Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: Final Report
Function: Test, Adjust, & Balance
Date: 8/24/2022

PROJECT

08-15 FIVE GUYS - SAVANNAH, GA

5500 ABERCORN ST

SAVANNAH, GA 31405

Client

Five Guys Enterprises LLC
20718 Richmond Highway

Lorton, VA 22079

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

Table Of Contents

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. 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 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.

RTU's (Roof Top Units) w/ Diffusers
Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that 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 within tolerance of the design flow. . Any EF's that fell outside of this tolerance is noted throughout the report.

MUA (Make Up Air Unit) w/ PSP
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 design tolerance. Any MUA's that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles
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 tolerance of design. Each terminal device was balanced to within tolerance 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 measured. It was confirmed that the building pressure fell within acceptable tolerances of -0.02" wc to +0.02" wc and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.
The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

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Project Issue Information

Issue Name : EF2

Description : EF2 RR FAN IS NOT RUNNING MOTOR IS SEIZED, UNABLE TO BALANCE FAN.

Created By : National TAB **Assigned To :** National TAB - Dale Wheeler

Status : Open

Originated Date : 08/18/2022 - Dale Wheeler - National TAB

Project Issue File Details

SAV4.JPG

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Project Issue Information

Issue Name : RTU-E4 ECON

Description : ECON IS NOT FUNCTIONING CORRECTLY. OUTSIDE AIR HAD TO BE SET MANUALLY

Created By : National TAB **Assigned To :** National TAB - Dale Wheeler

Status : Open

Originated Date : 08/18/2022 - Dale Wheeler - National TAB

Project Issue File Details

SAV3.jpg

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Project Issue Information

Issue Name : SPIRAL DINING ROOM DUCT INSTALLED

Description : SPIRAL DINING ROOM DUCT INSTALLED IS CAPPED OFF AND DOES NOT CONNECT TO ANY RTU. FOUR WAY DIFFUSERS WERE INSTALLED IN THE DROP CEILING. THIS IS DIFFERENT THEN WHAT IS SHOWN ON THE GRD.

Created By : National TAB **Assigned To :** National TAB - Wendy Biggs

Status : Open

Originated Date : 08/18/2022 - Dale Wheeler - National TAB

Project Issue File Details

SAV2.JPG

SAV1_.jpg

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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-A	DINING	2000	2103	1550	1695	450	408	22.5%	19.4%						
RTU-A	KITCHEN	2000	1801	1550	1395	450	406	22.5%	22.5%						
RTU-E2	DINING	1900	2060	1450	1619	450	441	23.7%	21.4%						
RTU-E3	DINING	2000	1802	2000	1802		0	0.0%	0.0%						
RTU-E4	SERVING	2000	2196	1550	1703	450	493	22.5%	22.4%						
EF-1	HD1											5300	4705		
MAU	HOOD														2452
TOTALS		9900	9962	8100	8214	1800	1748			0	0	5300	4705	0	2452

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1800	1748
TOTAL EXHAUST	5300	7157
NET AIRFLOW	-3500	-5409

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	
SIDE	
REAR	0.026
AVERAGE	**0.026**

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: EF2 FAN IS

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RTU4 / TEMP. SEN.

EF2

RTU-E4

RTU-E3

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RTU1/ DINING

EF1

MAU

RTU1/ KITCHEN

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RTU-E2

DINING ROOM

HOOD1R/HOOD1L

STORE FRONT

RTU4 / TEMP. SEN.

EF2

RTU-E4

RTU-E3

RTU1/ DINING

EF1

MAU

RTU1/ KITCHEN

RTU-E2

DINING ROOM

HOOD1R/HOOD1L

STORE FRONT

RTU4 / TEMP. SEN.

EF2

RTU-E4

RTU-E3

RTU1/ DINING

EF1

MAU

RTU1/ KITCHEN

RTU-E2

DINING ROOM

HOOD1R/HOOD1L

STORE FRONT

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CheckList Information

Name :	TECH - STEP 1: INITIAL WALKTHROUGH	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	NO / DINING ROOM GRILLS DO NOT MATCH GRD
All hood filters installed and accounted for?	YES / BUT SMALLER HOOD HAS A GAP WERE FILTERS DO NOT FIT PROPERLY THIS SPACE WAS BLOCKED OFF WITH CARDBOARD FOR BALANCE
Hoods are wired and have power?	YES
Hood is free of alarms?	N/A
Thermostats have power?	YES
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	OPEN LOCATION

Notes/Comments :

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CheckList Information

Name :	TECH - STEP 2: UNIT DATA AND EVAL	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional?	RTU3 DOES NOT HAVE AN OUTSIDE AIR CANOPY INSTALLED. RECOMMEND OA INTAKE BE INSTALLED.
DCV Max damper opening position is set to minimum?	YES
Free cooling enthalpy set point set for lowest setting (Typically "D")	MANUAL DAMPERS FOR TWO UNITS / ENTHALPY IS SET ON LENNOX UNITS
Motors are all operating below the FLA rating?	YES
Are belts tight?	YES / FOR ALL UNITS THAT ARE BELT DRIVEN
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?	YES
Grease cup installed on hood fan?	NO
Hinge kit installed installed on hood fan?	UTILITY STYLE FAN
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	UNABLE TO LEAN FAN BACK DUE TO IT BEING A UTILITY STYLE FAN.

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Flex conduit is long enough so that fan can be completely tilted back?	N/A
There is no major leakage around base of fan?	NO LEAKAGE TO NOTE
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?	RR FAN IS NOT FUNCTIONING / MOTOR IS SEIZED
Unit free of noticeable noise and vibration?	RR FAN IS NOT FUNCTIONING / MOTOR IS SEIZED
MUA	
Rotation is correct?	YES
Gas piping is installed and valves are in on position?	N/A
Heater tested and is functional?	N/A
Internal motorized damper is fully opening?	N/A
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?	YES
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	OPEN LOCATION

Notes/Comments :

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CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

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?	DINING AREA IS CONFORTABLE COOK LINE GETS VERY WARM, ALL DAMPERS ARE OPEN, UNIT IS RUNNING AT MAX SPEED. HOOD DOES NOT HAVE AN ACPSP INSTALLED NOR IS THE MAU CONDITIONED AIR.
Is the space free of ventilation noise?	YES
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	N/A

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CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**Status :**	Submitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	FRYERS / GRIDDLES
List smoke candle type used	SMOKE EMITTER
Smoke test capture - Perimeter of hood	100% / SOME CAME OUT OF THE FRONT OF THE HOOD INCIALLY THEN WAS PULLED BACK INSIDE THE CANOPY
Smoke test capture - Top of cooking surface	100%
WITNESS	
Date test was completed	08/16/2022
TAB tech name / Firm	DALE WHEELER / NTAB
Site super name / Firm	-
Owner representative name / Firm (if Applicable)	JADA / 5 GUYS MANAGEMENT
Building pressure at front & back doors (All Systems On)	FRONT DOOR COULD NOT GET AN ACCURATE READING DUE TO WIND AND STRONG BREEZE THROUGH STRIPMALL OVERHANG / WALKWAYCANOPY. BACK DOOR -0.026''
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 / BUILDING IS NEGATIVLY PRESSURED.
Thermostats are programmed?	5 GUYS MANAGEMENT DID NOT WANT ME TO PROGRAM THERMOSTATS THEY HAD BEEN INSTRUCTED TO LET UNITS STAY RUNNING THROUGH THE NIGHT.

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Notes/Comments :

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: AHU/RTU

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Asset: RTU-A1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	CARRIER	TRANE
Serial Num	-	113611960L
Model Num	48TCDA06A2A5	YSC060E3ELA0000
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28.5X11
Num Final Filter 1	-	2
Final Filter Size 1	-	20X30X2
Num Final Filter 2	-	N/L
Final Filter Size 2	-	N/L

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	1.5	1.0
Motor Rpm	-	1725
Phase	-	3
Rated Voltage	-	200
Rated Amperage	-	4.0

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VL34
Motor Bore Size	-	5/8
Motor Sheave SetPt	-	2 TURNS OUT
Fan Sheave Size	-	AK44
Fan Sheave Bore	-	0.75"
Belt CL Distance	-	9.0"
Num of Belts	-	1
Belt Size	-	A25
Belt Alignment	-	GOOD

Test Data		
	Design	**Actual**
SF CFM	2000	2103
SF RPM	-	1076
RA CFM	1508	1695
OA CFM	450	408
RL Voltage	-	208/208/207
RL Amperage	-	3.0/3.1/3.1
SF Rotation	-	CW
RA Damper Position	-	NO DAMPER
Min OA Damper Position	-	1 7/8
Min OA Damper Type	-	MANUAL DAMPER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.18"
Fan Suction SP	-	-0.596"
Fan Discharge SP	-	0.30"
Total ESP	0.8"	0.48"
Fan Total SP	-	1.076"

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

Completed By: Dale Wheeler

Notes: [1] UNIT GRILLS TO NOT MATCH WHAT IS SHOWN ON GRD.

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Project:08-15 FIVE GUYS - SAVANNAH, GA

AHU/RTU

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Diffuser Supply (GRD)

RTU-A1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	F		400	1	369	373	373	93.3
SGRD2	DINING	F		400	1	238	243	243	60.8
SGRD3	DINING	E		275	1	137	154	154	56.0
SGRD4	DINING	E		275	1	334	351	351	127.6
SGRD5	DINING	E		275	1	319	328	328	119.3
SGRD6	DINING	E		225	1	532	549	549	244.0
SGRD7	WOMENS RR	A		50	1	52	54	54	108.0
SGRD8	MENS RR	A		100	1	47	51	51	51.0

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: AHU/RTU

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Asset: RTU-A1 AREA:KITCHEN / BACK OF HOUSE

Unit Data		
	Design	**Actual**
MFG	CARRIER	LENNOX
Serial Num	-	5619D03188
Model Num	48TCDA06A2A5	LGH060H4EU4Y
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	31X13.75
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2
Num Final Filter 2	-	N/L
Final Filter Size 2	-	N/L

Motor Data		
	Design	**Actual**
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	1.5	1
Motor Rpm	-	N/L
Phase	-	1
Rated Voltage	-	200
Rated Amperage	-	7.4

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

Test Data		
	Design	**Actual**
SF CFM	2000	1801
SF RPM	-	DD
RA CFM	1508	1395
OA CFM	450	406
RL Voltage	-	209
RL Amperage	-	7.4
SF Rotation	-	CCW
RA Damper Position	-	4.25"
Min OA Damper Position	-	25%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.32"
Fan Suction SP	-	-0.47"
Fan Discharge SP	-	0.95"
Total ESP	0.8"	1.25"
Fan Total SP	-	1.42"

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

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Notes: [1] UNIT SERVES BACK OF HOUSE/ KITHCEN AREA.

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Project:08-15 FIVE GUYS - SAVANNAH, GA

AHU/RTU

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Diffuser Supply (GRD)

RTU-A1/KITCHEN / BACK OF HOUSE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	OFFICE	B		200	1	158	159	163	81.5
SGRD2	PREP	C		450	1	364	364	377	83.8
SGRD3	PREP	C		450	1	454	454	468	104.0
SGRD4	PREP	C		450	1	338	338	354	78.7
SGRD5	PREP	C		450	1	416	422	439	97.6

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: AHU/RTU

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Asset: RTU-E2 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	113510L01L
Model Num	NA	YSC060E3ELA
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	28.5X11
OA Filter Size 1	-	2
Num Final Filter 1	-	20X30X2
Final Filter Size 1	-	N/A
Num Final Filter 2	-	N/A
Final Filter Size 2	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	-	1.0
Motor Rpm	-	1725
Phase	-	3
Rated Voltage	-	200
Rated Amperage	-	4.0

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VL34
Motor Bore Size	-	5/8
Motor Sheave SetPt	-	2 TURNS OUT
Fan Sheave Size	-	AK44
Fan Sheave Bore	-	0.75"
Belt CL Distance	-	8.75"
Num of Belts	-	1
Belt Size	-	A-25
Belt Alignment	-	GOOD

Test Data		
	Design	**Actual**
SF CFM	1900	2060
SF RPM	-	1074
RA CFM	-	1619
OA CFM	450	441
RL Voltage	-	206/205/206
RL Amperage	-	3.1/3.4/3.1
SF Rotation	-	CW
RA Damper Position	-	NO DAMPER
Min OA Damper Position	-	2.0"
Min OA Damper Type	-	MANUAL DAMPER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.221"
Fan Suction SP	-	-0.717"
Fan Discharge SP	-	0.2"
Total ESP	-	0.421"
Fan Total SP	-	0.917"

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

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Notes: [1] UNIT GRILLS TO NOT MATCH WHAT IS SHOWN ON GRD.

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Project:08-15 FIVE GUYS - SAVANNAH, GA

AHU/RTU

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Diffuser Supply (GRD)

RTU-E2/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	E		275	1	452	491	491	178.5
SGRD2	DINING	E		275	1	493	522	522	189.8
SGRD3	DINING	E		275	1	301	327	327	118.9
SGRD4	DINING	E		275	1	694	720	720	261.8
SGRD5	DINING	F		400	1	0	0	0	0.0
SGRD6	DINING	G		400	1	0	0	0	0.0

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: AHU/RTU

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Asset: RTU-E3 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	1608125981
Model Num	NA	YSC063G3ELA0000
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	NO OA
OA Filter Size 1	-	NO OA
Num Final Filter 1	-	4
Final Filter Size 1	-	18X18X2
Num Final Filter 2	-	N/L
Final Filter Size 2	-	N/L

Motor Data		
	Design	**Actual**
Motor MFG	-	N/L
Frame	-	N/L
Horsepower	-	1.0
Motor Rpm	-	N/L
Phase	-	1
Rated Voltage	-	208
Rated Amperage	-	6.9

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

Test Data		
	Design	**Actual**
SF CFM	2000	1802
SF RPM	-	DD
RA CFM	-	1802
OA CFM	-	0
RL Voltage	-	209
RL Amperage	-	4.6
SF Rotation	-	CW
RA Damper Position	-	NO RETURN
Min OA Damper Position	-	NO OA
Min OA Damper Type	-	NO OA

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.22"
Fan Suction SP	-	-0.44"
Fan Discharge SP	-	0.19"
Total ESP	-	0.41"
Fan Total SP	-	0.63"

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

Completed By: Dale Wheeler

Notes: [1] UNIT GRILLS TO NOT MATCH WHAT IS SHOWN ON GRD. [2] UNIT DOES NOT HAVE AN OA CANOPY/ INTAKE INSTALLED RECOMMEND ONE BE INSTALLED ON UNIT.

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Project:08-15 FIVE GUYS - SAVANNAH, GA

AHU/RTU

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Diffuser Supply (GRD)

RTU-E3/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	G		500	1	301	368	368	73.6
SGRD2	DINING	F		400	1	412	437	437	109.3
SGRD3	DINING	E		275	1	463	494	494	179.6
SGRD4	DINING	E		275	1	479	503	503	182.9
SGRD5	DINING	E		275	1	0	0	0	0.0
SGRD6	DINING	E		275	1	0	0	0	0.0

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU-E4 AREA:SERVING

Unit Data		
	Design	**Actual**
MFG	NA	LENNOX
Serial Num	-	5621E09908
Model Num	NA	LGH060S4TU5Y
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	29X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2
Num Final Filter 2	-	N/L
Final Filter Size 2	-	N/L

Motor Data		
	Design	**Actual**
Motor MFG	-	US MOTORS
Frame	-	56
Horsepower	-	1.0
Motor Rpm	-	1745
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	3.0

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	3.0"
Motor Bore Size	-	0.75"
Motor Sheave SetPt	-	MINIMIZED
Fan Sheave Size	-	4.75"
Fan Sheave Bore	-	1.0"
Belt CL Distance	-	16.0"
Num of Belts	-	1
Belt Size	-	A-40
Belt Alignment	-	GOOD

Test Data		
	Design	**Actual**
SF CFM	2000	2196
SF RPM	-	847
RA CFM	-	1703
OA CFM	450	493
RL Voltage	-	209/209/208
RL Amperage	-	1.8/1.9/1.9
SF Rotation	-	CCW
RA Damper Position	-	7.0"
Min OA Damper Position	-	3 5/8
Min OA Damper Type	-	[2] SET MANUALLY

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-0.61"
Fan Discharge SP	-	0.64"
Total ESP	-	1.12"
Fan Total SP	-	1.25"

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

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Notes: [1] UNIT GRILLS DO NOT MATCH WHAT IS SHOWN ON GRD. [2] OA HAD TO BE SET MANUALLY DUE TO ECON NOT WORKING. UNIT TEMP. DISCHARGE IS 66F AT DIFFUSER

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National TAB

Project:08-15 FIVE GUYS - SAVANNAH, GA

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU-E4/SERVING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	COOKLINE	D		350	1	199	199	256	73.1
SGRD2	COOKLINE	D		300	1	244	244	314	104.7
SGRD3	COOKLINE	D		300	1	214	214	276	92.0
SGRD4	COOKLINE	D		300	1	269	269	347	115.7
SGRD5	COOKLINE	D		350	1	256	256	330	94.3
SGRD6	SERVICE	D		200	1	269	269	347	173.5
SGRD7	SERVICE	D		200	1	253	253	326	163.0

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF1 AREA:HOOD 1

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	HRE-24	HRE-24
Serial Num	-	1386233
Type	UPBLAST	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	184T
Horsepower	5	5.0
Motor Rpm	-	1775
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	14.0
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	2VP42
Motor Bore Size	-	1 1/8
Motor Sheave SetPt	-	3 TURNS OUT
Fan Sheave Size	-	5 5/8
Fan Sheave Bore	-	1 3/8
Belt CL Distance	-	10 3/8
Num of Belts	-	2
Belt Size	-	BX33

Test Data		
	Design	**Actual**
CFM	5300	4705
Fan RPM	1084	1059
Fan Rotation	-	CCW
Motor RPM	-	1760
RL Voltage	-	207/207/207
RL Amperage	-	8.4/8.7/8.9
Suction ESP	-	[1]
Discharge ESP	-	[1]
Total ESP	-2.0"	[1]

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Notes:

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National TAB

Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-A2 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	COOK
Model Num	G-085-D	90 ACEH 90C10DH
Serial Num	-	050SD76371
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	FASCO
Frame	-	N/L
Horsepower	1/20	1/25
Motor Rpm	-	1050
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.4
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	375	-
Fan RPM	-	[1]
Fan Rotation	-	[1]
Motor RPM	-	[1]
System SetPt	-	[1]
RL Voltage	-	[1]
RL Amperage	-	[1]
Total ESP	0.375"	[1]
Fan Inlet SP	-	[1]
Fan Discharge SP	-	[1]

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Notes:

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National TAB

Project:08-15 FIVE GUYS - SAVANNAH, GA

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

EF-A2/RESTROOMS

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	WOMENS RR	J			1				
EGRD2	MENS RR	J			1				
EGRD3	MOP ROOM	J			1				

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National TAB

Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: FAN - Supply

Comfort. Under control.

Asset: MAU1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	FLO AIRE
Model Num	NA	NSA12
Serial Num	-	1105108
Type	-	MAU
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	145T
Horsepower	-	2.0
Motor Rpm	-	1745
Phase	-	3
Voltage (rated)	-	208
Amperage (rated)	-	5.9
Service Factor	-	1.15

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	N/A
Flame Status (pass/fail)	-	N/A
Inlet Air Temp SetPt	-	N/A
Discharge Air Temp SetPt	-	N/A
Air Flow Switch SP Actual	-	N/A

Test Data		
	Design	**Actual**
CFM	-	2452
SF RPM	-	751
Motor RPM	-	1783
SF System SetPt	-	2.5 TURNS OUT
RL Voltage	-	209/209/209
RL Amperage	-	2.9/2.9/2.8
Total ESP	-	N/R
Fan Discharge SP	-	N/R

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

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	COMMERCIAL AIRE
Model Num	NA	CADEX-146.54-FP
Job / Serial Num	-	0310-7154
Type	-	TYPE 1 CANOPY
Hood length	-	144
Hood Width	-	54

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLED
Filter Size 1	-	20X16
Filter Size 2	-	16X16
Filter Qty 1	-	5
Filter Qty 2	-	3
Filter AK factor size 1	-	2.08
Filters AK factor size 2	-	1.62
Filter Total AK Area	-	15.26
Filter1 FPM	-	185
Filter2 FPM	-	197
Filter3 FPM	-	184
Filter4 FPM	-	197
Filter5 FPM	-	210
Filter6 FPM	-	184
Filter7 FPM	-	151
Filter8 FPM	-	184
Filter9 FPM	-	N/A
Filter10 FPM	-	N/A
Filter11 FPM	-	N/A
Filter12 FPM	-	N/A
Filter Ave FPM(corr)	-	186
CFM	-	2838

Cooking Equipment		
	Design	**Actual**
Item 1	-	GRIDDLE
Item 2	-	N/A

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

General		
	Design	**Actual**
Third Party Witness	-	JADA
Third Party Company	-	5 GUYS
Tech Witness	-	DALE WHEELER

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Notes:

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	COMMERCIAL AIRE
Model Num	NA	CADEX-94.54-FP
Job / Serial Num	-	0310-7154
Type	-	TYPE 1 CANOPY
Hood length	-	94
Hood Width	-	54

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFFLED
Filter Size 1	-	16X16
Filter Size 2	-	20X16
Filter Qty 1	-	3
Filter Qty 2	-	2
Filter AK factor size 1	-	1.62
Filters AK factor size 2	-	2.08
Filter Total AK Area	-	9.02
Filter1 FPM	-	208
Filter2 FPM	-	208
Filter3 FPM	-	220
Filter4 FPM	-	203
Filter5 FPM	-	197
Filter6 FPM	-	N/R
Filter7 FPM	-	N/R
Filter8 FPM	-	N/R
Filter9 FPM	-	N/R
Filter10 FPM	-	N/R
Filter11 FPM	-	N/R
Filter12 FPM	-	N/R
Filter Ave FPM(corr)	-	207
CFM	-	1867

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

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

General		
	Design	**Actual**
Third Party Witness	-	JADA
Third Party Company	-	5 GUYS
Tech Witness	-	DALE WHEELER

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Notes:

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: PSP-HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	COMERCIAL AIRE
Model Num	NA	CADEX-146.54-FP
Supply Plenum Type	-	PSP
Supply Plenum Width	-	14"
Supply Plenum Length	-	144"

Test Data Supply		
	Design	**Actual**
AK factor	-	14.0
Kv factor (Vel)	-	0.87
Num of Readings	-	9
Reading1 FPM	-	177
Reading2 FPM	-	88
Reading3 FPM	-	134
Reading4 FPM	-	29
Reading5 FPM	-	54
Reading6 FPM	-	19
Reading7 FPM	-	119
Reading8 FPM	-	179
Reading9 FPM	-	34
Reading10 FPM	-	N/L
Reading11 FPM	-	N/L
Reading12 FPM	-	N/L
Reading13 FPM	-	N/L
Reading14 FPM	-	N/L
Ave FPM(corr)	-	137
CFM	-	1644

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Project: 08-15 FIVE GUYS - SAVANNAH, GA

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: PSP-HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	CADEX-146.54-FP
Model Num	NA	NA
Supply Plenum Type	-	PSP
Supply Plenum Width	-	14"
Supply Plenum Length	-	54"

Test Data Supply		
	Design	**Actual**
AK factor	-	5.25
Kv factor (Vel)	-	0.87
Num of Readings	-	6
Reading1 FPM	-	113
Reading2 FPM	-	241
Reading3 FPM	-	213
Reading4 FPM	-	147
Reading5 FPM	-	161
Reading6 FPM	-	186
Reading7 FPM	-	N/R
Reading8 FPM	-	N/R
Reading9 FPM	-	N/R
Reading10 FPM	-	N/R
Reading11 FPM	-	N/R
Reading12 FPM	-	N/R
Reading13 FPM	-	N/R
Reading14 FPM	-	N/R
Ave FPM(corr)	-	177
CFM	-	808

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Notes:

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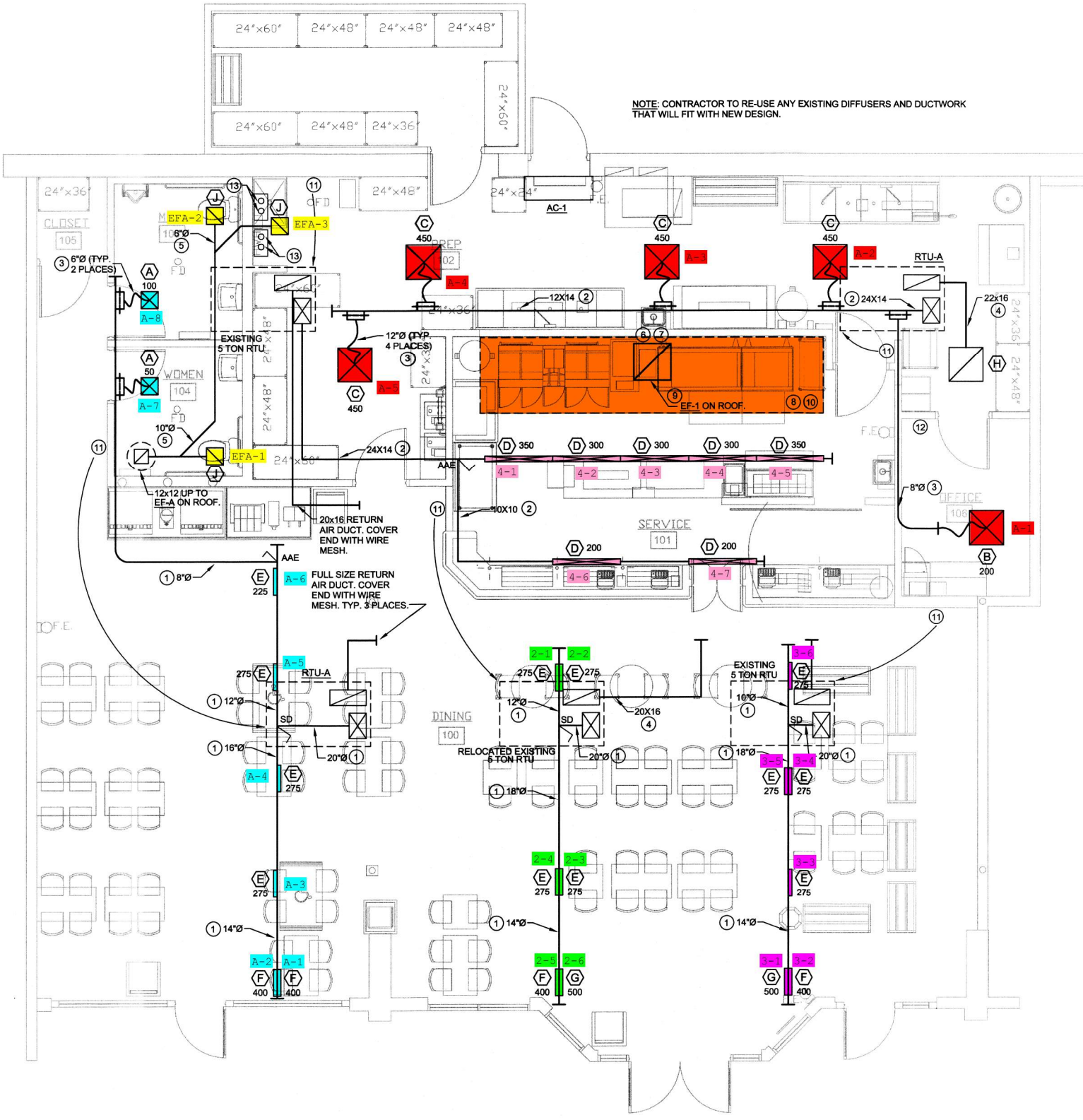

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