Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 03/06/2023

PROJECT

02-27-23 CULVERS - FRANKFORT, IN

2301 EAST WABASH ST

FRANKFORT, IN 46041

Client

Captive-Aire Region #60

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

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.

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

Project Issue Information

Issue Name : Ceiling tiles around hoods need to be installed.

Description : There are tiles around the hoods that are missing that will need to be installed to assure proper smoke capture.

Created By : National TAB **Assigned To :** National TAB - Jacob Davidson

Status : Open

Originated Date : 02/27/2023 - Jacob Davidson - National TAB

Project Issue File Details

Tiles.jpeg

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

Project Issue Information

Issue Name : EF1A Mop Room high flow

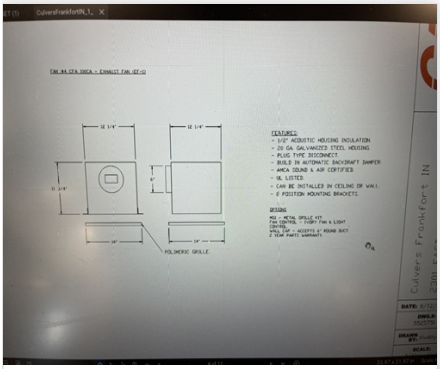
Description : The exhaust fan for the mop room is scheduled for 75CFM and is getting 104 CFM. There does not seem to be any speed control for the unit. Unit is underamping and in an open area, so this should not cause any major issues.

Created By : National TAB **Assigned To :** National TAB - Jacob Davidson

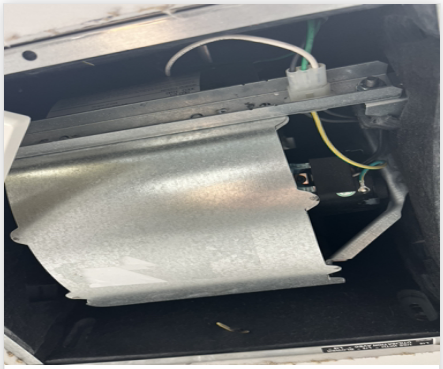
Status : Open

Originated Date : 03/01/2023 - Jacob Davidson - National TAB

Project Issue File Details



CAS.jpeg



Fan.jpeg

Aboveceiling.jpeg

Project Issue Response Details

- **03/07/2023 National TAB - Will Turnbough**
  - No further action is recommended.

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

Project Issue Information

Issue Name : HD1/HD2 faulty BOARD needs a replacement

Description : The HMI for the hoods will not move from the screen pictured. After troubleshooting it with John from Captive Aire customer support, we've determined that the board needs to be replaced under warranty. Without the HMI, tech will not be able to adjust speeds on either fan for proper balancing. Airflow for the exhaust fans is above design as a result

Created By : National TAB **Assigned To :** National TAB - Jacob Davidson

Status : Open

Originated Date : 03/01/2023 - Jacob Davidson - National TAB

Project Issue File Details

HMI.jpeg

Behind.jpeg

Project Issue Response Details

- **03/07/2023 National TAB - Will Turnbough**
  - Once resolved, PRV-2 (Griddle) should be slowed down to 38.7 Hz to achieve design airflow. And PRV-3 (Fryer) should be slowed down to 36.3 Hz.
- **03/02/2023 National TAB - Jacob Davidson**
  - The HMI came in with a board and after replacing, no changes happened. The board in the hood panel needs to be replaced and rewired by the EC. HD1 should be decreased to 38.7hz and HD2 should be reduced to 36.3hz
- **03/01/2023 National TAB - Jacob Davidson**
  - GC has ordered the board and it is expected to arrive tomorrow 3/2

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

Project Issue Information

Issue Name : RTU1 SGRD4/SGRD23 Low Flow

Description : Diffusers 4 and 23 on RTU1 are low. The dampers on each diffuser are fully open. Both diffusers are at the end of the duct after a 90 degree turn. This could be causing turbulence in the duct. Both diffusers are in open space so there should not be any noise or comfort issues with the diffusers.

Created By : National TAB **Assigned To :** National TAB - Jacob Davidson

Status : Open

Originated Date : 02/28/2023 - Jacob Davidson - National TAB

Project Issue File Details

G23.jpeg

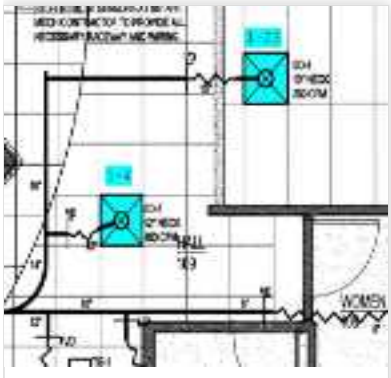
G4.jpeg

Aboveceiling.jpeg

Project Issue Response Details

- **03/07/2023 National TAB - Will Turnbough**
  - No further action is recommended.

- **02/28/2023 National TAB - Jacob Davidson**
  - Added GRD section of ductwork



LOWDIFFUSERS.png

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

Project Issue Information

Issue Name : RTU2 SGRD1/SGRD2 low flow

Description : Diffusers are scheduled for 600 CFM a piece but tech is unable to push more air to the end of the duct without throwing the cookline out of balance. These diffusers are in an open area and should not cause any comfort issues

Created By : National TAB **Assigned To :** National TAB - Jacob Davidson

Status : Open

Originated Date : 03/01/2023 - Jacob Davidson - National TAB

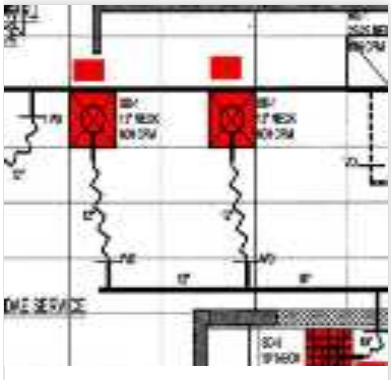
Project Issue File Details

Diffusers.jpeg

Project Issue Response Details

- **03/07/2023 National TAB - Will Turnbough**
  - No further action is recommended.

- **03/01/2023 National TAB - Jacob Davidson**
  - Added GRD of ductwork



rtu2low_.png

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	6150	6051	4350	4193	1800	1858	29.3%	30.7%						
RTU-2	KITCHEN	6150	6082	4450	4297	1700	1785	27.6%	29.3%						
PRV-1	RESTROOM													375	398
PRV-2	HD1 GRIDDLE											1500	1899		
PRV-3	HD2 FRYER											1500	1936		
EF-1A	MOP ROOM													75	104
TOTALS		12300	12133	8800	8490	3500	3643			0	0	3000	3835	450	502

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3500	3643
TOTAL EXHAUST	3450	4337
NET AIRFLOW	50	-694

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	-0.0251
SIDE	-0.0244
REAR	-0.0248
AVERAGE	**-0.0248**

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:

The hood control board needs to be replaced, so the fan speed for each hood fan cannot be reduced until a new board is installed.

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	NotSubmitted
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		

CheckList Item Details

STORE FRONT

Front.jpeg

RTU-1

RTU1.jpeg

RTU-2

RTU2.jpeg

PRV-1

PRV1.jpeg

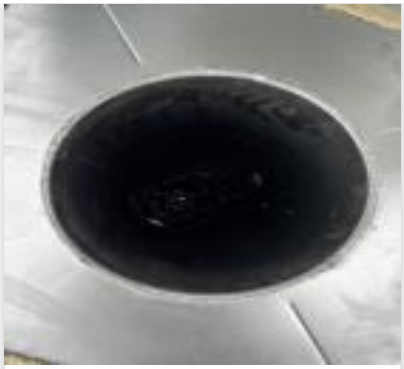
PRV-2 AND GREASE DUCT

PRV2.jpeg

Duct.jpeg

PRV-3 AND GREASE DUCT

PRV3.jpeg



DUCT.jpeg

EF-1A

Ef1a.jpeg

HOOD 1

Griddlehood.jpeg

HOOD 2

Hood2.jpeg

Notes/Comments :

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

CheckList Information

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

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	YES
Perforated diffusers are installed on the cook line? (4-ways will disrupt hood capture)	YES
All hood filters installed and accounted for?	YES
Hoods are wired and have power?	NO // HOODS WERE ABLE TO BE POWERED FOR TESTING. 2/29
Thermostats have power?	NO // UNITS WERE TURNED ON 2/28
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

CheckList Information

Name :	TECH - STEP 2: UNIT DATA AND EVAL	**Status :**	NotSubmitted
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?	YES
Thermostat wire run from OCP on the RTU to the Ec terminal at the thermostat? If no, jumper can be installed from R to OCP temporarily. (The economizers will not open without OCP being energized.)	YES
Motors are all operating below the FLA rating?	YES
Are belts tight?	NA
If direct drive unit is the speed controller working.	YES
Is gas piping installed and valves turned on?	PIPING INSTALLED. GAS SCHEDULED TO BE TURNED ON 3/2/23
Unit free of noticeable noise and vibration	YES
EF's	
Rotation is correct?	YES // PRV3 HAD TO HAVE DIRECTION REVERSED BY ELECTRICIAN.
Belts are tight?	NA
Grease cup installed on hood fan?	YES
Hinge kit installed installed on hood fan?	YES
Lean grease rated fans 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?	NO MAJOR LEAKAGE
Is the motor operating below the motor FLA rating?	YES
For restroom fan(s) is the back draft damper installed and can it fully open?	YES
Unit free of noticeable noise and vibration?	YES
The hood exhaust fans are installed in correct positions and are not switched?	YES
HOODS	
Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	NO, NO GAS
Second stage Grease Grabber filters are installed on the griddle hood?	NO, CAPTIVE AIRE HOODS.
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	NotSubmitted
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?	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 :

Comfort. Under control.

02-27-23 CULVERS - FRANKFORT, IN

CheckList Information

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

CheckList Item Details

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	HOODS, NO KITCHEN EQUIPMENT AVAILABLE.
List smoke candle type used	45 SECOND SMOKE EMITTER
Smoke test capture - Perimeter of hood	100%
Smoke test capture - Top of cooking surface	100%
WITNESS	
Date test was completed	03/02/2023
TAB tech name / Firm	JACOB DAVIDSON / NATIONAL TAB
Site super name / Firm	SPENCER / MCCON CONSTRUCTION
Owner representative name / Firm (if Applicable)	NA
Building pressure at front & back doors (All Systems On)	FRONT -0.0251" REAR -0.0248"
ADDITIONAL	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	NO, THE HOODS HAVE A BAD BOARD THAT IS PREVENTING TECH FROM REDUCING THE SPEED ON THE UNITS. PRESSURE SHOULD BECOME POSITIVE ONCE THE NEW BOARD IS INSTALLED AND FAN SPEED CAN BE TURNED DOWN ON THE EXHAUST FANS.
Thermostats are programmed?	CAPTIVE AIRE REP WILL PROGRAM

Notes/Comments :

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5525751
Model Num	CASRTU3-I.400-24-20T-DOAS	CASRTU3-I.400-24-20T-DOAS
Type	DOAS	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 WESTINGHOUSE
Frame	-	215T
Horsepower	10	10
Motor Rpm	-	1755
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	24.3/12.2

Test Data		
	Design	**Actual**
SF CFM	6150	6051
SF RPM	-	1726
RA CFM	4350	4193
OA CFM	1800	1858
RL Voltage	-	217V HMI
RL Amperage	-	22.8A HMI
SF Rotation	-	CCW
RA Damper Position	-	3.0VDC
Min OA Damper Position	-	3.0VDC
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.23"
Fan Discharge SP	-	0.40"
Total ESP	0.750"	0.63"

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

Completed By: Jacob Davidson

Notes: INCREASED OA BY 50 CFM TO OBTAIN A POSITIVE BUILDING PRESSURE. DOAS SPEED SETPOINT: 59HZ

National TAB

Project:02-27-23 CULVERS - FRANKFORT, IN

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	VESTIBULE	SD3	8"	150	1	154	166	145	96.7
SGRD2	MENS RESTROOM	SD4	8"	150	1	134	138	136	90.7
SGRD3	WOMENS RESTROOMS	SD4	8"	150	1	186	220	164	109.3
SGRD4	DINING	SD1	12"	450	1	261	292	372	82.7
SGRD5	DINING	SD1	8"	150	1	158	184	157	104.7
SGRD6	DINING	SD1	8"	150	1	139	159	154	102.7
SGRD7	DINING	SD1	8"	150	1	110	98	161	107.3
SGRD8	DINING	SD1	8"	150	1	130	145	153	102.0
SGRD9	DINING	SD1	8"	150	1	146	183	146	97.3
SGRD10	DINING	SD1	8"	150	1	103	120	160	106.7
SGRD11	DINING	SD1	8"	150	1	166	192	161	107.3
SGRD12	DINING	SD1	8"	150	1	132	159	146	97.3
SGRD13	DINING	SD1	8"	150	1	146	161	163	108.7
SGRD14	DINING	SD1	8"	150	1	113	164	157	104.7
SGRD15	DINING	SD1	8"	150	1	116	131	149	99.3
SGRD16	DINING	SD1	8"	150	1	133	172	160	106.7
SGRD17	DINING	SD1	8"	150	1	167	161	161	107.3
SGRD18	DINING	SD1	8"	150	1	117	139	150	100.0
SGRD19	DINING	SD1	8"	150	1	129	162	139	92.7
SGRD20	DRINKS & CONDIMENTS	SD1	10"	300	1	337	426	301	100.3
SGRD21	ENTRY	SD1	8:	150	1	174	215	147	98.0
SGRD22	ORDERING	SD1	12"	450	1	395	497	412	91.6
SGRD23	SERVING	SD1	10"	350	1	174	206	280	80.0
SGRD24	SERVING	SD1	10"	350	1	237	271	355	101.4
SGRD25	SERVING	SD1	10"	350	1	252	323	384	109.7
SGRD26	SERVING	SD1	10"	350	1	229	269	357	102.0
SGRD27	DRIVE THRU	SD1	12"	500	1	425	503	476	95.2
SGRD28	OFFICE	SD1	10"	200	1	302	360	205	102.5

Completed By: Jacob Davidson on

Asset	Notes
SGRD4	DAMPER IS FULLY OPEN. TECH IS UNABLE TO PUSH MORE AIR TO DIFFUSER. DIFFUSER IS IN AN OPEN AREA AND COMFORT SHOULD NOT BE AN ISSUE.
SGRD23	DAMPER IS FULLY OPEN. TECH IS UNABLE TO PUSH MORE AIR TO DIFFUSER. DIFFUSER IS IN OPEN AREA AND SHOULDN'T CAUSE COMFORT ISSUES.

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5525751
Model Num	CASRTU3-I.400-24-20T-DOAS	CASRTU3-I.400-24-20T-DOAS
Type	DOAS	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 WESTINGHOUSE
Frame	-	215T
Horsepower	10	10
Motor Rpm	3	1755
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	24.3/12.2

Test Data		
	Design	**Actual**
SF CFM	6150	6082
SF RPM	-	1755
RA CFM	4450	4297
OA CFM	1700	1785
RL Voltage	-	217V HMI
RL Amperage	-	23.9A HMI
SF Rotation	-	CCW
RA Damper Position	-	4.8 VDC
Min OA Damper Position	-	4.8 VDC
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.12"
Fan Discharge SP	-	0.40"
Total ESP	0.750"	0.52"

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

Completed By: Jacob Davidson

Notes:

National TAB

Project:02-27-23 CULVERS - FRANKFORT, IN

AHU/RTU

Comfort. Under control.

Diffuser Supply (GRD)

RTU2/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUNDAE SERVICE	SD1	12"	600	1	321	507	529	88.2
SGRD2	SUNDAE SERVICE	SD1	12"	600	1	303	453	498	83.0
SGRD3	COOKLINE	SD5	10"	200	1	241	196	219	109.5
SGRD4	COOKLINE	SD5	12"	375	1	320	250	340	90.7
SGRD5	KITCHEN	SD5	12"	350	1	218	390	339	96.9
SGRD6	KITCHEN	SD5	12"	350	1	347	309	338	96.6
SGRD7	KITCHEN	SD5	12"	400	1	404	396	438	109.5
SGRD8	KITCHEN	SD5	12"	400	1	454	354	399	99.8
SGRD9	KITCHEN	SD5	12"	350	1	459	392	357	102.0
SGRD10	COOKLINE	SD5	10"	250	1	302	264	234	93.6
SGRD11	COOKLINE	SD5	10"	275	1	320	423	259	94.2
SGRD12	ALCOVE	SD5	8"	125	1	200	130	115	92.0
SGRD13	TOILET	SD1	6"	75	1	108	160	76	101.3
SGRD14	UTILITY	SD1	12"	600	1	406	591	642	107.0
SGRD15	DRY GOODS	SD1	12"	600	1	418	605	646	107.7
SGRD16	DRY GOODS	SD1	12"	600	1	384	579	653	108.8

Completed By: Jacob Davidson on

Asset	Notes
SGRD1	DAMPER IS FULLY OPEN. UNABLE TO PUSH MORE AIR TO THE DIFFUSER
SGRD2	DAMPER IS FULLY OPEN. UNABLE TO PUSH ANYMORE AIR TO DIFFUSER.

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-A1 AREA:MOP ROOM

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CFA100CA	CFA100CA
Serial Num	-	5525751
Type	INLINE	CEILING
Configuration	HORIZONTAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	BROAN
Frame	-	UTO
Horsepower	0.116	0.116
Motor Rpm	-	493
Phase	1	1
Voltage (rated)	115	120
Amperage (rated)	-	1.1
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	75	104
Fan RPM	493	493
Fan Rotation	-	CCW
Motor RPM	-	493
System SetPt	-	NO SPEED CONTROL
RL Voltage	-	119V
RL Amperage	-	0.41A
Total ESP	0.125"	0.09"
Fan Inlet SP	-	UTO
Fan Discharge SP	-	0.09"

Completed By: Jacob Davidson

Notes:

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV1 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR12HFA	DR12HFA
Serial Num	-	5525751
Type	DOWNBLAST	DOWNBLAST
Configuration	HORIZONTAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower	0.250	1/4
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.9
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	375	398
Fan RPM	1364	885
Fan Rotation	-	CCW
Motor RPM	-	885
System SetPt	-	49P
RL Voltage	-	119V
RL Amperage	-	0.56A
Total ESP	0.5"	0.20"
Fan Inlet SP	-	-0.20"
Fan Discharge SP	-	ATM

Completed By: Jacob Davidson

Notes:

National TAB

Project:02-27-23 CULVERS - FRANKFORT, IN

FAN - Exhaust

Comfort. Under control.

Diffuser Ret/Exh (GRD)

PRV1/RESTROOMS

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	MEN RR	EG1	8X8	150	1	265	155	155	103.3
EGRD2	WOMEN RR	EG1	8X8	150	1	224	163	163	108.7
EGRD3	EMPLOYEE RR	EG1	8X8	75	1	116	80	80	106.7

Completed By: Jacob Davidson on

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV2 AREA:HD1 GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5525751
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	NL
Horsepower	0.750	3/4
Motor Rpm	-	1725
Phase	3	3
Voltage (rated)	208	208-230/460
Amperage (rated)	-	2.6-2.5/1.3
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	1500	1899
Fan RPM	1406	1406
Fan Rotation	-	CCW
Motor RPM	-	1406
System SetPt	-	48.9HZ
RL Voltage	-	188V
RL Amperage	-	2.6A
Total ESP	1.412"	1.23"
Fan Inlet SP	-	-1.23"
Fan Discharge SP	-	ATM

Completed By: Jacob Davidson

Notes: HMI FOR HOODS IS DEFECTIVE AND NEEDS TO BE REPLACED. TECH CANNOT ADJUST SPEEDS OF THE UNITS UNTIL THEN. BASED ON FAN LAW, TECH DETERMINED THAT THE SPEED WILL NEED TO BE DECREASED TO 38.7HZ ON THE HMI.

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV3 AREA:HD2 FRYER

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5525751
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	NL
Horsepower	0.750	3/4
Motor Rpm	-	1725
Phase	3	3
Voltage (rated)	208	208-230/460
Amperage (rated)	-	2.6-2.5/1.3
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	1500	1936
Fan RPM	1348	1348
Fan Rotation	-	CCW
Motor RPM	-	1348
System SetPt	-	46.9HZ
RL Voltage	-	158V
RL Amperage	-	2.5A
Total ESP	1.250"	1.10"
Fan Inlet SP	-	-1.10"
Fan Discharge SP	-	ATM

Completed By: Jacob Davidson

Notes: HMI FOR HOODS IS DEFECTIVE AND NEEDS TO BE REPLACED. TECH CANNOT ADJUST SPEEDS OF THE UNITS UNTIL THEN. BASED ON FAN LAW, TECH DETERMINED THAT THE SPEED NEEDS TO BE DECREASED TO 36.3HZ TO BE IN DESIGN.

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	3347 BD-2	3347 BD-2
Job / Serial Num	-	5525751
Type	TYPE I LOW PROXIMIITY	TYPE I LOW PROXIMITY
Hood length	66	66"
Hood Width	33	33"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	4	4
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	6.48	6.48
Filter1 FPM	-	289
Filter2 FPM	-	292
Filter3 FPM	-	295
Filter4 FPM	-	296
Filter Ave FPM(corr)	-	293
CFM	1500	1899

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

Completed By: Jacob Davidson

Notes:

National TAB

Project: 02-27-23 CULVERS - FRANKFORT, IN

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD2 AREA:FRYER

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	3347 BD-2	3347 BD-2
Job / Serial Num	-	5525751
Type	TYPE I LOW PROXIMITY	TYPE I LOW PROXIMITY
Hood length	84	84"
Hood Width	33	33"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16X16
Filter Qty 1	5	5
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	8.1	8.1
Filter1 FPM	-	243
Filter2 FPM	-	222
Filter3 FPM	-	227
Filter4 FPM	-	258
Filter5 FPM	-	248
Filter Ave FPM(corr)	-	239
CFM	1500	1936

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

Completed By: Jacob Davidson

Notes: HMI FOR HOODS IS DEFECTIVE AND NEEDS TO BE REPLACED. TECH CANNOT ADJUST SPEEDS OF THE UNITS UNTIL THEN. BASED ON FAN LAW, TECH DETERMINED THAT THE SPEED NEEDS TO BE DECREASED TO 36.3HZ TO BE IN DESIGN.