Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 05/23/2024

PROJECT

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

1925 E 2ND ST

EDMOND, OK 73003

Client

RKS Ventures, Inc.

9340 E Central Ave

Suite A

Wichita, KS 67206

National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

Table Of Contents

Overall Summary

The purpose of the visit to Freddy's in Edmond, OK was to address smoke capture concerns.

Smoke capture was poor on the fryer hood and the main griddle hood. The following are the major findings and recommendations from the visit:

Findings and recommendations are below.

1. The MUA back supply style plenum is notorious for causing smoke capture issues and that is a major factor here. The pulley needs to be changed to reduce airflow by half to around 1000 CFM. It is a non heated/non conditioned MUA so this will also be better for comfort.
2. The MUA filter is clogged and is reducing airflow by about 50%. This needs to be cleaned. But, doing so will also cause the smoke capture to worsen. So it needs to be done at the same time as the pulley change.
3. Full vertical end panel needs to be added to the right side of the griddle hood. A quarter end panel needs to be added to the left of the griddle hood.
4. Outside air filters need to be installed on RTU's 1 and 3 so that the outside air can be balanced for building pressurization. Additionally, this helps reduce return air paths in the kitchen which are contributing to the poor smoke capture.
5. The fryer hood capture is poor as well. There is a large amount of smoke escaping primarily on the left side but also on the left side. The griddle hood is the primary concern as that is what causes grease to accumulate on the return grilles and surfaces. But improving the fryer capture will reduce fry smell, and improve comfort in the building. Ideally, full vertical end panels would be added, but if that's not possible from an operational standpoint then quarter end panels should be added on both sides.

Above are the major recommendations and findings. Below is a technical summary with additional details and findings.

Technical Summary

Arrived on site and talked to the manager. They had not noticed any capture issues. However, grease accumulation was noted on the return grilles.

Measured all airflows in the building. Both dining Rtu's are operating at appropriate airflows. The hood exhausts were also found to be balanced. The MUA was very low (approximately 1000 CFM) and the building pressure was negative.

Performed an initial smoke test on all hoods. The main griddle hood was approximately 95% capture. Some minor loss was noted at the front of the hood perimeter. The backup griddle hood had 100% capture. The fryer hood had about 80% capture. There was significant smoke escaping out the left of the hood.

Went to the roof and found that the MUA intake air filter was clogged. Removed this temporarily and re-measured airflow to be close to the original design. Re-smoked all hoods and smoke was rolling out on the right side of the main grille hood. Mocked up a cardboard end panel and capture improved to 100%. A full stainless steel end panel is recommended on the right of the hood and a quarter end panel is recommended on the left of the hood.

End panel mockup on main griddle

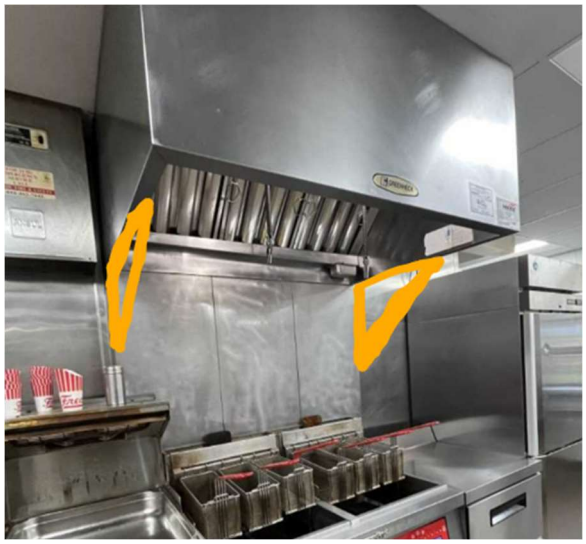
The fryer hood capture is now poor. Reducing the MUA should help. But quarter end panels are also recommended. Full vertical end panels would be ideal if they don't effect Operations.

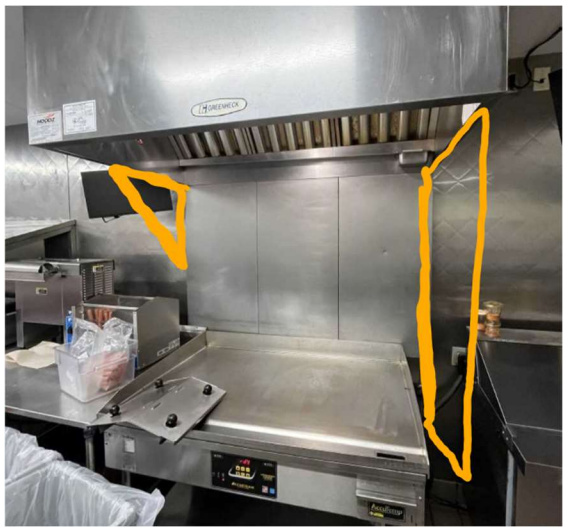
Fryer smoke capture loss

RTU's 1 and 3 are missing outside air filters so OA could not be set yet. This is creating a return path through the kitchen that is making the hood capture issues worse. Installing these and balancing the outside air should help reduce this effect.

Additionally found that the women's restroom exhaust fan rotation was backwards.

Before leaving the site, final performance data was gathered and the intake air filter was replaced on the MUA.





Recommend end panel locations

See following pages for additional insight into additional maintenance items that were found on site.

Issue List

- MUA intake filters dirty
- RTU-1/RTU-2/RTU-3 final filters dirty
- RTU-1/RTU-3 OA filters missing
- Women’s RR Exhaust fan

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

Project Issue Information

Issue Name : MUA intake filters dirty

Description : MUA OA intake filters are dirty. Recommend replacing. Removed for testing.

Created By : National TAB

Assigned To : National TAB - Dylan Crisman

Status : Open

Priority : Low

Asset Tag :

Originated Date : 05/23/2024 - Dylan Crisman - National TAB

Project Issue File Details

IMG_4197
05/23/2024

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

Project Issue Information

Issue Name : RTU-1/RTU-2/RTU-3 final filters dirty

Description : Final filters for all 3 RTUs are dirty. Recommend replacing with correct 20x25x2 merv 8 rated pleated filters. RTU-1 kitchen unit OA section is very dirty, recommend cleaning.

Created By : National TAB

Assigned To : National TAB - Dylan Crisman

Status : Open

Priority : Low

Asset Tag :

Originated Date : 05/22/2024 - Dylan Crisman - National TAB

Project Issue File Details

IMG_4189
05/22/2024

IMG_4186
05/22/2024

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

Project Issue Information

Issue Name : RTU-1/RTU-3 OA filters missing

Description : OA hood is installed but missing OA filters. Once installed the OA should be balanced to ensure positive building pressure and reduce return air path.

Created By : National TAB

Assigned To : National TAB - Dylan Crisman

Status : Open

Priority : High

Asset Tag :

Originated Date : 05/22/2024 - Dylan Crisman - National TAB

Project Issue File Details

IMG_4186
05/22/2024

IMG_4183
05/22/2024

IMG_4189
05/22/2024

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

Project Issue Information

Issue Name : Women's RR Exhaust fan

Description : Women's RR ceiling Exhaust fan is spinning backwards, read very low negative (-11CFM) to a slightly positive reading. Recommend mechanical contractor flip rotation on fan. May require that fan be replaced altogether.

Created By : National TAB

Assigned To : National TAB - Dylan Crisman

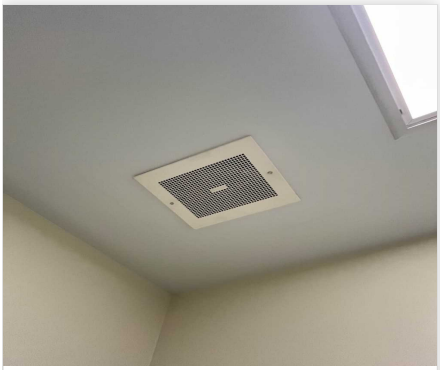
Status : Open

Priority : Low

Asset Tag :

Originated Date : 05/23/2024 - Dylan Crisman - National TAB

Project Issue File Details



IMG_4201
05/23/2024

NATIONAL TAB

CURRENT 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	DINING	4000	4114	2720	4114	900	0	22.5%	0.0%						
RTU-2	DINING	4000	4096	2720	3143	900	953	22.5%	23.3%						
RTU-3	KITCHEN	3000	2453	2100	2453	0	0	0.0%	0.0%						
MUA-1	HOODS									2024	2008				
KEF-1	HOOD 1											899	886		
KEF-2	HOOD 2											1162	1093		
KEF-3	HOOD 3											1162	1198		
EF-1	RR													150	108
EF-2	RR													150	0
TOTALS		11000	10663	7540	9710	1800	953			2024	2008	3223	3177	300	108

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3824	2961
TOTAL EXHAUST	3523	3285
NET AIRFLOW	301	-324

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.0036
SIDE	-0.0043
REAR	-0.098
AVERAGE	**-0.0329**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✗

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✗

NOTES:

NATIONAL TAB

PROPOSED 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	DINING	4000		2720	0	800		20.0%	#DIV/0!						
RTU-2	DINING	4000		2720	0	800		20.0%	#DIV/0!						
RTU-3	KITCHEN	3000		2100	0	600		20.0%	#DIV/0!						
MUA-1	HOODS									1100					
KEF-1	HOOD 1											899			
KEF-2	HOOD 2											1162			
KEF-3	HOOD 3											1162			
EF-1	RR													150	
EF-2	RR													150	
TOTALS		11000	0	7540	0	2200	0			1100	0	3223	0	300	0

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3300	0
TOTAL EXHAUST	3523	0
NET AIRFLOW	-223	0

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	
SIDE	
REAR	
AVERAGE	

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✗

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

CheckList List

- TECH - SITE PICTURES
- TECH - STEP 1: INITIAL READINGS
- TECH - STEP 2: INITIAL SITE WALKTHROUGH
- TECH - STEP 3: UNIT DATA AND EVAL
- TECH - STEP 4: TEST, ADJUST AND BALANCE
- TECH - STEP 5: FINAL TESTS

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - National TAB		

CheckList Item Details

STORE FRONT

Comment:

IMG_4212
05/23/2024

RTU-1

Comment:

IMG_4187
05/22/2024

RTU-2

Comment:

IMG_4184
05/22/2024

RTU-3

Comment:

IMG_4180
05/22/2024

MAU-1 Yes

Comment:

IMG_4167
05/22/2024

EF-1

Comment:

IMG_4174
05/22/2024

EF-2

Comment:

IMG_4171
05/22/2024

EF-3

Comment:

IMG_4169
05/22/2024

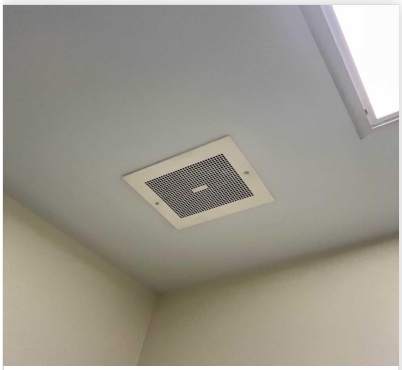
EF-4

Comment:

IMG_4200
05/23/2024

EF-5

Comment:



IMG_4201
05/23/2024

HOOD-1

Comment:

IMG_4162
05/22/2024

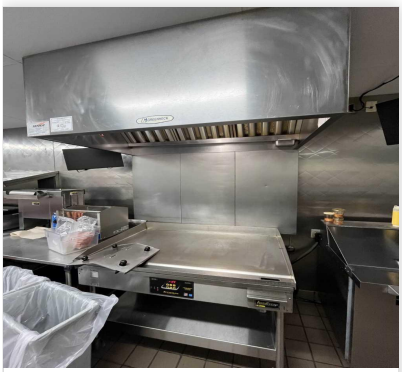
HOOD-2

Comment:

IMG_4164
05/22/2024

HOOD-3

Comment:



IMG_4160
05/22/2024

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - STEP 1: INITIAL READINGS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - National TAB		

CheckList Item Details

INITIAL BUILDING REVIEW:

What is the initial building pressure before making any changes?

Comment:

Side door -0.0060” Back door -0.0141” Front door 0.0026”

Are thermostats programmed? Yes

Comment:

Are building pressure relief working properly?

Comment:

Yes

INITIAL AIRFLOWS:

SUPPLY RTU-1

Comment:

OA RTU-1

Comment:

SUPPLY RTU-2

Comment:

OA RTU-2

Comment:

SUPPLY RTU-3

Comment:

OA RTU-3

Comment:

Filters in 1129CFM Filters out 2008CFM

EF-1

Comment:

886CFM

EF-2

Comment:

1093 CFM

EF-3

Comment:

1198 CFM

EF-4

Comment:

MAU-1

Comment:

2008CFM

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - STEP 2: INITIAL SITE WALKTHROUGH	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - National TAB		
Completed Date :	05/22/2024 - Dylan Crisman - National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

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

Comment:

Yes

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - STEP 3: UNIT DATA AND EVAL	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - 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?	No

Comment:

DCV Max damper opening position is set to minimum?	Yes

Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D")	Yes

Comment:

Motors are all operating below the FLA rating?	Yes

Comment:

Are belts tight?

Comment:

Yes

If direct drive unit is the speed controller working.

Comment:

Yes

Is gas piping installed and valves turned on?	Yes

Comment:

Unit free of noticeable noise and vibration	Yes

Comment:

EF's

Rotation is correct?	Yes

Comment:

Belts are tight?

Comment:

Yes

Grease cup installed on hood fan?	Yes

Comment:

Hinge kit installed installed on hood fan?	Yes

Comment:

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes

Comment:

Flex conduit is long enough so that fan can be completely tilted back?	Yes

Comment:

There is no major leakage around base of fan?	Yes

Comment:

Is the motor operating below the motor FLA rating?	Yes

Comment:

For restroom fan(s) is the back draft damper installed and can it fully open?	Yes

Comment:

Unit free of noticeable noise and vibration?	Yes

Comment:

MUA

Rotation is correct?	Yes

Comment:

Gas piping is installed and valves are in on position?	N/A

Comment:

Heater tested and is functional?	N/A

Comment:

Internal motorized damper is fully opening?	Yes

Comment:

Motor is operating below the FLA rating?	Yes

Comment:

Unit free of noticeable noise and vibration?	Yes

Comment:

HOODS

Kitchen equipment installed in proper places?	Yes

Comment:

Can kitchen equipment be turned on for final smoke test?	Yes

Comment:

DOCUMENTATION

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Comment:

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - STEP 4: TEST, ADJUST AND BALANCE	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - National TAB		
Completed Date :	05/22/2024 - Dylan Crisman - National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
Comment:	
Is space comfortable in all areas?	Yes
Comment:	
Is the space free of ventilation noise?	Yes
Comment:	

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

NA

05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

CheckList Information

Name :	TECH - STEP 5: FINAL TESTS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/21/2024 - Brian Turnbough - National TAB		

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

List smoke candle type used

Comment:

CE0163 45 Sec 150CF

Smoke test capture - Perimeter of hood

Comment:

Smoke test capture - Top of cooking surface

Comment:

WITNESS

Date test was completed

Comment:

TAB tech name / Firm

Comment:

Dylan Crisman / NTi

Site super name / Firm

Comment:

Owner representative name / Firm (if Applicable)

Comment:

Building pressure at front & back doors (All Systems On)

Comment:

ADDITIONAL

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Comment:

Thermostats are programmed?	Yes

Comment:

National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	185116204L
Model Num	YSC120A3EMAF000C	YSC120A3EMAF000C
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	0
OA Filter Size 1	-	38.5X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	3.0	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	7.30

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	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	4000	4114
SF RPM	-	727
RA CFM	3100	4114
OA CFM	900	897
SF Rotation	-	CW
RA Damper Position	-	100%
Min OA Damper Position	-	2.0”
Min OA Damper Type	-	MANUAL DAMPER
OA Enthalpy Setpt	-	NA

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

Completed By: Dylan Crisman on 05/23/2024

National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: AHU/RTU

Asset: RTU2 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	608100922L
Model Num	YSC120A3EMAF000C	YSC120A3EMAF000C
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5X16
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	GE
Frame	-	56Hz
Horsepower	3.0	3.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	9.4

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4.5"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	3 TURNS OPEN
Fan Sheave Size	-	AK59 BROWNING
Fan Sheave Bore	-	1"
Belt CL Distance	-	6"
Num of Belts	-	1
Belt Size	-	AX36
Belt Alignment	-	VERIFIED

Test Data		
	Design	**Actual**
SF CFM	4000	4096
SF RPM	-	922
RA CFM	3100	3143
OA CFM	900	953
RL Voltage	-	207.5/207.3/209
RL Amperage	-	5.5/5.3/5.9
SF Rotation	-	CW
RA Damper Position	-	65%
Min OA Damper Position	-	35%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	D

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.44"
Fan Suction SP	-	-0.78"
Fan Discharge SP	-	0.31"
Total ESP	1.2"	0.75"
Fan Total SP	-	1.09"

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

Completed By: Dylan Crisman on 05/23/2024

National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: AHU/RTU

Asset: RTU3 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	190610117L
Model Num	YSC092A3EMAA000C	YSC092A3EMAA000C
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	0
OA Filter Size 1	-	38.5X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.0"	1.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	3.3

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	3"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	3 TURNS OPEN
Fan Sheave Size	-	AK59X1
Fan Sheave Bore	-	1"
Belt CL Distance	-	12"
Num of Belts	-	1
Belt Size	-	A35
Belt Alignment	-	VERIFIED

Test Data		
	Design	**Actual**
SF CFM	3000	2453
SF RPM	-	727
RA CFM	2400	2453
OA CFM	600	514
RL Voltage	-	211/210.9/208.8
RL Amperage	-	2.8/2./2.6
SF Rotation	-	CW
RA Damper Position	-	100%
Min OA Damper Position	-	MANUAL DAMPER
Min OA Damper Type	-	0.5”
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.24"
Fan Suction SP	-	-0.45"
Fan Discharge SP	-	0.23"
Total ESP	1.0"	0.47"
Fan Total SP	-	0.68"

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

Completed By: Dylan Crisman on 05/23/2024

Notes:
Airflow should be increased slightly for better performance once all recommendations are completed.

Outside air proportionally balanced with supply air.

Written By: Ian Fuller on 06/10/2024

National TAB

Project:05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

AHU/RTU

Diffuser Supply (GRD)

RTU3/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
RTU3-SGRD1					1.0	193	193	193	-
RTU3-SGRD2					1.0	270	270	270	-
RTU3-SGRD3					1.0	409	409	409	-
RTU3-SGRD4					1.0	198	198	198	-
RTU3-SGRD5					1.0	263	263	263	-
RTU3-SGRD6					1.0	252	252	252	-
RTU3-SGRD7					1.0	293	293	293	-
RTU3-SGRD8					1.0	434	434	434	-
RTU3-SGRD9					1.0	141	141	141	-
Total				0		2453	2453	2453	0%

Completed By: Dylan Crisman on 05/23/2024

National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Exhaust

Asset: EF1 AREA:

Unit Data		
	Design	**Actual**
MFG	COOK	COOK
Model Num	GC-180	GC-180
Serial Num	-	
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	150	108
Fan Rotation	-	CCW
System SetPt	-	HIGH SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.25"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Exhaust

Asset: EF2 AREA:

Unit Data		
	Design	**Actual**
MFG	COOK	COOK
Model Num	GC-160	GC-160
Serial Num	-	
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	100	0
Fan Rotation	-	CCW
System SetPt	-	HIGH SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.25"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Exhaust

Asset: KEF1 AREA:HOOD 1

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CUBE-101-4	CUBE-101-4-G
Serial Num	-	05J30272
Type	-	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	FASCO
Frame	-	NL
Horsepower	0.25"	0.25
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.1
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	899	886
Fan RPM	1464	1413
Fan Rotation	-	CCW
Motor RPM	-	1760
System SetPt	-	2 TURNS OPEN
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.633"	0.20"
Fan Inlet SP	-	-0.20"
Fan Discharge SP	-	ATM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Exhaust

Asset: KEF2 AREA:HOOD 2

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CUBE-101-3	CUBE-101-3-G
Serial Num	-	06B15195
Type	-	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	48Z
Horsepower	0.333	0.333
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.1
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	1162	1093
Fan RPM	1767	1583
Fan Rotation	-	CCW
Motor RPM	-	1752
System SetPt	-	2 TURNS OPEN
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.778"	0.25"
Fan Inlet SP	-	-0.25"
Fan Discharge SP	-	ATM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Exhaust

Asset: KEF3 AREA:HOOD 3

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CUBE-101-3	CUBE-101-3-G
Serial Num	-	06B15194
Type	-	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	48Z
Horsepower	0.333"	0.333
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.1
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	1162	1198
Fan RPM	1767	1570
Fan Rotation	-	CCW
Motor RPM	-	1759
System SetPt	-	2 TURNS OPEN
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.778"	0.28"
Fan Inlet SP	-	-0.28"
Fan Discharge SP	-	ATM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: FAN - Supply

Asset: MUA1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	KSFB-109-H15	KSFB-109-H15
Serial Num	-	10398215
Type	MUA	MUA
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	CENTURY
Frame	-	K56Z
Horsepower	1	1.0
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.2
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	2024	2008
SF RPM	1056	1060
Motor RPM	-	1782
SF System SetPt	-	3 TURNS OPEN
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	NA
Fan Discharge SP	-	ATM

General		
	Design	**Actual**
Fan Rotation Correct	-	YES

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Notes:
[1] AX42 BELT, 17.5" CL
[2] 3.5" MOTOR SHEAVE 5/8" BORE
[3] 4" FAN SHEAVE 7/8" BORE
1782/1060 RPM

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	GHEW-4.33-S	GHEW-4.33-S
Job / Serial Num	-	10394140
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	52"	52”
Hood Width	39"	39”
Supply Plenum Type	-	NA
Supply Plenum Width	-	NA
Supply Plenum Length	52"	NA

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	16x20
Filter Size 2	-	
Filter Qty 1	-	3
Filter Qty 2	-	
Filter AK factor size 1	-	2.08
Filters AK factor size 2	-	
Filter Total AK Area	-	6.24
Filter1 FPM	-	147
Filter2 FPM	-	149
Filter3 FPM	-	131
Filter4 FPM	-	
Filter5 FPM	-	
Filter6 FPM	-	
Filter7 FPM	-	
Filter8 FPM	-	
Filter9 FPM	-	
Filter10 FPM	-	
Filter11 FPM	-	
Filter12 FPM	-	
Filter Ave FPM(corr)	-	142
CFM	899	886

Cooking Equipment		
	Design	**Actual**
Item 1	-	FRYER
Item 2	-	
Item 3	-	
Item 4	-	
Item 5	-	

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: Kitchen Hood Type I

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	GHEW-5.00-S	GHEW-5.00-S
Job / Serial Num	-	10394141
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	60"	60”
Hood Width	39"	39”
Supply Plenum Type	-	NA
Supply Plenum Width	-	NA
Supply Plenum Length	60"	NA

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	20x20
Filter Size 2	-	
Filter Qty 1	-	3
Filter Qty 2	-	
Filter AK factor size 1	-	2.68
Filters AK factor size 2	-	
Filter Total AK Area	-	8.04
Filter1 FPM	-	135
Filter2 FPM	-	133
Filter3 FPM	-	142
Filter4 FPM	-	
Filter5 FPM	-	
Filter6 FPM	-	
Filter7 FPM	-	
Filter8 FPM	-	
Filter9 FPM	-	
Filter10 FPM	-	
Filter11 FPM	-	
Filter12 FPM	-	
Filter Ave FPM(corr)	-	136
CFM	1163	1093

Cooking Equipment		
	Design	**Actual**
Item 1	-	GRIDDLE
Item 2	-	
Item 3	-	
Item 4	-	
Item 5	-	

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National TAB

Project: 05-20-24 FREDDY'S - EDMOND, OK (REVIVE)

System/Unit: Kitchen Hood Type I

Asset: HD3 AREA:

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	GHEW-5.00-S	GHEW-5.00-S
Job / Serial Num	-	10394142
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	60"	60”
Hood Width	39"	39”
Supply Plenum Type	-	NA
Supply Plenum Width	-	NA
Supply Plenum Length	60"	NA

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	20x20
Filter Size 2	-	
Filter Qty 1	-	3
Filter Qty 2	-	
Filter AK factor size 1	-	2.68
Filters AK factor size 2	-	
Filter Total AK Area	-	8.04
Filter1 FPM	-	149
Filter2 FPM	-	151
Filter3 FPM	-	149
Filter4 FPM	-	
Filter5 FPM	-	
Filter6 FPM	-	
Filter7 FPM	-	
Filter8 FPM	-	
Filter9 FPM	-	
Filter10 FPM	-	
Filter11 FPM	-	
Filter12 FPM	-	
Filter Ave FPM(corr)	-	149
CFM	1163	1198

Cooking Equipment		
	Design	**Actual**
Item 1	-	
Item 2	-	
Item 3	-	
Item 4	-	
Item 5	-	

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NATIONAL TAB

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	DINING	4000	4114	2720	3217	900	897	22.5%	21.8%						
RTU-2	DINING	4000	4096	2720	3143	900	953	22.5%	23.3%						
RTU-3	KITCHEN	3000	2453	2100	1939	600	514	20.0%	21.0%						
MUA-1										2024	2008				
KEF-1												899	886		
KEF-2												1162	1093		
KEF-3												1162	1198		
EF-1	RR													150	108
EF-2	RR													150	0
TOTALS		11000	10663	7540	8299	2400	2364			2024	2008	3223	3177	300	108

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4424	4372
TOTAL EXHAUST	3523	3285
NET AIRFLOW	901	1087

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.0036
SIDE	-0.0043
REAR	-0.098
AVERAGE	**-0.0329**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✗

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✗

NOTES: