Report By:

National TAB
1329 E Kemper Rd, Ste 4210
Cincinnati, OH 45246

Report: **Test and Balance**
Date: **7/3/2017**

PROJECT

FREDDY'S - RAYTOWN, MO

10019 E. 350 Highway
Raytown, MO 64138

Client

Freddy's Frozen Custard & Steakburgers
260 N Rock Rd
Suite 200
Wichita, KS 67206

National TAB

Project: FREDDY'S - RAYTOWN, MO

Table Of Contents

DEFICIENCY LIST

Assigned Organization: National TAB

Status: Not Submitted

Asset:

PRIORITY (HIGH/LOW/INFO ONLY)	
Info Only	There are no remaining deficienices that require resolution.

Notes/Comments:

PROJECT:	FREDDY'S - RAYTOWN, MO
SYSTEM:	AIR BALANCE SCHEDULE
LOCATION:	RAYTOWN, MO

	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL		AREA
UNIT	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	SERVED
RTU-1	3000	3027	2497	2508	503	519	16.8%	17.1%							DINING
RTU-2	3000	3063	2497	2535	503	528	16.8%	17.2%							DINING
RTU-3	5000	5023	4065	4079	935	944	18.7%	18.8%							KITCHEN
EF-1											2584	2754			HOOD 1 &2
EF-2											775	821			HOOD 3
EF-3											525	518			DISH HOOD
EF-4													150	136	RESTROOM
EF-5													150	141	RESTROOM
MUA-1									2743	2717					HOOD 1-3
TOTAL EXH	11000	11113	9059	9122	1941	1991			2743	2717	-3884	-4093	-300	-277	
TOTL OA	-	-	-	-	4684	4708			-	-			-4184	-4370	
													500	338	**NET AIRFLOW**

SYSTEM COMPONENTS TO ASSETS SCHEDULED ABOVE

UNIT	MANUFACTURER	FILTER TYPE/#/SIZE	MAU TYPE	MAU SIZE	HOOD MAKE-UP	HOOD EXHAUST	NET CFM
HD1	CAPTIVE-AIRE	SOLO 5 16X16	ACPSP	82X14	1034	1292	-258
HD2	CAPTIVE-AIRE	SOLO 5 16X16	ACPSP	82X14	1034	1292	-258
HD3	CAPTIVE-AIRE	SOLO 3 16X16	ACPSP	72X12	675	775	-100
HD4	CAPTIVE-AIRE					525	-525

DOOR TESTED	**BUILDING PRESSURE MEASUREMENTS (IN. H20)**
FRONT	0.016
SIDE	0.019
REAR	0.017
AVERAGE	0.017

NOTES:

STOREFRONT

KEF1

KEF2

KEF3

Typical EF1 and EF2

MAU

HOOD 3

HOOD 1

HOOD2

DISH HOOD

RTU1

RTU2

RTU3

BUILDING PRESSURE AND SMOKE CONTAINMENT TEST

Assigned Organization: National TAB

Status: Not Submitted

Asset:

HOOD CAPTURE TEST	
LIST EQUIPMENT TURNED ON FOR TESTING	all equipment
LIST SMOKE CANDLE TYPE USED	45 sec smoke bomb
SMOKE TEST CAPTURE - PERIMETER OF HOOD	100%
SMOKE TEST CAPTURE - TOP OF COOKING SURFACE	100%
WITNESS	
DATE TEST WAS COMPLETED	5/1/2017
TAB TECH NAME / FIRM	brian irvin / national tab
SITE SUPR NAME / FIRM	mark morrow / accel construction
OWNER REPRESENTATIVE NAME / FIRM (IF APPLICABLE)	na
CODE OFFICIAL NAME / FIRM (IF APPLICABLE)	na
BUILDING PRESSURE AT FRONT & BACK DOORS (ALL SYSTEMS ON)	0.017" average

Notes/Comments:

EXHAUST FAN SITE EVAL

Assigned Organization: National TAB

Status: Not Submitted

Asset:

EXHAUST FAN	
Verify units marked for easy identification	Yes
Unit sealed and properly seated to roof curb	Yes
No unusual vibration or noise present	Yes
Belts properly tensioned and free of damage	Yes
Pulleys properly aligned	Yes
Blower wheel moves freely by hand	Yes
Unit is providing required airflow	Yes
Verify on/off disconnect works	Yes
Verify voltage input is correct	Yes
Fan rotation is correct?	Yes

Notes/Comments:

FREDDY'S CONTROLS CHECKLIST

Assigned Organization: National TAB

Status: Not Submitted

Asset:

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	Yes
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)	Yes
Password is set to 999 for Partial Screen Lock?	Yes
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	Yes
"DCV Set" dials turned all the way to the left (counter clockwise)	Yes
"DCV Max" dials turned all the way to the left (counter clockwise)	Yes

Notes/Comments:

HVAC SITE EVAL

Assigned Organization: National TAB

Status: Not Submitted

Asset:

HVAC DUCTWORK CHECKLIST	
Ductwork and diffusers are installed per design	Yes
Balance dampers installed and functional	Yes
Balance dampers are accessible	Yes
Ductwork is properly covered with insulation, & Insulation is secured	Yes
Tops of diffusers are properly insulated	Yes
Installed diffusers match design	Yes

Notes/Comments:

RTU SITE EVAL

Assigned Organization: National TAB

Status: Not Submitted

Asset:

RTU CHECKLIST	
Units are labeled and installed at proper locations	Yes
Units size matches its design (nameplate)	Yes
Clean filters are installed at DX coil	Yes
Belts are tight and in good working order	Yes
Pulleys are properly aligned	Yes
Motors rotating correctly	Yes
Motors are operating under full load amps	Yes
Units sealed and properly seated to roof curb	Yes
Evaporator coils clean and free of debris	Yes
Gas piping installed	Yes
Gas valves turned in the on position	Yes
Condensate lines and P-traps installed correctly	Yes
Disconnect switch installed	Yes
No noticeable vibration or noise exist correct?	Yes
Economizer filters installed	Yes
Outside air dampers installed and functioning	Yes
Outside air damper positions are clearly marked	Yes
Is unit bringing in sufficient amount of outside air	Yes
Unit is providing required supply airflow	Yes
Condensor coil clean and free of damage	Yes
Verify voltage input correct	Yes

Notes/Comments:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: AHU/RTU

Asset: RTU1 AREA: DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA092S4B	KGA092S4BS3Y
Serial Num	-	5617C00519
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	2
OA Filter Size 1	-	14X23
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	-
Final Filter Size 2	-	-

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	56HZ
Horsepower	3	3
Motor Rpm	-	1745
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	7.8-7.4
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4.25"
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	5 TURNS OPEN
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	22"
Num of Belts	-	1
Belt Size	-	AX58
Belt Alignment	-	YES

Test Data		
	Design	**Actual**
SF CFM	3000	3027
SF RPM	-	732
RA CFM	2497	2508
OA CFM	503	519
RL Voltage	-	208/212/209
RL Amperage	-	5.2/5.1/4.6
SF Rotation	-	CCW
RA Damper Position	-	7 1/2" PEN
Min OA Damper Position	-	1" OPEN
Min OA Damper Type	-	ACTUATED BLADE
Brake Horse Power	-	1.91

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.26"
Fan Suction SP	-	-0.40"
Fan Discharge SP	-	0.61"
Total ESP	1.00"	0.87"
Fan Total SP	-	1.01"

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

Completed By: Brian Irvin on 05/01/2017

Notes:

Diffuser Supply (GRD)

RTU1 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRY	SD7	8"	150		227	200	152	101.3
SGRD2	DINING	SD1	12"	425		439	330	399	93.9
SGRD3	DINING	SD1	12"	400		597	512	399	99.8
SGRD4	DINING	SD1	12"	425		452	366	430	101.2
SGRD5	DINING	SD1	12"	400		406	306	366	91.5
SGRD6	DINING	SD1	12"	425		360	232	385	90.6
SGRD7	DINING	SD1	12"	425		710	582	439	103.3
SGRD8	HALL	SD6	8"	150		233	196	242	161.3
SGRD9	RESTROOM	SD5	6"	100		176	146	109	109.0
SGRD10	RESTROOM	SD5	6"	100		174	142	106	106.0

Completed By: Will Turnbough on 04/26/2017

Asset	Area Served	Notes

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: AHU/RTU

Asset: RTU2 AREA: DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA092S4B	KGA092S4B
Serial Num	-	5617C00520
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	2
OA Filter Size 1	-	14X23
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	-
Final Filter Size 2	-	-

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	56HZ
Horsepower	3	3
Motor Rpm	-	1745
Phase	3	3
Rated Voltage	208	200-230
Rated Amperage	-	7.8-7.4
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4.25"
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	4 TURNS OPEN
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	22"
Num of Belts	-	1
Belt Size	-	AX58
Belt Alignment	-	YES

Test Data		
	Design	**Actual**
SF CFM	3000	3063
SF RPM	-	776
RA CFM	2497	2535
OA CFM	503	528
RL Voltage	-	213/209/209
RL Amperage	-	5.3/5.1/4.7
SF Rotation	-	CCW
RA Damper Position	-	7 1/2" OPEN
Min OA Damper Position	-	1" OPEN
Min OA Damper Type	-	ACTUATED BLADE
Brake Horse Power	-	1.94

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.50"
Fan Discharge SP	-	0.75"
Total ESP	1.00"	1.06"
Fan Total SP	-	1.25"

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

Completed By: Brian Irvin on 05/01/2017

Notes:

Diffuser Supply (GRD)

RTU2 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINING	SD1	12"	500		571	518	545	109.0
SGRD2	DINING	SD1	12"	500		476	435	468	93.6
SGRD3	DINING	SD1	12"	500		516	449	540	108.0
SGRD4	DINING	SD1	12"	500		646	580	498	99.6
SGRD5	DINING	SD1	12"	500		681	625	470	94.0
SGRD6	DINING	SD1	12"	500		539	515	542	108.4

Completed By: Will Turnbough on 04/26/2017

Asset	Area Served	Notes

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: AHU/RTU

Asset: RTU3 AREA: KITCHEN

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA150S4B	KGA150S4BM3Y
Serial Num	-	5617C00522
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	2
OA Filter Size 1	-	14X23
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	-
Final Filter Size 2	-	-

Motor Data		
	Design	**Actual**
Motor MFG	-	NIDEC
Frame	-	184TZ
Horsepower	5	5
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	13.8-13.00
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4.75"
Motor Bore Size	-	1.125"
Motor Sheave SetPt	-	4 TURNS OPEN
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	21.5"
Num of Belts	-	1
Belt Size	-	BX59
Belt Alignment	-	YES

Test Data		
	Design	**Actual**
SF CFM	5000	5023
SF RPM	-	1000
RA CFM	4065	4079
OA CFM	935	944
RL Voltage	-	209/212/209
RL Amperage	-	8.3/9.5/9.0
SF Rotation	-	CCW
RA Damper Position	-	6 1/2" OPEN
Min OA Damper Position	-	2" OPEN
Min OA Damper Type	-	ACTUATED BLADE
Brake Horse Power	-	3.24

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.67"
Fan Suction SP	-	-1.04"
Fan Discharge SP	-	0.93"
Total ESP	1.00"	1.60"
Fan Total SP	-	1.97"

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

Completed By: Brian Irvin on 05/01/2017

Notes: BALANCE TO DIFFUSER TOTAL

Diffuser Supply (GRD)

RTU3 / KITCHEN

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ORDERING	SD2	12"	500		542	493	506	101.2
SGRD2	ORDERING	SD2	12"	400		481	433	417	104.3
SGRD3	DRIVE-THRU	SD3	10"	300		372	335	303	101.0
SGRD4	PREP	SD3	12"	375	2.76	336	303	349	93.1
SGRD5	PREP	SD	12"	400		334	289	396	99.0
SGRD6	OFFICE	SD4	8"	150		188	165	163	108.7
SGRD7	EQUIPMENT	SD3	12"	400		447	404	422	105.5
SGRD8	PREP	SD3	12"	375		365	314	369	98.4
SGRD9	PREP	SD3	12"	350		364	324	378	108.0
SGRD10	PREP	SD3	12"	350		509	450	356	101.7
SGRD11	HOOD 3 ACPSP	ACPSP	72X6	306		306	276	304	99.3
SGRD12	HOOD 2 ACPSP	ACPSP	82X6	372	3.42	649	291	378	101.6
SGRD13	HOOD 1 ACPSP	ACPSP	82X6	372	3.42	546	273	336	90.3
SGRD14	KITCHEN	SD-3	12"	350		-	365	346	98.9

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Asset	Area Served	Notes

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: FAN - Supply

Asset: MAU1 AREA: HOOD 1-3

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	A1-D.250-G10	A1-D.250-G10
Serial Num	-	2562535
Type	MAU	MUA
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56HZ
Horsepower	2	2
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	208-230/460
Amperage (rated)	-	5.95-5.38/2.69
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	1VL40
Motor Bore Size	-	0.875"
Fan Sheave Size	-	AK46
Fan Sheave Bore	-	0.75"
Belt CL Distance	-	14"
Num of Belts	-	1
Belt Size	-	AX38
Belt Alignment Verified	-	YES

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	60	60
Discharge Air Temp SetPt	65	65

Test Data		
	Design	**Actual**
CFM	2743	2717
SF RPM	1319	1434
SF Rotation	-	CW
Motor RPM	-	1746
RL Voltage	-	212/210/210
RL Amperage	-	4.8/4.4/4.7
Total ESP	0.50"	NR
Fan Discharge SP	-	NR

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

Completed By: Brian Irvin on 05/01/2017

Notes: 0.51" BURNER DP

Asset: EF1 AREA: RESTROOM

Unit Data		
	Design	**Actual**
MFG	COOK	TWIN CITY
Model Num	GC-164	NL
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	136W	NO ACCESS
Motor Rpm	-	NO ACCESS
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	NO ACCESS
Service Factor	-	NO ACCESS

Test Data		
	Design	**Actual**
CFM	150	136
Fan RPM	1300	DIRECT DRIVE
Fan Rotation	-	CW
Motor RPM	-	DIRECT DRIVE
System SetPt	-	HIGH
RL Voltage	-	117
RL Amperage	-	0.6
Total ESP	0.25"	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

Completed By: Brian Irvin on 05/01/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: FAN - Exhaust

Asset: EF2 AREA: RESTROOM

Unit Data		
	Design	**Actual**
MFG	COOK	TWIN CITY
Model Num	GC-164	NL
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Motor Data		
	Design	**Actual**
Motor MFG	-	NO ACCESS
Frame	-	NO ACCESS
Horsepower	136W	NO ACCESS
Motor Rpm	-	NO ACCESS
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NO ACCESS
Service Factor	-	NO ACCESS

Test Data		
	Design	**Actual**
CFM	150	141
Fan RPM	1300	DIRECTY DRIVE
Fan Rotation	-	CW
Motor RPM	-	DIRECT DRIVE
System SetPt	-	HIGH
RL Voltage	-	117
RL Amperage	-	0.6
Total ESP	0.25"	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

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Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: FAN - Exhaust

Asset: KEF1 AREA: HOOD 1&2

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	NCA16HPFA	NCA16HPFA
Serial Num	-	2562535
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56H
Horsepower	1.5	1.5
Motor Rpm	-	1760
Phase	3	3
Voltage (rated)	208	208-230/460
Amperage (rated)	-	4.64-4.20/2.10
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	1VL40
Motor Bore Size	-	0.625"
Motor Sheave SetPt	-	5 TURNS OPEN
Fan Sheave Size	-	3.75"
Fan Sheave Bore	-	1"
Belt CL Distance	-	7.125"
Num of Belts	-	1
Belt Size	-	AX23

Test Data		
	Design	**Actual**
CFM	2584	2754
Fan RPM	1329	1290
Fan Rotation	-	CCW
Motor RPM	-	1763
RL Voltage	-	208/208/212
RL Amperage	-	3.8/3.8/3.4
Suction ESP	-	-0.8"
Discharge ESP	-	ATM
Total ESP	1.40"	0.8"
Brake Horse Power	-	1.19

Completed By: Brian Irvin on 05/01/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: FAN - Exhaust

Asset: KEF2 AREA: HOOD 3

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU50HFA	DU50HFA
Serial Num	-	2562535
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

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

Test Data		
	Design	**Actual**
CFM	775	821
Fan RPM	1441	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	LOW
RL Voltage	-	78
RL Amperage	-	4.2
Total ESP	1.25"	0.71"
Fan Inlet SP	-	-0.71"
Fan Discharge SP	-	ATM

Completed By: Will Turnbough on 04/25/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: FAN - Exhaust

Asset: KEF3 AREA: DISH HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU30HFA	DU30HFA
Serial Num	-	2562535
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	0.25	0.25
Motor Rpm	-	1625
Phase	1	1
Voltage (rated)	115	115/230
Amperage (rated)	-	3.0/1.5
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	525	518
Fan RPM	1450	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	LOW
RL Voltage	-	75
RL Amperage	-	2.2
Total ESP	0.85"	0.21"
Fan Inlet SP	-	-0.21"
Fan Discharge SP	-	ATM

Completed By: Will Turnbough on 04/25/2017

Notes: VELOCITY MEASURED IN 10" RISER AT HOOD OF 951 FPM

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA: HOOD 1

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4824 ND-2-ACPSP-F	4824 ND-2-ACPSP-F
Job / Serial Num	-	2562535
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	82	82
Hood Width	48	48
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	14	14
Supply Plenum Length	82	82

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	-	181
Filter2 FPM	-	179
Filter3 FPM	-	187
Filter4 FPM	-	186
Filter5 FPM	-	175
Filter6 FPM	-	-
Filter7 FPM	-	-
Filter8 FPM	-	-
Filter9 FPM	-	-
Filter High FPM(corr)	-	187
Filter Low FPM (corr)	-	175
Filter Ave FPM(corr)	-	182
CFM	1292	1474

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	7.97	7.97
Kv factor (Vel)	0.90	0.90
Reading1 FPM	-	86
Reading2 FPM	-	106
Reading3 FPM	-	96
Reading4 FPM	-	126
Reading5 FPM	-	130
Reading6 FPM	-	107
Reading7 FPM	-	-
Reading8 FPM	-	-
Reading9 FPM	-	-
Reading10 FPM	-	-
Reading11 FPM	-	-
Reading12 FPM	-	-
Reading13 FPM	-	-
Reading14 FPM	-	-
High FPM(corr)	-	130
Low FPM(corr)	-	86
Ave FPM(corr)	-	97
CFM	1034	775

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	258	699
Smoke Generation Type	-	45 SEC SMOKE BOMB
Cooking Equip Heat On	-	YES
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	-
Riser Temp F (idle) Riser 1	-	73
Riser Temp F (idle) Riser 2	-	-
Ambient Room Temp	-	73
100% override functional	-	NA

General		
	Design	**Actual**
Third Party Witness	-	MARK MORROW

System/Unit: Kitchen Hood Type I

General		
	Design	**Actual**
Third Party Company	-	ACCEL CONSTRUCTION
Tech Witness	-	BRIAN IRVIN
Tech Company	-	NATIONAL TAB

Completed By: Brian Irvin on 05/01/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: Kitchen Hood Type I

Asset: HD2 AREA: HOOD 2

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4824 ND-2-ACPSP-F	4824 ND-2-ACPSP-F
Job / Serial Num	-	2562535
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	82	82
Hood Width	48	48
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	14	14
Supply Plenum Length	82	82

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	-	146
Filter2 FPM	-	167
Filter3 FPM	-	171
Filter4 FPM	-	167
Filter5 FPM	-	139
Filter6 FPM	-	-
Filter7 FPM	-	-
Filter8 FPM	-	-
Filter9 FPM	-	-
Filter High FPM(corr)	-	171
Filter Low FPM (corr)	-	139
Filter Ave FPM(corr)	-	158
CFM	1292	1280

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	7.97	7.97
Kv factor (Vel)	0.90	0.90
Reading1 FPM	-	166
Reading2 FPM	-	191
Reading3 FPM	-	177
Reading4 FPM	-	176
Reading5 FPM	-	158
Reading6 FPM	-	138
Reading7 FPM	-	-
Reading8 FPM	-	-
Reading9 FPM	-	-
Reading10 FPM	-	-
Reading11 FPM	-	-
Reading12 FPM	-	-
Reading13 FPM	-	-
Reading14 FPM	-	-
High FPM(corr)	-	191
Low FPM(corr)	-	138
Ave FPM(corr)	-	151
CFM	1034	1206

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	258	74
Smoke Generation Type	-	45 SEC SMOKE BOMB
Cooking Equip Heat On	-	YES
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	-
Riser Temp F (idle) Riser 1	-	72
Riser Temp F (idle) Riser 2	-	-
Ambient Room Temp	-	73
100% override functional	-	NA

General		
	Design	**Actual**
Third Party Witness	-	MARK MORROW

System/Unit: Kitchen Hood Type I

General		
	Design	**Actual**
Third Party Company	-	ACCEL CONSTRUCTION
Tech Witness	-	BRIAN IRVIN
Tech Company	-	NATIONAL TAB

Completed By: Will Turnbough on 04/25/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: Kitchen Hood Type I

Asset: HD3 AREA: HOOD 3

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	5424 ND-2-ACPSP-F	5424 ND-2-ACPSP-F
Job / Serial Num	-	2562535
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	60	60
Hood Width	54	54
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	12	12
Supply Plenum Length	72	72

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	-	166
Filter2 FPM	-	179
Filter3 FPM	-	162
Filter4 FPM	-	-
Filter5 FPM	-	-
Filter6 FPM	-	-
Filter7 FPM	-	-
Filter8 FPM	-	-
Filter9 FPM	-	-
Filter High FPM(corr)	-	179
Filter Low FPM (corr)	-	162
Filter Ave FPM(corr)	-	169
CFM	775	821

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	6	6
Kv factor (Vel)	0.87	0.87
Reading1 FPM	-	126
Reading2 FPM	-	151
Reading3 FPM	-	165
Reading4 FPM	-	139
Reading5 FPM	-	127
Reading6 FPM	-	-
Reading7 FPM	-	-
Reading8 FPM	-	-
Reading9 FPM	-	-
Reading10 FPM	-	-
Reading11 FPM	-	-
Reading12 FPM	-	-
Reading13 FPM	-	-
Reading14 FPM	-	-
High FPM(corr)	-	165
Low FPM(corr)	-	126
Ave FPM(corr)	-	123
CFM	675	736

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	-	85
Smoke Generation Type	-	45 SEC SMOKE BOMB
Cooking Equip Heat On	-	YES
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	-
Riser Temp F (idle) Riser 1	-	72
Riser Temp F (idle) Riser 2	-	-
Ambient Room Temp	-	73
100% override functional	-	NA

General		
	Design	**Actual**
Third Party Witness	-	MARK MORROW

General		
	Design	**Actual**
Third Party Company	-	ACCEL CONSTRUCTION
Tech Witness	-	BRIAN IRVIN
Tech Company	-	NATIONAL TAB

Completed By: Brian Irvin on 05/01/2017

Notes:

National TAB

Project: FREDDY'S - RAYTOWN, MO

System/Unit: Kitchen Hood Type II

Asset: HD(Type2)4 AREA: DISH HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4224 VHB-G	4224 VHB-G
Serial Num	-	2562535
Type	TYPE II	TYPE II
Hood length	42	42"
Hood Width	42	42"

Test Data		
	Design	**Actual**
Exhaust CFM	525	518

Completed By: Will Turnbough on 04/25/2017

Notes: