Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 01/16/2026

Completed By: National TAB

PROJECT

01-12-26 QT #1426 AVONDALE, AZ

1550 N 107TH AVE

AVONDALE, AZ

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 01-12-26 QT #1426 AVONDALE, AZ

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Project Summary

Project Summary
The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details 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)
Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the typical QT set point at the Emerson controller and then making manually adjustments on the roof. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

Kitchen Exhaust Hood & Associated Fans
The kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow.

Restroom Exhaust Fans
The restroom exhaust fans were measured with a flow hood. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

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. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

Issue List

- EXHAUST FAN ON EMERSON

01-12-26 QT #1426 AVONDALE, AZ

Project Issue Information

Issue Name : EXHAUST FAN ON EMERSON

Description : Exhaust fan for the hood don't show up on Emerson on the store computer

Created By : National TAB

Assigned To : National TAB - Dan Hertenstein

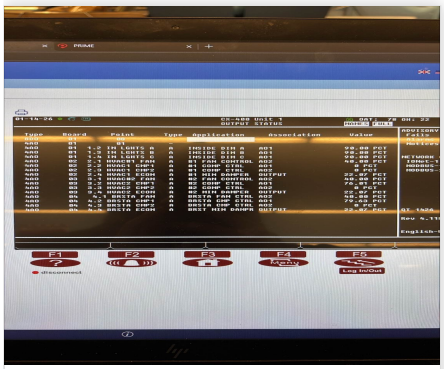
Status : Open

Priority : Low

Asset Tag :

Originated Date : 01/15/2026 - Ethan Van Orden - National TAB

Project Issue File Details



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NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	800	820	350	342				
RTU-2	SALES	800	855	350	380				
RTU-3	BOH/KITCHEN	800	836	350	368				
EF-1	RR/JANITOR					750	773	750	773
EF-3	HOOD					1350	1372	0	0
TOTALS		2400	2511	1050	1090	2100	2145	750	773

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2511
TOTAL EXHAUST	2100	2145
NET AIRFLOW	300	366

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0012
SIDE	0.016
REAR	0.0038
AVERAGE	**0.007**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1090
TOTAL EXHAUST	750	773
NET AIRFLOW	300	317

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0023
SIDE	0.0019
REAR	0.0031
AVERAGE	**0.0024**

NOTES:

CheckList List

- 01: RTU’s/AHU’s
- 02: Exhaust Fans
- 03: Hoods
- 04: Final Tests

01-12-26 QT #1426 AVONDALE, AZ

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	01/15/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
Comment:	
Condenser coils are clean?	Pass
Comment:	
Gas piping is installed and valves are turned on?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

01-12-26 QT #1426 AVONDALE, AZ

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	01/15/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

EF's

Hinge kit installed installed on hood fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
No major leakage around the fan base	Pass
Comment:	
Unit is free of noise and vibration	Pass
Comment:	

01-12-26 QT #1426 AVONDALE, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	01/15/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

HOODS

Hood is free of alarms?	Pass
Comment:	
Hood is free of damage?	Pass
Comment:	
End panels are installed per prototype?	Pass
Comment:	

01-12-26 QT #1426 AVONDALE, AZ

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/30/2025 - Trinity Dodds - National TAB		
Completed Date :	01/15/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

List smoke candle type used

Comment:

Smoke bomb

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed 01/15/2026

Comment:

TAB tech name / Firm	
Comment: Ethan V/ NTI	
Site super name / Firm	
Comment:	
Owner representative name / Firm (if Applicable)	
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:	

National TAB

Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202305-ANEK27167
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	44.5X22.5
Num Final Filter 1	2
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4286
SF RPM	-	1337
OA CFM (Hoods On)	800	820
OA CFM (Hoods Off)	350	342
RL Voltage	-	186@VFD
RL Amperage	-	8.22@VFD
VFD Max SetPt	-	45.6HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	21%

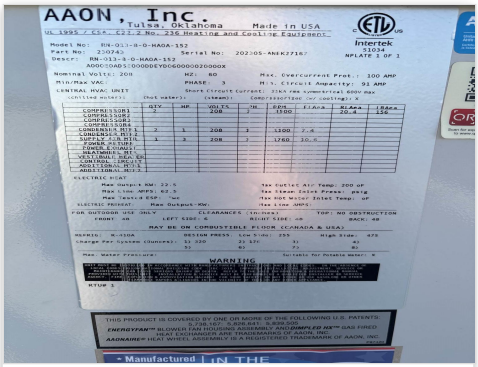
Performance Data	
	Actual
MA Plenum SP	-0.57”
Fan Suction SP	-0.85”
Fan Discharge SP	0.30”
Total ESP	0.87"
Fan Total SP	1.15"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG

01/15/2026



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Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202305-ANEK27168
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	44.5X22.5
Num Final Filter 1	2
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4233
SF RPM	-	1349
OA CFM (Hoods On)	800	855
OA CFM (Hoods Off)	350	380
RL Voltage	-	188@VFD
RL Amperage	-	8.11@VFD
VFD Max SetPt	-	46HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	20%

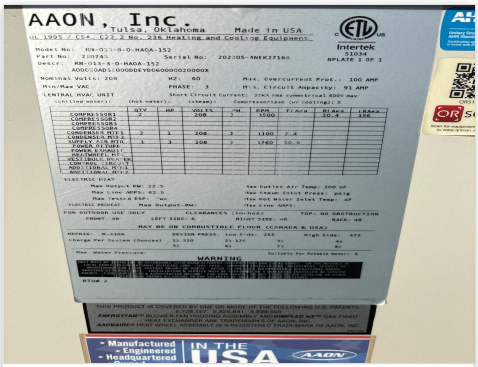
Performance Data	
	Actual
MA Plenum SP	-0.61”
Fan Suction SP	-0.84”
Fan Discharge SP	0.24”
Total ESP	0.85"
Fan Total SP	1.08"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG

01/14/2026



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Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202305-ANEK27169
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	44.5X22.5
Num Final Filter 1	1
Final Filter Size 1	44X20

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	470	4718
SF RPM	-	1496
OA CFM (Hoods On)	800	836
OA CFM (Hoods Off)	350	368
RL Voltage	-	211@VFD
RL Amperage	-	9.18@VFD
VFD Max SetPt	-	51HZ
VFD Min SetPt	-	24HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	24%

Performance Data	
	Actual
MA Plenum SP	-0.83”
Fan Suction SP	-1.19”
Fan Discharge SP	0.56”
Total ESP	1.39"
Fan Total SP	1.95"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG

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Project:01-12-26 QT #1426 AVONDALE, AZ

AHU/RTU

Diffuser Supply (GRD)

RT-3/BOH/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUPPORT SERVICE	SI	12"	800	1	646	738	798	99.8
SGRD2	SUPPORT SERVICE	SI	12"	800	1	686	754	761	95.1
SGRD3	SUPPORT SERVICE	SI	12"	800	1	668	736	787	98.4
SGRD4	SUPPORT SERVICE	SI	12"	800	1	760	805	805	100.6
SGRD5	WORKROOM	ES	10"	500	1	621	685	523	104.6
SGRD6	WORKROOM	ES	10"	500	1	602	674	546	109.2
SGRD7	PLUMBING	ER	8"	540	1	330	368	498	92.2
Total				4740		4313	4760	4718	99.54%

Completed By: Ethan Van Orden on 01/15/2026

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Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

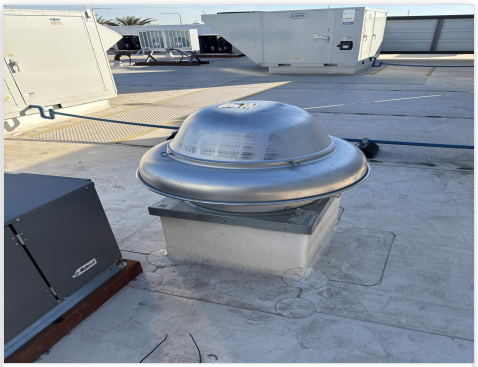
Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DR50HFA
Serial Num	6077744
Type	DOWNBLAST
Configuration	VERTICAL

Motor Data	
	Actual
Motor MFG	NEMA
Frame	NL
Horsepower	0.500
Motor Rpm	2000
Phase	1
Voltage (rated)	115
Amperage (rated)	8.4
Service Factor	NL

Test Data		
	Design	**Actual**
CFM	750	773
Fan Rotation	-	CCW
System SetPt	-	LOW
RL Amperage	-	4.1
Total ESP	-	0.82
Fan Inlet SP	-	-0.82
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG



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National TAB

Project:01-12-26 QT #1426 AVONDALE, AZ

Diffuser Ret/Exh (GRD)

EF1/RR/JANITOR

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD4	SUPPORT SERVICE	RI	8"	150	1	298	132	162	108.0
Total				150		298	132	162	108%

Completed By: Ethan Van Orden on 01/15/2026

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Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DU50HFA
Serial Num	8181165
Type	UPBLAST
Configuration	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	1/2	0.500
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1372
Fan RPM	-	1184
Fan Rotation	-	CCW
Motor RPM	-	1184
System SetPt	-	50.6HZ
RL Voltage	-	219
RL Amperage	-	1.66
Total ESP	-	0.35
Fan Inlet SP	-	-0.35
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG

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Project: 01-12-26 QT #1426 AVONDALE, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2
Job / Serial Num	-	8181165
Type	-	TYPE I CANOPY
Hood length	-	120”
Hood Width	-	60”

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	111
Filter2 FPM	-	113
Filter3 FPM	-	123
Filter4 FPM	-	108
Filter5 FPM	-	111
Filter6 FPM	-	96
Filter Ave FPM(corr)	-	110
CFM	1350	1372

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Ethan Van Orden on 01/15/2026

Unit Data - PHOTO LOG

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