Report By:

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

Report: **Test and Balance**
Date: **5/26/2016**

PROJECT

FREDDY'S - SHILOH, IL

3320 GREEN MOUNT CROSSING DRIVE
SHILOH, IL 62269

Client

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

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Project: FREDDY'S - SHILOH, IL

Table Of Contents

Project Summary

Project Summary
Preface
The summary below provides a quick understanding of how well your HVAC systems balanced in respect to the design criteria. The summary concludes with a quick understanding of your building environment and possible suggestions for each of your systems after testing has been performed. 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. Our focus is 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. Also, enclosed are pictures of building assets and items listed below that will provide your team with more insight

Facility Identification and TAB Requirements
Freddy's is located at 3320 Green Mount Crossing Drive, Shiloh, IL 62269. The mechanical equipment to be tested, adjusted, and balanced includes: (3) Three Roof Top Units (RTU), (5) Four Exhaust Fans (EF), (1) One Make Up Air Units (MUA), (4) Four Kitchen Hoods, and all associated air devices.
Constant Volume RTU's with Lay-In Ceiling Diffusers
Each of the RTU's were measured at their terminal devices utilizing a Flow Hood. The sum of these readings is equal to the total flow for that particular unit. The total flow of each RTU was then adjusted to +/-10% of the specified design. Each terminal diffuser was balanced to within +/-10% of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s).

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 +/-10% of the engineers design flow.

Total flow for the MAU (Make-up Air Unit) unit was measured by readings taken at the discharge of the hood's perforated supply plenum. Readings taken with a velocity matrix were averaged and multiplied by a manufacturer's corrected area. Adjustments to the fan speed were made in order to bring the unit to within +/-10% of design criteria.

General Exhaust Fans
EF-1 was 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 +/-10% of design. Each terminal device was balanced to within +/-10% of the design volume using the installed volume dampers.
EF-2 was 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 +/-10% of design. Each terminal device was balanced to within +/-10% of the design volume using the installed volume dampers.

Final Building Tests
After completing the test and balance, the final building pressure was recorded at 0.011" W.C. average. This pressure falls within the recommended tolerances by the International Mechanical Code of +0.02" W.C. to -0.02" W.C. The building is designed for a net positive pressure and this measurement coincides with that requirement.
The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat "OFF" and 100% capture was observed.

Deficiency List

Priority (High/Low/Info Only)	Description
Info Only	Cooking equipment was not turned on during smoke test.
Info Only	There are no major deficiencies that require resolution.

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PROJECT:	FREDDY'S SHILOH
SYSTEM:	AIR BALANCE SCHEDULE
LOCATION:	SHILOH, IL

	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		HOOD MAKE-UP		HOOD EXHAUST		GENERAL		AREA
UNIT	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	SERVED
RTU-1	3000	3091	2497	2581	503	510							DINING
RTU-2	3000	3037	2497	2548	503	489							DINING
RTU-3	5000	4906	4065	4023	935	883							KITCHEN
KEF-1									2584	2694			HOOD 1&2
KEF-2									775	770			HOOD 3
KEF-3									525	500			HOOD 4
EF-1											150	143	RESTROOM
EF-2											150	140	RESTROOM
MUA-1							2743	2791					KITCHEN HOODS
TOTAL EXH	11000	11034	9059	9152	1941	1882	2743	2791	-3884	-3964	-300	-283	
TOTL OA	-	-	-	-	4684	4673	-	-			-4184	-4247	
											500	426	**NET AIRFLOW**

DOOR TESTED	**BUILDING PRESSURE MEASUREMENTS (IN. H20)**
FRONT	+0.011"
SIDE	
REAR	
AVERAGE	+0.011"

NOTES:

RTU1

RTU2

RTU3

EF1

EF2

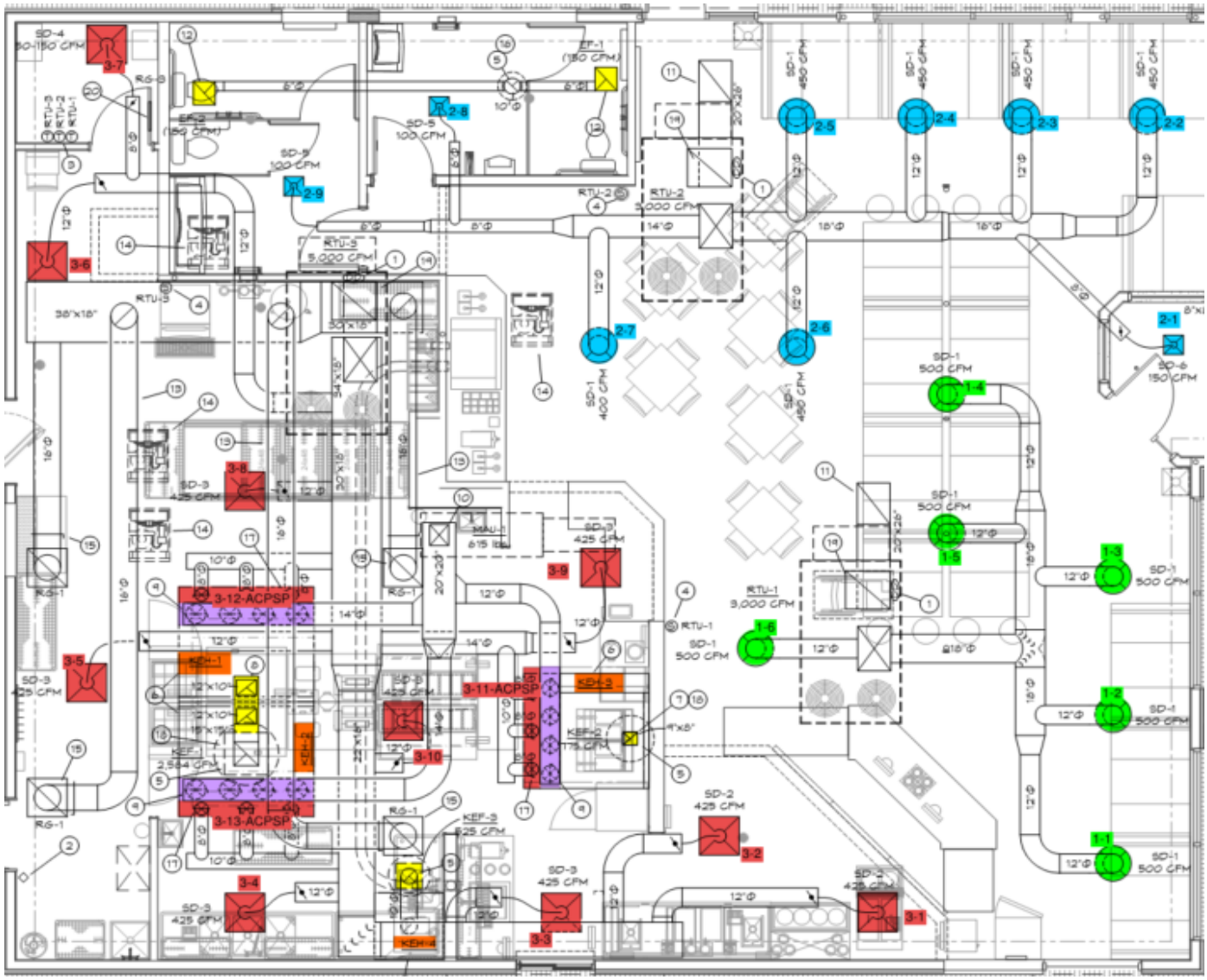
EF3

MAU1

HD1

HD2

HD3


3-12-ACPSP
3-11-ACPSP
3-13-ACPSP
RTU-1
9,000 CFM
RTU-2
5,000 CFM
RTU-3
5,000 CFM
SD-1
500 CFM
SD-2
425 CFM
SD-3
425 CFM
SD-4
150 CFM
SD-5
100 CFM
SD-6
150 CFM
EF-1
(150 CFM)
KEF-1
KEF-2
KEF-3
KEF-4
KEH-1
KEH-2
KEH-3
KEH-4
MAU-1
615 CFM

BUILDING PRESSURE AND SMOKE CONTAINMENT TEST

Assigned Organization: National TAB

Status: Submitted

Asset:

HOOD CAPTURE TEST	
LIST EQUIPMENT TURNED ON FOR TESTING	NONE
LIST SMOKE CANDLE TYPE USED	45 SEC
SMOKE TEST CAPTURE - PERIMETER OF HOOD	100%
SMOKE TEST CAPTURE - TOP OF COOKING SURFACE	100%
WITNESS	
DATE TEST WAS COMPLETED	5/26/2016
TAB TECH NAME / FIRM	JUSTIN MCFALL NATIONAL TAB
SITE SUPR NAME / FIRM	TIM
OWNER REPRESENTATIVE NAME / FIRM (IF APPLICABLE)	GREG
CODE OFFICIAL NAME / FIRM (IF APPLICABLE)	--
BUILDING PRESSURE AT FRONT & BACK DOORS (ALL SYSTEMS ON)	.011

Notes/Comments:

EXHAUST FAN SITE EVAL

Assigned Organization: National TAB

Status: 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:

HVAC SITE EVAL

Assigned Organization: National TAB

Status: 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: 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:

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Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Asset: RTU1 AREA: DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA092S4B	KGA092S4B
Serial Num	-	161513051L
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	15X35
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	3	3
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230/460
Rated Amperage	-	5.0-4.6/2.3
Service Factor	-	1.5
Efficiency	-	-
Power Factor	-	-

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VL34
Motor Bore Size	-	0.625"
Motor Sheave SetPt	-	3 TURNS OUT
Fan Sheave Size	-	AK59
Fan Sheave Bore	-	1"
Belt CL Distance	-	12"
Num of Belts	-	1
Belt Size	-	AX35
Belt Alignment	-	GOOD

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Notes:

Test Data		
	Design	**Actual**
SF CFM	3000	3091
SF RPM	-	762
RA CFM	2497	2581
OA CFM	503	510
RL Voltage	-	211/210/210
RL Amperage	-	3.4/3.3/3.2
SF Rotation	-	CW
RA Damper Position	-	1.75"
Min OA Damper Position	-	ECONOMIZER
Min OA Damper Type	-	SINGLE BLADE
Brake Horse Power	-	2.04

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.28
Fan Suction SP	-	-0.43
Fan Discharge SP	-	0.51
Total ESP	1.00"	0.79"
Fan Total SP	-	0.94

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

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Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU1 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINING	SD1	12"	500	491	516	516	103.2
SGRD2	DINING	SD1	12"	500	550	516	516	103.2
SGRD3	DINING	SD1	12"	500	478	522	522	104.4
SGRD4	DINING	SD1	12"	500	621	509	509	101.8
SGRD5	DINING	SD1	12"	500	497	527	527	105.4
SGRD6	DINING	SD1	12"	500	768	501	501	100.2

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Asset	Area Served	Notes

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Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Asset: RTU2 AREA: DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA092S4B	KGA092S4B
Serial Num	-	161513051L
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	15X35
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	3	3
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	200-230/460
Rated Amperage	-	5.0-4.6/2.3
Service Factor	-	1.5
Efficiency	-	-
Power Factor	-	-

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VL34
Motor Bore Size	-	0.625"
Motor Sheave SetPt	-	4 TURNS OPEN
Fan Sheave Size	-	AK59
Fan Sheave Bore	-	1"
Belt CL Distance	-	12"
Num of Belts	-	1
Belt Size	-	AX35
Belt Alignment	-	GOOD

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Notes:

Test Data		
	Design	**Actual**
SF CFM	3000	3037
SF RPM	-	704
RA CFM	2497	2548
OA CFM	503	489
RL Voltage	-	211/211/210
RL Amperage	-	3.5/3.4/3.5
SF Rotation	-	CW
RA Damper Position	-	15" OPEN
Min OA Damper Position	-	1" OPEN
Min OA Damper Type	-	ECONOMIZER
Brake Horse Power	-	2.08

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.25
Fan Suction SP	-	-0.39
Fan Discharge SP	-	0.36
Total ESP	1.00"	0.61"
Fan Total SP	-	0.75

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

National TAB

Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU2 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRY	SD6	8"	150	253	150	150	100.0
SGRD2	DINING	SD1	12"	450	621	483	466	103.6
SGRD3	DINING	SD1	12"	450	535	524	467	103.8
SGRD4	DINING	SD1	12"	450	500	477	458	101.8
SGRD5	DINING	SD1	12"	450	426	395	438	97.3
SGRD6	DINING	SD1	12"	450	461	357	422	93.8
SGRD7	DINING	SD1	12"	400	623	426	426	106.5
SGRD8	RESTROOM	SD5	6"	100	168	107	107	107.0
SGRD9	RESTROOM	SD5	6"	100	126	103	103	103.0

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Asset	Area Served	Notes

National TAB

Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Asset: RTU3 AREA: KITCHEN

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Model Num	KGA150S4B	KGA150S4B
Serial Num	-	161310727D
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	15X60
Num Final Filter 1	-	6
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	5	3
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208-230/460
Rated Amperage	-	9.4-4.9/460
Service Factor	-	1.15
Efficiency	-	-
Power Factor	-	-

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VP44
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	2 TURNS OUT
Fan Sheave Size	-	BK90
Fan Sheave Bore	-	1"
Belt CL Distance	-	22"
Num of Belts	-	1
Belt Size	-	BX62
Belt Alignment	-	GOOD

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Notes:

Test Data		
	Design	**Actual**
SF CFM	5000	4906
SF RPM	-	816
RA CFM	4065	4023
OA CFM	935	883
RL Voltage	-	211/212/211
RL Amperage	-	8.6/8.7/8.6
SF Rotation	-	CW
RA Damper Position	-	11" OPEN
Min OA Damper Position	-	0.75" OPEN'
Min OA Damper Type	-	ECONOMIZER
Brake Horse Power	-	2.74

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.77
Fan Suction SP	-	-0.90
Fan Discharge SP	-	0.25
Total ESP	1.00"	1.02"
Fan Total SP	-	1.15

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

National TAB

Project: FREDDY'S - SHILOH, IL

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU3 / KITCHEN

Asset	Area Served	Type	Size	DESIGN CFM	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SUNDAE PREP	SD2	12"	425	469	480	450	105.9
SGRD2	SUNDAE PREP	SD2	12"	425	391	430	425	100.0
SGRD3	DRIVE-THRU	SD3	12"	425	376	413	420	98.8
SGRD4	PREP	SD3	12"	425	361	397	411	96.7
SGRD5	PREP	SD3	12"	425	337	371	403	94.8
SGRD6	PREP	SD3	12"	400	255	281	365	91.3
SGRD7	OFFICE	SD4	8"	150	146	160	158	105.3
SGRD8	PREP	SD3	12"	425	390	429	429	100.9
SGRD9	PREP	SD3	12"	425	352	387	395	92.9
SGRD10	PREP	SD3	12"	425	350	386	392	92.2
SGRD11	HOOD 3 ACPSP	ACPSP	82X14	306	296	326	326	106.5
SGRD12	HOOD 1 ACPSP	ACPSP	82X14	372	334	367	367	98.7
SGRD13	HOOD 2 ACPSP	ACPSP	72X12	372	332	365	365	98.1

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Asset	Area Served	Notes

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Project: FREDDY'S - SHILOH, IL

System/Unit: FAN - Supply

Asset: MAU1 AREA: HOOD SUPPLY

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	A1-D.250-G10	A1-D.250-G10
Serial Num	-	2510431
Type	MAU	MAU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56HZ
Horsepower	2	2.0
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	208-230/460
Amperage (rated)	-	5.95-5.38/2.69
Service Factor	-	1.15
Efficiency	-	86.5%
Power Factor	-	0.81

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VL40
Motor Bore Size	-	0.875"
Fan Sheave Size	-	AK39
Fan Sheave Bore	-	0.75"
Belt CL Distance	-	14"
Num of Belts	-	1
Belt Size	-	AX37
Belt Alignment Verified	-	GOOD

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	55	55
Discharge Air Temp SetPt	60	60

Test Data		
	Design	**Actual**
CFM	2743	2791
SF RPM	1321	1319
SF Rotation	-	CW
Motor RPM	-	1713
RL Voltage	-	210/212/211
RL Amperage	-	5.9/6.0/5.8
Total ESP	0.50"	0.61
Fan Discharge SP	-	NR

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

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Notes: BURNER DP 0.379"

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Project: FREDDY'S - SHILOH, IL

System/Unit: FAN - Exhaust

Asset: EF1 AREA: RESTROOM

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

Motor Data		
	Design	**Actual**
Motor MFG	-	BROAN
Frame	-	-
Horsepower	136W	136W
Motor Rpm	-	-
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	0.4
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	150	143
Fan RPM	1300	DD
Fan Rotation	-	DD
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	121
RL Amperage	-	0.3
Total ESP	0.25"	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	NR

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Notes:

Asset: EF2 AREA: RESTROOM

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

Motor Data		
	Design	**Actual**
Motor MFG	-	BROAN
Frame	-	-
Horsepower	136W	136W
Motor Rpm	-	-
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	0.4
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	150	140
Fan RPM	1300	DD
Fan Rotation	-	DD
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	121
RL Amperage	-	0.2
Total ESP	0.25"	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	NR

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Notes:

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Project: FREDDY'S - SHILOH, IL

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	-	2510431
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56H
Horsepower	1.5	1.50
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	-	VL40
Motor Bore Size	-	0.625"
Motor Sheave SetPt	-	3 TURNS OUT
Fan Sheave Size	-	AK38
Fan Sheave Bore	-	0.875"
Belt CL Distance	-	7.25"
Num of Belts	-	1
Belt Size	-	AX23

Test Data		
	Design	**Actual**
CFM	2584	2694
Fan RPM	1329	1326
Fan Rotation	-	CCW
Motor RPM	-	1753
RL Voltage	-	209/208/208
RL Amperage	-	4.5/4.3/4.4
Suction ESP	-	-0.65
Discharge ESP	-	ATM
Total ESP	1.40"	0.65"
Brake Horse Power	-	1.42

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Project: FREDDY'S - SHILOH, IL

System/Unit: FAN - Exhaust

Asset: KEF2 AREA: HOOD 3

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU50HFA	DU50HFA
Serial Num	-	2510431
Type	CENTRIFUGAL	CENTRIFUAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	0.5	0.50
Motor Rpm	-	1625
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	5.6
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	775	770
Fan RPM	1441	DD
Fan Rotation	-	DD
Motor RPM	-	DD
System SetPt	-	LOW
RL Voltage	-	116
RL Amperage	-	3.3
Total ESP	1.25"	0.62"
Fan Inlet SP	-	-0.62
Fan Discharge SP	-	ATM

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Project: FREDDY'S - SHILOH, IL

System/Unit: FAN - Exhaust

Asset: KEF3 AREA: HOOD 4

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU30HFA	DU30HFA
Serial Num	-	2510431
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
Amperage (rated)	-	3
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	525	500
Fan RPM	1450	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	115
RL Amperage	-	2.36
Total ESP	0.85"	0.74"
Fan Inlet SP	-	-0.74
Fan Discharge SP	-	ATM

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Notes:

National TAB

Project: FREDDY'S - SHILOH, IL

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	-	2510431
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	-	152
Filter2 FPM	-	176
Filter3 FPM	-	168
Filter4 FPM	-	178
Filter5 FPM	-	178
Filter High FPM(corr)	-	178
Filter Low FPM (corr)	-	152
Filter Ave FPM(corr)	-	171
CFM	1292	1385

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	7.97	7.97
Kv factor (Vel)	0.90	0.90
Num of Readings	-	8
Reading1 FPM	-	122
Reading2 FPM	-	131
Reading3 FPM	-	143
Reading4 FPM	-	152
Reading5 FPM	-	153
Reading6 FPM	-	145
Reading7 FPM	-	138
Reading8 FPM	-	130
High FPM(corr)	-	138
Low FPM(corr)	-	110
Ave FPM(corr)	-	124
CFM	1034	1103

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	258	282
Smoke Generation Type	-	45 SEC SMOKE CANDLE
Cooking Equip Heat On	-	NO
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	15
Riser Temp F (idle) Riser 1	-	112
Riser Temp F (idle) Riser 2	-	115
Ambient Room Temp	-	77
100% override functional	-	YES

General		
	Design	**Actual**
Third Party Witness	-	TIM
Third Party Company	-	
Tech Witness	-	JUSTIN MCFALL
Tech Company	-	NATIONAL TAB

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Notes:

National TAB

Project: FREDDY'S - SHILOH, IL

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	-	2510431
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	-	158
Filter2 FPM	-	162
Filter3 FPM	-	171
Filter4 FPM	-	169
Filter5 FPM	-	148
Filter High FPM(corr)	-	171
Filter Low FPM (corr)	-	148
Filter Ave FPM(corr)	-	161
CFM	1292	1309

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	7.97	7.97
Kv factor (Vel)	0.90	0.90
Num of Readings	-	8
Reading1 FPM	-	152
Reading2 FPM	-	136
Reading3 FPM	-	112
Reading4 FPM	-	112
Reading5 FPM	-	133
Reading6 FPM	-	117
Reading7 FPM	-	119
Reading8 FPM	-	119
High FPM(corr)	-	137
Low FPM(corr)	-	101
Ave FPM(corr)	-	113
CFM	1034	994

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	258	315
Smoke Generation Type	-	45 SEC SMOKE CANDLE
Cooking Equip Heat On	-	NO
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	15
Riser Temp F (idle) Riser 1	-	112
Riser Temp F (idle) Riser 2	-	115
Ambient Room Temp	-	77
100% override functional	-	YES

General		
	Design	**Actual**
Third Party Witness	-	TIM
Third Party Company	-	
Tech Witness	-	JUSTIN MCFALL
Tech Company	-	NATIONAL TAB

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Notes:

National TAB

Project: FREDDY'S - SHILOH, IL

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	-	2510431
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	-	152
Filter2 FPM	-	161
Filter3 FPM	-	162
Filter High FPM(corr)	-	162
Filter Low FPM (corr)	-	152
Filter Ave FPM(corr)	-	158
CFM	775	770

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

Test Data Supply		
	Design	**Actual**
AK factor	1	1
Total AK Area	6	6
Kv factor (Vel)	0.87	0.87
Num of Readings	-	7
Reading1 FPM	-	122
Reading2 FPM	-	112
Reading3 FPM	-	109
Reading4 FPM	-	116
Reading5 FPM	-	108
Reading6 FPM	-	112
Reading7 FPM	-	131
High FPM(corr)	-	114
Low FPM(corr)	-	94
Ave FPM(corr)	-	100
CFM	675	694

Performance Data		
	Design	**Actual**
Exh-Supply Net CFM	100	76
Smoke Generation Type	-	45 SEC SMOKE CANDLE
Cooking Equip Heat On	-	NO
Hood Capture %	-	100%
Space Offset Temp Riser 1	-	15
Space Offset Temp Riser 2	-	15
Riser Temp F (idle) Riser 1	-	112
Riser Temp F (idle) Riser 2	-	115
Ambient Room Temp	-	77
100% override functional	-	YES

General		
	Design	**Actual**
Third Party Witness	-	TIM
Third Party Company	-	
Tech Witness	-	JUSTIN MCFALL
Tech Company	-	NATIONAL TAB

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Notes:

National TAB

Project: FREDDY'S - SHILOH, IL

System/Unit: Kitchen Hood Type II

Asset: HD(Type2)4 AREA: HOOD 4

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4224 VHB-G	4224 VHB-G
Serial Num	-	2510431
Type	TYPE II CANOPY	TYPE II CANOPY
Hood length	42	42
Hood Width	42	42

Test Data		
	Design	**Actual**
Exhaust CFM	525	500

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Notes: