

Report By:



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

Report: Test and Balance
Date: 2/24/2020

PROJECT
FREDDY'S - MT. VERNON, IL

101 N POTOMAC BLVD
MT VERNON, IL 62864

Client

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

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Project: FREDDY'S - MT. VERNON, IL

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DEFICIENCY LIST

Assigned Organization: National TAB

Status: Not Submitted

Asset:

PRIORITY (HIGH/LOW/INFO ONLY)	
INFO ONLY	NO BACKDRAFT DAMPER INSTALLED AT DISH HOOD
INFO ONLY	INTERNAL BACKDRAFT DAMPERS ON INLINE EF1/EF2 FANS TO BE CHECKED TO ENSURE THEY ARE OPENING FULLY
INFO ONLY	KEF1, KEF2 NEED FRONT OF FAN BASE TO CURB SECURED WITH A SCREW
INFO ONLY	KEF1 (GRIDDLE FAN) NEEDS STACK INSTALLED
INFO ONLY	PANEL BREAKER LABELS TO BE CONFIRMED AS COMPLETE
INFO ONLY	HOOD GREASE CUPS TO BE CONFIRMED AS INSTALLED
INFO ONLY	HOODS TO BE FINISHED CAULKED TO WALL
INFO ONLY	ADD PLASTIC - SENSOR COVERS OVER DOAS SPACE/HUMIDITY SENSOR IN KITCHEN TO PROTECT AGAINST DAMAGE.

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.

Constant Volume RTU/DOAS 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). 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 0.0065" 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-NOT STARTED" 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	5000	5274	4100	4323	900	951	18.0%	18.0%						
DOAS-1	KITCHEN	2800	2644	0	0	2800	2644	100.0%	100.0%						
KEF-1	HD1 GRIDDLE											1800	1720		
KEF-2	HD2 FRYER											775	855		
KEF-3	HD3 DISHWASHER											525	493		
EF-1	FAMILY RR													75	44
EF-2	MENS RR													150	50
EF-3	WOMENS RR													75	97
TOTALS		7800	7918	4100	4323	3700	3595			0	0	3100	3068	300	191

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3700	3595
TOTAL EXHAUST	3400	3259
NET AIRFLOW	300	336

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.007
SIDE	
REAR	0.006
AVERAGE	0.0065

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:

EF1-3 Roof Outlet



RTU1



KEF1



KEF2



KEF3



DOAS1



DOAS Office



DOAS Unit



HD1



HD2



HD3

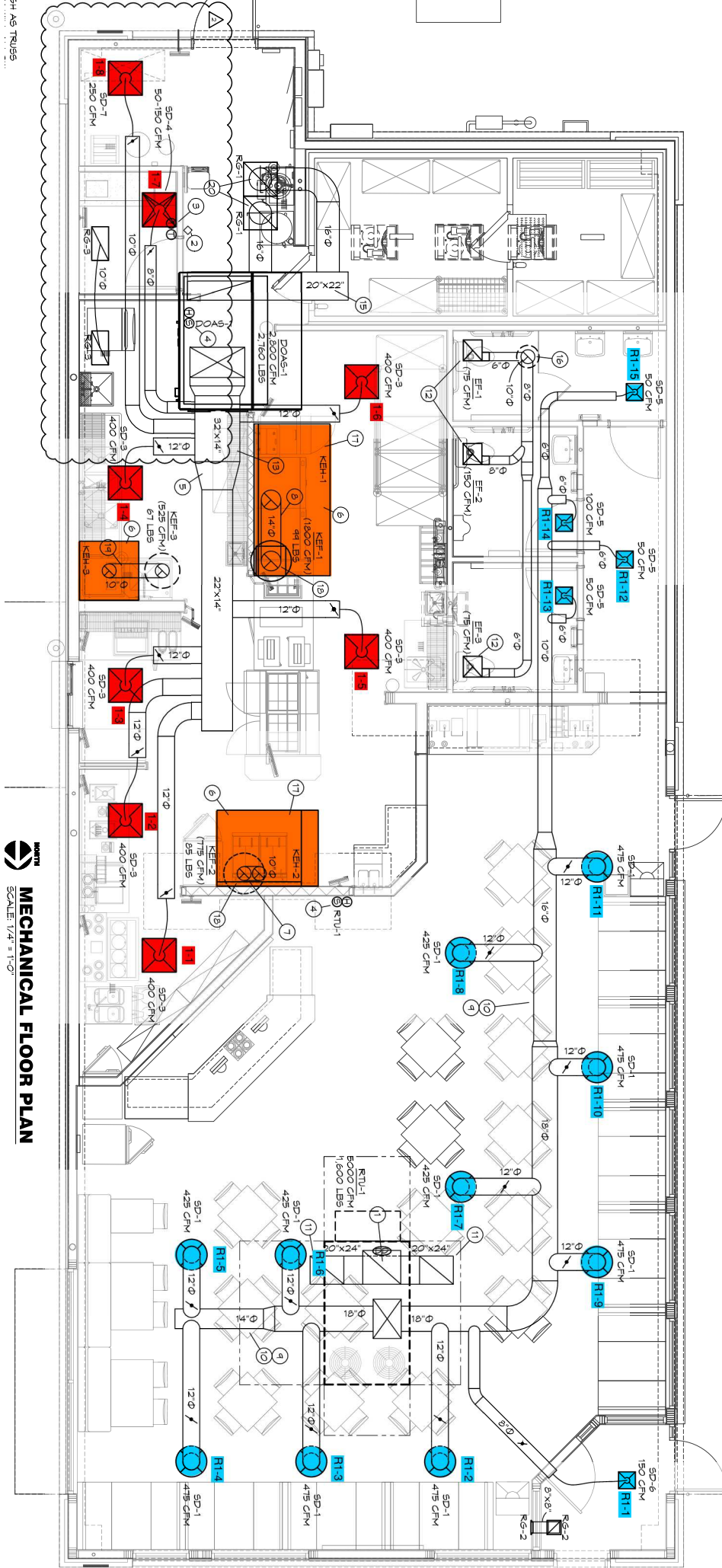


Thermostat



Front Of Store





MORTI
MECHANICAL FLOOR PLAN
 SCALE: 1/4" = 1'-0"

SH AS TRUSS



TECH - STEP 1: INITIAL WALKTHROUGH

Assigned Organization: National TAB

Status: Not 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?	NA

Notes/Comments:



TECH - STEP 2: UNIT DATA AND EVAL

Assigned Organization: National TAB

Status: Not Submitted

Asset:

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:	
RTU's/AHU's	
Economizers are assembled and functional?	YES
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
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?	INTEGRAL BACK DRAFT DAMPER'S PER FAN SPECIFICATION, NOT VISIBLE DUE TO HARD CEILING IN RESTROOMS
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)	NO
HOODS	
Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	NO, EQUIPMENT HAS NOT BEEN SET UP
Griddle is completely centered underneath hood?	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: Not 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: Not 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	2/17/2020
TAB tech name / Firm	TRAVIS HALTER / NATIONAL TAB
Site super name / Firm	TOM CLEMENTS / HUNTER CONSTRUCTION
Building pressure at front & back doors (All Systems On)	0.007" / 0.006"
Video taken of the smoke test?	YES
ADDITIONAL	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	YES
Thermostats are programmed?	YES
Thermostats Schedules: 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	STARTS AT 11:45 PM
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)

THIS THERMOSTAT DOES NOT HAVE A LOCKING OPTION

Notes/Comments:



Asset: DOAS1

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	CASRTU3-I.300-18-20T-DOAS	CASRTU3-I.300-18-20T-DOAS
Serial Num	-	3954439
Type	DOAS	DOAS
Configuration	VERTICAL DISCHARGE	VERTICAL DISCGARGE
Num OA Filters 1	-	4
OA Filter Size 1	-	23X14
Num Final Filter 1	-	8
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	182T
Horsepower	3.0	3
Motor Rpm	-	1755
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	8.6/4.3

Drive Data		
	Design	Actual
Num of Belts	-	DD

Test Data		
	Design	Actual
SF CFM	2800	2644
SF RPM	1254	1258
RA CFM	0	0
OA CFM	2800	2644
RL Voltage	-	215/215/215
RL Amperage	-	5.2/5.2/5.2
SF Rotation	-	CCW
RA Damper Position	-	OCCUPIED-CLOSED
Min OA Damper Position	-	100%
Min OA Damper Type	-	OCCUPIED - MUA
Brake Horse Power	-	1.81

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

Completed By: Travis Halter on 02/17/2020

Notes: [1] VFD Set to 43.0 Hz
 [2] Space temperature in the office reads 70 and in the unit reads 70. See pictures.



Diffuser Supply (GRD)

DOAS1 / KITCHEN

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	CUSTARD	SDD3	12"	400	1	348	382	382	95.5
SGRD2	CUSTARD	SD3	12"	400	1	454	363	363	90.8
SGRD3	DRIVE THRU	SD3	12"	400	1	435	375	375	93.8
SGRD4	DISHWASH	SD3	12"	400	1	336	364	364	91.0
SGRD5	PREP	SD3	12"	400	1	313	396	396	99.0
SGRD6	PREP	SD3	12"	400	1	383	383	383	95.8
SGRD7	OFFICE	SD4	8"	150	1	146	142	142	94.7
SGRD8	UTILITY	SD7	10"	250	1	188	239	239	95.6

Completed By: Travis Halter on 02/17/2020

Asset	Area Served	Notes



Asset: RTU1

AREA: DINING

Unit Data		
	Design	Actual
MFG	LENNOX	LENNOX
Model Num	LGH150H4M	LGH150H4MH1 Y
Serial Num	-	5619L09816
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	2
OA Filter Size 1	-	14.25X22.75
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	184TZ
Horsepower	5.0	5.0
Motor Rpm	-	1765
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	15.8-14.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	5.0"
Motor Bore Size	-	1.0"
Motor Sheave SetPt	-	5.5 TURNS OUT
Fan Sheave Size	-	6.5"
Fan Sheave Bore	-	1.0"
Belt CL Distance	-	21.25"
Num of Belts	-	1
Belt Size	-	BX57
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	5000	5274
SF RPM	-	1054
RA CFM	4100	4323
OA CFM	900	951
RL Voltage	-	215/215/215
RL Amperage	-	10.9/11.0/11.1
SF Rotation	-	CCW
RA Damper Position	-	65% HI / 53% LOW
Min OA Damper Position	-	35% HI / 47% LOW
Min OA Damper Type	-	ECON
Brake Horse Power	-	3.48

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.18"
Fan Suction SP	-	-1.11"
Fan Discharge SP	-	0.98"
Total ESP	1.00"	1.16"
Fan Total SP	-	2.09"

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

Completed By: Travis Halter on 02/17/2020

Notes: [1] Coil is clean, no blockage at discharge



Diffuser Supply (GRD)

RTU1 / DINING

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRY	SD6	8"	150	1.88	135	174	153	102.0
SGRD2	DINING	SD1	12"	475	1	314	465	428	90.1
SGRD3	DINING	SD1	12"	475	1	623	598	519	109.3
SGRD4	DINING	SD1	12"	475	1	680	584	512	107.8
SGRD5	DINING	SD1	12"	425	1	741	532	468	110.1
SGRD6	DINING	SD1	12"	425	1	671	541	476	112.0
SGRD7	DINING	SD1	12"	425	1	528	533	469	110.4
SGRD8	DINING	SD1	12"	425	1	542	512	451	106.1
SGRD9	DINING	SD1	12"	475	1	448	556	489	102.9
SGRD10	DINING	SD1	12"	475	1	558	619	521	109.7
SGRD11	DINING	SD1	12"	475	1	662	593	522	109.9
SGRD12	RR VESTIBULE	SD5	6"	50	1	119	67	54	108.0
SGRD13	WOMENS RR	SD5	6"	50	1	88	62	55	110.0
SGRD14	MENS RR	SD5	6"	100	1	90	116	102	102.0
SGRD15	FAMILY RR	SD5	6"	50	1	138	75	55	110.0

Completed By: Travis Halter on 02/17/2020

Asset	Area Served	Notes
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Asset: EF1

AREA: FAMILY RR

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC	GEMINI 140 SERIES
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Test Data		
	Design	Actual
CFM	75	44
Fan RPM	900	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	123
RL Amperage	-	0.33
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	30.3W	15W
Motor Rpm	-	1550/2 SPD
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.4/0.22
Service Factor	-	1.0

Completed By: Travis Halter on 02/17/2020

Notes: [1] Ductwork located above hard ceiling. INTEGRAL BACK DRAFT DAMPER may need to be checked as a point of restriction



Asset: EF2

AREA: MENS RR

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC	GEMINI 160 SERIES
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Test Data		
	Design	Actual
CFM	150	50
Fan RPM	1099	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	124
RL Amperage	-	0.33
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	50.4W	16W
Motor Rpm	-	1100/2 SPD
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.51/0.44
Service Factor	-	1.0

Completed By: Travis Halter on 02/17/2020

Notes: [1] Ductwork located above hard ceiling. INTEGRAL BACK DRAFT DAMPER may need to be checked as a point of restriction



Asset: EF3

AREA: WOMENS RR

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC	GEMINI 140 SERIES
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Test Data		
	Design	Actual
CFM	75	97
Fan RPM	900	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	HIGH
RL Voltage	-	124
RL Amperage	-	0.38
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	30.3W	15W
Motor Rpm	-	1550/2 SPD
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.40/0.22
Service Factor	-	1.0

Completed By: Travis Halter on 02/17/2020

Notes: [1] Ductwork located above hard ceiling.



Asset: KEF1

AREA: HD1 GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU	DU85HFA
Serial Num	-	3898161
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	-
Horsepower	0.75	0.75
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	8.9
Service Factor	-	-

Test Data		
	Design	Actual
CFM	1800	1720
Fan RPM	1411	1440
Fan Rotation	-	CCW
Motor RPM	-	1440
System SetPt	-	80%
RL Voltage	-	124
RL Amperage	-	8.5
Total ESP	1.20"	1.04"
Fan Inlet SP	-	-1.04"
Fan Discharge SP	-	ATM

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Notes:



Asset: KEF2

AREA: HD2 FRYER

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU	DU50HFA
Serial Num	-	3898161
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	-
Horsepower	0.50	0.50
Motor Rpm	-	1800 VAR
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.3
Service Factor	-	-

Test Data		
	Design	Actual
CFM	775	855
Fan RPM	1532	1008
Fan Rotation	-	CCW
Motor RPM	-	1008
System SetPt	-	56%
RL Voltage	-	124
RL Amperage	-	1.8
Total ESP	1.25"	0.62"
Fan Inlet SP	-	-0.62"
Fan Discharge SP	-	ATM

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Notes:



Asset: KEF3

AREA: HD3 DISHWASHER

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU	DU33HFA
Serial Num	-	3898161
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Test Data		
	Design	Actual
CFM	525	493
Fan RPM	1296	666
Fan Rotation	-	CCW
Motor RPM	-	666
System SetPt	-	37%
RL Voltage	-	124
RL Amperage	-	0.4
Total ESP	0.60"	0.09"
Fan Inlet SP	-	-0.09"
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	48Y
Horsepower	0.33	0.33
Motor Rpm	-	1800 VAR
Phase	1	1
Voltage (rated)	115	120/240
Amperage (rated)	-	4.4/2.8
Service Factor	-	-

Completed By: Travis Halter on 02/17/2020

Notes: [1] Volts taken at disconnect, motor speed controlled through hood

System/Unit: Kitchen Hood Type I



Asset: HD1

AREA: GRIDDLE

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	3898161
Type	TYPE I CANOPY	TYPE I
Hood length	108	108"
Hood Width	54	54"

Performance Data		
	Design	Actual
Smoke Generation Type	-	SMOKE EMITTER
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES

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	-	165
Filter2 FPM	-	176
Filter3 FPM	-	183
Filter4 FPM	-	184
Filter5 FPM	-	173
Filter6 FPM	-	179
Filter Ave FPM(corr)	-	177
CFM	1800	1720

General		
	Design	Actual
Third Party Witness	-	TOM CLEMENTS
Third Party Company	-	HUNTER CONSTRUCTION
Tech Witness	-	TRAVIS HALTER
Tech Company	-	NATIONAL TAB

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

Completed By: Travis Halter on 02/17/2020

Notes:

System/Unit: Kitchen Hood Type I



Asset: HD2

AREA: FRYER

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	3898161
Type	TYPE I CANOPY	TYPE I
Hood length	60	60"
Hood Width	54	54"

Performance Data		
	Design	Actual
Smoke Generation Type	-	SMOKE EMITTER
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES

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	-	169
Filter2 FPM	-	183
Filter3 FPM	-	175
Filter4 FPM	-	NA
Filter5 FPM	-	NA
Filter6 FPM	-	NA
Filter Ave FPM(corr)	-	176
CFM	775	855

General		
	Design	Actual
Third Party Witness	-	TOM CLEMENTS
Third Party Company	-	HUNTER CONSTRUCTION
Tech Witness	-	TRAVIS HALTER
Tech Company	-	NATIONAL TAB

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

Completed By: Travis Halter on 02/17/2020

Notes:

System/Unit: Kitchen Hood Type II



Asset: HD3

AREA: DISHWASHER

Unit Data		
	Design	Actual
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	4224 VHB-G	4224 VHB-G
Serial Num	-	3898161
Type	TYPE II CANOPY	TYPE II
Hood length	42	42"
Hood Width	42	42"

Test Data		
	Design	Actual
Exhaust CFM	525	493

Completed By: Travis Halter on 02/17/2020

Notes:



**FREDDY'S ANSUL TEST
 READINESS INSPECTION
 [GENERAL
 CONTRACTOR]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

PRE-CONDITION TO ANSUL PRETEST	
ANSUL TRIP ONE COMPLETED (TANKS AND MICROSWITCH INSTALLED)	Yes
ABOVE CEILING MECHANICAL INSPECTIONS COMPLETED AND PASSED	Yes
ALL APPLIANCES (HVAC AND FOOD COOKING FOOD EQUIPMENT) IS FULLY OPERATIONAL	INSTALLED AND OPEARTIONAL, NOT ABLE TO TURN ON FOR FINAL SMOKE TEST
CONDUCT HOOD PRETEST	
IF BUILDING ALARM PANEL IS INSTALLED - PUT PANEL IN "TEST" MODE	No
DEPRESS LEVER ARMS ON MICROSWITCHE(S)	Yes
- DID EXHAUST FAN GO ON AND MUA SHUT OFF OR STAY OFF?	Yes
- DID SHUNT TRIP BREAKER TRIP AND DID POWER UNDER THE HOOD GO TO 0-VOLTS?	Yes
- DID ELECTRIC GAS VALVE SHUT OFF GAS TO APPLIANCES?	Yes
- IF BUILDING ALARM PANEL INSTALLED, DID IT RECIEVE HOOD FIRE ALARM SIGNAL?	No
IF ALL PRE-TEST PASSED, SCHEDULED FIRE FINAL TEST DATE (MUST PROVIDE MINIMUM 5 DAYS NOTICE):	2/14/2020
NATIONAL TAB - TEST AND BALANCE COMPANY SCHEDULED TO BE ON SITE 1 DAY BEFORE ANSUL FINAL	2/17/2020

Notes/Comments:

Inspector requires DOAS to go to 100% recirculated air during fire, does not have to shut off

Building alarm panel is not required to be tied to hood, separate test



**FREDDY'S GENERAL
PURPOSE EXHAUST FAN
[MECHANICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

ROOF TOP INSPECTION	
DUCT TERMINATION TO FAN IS SIZED AS INDICATED ON DRAWINGS	Yes
GRAVITY DAMPERS ARE INSTALLED APPROXIMATELY 6" BELOW THE FAN BASE/INSIDE THE DUCT	INLINE RR FANS HAVE DISCHARGE DAMPERS
GRAVITY DAMPER "FALLS" CLOSED AND CAN BE OPENED EASILY BY HAND "UP" TO OPEN	NOT INSTALLED ON THE DISH HOOD EXHAUST FAN
DUCT FLANGE PLATE IS FULLY SEALED AROUND THE CURB AND CAULKED WITH WEATHER TIGHT SILICONE	Yes
FAN BASE SITS FULLY ON THE CURB WITH NO GAPS	Yes
FAN BASE IS SECURED TO THE CURB WITH PERMITETER ANCHORS/SCREWS	Yes
ARE THERE ANY ELECTRICAL WHIPS OR OTHER ITEMS THAT ARE INTERFERING WITH THE MECHANICAL INSPECTION	None
INLINE / ABOVE CEILING FAN INSPECTIONS	
CEILING DIFFUSER IS LOCATED AS SHOWN ON PLANS	Yes
CEILING DIFFUSER IS FASTENED TO CEILING AND ABLE TO BE REMOVED FOR MAINTENANCE	Yes
CEILNG FAN IS CLEAN OF DEBRIS	Yes
CEILING FAN IS PROPERLY SECURED AS INDICATED ON MECH. DETAILS & OEM MANUAL	Yes

Notes/Comments:

3-inline fans tied to one roof exhaust vent



FREDDY'S GENERAL PURPOSE FANS [ELECTRICAL]

Assigned Organization: National TAB

Status: Not Submitted

Asset:

GENERAL PURPOSE POWER	
ELECTRICAL METER HAS BEEN SET AND POWER HAS BEEN ENABLED TO BREAKER PANEL	Yes
BREAKERS FOR EACH INDIVIDUAL FAN INSTALLED AND FUNCTIONAL	Yes
LINE POWER HAS BEEN INSTALLED TO EACH FAN'S DISCONNECT	Yes
FAN ROTATION HAS BEEN VERIFIED (BUMP FAN TO VALIDATE)	Yes
FAN BREAKER'S ARE LABELED IN THE PANEL	No
FANS ARE READY TO BE STARTED UP BY MECHANICAL CONTRACTOR	Yes

Notes/Comments:

BREAKER PANEL LABELS NOT COMPLETE AT TIME OF FINAL INSPECTION



FREDDY'S GREASE HOOD [PLUMBING]

Assigned Organization: National TAB

Status: Not Submitted

Asset:

GAS METER	
GAS METER IS SET AND GAS IS AVAILABLE TO ALL APPLIANCES	Yes
HOOD GAS PIPE	
ELECTRONIC GAS VALVE INSTALLED	Yes
FLEXIBLE HOSE KITS INSTALLED TO EACH APPLIANCE	Yes
GAS LINES HAVE BEEN PRESSURE TESTED	NOT VERIFIED
MECHANICAL SHUT-OFF DEVICES INSTALLED FOR MAINTENANCE	Yes
ALL FOOD EQUIPMENT GAS CAN BE TURNED ON AND STARTED UP BY GC/FED	FRYER EQUIPMENT NOT STARTED UP PRIOR TO TAB TEST
ROOF TOP HVAC/MUA GAS LINES	
ALL GAS LINES INSTALLED TO RTU'S	Yes
ALL GAS LINES HAVE SHUT OFF VALVES INSTALLED FOR MAINTENANCE	Yes
ALL ROOF TOP GAS LINES HAVE BEEN PROPERLY PRESSURE TESTED	NOT CONFIRMED
GAS LINES AIR HAS BEEN REMOVED AND LINE RESEALED	Yes
ALL RTU'S/MUA HEATERS HAVE GAS AND CAN BE STARTED UP BY MECHANICAL CONTRACTOR	DOAS HAD FULL STARTUP COMPLETED, RTU STARTUP REPORT NOT PROVIDED

Notes/Comments:

Fryers are gas, griddles are electric



**FREDDY'S GREASE
HOOD CONTROL & FANS
[ELECTRICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

-----HOOD CONTROLS-----	
BREAKER PANEL TO HOOD CONTROLS	
EXHAUST FAN (ECM) LINE WIRES ARE RUN FROM BREAKER PANEL TO EACH INDIVIDUAL EXHAUST FAN DISCONNECT	Yes
HOOD 120V CONTROL POWER FROM PANEL TO HOOD CONTROLS (H1/N1)	Yes
SHUNT TRIP BREAKER TO ST/N1 IN HOOD CONTROLS	Yes
FAN LOAD WIRING FROM HOOD CONTROLS TO DOAS	
DOAS INTERLOCK - OCCUPIED WHEN HOODS ARE ON FROM SFO1/SFC1	Yes
CONTROL/SPEED WIRES	
STP WIRES (PROVIDED) WIRED FROM CONTROL PANEL TO EF1 (BLACK/RED-ECM CONTROLLER)	Yes
STP WIRES (PROVIDED) WIRED FROM CONTROL PANEL TO EF2 (BLACK/RED-ECM CONTROLLER)	Yes
LIGHTS	
FRYER LIGHT JUNCTION BOX WIRED TO GRIDDLE HOOD 1 LIGHT JUNCTION BOX	Yes
GRIDDLE HOOD 1 LIGHT JUNCTION BOX WIRED TO GRIDDLE HOOD 2 LIGHT JUNCTION BOX	Yes
GAS VALVE	
GAS VALVE SOLENOID WIRED TO "GAS"/N1 IN HOOD CONTROLS (NORMALLY DE-ENERGIZED)	Yes
ANSUL MICRO-SWITCH	
COMMON ON ANSUL SWITCH WIRED TO "C1" N HOOD CONTROLS	Yes
NORMALLY CLOSED ON ANSUL SWITCH WIRED TO "AR1" IN HOOD CONTROLS	Yes



NORMALLY OPEN WIRE IS EITHER WIRE NUTTED (NOT USED) OR TIED TO HORN/STROBE IF REQUIRED.	Yes
FAN ROTATION	
ALL FAN'S ARE ROTATING IN THE CORRECT DIRECTION	Yes
ALL HOOD FAN'S ARE POWERED AND CAN BE STARTED UP BY BALANCE COMPANY	Yes

Notes/Comments:

BREAKER PANEL NOT LABELED AT FINAL INSPECTION



FREDDY'S GREASE HOOD EXHAUST FAN [MECHANICAL]

Assigned Organization: National TAB

Status: Not Submitted

Asset:

---PERFORM ALL INSPECTIONS WITH DISCONNECT "OFF" ----	
GREASE DUCT TERMINATION	
GREASE DUCT IS FLANGED AND SEALED AROUND THE TOP OF THE CURB	Yes
GREASE DUCT IS CENTERED WITHIN THE CURB (NOT OFFSET TO ONE SIDE OR THE OTHER)	Yes
GREASE DUCT OPENING TRANSITIONS TO 1.25 TIMES THE AREA OF THE MAIN GREASE DUCT	ROUND DUCT INSTALLED, INLET OPENING SIZE, CONDITION IS SATISFACTORY FOR APPLICATION
GREASE DUCT TOP PLATE IS FLAT/NO WARPS TO ALLOW FAN TO SIT FULLY ON ENTIRE FLANGE PLATE	Yes
FLANGE PLATE HAS PERIMETER FIRE RATED GASKET INSTALLED	No
GREASE DUCT HAS MINIMUM RUN OF 36" FROM TOP OF FLANGE PLATE TO FIRST RADIUS TURN	Yes
CURB - HINGE KIT	
HINGE KIT IS INSTALLED	Yes
FAN IS ABLE TO HINGE FULLY BACK TO ACCESS DUCT FOR CLEANING AND INSPECTIONS	Yes
GREASE CUP	
GREASE CUP IS INSTALLED	Yes
RUBBER DRAIN HOSE IS INSTALLED FROM THE FAN DRAIN TO THE GREASE CUP	Yes
EXHAUST FAN HOUSING	
FAN MOTOR HOUSING IS FREE AND CLEAR OF ALL DEBRIS	Yes
WHEEL HOUSING IS FREE OF ALL DIRT AND DEBRIS (PLASTIC, SCREWS, CONSTRUCTION DEBRIS, ETC)	Yes
FAN WHEEL CAN ROTATE FREELY BY HAND	Yes
EXHAUST FAN STACK	



EXHAUST FAN STACK'S ARE INSTALLED	MISSING STACK FOR GRIDDLE EXHAUST FAN EF1, MECHANICAL INDICATED IT WAS BEING REPLACED AND INSTALLED
ALL BOLTS/NUTS THAT HOLD CLIPS IN PLACE ARE INSTALLED AND SECURED	Yes
FAN BASE TO CURB	
FAN SITS SQUARELY AND FLAT ON THE CURB BASE (NO GAPPING)	Yes
FAN CURB IS SECURED ON FRONT (OPPOSITE OF HINGES) AND BOTH SIDES WITH ANCHOR SREWS	FRONT OF FAN BASES FOR EF1/EF2 NOT SECURED TO CURB DURING THE LAST INSPECTION
---TURN DISCONNECT BACK "ON" WHEN INSPECTIONS ARE COMPLETE ---	

Notes/Comments:

Electrical junction boxes not covered on side of curbs



FREDDY'S HVAC DUCT AND TERMINAL DEVICES [MECHANICAL]

Assigned Organization: National TAB

Status: Not Submitted

Asset:

HVAC DUCT	
INSTALLED PER PLAN WITHOUT DEVIATION	Yes
- IF DUCT DEVIATES FROM PLAN - EXPLAIN (OTHERWISE "N/A")	NO DEVIATIONS
INSTALLER OBSERVED ALL MECHANICAL DETAILS PER M-SHEETS AND INSTALLED ACCORDINGLY	Yes
DUCT IS INSULATED PER REQUIRED ENERGY CODE/PLANNED SPECIFICATIONS	Yes
INSULATION IS FULLY TAPED/SEALED WITH NO SAGS TO PREVENT BREACH OF VAPOR BARRIER	Yes
BALANCE DAMPERS	
ALL DAMPERS INSTALLED PER PLAN	Yes
ALL DAMPERS ARE SECURED WITH WING NUT OR LOCKING HANDLE	Yes
ALL DAMPERS CAN BE OPENED 100% OR CLOSED 0% WITH SMOOTH MANUAL OPERATION	Yes
ALL DAMPERS ARE VISIBLE AND LEFT 100% OPEN	Yes
INSULATION IS CUT AROUND THE DAMPER HANDLE AND DOES NOT HIDE OR IMPEDE THE DAMPERS MOVEMENT	Yes
FLEX DUCT IS CUT AROUND THE DAMPER HANDLE AND DOES NOT HIDE OR IMPEDE THE DAMPERS OPERATION	Yes
DAMPER HANDLE IS FREE FROM ANY ZIP TIES OR FLEX DUCT SECURING METHODS	Yes
TERMINAL DEVICES - SUPPLY GRD'S	
GRD'S INSTALLED ARE AS SCHEDULED ON THE MECHANICAL PRINTS	Yes
ALL GRD'S ARE INSTALLED	Yes
ALL GRD'S ARE INSTALLED AS SHOWN ON THE PLANS WITHOUT DEVIATION	Yes
TERMINAL DEVICES - RETURN'S	



RETURN TERMINAL DEVICES ARE AS SCHEDULED ON THE MECHANICAL PRINTS	Yes
ALL RETURNS ARE INSTALLED	Yes
RETURNS ARE INSTALLED IN LOCATIONS AS SHOWN ON THE MECHANICAL PRINTS	Yes
IF DAMPERS ARE INSTALLED - THEY MUST BE LOCKING HANDLE (NOT WING-NUT)	[1]

Notes/Comments:

[1] DOAS RETURN AIR DAMPERS REMOVED, THEY WERE WING NUT AND FOUND TO BE SLAMMED SHUT CREATING LOW FLOW (NO HEAT) CONDITION. AFTER REMOVING DAMPER THE UNOCCUPIED AIRFLOW/HEAT MODE OPERATED AS EXPECTED. FUTURE DOAS SHOULD NOT HAVE RETURN DAMPERS. RTU RETURN DAMPERS SHOULD ALWAYS BE LOCKING QUADRANT DAMPERS ONLY.



**FREDDY'S HVAC-RTU
POWER [ELECTRICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

RTU POWER	
ELECTRICAL METER HAS BEEN SET AND POWER HAS BEEN ENABLED TO BREAKER PANEL	Yes
BREAKERS FOR EACH INDIVIDUAL RTU INSTALLED AND FUNCTIONAL	Yes
LINE POWER HAS BEEN INSTALLED TO THE RTU DISCONNECT	Yes
RTU BLOWER ROTATION HAS BEEN VERIFIED (BUMP FAN TO VALIDATE)	Yes
RTU BREAKER'S ARE LABELED IN THE PANEL	No
RTU'S ARE READY TO BE STARTED UP BY MECHANICAL CONTRACTOR	Yes

Notes/Comments:

BREAKER PANEL NOT LABLED AT TIME OF FINAL INSPECTION



**FREDDY'S KITCHEN
GREASE RATED HOODS
& DUCT [MECHANICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

HOOD INSTALLATION	
HOOD IS LOCATED PER PLAN AND WILL BE CENTERED OVER COOKING EQUIPMENT	Yes
HOOD IS VERTICALLY LEVELED AGAINST WALL OR AGAINST EACH OTHER (ISLAND CONFIGURATION)	Yes
HOOD IS HORIZONTALLY LEVELED ON ALL SIDES	Yes
HOOD IS CAULKED/SEALED AT WALL OR AGAINST ANY OTHER CONTACT SURFACE	No
HOOD FILTERS ARE INSTALLED	Yes
HOOD GREASE CUPS ARE INSTALLED	No
MECHANICAL OBSERVED O&M MANUAL FOR INSTALLATION AND USED CORRECT HANGING ROD ON ALL SUPPORTS	Yes
GREASE DUCT	
GREASE DUCT IS INSTALLED PER PLAN (SIZE, ELBOWS, AND ALL FITTINGS) AND AS PER DETAILS	Yes
ALL HORIZONTAL DUCT PITCHES TO HOOD AT NO LESS THAN 1/4" RISE FOR EVERY 12" RUN	Yes
GREASE DUCT PIN-HOLE INSPECTION PASSED	Yes
GREASE DUCT FIRE-WRAP INSPECTION (2HOUR) PASSED AND IS INSTALLED PER OEM INSTRUCTIONS	Yes
ALL ELBOWS ARE RADIUS AND INSTALLED PER MECHANICAL DETAILS	Yes
CLEAN-OUT DOORS ARE INSTALLED SO ALL PARTS OF THE DUCT ARE ACCESSIBLE FOR CLEANING	NO CLEAN-OUTS REQUIRED/INSTALLED
CLEAN-OUT DOORS CAN BE REMOVED WITHOUT USE OF TOOLS	N/A
CLEAN-OUT DOORS HAVE BEEN FULLY SECURED AFTER INSPECTIONS AND FULLY SEAL AROUND PERIMETER OF GREASE DUCT	N/A



CLEAN-OUT DOORS ARE EASILY LOCATED AND MARKED	N/A
CLEAN-OUT DOORS USED MUST BE LISTED BY ETL/U.L./ OR AS LISTED ASSEMBLY BY OEM	N/A
CUSTOM CLEANOUT DOORS ARE NOT APPROVED AND WERE NOT USED	N/A
GREASE DUCT SUPPORTS ARE INSTALLED PER CODE AS REQUIRED	BOTH DUCTS SUPPORTED BY HOOD AND CURB

Notes/Comments:

AT TIME OF FINAL INSPECTION FINAL CAULK FROM HOOD TO WALL NOT COMPLETE
 AT TIME OF FINAL INSPECTION GREASE CUPS WERE HANGING IN THE HOOD, NOT INSTALLED IN PROPER PLACE



**FREDDY'S RTU -
[MECHANICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

RTU/DOAS	
RTU'S INSTALLED IN PROPER PLACE	Yes
HAIL GUARDS ARE INSTALLED	Yes
ECONOMIZER IS INSTALLED	Yes
ECONOMIZER STROKES 100% OPEN / 100% CLOSED AND DOES NOT BIND	Yes
THERMOSTATS ARE INSTALLED IN THE OFFICE AND LABELED	Yes
TEMPERATURE SENSORS ARE INSTALLED AS SHOWN ON THE PLANS	Yes
HUMIDITY SENSOR IS INSTALLED AS SHOWN ON THE PLANS	Yes
THERMOSTAT/SENSOR/RTU WIRING COMPLETED AS PER FREDDY'S PROTO DETAILS	Yes
CONDENSATE DRAINS	
DRAIN IS LOCATED ON THE LOW SIDE OF THE ROOF	Yes
IF DRAIN IS LOCATED ON HIGH SIDE OF THE ROOF, PROVIDE SLOPED DRAIN LEG PAST RTU AWAY FROM THE ECONOMIZER	NA
ENSURE THE DRAIN LEG IS 1.5" LOWER THAN THE FILL LEG	CONFIRMED
ENSURE THE DRAIN LEG HAS A CLEAN-OUT ON THE TOP OF THE CONNECTION	Yes

Notes/Comments:



**FREDDY'S STARTUP
REPORTS [MECHANICAL]**

Assigned Organization: National TAB

Status: Not Submitted

Asset:

START-UP REPORTS COMPLETED AFTER ALL ELECTRICAL AND CONTROL WIRING IS COMPLETE	
ALL GREASE EXHAUST FANS	NT-TAB REPORT
ALL GENERAL PURPOSE EXHAUST FANS	NT-TAB REPORT
ALL SUPPLY OR GAS FIRED MUA FANS	N/A
ALL RTU'S OR HVAC EQUIPMENT	SDV-DOAS, NO STARTUP REPORT FOR RTU SUBMITTED
ALL STARTUP REPORTS ARE TO BE COMPLETED PER OEM OPERATION MANUAL REQUIREMENTS AND GIVEN TO SITE GENERAL CONTRACTOR	NT-TAB RESULTS AND SDV DOAS STARTUP (YES), RTU - NOT VERIFIED

Notes/Comments: