Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 07/10/2024

PROJECT

06-24-24 CULVERS - ORLANDO, FL

13320 E COLONIAL DRIVE

ORLANDO, FL 32826

Client

Accurex

PO Box 410

Schofield, WI 54476

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

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)
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.

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 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.

Issue List

- Diffuser 2-16 Missing Damper
- Diffuser 2-4 Restrictive Ductwork
- Diffuser 2-5 Restrictive Takeoff
- Flex Duct Ran Directly To Cookline Diffuser
- Men's RR Exhaust Fan
- Office Diffuser Type Incorrect
- RTU 2 Cookline Diffuser Locations Incorrect

Project Issue Information

Issue Name : Diffuser 2-16 Missing Damper

Description : There is no damper installed on RTU 2 Diffuser 16. If comfort issues arise, recommend installing damper and rebalancing diffuser to design airflow. Kitchen was comfortable at time of balancing.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority : High

Asset Tag :

Originated Date : 06/27/2024 - Stephen Tassinaro - National TAB

Project Issue File Details

Diffuser2_16
06/27/2024

06-24-24 CULVERS - ORLANDO, FL

Project Issue Information

Issue Name : Diffuser 2-4 Restrictive Ductwork

Description : When diffuser 4 was moved to match the location shown in the plans, the duct kinked and is now restricting airflow to the diffuser. Even with the damper opened fully, design airflow could not be achieved. If comfort issues arise, recommend straightening the duct run and rebalancing to design. Kitchen was comfortable at time of balancing.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority : High

Asset Tag :

Originated Date : 07/10/2024 - Stephen Tassinaro - National TAB

Project Issue Response Details

- **07/10/2024 National TAB - Stephen Tassinaro**
  - Smoke containment 100% successful as-is.

Project Issue Information

Issue Name : Diffuser 2-5 Restrictive Takeoff

Description : RTU 2 (Kitchen) Diffuser 5 has a restrictive takeoff. Currently this takeoff is installed on the top of the duct. It is not recommended to install the takeoffs on top of the trunkline. If comfort issues arise, recommend moving take-off and rebalancing so that design airflow may be achieved.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority : High

Asset Tag :

Originated Date : 06/27/2024 - Stephen Tassinaro - National TAB

Project Issue File Details

Diffuser2_6
06/27/2024

Project Issue Response Details

- **07/10/2024 National TAB - Stephen Tassinaro**
  - Smoke containment 100% successful as-is.

06-24-24 CULVERS - ORLANDO, FL

Project Issue Information

Issue Name : Flex Duct Ran Directly To Cookline Diffuser

Description : Cookline diffusers should have 12"-18" of straight pipe followed by a rigid 90. Currently flex duct is ran directly to cookline diffusers.

Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	High	**Asset Tag :**	
Originated Date :	06/27/2024 - Stephen Tassinaro - National TAB		

Project Issue File Details

CooklineDucts
06/27/2024

Project Issue Response Details

- **07/10/2024 National TAB - Stephen Tassinaro**
  - No changes made. Smoke containment 100% successful as-is.

06-24-24 CULVERS - ORLANDO, FL

Project Issue Information

Issue Name :	Men's RR Exhaust Fan		
Description :	The men's restroom exhaust fan has been replaced with the correct model. However the backdraft damper and transition to the discharge duct are restrictive. The fan is achieving 150CFM out of 220CFM with the speed controller maximized.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	06/27/2024 - Stephen Tassinaro - National TAB		

Project Issue Information

Issue Name : Office Diffuser Type Incorrect

Description : The office supply diffuser is not the correct type per the Air Distribution Schedule on M2. The mechanical plans call for a type "D" diffuser in the office, instead a type "A" is installed. Recommend replacing with the correct diffuser.

Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	Medium	**Asset Tag :**	
Originated Date :	06/27/2024 - Stephen Tassinaro - National TAB		

Project Issue File Details

OfficeDiffuser
06/27/2024

06-24-24 CULVERS - ORLANDO, FL

Project Issue Information

Issue Name : RTU 2 Cookline Diffuser Locations Incorrect

Description : The cookline diffusers (RTU 2, Diffusers 3 thru 8 per NTi GRD Layout) need to be moved closer to the hoods, in between the lights. An example picture is attached. The diffuser locations are imperative for proper hood smoke containment. When looking at the kitchen hoods, each diffuser needs to be moved 24" closer to hoods and 24" to the right.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

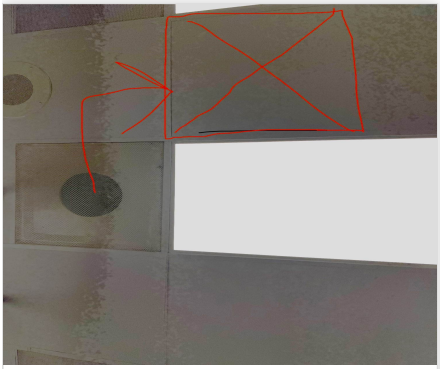
Status : Open

Priority : Medium

Asset Tag :

Originated Date : 06/27/2024 - Stephen Tassinaro - National TAB

Project Issue File Details



CooklineDiffusers_2_...
06/27/2024

CooklineDiffusers
06/27/2024

Project Issue Response Details

- **07/10/2024 National TAB - Stephen Tassinaro**
  - Diffusers 7 & 8 were not able to be moved into their correct locations due to ceiling grid constraints. All other diffuser locations now correct. Smoke containment 100% successful in current arrangement.

NATIONAL TAB

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	5200	4880	3200	2897	2000	1983	38.5%	40.6%						
RTU-2	KITCHEN	5000	4600	3000	2676	2000	1924	40.0%	41.8%						
PRV 2	HOOD2											1500	1495		
PRV 3	HOOD1											1500	1455		
PRV 4	HOOD3											350	356		
EF-1	MENS RR													220	150
EF-2	MOP ROOM													50	53
EFA3	WOMENS RR													70	65
EFB3	WOMENS RR													70	68
EFC3	EMPLOYEE RR													70	66
TOTALS		10200	9480	6200	5573	4000	3907			0	0	3350	3306	480	402

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4000	3907
TOTAL EXHAUST	3830	3708
NET AIRFLOW	170	199

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.004
SIDE	0.005
REAR	0.003
AVERAGE	**0.004**

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:

CheckList List

- SITE PICTURES

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name :	SITE PICTURES	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/26/2024 - Wale Odofin - National TAB		

CheckList Item Details

STORE FRONT

Comment:

STOREFRONT_1909855933..
07/10/2024

RTU-1

Comment:

RTU1_712490325
07/10/2024

RTU-2

Comment:

RTU2_1872591309
07/10/2024

PRV-2

Comment:

PRV2_77366443
07/10/2024

PRV-3

Comment:

PRV3_190312005
07/10/2024

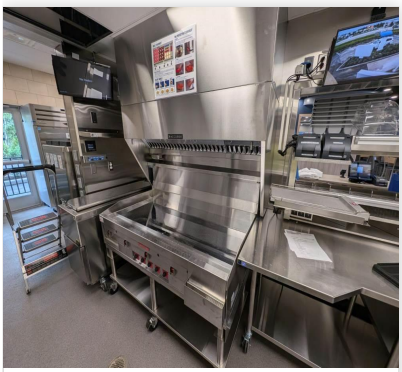
PRV-4

Comment:

PRV4_263473024
07/10/2024

HOOD 1

Comment:



Hood1_1052938386
07/10/2024

HOOD 2

Comment:

Hood2_264457387
07/10/2024

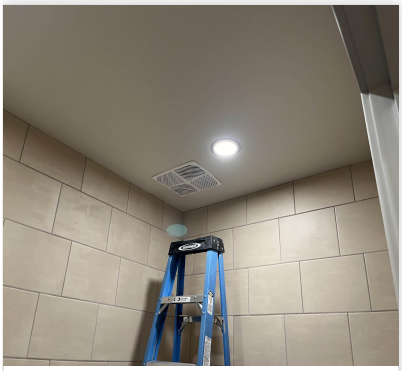
HOOD 3

Comment:

Hood3_1537762773
07/10/2024

EF-1

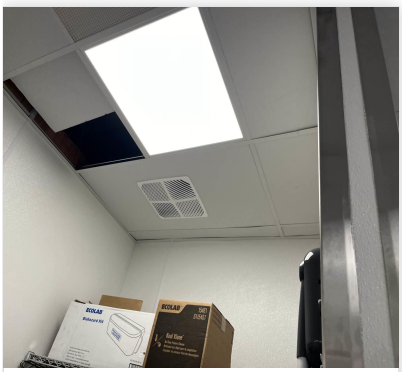
Comment:



EF1_18620450
07/10/2024

EF-2

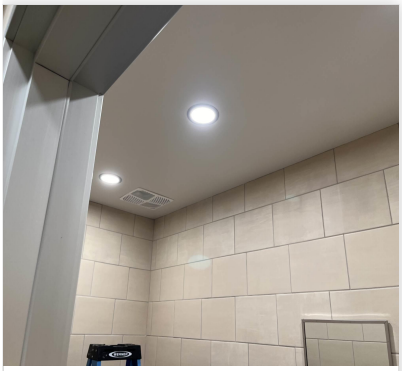
Comment:



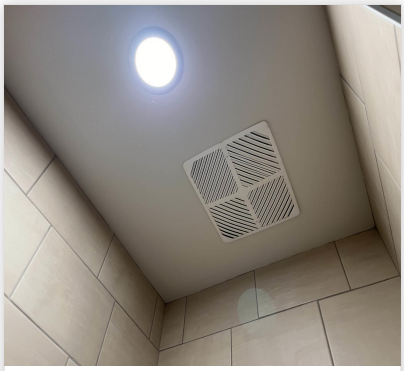
EF2_338697144
07/10/2024

EF-3

Comment:



EFA3_1174657808
07/10/2024



EFB3_1532739655
07/10/2024

EFC3_1093657617
07/10/2024

Notes/Comments :

MC: ACE Air Conditioning / 386.668.8651

Date :07/10/2024

CheckList List

- EXHAUST FANS
- FINAL TEST
- HOOD 1
- HOOD 2
- RTU's

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name :	EXHAUST FANS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/26/2024 - Wale Odofin - National TAB		

CheckList Item Details

EF's

Rotation is correct?	Pass
Comment:	
Belts are tight?	N/A
Comment: DIRECT DRIVE	
Hinge kit installed installed on hood fan?	Pass
Comment:	
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
There is no major leakage around base of fan?	Pass
Comment:	
Is the motor operating below the motor FLA rating?	Pass

Comment:

For restroom fan(s) is the back draft damper installed and can it fully open?	Pass

Comment:

Unit free of noticeable noise and vibration?	Pass

Comment:

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name :	FINAL TEST	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/26/2024 - Wale Odofin - National TAB		

CheckList Item Details

FINAL CHECKS

When hoods are turned off, verify the economizers shut	N/A
Comment: Economizers close when thermostats in unoccupied mode.	
When hoods are turned on, verify the economizers open to the minimum position	N/A
Comment: Economizers open to minimum position when units in occupied mode.	
Is space free of drafting?	Pass
Comment:	
Is space comfortable in all areas?	Pass
Comment:	
Is the space free of ventilation noise?	Pass
Comment:	

HOOD CAPTURE TEST

List kitchen equipment turned on for testing	

Comment:

None

List smoke candle type used

Comment:

45S Smoke Emitter

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	07/10/2024

Comment:

TAB tech name / Firm

Comment:

Stephen Tassinaro / NTi

Site super name / Firm

Comment:

N/A

Owner representative name / Firm (if Applicable)

Comment:

N/A

BUILDING PRESSURE

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	Pass

Comment:

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name : HOOD 1 **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 06/26/2024 - Wale Odofin - National TAB

CheckList Item Details

HD-1

Is the hood powered and free of alarms?	Pass
Comment:	
Does hood label match submittal?	Pass
Comment:	
Do hood dimensions match submittal?	Pass
Comment:	
Is the hood hung Level?	Pass
Comment:	
Are hood lights installed and are they powered?	N/A
Comment:	
Are temperature Sensors installed?	Pass
Comment:	
Are the correct number and size of filters installed, and are they installed correctly?	Pass

Comment:

Is the grease cup installed?	Pass

Comment:

Are side splashes/skirts installed and do they match the submittal?	Pass

Comment:

Is the backsplash installed and does it match the submittal?	Pass

Comment:

Are ceiling enclosures installed and do they match the submittal?	Pass

Comment:

Does the appliance line-up match the drawings on submittal?	Pass

Comment:

Document any other issues or discrepancies.

Comment:

No issues

HOOD CAPTURE TEST

List equipment turned on for testing:

Comment:

None

Smoke Test Capture - Perimeter of Hood

Comment:

100%

Smoke Test Capture - Top of Cooking Surface

Comment:

100%

List smoke candle used:

Comment:

45S Smoke Emitter

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name : HOOD 2 **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 06/26/2024 - Wale Odofin - National TAB

CheckList Item Details

HD-1

Is the hood powered and free of alarms?	Pass
Comment:	
Does hood label match submittal?	Pass
Comment:	
Do hood dimensions match submittal?	Pass
Comment:	
Is the hood hung Level?	Pass
Comment:	
Are hood lights installed and are they powered?	N/A
Comment:	
Are temperature Sensors installed?	Pass
Comment:	
Are the correct number and size of filters installed, and are they installed correctly?	Pass

Comment:

Is the grease cup installed?	Pass

Comment:

Are side splashes/skirts installed and do they match the submittal?	Pass

Comment:

Is the backsplash installed and does it match the submittal?	Pass

Comment:

Are ceiling enclosures installed and do they match the submittal?	Pass

Comment:

Does the appliance line-up match the drawings on submittal?	Pass

Comment:

Document any other issues or discrepancies.

Comment:

No issues

HOOD CAPTURE TEST

List equipment turned on for testing:

Comment:

None

Smoke Test Capture - Perimeter of Hood

Comment:

100%

Smoke Test Capture - Top of Cooking Surface

Comment:

100%

List smoke candle used:

Comment:

45S Smoke Emitter

06-24-24 CULVERS - ORLANDO, FL

CheckList Information

Name : RTU's **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 06/26/2024 - Wale Odofin - National TAB

CheckList Item Details

RTU's/AHU's

Thermostats installed and have power?	Pass
Comment:	
All diffusers and grilles are installed and match design?	Pass
Comment: Yes	
Cookline diffusers have at 12-18" of straight duct out of the top of the diffusers and a rigid 90 degree fitting?	Fail
Comment: No, flex ran directly to cookline diffusers and no rigid 90s	
Economizers are assembled and functional?	Pass
Comment:	
Motors are all operating below the FLA rating?	Pass
Comment:	
Are belts tight?	N/A
Comment:	

If direct drive unit is the speed controller working?	Pass
Comment:	
Is gas piping installed and valves turned on?	N/A
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5487289
Model Num	CASTRU3E452 24 20T	CASTRU3E302 24 20T
Type	RTU	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16"X25"X2"
Num Final Filter 1	-	8
Final Filter Size 1	-	20"X25"X2"

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	215T
Horsepower	-	5/3.7
Motor Rpm	-	1165
Phase	-	3
Rated Voltage	-	230/460
Rated Amperage	-	14.3/7.15

Drive Data	
	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	5200	4880
SF RPM	75Hz	1456
RA CFM	3200	2897
OA CFM	2000	1983
RL Voltage	-	207/206/209
RL Amperage	-	15.3/14.7/14.8
SF Rotation	-	CORRECT
SF System SetPt	-	75Hz
RA Damper Position	-	4.9V
Min OA Damper Position	-	6.1V
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
Fan Suction SP	-	-1.70”
Fan Discharge SP	-	0.83”
Fan Total SP	-	2.53"

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

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project:06-24-24 CULVERS - ORLANDO, FL

AHU/RTU

Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	ENTRY	A4	6"	100	1	90	102	99	99.0
SGRD2	DINING	A4	8"	200	1	239	219	191	95.5
SGRD3	DINING	A4	10"	300	1	235	288	301	100.3
SGRD4	DINING	A4	10"	250	1	283	262	247	98.8
SGRD5	DINING	A4	10"	300	1	350	303	286	95.3
SGRD6	DINING	A4	8"	200	1	232	203	184	92.0
SGRD7	DINING	A3	10"	150	1	172	160	144	96.0
SGRD8	DINING	A4	10"	275	1	179	242	264	96.0
SGRD9	DINING	A3	8"	150	1	178	150	154	102.7
SGRD10	DINING	A4	10"	275	1	370	266	252	91.6
SGRD11	DINING	A4	10"	250	1	261	217	247	98.8
SGRD12	DINING	A3	8"	150	1	206	133	132	88.0
SGRD13	DINING	A3	10"	300	1	323	257	271	90.3
SGRD14	DINING	A3	10"	300	1	237	271	292	97.3
SGRD15	DINING	A4	8"	200	1	140	179	185	92.5
SGRD16	DINING	A4	10"	250	1	230	212	231	92.4
SGRD17	CUST. ORD	A4	10"	300	1	148	178	255	85.0
SGRD18	CUST. SER	A4	8"	200	1	138	166	188	94.0
SGRD19	CUST. SER	A4	8"	200	1	147	176	178	89.0
SGRD20	CUST. SER	A4	8"	200	1	152	181	181	90.5
SGRD21	CUST. SER	A4	8"	200	1	153	181	197	98.5
SGRD22	HALL	A4	10"	300	1	160	190	260	86.7
SGRD23	RESTROOM	C3	6"	75	1	98	80	70	93.3
SGRD24	RESTROOM	C3	6"	75	1	98	88	71	94.7
Total				5200		4819	4704	4880	93.85%

Completed By: Stephen Tassinaro on 07/10/2024

Asset	Notes	Date	Written By
SGRD17	All diffusers proportionally balanced to unit total, 93.8% of design. No further action recommend ed at this time.	07/10/2024	Stephen Tassinaro

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: AHU/RTU

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5487289
Model Num	CASTRU3E452 24 20T	CASTRU3E302 24 20T
Type	RTU	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16X25X2
Num Final Filter 1	-	8
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO WESTING HOUSE
Frame	-	215T
Horsepower	-	5/3.7
Motor Rpm	-	1165
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	14.3/7.15

Drive Data	
	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	5000	4600
SF RPM	75Hz	1456
RA CFM	3000	2676
OA CFM	2000	1924
RL Voltage	-	211/209/212
RL Amperage	-	15.1/15.2/15.2
SF Rotation	-	CCW
SF System SetPt	-	75Hz
RA Damper Position	-	4.2V
Min OA Damper Position	-	5.8V
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
Fan Suction SP	-	-1.76”
Fan Discharge SP	-	1.03”
Fan Total SP	-	2.79"

General	
	Actual
Fan Rotation Correct	CORRECT
Unit Filters Clean	YES
Condensate Drain Installed	INSTALLED

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project:06-24-24 CULVERS - ORLANDO, FL

AHU/RTU

Diffuser Supply (GRD)

RTU2/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DRIVE THRU	A4	12"	500	1	408	455	495	99.0
SGRD2	SUNDAE PREP	A4	10"	300	1	314	281	296	98.7
SGRD3	KITCHEN	F4	10"	300	1	281	317	275	91.7
SGRD4	KITCHEN	F4	10"	350	1	89	325	259	74.0
SGRD5	KITCHEN	F4	10"	300	1	299	297	223	74.3
SGRD6	KITCHEN	F4	10"	300	1	172	203	280	93.3
SGRD7	KITCHEN	F4	10"	350	1	300	350	342	97.7
SGRD8	KITCHEN	F4	10"	300	1	292	270	297	99.0
SGRD9	PREP AREA	A4	10"	300	1	245	298	279	93.0
SGRD10	KITCHEN	A4	10"	350	1	325	348	321	91.7
SGRD11	DISHWASH	A4	10"	350	1	356	308	301	86.0
SGRD12	MOP	F4	12"	550	1	416	442	496	90.2
SGRD13	OFFICE	D1	9"	225	1	199	212	221	98.2
SGRD14	UTILITY RM.	D1	7"	150	1	117	119	133	88.7
SGRD15	DRY GOODS	C1	4"	25	1	81	24		-
SGRD16	DRY GOODS	A4	8"	150	1	176	179	202	134.7
SGRD17	DRY GOODS	A4	8"	200	1	139	148	156	78.0
Total				5000		4209	4576	4576	91.52%

Completed By: Stephen Tassinaro on 07/10/2024

Asset	Notes	Date	Written By
SGRD4	Duct restrictive.	07/10/2024	Stephen Tassinaro
SGRD5	Takeoff restrictive (located on top of trunk line, directly above 3 other takeoffs)	07/10/2024	Stephen Tassinaro
SGRD11	All diffusers proportionally balanced to unit total, 92.0% of design. No further action is recommended at this time.	07/10/2024	Stephen Tassinaro
SGRD14	All diffusers proportionally balanced to unit total, 92.0% of design. No further action is recommended at this time.	07/10/2024	Stephen Tassinaro
SGRD16	No damper installed.	07/10/2024	Stephen Tassinaro
SGRD17	Unable to push design airflow to this diffuser due to ductwork issues at other diffusers.	07/10/2024	Stephen Tassinaro

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: EF1 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCRA200	XCR-A200
Serial Num	-	21859636
Type	CEILING	CEILING
Configuration	VERTICAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	900
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.46
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	220	150
Fan RPM	829	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	MAXIMIZED
RL Voltage	-	120
RL Amperage	-	0.4

Completed By: Stephen Tassinaro on 07/10/2024

Notes:
Transition to discharge duct restrictive.

Written By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: EF2 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCRB50	SP-B80-QD
Serial Num	-	146034543-0042
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	900
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.16
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	50	53
Fan RPM	519	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	WIRED DIRECT
RL Voltage	-	120
RL Amperage	-	0.15

Notes:
No speed controller installed.

Written By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: EFA3 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCR-B70	XCR-B70
Serial Num	-	21859647
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	675
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.15
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	70	65
Fan RPM	642	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	MAXIMIZED
RL Voltage	-	121
RL Amperage	-	0.14

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: EFB3 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCR-B70	XCR-B70
Serial Num	-	21859649
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	675
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.15
Service Factor	-	NOT LISTED

Test Data		
	Design	**Actual**
CFM	70	68
Fan RPM	642	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	MAXIMIZED
RL Voltage	-	122
RL Amperage	-	0.14

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: EFC3 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCR-B70	SP-B80-QD
Serial Num	-	177879881-0070
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	850
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	0.23

Test Data		
	Design	**Actual**
CFM	70	66
Fan RPM	642	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	MAXIMIZED
RL Voltage	-	122
RL Amperage	-	0.2

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: PRV2 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCUE-140-VG	XCUE-140-VG
Serial Num	-	21862414
Type	UPBLAST	CENTRIFUGAL
Configuration	VERTICAL	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Horsepower	-	1
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	115	115/208-230
Amperage (rated)	-	11.5/7.0
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	1500	1495
Fan RPM	1703	1680
Fan Rotation	-	CORRECT
Motor RPM	-	1680
System SetPt	-	9.6V
RL Voltage	-	123
RL Amperage	-	10.8
Total ESP	1.80"	1.42"
Fan Inlet SP	-	-1.42"
Fan Discharge SP	-	ATM

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: PRV3 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCUE-140-VG	XCUE-140-VG
Serial Num	-	21862425
Type	UPBLAST	CENTRIFUGAL
Configuration	VERTICAL	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	1	
Voltage (rated)	115	
Amperage (rated)	-	
Service Factor	-	

Test Data		
	Design	**Actual**
CFM	1500	1455
Fan RPM	1349	1173
Fan Rotation	-	CORRECT
Motor RPM	-	1173
System SetPt	-	6.7
RL Voltage	-	124
RL Amperage	-	4.2
Total ESP	1.8"	1.74"
Fan Inlet SP	-	-1.74"
Fan Discharge SP	-	ATM

Completed By: Stephen Tassinaro on 07/10/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: FAN - Exhaust

Asset: PRV4 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRED095D	XRED095D
Serial Num	-	21862387
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	DOWNBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	MCMILLAN ELECTRIC CO
Frame	-	NL
Horsepower	-	1/8
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	350	356
Fan RPM	1467	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	LOW
RL Voltage	-	122
RL Amperage	-	1.1
Total ESP	0.60"	0.25"
Fan Inlet SP	-	-0.25"
Fan Discharge SP	-	ATM

Completed By: Stephen Tassinaro on 07/10/2024

Notes:
FAN WILL NEED A SPEED CONTROLLER INSTALLED IN ORDER FOR AIRFLOW TO BE REDUCED TO DESIGN. CURRENTLY WIRED TO LOW SPEED.

Written By: Stephen Tassinaro on 06/27/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XGEP-64-S	XGEP-64.00-S
Job / Serial Num	-	22005092
Type	TYPE I	TYPE I CANOPY
Hood length	64"	64”
Hood Width	23"	23”

Test Data Exhaust		
	Design	**Actual**
Filter Type	GREASE GRABBER	GREASE GRABBER
Filter Size 1	16X16	16X16
Filter Qty 1	4	4
Filter AK factor size 1	1.53	1.53
Filter Total AK Area	6.12	6.12
Filter1 FPM	-	262
Filter2 FPM	-	230
Filter3 FPM	-	227
Filter4 FPM	-	258
Filter Ave FPM(corr)	-	244.25
CFM	1500	1495

Cooking Equipment	
	Actual
Item 1	GRILL

Completed By: Stephen Tassinaro on 07/02/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: Kitchen Hood Type I

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XXEP-83-S	XXEP-83.00-S
Job / Serial Num	-	22005088
Type	TYPE I	TYPE I CANOPY
Hood length	83"	83”
Hood Width	23"	23”

Test Data Exhaust		
	Design	**Actual**
Filter Type	XTRACTOR	XTRACTOR
Filter Size 1	16X16	16X16
Filter Qty 1	5	5
Filter AK factor size 1	1.53	1.53
Filter Total AK Area	7.65	7.65
Filter1 FPM	-	201
Filter2 FPM	-	189
Filter3 FPM	-	184
Filter4 FPM	-	188
Filter5 FPM	-	189
Filter Ave FPM(corr)	-	190.2
CFM	1500	1455

Cooking Equipment	
	Actual
Item 1	FRYERS

Completed By: Stephen Tassinaro on 07/02/2024

National TAB

Project: 06-24-24 CULVERS - ORLANDO, FL

System/Unit: Kitchen Hood Type II

Asset: HD3 AREA:

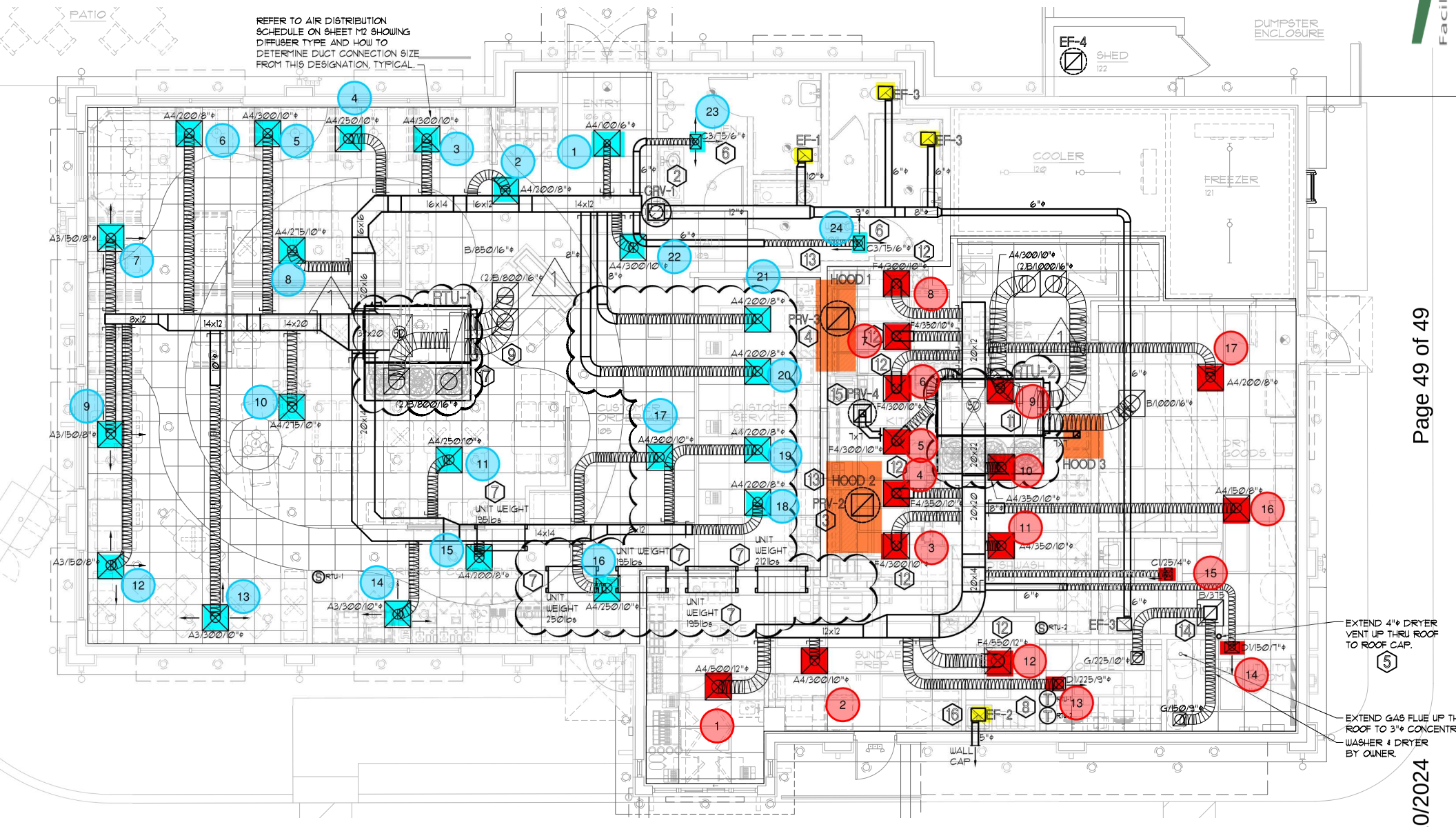
Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XD3-42-S	XD3-42.00-S
Serial Num	-	22005072
Type	TYPE II	TYPE II CANOPY
Hood length	42"	42"
Hood Width	42"	42"

Test Data		
	Design	**Actual**
Exhaust CFM	350	356

Completed By: Stephen Tassinaro on 07/10/2024

Notes:
PRV-4 WILL REQUIRE A SPEED CONTROLLER TO REDUCE AIRFLOW TO 350CFM.

Written By: Stephen Tassinaro on 06/27/2024



Page 49 of 49

Date: 7/10/2024