Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 06/26/2023

PROJECT

06-19-23 CULVERS - COLUMBUS, GA

6859 MIDLAND COMMONS BLVD

COLUMBUS, GA 31909

Client

Accurex

PO Box 410

Schofield, WI 54476

Issue List

- Hood Capture
- Incorrect Dampers Installed
- Office Diffuser Ductwork
- RTU 1 Low Diffusers
- RTU 2 Diffuser 15 Low Flow
- Thermostat Labeling

06-19-23 CULVERS - COLUMBUS, GA

Project Issue Information

Issue Name : Hood Capture

Description : With Hoods and Cookline diffusers at design flow, hood smoke capture is failing. Technician verified with kitchen units off the hoods captured correctly. Cookline diffuser ductwork is not installed per design. See MSET page m201 detail c6. Diffusers are missing rigid 90 and 12” rigid duct run. Return style diffusers are installed instead of supply.

Created By : National TAB

Assigned To : National TAB - William Patton

Status : Open

Originated Date : 06/22/2023 - William Patton - National TAB

Project Issue File Details

LineDiffusers
06/22/2023

CookLineDuctwork
06/22/2023

06-19-23 CULVERS - COLUMBUS, GA

Project Issue Information

Issue Name : Incorrect Dampers Installed

Description : MSET calls for volume dampers at supply takeoffs, instead dampers were installed at faces of diffusers. See MSET M201 detail C6. The existence of branch dampers could not be verified due to spray foam insulation on the duct. The face dampers are causing excessive noise at several diffusers.

Created By : National TAB

Assigned To : National TAB - William Patton

Status : Open

Originated Date : 06/21/2023 - William Patton - National TAB

Project Issue File Details

SprayFoamInsulation.j..
06/21/2023

InNeckFaceDamper
06/21/2023

06-19-23 CULVERS - COLUMBUS, GA

Project Issue Information

Issue Name : Office Diffuser Ductwork

Description : Office supply diffuser is ducted to rtu2 instead of rtu1. MSET M101 calls for that diffuser to be ducted to rtu1. Per the MC the truss work makes ducting to rtu1 impossible. This may lead to uncomfortable temperatures in the office as the kitchen has a different demand for heat/cool than the office.

Created By : National TAB

Assigned To : National TAB - William Patton

Status : Open

Originated Date : 06/21/2023 - William Patton - National TAB

Project Issue File Details

OfficeDiffuser
06/21/2023

Trusses
06/21/2023

06-19-23 CULVERS - COLUMBUS, GA

Project Issue Information

Issue Name : RTU 1 Low Diffusers

Description : As a result of incorrect dampers being installed and the ductwork layout differing from that shown on the MSET there are 4 diffusers that are below design. Several full passes were made to attempt to resolve this but were unsuccessful. Space is comfortable as is.

Created By : National TAB

Assigned To : National TAB - William Patton

Status : Open

Originated Date : 06/21/2023 - William Patton - National TAB

Project Issue File Details

LowLineDiffusers
06/21/2023

Project Issue Response Details

- **06/22/2023 National TAB - William Patton**
  - RECOMMENDED TO INSTALL VOLUME DAMPERS FOR THE DIFFUSERS AT THE TAKEOFFS. IT IS ALSO RECOMMENDED TO INSTALL BRANCH DAMPERS. NTAB WAS UNABLE TO SEE OR USE ANY BRANCH DAMPERS DUE TO SPRAY INSULATION ON THE DUCTWORK.

06-19-23 CULVERS - COLUMBUS, GA

Project Issue Information

Issue Name : RTU 2 Diffuser 15 Low Flow

Description : Diffuser 15 (dry goods) is 351/600cfm. After several full passes, total increase in flow to this diffuser was 63 cfm, with all other diffusers falling within design. After inspection technician could not diagnose what is causing restriction. Recommend mechanical contractor investigates ductwork and volume damper for any issues.

Created By : National TAB

Assigned To : National TAB - William Patton

Status : Open

Originated Date : 06/22/2023 - William Patton - National TAB

Project Issue File Details

LowFlowDiffuser
06/22/2023

Project Issue Information

Issue Name :	Thermostat Labeling		
Description :	Thermostats are not labeled. Recommend labeling thermostats indicating which RTU they control.		
Created By :	National TAB	**Assigned To :**	National TAB - William Patton
Status :	Open		
Originated Date :	06/22/2023 - William Patton - National TAB		

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.

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	5767	4400	3918	1750	1849	28.5%	32.1%						
RTU-2	KITCHEN	6150	6362	4450	4651	1700	1711	27.6%	26.9%						
PRV-2	HOOD1											1500	1438		
PRV-3	HOOD2											1500	1561		
PRV-1	RESTROOM													375	393
EF-1A	MOP ROOM													75	72
TOTALS		12300	12129	8850	8569	3450	3560			0	0	3000	2999	450	465

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3450	3560
TOTAL EXHAUST	3450	3464
NET AIRFLOW	0	96

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.001
SIDE	0.0013
REAR	0.0015
AVERAGE	**0.0013**

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
- TECH - STEP 1: INITIAL WALKTHROUGH
- TECH - STEP 2: UNIT DATA AND EVAL
- TECH - STEP 3: TEST, ADJUST AND BALANCE
- TECH - STEP 4: FINAL TESTS

06-19-23 CULVERS - COLUMBUS, GA

CheckList Information

Name :	SITE PICTURES	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/15/2023 - Wale Odofin - National TAB		

CheckList Item Details

STORE FRONT

Comment:

StoreFront
06/22/2023

RTU-1

Comment:

RTU1
06/22/2023

RTU-2

Comment:

RTU2(1)
06/22/2023

PRV-1

Comment:

PRV1
06/22/2023

PRV-2

Comment:

PRV2
06/22/2023

PRV-3

Comment:

PRV3
06/22/2023

EF-1A

Comment:

EF1
06/22/2023

HOOD 1

Comment:

HOOD1
06/22/2023

HOOD 2

Comment:

Hood2
06/22/2023

Notes/Comments :

N/A

Date :06/26/2023

06-19-23 CULVERS - COLUMBUS, GA

CheckList Information

Name :	TECH - STEP 1: INITIAL WALKTHROUGH	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/14/2023 - Wale Odofin - National TAB		

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?

Comment:

NO, COOK LINE DIFFUSERS NOT TO SPEC.

Perforated diffusers are installed on the cook line? (4-ways will disrupt hood capture)

Comment:

DIFFUSERS ARE PERFORATED BUT ARE FOR RETURN APPLICATIONS. RECOMMEND REPLACING.

All hood filters installed and accounted for?

Comment:

YES

Hoods are wired and have power?

Comment:

YES

Thermostats have power?

Comment:

YES

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

Comment:

YES

Notes/Comments :

N/A

Date :06/26/2023

06-19-23 CULVERS - COLUMBUS, GA

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 06/14/2023 - Wale Odofin - 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?

Comment:

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.)

Comment:

YES

Motors are all operating below the FLA rating?

Comment:

YES

Are belts tight?

Comment:

DIRECT DRIVE

If direct drive unit is the speed controller working.

Comment:

YES

Is gas piping installed and valves turned on?

Comment:

INSTALLED NOT TURNED ON

Unit free of noticeable noise and vibration

Comment:

YES

EF's

Rotation is correct?

Comment:

YES

Belts are tight?

Comment:

DIRECT DRIVE

Grease cup installed on hood fan?

Comment:

YES

Hinge kit installed installed on hood fan?

Comment:

YES

Lean grease rated fans back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?

Comment:

YES

Flex conduit is long enough so that fan can be completely tilted back?

Comment:

YES

There is no major leakage around base of fan?

Comment:

YES

Is the motor operating below the motor FLA rating?

Comment:

YES

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

Comment:

YES

Unit free of noticeable noise and vibration?

Comment:

YES

The hood exhaust fans are installed in correct positions and are not switched?

Comment:

YES

HOODS

Kitchen equipment installed in proper places?

Comment:

YES

Can kitchen equipment be turned on for final smoke test?

Comment:

NO

Second stage Grease Grabber filters are installed on the griddle hood?

Comment:

YES

DOCUMENTATION

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

Comment:

YES

Notes/Comments :

N/A

Date :06/26/2023

06-19-23 CULVERS - COLUMBUS, GA

CheckList Information

Name :	TECH - STEP 3: TEST, ADJUST AND BALANCE	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/14/2023 - Wale Odofin - National TAB		

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?

Comment:

NO. DRAFTING ON COOK LINE.

Is space comfortable in all areas?

Comment:

YES

Is the space free of ventilation noise?

Comment:

NO. EXCESSIVE NOISE CAN BE HEARD FROM DIFFUSERS POST BALANCE. (CAUSED BY INCORRECT DAMPER TYPE)

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

N/A

Notes/Comments :

N/A

Date :07/24/2023

06-19-23 CULVERS - COLUMBUS, GA

CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/14/2023 - Wale Odofin - National TAB		

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

NONE

List smoke candle type used

Comment:

S102 45 SECOND 150 CUBIC FEET

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

50%

WITNESS

Date test was completed	06/29/2023

Comment:

SMOKE CAPTURE NOT 100% DUE TO DRAFTING FROM THE COOKLINE DIFFUSERS. SEVERAL ISSUES WITH DAMPERS AND DUCTWORK. SEE ISSUES.

TAB tech name / Firm

Comment:

WILLIAM PATTON/NATIONAL TAB

Site super name / Firm

Comment:

DEREK MCCAIN/ POUND CONSTRUCTION

Owner representative name / Firm (if Applicable)

Comment:

N/A

Building pressure at front & back doors (All Systems On)

Comment:

FRONT: 0.001 BACK: 0.0015

ADDITIONAL

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

Comment:

YES

Thermostats are programmed? No

Comment:

PRODIGY SETTINGS FOR RTU'S

Parameter 65 set to 0

Comment:

N/A

Parameter 78 set to 0

Comment:

N/A

Parameter 105 set to 6

Comment:

N/A

Parameter 156 set to 70 (Dining unit only)

Comment:

N/A

Parameter 156 set to 65 (Kitchen Unit Only)

Comment:

N/A

Parameter 170 set to 75 (Dining Unit Only)

Comment:

N/A

Parameter 170 set to 70 (Kitchen Unit Only)

Comment:

N/A

Parameter 131 set to the same % as OA minimum position?

Comment:

N/A

Parameter 117 set to the same % as OA minimum position?

Comment:

N/A

Notes/Comments :

N/A

Date :06/26/2023

National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING ROOM

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE/ACCUREX	CARRIER
Serial Num	-	1823P22636
Model Num	NA	48FCN24K5M5A6F8CO
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	14 1/4X 23 1/4
Num Final Filter 1	-	6
Final Filter Size 1	-	20X25x4

Test Data		
	Design	**Actual**
SF CFM	5950	5767
SF RPM	-	1450
RA CFM	4200	3918
OA CFM	1750	1849
RL Voltage	-	211.6/212.3/212.5
RL Amperage	-	2.6/2.7/2.8
SF Rotation	-	CCW
RA Damper Position	-	4.1V
Min OA Damper Position	-	5.9V
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	ES5

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.321”
Fan Suction SP	-	-0.654”
Fan Discharge SP	-	0.559”
Total ESP	0.75"	0.88”
Fan Total SP	-	1.213”

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	6.9VDC
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

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

Completed By: William Patton on 06/23/2023

National TAB

Project:06-19-23 CULVERS - COLUMBUS, GA

AHU/RTU

Diffuser Supply (GRD)

RTU1/DINING ROOM

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	ENTRY	SD3	8"	150	1	149	128	145	96.7
SGRD2	DINING	SD1	8"	150	1	240	191	156	104.0
SGRD3	DINING	SD1	8"	150	1	234	191	143	95.3
SGRD4	DINING	SD1	8"	150	1	245	201	149	99.3
SGRD5	DINING	SD1	8"	150	1	257	206	161	107.3
SGRD6	DINING	SD1	8"	150	1	287	243	154	102.7
SGRD7	DINING	SD1	8"	150	1	263	211	163	108.7
SGRD8	DINING	SD1	8"	150	1	313	259	163	108.7
SGRD9	DINING	SD1	8"	150	1	226	195	145	96.7
SGRD10	DINING	SD1	8"	150	1	210	167	157	104.7
SGRD11	DINING	SD1	8"	150	1	211	162	147	98.0
SGRD12	DINING	SD1	8"	150	1	257	207	158	105.3
SGRD13	DINING	SD1	8"	150	1	211	166	140	93.3
SGRD14	DINING	SD1	8"	150	1	205	158	145	96.7
SGRD15	DINING	SD1	8"	150	1	189	153	161	107.3
SGRD16	DINING	SD1	10"	300	1	226	185	263	87.7
SGRD17	DINING	SD1	12"	150	1	314	245	158	105.3
SGRD18	DRIVE THRU	SD1	12"	500	1	915	699	512	102.4
SGRD20	DINING	SD1	12"	450	1	354	294	383	85.1
SGRD21	CUST.SERV	SD1	10"	350	1	228	183	330	94.3
SGRD22	CUST.SERV	SD1	10"	350	1	287	229	295	84.3
SGRD23	CUST.SERV	SD1	10"	350	1	308	233	293	83.7
SGRD24	CUST.SERV	SD1	10"	350	1	354	273	340	97.1
SGRD25	DINING	SD1	12"	450	1	544	451	448	99.6
SGRD26	DINING	SD1	8"	150	1	244	206	158	105.3
SGRD27	M.RESTROOM	SD4	8"	150	1	166	228	157	104.7
SGRD28	W.RESTROOM	SD4	8"	150	1	218	183	143	95.3
Total				5950		7655	6247	5767	96.92%

National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: AHU/RTU

Asset: RTU2 AREA:OFFICE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE/ACCUREX	CARRIER
Serial Num	-	1823P22637
Model Num	NA	48FCSN24K5M5A6F8C6
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	14 1/4X23 1/4
Num Final Filter 1	-	6
Final Filter Size 1	-	20X25X4

Test Data		
	Design	**Actual**
SF CFM	6350	6362
SF RPM	-	1593
RA CFM	4650	4651
OA CFM	1700	1711
RL Voltage	-	212.9/213.5/213.6
RL Amperage	-	3.6/3.8/3.7
SF Rotation	-	CCW
RA Damper Position	-	4.4V
Min OA Damper Position	-	5.6V
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	ES5

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.297”
Fan Suction SP	-	-0.757”
Fan Discharge SP	-	0.790”
Total ESP	0.75"	1.087"
Fan Total SP	-	1.547"

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	7.6VDC
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

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

Completed By: William Patton on 06/23/2023

National TAB

Project:06-19-23 CULVERS - COLUMBUS, GA

AHU/RTU

Diffuser Supply (GRD)

RTU2/OFFICE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	KITCHEN	SD2	12"	600	1	710	517	615	102.5
SGRD2	KITCHEN	SD1	12"	600	1	675	489	610	101.7
SGRD3	KITCHEN	SD5	10"	200	1	289	205	204	102.0
SGRD4	KITCHEN	SD5	12"	375	1	575	408	410	109.3
SGRD5	KITCHEN	SD5	12"	400	1	1077	773	424	106.0
SGRD6	KITCHEN	SD5	12"	400	1	243	177	375	93.8
SGRD7	KITCHEN	SD5	10"	250	1	781	556	262	104.8
SGRD8	KITCHEN	SD5	10"	275	1	370	264	300	109.1
SGRD9	KITCHEN	SD5	8"	125	1	279	204	124	99.2
SGRD10	KITCHEN	SD1	6"	75	1	233	162	81	108.0
SGRD11	KITCHEN	SD5	12"	350	1	910	652	365	104.3
SGRD12	KITCHEN	SD5	12"	350	1	1025	745	381	108.9
SGRD13	KITCHEN	SD5	12"	350	1	532	375	366	104.6
SGRD14	UTILITY ROOM	SD1	12"	600	1	521	356	634	105.7
SGRD15	DRY GOODS	SD1	12"	600	1	288	206	351	58.5
SGRD16	DRY GOODS	SD1	12"	600	1	651	484	651	108.5
SGRD17	OFFICE	SD2	10"	200	1	205	150	209	104.5
Total				6350		9364	6723	6362	100.19%

National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: FAN - Exhaust

Asset: EFA1 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCR-B80	XCR-B80
Serial Num	-	21447656
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	75	72
Fan Rotation	-	CCW
System SetPt	-	75%
RL Voltage	-	NOT VERIFIED
RL Amperage	-	0.2

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

Completed By: William Patton on 06/21/2023

National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: FAN - Exhaust

Asset: PRV1 AREA:RESTROOM

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRED-090-VG	XRED-090-VG-1-17-X
Serial Num	-	21450073
Type	DOWNBLAST	DOWNBLAST
Configuration	CENTRIFUGAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.1	1/10
Motor Rpm	1725	1750
Phase	1	1
Voltage (rated)	115	115/208
Amperage (rated)	-	1.38
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	375	393
Fan RPM	1465	1225
Fan Rotation	-	CCW
Motor RPM	-	1225
System SetPt	-	7
RL Voltage	-	NOT VERIFIED
RL Amperage	-	1.0
Total ESP	0.5"	0.255"
Fan Inlet SP	-	-0.255"
Fan Discharge SP	-	ATM

Completed By: William Patton on 06/21/2023

National TAB

Project:06-19-23 CULVERS - COLUMBUS, GA

FAN - Exhaust

Diffuser Ret/Exh (GRD)

PRV1/RESTROOM

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	M.RESTROOM	EG1	8X8	150	1	142	162	162	108.0
EGRD2	W. RESTROOM	EG1	8X8	150	1	148	158	158	105.3
EGRD3	TOILET	EG1	8X8	75	1	175	73	73	97.3
Total				375		465	393	393	104.8%

National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: FAN - Exhaust

Asset: PRV2 AREA:HOOD1

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRUB-160XP-15	XCUE-140-10-VG-1-26-G
Serial Num	-	21449172
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	1.5	1
Motor Rpm	1725	1750
Phase	3	1
Voltage (rated)	208	115/208
Amperage (rated)	-	11.5/7.0
Service Factor	-	NL

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	7.4VDC
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Test Data		
	Design	**Actual**
CFM	1500	1438
Fan RPM	2411	1295
Fan Rotation	-	CCW
Motor RPM	-	1295
RL Voltage	-	122.8
RL Amperage	-	5.2
Suction ESP	-	-1.153"
Discharge ESP	-	ATM
Total ESP	2.337"	1.153"

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National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: FAN - Exhaust

Asset: PRV3 AREA:HOOD 2

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRUB-140-7	XCUE-140-10-VG-1-26-G
Serial Num	-	21449173
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.75"	1
Motor Rpm	1725	1750
Phase	3	1
Voltage (rated)	208	115/208
Amperage (rated)	-	11.5/7.0
Service Factor	-	NL

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	5.7VDC
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Test Data		
	Design	**Actual**
CFM	1500	1561
Fan RPM	1377	998
Fan Rotation	-	CCW
Motor RPM	-	998
RL Voltage	-	122.9
RL Amperage	-	2.7
Suction ESP	-	-0.543"
Discharge ESP	-	ATM
Total ESP	1.0"	0.543"

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National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XGEP-64-S	XGEP-64-S
Job / Serial Num	-	21447924
Type	TYPE I	TYPE I LOW PROXIMITY
Hood length	64"	64
Hood Width	23"	23

Test Data Exhaust		
	Design	**Actual**
Filter Type	GREASE GRABBER	GREASE GRABBER
Filter Size 1	16X16	16x16x1
Filter Qty 1	4	4
Filter AK factor size 1	1.53	1.53
Filter Total AK Area	6.12	6.12
Filter1 FPM	-	-245
Filter2 FPM	-	-230
Filter3 FPM	-	-221
Filter4 FPM	-	-245
Filter Ave FPM(corr)	-	235
CFM	1500	1438

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

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National TAB

Project: 06-19-23 CULVERS - COLUMBUS, GA

System/Unit: Kitchen Hood Type I

Asset: HD2 AREA:

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XXEP-83-S	XXEP-83-S
Job / Serial Num	-	21447916
Type	TYPE I	TYPE I LOW PROXIMITY
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	-	216
Filter2 FPM	-	211
Filter3 FPM	-	190
Filter4 FPM	-	184
Filter5 FPM	-	220
Filter Ave FPM(corr)	-	204
CFM	1500	1561

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

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