

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 01/20/2026
Completed By: National TAB

PROJECT
03-16-26 QT #0596 OMAHA, NE

5005 SOUTH 108TH STR

OMAHA, NE

Client

QUIKTRIP
4705 SOUTH 129TH EAST AVENUE
TULSA, OK 74134

National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

Table Of Contents

Section	Page #
Summary	3
Issue Data	4
Balance Schedule	14
Checklist	15
RTU-1	21
RTU-2	23
EF-1 - Exhaust	26
EF-2 - Hood Exhaust	28
Kitchen Hood Type I	30
EF-3 - Combi-Oven Exhaust	32
GRD Layout	34



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

- EF-1: Not Running
- EF-2: Air Leakage
- HOOD1: Smoke Capture
- RT-1: Air Leakage
- RT-1: Economizer/OA Damper
- RT-1: Fan Speed
- RT-2: Flex Duct
- RTs: Dirty Evaporator Coils
- RTs: Dirty Filters



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : EF-1: Not Running
Description : EF-1 is not running. Drive belt is broken. Motor does not turn on. Noticeable burn marks on the motor. Recommend Service
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Urgent **Asset Tag :** EF1
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : EF-2: Air Leakage
Description : There is minor air leakage observed at the fan base. This is causing the fan speed to be set higher to achieve design airflow. Recommend sealing connection.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : High **Asset Tag :** EF2
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : HOOD1: Smoke Capture
Description : The smoke capture was very poor (~70%) along the perimeter. This appears to be due too turbulence caused by the diffusers and minor air leakage at the fan base. Recommend sealing connection at EF-2 and installing rigid risers/elbows at neck of the diffusers.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : High **Asset Tag :** HD1
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : RT-1: Air Leakage
Description : Large amount of air leakage at the supply drop for RT-1. The curb for the unit is not properly aligned. There is approximately 20% loss in airflow. Recommend aligning drop for improved airflow.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : High **Asset Tag :** RT-1
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : RT-1: Economizer/OA Damper
Description : The Economizer/actuator is not attached to the OA gears. OA damper position set manually and fastened with a screw.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Medium **Asset Tag :** RT-1
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

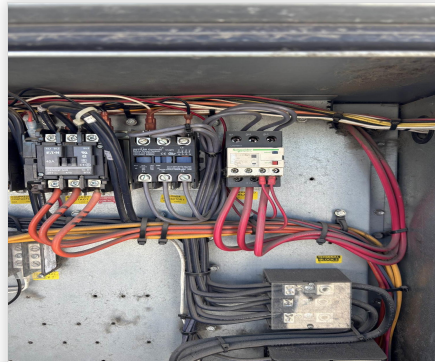
Project Issue Information

Issue Name : RT-1: Fan Speed
Description : There is no VFD/Speed Controller for RT-1. Unable to adjust fan speed for improved airflow.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : High **Asset Tag :**
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : RT-2: Flex Duct
Description : The diffusers for RT-2 have flex duct ran all the way to them. The flex is pinched at the neck of the diffuser causing turbulence at the face of it and at the hood. Recommend installing rigid risers/elbows to neck of the diffusers.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Medium **Asset Tag :** RT-2
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026



03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : RTs: Dirty Evaporator Coils
Description : The evaporator coils inside the RTUs are dirty. This affects unit performance and efficiency. Recommend cleaning.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026

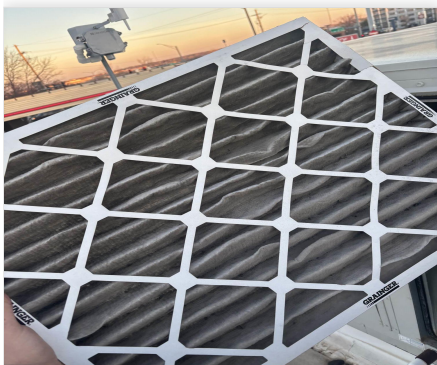


03-16-26 QT #0596 OMAHA, NE

Project Issue Information

Issue Name : RTs: Dirty Filters
Description : The filters inside the RTUs are dirty. Recommend replacing.
Created By : National TAB **Assigned To :** National TAB - Dan Hertenstein
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 03/19/2026 - Kalen Kemp - National TAB

Project Issue File Details



03/19/2026



03/19/2026

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	700	738	700	738				
RTU-2	BOH	1350	1358	0	0				
EF-1	RESTROOMS					250	0	250	0
EF-2	HOOD					1350	1298	0	0
EF-3	COMBI-OVEN					150	149	150	149
TOTALS		2050	2096	700	738	1750	1447	400	149

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2050	2096
TOTAL EXHAUST	1750	1447
NET AIRFLOW	300	649

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0091
SIDE	0.0092
REAR	N/A
AVERAGE	0.0092

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	700	738
TOTAL EXHAUST	400	149
NET AIRFLOW	300	589

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0058
SIDE	0.0055
REAR	N/A
AVERAGE	0.0057

NOTES:

EF-1 NOT RUNNING. WILL RETURN TO BALANCE ONCE ISSUES ARE RESOLVED.

CheckList List

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



03-16-26 QT #0596 OMAHA, NE

CheckList Information

Name : 01: RTU's/AHU's **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/20/2026 - Trinity Dodds - National TAB
Completed Date : 03/19/2026 - Kalen Kemp - National TAB

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean? Fail

Comment:

Dirty coils in both RTUs

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:



03-16-26 QT #0596 OMAHA, NE

CheckList Information

Name : 02: Exhaust Fans **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/20/2026 - Trinity Dodds - National TAB
Completed Date : 03/19/2026 - Kalen Kemp - 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:

Minor air leakage observed at fan base.

Unit is free of noise and vibration Pass

Comment:



03-16-26 QT #0596 OMAHA, NE

CheckList Information

Name : 03: Hoods **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 01/20/2026 - Trinity Dodds - National TAB

Completed Date : 03/19/2026 - Kalen Kemp - National TAB

CheckList Item Details

HOODS

Hood is free of alarms? Pass

Comment:

HMI displays proving fault when RT-3/EF-2 are turned off. This also turns off all kitchen equipment underneath the hood. Likely caused by interlock that is required by code in Omaha.

Hood is free of damage? Pass

Comment:

End panels are installed per prototype? Fail

Comment:

End panels could not be installed due to locations of kitchen equipment.



03-16-26 QT #0596 OMAHA, NE

CheckList Information

Name : 04: Final Tests **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 01/20/2026 - Trinity Dodds - National TAB

Completed Date : 03/19/2026 - Kalen Kemp - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Fryers, Pizza Ovens

List smoke candle type used

Comment:

S102 (45 sec)

Smoke test capture % - Perimeter of hood

Comment:

70% Smoke Capture

Smoke test capture % - Top of cooking surface

Comment:

100% Smoke Capture

WITNESS

Date test was completed

03/19/2026

Comment:

TAB tech name / Firm

Comment:

Kalen Kemp / National TAB

Site super name / Firm

Comment:

Sam Snyder / Snyder Construction; Kari Heinrich / QT Projects

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:

Notes/Comments :

Hood has poor smoke capture along the perimeter. This is due to turbulence being caused by the flex duct in the diffusers. Recommend installing rigid risers/elbows in neck of the diffusers.

Date :03/19/2026



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201208-ANGL24737
Model Num	RN-015-8-0-CA02-2F2
Num OA Filters 1	1
OA Filter Size 1	22.5X45"
Num Final Filter 1	4
Final Filter Size 1	20X25X2"

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	5.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	16.7

Test Data		
	Design	Actual
SF CFM	5000	4526
SF RPM	-	NA
OA CFM (Hoods On)	700	738
OA CFM (Hoods Off)	700	738
RL Voltage	-	206/207/208
RL Amperage	-	12.7/12.8/12.0
VFD Max SetPt	-	N/A
VFD Min SetPt	-	N/A
OA Damper Position (Hoods On)	-	0.875" OPEN
OA Damper Position (Hoods Off)	-	0.875" OPEN

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.67"
Fan Suction SP	-	-1.05"
Fan Discharge SP	-	0.13"
Total ESP	-	0.80"
Fan Total SP	-	1.18"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Kalen Kemp on 03/19/2026

Notes:

- MOTOR DATA RETRIEVED FROM UNIT TAG.
- FINAL FILTERS ARE DIRTY.
- EVAPORATOR COIL IS DIRTY.
- NO VFD OR SPEED CONTROLLER. UNABLE TO ADJUST FAN SPEED.
- CURB NOT ALIGNED PROPERLY WITH SUPPLY DROP. CAUSING LARGE AMOUNT OF AIR LEAKAGE ABOVE CEILING. MEASURED TOTAL AIRFLOW BY ADDING OA CFM AND RA CFM.
- OA ACTUATOR NOT CONNECTED TO OA DAMPER ARM. OA DAMPER POSITION SET MANUALLY.
- DISCHARGE PRESSURE READING TAKEN AT UNIT ON THE ROOF. READING IS LOW DUE TO AIR LEAKAGE AT THE DROP.

Written By: Kalen Kemp on 03/19/2026

Unit Data - PHOTO LOG



03/19/2026



03/19/2026



03/19/2026



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: AHU/RTU

Asset: RT-2

AREA:BOH

Unit Data	
	Actual
MFG	AAON
Serial Num	201406-ANGJ36139
Model Num	RN-010-8-0-FB09-3L9
Num OA Filters 1	1
OA Filter Size 1	16.5X27.5"
Num Final Filter 1	4
Final Filter Size 1	16X20X2"

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	1.0
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	4.6

Test Data		
	Design	Actual
SF CFM	1350	1358
SF RPM	-	NA
OA CFM (Hoods On)	1350	1358
OA CFM (Hoods Off)	0	0
RL Voltage	-	207/208/208
RL Amperage	-	1.87/1.84/1.84
VFD Max SetPt	-	44.8 Hz
VFD Min SetPt	-	24.0 Hz
OA Damper Position (Hoods On)	-	6.375" OPEN (100%)
OA Damper Position (Hoods Off)	-	0" OPEN (0%)

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.07"
Fan Suction SP	-	-0.21"
Fan Discharge SP	-	0.18"
Total ESP	-	0.25"
Fan Total SP	-	0.39"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Kalen Kemp on 03/19/2026

Notes:

- MOTOR DATA RETRIEVED FROM UNIT TAG.
- FINAL FILTERS ARE DIRTY.
- EVAPORATOR COIL IS DIRTY.

Written By: Kalen Kemp on 03/19/2026

Unit Data - PHOTO LOG



03/19/2026



03/19/2026



03/19/2026



National TAB

Project:03-16-26 QT #0596 OMAHA, NE

AHU/RTU

Diffuser Supply (GRD)

RT-2/BOH

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	BOH	RS	12"	675	1.0	841	707	668	99.0
SGRD2	BOH	RS	12"	675	1.0	559	737	690	102.2
Total				1350		1400	1444	1358	100.59%



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: FAN - Exhaust

Asset: EF1

AREA:RESTROOMS

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	100C2B
Serial Num	-	009S428536000000700396
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Test Data		
	Design	Actual
CFM	240	0

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	48Z
Horsepower	-	0.167
Motor Rpm	-	NL
Phase	-	1
Voltage (rated)	-	NL
Amperage (rated)	-	NL
Service Factor	-	NL

Completed By: Kalen Kemp on 03/19/2026

Notes:

- FAN NOT RUNNING. DRIVE BELT IS BROKEN. RECOMMEND SERVICE.
- MOTOR NOT RUNNING. HAS NOTICEABLE BURN MARKS ON IT.

Written By: Kalen Kemp on 03/19/2026



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: FAN - Exhaust

Asset: EF2

AREA:GRIDDLE EXHAUST

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7257691
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	48
Horsepower	0.50	0.50
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1350	1298
Fan RPM	-	1310
Fan Rotation	-	CCW
Motor RPM	-	1310
System SetPt	-	57.8 Hz
RL Voltage	-	207
RL Amperage	-	2.84/2.90
Total ESP	0.75"	0.79"
Fan Inlet SP	-	-0.79"
Fan Discharge SP	-	ATM

Completed By: Kalen Kemp on 03/19/2026

Notes:
 -MINOR AIR LEAKAGE OBSERVED AT FAN BASE
 -RPM DATA RETRIEVED FROM MOTOR SPEED CONTROLLER IN MOTOR COMPARTMENT.

Written By: Kalen Kemp on 03/19/2026

Unit Data - PHOTO LOG



03/19/2026



03/19/2026



03/19/2026



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: Kitchen Hood Type I

Asset: HD1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	8257691
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	108"	108"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	20X16	20X16
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	103
Filter2 FPM	-	98
Filter3 FPM	-	103
Filter4 FPM	-	107
Filter5 FPM	-	106
Filter6 FPM	-	105
Filter Ave FPM(corr)	-	104
CFM	1350	1298

Cooking Equipment	
	Actual
Item 1	FRYER (2)
Item 2	PIZZA OVEN (2)

Completed By: Kalen Kemp on 03/19/2026

Notes:

-HOOD HAS POOR SMOKE CAPTURE ALONG THE PERIMETER. SMOKE CAPTURE IS 100% AT COOKING SURFACE. WE DO NOT ANTICIPATE ANY SMOKE LOSS FROM COOKING SURFACES.

Written By: Kalen Kemp on 03/19/2026



National TAB

Project: 03-16-26 QT #0596 OMAHA, NE

System/Unit: FAN - Exhaust

Asset: EF3

AREA:COMBI OVEN

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	SIFI0DD-SS
Serial Num	-	8257691
Type	INLINE	INLINE
Configuration	VERTICAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.3	0.250
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	2.9
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	150	149
Fan RPM	-	641
Fan Rotation	-	NA
Motor RPM	-	641
System SetPt	-	38%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.08"
Fan Inlet SP	-	-0.05"
Fan Discharge SP	-	0.03"

Completed By: Kalen Kemp on 03/19/2026

Notes:

-COULD NOT SAFELY ACCESS VOLTAGE/AMPERAGE READINGS.

Written By: Kalen Kemp on 03/19/2026

Unit Data - PHOTO LOG



03/19/2026

