Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 06/20/2024

PROJECT

Snipes Colerain (Cincinnati, OH)

8415 Colerain Ave.

Cincinnati, OH 45239

Client

Champion Commercial HVAC

2638 Tem Mile Rd.

Melbourne, KY 41059

National TAB

Project: Snipes Colerain (Cincinnati, OH)

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CERTIFICATION

PROJECT: Snipes Colerain (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:	6/20/2024

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:	

Submitted and Certified by:

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

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	Kanomax Micromanometer 6700 S/N 30513	7/23/2023	7/27/2024
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Kanomax Micromanometer 6700 S/N 30513	7/23/2023	7/7/2024
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Kanomax Micromanometer 6700 S/N 30513	7/23/2023	7/7/2024
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	6/6/2023	6/6/2024
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	6/6/2023	6/6/2024
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	6/6/2023	6/6/2024
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	6/6/2023	6/6/2024
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	6/6/2023	6/6/2024
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	6/6/2023	6/6/2024
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 071118034	6/6/2023	6/6/2024
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	6/1/2023	6/1/2024
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	6/1/2023	6/1/2024
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	SHIMPO DT-207LR S/N: D1530081R	6/1/2023	6/1/2024
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Alnor HM675 S/N: 72214041	5/2023	5/2024
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Alnor HM675 S/N: 72214041	5/2023	5/2024

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

3 GENERAL NOTES
SCALE: N/A

NOTE:
EXISTING CONDITIONS WERE TAKEN FROM SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CONTRACTOR SHALL CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

ALL HVAC EQUIPMENT AND CONTROLS MUST BE LOCATED FOR PROPER ACCESS FOR MAINTENANCE AND REPAIR, WHETHER INSTALLATION IS EXISTING OR NEW. EXISTING EQUIPMENT AND CONTROLS SHALL BE RELOCATED BY THIS CONTRACTOR IF REQUIRED.

NOTE: MECHANICAL SCOPE INCLUDES INTERIOR ALTERATION OF EXISTING TENANT SPACE BY INSTALLATION OF NEW DUCTWORK AND DIFFUSERS AS SHOWN ON PLANS.

NOTE: ALL DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS. SEE SPECIFICATIONS FOR INSULATION REQUIREMENTS.

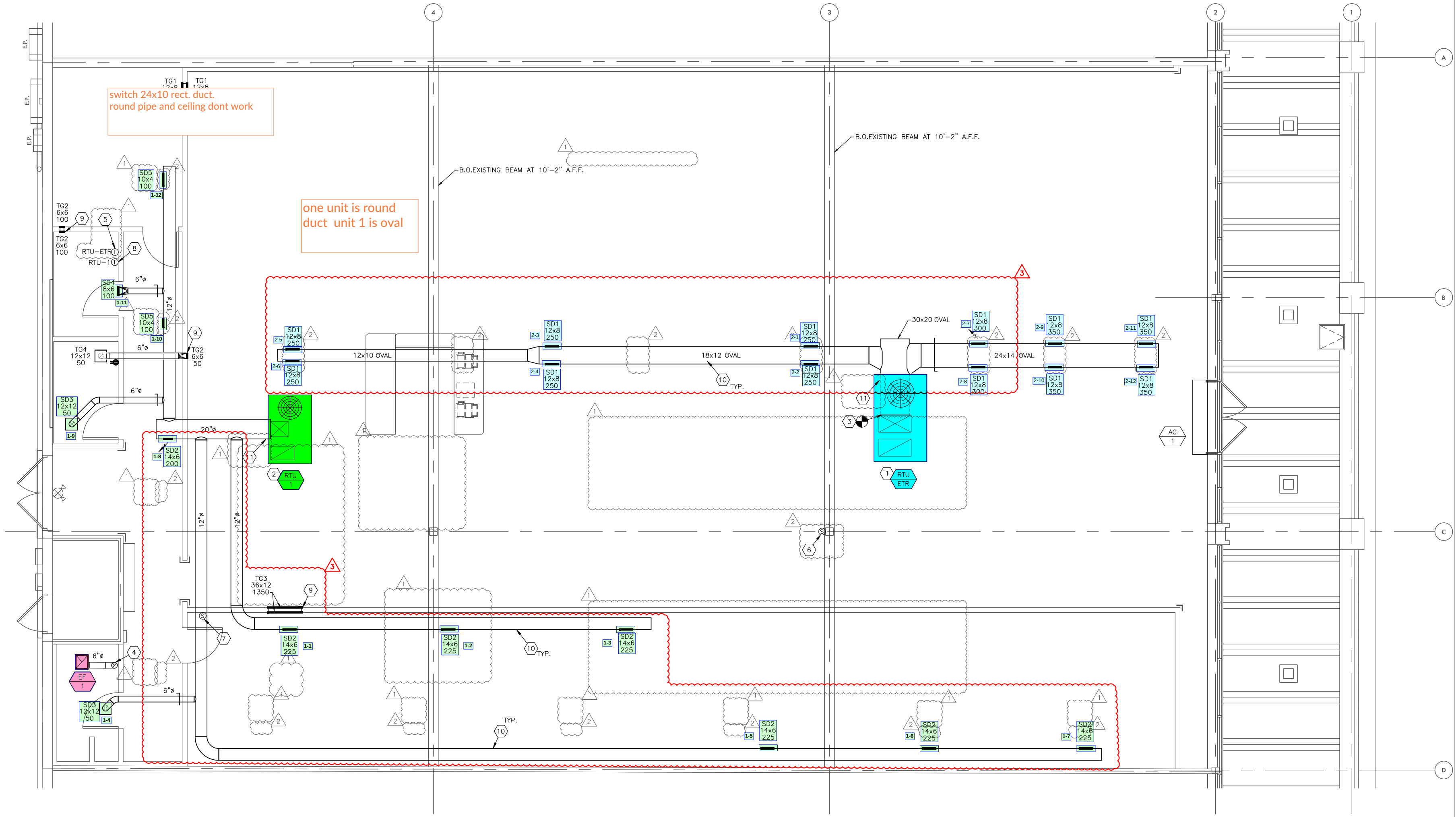
2 MECHANICAL KEYNOTES
SCALE: N/A

KEYNOTE SYMBOLS: (1 , 2 , X)

1. REUSE EXISTING 10 TON ROOFTOP UNIT. FIELD VERIFY EXACT LOCATION OF DUCT DROPS INTO THE SPACE AND COORDINATE AS NECESSARY. BALANCE SUPPLY AIR TO 3500 CFM AND MINIMUM OUTDOOR AIR TO 1175 CFM. CLEAN AND REFURBISH UNIT TO LIKE NEW CONDITION. UPDATE EXISTING IDENTIFICATION PLACARDS PER CRR STANDARDS.
2. REPLACE EXISTING ROOFTOP UNIT WITH NEW PER RTU SCHEDULE. FIELD VERIFY EXACT LOCATION OF DUCT DROPS INTO THE SPACE AND COORDINATE AS NECESSARY.
3. CONNECT NEW DUCT TO EXISTING. CLEAN AND REFURBISH EXISTING TO LIKE NEW CONDITION.
4. REPLACE EXISTING EXHAUST FAN WITH NEW PER SCHEDULE. ROUTE EXHAUST DUCT THRU ROOF AND PENETRATE WITH ROOF VENT CAP.
5. RELOCATE EXISTING THERMOSTAT TO LOCATION SHOWN. INSTALL AT ADA MOUNTING HEIGHT.
6. PROVIDE TEMPERATURE SENSOR MOUNTED ON COLUMN AS HIGH AS POSSIBLE FOR EXISTING ROOFTOP UNIT AND CONNECTED TO RELOCATED THERMOSTAT IN MANAGER'S OFFICE.
7. PROVIDE TEMPERATURE SENSOR MOUNTED NEAR TRANSFER GRILLE FOR RTU-1 AND CONNECTED TO THERMOSTAT IN MANAGER'S OFFICE.
8. PROVIDE NEW PROGRAMMABLE THERMOSTAT FOR RTU-1 IN LOCATION SHOWN.
9. MOUNT TRANSFER GRILLE ON WALL AS HIGH AS POSSIBLE. INSTALL GRILLES WITH LOUVERS IN OPPOSED DIRECTIONS TO SHIELD FROM LIGHT TRANSFER.
10. DUCTWORK TO BE INSTALLED TIGHT TO DECK/STRUCTURE ABOVE. WHERE POSSIBLE, DUCTWORK SHALL BE ROUTED THROUGH JOIST WEBS. CONTRACTOR TO VERIFY DUCT SIZING AND ROUTING PRIOR TO FABRICATION.
11. ACTUATION OF SMOKE DETECTOR SHALL ACTIVE A VISIBLE AND AUDIBLE SIGNAL IN AN APPROVED LOCATION. DUCT SMOKE DETECTOR TROUBLE CONDITIONS SHALL ACTIVATE A VISBLE OR AUDIBLE SIGNAL IN AN PPROVED LOCATION AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TROUBLE PER SECTION 606.4.1 EXCEPTION 2 OF THE OHIO MECHANICAL CODE. CONTRACTOR TO COORDINATE APPROVED LOCATION WITH LANDLORD.

4 -
SCALE: N/A

5 -
SCALE: N/A



20 MECHANICAL PLAN
SCALE: 1/4" = 1'-0"

ADDRESS
COLERAIN HILLS
8415 COLERAIN AVE.
CINCINNATI, OH 45239

CLIENT
SNIPES USA
3329 STREET RD.
BENSALEM, PA 19020

DESIGN PROFESSIONALS
BRETT DELMEZ, ARCHITECT
7750 MARYLAND AVE.
UNIT 50375
ST. LOUIS, MO 63105

BRIAN J. TIMMONS, P.E.
11880 COLLEGE BLVD., SUITE 475
OVERLAND PARK, KS 66210

ACERTUS CONSULTING GROUP, LLC
11880 COLLEGE BLVD, STE 475
OVERLAND PARK, KS 66210
P 913 322 5150
www.AcertusGroup.com
Proj# 232.0259

PROFESSIONAL SEAL

DESCRIPTION	DATE	DWR	APP
ORIGINAL ISSUANCE	11/10/23	MR/GG/KE	CF/AR
REV 1 CITY / OWNER COMMENTS	12/08/23	MR/GG/KE	CF/AR
REV 2 CITY / OWNER COMMENTS	01/26/24	MR/GG/KE	CF/AR
REV 3 OWNER COMMENTS - FOR CONSTRUCTION	03/13/24	MR/GG/KE	CF/AR

PROJECT NUMBER
23128

MECHANICAL PLAN

M1.0

National TAB

Project: Snipes Colerain (Cincinnati, OH)

System/Unit: AHU/RTU

Asset: RTU-1 AREA:BOH

Unit Data		
	Design	**Actual**
MFG	NA	Carrier
Serial Num	-	0723C05969
Model Num	NA	48FCEA06
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14x24
Num PreFilter 1	-	2
PreFilter Size 1	-	16x25x2

Motor Data		
	Design	**Actual**
Motor MFG	-	-
Frame	-	-
Horsepower	1	1
Motor Rpm	-	-
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	9.2
Service Factor	-	1.15

Test Data		
	Design	**Actual**
SF CFM	2175	2017
RA CFM	1925	1777
OA CFM	250	240
RL Voltage	208	212
RL Amperage	-	8.2

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.23
Fan Suction SP	-	0.56
Fan Discharge SP	-	0.33
Total ESP	0.8	0.56
Fan Total SP	-	0.89

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Project:Snipes Colerain (Cincinnati, OH)

AHU/RTU

Diffuser Supply (GRD)

RTU-1/BOH

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1-1	BOH	SD2	14X6	225	120	228	101.3
1-2	BOH	SD2	14X6	225	188	232	103.1
1-3	BOH	SD2	14X6	225	202	238	105.8
1-4	BOH RR	SD3	12X12	50	208	55	110.0
1-5	BOH	SD2	14X6	225	214	240	106.7
1-6	BOH	SD2	14X6	225	168	218	96.9
1-7	BOH	SD2	14X6	225	248	226	100.4
1-8	BOH	SD2	14X6	200	116	215	107.5
1-9	BOH	SD3	12X12	50	257	51	102.0
1-10	BOH	SD5	10X4	100	122	105	105.0
1-11	BOH	SD4	8X6	100	108	108	108.0
1-12	BOH	SD5	10X4	100	155	101	101.0
Total				1950	2106	2017	103.44%

National TAB

Project:Snipes Colerain (Cincinnati, OH)

Diffuser Supply (GRD)

RTU-1/BOH

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1-1	BOH	SD2	14X6	225	120	228	101.3
1-2	BOH	SD2	14X6	225	188	232	103.1
1-3	BOH	SD2	14X6	225	202	238	105.8
1-4	BOH RR	SD3	12X12	50	208	55	110.0
1-5	BOH	SD2	14X6	225	214	240	106.7
1-6	BOH	SD2	14X6	225	168	218	96.9
1-7	BOH	SD2	14X6	225	248	226	100.4
1-8	BOH	SD2	14X6	200	116	215	107.5
1-9	BOH	SD3	12X12	50	257	51	102.0
1-10	BOH	SD5	10X4	100	122	105	105.0
1-11	BOH	SD4	8X6	100	108	108	108.0
1-12	BOH	SD5	10X4	100	155	101	101.0
Total				1950	2106	2017	103.44%

EXISTING RTU SGRD'S/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2-1	SALES	SD1	12X8	250	217	255	102.0
2-2	SALES	SD1	12X8	250	388	248	99.2
2-3	SALES	SD1	12X8	250	226	242	96.8
2-4	SALES	SD1	12X8	250	205	232	92.8
2-5	SALES	SD1	12X8	250	342	238	95.2
2-6	SALES	SD1	12X8	250	308	258	103.2
2-7	SALES	SD1	12X8	300	211	287	95.7
2-8	SALES	SD1	12X8	300	255	277	92.3
2-9	SALES	SD1	12X8	350	311	346	98.9
2-10	SALES	SD1	12X8	350	305	326	93.1
2-11	SALES	SD1	12X8	350	305	319	91.1
2-12	SALES	SD1	12X8	350	368	328	93.7
Total				3500	3441	3356	95.89%