

Report By:

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SUITE 4210
CINCINNATI, OH 45246



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

PROJECT
02-03-25 WAWA #5804 FAIRHOPE, AL

22148 STATE HWY 181

FAIRHOPE, AL 36532

Client

Wawa
260 West Baltimore Pike

Wawa, PA 19063

National TAB

Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

RTU's (Roof Top Units) w/ Diffusers

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

Ceiling Exhaust Fans

The ceiling exhaust fans were measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. Any equipment that fell outside of this tolerance is noted throughout the report.

Final Building Tests

After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	RETAIL	3400	3495	2900	2977	500	518	14.7%	14.8%						
RTU-2	FOOD SERVICE	5000	5139	4350	4521	650	618	13.0%	12.0%						
RTU-3	RETAIL	3000	3098	2700	2784	300	314	10.0%	10.1%						
EF-1	FOOD SERVICE													850	880
EF-2	WATER SERVICE													60	58
TOTALS		11400	11732	9950	10282	1450	1450			0	0	0	0	910	938

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1450	1450
TOTAL EXHAUST	910	938
NET AIRFLOW	540	512

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.01
SIDE	
REAR	0.01
AVERAGE	0.01

FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

CheckList List

- 01: RTU's/AHU's
- 02: LENNOX SETUP PARAMETERS
- 03: SENSOR WIRING (LENNOX)
- 04: EF'S
- 05: CLOSEOUT CHECKS



02-03-25 WAWA #5804 FAIRHOPE, AL

CheckList Information

Name : 01: RTU's/AHU's **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 02/03/2025 - Brianna Biggs - National TAB

CheckList Item Details

RTU's/AHU's

All diffusers and grilles are installed and match design? Pass

Comment:

Clean filters installed? Pass

Comment:

Economizers are assembled and functional? Pass

Comment:

Motors are all operating below the FLA rating? Pass

Comment:

Are belts tight? N/A

Comment:

UNITS ARE DIRECT DRIVE.

If direct drive unit is the speed controller working? Pass

Comment:

Is gas piping installed and valves turned on? Pass

Comment:

Condensate drains are installed?

Pass

Comment:

Unit free of noticeable noise and vibration

Pass

Comment:

Final outside air damper position is marked with permanent marker?

Pass

Comment:

No alarms present?

Pass

Comment:

Any noticeable duct leakage?

Pass

Comment:

Total supply and OA flows are balanced within +/-5% and supply & return diffusers within +/-10%?

Pass

Comment:

IN TEST MODE, TEST THE FOLLOWING:

Heating mode is operational? Record EAT/LAT for each unit:

Pass

Comment:

RTU-1 68/72 RTU-2 67/71 RTU-3 67/72

Dehumidification mode is operational? (Feel dehumidification coil with your hand. Is it hot?) Record EAT/LAT for each unit:

Pass

Comment:

RTU-1 71/64 COIL HOT RTU-2 70/62 COIL HOT RTU-3 72/64 COIL HOT



02-03-25 WAWA #5804 FAIRHOPE, AL

CheckList Information

Name : 02: LENNOX SETUP PARAMETERS **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 02/03/2025 - Brianna Biggs - National TAB

CheckList Item Details

UNIT ID CONFIGURATIONS

BACNET CONFIGURATION: GO TO SETTINGS>GENERAL>CONFIGURATION ID1 POSITION 5 SET TO "N". N/A

Comment:

NETWORK CONFIGURATION: GO TO SETUP>NETWORK INTEGRATION, SET TO BACNET IP N/A

Comment:

CONTROL MODE: SET CONTROL MODE TO ROOM SENSOR: CO2, TEMP & HUMIDITY (PER UNIT, AS NEEDED). N/A

Comment:

INDIVIDUAL PARAMETER CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):

PARAMETER 105 DEHUMID MODE: 7 NO CONDITIONS N/A

Comment:

PARAMETER 106 DEHUMID SETPOINT: 50, THIS IS A CENTERED SET POINT (+/-) N/A

Comment:

PARAMETER 107 DEHUMID DEADBAND: 3 (DEFAULT) THIS IS THE ACTUAL +/- VALUE N/A

Comment:

PARAMETER 117 CO2 DAMPER MAX OPEN: 50%

N/A

Comment:

PARAMETER 118 CO2 START OPEN PPM: 1500

N/A

Comment:

PARAMETER 119 CO2 MAX OPEN PPM: 1500

N/A

Comment:

PARAMETER 137 OCCHET SET POINT: 68 (BACK UP)

N/A

Comment:

PARAMETER 131 SET TO THE SAME % AS THE MINMIUM OA DAMPER SETPOINT

N/A

Comment:

PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP)

N/A

Comment:

PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1

N/A

Comment:

CFM VALUES / MSAV FAN SPEEDS (AIR BALANCER TO DEFINE / IF APPLICABLE):

OA DAMPER SET TO SAME POSITION IN ALL FAN SPEEDS?

Pass

Comment:

ALL FAN SPEEDS SET TO THE SAME CFM VALUE (ENTER SETPOINTS BELOW)

Pass

Comment:

RTU 1-68% RTU 2-88% RTU 3-71%

HEAT CFM VALUE: PER THE HVAC SCHEDULE

N/A

Comment:

HIGH COOL CFM VALUE: THE HIGH COOL CFM VALUE

N/A

Comment:

LOW COOL CFM VALUE: MATCH THE HIGH COOL CFM VALUE

N/A

Comment:

VENTILATION CFM VALUE: MATCH THE HIGH COOL CFM VALUE

N/A

Comment:



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CheckList Information

Name : 03: SENSOR WIRING (LENNOX) **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 02/03/2025 - Brianna Biggs - National TAB

Completed Date : 02/06/2025 - Oscar Ventura - National TAB

CheckList Item Details

COMBINATION TEMPERATURE/HUMIDITY SENSOR

Sensors are installed where shown on the drawing? Pass

Comment:

2 conductor shielded cable has one wire landed to Vin, one to GND, and the shield wire is not connected. Pass

Comment:

For second shielded cable, one wire is landed to Vout and the shield wire is not connected. Pass

Comment:

Verify that the CORE or Prodigy controller is sensing a relative humidity (record the reading) Pass

Comment:

RTU-1 60% RTU-2 62% RTU-3 62%



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CheckList Information

Name : 04: EF'S **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 02/03/2025 - Brianna Biggs - National TAB

Completed Date : 02/05/2025 - Oscar Ventura - National TAB

CheckList Item Details

EF's

Rotation is correct?	Pass
-----------------------------	------

Comment:

Belts are tight (if applicable)?	N/A
---	-----

Comment:

DIRECT DRIVE

Speed controller installed and functional (if applicable)?	Pass
---	------

Comment:

There is no major leakage around base of fan?	Pass
--	------

Comment:

Is the motor operating below the motor FLA rating?	Pass
---	------

Comment:

Back draft damper installed and can it fully open?	Pass
---	------

Comment:

Unit free of noticeable noise and vibration?

Pass

Comment:

Total exhaust flow balanced within +/-5% and grilles are within +/-10%?

Pass

Comment:



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CheckList Information

Name : 05: CLOSEOUT CHECKS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 02/03/2025 - Brianna Biggs - National TAB

Completed Date : 02/06/2025 - Oscar Ventura - National TAB

CheckList Item Details

SPACE COMFORT

Is space free of drafting? Pass

Comment:

Is space comfortable in all areas? Pass

Comment:

Is the space free of ventilation noise? Pass

Comment:

BUILDING PRESSURE

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative) Pass

Comment:

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Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

System/Unit: AHU/RTU



Asset: RTU1

AREA:RETAIL

Unit Data		
	Design	Actual
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624H04580
Model Num	LCT102H4E	LCT102H4EG1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	24X16
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	3.75	3.8
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7
Service Factor	-	NL

Drive Data	
	Actual
Motor Sheave Size	DIRECT DRIVE

Test Data		
	Design	Actual
SF CFM	3400	3495
SF RPM	-	1540
MOTOR RPM	-	1540
RA CFM	2900	2977
OA CFM	500	518
RL Voltage	-	209/209/208
RL Amperage	-	6.4/6.5/6.5
SF System SetPt	-	68%
RA Damper Position	-	76%
OA Damper Position	-	24%
OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.53"
Fan Suction SP	-	-0.95"
Fan Discharge SP	-	0.31"
Total ESP	0.5"	0.84"
Fan Total SP	-	1.26"

Completed By: Oscar Ventura on 02/05/2025

Unit Data - PHOTO LOG



02/04/2025

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Project:02-03-25 WAWA #5804 FAIRHOPE, AL

AHU/RTU



Diffuser Supply (GRD)

RTU1/RETAIL

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	RETAIL	LD1	10"	310	1	549	432	302	97.4
SGRD2	RETAIL	LD1	10"	300	1	599	451	307	102.3
SGRD3	RETAIL	LD1	10"	300	1	628	525	310	103.3
SGRD4	RETAIL	LD1	10"	300	1	604	502	314	104.7
SGRD5	RETAIL	LD1	10"	300	1	647	516	312	104.0
SGRD6	ASSOCIATES	CD1	8"	150	1	238	175	159	106.0
SGRD7	OFFICE	CD1	8"	150	1	204	163	154	102.7
SGRD8	RETAIL	LD1	10"	310	1	336	332	319	102.9
SGRD9	RETAIL	LD1	10"	285	1	391	252	292	102.5
SGRD10	DELIVERY VESTIBULE	CD1	8"	200	1	319	234	211	105.5
SGRD11	RETAIL	LD1	10"	285	1	339	247	294	103.2
SGRD12	RETAIL	LD1	10"	285	1	298	155	288	101.1
SGRD13	WOMENS RR	CD3	6"	50	1	77	68	53	106.0
SGRD14	REAR VESTIBULE	CD3	6"	100	1	159	109	102	102.0
SGRD15	MENS RR	CD3	6"	75	1	104	86	78	104.0
Total				3400		5492	4247	3495	102.79%

Completed By: Oscar Ventura on 02/04/2025

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Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

System/Unit: AHU/RTU



Asset: RTU2

AREA:FOOD SERVICE

Unit Data		
	Design	Actual
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624HO4161
Model Num	LCT150H4E	LCT150H4EG1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	24X16
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	3.75	3.8
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7
Service Factor	-	NL

Drive Data	
	Actual
Motor Sheave Size	DIRECT DRIVE

Test Data		
	Design	Actual
SF CFM	5000	5139
SF RPM	-	1937
MOTOR RPM	-	1937
RA CFM	4350	4521
OA CFM	650	618
RL Voltage	-	208/208/209
RL Amperage	-	6.3/6.2/6.2
SF System SetPt	-	88%
RA Damper Position	-	85%
OA Damper Position	-	15%
OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.65"
Fan Suction SP	-	-1.08"
Fan Discharge SP	-	0.62"
Total ESP	0.5"	1.27"
Fan Total SP	-	1.70"

Completed By: Oscar Ventura on 02/05/2025

Unit Data - PHOTO LOG



02/04/2025

National TAB
 Project:02-03-25 WAWA #5804 FAIRHOPE, AL
AHU/RTU



Diffuser Supply (GRD)

RTU2/FOOD SERVICE

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	FOOD SERVICE	LD1	12"	500	1	628	584	521	104.2
SGRD2	FOOD SERVICE	LD1	12"	500	1	619	562	508	101.6
SGRD3	FOOD SERVICE	LD1	12"	500	1	564	535	502	100.4
SGRD4	FOOD SERVICE	LD1	12"	500	1	587	547	511	102.2
SGRD5	FOOD SERVICE	LD1	12"	500	1	592	569	505	101.0
SGRD6	FOOD SERVICE	LD1	12"	500	1	580	556	509	101.8
SGRD7	FOOD SERVICE	CD1	12"	500	1	587	550	506	101.2
SGRD8	FOOD SERVICE	CD1	12"	375	1	492	438	388	103.5
SGRD9	WASHROOM	CD1	12"	500	1	566	551	529	105.8
SGRD10	STAGING	CD1	6"	75	1	93	82	79	105.3
SGRD11	ELECTRICAL ROOM	CD1	12"	550	1	408	394	581	105.6
Total				5000		5716	5368	5139	102.78%

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Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

System/Unit: AHU/RTU



Asset: RTU3

AREA:RETAIL

Unit Data		
	Design	Actual
MFG	LENNOX ENLIGHT	LENNOX ENLIGHT
Serial Num	-	5624H04156
Model Num	LCT092H4E	LCT092H4EG1Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	24X16
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	3.75	3.8
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7
Service Factor	-	NL

Drive Data	
	Actual
Motor Sheave Size	DIRECT DRIVE

Test Data		
	Design	Actual
SF CFM	3000	3098
SF RPM	-	1562
MOTOR RPM	-	1562
RA CFM	2700	2784
OA CFM	300	314
RL Voltage	-	208/208/209
RL Amperage	-	6.8/6.7/6.7
SF System SetPt	-	71%
RA Damper Position	-	78%
OA Damper Position	-	22%
OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.46"
Fan Suction SP	-	-0.72"
Fan Discharge SP	-	1.12"
Total ESP	0.5"	1.58"
Fan Total SP	-	1.84"

Completed By: Oscar Ventura on 02/05/2025

Unit Data - PHOTO LOG



02/04/2025

National TAB

Project:02-03-25 WAWA #5804 FAIRHOPE, AL

AHU/RTU



Diffuser Supply (GRD)

RTU3/RETAIL

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	FRONT VESTIBULE	LD1	10"	500	1	672	648	533	106.6
SGRD2	RETAIL	LD1	10"	350	1	582	573	365	104.3
SGRD3	RETAIL	LD1	10"	300	1	469	441	314	104.7
SGRD4	COFFEE/SPECIALTY BEVERAGE	LD1	10"	300	1	362	317	309	103.0
SGRD5	COFFEE/SPECIALTY BEVERAGE	LD1	10"	300	1	409	388	306	102.0
SGRD6	COFFEE/SPECIALTY BEVERAGE	LD1	10"	300	1	445	406	311	103.7
SGRD7	RETAIL	LD1	10"	300	1	122	104	301	100.3
SGRD8	RETAIL	LD1	10"	300	1	183	141	302	100.7
SGRD9	RETAIL	LD1	10"	350	1	171	148	357	102.0
Total				3000		3415	3166	3098	103.27%

Completed By: Oscar Ventura on 02/05/2025

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Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

System/Unit: FAN - Exhaust



Asset: EF1

AREA:FOOD SERVICE

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-120	G-120-4-VG-19-X
Serial Num	-	2S4S9467
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	1/4	1/4
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	3.5
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	850	880
Fan RPM	1038	SPEED DIAL
Fan Rotation	-	CW
Motor RPM	-	SPEED DIAL
System SetPt	-	HIGH
RL Voltage	-	121
RL Amperage	-	2.3
Total ESP	0.375"	0.31"
Fan Inlet SP	-	-0.31"
Fan Discharge SP	-	ATM

Completed By: Oscar Ventura on 02/05/2025

Unit Data - PHOTO LOG



02/04/2025

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 Project:02-03-25 WAWA #5804 FAIRHOPE, AL
FAN - Exhaust



Diffuser Ret/Exh (GRD)

EF1/FOOD SERVICE

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	FOOD SERVICE	G1	10"	200	1	328	251	209	104.5
EGRD2	FOOD SERVICE	G1	10"	200	1	312	247	207	103.5
EGRD3	FOOD SERVICE	G1	10"	200	1	284	226	202	101.0
EGRD4	STAGING	G1	10"	100	1	186	142	103	103.0
EGRD5	MENS RR	G3	6"	50	1	119	101	53	106.0
EGRD6	WOMENS RR	G3	6"	100	1	139	109	106	106.0
Total				850		1368	1076	880	103.53%

Completed By: Oscar Ventura on 02/04/2025

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Project: 02-03-25 WAWA #5804 FAIRHOPE, AL

System/Unit: FAN - Exhaust



Asset: EF2

AREA:WATER SERVICE ROOM

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	CSP-B110	CSP-B110
Serial Num	-	-
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Test Data		
	Design	Actual
CFM	60	58
Fan RPM	584	(1)
Fan Rotation	-	NL
Motor RPM	-	(1)
System SetPt	-	(1)
RL Voltage	-	120
RL Amperage	-	(1)
Total ESP	0.125"	0.10"
Fan Inlet SP	-	-0.10"
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	21W	NL
Motor Rpm	-	(1)
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	(1)
Service Factor	-	NL

Completed By: Oscar Ventura on 02/05/2025

Notes:
 (1). MOTOR DATA IS NOT ACCESSIBLE. MOTOR IS ENCLOSED IN METAL CASING.

Written By: Oscar Ventura on 02/05/2025

Unit Data - PHOTO LOG



02/05/2025

1 HVAC FLOOR PLAN
1/8" = 1'-0"

