Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 11/21/2025

Completed By: National TAB

PROJECT

11-10-25 QT #0465 PHOENIX, AZ

23550 N 23RD AVE

PHOENIX, AZ 85027

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

Table Of Contents

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) 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 for comfort and hood performance. 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.

Kitchen Exhaust Hood & Associated Fans
Each 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. Any EF's 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. 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

- DAMPERS INACCESSIBLE
- DIFFUSER LYING ON TOP OF CEILING
- STORE PC NOT AFFECTING OA DAMPERS

11-10-25 QT #0465 PHOENIX, AZ

Project Issue Information

Issue Name :	DAMPERS INACCESSIBLE		
Description :	Dampers for kitchen grilles are inaccessible when tiles are in place. Dampers for Workroom are inaccessible due to equipment and shelving.		
Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Low	**Asset Tag :**	RT-3
Originated Date :	11/29/2025 - Christine Weale - National TAB		

11-10-25 QT #0465 PHOENIX, AZ

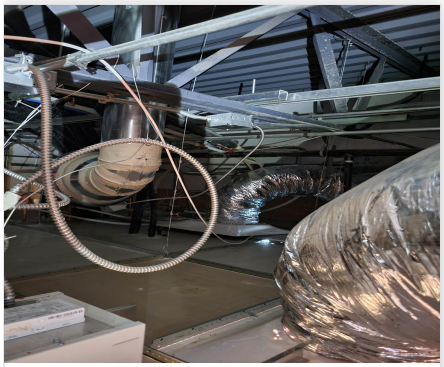
Project Issue Information

Issue Name : DIFFUSER LYING ON TOP OF CEILING

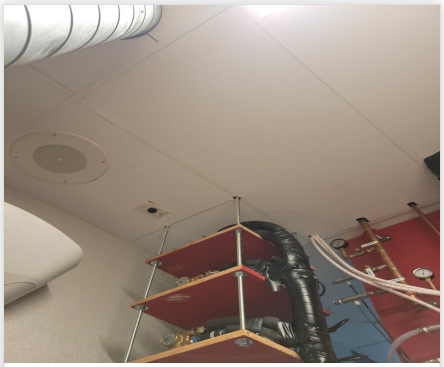
Description : Diffuser is not in use, should be conditioning the humid area behind the soda machines. Recommend reopening damper for duct and replacing where it should be.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Low	**Asset Tag :**	SGRD5
Originated Date :	11/23/2025 - Christine Weale - National TAB		

Project Issue File Details



11/23/2025



11/23/2025

11-10-25 QT #0465 PHOENIX, AZ

Project Issue Information

Issue Name :	STORE PC NOT AFFECTING OA DAMPERS		
Description :	Store PC not communicating OA position to any of the 3 units.		
Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Medium	**Asset Tag :**	
Originated Date :	11/23/2025 - Christine Weale - National TAB		

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	853	350	378				
RTU-2	SALES	800	866	350	358				
RTU-3	BOH/KITCHEN	800	853	350	358				
EF-1	RR/JANITOR CLOSET					750	945	750	945
EF-3	HOOD					1350	1408	0	0
TOTALS		2400	2572	1050	1094	2100	2353	750	945

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2572
TOTAL EXHAUST	2100	2353
NET AIRFLOW	300	219

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.004
SIDE	0.003
REAR	0.006
AVERAGE	**0.0043**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1094
TOTAL EXHAUST	750	945
NET AIRFLOW	300	149

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.004
SIDE	0.003
REAR	0.008
AVERAGE	**0.005**

NOTES:

CheckList List

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

11-10-25 QT #0465 PHOENIX, AZ

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/04/2025 - Trinity Dodds - National TAB		
Completed Date :	11/23/2025 - Christine Weale - 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:	

11-10-25 QT #0465 PHOENIX, AZ

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/04/2025 - Trinity Dodds - National TAB		
Completed Date :	11/23/2025 - Christine Weale - 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:	

11-10-25 QT #0465 PHOENIX, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/04/2025 - Trinity Dodds - National TAB		
Completed Date :	11/23/2025 - Christine Weale - 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:	

11-10-25 QT #0465 PHOENIX, AZ

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/04/2025 - Trinity Dodds - National TAB		
Completed Date :	11/23/2025 - Christine Weale - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Fryers and dual-oven

List smoke candle type used

Comment:

45s S102

Smoke test capture % - Perimeter of hood

Comment:

100

Smoke test capture % - Top of cooking surface

Comment:

100

WITNESS

Date test was completed	11/21/2025

Comment:

TAB tech name / Firm

Comment:

Christine Weale, NTI

Site super name / Firm

Comment:

TBuilt

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: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202303-ANEK25718
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3.0
Motor Rpm	1760
Phase	3.0
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4612
SF RPM	-	43.8 HZ
OA CFM (Hoods On)	800	853
OA CFM (Hoods Off)	350	378
RL Voltage	-	143
RL Amperage	-	6.95
VFD Max SetPt	-	73
VFD Min SetPt	-	24
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.47"
Fan Suction SP	-	-0.67"
Fan Discharge SP	-	0.24"
Total ESP	-	0.71"
Fan Total SP	-	0.91"

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

Completed By: Christine Weale on 11/22/2025

Unit Data - PHOTO LOG

11/22/2025

11/22/2025

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202303-ANEK25719
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3.0
Motor Rpm	1760
Phase	3.0
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4572
SF RPM	-	49.8 HZ
OA CFM (Hoods On)	800	866
OA CFM (Hoods Off)	350	358
RL Voltage	-	181.6
RL Amperage	-	8.65
VFD Max SetPt	-	83.0
VFD Min SetPt	-	24.0
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.62"
Fan Suction SP	-	-0.90"
Fan Discharge SP	-	0.66"
Total ESP	-	1.28"
Fan Total SP	-	1.56"

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

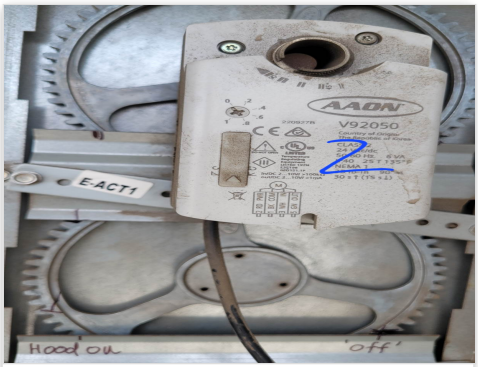
Completed By: Christine Weale on 11/22/2025

Notes:
RECOMMEND REPLACING SGRD-5 AND REOPENING DAMPER TO CONDITION BEHIND SODA MACHINES AND EVEN OUT AIR FLOW.

Written By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG

11/22/2025



11/22/2025

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202303-ANEK25717
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X22
Num Final Filter 1	2
Final Filter Size 1	46X19.5X2

Motor Data	
	Actual
Motor MFG	NL
Frame	NL
Horsepower	3.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4497
SF RPM	-	46.2 HZ
OA CFM (Hoods On)	800	853
OA CFM (Hoods Off)	350	358
RL Voltage	-	158.8
RL Amperage	-	7.7
VFD Max SetPt	-	77.0
VFD Min SetPt	-	24.0
OA Damper Position (Hoods On)	-	46.0
OA Damper Position (Hoods Off)	-	0.0

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.36"
Fan Suction SP	-	-0.55"
Fan Discharge SP	-	0.28"
Total ESP	-	0.64"
Fan Total SP	-	0.83"

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

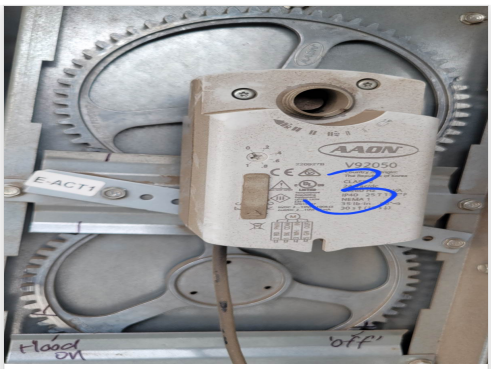
Completed By: Christine Weale on 11/22/2025

Notes:
DAMPERS INACCESSIBLE, SEE 'REMARKS'.

Written By: Christine Weale on 11/28/2025

Unit Data - PHOTO LOG

11/22/2025



11/22/2025

National TAB

Project:11-10-25 QT #0465 PHOENIX, 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	810	810	810	101.3
SGRD2	SUPPORT SERVICE	SI	12"	800	1	808	808	808	101.0
SGRD3	SUPPORT SERVICE	SI	12"	800	1	816	816	816	102.0
SGRD4	SUPPORT SERVICE	SI	12"	800	1	666	666	666	83.3
SGRD5	WORKROOM	ES	10"	500	1	523	523	523	104.6
SGRD6	WORKROOM	ES	10"	500	1	550	550	550	110.0
SGRD7	PLUMBING ROOM	ER	8"	540	1	324	324	324	60.0
Total				4740		4497	4497	4497	94.87%

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR50HFA
Serial Num	-	5920923
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	-	0.5\0.75
Motor Rpm	-	1625
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	5.6\8.4
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	750	834
Fan RPM	-	N/A
Fan Rotation	-	CCW
Motor RPM	-	N/A
System SetPt	-	LOW
RL Voltage	-	N/A
RL Amperage	-	7.51
Total ESP	-	0.17"
Fan Inlet SP	-	-0.17"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 11/22/2025

Unit Data - PHOTO LOG

11/22/2025

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7644877
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1408
Fan RPM	-	1217
Fan Rotation	-	CCW
Motor RPM	-	1217
System SetPt	-	51.8 HZ
RL Voltage	-	216.2
RL Amperage	-	1.93
Total ESP	-	0.66"
Fan Inlet SP	-	-0.66"
Fan Discharge SP	-	ATMS

Completed By: Christine Weale on 11/22/2025

Unit Data - PHOTO LOG

11/22/2025

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: FAN - Exhaust

Asset: EF4 AREA:COMBI-OVEN

Unit Data	
	Actual
MFG	NA
Model Num	NA

Test Data		
	Design	**Actual**
CFM	150	111

Completed By: Christine Weale on 11/28/2025

Notes:
INLINE FAN ADDED FOR COMBI-OVEN. NO SUBMITTAL PROVIDED AND FAN IS INACCESSIBLE. LOW ON AIRFLOW.

Written By: Michael McDonnell on 12/17/2025

National TAB

Project: 11-10-25 QT #0465 PHOENIX, AZ

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

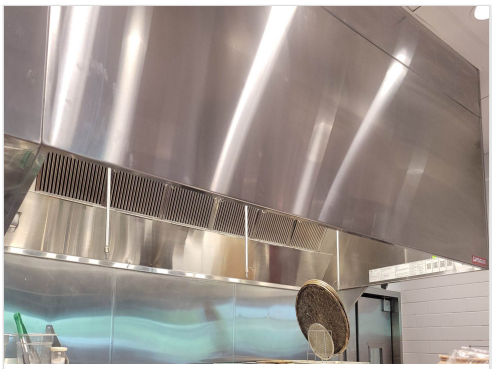
Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-F	6030 ND-2-F
Job / Serial Num	-	7644877
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	110
Filter2 FPM	-	123
Filter3 FPM	-	117
Filter4 FPM	-	112
Filter5 FPM	-	106
Filter6 FPM	-	109
Filter Ave FPM(corr)	-	113
CFM	1350	1408

Cooking Equipment	
	Actual
Item 1	FRYERS
Item 2	DUAL-OVEN

Completed By: Christine Weale on 11/22/2025

Unit Data - PHOTO LOG



11/22/2025