

Report By:



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

Report: Test and Balance
Date: 10/7/2020

PROJECT
FREDDY'S - SAPPINGTON (ST LOUIS, MO)

5479 SOUTHFIELD CENTER
ST. LOUIS, MO

Client

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

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National TAB

Project: FREDDY'S - SAPPINGTON (ST LOUIS, MO)

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REMARKS

Assigned Organization: National TAB

Status: Submitted

Asset:

PRIORITY (HIGH/LOW/INFO ONLY)	
HIGH	RTU1, RTU2, RTU3 do not have a wire run from thermostats to OCP terminal at units. Installed a temporary jumper so that balancing of the OA could be completed. But this wire needs to be run in order to ensure that the OA dampers close while the restaurant is unoccupied and open during occupied hours.
HIGH	KEF3 has a small hole at base of the fan that goes into unit curb. This penetration needs to be sealed to prevent water or debris from entering duct. See pictures

Notes/Comments:



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

The mechanical equipment to be tested, adjusted, and balanced includes: All Roof Top Units (RTU), All Exhaust Fans (EF), All Make Up Air Units (MUA), All Kitchen Hoods, and all associated air devices.

RTU's

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). Any equipment that fell outside of this 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 +/-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. Any EF's or MUA's that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans

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 +/-10% of design. Each terminal device was balanced to within +/-10% 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 recorded at 0.0005" 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.

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	2000	1993	1600	1561	400	432	20.0%	21.7%						
RTU-2	DINING	3000	3145	2400	2541	600	604	20.0%	19.2%						
RTU-3	KITCHEN	4500	4154	3600	3165	900	989	20.0%	23.8%						
MUA-1	HOODS									2060	2006				
KEF-1	GRIDDLE											1800	1847		
KEF-2	FRYER											775	744		
KEF-3	DISH HOOD											525	531		
EF-1	RESTROOM													225	248
EF-2	RESTROOM													225	163
TOTALS		9500	9292	7600	7267	1900	2025			2060	2006	3100	3122	450	411

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3960	4031
TOTAL EXHAUST	3550	3533
NET AIRFLOW	410	498

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.001
SIDE	
REAR	0.
AVERAGE	0.0005

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:

KEF1



KEF2



KEF3



MAU



KEF3 Hole In Curb



RTU1



RTU2



RTU3



RTU3 Duct



RTU2 Duct



RTU3 Duct



Front Of Store



HD1



HD2



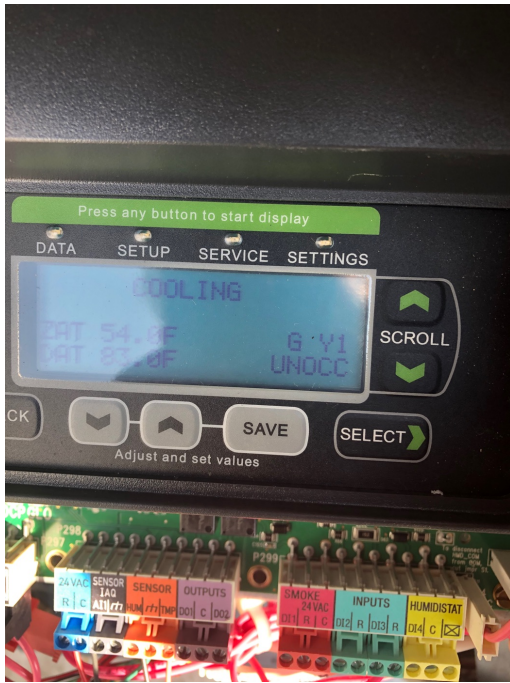
HD3

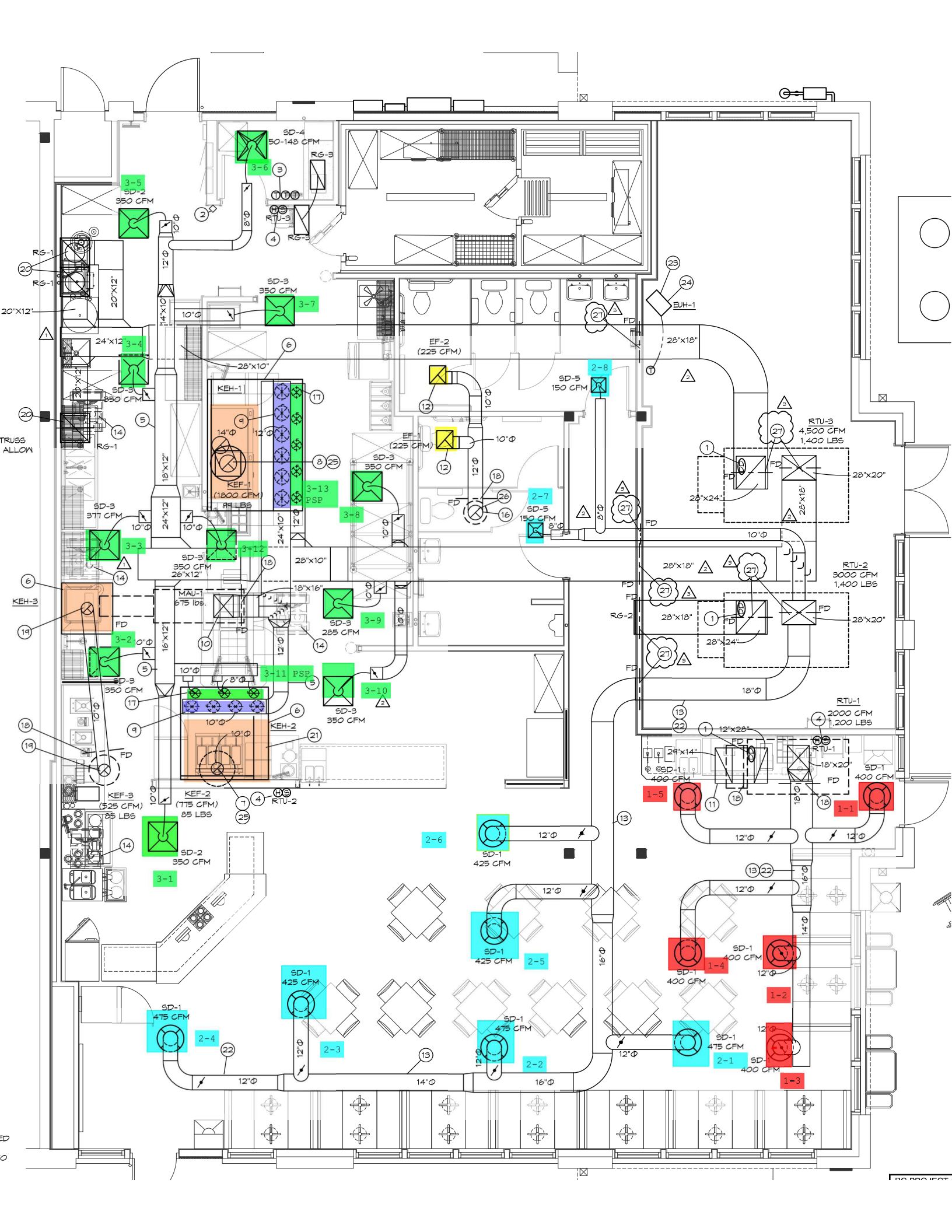


Thermostats



Typ. RTU OCP







TECH - STEP 1: INITIAL WALKTHROUGH

Assigned Organization: National TAB

Status: Submitted

Asset:

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?	YES

Notes/Comments:



TECH - STEP 2: UNIT DATA AND EVAL

Assigned Organization: National TAB

Status: Submitted

Asset:

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?	PRODIGY BOARD
Free cooling enthalpy set point set for lowest setting (Typically "D")	PRODIGY BOARD
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?	DD
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?	YES
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?	YES
Unit free of noticeable noise and vibration?	YES
If there is a dish exhaust fan, is a back draft damper installed? (If no dish EF then put NA)	YES
MUA	



Rotation is correct?	NO - ELECTRICAL FIXED
Gas piping is installed and valves are in on position?	YES
Heater tested and is functional?	YES
Internal motorized damper is fully opening?	YES
Motor is operating below the FLA rating?	YES
Unit free of noticeable noise and vibration?	YES
HOODS	
Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	NO, COOKING EQUIPMENT HAS NOT BEEN STARTED
Griddle is completely centered underneath hood?	YES
PSPs	
Are the dampers tightened down? (Round collars with a wingnut, not the rectangular dampers with the allen adjustment.)	YES
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES
PICTURES TAKEN OF:	
All Issues	YES
Each Piece of equipment	YES
Each Hood	YES
Front of Store	YES

Notes/Comments:



TECH - STEP 3: TEST, ADJUST AND BALANCE

Assigned Organization: National TAB

Status: Submitted

Asset:

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".	NA

Notes/Comments:



TECH - STEP 4: FINAL TESTS

Assigned Organization: National TAB

Status: Submitted

Asset:

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	NONE
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	10/6/2020
TAB tech name / Firm	TRAVIS HALTER / NATIONAL TAB
Site super name / Firm	TAYLOR DIETZ / FREDDY'S
Owner representative name / Firm (if Applicable)	NA
Video taken of the smoke test?	YES
Building pressure at front & back doors (All Systems On)	0.0005" AVG
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
Is the kitchen negative to the dining (use balance schedule sheet for calculation)?	YES
Thermostats are programmed?	YES
Prodigy parameter 131 is set to the same as the minimum damper position for all RTU's?	YES

Notes/Comments:



Asset: RTU1

AREA: DRINKS

Unit Data		
	Design	Actual
MFG	LENNNOX	LENNNOX
Model Num	LGH060H4E	LGH060H4EU5Y
Serial Num	-	5620G03265
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	21.5X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2
Num Final Filter 2	-	NA
Final Filter Size 2	-	NA

Test Data		
	Design	Actual
SF CFM	2000	1993
SF RPM	NA	[2]
RA CFM	1600	1561
OA CFM	400	432
RL Voltage	-	215
RL Amperage	-	5.4
SF Rotation	-	CW, CORRECT
RA Damper Position	-	63%
Min OA Damper Position	-	37%
Min OA Damper Type	-	ECONOMIZER

Motor Data		
	Design	Actual
Motor MFG	-	[1]
Frame	-	[1]
Horsepower	NA	1
Motor Rpm	NA	[1]
Phase	3	1
Rated Voltage	208	208/230
Rated Amperage	NA	7.4

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.28
Fan Suction SP	-	-0.41
Fan Discharge SP	-	0.36
Total ESP	1.00"	0.64
Fan Total SP	NA	0.77

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

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

Completed By: Travis Halter on 10/06/2020

- Notes: [1] Motor sticker not accessible, motor data taken from unit sticker.
 [2] Motor set to 72% speed
 [3] OCP not connected. Installed temporary jumper to balance the OA.



Diffuser Supply (GRD)

RTU1 / DRINKS

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DRINKS	SD-1	12	400	1	284	340	408	102.0
SGRD2	DINING	SD-1	14	400	1	361	309	371	92.8
SGRD3	DINING	SD-1	12	400	1	412	340	408	102.0
SGRD4	DINING	SD-1	12	400	1	306	356	427	106.8
SGRD5	DRINKS	SD-S	12	400	1	276	316	379	94.8

Completed By: Travis Halter on 10/06/2020

Asset	Area Served	Notes



Asset: RTU2

AREA: DINING

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Model Num	LGH092H4B	LGH092H4BH4Y
Serial Num	-	5620G02952
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.25X22.75
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	NA
Final Filter Size 2	-	NA

Test Data		
	Design	Actual
SF CFM	3000	3145
SF RPM	-	963
RA CFM	2400	2541
OA CFM	600	604
RL Voltage	-	209/201/209
RL Amperage	-	7.9/7.9/7.9
SF Rotation	-	CCW, CORRECT
RA Damper Position	-	70%
Min OA Damper Position	-	30%
Min OA Damper Type	-	ECONOMIZER

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	-	5
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	13.8-13.0

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.26
Fan Suction SP	-	-0.70
Fan Discharge SP	-	1.06
Total ESP	1.00"	1.32
Fan Total SP	-	1.76

Drive Data		
	Design	Actual
Motor Sheave Size	-	4.875"
Motor Bore Size	-	1.125"
Motor Sheave SetPt	-	5
Fan Sheave Size	-	7.1875
Fan Sheave Bore	-	1"
Belt CL Distance	-	21.75"
Num of Belts	-	1
Belt Size	-	BX59
Belt Alignment	-	GOOD

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

Completed By: Travis Halter on 10/06/2020

Notes: [1] OCP not connected, bypassed OA dampers open to ensure balance.
 [2] OCP not connected. Installed temporary jumper to balance the OA.



Diffuser Supply (GRD)

RTU2 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINING	SD-1	12	475	1	526	541	513	108.0
SGRD2	DINING	SD-1	16	475	1	544	535	508	106.9
SGRD3	DINING	SD-1	12	425	1	538	521	444	104.5
SGRD4	DINING	SD-1	12	475	1	525	513	487	102.5
SGRD5	DINING	SD-1	12	425	1	496	465	441	103.8
SGRD6	DINING	SD-1	12	425	1	421	453	430	101.2
SGRD7	DINING	SD-5	8	150	1	268	173	164	109.3
SGRD8	DINING	SD-5	8	150	1	164	166	158	105.3

Completed By: Travis Halter on 10/06/2020

Asset	Area Served	Notes



Asset: RTU3

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Model Num	LGH150H4B	LGH150H4BH2Y
Serial Num	-	5620G03275
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.5X23
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	NA
Final Filter Size 2	-	NA

Test Data		
	Design	Actual
SF CFM	4500	4154
SF RPM	-	1138
RA CFM	3600	3165
OA CFM	900	989
RL Voltage	-	214/214/215
RL Amperage	-	10.4/10.4/10.4
SF Rotation	-	CCW, CORRECT
RA Damper Position	-	75%
Min OA Damper Position	-	25%
Min OA Damper Type	-	ECONOMIZER

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	-	5
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	13.8-13.0

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.77
Fan Suction SP	-	-1.32
Fan Discharge SP	-	1.29
Total ESP	1.00"	2.06
Fan Total SP	-	2.61

Drive Data		
	Design	Actual
Motor Sheave Size	-	4.875"
Motor Bore Size	-	1.125"
Motor Sheave SetPt	-	1
Fan Sheave Size	-	7"
Fan Sheave Bore	-	1"
Belt CL Distance	-	21.75"
Num of Belts	-	1
Belt Size	-	BX59
Belt Alignment	-	GOOD

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

Completed By: Travis Halter on 10/06/2020

Notes: [1] OCP not connected. Installed temporary jumper to balance the OA.



Diffuser Supply (GRD)

RTU3 / KITCHEN

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	KITCHEN	SD-2	10"	350	1	305	279	331	94.6
SGRD2	KITCHEN	SD-3	10"	350	1	218	280	333	95.1
SGRD3	KITCHEN	SD-3	10"	377	1	249	301	357	94.7
SGRD4	KITCHEN	SD-3	12"	350	1	179	232	316	90.3
SGRD5	KITCHEN	SD-2	10"	350	1	217	249	321	91.7
SGRD6	KITCHEN	SD-4	8"	148	1	61	115	137	92.6
SGRD7	KITCHEN	SD-3	10"	350	1	143	269	320	91.4
SGRD8	KITCHEN	SD-3	10"	350	1	313	275	326	93.1
SGRD9	KITCHEN	SD-3	10"	285	1	333	224	266	93.3
SGRD10	KITCHEN	SD-3	10"	350	1	294	234	323	92.3
SGRD11	HD2 ACPSP	ACPSP	60X6	309	1.95	222	245	290	93.9
SGRD12	KITCHEN	SD-3	10"	350	1	187	239	324	92.6
SGRD13	HD1 ACPSP	ACPSP	120X6	565	3.9	566	378	510	90.3

Completed By: Travis Halter on 10/06/2020

Asset	Area Served	Notes

System/Unit: FAN - Supply



Asset: MAU1

AREA: HOOD 1&2

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	A1-D.250-15D	A1-D.250-15D
Serial Num	-	4032106
Type	MAU	MAU
Configuration	VERTICAL DISCHARGE	VERTICAL

Test Data		
	Design	Actual
CFM	2060	2006
SF RPM	2135	2308
Motor RPM	-	2308
RL Voltage	-	245/245/245
RL Amperage	-	5.1/5.1/5.1
Total ESP	0.50"	NA
Fan Discharge SP	-	NA

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	145T
Horsepower	2	2
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	5.48/2.74
Service Factor	-	1.15

General		
	Design	Actual
Fan Rotation Correct	-	YES

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
Air Flow Switch SP Actual	-	0.43

Completed By: Travis Halter on 10/06/2020

Notes: [1] VFD set to 79.6 Hz

System/Unit: FAN - Exhaust



Asset: EF1

AREA: RESTROOM

Unit Data		
	Design	Actual
MFG	COOK	PENNBARRY
Model Num	GC-182	Z81S
Serial Num	-	G20SZ45867
Type	CEILING	CEILING
Configuration	HORIZONTAL	CENTRIFUGAL

Test Data		
	Design	Actual
CFM	225	248
Fan RPM	-	1050
Fan Rotation	-	CW, CORRECT
Motor RPM	-	1050
System SetPt	-	SINGLE SPEED
RL Voltage	-	[2]
RL Amperage	-	[2]
Total ESP	0.25"	[3]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[3]

Motor Data		
	Design	Actual
Motor MFG	-	[1]
Frame	-	[1]
Horsepower	167W	[1]
Motor Rpm	-	1050
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	[1]
Service Factor	-	1.0

Completed By: Travis Halter on 10/05/2020

- Notes:
- [1] Motor sticker not accessible, motor data taken from unit sticker
 - [2] Unable to safely take volts and amps
 - [3] Unable to take SPs due to hard ceiling.

System/Unit: FAN - Exhaust



Asset: EF2

AREA: RESTROOM

Unit Data		
	Design	Actual
MFG	COOK	PENNBARRY
Model Num	GC-182	Z81S
Serial Num	-	G20SZ45866
Type	CEILING	CEILING
Configuration	HORIZONTAL	CENTRIFUGAL

Test Data		
	Design	Actual
CFM	225	163
Fan RPM	-	1050
Fan Rotation	-	CW, CORRECT
Motor RPM	-	1050
System SetPt	-	SINGLE SPEED
RL Voltage	-	[2]
RL Amperage	-	[2]
Total ESP	-	[3]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[3]

Motor Data		
	Design	Actual
Motor MFG	-	[1]
Frame	-	[1]
Horsepower	-	[1]
Motor Rpm	-	1050
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	[1]
Service Factor	-	1.0

Completed By: Travis Halter on 10/05/2020

- Notes: [1] Motor sticker not accessible, motor data taken from unit sticker
 [2] Unable to safely take volts and amps
 [3] Unable to take SPs due to hard ceiling.

System/Unit: FAN - Exhaust



Asset: KEF1

AREA: GRIDDLE HOOD

Unit Data		
	Design	Actual
MFG	CAPTIVE AIRE	CAPTIVE AIRE
Model Num	NA	DU85HFA
Serial Num	-	4032106
Type		UPBLAST
Configuration		CENTRIFUGAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower		0.75
Motor Rpm	-	1800
Phase		1
Voltage (rated)		208-277
Amperage (rated)	-	6.5
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	1800	1847
Fan RPM		1404
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1404
System SetPt	-	78%
RL Voltage	-	215
RL Amperage	-	5.4
Total ESP		1.17
Fan Inlet SP	-	-1.17
Fan Discharge SP	-	ATM

Completed By: Travis Halter on 10/06/2020

Notes:

System/Unit: FAN - Exhaust



Asset: KEF2

AREA: FRYER HOOD

Unit Data		
	Design	Actual
MFG	CAPTIVE AIRE	CAPTIVE AIRE
Model Num	NA	DU50HFA
Serial Num	-	4032106
Type		UPBLAST
Configuration		CENTRIFUGAL

Test Data		
	Design	Actual
CFM	775	744
Fan RPM		1080
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1080
System SetPt	-	60%
RL Voltage	-	124
RL Amperage	-	2.7
Total ESP		0.60
Fan Inlet SP	-	-0.60
Fan Discharge SP	-	ATM

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

Completed By: Travis Halter on 10/06/2020

Notes:

System/Unit: FAN - Exhaust



Asset: KEF3

AREA: DISHWASHER

Unit Data		
	Design	Actual
MFG	CAPTIVE AIRE	CAPTIVE AIRE
Model Num	NA	DU33HFA
Serial Num	-	4032106
Type		UPBLAST
Configuration		CENTRIFUGAL

Test Data		
	Design	Actual
CFM	525	531
Fan RPM		1296
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1296
System SetPt	-	72%
RL Voltage	-	124
RL Amperage	-	1.9
Total ESP		0.43"
Fan Inlet SP	-	-0.43
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower		0.33
Motor Rpm		1800
Phase		1
Voltage (rated)		115
Amperage (rated)	-	4.3
Service Factor	-	1.0

Completed By: Travis Halter on 10/06/2020

Notes: [1] Unit has hole that goes into unit curb, see pictures

System/Unit: Kitchen Hood Type I



Asset: HD1

AREA: GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	5424 ND-2-ACPSP-F	5424 ND-2
Job / Serial Num	-	4032106
Type	TYPE 1 CANOPY	TYPE I
Hood length	108	108
Hood Width	54	54
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	14	14
Supply Plenum Length	120	120

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	6	6
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	9.72	9.72
Filter1 FPM	-	192
Filter2 FPM	-	181
Filter3 FPM	-	207
Filter4 FPM	-	196
Filter5 FPM	-	186
Filter6 FPM	-	177
Filter Ave FPM(corr)	-	190
CFM	1800	1847

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

Test Data Supply		
	Design	Actual
AK factor	1	1
Total AK Area	12	11.67
Kv factor (Vel)	.92	0.92
Num of Readings	-	10
Reading1 FPM	-	143
Reading2 FPM	-	175
Reading3 FPM	-	177
Reading4 FPM	-	162
Reading5 FPM	-	135
Reading6 FPM	-	153
Reading7 FPM	-	120
Reading8 FPM	-	86
Reading9 FPM	-	106
Reading10 FPM	-	83
Ave FPM(corr)	-	134
CFM	1440	1439

Performance Data		
	Design	Actual
Exh-Supply Net CFM	360	408
Smoke Generation Type	-	SMOKE EMITTER
Cooking Equip Heat On	-	NO
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES
Space Offset Temp Riser 1	-	15.0
Riser Temp F (idle) Riser 1	-	69.8
Ambient Room Temp	-	70.8

General		
	Design	Actual
Third Party Witness	-	TAYLOR DIETZ
Third Party Company	-	FREDDY'S
Tech Witness	-	TRAVIS HALTER
Tech Company	-	NATIONAL TAB

Completed By: Travis Halter on 10/06/2020

Notes:

System/Unit: Kitchen Hood Type I



Asset: HD2

AREA: FRYER

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	54254 ND-2-ACPSP-F	5424 ND-2
Job / Serial Num	-	4032106
Type	TYPE I CANOPY	TYPE I
Hood length	60	60"
Hood Width	54	54"
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	12	12"
Supply Plenum Length	60	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE FILTER	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	-	153
Filter2 FPM	-	155
Filter3 FPM	-	152
Filter Ave FPM(corr)	-	153
CFM	775	744

Cooking Equipment		
	Design	Actual
Item 1	-	FRYER

Test Data Supply		
	Design	Actual
AK factor	1	1
Total AK Area	5	5
Kv factor (Vel)	.87	0.87
Num of Readings	-	5
Reading1 FPM	-	116
Reading2 FPM	-	123
Reading3 FPM	-	112
Reading4 FPM	-	155
Reading5 FPM	-	143
Ave FPM(corr)	-	130
CFM	620	567

Performance Data		
	Design	Actual
Exh-Supply Net CFM	155	177
Smoke Generation Type	-	SMOKE EMITTER
Cooking Equip Heat On	-	NO
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES
Space Offset Temp Riser 1	-	15.0
Riser Temp F (idle) Riser 1	-	70.8
Ambient Room Temp	-	70.8

General		
	Design	Actual
Third Party Witness	-	TAYLOR DIETZ
Third Party Company	-	FREDDY'S
Tech Witness	-	TRAVIS HALTER
Tech Company	-	NATIONAL TAB

Completed By: Travis Halter on 10/06/2020

Notes:



Asset: HD(Type2)1

AREA: DISH

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4224 VHB-G	4224 VHB
Serial Num	-	4032106
Type	TYPE 2 CANOPY	TYPE II
Hood length	42	42"
Hood Width	42	42"

Test Data		
	Design	Actual
Exhaust CFM	525	531

Completed By: Travis Halter on 10/05/2020

Notes: