

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 03/27/2025
Completed By: National TAB

PROJECT
Blue Halo Clean Room (Dayton, OH)

4401 Dayton Xenia Rd

Dayton , OH 45432

Client

Jim Verlander

National TAB

Project: Blue Halo Clean Room (Dayton, OH)

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CERTIFICATION



PROJECT: Blue Halo Clean Room (Dayton, 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: 4/18/2025

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: _____

Submitted and Certified by:

NEBB TAB FIRM: National TAB

TAB PROFESSIONAL: Joe Hertenstein

SIGNATURE: 

REGISTRATION NO: 3629

CERTIFICATION EXP: 12/31/2025





National TAB



Testing, Adjusting, and Balancing Equipment

INTELLIGENCE

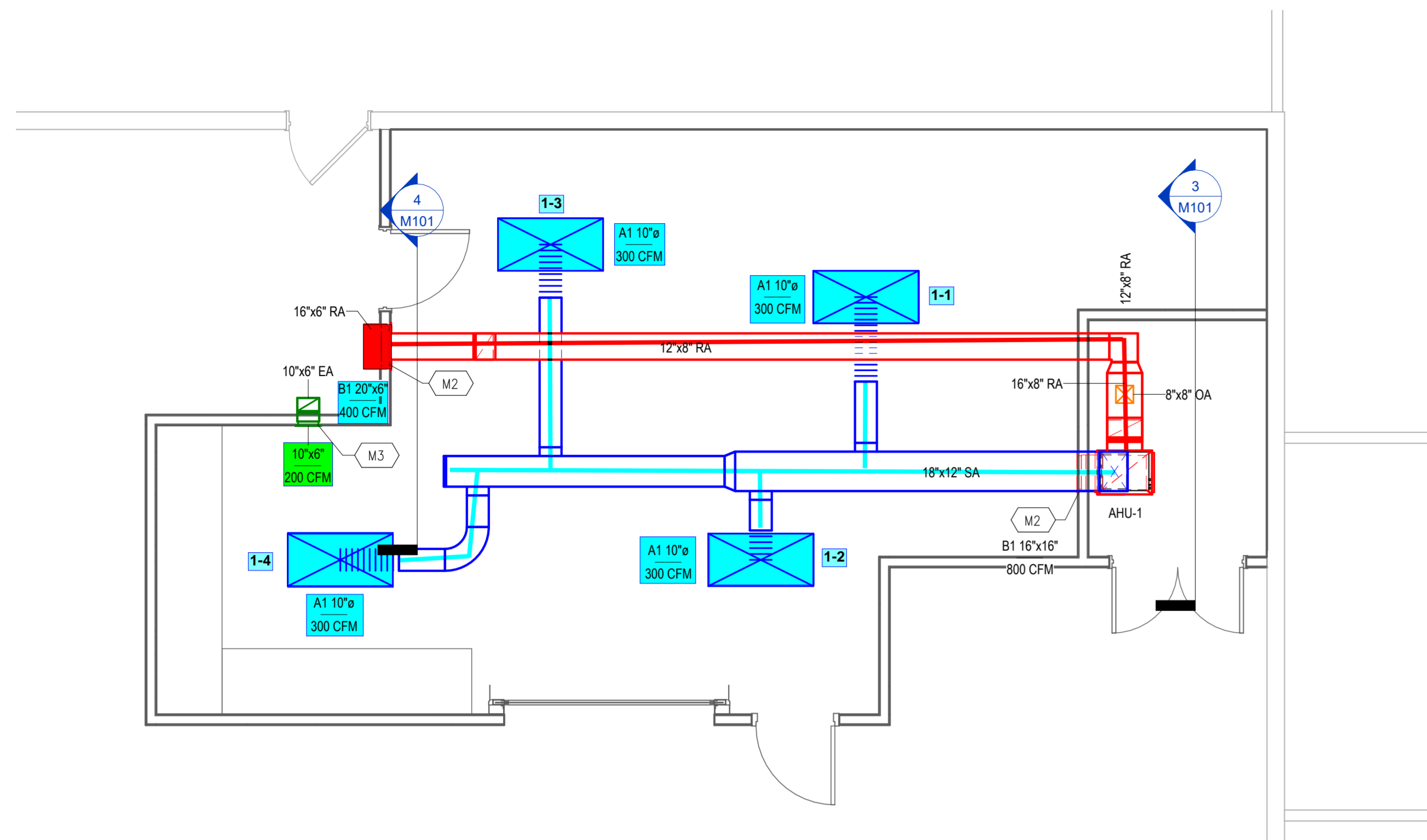
Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	7/12/2024	7/12/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	7/12/2024	7/12/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	7/12/2024	7/12/2025
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	7/12/2024	7/12/2025
	AMPERAGE MEASUREMENT	0 Amperes to 100 Amperes	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	7/12/2024	7/12/2025
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	SHIMPO DT-207LR S/N: D1530081R	7/12/2024	7/12/2025
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Alnor HM680 S/N: 70807241	5/11/2024	5/31/2025
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Alnor HM680 S/N: 70807241	5/11/2024	5/31/2025

Abbreviation List

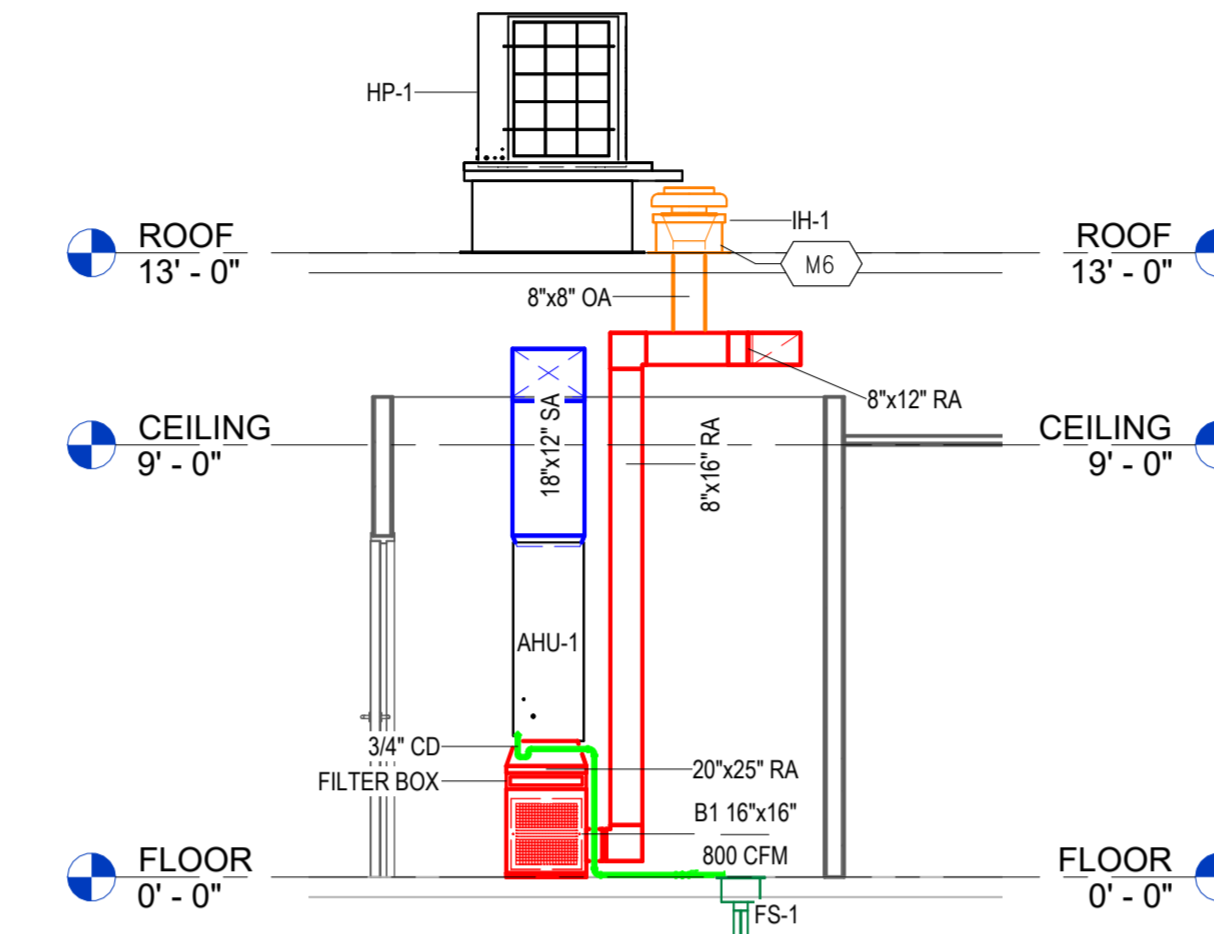
A = Area (ft ²)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A _k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T _{ma} = Mixed Air Temperature
CL = Center Distance (used 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
CO ₂ = 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

PLAN NOTES

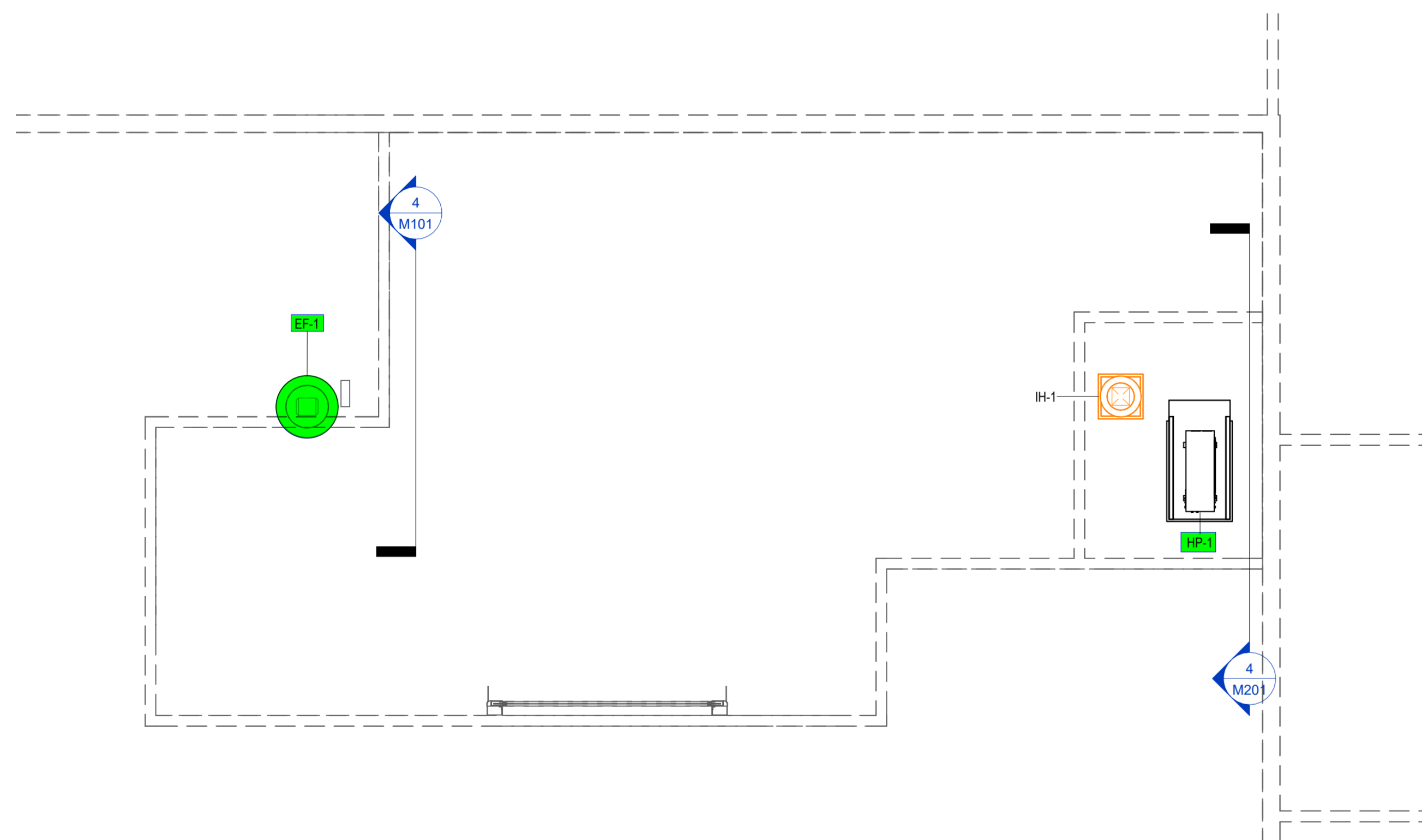
- M2 RETURN GRILLE AT 1' AFF.
- M3 EXHAUST GRILLE AT 1' AFF. ROUTE DUCTWORK UP TO EF-1 ON ROOF.
- M6 BALANCE OUTSIDE AIR DUCT TO MINIMUM OF 165 CFM.



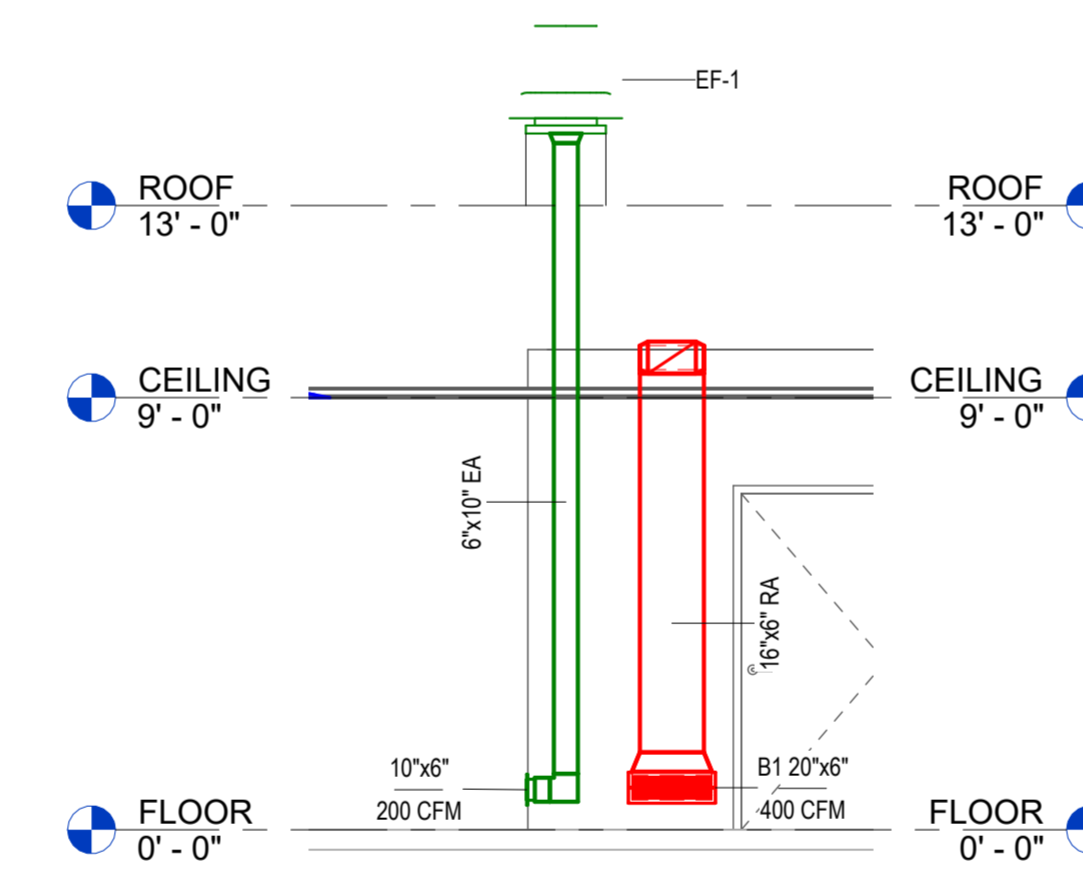
1 MECHANICAL DUCTWORK
1/4" = 1'-0"



3 AHU SECTION VIEW
1/4" = 1'-0"



2 ROOF MECHANICAL PLAN
1/4" = 1'-0"



4 RETURN GRILLE SECTION VIEW
1/4" = 1'-0"

BLUE HALO CLEAN ROOM

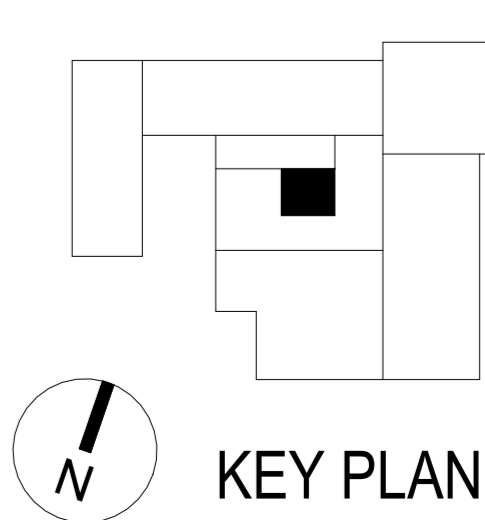
4401 DAYTON XENIA RD
DAYTON, OH 45432



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PROJECT #	240662
DRAWN BY	AF
CHECKED BY	SS
PROJ MGR	JV
SCALE	1/4" = 1'-0"
PLOT DATE	11/22/2024 9:52:04 AM
REV	DATE DESCRIPTION
0	11/21/24 PERMIT



KEY PLAN

MECHANICAL DUCT

M101

National TAB

Project: Blue Halo Clean Room (Dayton, OH)

System/Unit: AHU/RTU



Asset: AHU-1

AREA:ROOF

Unit Data		
	Design	Actual
MFG	NA	ACIQ
Serial Num	-	F243445193
Model Num	NA	FJMA4X36L0BB
Type	-	AHU
Configuration	-	VERTICAL
Num Final Filter 1	-	1
Final Filter Size 1	-	16"X20"X1"

Test Data		
	Design	Actual
SF CFM	1200	1249
RA CFM	1035	1016
OA CFM	165	167
RL Voltage	-	209.4
RL Amperage	-	3.98
SF System SetPt	-	HIGH
Brake Horse Power	-	0.47

Motor Data		
	Design	Actual
Motor MFG	-	BROAD-OCEAN
Horsepower	0.5	0.5
Phase	1	1
Rated Voltage	208	208
Rated Amperage	-	4.2

Performance Data		
	Design	Actual
MA Plenum SP	-	0.13"
Fan Suction SP	-	-0.98"
Fan Discharge SP	-	0.39"
Total ESP	-	1.11"
Fan Total SP	-	1.37"

Completed By: Aaron Cosby on 04/17/2025

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Project: Blue Halo Clean Room (Dayton, OH)

AHU/RTU



Diffuser Supply (GRD)

AHU-1/ROOF

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
AHU-1-SGRD1	MAIN AREA	SD	10	300	302	327	109.0
AHU-1-SGRD2	MAIN AREA	SD	10	300	291	329	109.7
AHU-1-SGRD3	MAIN AREA	SD	10	300	311	309	103.0
AHU-1-SGRD4	MAIN AREA	SD	10	300	217	284	94.7
Total				1200	1121	1249	104.08%

Diffuser Ret/Exh (GRD)

AHU-1/ROOF

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
AHU-1-EGRD1	RG	12X8	400	1	156	156	156	39.0
AHU-1-EGRD2	RG	18x8	800	1	860	860	860	107.5
Total			1200		1016	1016	1016	84.67%

Completed By: Jordan Best on 03/27/2025

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Project: Blue Halo Clean Room (Dayton, OH)

System/Unit: FAN - Exhaust



Asset: EF-1

AREA:ROOF

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	90C17DL-VF-90-ACEL
Serial Num	-	108PL44341-00/0000/01
Type	-	DOWNBLAST

Test Data		
	Design	Actual
CFM	200	209
RL Voltage	-	121.5
RL Amperage	-	0.47
Discharge ESP	-	ATM
Total ESP	-	0.12"

Motor Data		
	Design	Actual
Motor MFG	-	JAKEL
Motor Rpm	1113	1800
Phase	1	1
Voltage (rated)	208	115
Amperage (rated)	-	1.1

Completed By: Aaron Cosby on 04/16/2025

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Project: Blue Halo Clean Room (Dayton, OH)

FAN - Exhaust



Diffuser Ret/Exh (GRD)

EF-1/ROOF

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EF-1-EGRD1	RG	10X6	200	1	311	209	209	104.5
Total			200		311	209	209	104.5%

Completed By: Jordan Best on 03/27/2025