

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 01/28/2026
Completed By: National TAB

PROJECT

**02-23-26 WHATABURGER #1572 GLENDALE,
AZ**

9700 W Northern Ave

GLENDALE, AZ

Client

Whataburger Restaurants
300 Concord Plaza Dr

San Antonio, TX 78216

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

Table Of Contents

Section	Page #
Summary	3
Balance Schedule	4
AHU/RTU	5
Diffuser Supply (GRD)	11
FAN - Exhaust	13
Kitchen Hood Type I	20
GRD Layout	22



National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ
Function: Test, Adjust, & Balance

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 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.

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.

Exhaust Fans w/ Registers

The exhaust fan was measured at the grilles to measure the total flow. The fan was then adjusted to bring airflow within tolerance of the engineer's design flow. Each grille was then adjusted to within tolerance of design flow.

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.

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	KITCHEN	3850	3902	1390	1529	2460	2373	63.9%	60.8%						
RTU-2	DINING	2050	2039	500	528	1550	1511	75.6%	74.1%						
KEF-1	GRILL HOOD											1995	2052		
KEF-2	FRYER HOOD											1216	1206		
EF-1	RESTROOMS													300	301
TOTALS		5900	5941	1890	2057	4010	3884			0	0	3211	3258	300	301

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4010	3884
TOTAL EXHAUST	3511	3559
NET AIRFLOW	499	325

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.007
SIDE	0.0103
REAR	0.0083
AVERAGE	0.0085

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

NOTES:

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: AHU/RTU



Asset: RTU-1

AREA:KITCHEN

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Serial Num	8251795
Model Num	CAS-HVAC3-I.300-20-20T
Num OA Filters 1	4
OA Filter Size 1	16X25X2
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	NEMA
Frame	-	184T
Horsepower	3.00	5
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	13.6

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD
Belt Alignment	DD

Test Data		
	Design	Actual
SF CFM (Traverse)	-	4082
SF CFM	3850	3902
SF RPM	-	1283
MOTOR RPM	-	1283
RA CFM (Traverse)	-	1505
RA CFM	1390	1529
OA CFM	2460	2373
RL Voltage	-	141@VFD
RL Amperage	-	9.6@VFD
SF System SetPt	-	44HZ
RA Damper Position	-	40%
Min OA Damper Position	-	60%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.30"
Fan Suction SP	-	-0.66"
Fan Discharge SP	-	0.32"
Total ESP	0.75"	0.62"
Fan Total SP	-	0.98"

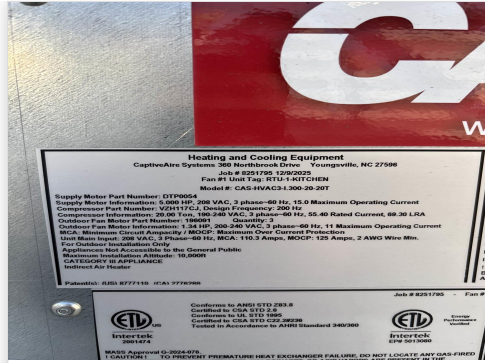
General	
	Actual
Unit free of Damage	YES
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG



02/23/2026



02/23/2026



02/23/2026

National TAB

Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

AHU/RTU



Diffuser Supply (GRD)

RTU-1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	BOH DOOR	H10	12"	150	1	44	145	145	96.7
SGRD2	DRY STORAGE	A5	10"	175	1	278	177	177	101.1
SGRD3	BOH	A5	10"	320	1	309	308	308	96.3
SGRD4	OFFICE	A3	6"	90	1	105	93	93	103.3
SGRD5	WASH ROOM	A3	6"	70	1	72	77	77	110.0
SGRD6	KITCHEN	A6	12"	520	1	455	505	505	97.1
SGRD7	KITCHEN	A6	12"	520	1	630	541	541	104.0
SGRD8	KITCHEN	A6	12"	470	1	624	450	450	95.7
SGRD9	KITCHEN	A6	12"	500	1	102	466	466	93.2
SGRD10	KITCHEN	P1	8"	200	1	167	186	186	93.0
SGRD11	KITCHEN	A5	10"	345	1	324	317	317	91.9
SGRD12	KITCHEN	A6	12"	520	1	530	484	484	93.1
SGRD13	WOMEN'S RR	B3	6"	75	1	93	76	76	101.3
SGRD14	MEN'S RR	B3	6"	75	1	109	77	77	102.7
Total				4030		3842	3902	3902	96.82%

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: AHU/RTU



Asset: RTU-2

AREA:DINING

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Serial Num	8251795
Model Num	CAS-HVAC3-I.200-15-15T
Num OA Filters 1	4
OA Filter Size 1	16X25X2
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	NEMA
Frame	-	145T
Horsepower	2.00	1.5
Motor Rpm	-	1740
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	4.02

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD
Belt Alignment	DD

Test Data		
	Design	Actual
SF CFM (Traverse)	-	2170
SF CFM	2050	2039
SF RPM	-	1276
MOTOR RPM	-	1276
RA CFM (Traverse)	-	561
RA CFM	500	528
OA CFM	1550	1511
RL Voltage	-	141@VFD
RL Amperage	-	2.9@VFD
SF System SetPt	-	44HZ
RA Damper Position	-	4.0V
Min OA Damper Position	-	6.0V
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.12"
Fan Suction SP	-	-0.21"
Fan Discharge SP	-	0.15"
Total ESP	0.50"	0.27"
Fan Total SP	-	0.36"

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

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

AHU/RTU



Diffuser Supply (GRD)

RTU-2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRANCE	P3	10"	100	0.85	158	103	103	103.0
SGRD2	DINING	H9	10"	100	0.85	162	104	104	104.0
SGRD3	DINING	H9	10"	100	0.85	201	96	96	96.0
SGRD4	DINING	H9	10"	100	0.85	173	99	99	99.0
SGRD5	DINING	H9	10"	100	0.85	103	102	102	102.0
SGRD6	DINING	H9	10"	100	0.85	76	91	91	91.0
SGRD7	SIDE ENTRANCE	H9	10"	100	0.85	121	96	96	96.0
SGRD8	SIDE ENTRANCE	H9	10"	100	0.85	111	107	107	107.0
SGRD9	DINING	H9	10"	100	0.85	119	102	102	102.0
SGRD10	DINING	H9	10"	100	0.85	84	95	95	95.0
SGRD11	DINING	H9	10"	100	0.85	142	103	103	103.0
SGRD12	DINING	H9	10"	100	0.85	105	107	107	107.0
SGRD13	DINING	A4	8"	170	1	112	102	102	60.0
SGRD14	DINING	A4	8"	170	1	156	183	183	107.6
SGRD15	DINING	A4	8"	170	1	136	187	187	110.0
SGRD16	SERVING AREA	A4	8"	240	1	103	253	253	105.4
SGRD17	SERVING AREA	H9	8"	100	0.85	109	109	109	109.0
Total				2050		2171	2039	2039	99.46%

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ



Diffuser Supply (GRD)

RTU-1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	BOH DOOR	H10	12"	150	1	44	145	145	96.7
SGRD2	DRY STORAGE	A5	10"	175	1	278	177	177	101.1
SGRD3	BOH	A5	10"	320	1	309	308	308	96.3
SGRD4	OFFICE	A3	6"	90	1	105	93	93	103.3
SGRD5	WASH ROOM	A3	6"	70	1	72	77	77	110.0
SGRD6	KITCHEN	A6	12"	520	1	455	505	505	97.1
SGRD7	KITCHEN	A6	12"	520	1	630	541	541	104.0
SGRD8	KITCHEN	A6	12"	470	1	624	450	450	95.7
SGRD9	KITCHEN	A6	12"	500	1	102	466	466	93.2
SGRD10	KITCHEN	P1	8"	200	1	167	186	186	93.0
SGRD11	KITCHEN	A5	10"	345	1	324	317	317	91.9
SGRD12	KITCHEN	A6	12"	520	1	530	484	484	93.1
SGRD13	WOMEN'S RR	B3	6"	75	1	93	76	76	101.3
SGRD14	MEN'S RR	B3	6"	75	1	109	77	77	102.7
Total				4030		3842	3902	3902	96.82%

Completed By: Ethan Van Orden on 02/23/2026

RTU-2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRANCE	P3	10"	100	0.85	158	103	103	103.0
SGRD2	DINING	H9	10"	100	0.85	162	104	104	104.0
SGRD3	DINING	H9	10"	100	0.85	201	96	96	96.0
SGRD4	DINING	H9	10"	100	0.85	173	99	99	99.0
SGRD5	DINING	H9	10"	100	0.85	103	102	102	102.0
SGRD6	DINING	H9	10"	100	0.85	76	91	91	91.0
SGRD7	SIDE ENTRANCE	H9	10"	100	0.85	121	96	96	96.0
SGRD8	SIDE ENTRANCE	H9	10"	100	0.85	111	107	107	107.0
SGRD9	DINING	H9	10"	100	0.85	119	102	102	102.0
SGRD10	DINING	H9	10"	100	0.85	84	95	95	95.0
SGRD11	DINING	H9	10"	100	0.85	142	103	103	103.0
SGRD12	DINING	H9	10"	100	0.85	105	107	107	107.0
SGRD13	DINING	A4	8"	170	1	112	102	102	60.0
SGRD14	DINING	A4	8"	170	1	156	183	183	107.6
SGRD15	DINING	A4	8"	170	1	136	187	187	110.0
SGRD16	SERVING AREA	A4	8"	240	1	103	253	253	105.4
SGRD17	SERVING AREA	H9	8"	100	0.85	109	109	109	109.0
Total				2050		2171	2039	2039	99.46%

Completed By: Ethan Van Orden on 02/23/2026

TRAVERSES/

Asset					
Asset Name	Size	DESIGN CFM	VEL(1)	FINAL CFM	% to design
RETURN TRAVERSE - RTU1	20X18	1390	602	1505	108.3
RETURN TRAVERSE - RTU2	20X18	500	223	561	112.2

TRAVERSES/

Asset					
Asset Name	Size	DESIGN CFM	VEL(1)	FINAL CFM	% to design
SUPPLY TRAVERSE - RTU1	24X22	3850	1113	4082	106.0
SUPPLY TRAVERSE - RTU2	28X12	2050	930	2170	105.9
Total		7790		8318	106.78%

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust



Asset: EF-1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	G-080-VG	G-080-VG-1-17-X
Serial Num	-	28145897
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.10	0.10
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.38
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	300	301
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	8-DIAL
RL Voltage	-	115
RL Amperage	-	0.68
Total ESP	0.50"	0.37"
Fan Inlet SP	-	-0.37"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

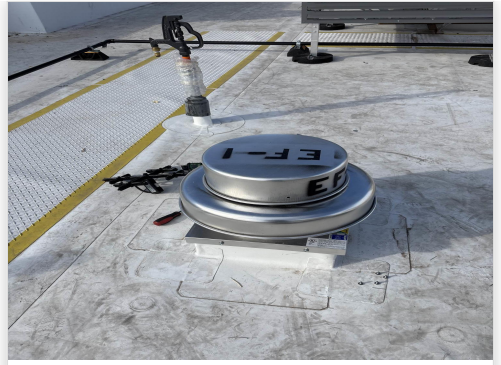
Unit Data - PHOTO LOG



02/23/2026



02/23/2026



02/23/2026

National TAB

Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

FAN - Exhaust



Diffuser Ret/Exh (GRD)

EF-1/RESTROOM

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	WOMEN'S RR	F1	6X6	150	1	157	148	148	98.7
EGRD2	MEN'S RR	F1	6X6	150	1	37	153	153	102.0
Total				300		194	301	301	100.33%

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust



Asset: KEF-1

AREA:GRILL HOOD

Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	CUE-140-VG	CUE-140-7-VG-1-26-G
Serial Num	-	28145898 25L
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.75	0.75
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	5.4
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1995	2052
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	7-DIAL
RL Voltage	-	208
RL Amperage	-	3.2
Total ESP	1.00"	0.91"
Fan Inlet SP	-	-0.91"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG



02/23/2026



02/23/2026



02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust



Asset: KEF-2

AREA:FRYER HOOD

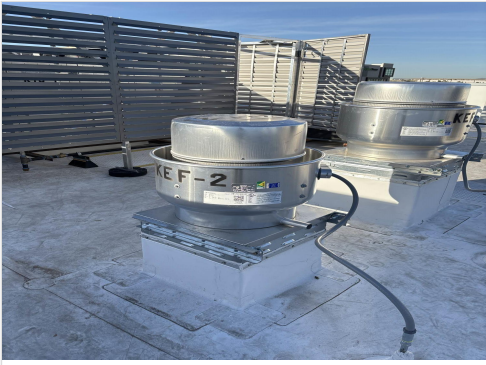
Unit Data		
	Design	Actual
MFG	GREENHECK	GREENHECK
Model Num	CUE-120-VG	CUE-120-5--VG-1-22-G
Serial Num	-	28145899 25L
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.50	0.50
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1216	1206
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	6-DIAL
RL Voltage	-	208
RL Amperage	-	2.1
Total ESP	0.75"	0.77"
Fan Inlet SP	-	-0.77"
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG



02/23/2026



02/23/2026



02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: Kitchen Hood Type I



Asset: HD-1

AREA:GRIDDLE

Unit Data		
	Design	Actual
MFG	H&K	H&K
Model Num	HKD027	HKD027
Job / Serial Num	-	8192986-001
Type	-	TYPE I CANOPY
Hood length	-	87"
Hood Width	-	57"

Test Data Exhaust		
	Design	Actual
Filter Type	-	BAFFLE
Filter Size 1	-	12X20
Filter Qty 1	-	8
Filter AK factor size 1	-	1.5
Filter Total AK Area	-	12
Filter1 FPM	-	152
Filter2 FPM	-	180
Filter3 FPM	-	186
Filter4 FPM	-	163
Filter5 FPM	-	180
Filter6 FPM	-	180
Filter7 FPM	-	174
Filter8 FPM	-	154
Filter Ave FPM(corr)	-	171
CFM	1995	2052

Cooking Equipment	
	Actual
Item 1	GRIDDLE
Item 2	GRIDDLE

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: Kitchen Hood Type I



Asset: HD-2

AREA:FRYER

Unit Data		
	Design	Actual
MFG	H&K	H&K
Model Num	HKD023	HKD023
Job / Serial Num	-	8193792-001
Type	-	TYPE I CANOPY
Hood length	-	65"
Hood Width	-	22"

Test Data Exhaust		
	Design	Actual
Filter Type	-	BAFFLE
Filter Size 1	-	16X12
Filter Qty 1	-	4
Filter AK factor size 1	-	1.16
Filter Total AK Area	-	4.64
Filter1 FPM	-	272
Filter2 FPM	-	267
Filter3 FPM	-	263
Filter4 FPM	-	239
Filter Ave FPM(corr)	-	260
CFM	1216	1206

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	FRYER

Completed By: Ethan Van Orden on 02/23/2026

