

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 06/02/2025
Completed By: National TAB

PROJECT
Transcendia (Richmond, IN)

300 Industrial Parkway

Richmond, IN 47374

Client

Mechanical Services & Design (MSD)

4401 Springfield St

Dayton, OH 45431

National TAB

Project: Transcendia (Richmond, IN)

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CERTIFICATION



PROJECT: Transcendia (Richmond, IN)

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: 6/2/2025

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

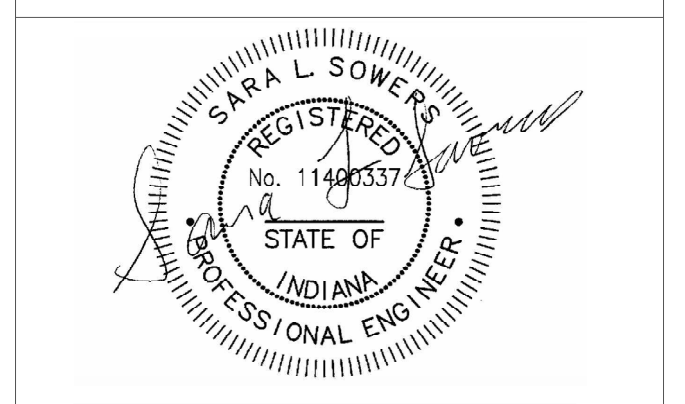
INTELLIGENCE

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



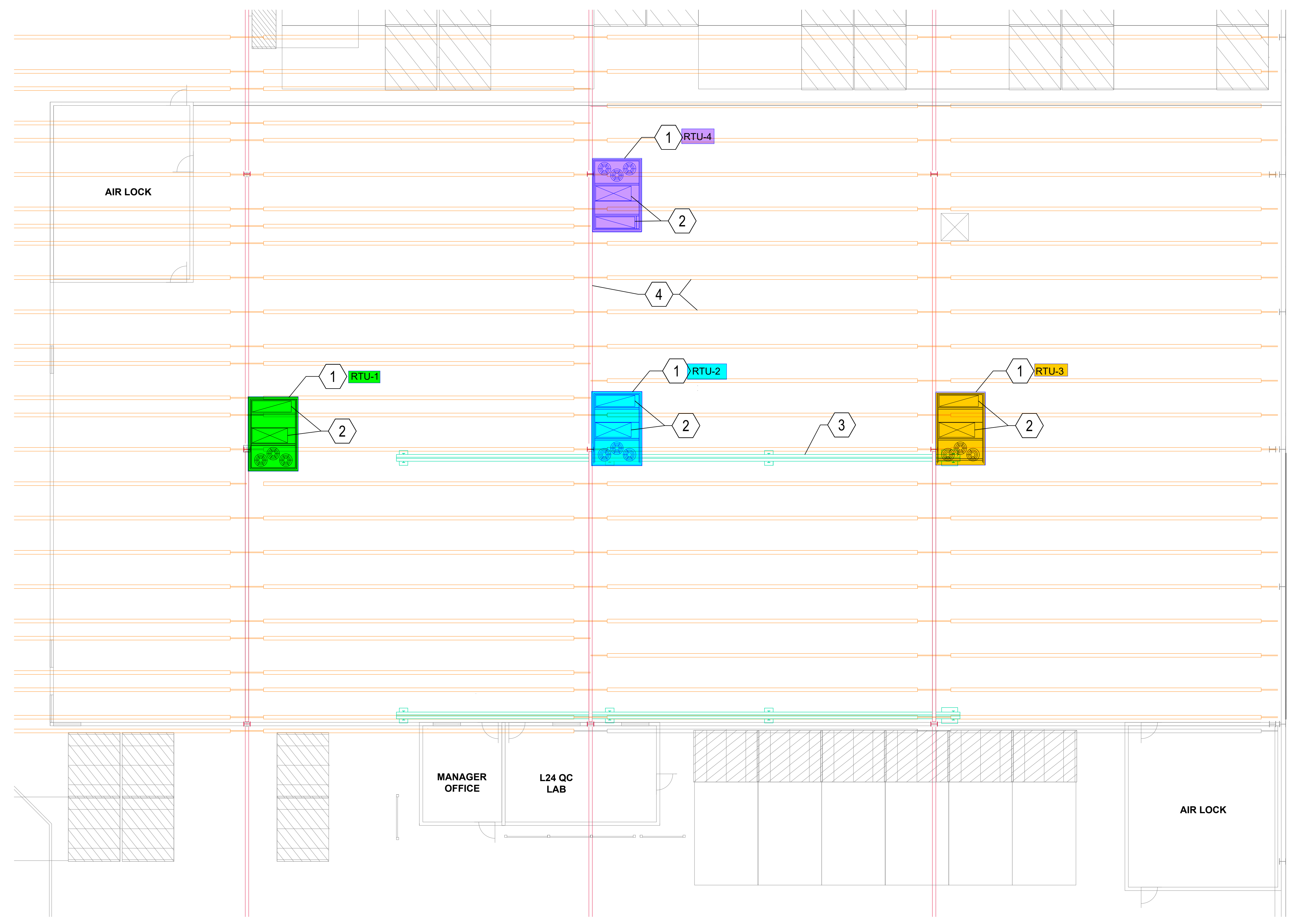
FOR PERMIT

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PROJECT #	250092
DRAWN BY	SLS
PROJ MGR	JV
SCALE	X=X
PLOT DATE:	03/14/2025
REV	DATE DESCRIPTION
0	03/12/25 PERMIT SET

MECHANICAL SCHEDULES

M100



PLAN NOTES:

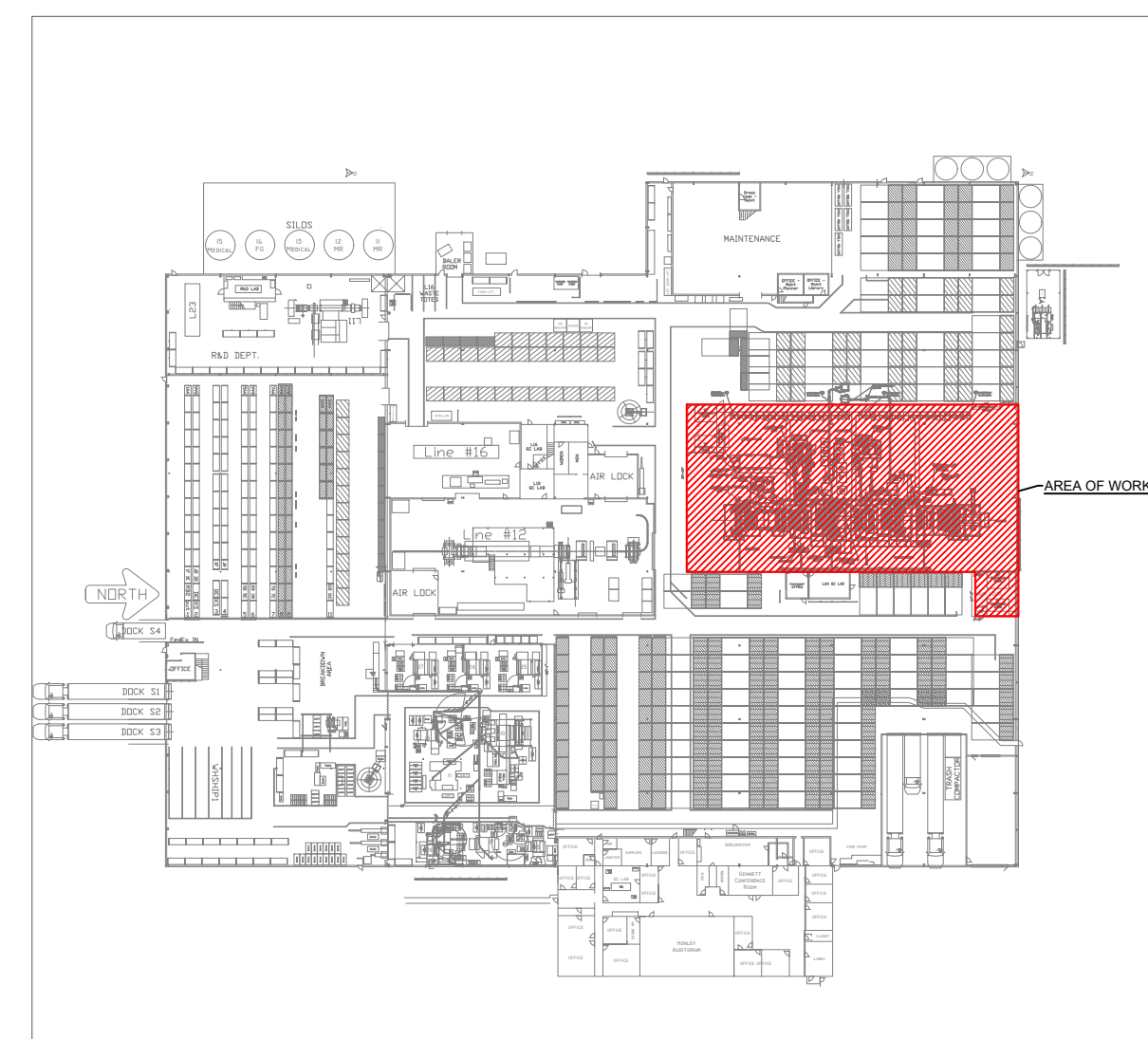
1. INSTALL OWNER PROVIDED ROOFTOP UNIT ON ROOF AT THIS LOCATION. REFER TO STRUCTURAL DRAWING ON SHEET M200 FOR STEEL REINFORCING REQUIREMENTS. REFER TO SCHEDULE THIS SHEET FOR RTU INFORMATION.
2. INSTALL SUPPLY AND RETURN DUCT DROPS TO OWNER PROVIDED CONCENTRIC DIFFUSER. MOUNT DIFFUSER AS TIGHT TO JOISTS AS POSSIBLE. OWNER TO REROUTE EXISTING SPRINKLER PIPING TO ALLOW FOR DUCT DROPS.
3. FUTURE CRANE PROVIDED BY OWNER. VERIFY HEIGHT WITH OWNER TO ENSURE CLEARANCE FOR CONCENTRIC DIFFUSER
4. EXISTING JOIST GIRDER (RED) AND BAR JOIST (ORANGE).

TRANSCENDIA MAKUP AIR DUCTWORK | 1
SCALE: 1/8" = 1'-0" | M100



ROOFTOP UNIT SCHEDULE

TAG	BASIS OF DESIGN		NOMINAL TONANGE	SUPPLY CFM	OUTSIDE AIR CFM	SUPPLY FAN			COOLING DATA				HEATING DATA			ELECTRICAL DATA			NOTES	
	MANUFACTURER	MODEL				RPM	BHP	EXT. STATIC (IN WG)	EAT (DB/WB °F)	LAT (DB/WB °F)	NO. OF CIRCUITS	CAPACITY (MBH)		EAT (°F)	LAT (°F)	INPUT (KW)	V/PH/Hz	MCA		MOCP
												Sensible	Total							
RTU-1	CARRIER	50FE-N20A2A6-8F0A0	17.5	7000	700	1730	3.83	1.0	80/67	587/57.3	2	160.8	216.0	70	101.1	68.9	460/3/60	106	110	
RTU-2	CARRIER	50FE-N20A2A6-8F0A0	17.5	7000	700	1730	3.83	1.0	80/67	587/57.3	2	160.8	216.0	70	101.1	68.9	460/3/60	106	110	
RTU-3	CARRIER	50FE-N20A2A6-8F0A0	17.5	7000	700	1730	3.83	1.0	80/67	587/57.3	2	160.8	216.0	70	101.1	68.9	460/3/60	106	110	
RTU-4	CARRIER	50FE-N20A2A6-8F0A0	17.5	7000	700	1730	3.83	1.0	80/67	587/57.3	2	160.8	216.0	70	101.1	68.9	460/3/60	106	110	



KEY PLAN | 2
SCALE: NTS | M100



National TAB

Project: Transcendia (Richmond, IN)
System/Unit: AHU/RTU



Asset: RTU-1

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	5024P15606
Model Num	NA	50 FE-N20A2A6
Configuration	-	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	25"x16"
Num PreFilter 1	-	6
PreFilter Size 1	-	20"x25"x2"

Motor Data		
	Design	Actual
Horsepower	-	2.4x2
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3.0x2

Test Data		
	Design	Actual
SF CFM	7000	7125
SF RPM (Initial)	-	8.6 DCV
SF RPM	1730	7.6 DCV
RA CFM	6300	6360
OA CFM	700	765
RL Voltage	460	470/466/469
RL Amperage	-	3.2/3.9/3.1
OA Damper Position	-	4.8 DCV
Brake Horse Power	3.83	1.4x2

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.87"
Fan Discharge SP	-	0.07"
Total ESP	1.0	0.32"
Fan Total SP	-	0.94"
Pre-Filter P.D.	-	0.52"*

Completed By: Gabe Merk on 05/29/2025

Notes:
*PREFILTER AND COOLING COIL PD COMBINED.

Written By: Gabe Merk on 05/29/2025

National TAB
 Project: Transcendia (Richmond, IN)
 System/Unit: AHU/RTU



Asset: RTU-2

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	5024P15608
Model Num	NA	50FE-N20A2A6
Configuration	-	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16"x25"
Num PreFilter 1	-	6
PreFilter Size 1	-	20"x25"x2"

Motor Data		
	Design	Actual
Horsepower	-	2.4x2
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3.0x2

Test Data		
	Design	Actual
SF CFM	7000	6783
SF RPM (Initial)	-	8.4 DCV
SF RPM	1730	7.6 DCV
RA CFM	6300	6040
OA CFM	700	743
RL Voltage	460	464/469/468
RL Amperage	-	3.3/4.0/3.1
OA Damper Position	-	5.6 DCV
Brake Horse Power	3.83	1.4x2

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.86"
Fan Discharge SP	-	0.05"
Total ESP	1.0	0.30"
Fan Total SP	-	0.91"
Pre-Filter P.D.	-	0.61"*

Completed By: Gabe Merk on 05/29/2025

Notes:

*PREFILTER AND COOLING COIL PD COMBINED.

Written By: Gabe Merk on 05/29/2025

National TAB

Project: Transcendia (Richmond, IN)
System/Unit: AHU/RTU



Asset: RTU-3

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	5024P15607
Model Num	NA	50FE-N20A2A6
Configuration	-	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16"x25"
Num PreFilter 1	-	6
PreFilter Size 1	-	20"x25"x2"

Motor Data		
	Design	Actual
Horsepower	-	2.4x2
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3.0x2

Test Data		
	Design	Actual
SF CFM	7000	6707
SF RPM (Initial)	-	9.3 DCV
SF RPM	1730	7.6 DCV
RA CFM	6300	6028
OA CFM	700	679
RL Voltage	460	469/463/467
RL Amperage	-	3.2/4.0/3.2
OA Damper Position	-	5.8 DCV
Brake Horse Power	3.83	1.4x2

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.77"
Fan Discharge SP	-	0.05"
Total ESP	1.0	0.22"
Fan Total SP	-	0.82"
Pre-Filter P.D.	-	0.60"*

Completed By: Gabe Merk on 05/29/2025

Notes:

*PREFILTER AND COOLING COIL PD COMBINED.

Written By: Gabe Merk on 05/29/2025

National TAB

Project: Transcendia (Richmond, IN)
System/Unit: AHU/RTU



Asset: RTU-4

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	5024P15605
Model Num	NA	50FE-N20A2A6
Configuration	-	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16"x25"
Num PreFilter 1	-	6
PreFilter Size 1	-	20"x25"x2"

Motor Data		
	Design	Actual
Horsepower	-	2.4x2
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3x2

Test Data		
	Design	Actual
SF CFM	7000	6707
SF RPM (Initial)	-	9.3 DCV
SF RPM	1730	7.6 DCV
RA CFM	6300	6046
OA CFM	700	661
RL Voltage	460	464/467/468
RL Amperage	-	3.3/4.1/3.2
OA Damper Position	-	4.6 DCV
Brake Horse Power	3.83	1.4x2

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.83"
Fan Discharge SP	-	0.06"
Total ESP	1.0	0.22"
Fan Total SP	-	0.89"
Pre-Filter P.D.	-	0.67"*

Completed By: Gabe Merk on 05/29/2025

Notes:

*PREFILTER AND COOLING COIL PD COMBINED.

Written By: Gabe Merk on 05/29/2025