHU-DUAL FAN

VAV - Single Duct

AHU-M4/DISTRICT & MS OFFICCE

Asset											
Asset Name	MFG	Model Num	Type	Inlet Size	Design Max CFM	Max CFM	Design Min CFM	Min CFM	Design Heat CFM	Heat CFM	Ak (max)
VAV-4-1-3	PRICE	SDV	REHEAT	5	160	164	95	93	95	97	1.245
VAV-4-1-4	PRICE	SDV	REHEAT	5	240	253	140	144	140	148	0.981
VAV-4-1-5	PRICE	SDV	REHEAT	4	120	118	100	99	100	102	0.952
VAV-4-1-6	PRICE	SDV	REHEAT	6	320	311	130	134	320	328	2.390
VAV-4-1-7	PRICE	SDV	REHEAT	6	280	269	90	92	280	275	2.737
VAV-4-1-8	PRICE	SDV	REHEAT	6	280	288	90	94	280	271	2.607
VAV-4-1-9	PRICE	SDV	REHEAT	8	580	564	280	284	280	289	2.252
VAV-4-1-10	PRICE	SDV	REHEAT	6	280	282	130	133	280	289	2.747
VAV-4-1-11	PRICE	SDV	REHEAT	4	120	114	50	52	120	118	1.482
VAV-4-1-12	PRICE	SDV	REHEAT	4	120	127	50	55	50	52	0.892
VAV-4-1-13	PRICE	SDV	REHEAT	5	160	162	55	54	160	165	1.788
VAV-4-1-14	PRICE	SDV	REHEAT	5	160	170	55	60	55	53	1.519
VAV-4-1-15	PRICE	SDV	REHEAT	5	200	202	40	42	200	209	2.16
VAV-4-1-16	PRICE	SDV	REHEAT	5	240	245	100	105	240	251	1.536
VAV-4-1-17	PRICE	SDV	REHEAT	8	520	507	145	140	145	142	2.408
VAV-4-1-18	PRICE	SDV	REHEAT	7	440	436	290	281	290	293	2.540
VAV-4-1-19	PRICE	SDV	REHEAT	5	120	120	50	52	50	48	1.461
VAV-4-1-20	PRICE	SDV	REHEAT	4	80	81	40	43	40	42	0.820
VAV-4-1-21	PRICE	SDV	REHEAT	5	240	237	40	39	40	43	1.423
VAV-4-1-22	PRICE	SDV	REHEAT	5	240	236	40	40	40	38	1.331
VAV-4-1-23	PRICE	SDV	REHEAT	5	240	246	40	39	40	43	1.478
VAV-4-1-24	PRICE	SDV	REHEAT	5	240	236	40	42	40	40	1.502
VAV-4-1-25	PRICE	SDV	REHEAT	5	240	251	40	42	240	244	1.11
VAV-4-1-26	PRICE	SDV	REHEAT	6	280	275	50	53	50	48	2.729
VAV-4-1-27	PRICE	SDV	REHEAT	5	200	204	40	42	200	205	1.221
VAV-4-1-28	PRICE	SDV	REHEAT	10	760	730	235	244	760	749	1.94
VAV-4-1-29	PRICE	SDV	REHEAT	6	280	281	200	205	280	277	2.83
VAV-4-1-30	PRICE	SDV	REHEAT	4	120	125	95	99	120	109	0.79
VAV-4-1-31	PRICE	SDV	REHEAT	4	40	42	40	41	40	42	0.656
VAV-4-1-32	PRICE	SDV	REHEAT	4	40	43	40	41	40	41	0.775
VAV-4-1-33	PRICE	SDV	REHEAT	4	40	39	40	42	40	40	0.901
VAV-4-1-34	PRICE	SDV	REHEAT	12	1000	1058	765	774	765	783	2.003
VAV-4-1-35	PRICE	SDV	REHEAT	10	840	841	85	90	85	92	1.928
VAV-4-1-36	PRICE	SDV	REHEAT	5	200	195	170	168	170	174	1.698
VAV-4-1-37	PRICE	SDV	REHEAT	6	280	279	130	135	130	133	2.804
VAV-4-1-38	PRICE	SDV	REHEAT	4	80	79	40	38	40	40	0.976

Diffuser Supply (GRD)

VAV-4-1-10/170

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
4110-1	170	S8L	8	140	178	145	103.6
4110-1	170	S8L	8	140	185	137	97.9
Total				280	363	282	100.71%

VAV-4-1-11/170

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4111-1	170	S8L	8	120	144	114	95.0
Total				120	144	114	95%

VAV-4-1-12/177

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4112-1	177	S8L	8	120	171	127	105.8
Total				120	171	127	105.83%

VAV-4-1-13/178

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4113-1	178	S8L	8	160	184	162	101.3
Total				160	184	162	101.25%

VAV-4-1-14/179

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4114-1	179	S8L	8	160	196	170	106.3
Total				160	196	170	106.25%

VAV-4-1-15/197

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4115-1	DO-18	S6L	6	40	66	42	105.0
4115-1	DO-17	S6L	6	40	52	38	95.0
4115-3	DO-24	S6L	6	40	41	43	107.5
4115-4	197	S6L	6	80	45	77	96.3
Total				200	204	200	100%

VAV-4-1-16/DO-23

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4116-1	DO-23	S10L	10	240	285	245	102.1
Total				240	285	245	102.08%

VAV-4-1-17/DO-16

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4117-1	D0-16	S8L	8	130	48	134	103.1
4117-1	D0-16	S8L	8	130	30	135	103.8
4117-3	D0-16	S8L	8	130	201	121	93.1
4117-4	D0-16	S8L	8	130	198	117	90.0
Total				520	477	507	97.5%

VAV-4-1-18/DO-5

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4118-1	DO-15	S8L	8	180	139	169	93.9
4118-1	DO-15	S8L	8	180	150	184	102.2
4118-3	DO-5	S6L	6	40	80	40	100.0
4118-4	DO-5	S6L	6	40	66	43	107.5
Total				440	435	436	99.09%

VAV-4-1-19/DO-5

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4119-1	DO-5	S6L	6	60	111	61	101.7
4119-1	DO-14	S6L	6	60	82	59	98.3
Total				120	193	120	100%

VAV-4-1-20/DO-13

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4120-1	DO-13	S6L	6	80	125	81	101.3
Total				80	125	81	101.25%

VAV-4-1-21/DO-12

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4121-1	DO-12	S10L	10	240	293	237	98.8
Total				240	293	237	98.75%

VAV-4-1-22/DO-11

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4122-1	DO-11	S10L	10	240	170	236	98.3
Total				240	170	236	98.33%

VAV-4-1-23/DO-10

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4123-1	DO-10	S10L	10	240	292	246	102.5
Total				240	292	246	102.5%

VAV-4-1-24/DO-09

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4124-1	DO-9	S10L	10	240	291	236	98.3
Total				240	291	236	98.33%

VAV-4-1-25/DO-8

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4125-1	DO-8	S10L	10	240	307	251	104.6
Total				240	307	251	104.58%

VAV-4-1-26/DO-7

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4126-1	DO-7	S10L	10	280	266	275	98.2
Total				280	266	275	98.21%

VAV-4-1-27/DO-6

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4127-1	DO-6	S8L	8	200	258	204	102.0
Total				200	258	204	102%

VAV-4-1-28/DO-2

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4128-1	DO-2	S8L	8	200	153	185	92.5
4128-1	DO-4	S8L	8	160	155	148	92.5
4128-3	DO-1	S8L	8	200	177	205	102.5
4128-4	DO-2	S8L	8	200	182	192	96.0
Total				760	667	730	96.05%

VAV-4-1-29/DO-3

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4129-1	DO-3	S8L	8	140	38	138	98.6
4129-1	DO-3	S8L	8	140	200	143	102.1
Total				280	238	281	100.36%

VAV-4-1-3/162

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
413-1	162A	S6L	6	40	41	39	97.5
413-1	162	S6L	6	80	128	81	101.3
413-3	162B	S6L	6	40	33	44	110.0
Total				160	202	164	102.5%

VAV-4-1-30/DO-28

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4130-1	DO-25	S8L	8	120	88	125	104.2
Total				120	88	125	104.17%

VAV-4-1-31/DO-27

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4131-1	DO-26	S6L	6	40	90	42	105.0
Total				40	90	42	105%

VAV-4-1-32/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4132-1	DO-27	S6L	6	40	56	43	107.5
Total				40	56	43	107.5%

VAV-4-1-33/DO-28

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4133-1	DO-28	S6L	6	40	60	39	97.5
Total				40	60	39	97.5%

VAV-4-1-34/DO-29

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4134-1	DO-29	S10L	10	250	340	256	102.4
4134-1	DO-29	S10L	10	250	318	272	108.8
4134-3	DO-29	S10L	10	250	328	268	107.2
4134-4	DO-29	S10L	10	250	90	262	104.8
Total				1000	1076	1058	105.8%

VAV-4-1-35/DO-34

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4135-1	DO-30	S10L	10	320	322	328	102.5
4135-1	DO-30	S10L	10	320	302	311	97.2
4135-3	DO-34	S8L	8	200	220	202	101.0
Total				840	844	841	100.12%

VAV-4-1-36/DP-37

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4136-1	DO-33	S8L	8	200	225	195	97.5
Total				200	225	195	97.5%

VAV-4-1-37/DO-36

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4137-1	DO-35	S6L	6	100	93	96	96.0
4137-1	DO-35	S6L	6	100	91	104	104.0
4137-3	DO-37	S6L	6	80	72	79	98.8
Total				280	256	279	99.64%

VAV-4-1-38/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4138-1	DO-36	S6L	6	80	114	79	98.8
Total				80	114	79	98.75%

VAV-4-1-4/160

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
414-1	160	SG	12X6	120	230	129	107.5
414-1	160	SG	12X6	120	180	124	103.3
Total				240	410	253	105.42%

VAV-4-1-6/171

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
416-1	171	S10L	10	320	265	311	97.2
Total				320	265	311	97.19%

VAV-4-1-7/172

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
417-1	172	S10L	10	280	225	269	96.1
Total				280	225	269	96.07%

VAV-4-1-8/163 CORR

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
418-1	173	S10L	10	280	237	288	102.9
Total				280	237	288	102.86%

VAV-4-1-9/169

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
419-1	163 CORR	S6L	6	150	124	143	95.3
419-1	169	S8L	8	160	270	156	97.5
419-3	168	S6L	6	120	37	122	101.7
419-4	163 CORR	S6L	6	150	119	143	95.3
Total				580	550	564	97.24%

VAV-4-1-5/160A

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
SGRD1	160A	S8D	8	120	175	118	98.3
Total				120	175	118	98.33%

Asset	Notes	Date	Written By
VAV-4-1-19	BOX DESIGN:160CFM, BOX CONNECTED LOAD:120 CFM. BALANCED TO CONNECTED LOAD	12/04/2023	Tyler Youells

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Supply

Asset: MAU-1 AREA:OUTSIDE AIR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	MSX-P116-H22-MF
Serial Num	-	20243429
Type	-	MUA
Configuration	HORIZONTAL	VERTICAL
Num Filters Size 1	-	6
Filter Size 1	-	20X20X2

Test Data		
	Design	**Actual**
CFM	5128	4899
RL Voltage	-	446 VFD
RL Amperage	-	3.8 VFD
Brake Horse Power	-	2.71

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	182
Horsepower	3.0	3.0
Motor Rpm	1725	1765
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	4.2
Service Factor	-	1.15

Completed By: Nick Payne on 02/21/2024

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-240-VG
Serial Num	-	20263153226
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	6410	6266
RL Voltage	-	477/472/471
RL Amperage	-	4.9/5.1/5.1
Total ESP	1.125	-0.887

Motor Data		
	Design	**Actual**
Motor MFG	-	Baldor
Frame	-	184
Horsepower	5.0	5
Motor Rpm	1140	1200
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	5.7
Service Factor	-	1.15

Completed By: Nick Payne on 02/21/2024

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:WARE WASHING HOOD

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-099-VG
Serial Num	-	2130016723a
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	1000	942
RL Voltage	-	115
RL Amperage	-	2.11
Total ESP	0.50	0.33

Motor Data		
	Design	**Actual**
Motor MFG	-	VARIGREEN
Frame	-	48
Horsepower	0.25	0.25
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	2.85
Service Factor	-	1.15

Completed By: Nick Payne on 03/26/2024

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:EX104

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-120-VG
Serial Num	-	21300443
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	1260	1240
Total ESP	0.50	0.44

Motor Data		
	Design	**Actual**
Motor MFG	-	Varigreen
Frame	-	48
Horsepower	0.25	0.25
Motor Rpm	1400	1750
Phase	1	1
Voltage (rated)	277	277
Amperage (rated)	-	1.5
Service Factor	-	1.15

Completed By: Nick Payne on 02/21/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-3/EX104

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF3-1	EG	8	210	1	97	118	217	103.3
EF3-2	EG	8	210	1	178	195	202	96.2
EF3-3	EG	8	210	1	168	182	211	100.5
EF3-4	EG	8	210	1	86	148	199	94.8
EF3-5	EG	8	210	1	69	172	209	99.5
EF3-6	EG	8	210	1	43	181	202	96.2
Total			1260		641	996	1240	98.41%

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:225

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-240-VG
Type	CRE UPBLAST	CRE UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	56
Horsepower	5.0	5.0
Motor Rpm	1140	1140
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	7.1
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	7625	7273
RL Voltage	-	475/474/477
RL Amperage	-	6.8/6.9/6.8
Total ESP	1.25	1.08

Completed By: Nick Payne on 03/15/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-4/225

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF4-1	E	6	75		80		77	102.7
EF4-2	E6L	6	100		175		95	95.0
EF4-3	E	6	75		77		72	96.0
EF4-4	E8D	8	50		170		52	104.0
EF4-5	E8D	8	50		173		48	96.0
EF4-6	E8D	8	150		164		145	96.7
EF4-7	E8D	8	150		65		140	93.3
EF4-8	E	6	65		210		62	95.4
EF4-9	E8D	8	50		37		54	108.0
EF4-10	E12L	12	500		481		499	99.8
EF4-11	E12L	12	500		438		468	93.6
EF4-12	E12L	12	500		432		455	91.0
EF4-13	E12L	12	500		364		462	92.4
EF4-14	E8L	8	75		125		72	96.0
EF4-15	E8D	8	75		68		70	93.3
EF4-16	E8L	8	100		49		99	99.0
EF4-17	E	12	450		420		488	108.4
EF4-18	E	12	450		316		422	93.8
EF4-19	EG	12X8	230		121		249	108.3
EF4-20	EG	12X8	230		121		241	104.8
EF4-21	EG	12X8	230		121		233	101.3
EF4-22	EG	12X8	230		121		247	107.4
EF4-23	EG	12X8	230		121		238	103.5
EF4-24	E10L	10	300		64		279	93.0
EF4-25	E8D	8	50		193		52	104.0
EF4-26	E8D	8	50		179		48	96.0
EF4-27	E8D	8	150		115		147	98.0
EF4-28	E8D	8	150		220		141	94.0
EF4-29	E8D	8	65		200		69	106.2
EF4-30	E8D	8	50		131		55	110.0
EF4-31	E10L	10	350		447		368	105.1
EF4-32	E10L	10	350		438		372	106.3
EF4-33	E10L	10	350		428		380	108.6
EF4-34	E10L	10	350		471		374	106.9
Total			7280		7335	0	7273	99.9%

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-5 AREA:250

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SQ-18-VG
Type	INLINE	INLINE

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	184
Horsepower	2.0	2.0
Motor Rpm	1310	1310
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	12.5
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	3825	3854
RL Voltage	-	212/210/211
RL Amperage	-	10.8/10.2/10.7
Total ESP	0.75	0.88

Completed By: Nick Payne on 03/15/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-5/250

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF5-1	E8D	8	100		95	95	95	95.0
EF5-1	EG	6X6	200		205	205	205	102.5
EF5-3	E8D	8	200		210	210	210	105.0
EF5-4	E6D	6	50		50	50	50	100.0
EF5-5	E6DX	6	50		52	52	52	104.0
EF5-6	E6DX	6	50		54	54	54	108.0
EF5-7	E12L	12	450		301	405	405	90.0
EF5-8	E12L	12	450		530	449	449	99.8
EF5-9	E12L	12	450		411	436	436	96.9
EF5-10	E12L	12	450		410	435	435	96.7
EF5-11	E8D	8	150		165	165	165	110.0
EF5-12	E6D	6	50		54	54	54	108.0
EF5-13	E6D	6	50		119	54	54	108.0
EF5-14	E8D	8	150		161	161	161	107.3
EF5-15	E8D	8	150		163	163	163	108.7
EF5-16	E6D	6	50		51	51	51	102.0
EF5-17	E6D	6	50		22	52	52	104.0
EF5-18	E6D	6	50		23	49	49	98.0
EF5-19	E6DX	6	50		55	54	54	108.0
EF5-20	E6L	6	75		62	77	77	102.7
EF5-21	E6DX	6	50		68	53	53	106.0
EF5-22	E6L	6	75		49	81	81	108.0
EF5-23	E6DX	6	50		69	55	55	110.0
EF5-24	E6D	6	50		28	52	52	104.0
EF5-25	E6D	6	50		75	53	53	106.0
EF5-26	E6D	6	50		10	52	52	104.0
EF5-27	E6D	6	50		55	54	54	108.0
EF5-28	E6DX	6	50		62	52	52	104.0
EF5-29	E6DX	6	50		89	54	54	108.0
EF5-30	E6L	6	75		55	77	77	102.7
Total			3825		3753	3854	3854	100.76%

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-6 AREA:130B

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-100HP-VG
Serial Num	-	2130073423A
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	200	195
RL Voltage	-	119
RL Amperage	-	1.66
Total ESP	0.5	0.28

Motor Data		
	Design	**Actual**
Motor MFG	-	VARIGREEN
Frame	-	48
Horsepower	0.25	0.25
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	2.85
Service Factor	-	1.15

Completed By: Nick Payne on 02/21/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-6/130B

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF6-1	EG	8X8	200		88	195	195	97.5
Total			200		88	195	195	97.5%

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-7 AREA:041

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-095-VG
Serial Num	-	21300761
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	400	413
RL Voltage	-	120
RL Amperage	-	2.0
Total ESP	0.5	0.44

Motor Data		
	Design	**Actual**
Horsepower	0.167	0.167
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	2.2
Service Factor	-	1.15

Completed By: Nick Payne on 03/26/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-7/041

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF7-1	E8D	8	150		0	167	152	101.3
EF7-1	E8D	8	150		0	174	155	103.3
EF7-3	E6D	6	50		0	68	52	104.0
EF7-4	E6D	6	50		0	77	54	108.0
Total			400		0	486	413	103.25%

National TAB

Project: Indian Hill Middle School (Cincinnati, OH)

System/Unit: FAN - Exhaust

Asset: EF-8 AREA:118

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	CUE-095-VG
Serial Num	-	213-007-6823A
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	**Actual**
CFM	320	320
RL Voltage	-	120
RL Amperage	-	1.8
Total ESP	0.5	0.599

Motor Data		
	Design	**Actual**
Motor MFG	-	VARIGREEN
Frame	-	48
Horsepower	0.167	0.167
Motor Rpm	1725	1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	2.3
Service Factor	-	1.15

Completed By: Nick Payne on 02/21/2024

National TAB

Project:Indian Hill Middle School (Cincinnati, OH)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-8/118

Asset								
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EF8-1	E6L	6	50		55		52	104.0
EF8-1	E6L	6	70		80		75	107.1
EF8-3	E6L	6	50		26		52	104.0
EF8-4	E6L	6	90		77		84	93.3
EF8-5	E		60		94		57	95.0
Total			320		332	0	320	100%

Circuit Setter

CHW CS/

Asset							
Asset Name	**Size**	**Type**	**Design GPM**	**Setting**	**Delta P**	**Final GPM**	**% to Design**
AHU-M1	6	AUTO	357.0	14.6	12.9	336	94.1
AHU-M2	6	AUTO	488.0	16.4	15.5	474	97.1
AHU-M3	3	AUTO	331.0	13.6	12.5	317	95.8
AHU-M4	3	AUTO	62.0	9.6	9.1	60	96.8
MUA-1	1.5	AUTO	44	2-32 PSI	5.6 PSI	44	100.0
Total			1282			1231	96.02%

HW CS/

Asset							
Asset Name	**Size**	**Type**	**Design GPM**	**Setting**	**Delta P**	**Final GPM**	**% to Design**
AHU-M1	4.0	AUTO	174.0	2-32 PSI	7.7 PSI	174	100.0
AHU-M2	4.0	AUTO	135.0	2-32 PSI	11.8 PSI	135	100.0
AHU-M3	3.0	AUTO	125.0	2-32 PSI	15.6 PSI	125	100.0
AHU-M4	2.0	AUTO	34.0	2-32 PSI	8.4 PSI	34	100.0
FPVAV-1-1	1	AUTO	0.40	2-32 PSI	3.5 PSI	0.40	100.0
FPVAV-1-2	0.75	AUTO	2.60	2-32 PSI	6.43 PSI	2.60	100.0
FPVAV-4-1	0.75	AUTO	2.60	2-32 PSI	3.9 PSI	2.60	100.0
MUA-1	2.5	AUTO	47.3	2-32 PSI	4.5 PSI	47.3	100.0
UH-1	0.75	AUTO	2.50	2-32 PSI	5.29 PSI	2.50	100.0
VAV-1-1-1	0.75	AUTO	1.87	2-32 PSI	7.2 PSI	1.87	100.0
VAV-1-1-2	0.75	AUTO	2.03	2-32 PSI	6.5 PSI	2.03	100.0
VAV-1-1-3	0.75	AUTO	1.90	2-32 PSI	8.8 PSI	1.90	100.0
VAV-1-1-4	0.75	AUTO	1.90	2-32 PSI	7.7 PSI	1.90	100.0
VAV-1-1-5	0.75	AUTO	1.61	2-32 PSI	5.2 PSI	1.61	100.0
VAV-1-1-6	0.75	AUTO	1.37	2-32 PSI	10.8 PSI	1.37	100.0
VAV-1-1-7	0.75	AUTO	0.94	2-32 PSI	9.7 PSI	0.94	100.0
VAV-1-1-8	0.75	AUTO	2.31	2-32 PSI	11.6 PSI	2.31	100.0
VAV-1-1-9	0.75	AUTO	2.31	2-32 PSI	10.8 PSI	2.31	100.0
VAV-1-1-10	0.75	AUTO	0.68	2-32 PSI	8.5 PSI	0.68	100.0
VAV-1-1-11	0.75	AUTO	1.20	2-32 PSI	7.37 PSI	1.20	100.0
VAV-1-1-12	0.75	AUTO	1.25	2-32 PSI	10.2 PSI	1.25	100.0
VAV-1-1-13	0.75	AUTO	2.70	2-32 PSI	9.6 PSI	2.70	100.0
VAV-1-1-14	0.75	AUTO	2.70	2-32 PSI	5.8 PSI	2.70	100.0
VAV-1-1-15	0.75	AUTO	1.90	2-32 PSI	7.2 PSI	1.90	100.0
VAV-1-1-16	0.75	AUTO	0.88	2-32 PSI	11.14 PSI	0.88	100.0
VAV-1-1-17	0.75	AUTO	2.85	2-32 PSI	5.04 PSI	2.85	100.0
VAV-1-1-18	0.75	AUTO	2.89	2-32 PSI	4.96 PSI	2.89	100.0
VAV-1-1-19	0.75	AUTO	2.70	2-32 PSI	6.14 PSI	2.70	100.0
VAV-1-1-20	0.75	AUTO	2.85	2-32 PSI	4.95 PSI	2.85	100.0
VAV-1-1-21	0.75	AUTO	3.42	2-32 PSI	14.8 PSI	3.42	100.0
VAV-1-1-22	0.75	AUTO	1.53	2-32 PSI	11.23 PSI	1.53	100.0
VAV-1-1-23	0.75	AUTO	1.53	2-32 PSI	8.52 PSI	1.53	100.0
VAV-1-1-24	0.75	AUTO	1.20	2-32 PSI	6.34 PSI	1.20	100.0
VAV-1-1-25	0.75	AUTO	1.90	2-32 PSI	5.15 PSI	1.90	100.0
VAV-1-1-26	0.75	AUTO	2.42	2-32 PSI	6.7 PSI	2.42	100.0
VAV-1-1-27	0.75	AUTO	1.46	2-32 PSI	6.46 PSI	1.46	100.0
VAV-1-1-28	0.75	AUTO	1.37	2-32 PSII	5.77 PSI	1.37	100.0
VAV-1-1-18A1	0.75	AUTO	0.29	2-32 PSI	4.96 PSI	0.29	100.0
VAV-1-2-1	0.75	AUTO	1.90	2-32 PSI	7.7 PSI	1.90	100.0
VAV-1-2-2	0.75	AUTO	2.70	2-32 PSI	8.1 PSI	2.70	100.0
VAV-1-2-3	0.75	AUTO	1.90	2-32 PSI	6.5 PSI	1.90	100.0
VAV-1-2-4	0.75	AUTO	1.90	2-32 PSI	4.8 PSI	1.90	100.0
VAV-1-2-5	0.75	AUTO	2.07	2-32 PSI	5.2 PSI	2.07	100.0
VAV-1-2-6	0.75	AUTO	2.78	2-32 PSI	10.8 PSI	2.78	100.0
VAV-1-2-7	0.75	AUTO	2.50	2-32 PSI	7.9 PSI	2.50	100.0
VAV-1-2-8	0.75	AUTO	3.20	2-32 PSI	6.2 PSI	3.2	100.0
VAV-1-2-9	0.75	AUTO	3.20	2-32 PSI	9.5 PSI	3.2	100.0
VAV-1-2-10	0.75	AUTO	1.99	2-32 PSI	8.8 PSI	1.99	100.0
VAV-1-2-11	0.75	AUTO	1.20	2-32 PSI	7.1 PSI	1.2	100.0
VAV-1-2-12	0.75	AUTO	0.77	2-32 PSI	10.6 PSI	0.77	100.0
VAV-1-2-13	0.75	AUTO	3.17	2-32 PSI	5.5 PSI	3.17	100.0
VAV-1-2-14	0.75	AUTO	3.27	2-32 PSI	6.2 PSI	3.27	100.0
VAV-1-2-15	0.75	AUTO	3.14	2-32 PSI	8.8 PSI	3.17	103.2
VAV-1-2-16	0.75	AUTO	1.90	2-32 PSI	9.8 PSI	1.9	100.0
VAV-1-2-17	0.75	AUTO	2.42	2-32 PSI	7.9 PSI	2.42	100.0
VAV-1-2-18	0.75	AUTO	2.42	2-32 PSI	4.2 PSI	2.42	100.0
VAV-1-2-19	0.75	AUTO	2.29	2-32 PSI	6.5 PSI	2.29	100.0
VAV-1-2-20	0.75	AUTO	2.77	2-32 PSI	8.1 PSI	2.77	100.0
VAV-1-2-21	0.75	AUTO	2.85	2-32 PSI	4.11 PSI	2.85	100.0
VAV-1-2-22	0.75	AUTO	2.59	2-32 PSI	8.33 PSI	2.59	100.0
VAV-1-2-23	0.75	AUTO	2.24	2-32 PSI	7.2 PSI	2.24	100.0
VAV-1-2-24	0.75	AUTO	2.24	2-32 PSI	5.5 PSI	2.24	100.0
VAV-1-2-25	0.75	AUTO	2.16	2-32 PSI	9.6 PSI	2.16	100.0
VAV-2-1-1	0.75	AUTO	1.37	2-32 PSI	13.13 PSI	1.37	100.0
VAV-2-1-2	0.75	AUTO	0.94	2-32 PSI	10.93 PSI	0.94	100.0
VAV-2-1-3	0.75	AUTO	1.55	2-32 PSI	10.9 PSI	1.55	100.0

VAV-2-1-4	0.75	AUTO	2.42	2-32 PSI	9.21 PSI	2.42	100.0
VAV-2-1-5	0.75	AUTO	0.94	2-32 PSI	8.8 PSI	0.94	100.0
VAV-2-1-6	1.0	AUTO	4.98	2-32 PSI	6.7 PSI	4.98	100.0
VAV-2-1-7	0.75	AUTO	1.75	2-32 PSI	6.85 PSI	1.75	100.0
VAV-2-1-8	0.75	AUTO	2.72	2-32 PSI	5.89 PSI	2.72	100.0
VAV-2-1-9	0.75	AUTO	1.99	2-32 PSI	6.89 PSI	1.99	100.0
VAV-2-1-10	0.75	AUTO	3.01	2-32 PSI	6.32 PSI	3.01	100.0
VAV-2-1-11	0.75	AUTO	0.20	2-32 PSI	9.61 PSI	0.20	100.0
VAV-2-1-12	0.75	AUTO	0.53	2-32 PSI	10.6 PSI	0.53	100.0
VAV-2-1-13	0.75	AUTO	0.25	2-32 PSI	10.2 PSI	0.25	100.0
VAV-2-1-14	0.75	AUTO	3.56	2-32 PSI	9.18 PSI	3.56	100.0
VAV-2-1-15	0.75	AUTO	0.40	2-32 PSI	9.55 PSI	0.40	100.0
VAV-2-2-1	0.75	AUTO	2.16	2-32 PSI	8.8 PSI	2.16	100.0
VAV-2-2-2	0.75	AUTO	0.40	2-32 PSI	12.17 PSI	0.40	100.0
VAV-2-2-3	0.75	AUTO	2.85	2-32 PSI	6.8 PSI	2.85	100.0
VAV-2-2-4	0.75	AUTO	3.33	2-32 PSI	7.3 PSI	3.33	100.0
VAV-2-2-5	0.75	AUTO	2.40	2-32 PSI	10.6 PSI	2.40	100.0
VAV-2-2-6	0.75	AUTO	3.33	2-32 PSI	11.2 PSI	3.33	100.0
VAV-2-2-7	0.75	AUTO	2.29	2-32 PSI	8.4 PSI	2.29	100.0
VAV-2-2-8	0.75	AUTO	2.29	2-32 PSI	10.16 PSI	2.29	100.0
VAV-2-2-9	0.75	AUTO	2.70	2-32 PSI	9.4 PSI	2.70	100.0
VAV-2-2-10	0.75	AUTO	2.29	2-32 PSI	7.7 PSI	2.29	100.0
VAV-2-2-11	0.75	AUTO	2.16	2-32 PSI	8.6 PSI	2.16	100.0
VAV-2-2-12	0.75	AUTO	2.40	2-32 PSI	9.5 PSI	2.40	100.0
VAV-2-2-13	0.75	AUTO	1.75	2-32 PSI	10.5 PSI	1.75	100.0
VAV-2-2-14	0.75	AUTO	1.75	2-32 PSI	9.9 PSI	1.75	100.0
VAV-2-2-15	0.75	AUTO	0.96	2-32 PSI	8.2 PSI	0.96	100.0
VAV-2-2-16	0.75	AUTO	0.96	2-32 PSI	8.8 PSI	0.96	100.0
VAV-2-2-17	0.75	AUTO	1.73	2-32 PSI	6.5 PSI	1.73	100.0
VAV-3-1-1	1.25	AUTO	13.95	2-32 PSI	5.7 PSI	13.95	100.0
VAV-3-1-2	1.25	AUTO	13.95	2-32 PSI	4.4 PSI	13.95	100.0
VAV-3-1-3	0.75	AUTO	1.20	2-32 PSI	5.82 PSI	1.20	100.0
VAV-3-1-4	0.75	AUTO	1.37	2-32 PSI	5.29 PSI	1.37	100.0
VAV-3-1-5	0.75	AUTO	0.68	2-32 PSI	7.1 PSI	0.68	100.0
VAV-3-1-6	0.75	AUTO	1.75	2-32 PSI	8.5 PSI	1.75	100.0
VAV-3-1-7	0.75	AUTO	2.07	2-32 PSI	4.55 PSI	2.07	100.0
VAV-3-1-8	0.75	AUTO	0.69	2-32 PSI	6.22 PSI	0.69	100.0
VAV-3-1-9	0.75	AUTO	0.69	2-32 PSI	3.65 PSI	0.69	100.0
VAV-3-1-10	0.75	AUTO	1.20	2-32 PSI	2.32 PSI	1.20	100.0
VAV-3-1-11	0.75	AUTO	1.37	2-32 PSI	4.7 PSI	1.37	100.0
VAV-3-1-12	0.75	AUTO	1.19	2-32 PSI	2.16 PSI	1.19	100.0
VAV-3-1-13	1.0	AUTO	6.84	2-32 PSI	2.33 PSI	6.84	100.0
VAV-3-1-14	1.0	AUTO	7.89	2-32 PSI	2.47 PSI	7.89	100.0
VAV-3-1-15	0.75	AUTO	0.94	2-32 PSI	4.83 PSI	0.94	100.0
VAV-3-1-10B1	0.75	AUTO	1.75	2-32 PSI	4.1 PSI	1.75	100.0
VAV-4-1-1	0.75	AUTO	1.19	2-32 PSI	8.2 PSI	1.19	100.0
VAV-4-1-2	0.75	AUTO	0.94	2-32 PSI	6.53 PSI	0.94	100.0
VAV-4-1-3	0.75	AUTO	1.19	2-32 PSI	4.47 PSI	1.19	100.0
VAV-4-1-4	0.75	AUTO	3.32	2-32 PSI	3.63 PSI	3.32	100.0
VAV-4-1-5	0.75	AUTO	0.69	2-32 PSI	5.89 PSI	0.69	100.0
VAV-4-1-6	0.75	AUTO	0.88	2-32 PSI	7.50 PSI	0.88	100.0
VAV-4-1-7	0.75	AUTO	0.68	2-32 PSI	5.69 PSI	0.68	100.0
VAV-4-1-8	0.75	AUTO	0.68	2-32 PSI	5.64 PSI	0.68	100.0
VAV-4-1-9	0.75	AUTO	1.87	2-32 PSI	7.44 PSI	1.87	100.0
VAV-4-1-10	0.75	AUTO	0.68	2-32 PSI	6.63 PSI	0.68	100.0
VAV-4-1-11	0.75	AUTO	0.69	2-32 PSI	6.02 PSI	0.69	100.0
VAV-4-1-12	0.75	AUTO	0.69	2-32 PSI	5.71 PSI	0.69	100.0
VAV-4-1-13	0.75	AUTO	1.19	2-32 PSI	4.76 PSI	1.19	100.0
VAV-4-1-14	0.75	AUTO	1.19	2-32 PSI	5.69 PSI	1.19	100.0
VAV-4-1-15	0.75	AUTO	1.99	2-32 PSI	8.0 PSI	1.99	100.0
VAV-4-1-16	0.75	AUTO	3.32	2-32 PSI	5.8 PSI	3.32	100.0
VAV-4-1-17	0.75	AUTO	1.55	2-32 PSI	8.8 PSI	1.55	100.0
VAV-4-1-18	0.75	AUTO	1.20	2-32 PSI	6.16 PSI	1.2	100.0
VAV-4-1-19	0.75	AUTO	0.69	2-32 PSI	7.81 PSI	0.69	100.0
VAV-4-1-20	0.75	AUTO	0.30	2-32 PSI	10.54 PSI	0.30	100.0
VAV-4-1-21	0.75	AUTO	3.32	2-32 PSI	6.02 PSI	3.32	100.0
VAV-4-1-22	0.75	AUTO	3.32	2-32 PSI	6.5 PSI	3.32	100.0
VAV-4-1-23	0.75	AUTO	3.32	2-32 PSI	6.16 PSI	3.32	100.0
VAV-4-1-24	0.75	AUTO	3.32	2-32 PSI	4.90 PSI	3.32	100.0

VAV-4-1-25	0.75	AUTO	3.32	2-32 PSI	6.01 PSI	3.32	100.0
VAV-4-1-26	0.75	AUTO	0.68	2-32 PSI	7.07 PSI	0.68	100.0
VAV-4-1-27	0.75	AUTO	1.99	2-32 PSI	8.2 PSI	1.99	100.0
VAV-4-1-28	0.75	AUTO	3.02	2-32 PSI	6.60 PSI	3.02	100.0
VAV-4-1-29	0.75	AUTO	0.68	2-32 PSI	6.55 PSI	0.68	100.0
VAV-4-1-30	0.75	AUTO	0.69	2-32 PSI	6.85 PSI	0.69	100.0
VAV-4-1-31	0.75	AUTO	0.11	2-32 PSI	9.5 PSI	0.11	100.0
VAV-4-1-32	0.75	AUTO	0.11	2-32 PSI	11.6 PSI	0.11	100.0
VAV-4-1-33	0.75	AUTO	0.11	2-32 PSI	9.84 PSI	0.11	100.0
VAV-4-1-34	0.75	AUTO	2.16	2-32 PSI	7.58 PSI	2.16	100.0
VAV-4-1-35	0.75	AUTO	2.24	2-32 PSI	6.95 PSI	2.24	100.0
VAV-4-1-36	0.75	AUTO	1.99	2-32 PSI	6.86 PSI	1.99	100.0
VAV-4-1-37	0.75	AUTO	0.68	2-32 PSI	6.84 PSI	0.68	100.0
VAV-4-1-38	0.75	AUTO	0.30	2-32 PSI	9.19 PSI	0.30	100.0
Total			813.11			813.14	100%