Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 04/20/2023

PROJECT

04-17-23 FREDDY'S - AUGUSTA, SC

505 W Martintown Rd

AUGUSTA, SC 29841

Client

316 Restaurant Group
109 Knox Abbott Dr. Unit 2109

Cayce, SC 29033

National TAB

Project: 04-17-23 FREDDY'S - AUGUSTA, SC

Table Of Contents

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.

DOAS w/ Diffusers

Each of the DOAS were measured at their terminal devices or via traverse to establish a total flow for that unit. Each DOAS 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.

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.

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 of -0.02" wc to +0.02" wc 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.

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04-17-23 FREDDY'S - AUGUSTA, SC

Project Issue Information

Issue Name : EF1 / SPEED CONTROLLER

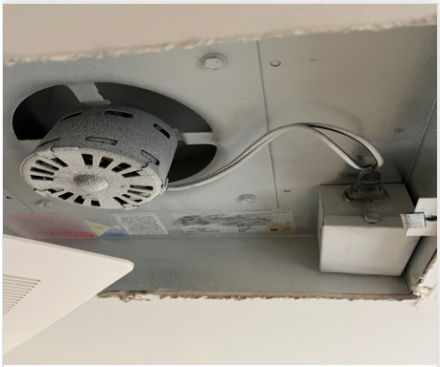
Description : EF1 IS HIGH OF DESIGN CFM. NO SPEED CONTROLLER IS INSTALLED. THIS IS A NON-CRITICAL ISSUE. RR HAS NEGATIVE PRESSURE.

Created By : National TAB **Assigned To :** National TAB - Dale Wheeler

Status : Open

Originated Date : 04/19/2023 - Dale Wheeler - National TAB

Project Issue File Details



EF1.jpeg

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04-17-23 FREDDY'S - AUGUSTA, SC

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

STORE FRONT

STOREFRONT.jpeg

DOAS-1

RTU1.jpeg

DOAS-2

DOAS1.jpeg

KEF-1

KEF1.jpeg

KEF-2

KEF2.jpeg

KEF-3

KEF3.jpeg

EF-1

EF1.jpeg

EF-2

EF2.jpeg

HOOD-1

HOOD1.jpeg

HOOD-2

HOOD2.jpeg

HOOD-3

HOOD3.jpeg

Notes/Comments :

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04-17-23 FREDDY'S - AUGUSTA, SC

CheckList Information

Name :	TECH - STEP 1: INITIAL WALKTHROUGH	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	YES
All hood filters installed and accounted for?	YES
Hoods are wired and have power?	YES
Hood is free of alarms?	YES
Thermostats have power?	YES
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	N/A

Notes/Comments :

N/A

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04-17-23 FREDDY'S - AUGUSTA, SC

CheckList Information

Name :	TECH - STEP 2: UNIT DATA AND EVAL	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional?	YES
DCV Max damper opening position is set to minimum?	FREE COOLING IS DISABLED
Free cooling enthalpy set point set for lowest setting (Typically "D")	FREE COOLING IS DISABLED
Motors are all operating below the FLA rating?	YES
Are belts tight?	YES
If direct drive unit is the speed controller working.	YES
Is gas piping installed and valves turned on?	YES
Unit free of noticeable noise and vibration	YES

EF's

Rotation is correct?	YES
Belts are tight?	N/A
Grease cup installed on hood fan?	YES
Hinge kit installed installed on hood fan?	YES
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	YES

Flex conduit is long enough so that fan can be completely tilted back?	YES
There is no major leakage around base of fan?	NO LEAKAGE TO NOTE
Is the motor operating below the motor FLA rating?	YES
For restroom fan(s) is the back draft damper installed and can it fully open?	N/A
Unit free of noticeable noise and vibration?	YES
MUA	
Rotation is correct?	N/A
Gas piping is installed and valves are in on position?	N/A
Heater tested and is functional?	N/A
Internal motorized damper is fully opening?	N/A
Motor is operating below the FLA rating?	N/A
Unit free of noticeable noise and vibration?	N/A
HOODS	
Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	NO
Griddle is completely centered underneath hood?	YES
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	STORE HAS BEEN TURNED OVER TO FREDDYS
PICTURES TAKEN OF:	
All Issues	YES
Each Piece of equipment	YES
Each Hood	YES
Front of Store	YES

Notes/Comments :

N/A

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04-17-23 FREDDY'S - AUGUSTA, SC

CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	YES
Is space comfortable in all areas?	YES
Is the space free of ventilation noise?	YES
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	N/A

Notes/Comments :

N/A

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04-17-23 FREDDY'S - AUGUSTA, SC

CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	NO EQUIPMENT COULD BE TURNED ON FOR TEST
List smoke candle type used	SMOKE EMITTER
Smoke test capture - Perimeter of hood	100%
Smoke test capture - Top of cooking surface	100%
WITNESS	
Date test was completed	04/20/2023
TAB tech name / Firm	DALE WHEELER / NTAB
Site super name / Firm	GC NOT ON SITE, BUILDING HAS BEEN TURNED OVER TO FREDDYS. SMOKE TEST IS ON VIDEO
Owner representative name / Firm (if Applicable)	N/A
Building pressure at front & back doors (All Systems On)	FRONT DOOR +0.011'' / SIDE DOOR +0.012'' / BACK DOOR +0.0113'' / ALL SYSTEMS ON
ADDITIONAL	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	YES
Thermostats are programmed?	DOAS HMI IS PRE-PROGRAMMED RTU1 THERMOSTAT HAS BEEN PROGRAMMED

Thermostats Schdedules: Program all thermostats to following settings:	
All three thermostats have correct time/date? (if not set correctly)	YES
Occupied Time: 8am-11:55pm	YES
Occupied Fan ON	YES
Occupied cooling 74	RTU1 SET TO 73
Occupied heating 68	YES
Unoccupied Time 11:55pm-8am	YES
Unoccupied Fan Auto	YES
Unoccupied cooling 79	YES
Unoccupied heating 63	YES
Set a Partial Screen Lock for Thermostats (i.e., make sure temperature is adjustable but not schedule)	UNABLE TO SET PARTIAL SCREEN LOCK
Password is set to 999 for Partial Screen Lock?	UNABLE TO SET PARTIAL SCREEN LOCK
RTU Economizers	
Note: These instructions are for Lennox units. There are similar settings for other OEMs. Call office for assistance if needed.	
Enthalpy is set to "D" for all three units	RTU1 FREE COOLING DISABLED / YORK
"DCV Set" dials turned all the way to the left (counter clockwise)	RTU1 FREE COOLING DISABLED / YORK
"DCV Max" dials turned all the way to the left (counter clockwise)	RTU1 FREE COOLING DISABLED / YORK

Notes/Comments :

N/A

National TAB

Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: AHU/RTU

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Asset: DOAS1 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	YORK
Serial Num	-	N243361852
Model Num	CASRTU3-I.200-15-15T-DOAS	ZJ090N18R2B5EAE1A3
Type	DOAS	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29X 19.5
Num Final Filter 1	-	4
Final Filter Size 1	-	20X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	56HZ
Horsepower	2	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.3

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	1VL50
Motor Bore Size	-	7/8
Motor Sheave SetPt	-	1 TURN OUT
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1.0"
Belt CL Distance	-	19.25"
Num of Belts	-	1
Belt Size	-	A54
Belt Alignment	-	GOOD

Test Data		
	Design	**Actual**
SF CFM	3050	3092
SF RPM	-	1064
RA CFM	2450	2439
OA CFM	600	653
RL Voltage	-	211/212/211
RL Amperage	-	7.9/7.9/8.1
SF Rotation	-	CCW
RA Damper Position	-	5.75"
Min OA Damper Position	-	26%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.708"
Fan Suction SP	-	-1.03"
Fan Discharge SP	-	0.422"
Total ESP	0.5"	1.13"
Fan Total SP	-	1.452"

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

Completed By: Dale Wheeler

Notes:

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Project:04-17-23 FREDDY'S - AUGUSTA, SC

AHU/RTU

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Diffuser Supply (GRD)

DOAS1/

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	SD1	10"	320	1	422	365	328	102.5
SGRD2	DINING	SD1	10"	315	1	322	338	311	98.7
SGRD3	DINING	SD1	10"	315	1	611	412	345	109.5
SGRD4	DINING	SD1	10"	315	1	128	287	302	95.9
SGRD5	DINING	SD1	10"	320	1	145	247	314	98.1
SGRD6	DINING	SD1	10"	315	1	177	262	299	94.9
SGRD7	DINING	SD1	10"	315	1	423	277	313	99.4
SGRD8	DINING	SD1	10"	320	1	412	341	341	106.6
SGRD9	DINING	SD1	10"	315	1	165	295	341	108.3
SGRD10	RR VESTIBULE	SD5	6"	50	1	134	48	55	110.0
SGRD11	RESTROOM	SD5	6"	100	1	99	102	90	90.0
SGRD12	RESTROOM	SD5	6"	50	1	99	78	53	106.0

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: AHU/RTU

Comfort. Under control.

Asset: DOAS2 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5456532
Model Num	CASRTU2-I.250-18-8T-DOAS	CASRTU3-I.200-15-15T
Type	DOAS	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45.75"X34"
Num Final Filter 1	-	8
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	145T
Horsepower	2	2.0
Motor Rpm	-	1740
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	5.48

Drive Data		
	Design	**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	2400	2397
SF RPM	-	61 HZ. / DD
RA CFM	0	0
OA CFM	2400	2397
RL Voltage	-	210/211/212
RL Amperage	-	5.2/5.4/5.4
SF Rotation	-	CCW
RA Damper Position	-	CLOSED
Min OA Damper Position	-	10.0V / 100% OPEN
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.634"
Fan Suction SP	-	-1.13"
Fan Discharge SP	-	0.199"
Total ESP	-	0.833"
Fan Total SP	-	1.329"

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

Completed By: Dale Wheeler

Notes:

National TAB

Project:04-17-23 FREDDY'S - AUGUSTA, SC

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

DOAS2/

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	KITCHEN	SD3	10"	250	1	133	179	211	84.4
SGRD2	OFFICE	SD4	8"	50	1	99	136	50	100.0
SGRD3	KITCHEN	SD3	10"	250	1	147	191	225	90.0
SGRD4	KITCHEN	SD3	10"	250	1	152	191	219	87.6
SGRD5	KITCHEN	SD3	10"	250	1	194	245	231	92.4
SGRD6	KITCHEN	SD3	10"	250	1	188	237	240	96.0
SGRD7	KITCHEN	SD2	10"	250	1	214	228	226	90.4
SGRD8	KITCHEN	SD3	10"	250	1	178	225	255	102.0
SGRD9	KITCHEN	SD3	10"	250	1	170	215	232	92.8
SGRD10	KITCHEN	SD3	10"	250	1	172	218	253	101.2
SGRD11	KITCHEN	SD2`	10"	250	1		225	255	102.0

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	PENNBARRY
Model Num	NA	ZJ1
Serial Num	-	J22A099139
Type	-	CEILING MOUNTED
Configuration	-	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	FASCO
Frame	-	N/L
Horsepower	-	N/L
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.4
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	-	157
Fan RPM	-	1550
Fan Rotation	-	CCW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	122
RL Amperage	-	1.3
Total ESP	-	N/L
Fan Inlet SP	-	N/L
Fan Discharge SP	-	ATM

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Notes:

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	PENNBARRY
Model Num	NA	ZJ1
Serial Num	-	J22A099139
Type	-	CEILING MOUNTED
Configuration	-	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	FASCO
Frame	-	N/L
Horsepower	-	N/L
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.4
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	-	160
Fan RPM	-	1550
Fan Rotation	-	CCW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	121
RL Amperage	-	1.3
Total ESP	-	N/R
Fan Inlet SP	-	N/R
Fan Discharge SP	-	ATM

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: KEF1 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CASRE18DD	CASRE18DD
Serial Num	-	5456532
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	145T
Horsepower	1	1.0
Motor Rpm	-	1150
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	3.44
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	1600	1539
Fan RPM	1105	DD / 57.7HZ
Fan Rotation	-	CCW
Motor RPM	-	DD / 57.7 HZ
System SetPt	-	57.7 HZ
RL Voltage	-	211/210/210
RL Amperage	-	3.2
Total ESP	1.4"	N/R
Fan Inlet SP	-	N/R
Fan Discharge SP	-	ATM

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Notes:

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: KEF2 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU50HFA	DU50HFA
Serial Num	-	5456532
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	N/L
Horsepower	0.5	0.5
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.3
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	775	743
Fan RPM	1532	62% / DD
Fan Rotation	-	CCW
Motor RPM	-	62% DD
System SetPt	-	62%
RL Voltage	-	121
RL Amperage	-	3.22
Total ESP	1.250"	0.583"
Fan Inlet SP	-	-0.583"
Fan Discharge SP	-	ATM

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Notes:

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: KEF3 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU33HFA	DU33HFA
Serial Num	-	5456532
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO
Frame	-	N/L
Horsepower	0.333	1/3
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	4.3
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	525	544
Fan RPM	1500	903
Fan Rotation	-	CCW
Motor RPM	-	903
System SetPt	-	P-50
RL Voltage	-	121
RL Amperage	-	0.88
Total ESP	0.8"	0.18"
Fan Inlet SP	-	-0.18"
Fan Discharge SP	-	ATM

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Notes:

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	5456532
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	96	96"
Hood Width	54	54"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	5	5
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	8.1	8.1
Filter1 FPM	-	196
Filter2 FPM	-	194
Filter3 FPM	-	197
Filter4 FPM	-	186
Filter5 FPM	-	175
Filter Ave FPM(corr)	-	190
CFM	1600	1539

Cooking Equipment		
	Design	**Actual**
Item 1	-	GRIDDLE
Item 2	-	GRIDDLE

Completed By: Dale Wheeler

Notes:

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Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	5456532
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	60	60"
Hood Width	54	54"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	3	3
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	4.86	4.86
Filter1 FPM	-	161
Filter2 FPM	-	152
Filter3 FPM	-	147
Filter Ave FPM(corr)	-	153
CFM	775	743

Cooking Equipment		
	Design	**Actual**
Item 1	-	FRYER
Item 2	-	FRYER

Completed By: Dale Wheeler

Notes:

National TAB

Project: 04-17-23 FREDDY'S - AUGUSTA, SC

System/Unit: Kitchen Hood Type II

Comfort. Under control.

Asset: HD3 AREA:

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	4224 VHB-G	4224 VHB-G
Serial Num	-	5456532
Type	TYPE II CANOPY	TYPE II CANOPY
Hood length	42	42"
Hood Width	42	42"

Test Data		
	Design	**Actual**
Exhaust CFM	525	544

Completed By: Dale Wheeler

Notes:

Project Summary

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DOAS w/ Diffusers

Each of the DOAS were measured at their terminal devices or via traverse to establish a total flow for that unit. Each DOAS 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.

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.

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 of -0.02" wc to +0.02" wc 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.