Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 08/08/2024

PROJECT

Kohls (Wesley Chapel, FL)

2160 GRAND CYPRESS DRIVE

LUTZ, FL 33559

Client

Air Temp Inc

52 Riley Road #260

Celebration, FL 34747

National TAB

Project: Kohls (Wesley Chapel, FL)

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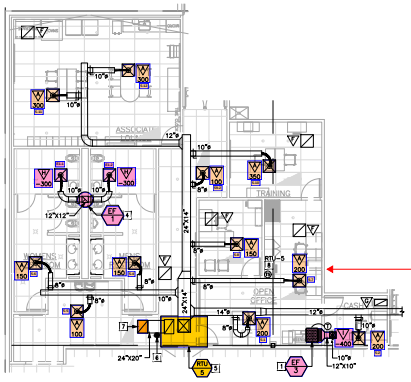
National TAB

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-860C S/N M19547	10/17/2023	10/16/2024
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Shortridge ADM-860C S/N M19548	10/17/2023	10/16/2024
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 3 % +/- 7 cfm	Shortridge Flow Hood	10/17/2023	10/16/2024
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	10/20/2023	10/19/2024
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	10/20/2023	10/19/2024
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 081820093	10/20/2023	10/19/2024
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	10/20/2023	10/19/2024
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 090315046	10/20/2023	10/19/2024
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/16/2023	10/15/2024
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Dwyer CM-1 - S/N 190800099	10/16/2023	10/15/2024
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Dwyer TAC-L - S/N S1100123	10/16/2023	10/15/2024
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



2 ENLARGED MECHANICAL PLAN
1/8" = 1'-0"

DEMAND CONTROL VENTILATION

- THE DEMAND CONTROL VENTILATION SYSTEM SHALL OPERATE DURING ALL OCCUPIED HOURS. THE ECONOMIZER SHALL BE PROGRAMMED TO OVERRIDE THE DEMAND CONTROL VENTILATION WHEN FREE COOLING IS AVAILABLE.
- A PRE-OCCUPANCY PURGE OF THE SPACE AIR SYSTEM SHALL BE INCLUDED IN THE SEQUENCE OF OPERATIONS OF THE ROOFTOP UNIT EQUIPMENT.
- THE OUTSIDE AIR DAMPER SHALL BE SET TO PROVIDE THE MINIMUM VENTILATION RATE LISTED IN THE VENTILATION SCHEDULE AT THE MINIMUM DAMPER POSITION.
- HVAC SYSTEM SERVING STOCK ROOM WILL NOT HAVE DEMAND CONTROL VENTILATION SYSTEM.

CO2 CONTROL RANGE:

WHEN THE CO2 LEVEL OF 700 PPM ABOVE AMBIENT IS MEASURED BY THE SPACE CO2 SENSOR, THE OUTSIDE AIR DAMPER SHALL MODULATE OPEN TO MAINTAIN THE CO2 LEVEL AT NO MORE THAN 700 PPM ABOVE AMBIENT.

PRE-OCCUPANCY PURGE:

WHEN THE ROOFTOP UNIT STARTS, THE OUTDOOR AIR DAMPER SHALL OPEN, INITIATING A TIMED PURGE CYCLE. THE OUTDOOR AIR DAMPER SHALL MODULATE TO MAINTAIN THE MIXED AIRFLOW AT 30 PERCENT OUTDOOR AIR. THE PURGE PERIOD SHALL BE ADJUSTABLE AND SHALL INITIALLY BE SET FOR A MINIMUM OF 5 MINUTES.

THE ROOFTOP UNIT SHALL MODULATE ITS HEATING TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SET POINT IF THE MIXED AIR TEMPERATURE FALLS BELOW THE ROOFTOP UNIT SPACE TEMPERATURE SET POINT. AT THE CONCLUSION OF THE TIMED CYCLE, THE OUTDOOR AIR DAMPER SHALL MODULATE CLOSED TO MAINTAIN THE BASE VENTILATION RATE OF OUTDOOR AIR (REFER TO VENTILATION SCHEDULE ON DRAWING M2), AND THE DEMAND CONTROL VENTILATION CONTROL ALGORITHM SHALL BE ENABLED.

OCCUPIED OPERATION:

ONE GLOBAL CO2 SENSOR SHALL MEASURE CO2 LEVEL OF OUTDOOR AIR. THERE SHALL BE MULTIPLE CO2 SENSORS SERVING THE RETAIL SPACE, WITH NO MORE THAN 25,000 SF OF RETAIL SPACE SERVED PER SENSOR, AND NO MORE THAN ONE FLOOR SERVED PER SENSOR. THERE SHALL BE ONE CO2 SENSOR SERVING THE OFFICE CORE. EACH SPACE CO2 SENSOR READING SHALL BE SENT TO BAS. CO2 READINGS SHALL BE COMPARED TO THE GLOBAL CO2 SENSOR AT BAS. IF THE READING FALLS BELOW THE CO2 SETPOINT, THE BAS SHALL SEND A SIGNAL TO ROOFTOP UNIT CONTROLLER TO MODULATE THE OUTDOOR AIR DAMPER TO BASE POSITION (MINIMUM VENTILATION RATE PER VENTILATION SCHEDULE ON DRAWING M2). UTILIZING A PROPORTIONAL-INTERGRAL (PI) LOOP TO MAINTAIN A CO2 CONCENTRATION LESS THAN OR EQUAL TO THE CO2 SETPOINT (REFER TO CO2 CONTROL RANGE).

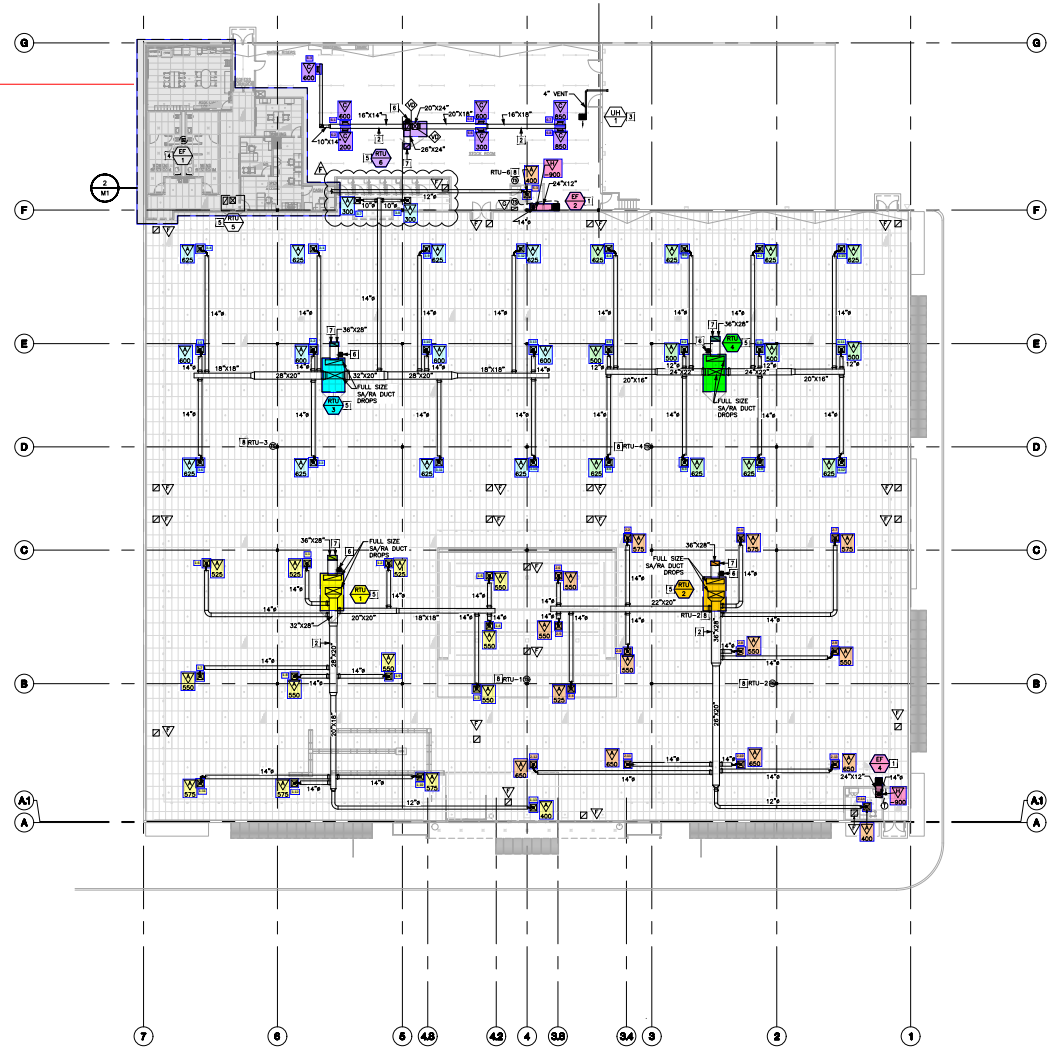
IF THE CO2 SENSOR READING IS ABOVE THE CO2 SETPOINT, BAS SHALL SIGNAL THE OUTDOOR AIR DAMPER CONTROLLER TO CONTINUE TO MODULATE DAMPERS OPEN UNTIL THE OCCUPIED VENTILATION RATE (MAXIMUM VENTILATION RATE PER VENTILATION SCHEDULE ON DRAWING M2) IS ACHIEVED.

THE ROOFTOP UNIT SHALL MODULATE ITS HEATING TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT IF THE MIXED AIR TEMPERATURE FALLS BELOW THE ROOFTOP UNIT SPACE THERMOSTAT SETPOINT.

IF THE BAS DETERMINES THAT IT IS BENEFICIAL TO USE OUTSIDE AIR FOR COOLING, THE ECONOMIZER SHALL OVERRIDE THE DEMAND CONTROL VENTILATION ALGORITHM TO MODULATE THE DAMPERS OPEN TO THE REQUIRED ECONOMIZER DAMPER POSITION.

UNOCCUPIED OPERATION:

WHEN THE BUILDING IS UNOCCUPIED, THE DEMAND CONTROL VENTILATION SYSTEM SHALL BE DISABLED, AND ALL ROOFTOP UNIT OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED.



1 MECHANICAL PLAN
1/16" = 1'-0"

KOHL'S

WESLEY CHAPEL

11604

1954 SUN VISTA DR
LUTZ, FL

DEVELOPED BY:
KOHL'S, INC.
N56 W17000 RIDGEWOOD DRIVE
MENOMONEE FALLS, WISCONSIN 53051
TEL: (262) 703-7000
FAX: (262) 703-7001

GENERAL MECHANICAL NOTES

A. CONTRACTORS AND SUB-CONTRACTORS SHALL CAREFULLY REVIEW THE CONSTRUCTION DOCUMENTS. INFORMATION REGARDING THE COMPLETE WORK IS DISPERSED THROUGHOUT THE DOCUMENT SET AND CANNOT BE ACCURATELY DETERMINED WITHOUT REFERENCE TO THE COMPLETE DOCUMENT SET.

B. COORDINATE WITH THE WORK OF OTHER SECTIONS. EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE DUCT RISES AND DROPS AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

C. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPES, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

D. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY, INCLUDING APPLICABLE SECTIONS OF NFPA, OSHA, IBC, UBC, OR ANY INTERIM AMENDMENTS AT THE TIME OF THE PROPOSAL. PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

E. HVAC CONTRACTOR IS RESPONSIBLE FOR STARTUP AND PROPER OPERATION OF ALL ROOFTOP UNITS.

F. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN THE RETURN AIR PLENUM. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALL EXPOSED WIRING IN THE PLENUM SHALL BE PLENUM RATED.

G. INSULATE SUPPLY DUCTWORK WITH MINIMUM 1-1/2" THICK FOIL-BACKED DUCT WRAP. ALL DUCTWORK WITHIN A 40 FOOT RADIUS FROM THE SUPPLY DUCT DROP SHALL BE INSULATED. R-VALUE SHALL BE MINIMUM 4.2.

H. PROVIDE AIR TIGHT COVERS OVER RETURN AIR OPENINGS OF UNITS NOT USED DURING CONSTRUCTION. PROVIDE FILTER RACK AND MINIMUM MERV 8 FILTERS USED FOR TEMPORARY HEATING/COOLING. REPLACE FILTERS AT REGULAR INTERVALS DURING TEMPORARY USE. CONTRACTOR IS RESPONSIBLE FOR CLEANING AND REPAIRING UNITS AND DUCTWORK SOILED OR DAMAGED DURING TEMPORARY USE.

I. AT CONTRACTOR'S OPTION, EQUIVALENTLY SIZED ROUND DUCTWORK IS ALLOWED IN LIEU OF RECTANGULAR DUCTWORK. ROUND DUCTWORK SHALL BE SIZED FOR MAXIMUM PRESSURE DROP OF 0.08"WC/100 FT OF DUCT, AND MAXIMUM VELOCITY NOT TO EXCEED 1200 FPM.

J. ANY DUCTWORK, CONTROL WIRING, ACCESSORIES, ETC. LOCATED ABOVE CAROUSEL SYSTEM(S) SHALL BE INSTALLED HIGH BETWEEN AND/OR THROUGH STRUCTURAL JOISTS TO AVOID CLEARANCE ISSUES WITH CAROUSEL SYSTEM(S).

MECHANICAL PLAN NOTES

1. PROVIDE INLINE TRANSFER FAN. SUPPORT FAN FROM STRUCTURE ABOVE WITH STEEL CHANNEL AND THREADED ROD WITH VIBRATION ISOLATORS. PROVIDE FLEXIBLE CONNECTORS ON THE INLET AND DISCHARGE DUCT CONNECTIONS. TRANSFER FAN SHALL DISCHARGE TO PLENUM. REFER TO EXHAUST AND TRANSFER FAN SCHEDULE ON SHEET M2 FOR ADDITIONAL REQUIREMENTS.
2. MOUNT DUCT TIGHT TO BOTTOM OF STRUCTURE.
3. PROVIDE GAS-FIRED UNIT HEATER. SUSPEND HEATER FROM STRUCTURE ABOVE WITH STEEL CHANNEL AND ALL-THREAD ROD. MOUNT BOTTOM OF UNIT HEATER #'-6" ABOVE FINISH FLOOR. PROVIDE INTEGRAL THERMOSTAT. PROVIDE VENT IN ACCORDANCE WITH UNIT HEATER MANUFACTURER'S INSTRUCTIONS. PROVIDE MANUFACTURER'S SIDEWALL VENT TERMINATION KIT. TERMINATE VENT PER CODE, AND A MINIMUM OF 10' ABOVE GRADE. REFER TO UNIT HEATER SCHEDULE ON SHEET M2 FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE ROOF MOUNTED EXHAUST FAN AND CURB. PROVIDE DUCTWORK AS INDICATED ON THE PLAN. EXTEND DUCTWORK UP TO ROOF. REFER TO EXHAUST AND TRANSFER FAN SCHEDULE ON SHEET M2 FOR ADDITIONAL REQUIREMENTS.
5. INSTALL ROOFTOP UNIT AND ROOF CURB. COORDINATE UNIT WITH STRUCTURE. SHIM UNIT AND CURB LEVEL FOR PROPER CONDENSATE DRAINAGE. UNIT SHALL BE INSTALLED MAXIMUM 1/8" PER FOOT OUT OF LEVEL. PROVIDE FLEXIBLE CONNECTORS ON THE SUPPLY AND RETURN AIR DUCT CONNECTIONS. TRANSITION TO DUCT SIZES SHOWN. PROVIDE DUCTWORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. ALSO REFER TO ROOFTOP UNIT SCHEDULE ON SHEET M2.
6. INSTALL SMOKE DETECTOR FURNISHED BY FIRE ALARM CONTRACTOR. PROVIDE INTERLOCK WIRING FROM RELAY AT SMOKE DETECTOR TO ROOFTOP UNIT TO SHUT ROOFTOP UNIT DOWN UPON ALARM SIGNAL FROM FIRE ALARM SYSTEM. UPON SIGNAL FROM FIRE ALARM SYSTEM, ALL ROOFTOP UNITS SHALL SHUT DOWN. REFER TO FIRE ALARM SYSTEM RISER ON SHEET E4 FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE RETURN AIR BOOT WITH ACOUSTICAL DUCT LINER. LINER SHALL BE 1" THICK 2 PCF DENSITY, LONG TEXTILE TYPE FIBER, WITH SURFACE CLEANABLE PER NAIMA DUCT CLEANING GUIDELINES. INSTALL LINER IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS. LAMINATE LINER TO INTERNAL SURFACES OF DUCT IN ACCORDANCE WITH LINER MANUFACTURER'S INSTRUCTIONS, AND FASTEN WITH MECHANICAL FASTENERS.
8. PROVIDE BAS TEMPERATURE SENSOR ON COLUMN SHOWN ON PLAN. MOUNT 72" ABOVE FINISHED FLOOR.

Bowen+

2019 CENTER STREET, SUITE 300
CLEVELAND, OH 44113

INFORMATION ON THIS DRAWING TAKES PRECEDENCE OVER THE SPECIFICATIONS MANUAL IF THE DOCUMENTS HAVE CONFLICTING INFORMATION.

NO.	DATE	BY	DESCRIPTION
A	11/17/23	KL	ADDENDUM A
C	2/12/24	KL	ADDENDUM C
F	3/26/24	KL	ADDENDUM F

MECHANICAL PLAN

SCALE: AS NOTED
SHEET: M1
PROJECT #: 13615
DRWN BY: CHKD BY:
BLDG. SUBMITTAL: 12/1/23

CONSTRUCTION SET - 3/22/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-1 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4495562
Model Num	NA	AV18S3CQ4G3CAS4KB3
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	31X12.75
Num PreFilter 1	-	6
PreFilter Size 1	-	20X25X2

Test Data		
	Design	**Actual**
SF CFM	7000	7044
SF RPM	890	49Hz
RA CFM	-	5699
OA CFM	1395	1345
RL Voltage	460	478/476/480
RL Amperage	9.9	4.7/4.7/4.4
OA Damper Position	-	22%
Brake Horse Power	3.26	3.60

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	184TZ
Horsepower	5	5.25
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	9.9	13.5-13.4/6.7
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.18”
Fan Suction SP	-	-0.59”
Fan Discharge SP	-	0.29”

Drive Data	
	Actual
Motor Sheave Size	4.5”
Motor Bore Size	7/8”
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	1B5V74
Fan Sheave Bore	1 7/16”
Belt CL Distance	11.5”
Num of Belts	1
Belt Size	BX40

Completed By: Stephen Tassinaro on 08/22/2024

Notes:
VFD Setpoint: 49Hz // High Speed High CO2 - 28% // Low Speed Low CO2 - 37% // Low Speed High CO2 - 66%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-1/SALES FLOOR

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
1-1	OFFICE	A	12"	400	443	390	97.5
1-2	SALES FLOOR	A	14"	575	722	624	108.5
1-3	SALES FLOOR	A	14"	575	856	626	108.9
1-4	SALES FLOOR	A	14"	575	706	624	108.5
1-5	SALES FLOOR	A	14"	550	606	532	96.7
1-6	SALES FLOOR	A	14"	550	686	531	96.5
1-7	SALES FLOOR	A	14"	550	627	559	101.6
1-8	SALES FLOOR	A	14"	550	654	554	100.7
1-9	SALES FLOOR	A	14"	550	574	504	91.6
1-10	SALES FLOOR	A	14"	550	648	545	99.1
1-11	SALES FLOOR	A	14"	525	546	480	91.4
1-12	SALES FLOOR	A	14"	525	607	502	95.6
1-13	SALES FLOOR	A	14"	525	678	573	109.1
Total				7000	8353	7044	100.63%

Completed By: Stephen Tassinaro on 08/09/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-2 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4489476
Model Num	NA	AV20S3CQ4G3CAQ16F2
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	31X12.75
Num PreFilter 1	-	6
PreFilter Size 1	-	20X25X2

Test Data		
	Design	**Actual**
SF CFM	8000	7969
SF RPM	945	50Hz
RA CFM	6605	6487
OA CFM	1395	1482
RL Voltage	460	473/470/475
RL Amperage	9.9	5.4/5.4/4.9
OA Damper Position	-	21%
Brake Horse Power	4.13	4.10

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	184TZ
Horsepower	5	5.25
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	9.9	13.5-13.4/6.7
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.21”
Fan Suction SP	-	-0.76”
Fan Discharge SP	-	0.40”
Total ESP	0.75	0.61"
Fan Total SP	0.82	1.16"

Drive Data	
	Actual
Motor Sheave Size	4.75”
Motor Bore Size	7/8”
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	7.75”
Fan Sheave Bore	1 7/16”
Belt CL Distance	11.25”
Num of Belts	1
Belt Size	BX40

Completed By: Stephen Tassinaro on 08/09/2024

Notes:
50Hz VFD // High Speed High CO2 - 36% // Low Speed Low CO2 - 47% // Low Speed High CO2 - 75%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-2/SALES FLOOR

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
2-1	OFFICE	A	12"	400	608	371	92.8
2-2	SALES FLOOR	A	14"	650	718	646	99.4
2-3	SALES FLOOR	A	14"	650	165	632	97.2
2-4	SALES FLOOR	A	14"	650	843	691	106.3
2-5	SALES FLOOR	A	14"	650	530	697	107.2
2-6	SALES FLOOR	A	14"	525	656	550	104.8
2-7	SALES FLOOR	A	14"	550	456	565	102.7
2-8	SALES FLOOR	A	14"	550	806	559	101.6
2-9	SALES FLOOR	A	14"	550	655	538	97.8
2-10	SALES FLOOR	A	14"	575	676	530	92.2
2-11	SALES FLOOR	A	14"	575	576	568	98.8
2-12	SALES FLOOR	A	14"	575	467	545	94.8
2-13	SALES FLOOR	A	14"	550	661	516	93.8
2-14	SALES FLOOR	A	14"	550	620	561	102.0
Total				8000	8437	7969	99.61%

Completed By: Stephen Tassinaro on 08/09/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-3 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4489477
Model Num	NA	AV20S3CQ4G3CAS1KB3
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	31X12.75
Num PreFilter 1	-	6
PreFilter Size 1	-	20X25X2

Test Data		
	Design	**Actual**
SF CFM	8000	7884
SF RPM	945	51Hz
RA CFM	6605	6462
OA CFM	1395	1422
RL Voltage	460	476/478/480
RL Amperage	9.9	6.0/6.0/5.4
OA Damper Position	-	23%
Brake Horse Power	4.13	4.54

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	184TZ
Horsepower	5	5.25
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	9.9	13.5-13.4/6.7
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.32”
Fan Suction SP	-	-0.96”
Fan Discharge SP	-	0.45”
Total ESP	0.75	0.77"
Fan Total SP	0.82	1.41"

Drive Data	
	Actual
Motor Sheave Size	4.75"
Motor Bore Size	7/8"
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	7.75"
Fan Sheave Bore	1 7/16"
Belt CL Distance	11.25"
Num of Belts	1
Belt Size	BX40

Completed By: Stephen Tassinaro on 08/22/2024

Notes:
51Hz VFD // High Speed High CO2 - 35% // Low Speed Low CO2 - 36% // Low Speed High CO2 - 70%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-3/SALES FLOOR

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
3-1	SALES FLOOR	A	14"	625	748	583	93.3
3-2	SALES FLOOR	A	14"	600	118	552	92.0
3-3	SALES FLOOR	A	14"	625	871	576	92.2
3-4	SALES FLOOR	A	14"	625	876	603	96.5
3-5	SALES FLOOR	A	14"	600	807	638	106.3
3-6	SALES FLOOR	A	14"	625	662	579	92.6
3-7	SALES FLOOR	A	14"	625	805	658	105.3
3-8	SALES FLOOR	A	14"	600	145	579	96.5
3-9	SALES FLOOR	A	14"	625	873	658	105.3
3-10	SALES FLOOR	A	14"	625	506	626	100.2
3-11	SALES FLOOR	A	14"	600	869	580	96.7
3-12	SALES FLOOR	A	14"	625	817	647	103.5
3-13	SALES FLOOR	A	10"	300	0	302	100.7
3-14	SALES FLOOR	A	10"	300	0	303	101.0
Total				8000	8097	7884	98.55%

Completed By: Stephen Tassinaro on 08/22/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-4 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4495561
Model Num	NA	AV18S3CQ4G3CAS4KB3
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	31X12.75
Num PreFilter 1	-	6
PreFilter Size 1	-	20X25X2

Test Data		
	Design	**Actual**
SF CFM	7000	7279
SF RPM	890	50Hz
RA CFM	5605	6022
OA CFM	1395	1257
RL Voltage	460	472/470/474
RL Amperage	9.9	4.6/4.6/4.2
OA Damper Position	-	22%
Brake Horse Power	3.26	3.5

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	184TZ
Horsepower	5	5.25
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	9.9	13.5-13.4/6.7
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.16”
Fan Suction SP	-	-0.64”
Fan Discharge SP	-	0.41”
Total ESP	.75	0.57"
Fan Total SP	.84	1.05"

Drive Data	
	Actual
Motor Sheave Size	4.5"
Motor Bore Size	7/8"
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	1B5V74
Fan Sheave Bore	1 7/16"
Belt CL Distance	11.5"
Num of Belts	1
Belt Size	BX40

Completed By: Stephen Tassinaro on 08/22/2024

Notes:
50Hz VFD // High Speed High CO2 - 36% // Low Speed Low CO2 - 47% // Low Speed High CO2 - 75%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-4/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
4-1	SALES FLOOR	A	14"	625	893	673	107.7
4-2	SALES FLOOR	A	12"	500	625	532	106.4
4-3	SALES FLOOR	A	14"	625	782	667	106.7
4-4	SALES FLOOR	A	14"	625	892	621	99.4
4-5	SALES FLOOR	A	12"	500	761	470	94.0
4-6	SALES FLOOR	A	14"	625	813	622	99.5
4-7	SALES FLOOR	A	14"	625	873	665	106.4
4-8	SALES FLOOR	A	12"	500	165	514	102.8
4-9	SALES FLOOR	A	14"	625	820	648	103.7
4-10	SALES FLOOR	A	14"	625	716	674	107.8
4-11	SALES FLOOR	A	12"	500	111	516	103.2
4-12	SALES FLOOR	A	14"	625	1028	677	108.3
Total				7000	8479	7279	103.99%

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National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-5 AREA:SERVER ROOM

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4422656
Model Num	NA	ZJ090S12R4D5BCBKA3
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28.75X20.5
Num PreFilter 1	-	4
PreFilter Size 1	-	20X24X2

Test Data		
	Design	**Actual**
SF CFM	2600	2625
SF RPM	936	43Hz
RA CFM	2350	2400
OA CFM	250	225
RL Voltage	460	475/478/480
RL Amperage	4.7	2.3/2.4/1.7
OA Damper Position	-	22%
Brake Horse Power	1.8	1.56

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	57HZ
Horsepower	3	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	4.7	8.3-8.2/4.1
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.44”
Fan Suction SP	-	-0.62”
Fan Discharge SP	-	0.58”
Total ESP	0.75	1.02"
Fan Total SP	1	1.20"

Drive Data	
	Actual
Motor Sheave Size	1VM50
Motor Bore Size	7/8”
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	AK59
Fan Sheave Bore	1.0”
Belt CL Distance	19.5”
Num of Belts	1
Belt Size	A54

Completed By: Stephen Tassinaro on 08/22/2024

Notes:
Diffuser total = 2600CFM / RTU Schedule = 3000CFM. Balanced to diffuser total. Amperage and fan speed is available if a speed increase to 3000CFM is required. // High Speed High CO2 - 22% / Low Speed High CO2 - 25%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-5/SERVER ROOM

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
5-1	TRAINING	A	10"	350	655	355	101.4
5-2	OFFICE	A	8"	200	387	187	93.5
5-3	CASH	A	10"	200	191	182	91.0
5-4	OFFICE	A	8"	200	123	191	95.5
5-5	OFFICE	A	8"	150	290	164	109.3
5-6	HALLWAY	A	8"	100	160	94	94.0
5-7	WOMENS RR	A	8"	150	237	164	109.3
5-8	MENS RR	A	8"	150	198		-
5-9	HALLWAY	A	8"	100	327	98	98.0
5-10	ASSOCIATE LOUNGE	A	10"	300	489	315	105.0
5-11	ASSOCIATE LOUNGE	A	10"	300	403	320	106.7
5-12	SERVER ROOM	A	12"	400	229	404	101.0
Total				2600	3689	2474	95.15%

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National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: AHU/RTU

Asset: RTU-6 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2F4422655
Model Num	NA	ZJ120S24R4D5BCLKA3
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29X20.5
Num PreFilter 1	-	4
PreFilter Size 1	-	24X20X2

Test Data		
	Design	**Actual**
SF CFM	4000	3928
SF RPM	1210	1016
RA CFM	3265	3185
OA CFM	735	743
RL Voltage	460	481/474/478
RL Amperage	4.7	3.6/3.7/3.1
OA Damper Position	-	23%
Brake Horse Power	3.02	2.53

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR RELIANCE
Frame	-	56HZ
Horsepower	3	3.0
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	4.7	8.3-8.2/4.1
Service Factor	-	1.15

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.57”
Fan Suction SP	-	-0.94”
Fan Discharge SP	-	0.53”
Total ESP	0.75	1.10"
Fan Total SP	1.31	1.47"

Drive Data	
	Actual
Motor Sheave Size	VM50
Motor Bore Size	7/8”
Motor Sheave SetPt	2.5 TURNS OUT
Fan Sheave Size	AK74
Fan Sheave Bore	1.0”
Belt CL Distance	19.0”
Num of Belts	1
Belt Size	A54

Completed By: Stephen Tassinaro on 08/22/2024

Notes:
Supply total found via 2 duct traverse, individual diffusers will be adjusted 8/19. Trunk 1: 978FPM * 2.5ft area = 2445CFM. Trunk 2: 840FPM * 1.56ft area = 1310CFM. Total = 3755 CFM. Fan speed later increased to achieve 3928CFM // High Speed High CO2 - 23% / Low Speed Low CO2 - 32%

Written By: Stephen Tassinaro on 08/22/2024

National TAB

Project:Kohls (Wesley Chapel, FL)

AHU/RTU

Diffuser Supply (GRD)

RTU-6/

Asset									
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**VEL(1)**	**CFM(1)**	**VEL(2)**	**FINAL CFM**	**% to design**
6-1	C	20X14	600	1.5	428	642	397	596	99.3
6-2	C	20X14	600	1.5	288	432	382	573	95.5
6-3	C	20X14	200	1.5	259	389	129	194	97.0
6-4	C	20X14	600	1.5	321	482	399	599	99.8
6-5	C	20X14	300	1.5	303	455	196	294	98.0
6-6	C	20X14	850	1.5	451	677	559	839	98.7
6-7	C	20X14	850	1.5	476	714	555	833	98.0
Total			4000			3791		3928	98.2%

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National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-090-VG	G-090-VG-1-17-X
Serial Num	-	24193829 24C
Type	CEILING	CENTRIFUGAL

Test Data		
	Design	**Actual**
CFM	600	565
RL Voltage	-	118
RL Amperage	-	1.1
Total ESP	0.375	0.11”

Motor Data		
	Design	**Actual**
Motor MFG	-	BROAD-OCEAN
Horsepower	0.08	1/10
Motor Rpm	1725	1750
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	1.38

Completed By: Stephen Tassinaro on 08/22/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:MDF ROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CSP-A1050	CSP-A1050-QD
Serial Num	-	23995667
Type	CEILING	INLINE

Test Data		
	Design	**Actual**
CFM	900	922
RL Voltage	-	117
RL Amperage	-	3.5
Total ESP	0.25	0.14

Motor Data		
	Design	**Actual**
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	5

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National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:CASH ROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CSP-A510	CSP-A510-QD
Serial Num	-	24059077
Type	CEILING	INLINE

Test Data		
	Design	**Actual**
CFM	400	398
RL Voltage	-	118
RL Amperage	-	2.5
Total ESP	0.21	0.10"

Motor Data		
	Design	**Actual**
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	3.3

Completed By: Stephen Tassinaro on 08/08/2024

National TAB

Project: Kohls (Wesley Chapel, FL)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:LP OFFICE

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CSP-A1050	CSP-A1050-QD
Serial Num	-	23995668
Type	CEILING	INLINE

Test Data		
	Design	**Actual**
CFM	900	914
RL Voltage	-	118
RL Amperage	-	3.5
Total ESP	0.25	0.18

Motor Data		
	Design	**Actual**
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	5

Completed By: Stephen Tassinaro on 08/08/2024