Report By:

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

NATIONAL TAB

Comfort. Under control.

Report: FINAL TAB REPORT
Function: Test, Adjust, & Balance
Date: 08/24/2022

PROJECT

08-15 CULVERS - WHEATON, IL

908 E ROOSEVELT RD

WHEATON, IL

Client

Accurex

PO Box 410

Schofield, WI 54476

National TAB

Project: 08-15 CULVERS - WHEATON, IL

Table Of Contents

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	5913	4350	4045	1800	1868	29.3%	31.6%						
RTU-2	KITCHEN	6150	6129	4450	4341	1700	1788	27.6%	29.2%						
PRV-1	RESTROOMS													375	371
PRV-2	HD1 GRIDDLE											1500	1530		
PRV-3	HD2 FRYER											1500	1622		
EF-1A	MOP ROOM													75	76
TOTALS		12300	12042	8800	8386	3500	3656			0	0	3000	3152	450	447

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3500	3656
TOTAL EXHAUST	3450	3599
NET AIRFLOW	50	57

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	
SIDE	
REAR	
AVERAGE	**0.013**

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:

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.

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08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : Accurex hood control screwed through.

Description : Typically the hood control screen clips into the wall box. In this instance the incorrect box was installed in the wall.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 08/18/2022 - Michael McDonnell - National TAB

Project Issue File Details

Screenshot_2022_09_12...

Project Issue Response Details

- **09/29/2022 National TAB - Michael McDonnell**
  - Not resolved upon return trip.

08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : Diffuser 1-11 in wrong location.

Description : Lighting installed in ceiling tile for diffuser. Not anticipated to cause any issues.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 08/18/2022 - Michael McDonnell - National TAB

Project Issue File Details

FuseITa2c618b017cc4ae...

Project Issue Response Details

- **08/19/2022 National TAB - Michael McDonnell**
  - Correct location.

FuseITe74dfb8f877e451585d299e2f419c779.jpeg

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08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : Diffuser 2-14 has 10” neck. Plans call for 12”.

Description : 10”neck diffuser installed. Diffuser scheduled for 600cfm. MC installing 12-10” reducer.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Open

Originated Date : 08/18/2022 - Michael McDonnell - National TAB

Project Issue File Details

Screenshot_2022_09_12...

Project Issue Response Details

- **08/19/2022 National TAB - Michael McDonnell**
  - Diffuser is low on airflow (480/600cfm-80%) with all other diffusers within design and unit at FLA. Cannot push more air to diffuser. In mechanical room. Not anticipated to cause any issue.

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Project Issue Information

Issue Name : EF-1A (mop room) cover not yet installed.

Description : EF-1A fan cover not yet in place.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Closed

Originated Date : 08/19/2022 - Michael McDonnell - National TAB

Project Issue File Details

FuseIT819875a6ee824c1...

Project Issue Response Details

- **09/29/2022 National TAB - Michael McDonnell**
  - Cover installed upon return trip

08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : PRV-1 RR rotation is incorrect.

Description : Rotation incorrect on single phase motor.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Closed

Originated Date : 08/19/2022 - Michael McDonnell - National TAB

Project Issue Response Details

- **09/15/2022 National TAB - Michael McDonnell**
  - MOTOR REPLACED, FAN BALNCED TO DESIGN.
- **08/19/2022 National TAB - Michael McDonnell**
  - Video of rotation.
    1. Open IMG7532.MOV
- **08/19/2022 National TAB - Michael McDonnell**
  - Fan not balanced. Accurex will need to send replacement motor. Per manual: motor is factory pre-wired and cannot be changed in the field.

08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : PRV-2 and PRV-3 conduit drilled through fan housing.

Description : Conduit was routed/drilled through fan housing. Typically is routed through motor housing exhaust vent.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Closed

Originated Date : 08/18/2022 - Michael McDonnell - National TAB

Project Issue File Details

FuseIT003a6a8053c74d1...

Project Issue Response Details

- **09/15/2022 National TAB - Michael McDonnell**
  - PROPERLY INSTALLED

- **09/15/2022 National TAB - Michael McDonnell**
  - ROUTED PROPERLY THROUGH MOTOR VENT

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08-15 CULVERS - WHEATON, IL

Project Issue Information

Issue Name : RTU-1 (dining) missing return.

Description : Plans call for (5) 16” returns. (4) 18” returns are installed, and not in precise locations.

Created By : National TAB **Assigned To :** National TAB - Will Turnbough

Status : Closed

Originated Date : 08/18/2022 - Michael McDonnell - National TAB

Project Issue File Details

FuseITba6c2d2a54d143d...

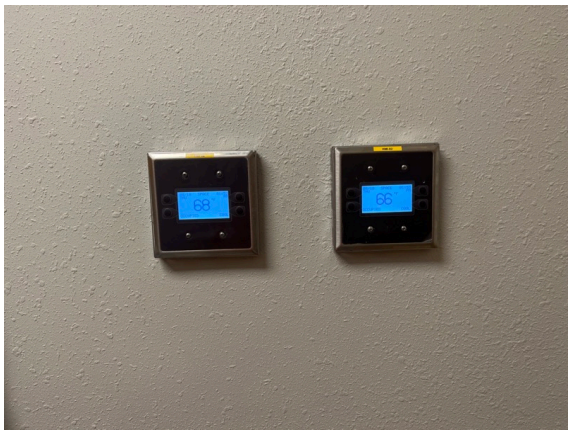
FuseITf5863a50770d4b6...

Project Issue Response Details

- **08/19/2022 National TAB - Michael McDonnell**
  - Due to limited ceiling space MC increased size of returns from 16” to 18” and deleted one return grille. Unit is achieving design airflow and return not causing issues.

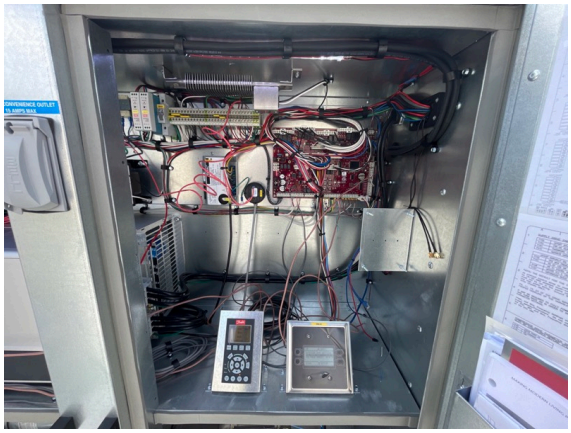
Culvers
Wheaton, IL

Roof Layout



Thermostats

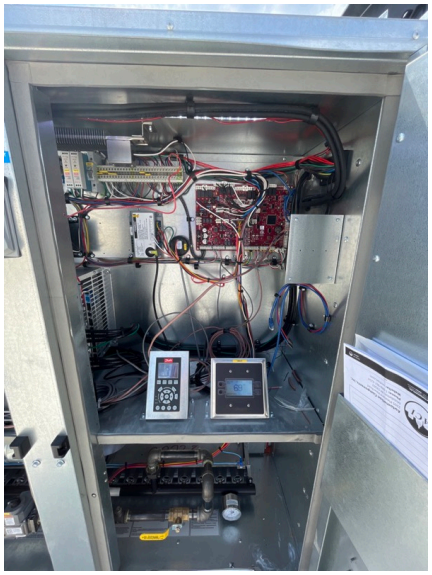
RTU-1
Dining



RTU-1
Control wiring

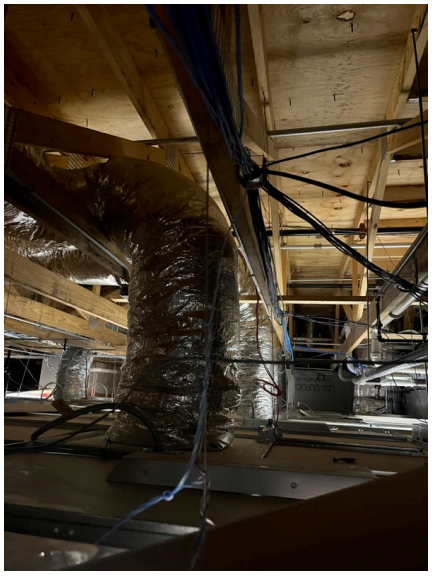
RTU-1
OA Damper Position Marked

RTU-2
Kitchen



RTU-2
Control wiring

RTU-2
OA damper position



RTU-2
Cookline diffuser drops.

RTU-2
Cookline diffusers perforated.

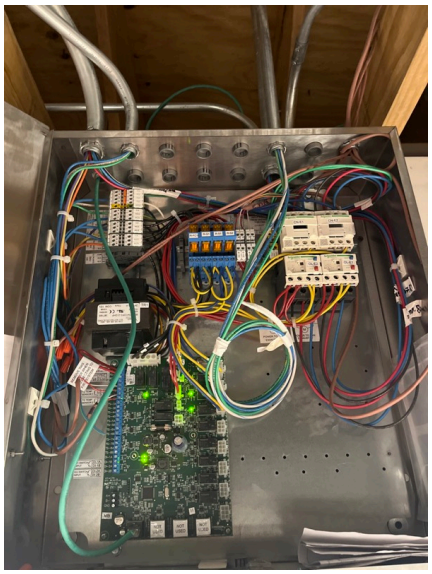
PRV-1
Restrooms

PRV-1
Disconnect and speed controller installed.

PRV-1
Speed controller

PRV-1
Backdraft damper installed and functional

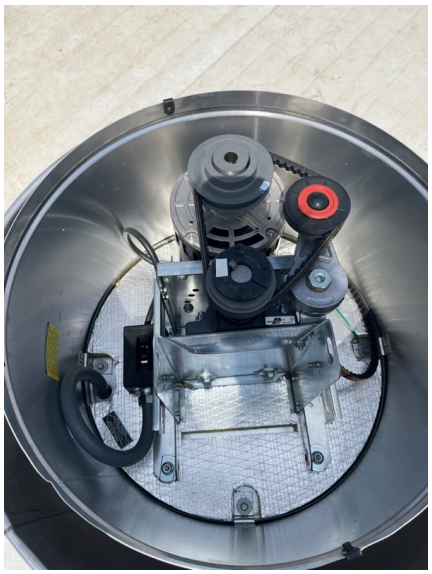
Accurex Hood Control



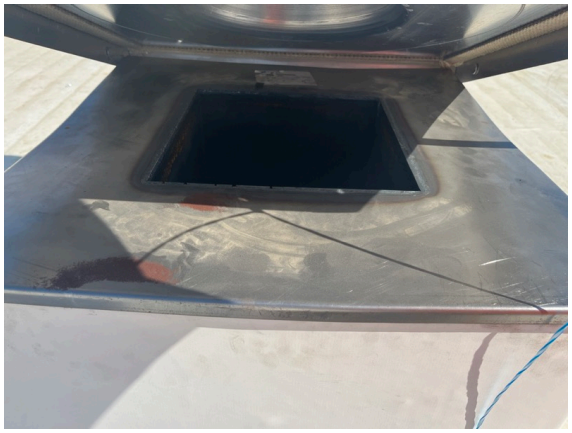
Accurex Box

HD-1
Griddle

PRV-2
HD-1 Griddle



PRV-2
Disconnect installed.

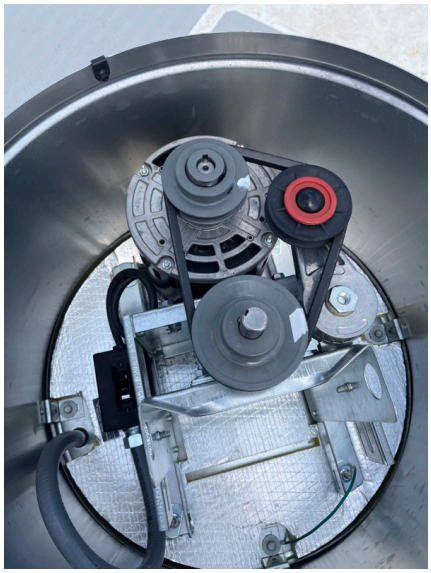


PRV-2

PRV-2
Grease duct

HD-2
Fryer

PRV-3
HD-2 Fryer



PRV-3
Disconnect installed.

PRV-3

PRV-3
Grease duct

EF-1A
Mop fan

EF-1A
Speed controller marked. Set to max.

08-15 CULVERS - WHEATON, IL

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

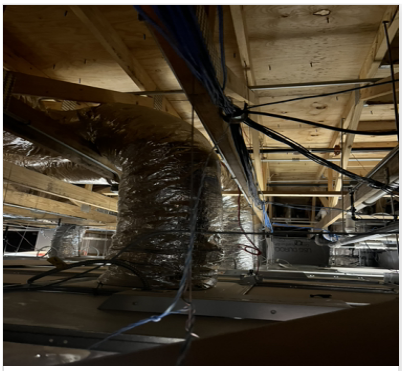
All diffusers and grilles are installed and match design?	Diffuser 2-14 not yet installed. 10" neck diffuser shipped to site. MC is installing a 12-10" reducer on the diffuser. RTU-1 only has 4 returns installed. Plans call for 5.

FuseITbab8411dfa26416...

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

FuseITa78f7084356b4a6...

All hood filters installed and accounted for?	Yes
Hoods are wired and have power?	No. Hoods are wired but do not yet have power.
Thermostats have power?	Yes
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes
On the cookline diffusers neck is there 18" (12" minimum) straight rigid duct run attached?	Yes



FuseIT1f358ff8d3fe400...

Notes/Comments :

08-15 CULVERS - WHEATON, IL

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.)	NA, Captive Aire DOAS units installed.
Motors are all operating below the FLA rating?	Yes
Are belts tight?	NA, direct drive units.
If direct drive unit is the speed controller working.	Yes
Is gas piping installed and valves turned on?	No, building does not yet have meter.

FuseITfe004271a116489...

Unit free of noticeable noise and vibration	Yes
EF's	
Rotation is correct?	PRV-1 (restrooms) rotation is incorrect. Factory issue, Accurex sending replacement.
Belts are tight?	Yes
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. Appears too short, but it was demonstrated fans can be fully tilted back with no issue.
There is no major leakage around base of fan?	Yes
Is the motor operating below the motor FLA rating?	Yes
For restroom fan(s) is the back draft damper installed and can it fully open?	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, building does not yet have gas.
Second stage Grease Grabber filters are installed on the griddle hood?	Yes
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Notes/Comments :

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08-15 CULVERS - WHEATON, IL

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 :

08-15 CULVERS - WHEATON, IL

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	None
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	08/19/2022
TAB tech name / Firm	Michael McDonnell / National Tab
Site super name / Firm	Earl Pulda / McCon Construction
Owner representative name / Firm (if Applicable)	NA
Building pressure at front & back doors (All Systems On)	0.013"
ADDITIONAL	
Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	Yes
Thermostats are programmed?	Yes
PRODIGY SETTINGS FOR RTU'S	

Parameter 65 set to 0	NA, Captive Aire DOAS units installed.
Parameter 78 set to 0	NA
Parameter 105 set to 6	NA
Parameter 156 set to 70 (Dining unit only)	NA
Parameter 156 set to 65 (Kitchen Unit Only)	NA
Parameter 170 set to 75 (Dining Unit Only)	NA
Parameter 170 set to 70 (Kitchen Unit Only)	NA
Parameter 131 set to the same % as OA minimum position?	NA
Parameter 117 set to the same % as OA minimum position?	NA

Notes/Comments :

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	CAPTIVE AIRE
Serial Num	-	5313372
Model Num	LGH180H4B	CASRTU3-I.400-24-20T-DOAS
Type	RTU	RTU
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	-	10.0
Motor Rpm	-	1755
Phase	3	3
Rated Voltage	208/230	230
Rated Amperage	-	24.3

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	60 HZ
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	6150	5913
SF RPM	-	1755
RA CFM	4350	4045
OA CFM	1800	1868
RL Voltage	-	205 [1]
RL Amperage	-	24.9 [1]
SF Rotation	-	CCW
Min OA Damper Position	-	4.4V
Min OA Damper Type	-	ECONOMIZER
Brake Horse Power	-	10.25

Performance Data		
	Design	**Actual**
MA Plenum SP	-	1.08"
Fan Suction SP	-	2.88"
Fan Discharge SP	-	0.63"
Total ESP	-	1.71"
Fan Total SP	-	3.51"

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

Completed By: Michael McDonnell

Notes: ADDED +50CFM OF OA TO UNIT TO OBTAIN POSITIVE BUILDING PRESSURE. [1] INFORMATION TAKEN FROM VFD. RECIEVED PERMISSION FROM CAPTIVE AIRE TO PUSH UNIT AS FAR AS UNIT STICKER FLA (27.0A) BASED ON UNIT VOLTAGE OF 205V. [2] SERVED BY LEFT HMI (THERMOSTAT) IN OFFICE.

National TAB

Project:08-15 CULVERS - WHEATON, IL

AHU/RTU

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Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	ENTRY	SD3	8"	150	1.0	163	190	157	104.7
SGRD2	MENS RR	SD4	8"	150	1.0	153	170	145	96.7
SGRD3	WOMENS RR	SD4	8"	150	1.0	145	164	156	104.0
SGRD4	HALL	SD1	12"	450	1.0	303	354	410	91.1
SGRD5	DINING	SD1	8"	150	1.0	184	198	146	97.3
SGRD6	DINING	SD1	8"	150	1.0	230	257	162	108.0
SGRD7	DINING	SD1	8"	150	1.0	85	142	146	97.3
SGRD8	DINING	SD1	8"	150	1.0	150	180	147	98.0
SGRD9	DINING	SD1	8"	150	1.0	161	177	138	92.0
SGRD10	DINING	SD1	8"	150	1.0	126	153	156	104.0
SGRD11	DINING	SD1	8"	150	1.0	141	180	161	107.3
SGRD12	DINING	SD1	8"	150	1.0	169	136	162	108.0
SGRD13	DINING	SD1	8"	150	1.0	105	110	139	92.7
SGRD14	DINING	SD1	8"	150	1.0	126	139	140	93.3
SGRD15	DINING	SD1	8"	150	1.0	140	149	161	107.3
SGRD16	DINING	SD1	8"	150	1.0	153	169	143	95.3
SGRD17	DINING	SD1	8"	150	1.0	102	118	147	98.0
SGRD18	DINING	SD1	8"	150	1.0	180	184	137	91.3
SGRD19	DINING	SD1	8"	150	1.0	164	179	136	90.7
SGRD20	DRINKS & CONDIMENTS	SD1	8"	300	1.0	350	392	309	103.0
SGRD21	ENTRY	SD1	8"	150	1.0	230	248	150	100.0
SGRD22	CUSTOMER ORDERING AREA	SD1	12"	450	1.0	387	426	416	92.4
SGRD23	CUSTOMER SERVICE	SD1	10"	350	1.0	229	250	319	91.1
SGRD24	CUSTOMER SERVICE	SD1	10"	350	1.0	243	294	317	90.6
SGRD25	CUSTOMER SERVICE	SD1	10"	350	1.0	248	271	324	92.6
SGRD26	CUSTOMER SERVICE	SD1	10"	350	1.0	233	269	320	91.4
SGRD27	DRIVE THRU	SD1	12"	500	1.0	313	353	462	92.4
SGRD28	OFFICE	SD1	10"	200	1.0	274	290	207	103.5

Completed By: Dan Hertenstein on

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: AHU/RTU

Comfort. Under control.

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	LENNOX	CAPTIVE AIRE
Serial Num	-	5313372
Model Num	LGH210H4B	CASRTU3-I.400-24-20T-DOAS
Type	RTU	RTU
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	-	10.0
Motor Rpm	-	1755
Phase	3	3
Rated Voltage	208/230	230
Rated Amperage	-	24.3

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	60 HZ
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	6150	6129
SF RPM	-	1755
RA CFM	4450	4341
OA CFM	1700	1788
RL Voltage	-	204 [2]
RL Amperage	-	24.2 [2]
SF Rotation	-	CCW
Min OA Damper Position	-	4.3V
Min OA Damper Type	-	ECONOMIZER
Brake Horse Power	-	9.96

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-1.11"
Fan Suction SP	-	-2.91"
Fan Discharge SP	-	0.70"
Total ESP	-	1.81"
Fan Total SP	-	3.61"

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

Completed By: Michael McDonnell

Notes: [1] DIFFUSER 2-14 LOW ON AIRFLOW (480/600CFM-80%) DUE TO INCORRECT NECK SIZE. 10" INSTALLED, PLANS CALL FOR 12". REDUCER INSTALLED BEFORE NECK, CANNOT PUSH ANY MORE AIR TO DIFFUSER WITH ALL OTHER DIFFUSERS ACHEIVING DESIGN. [2] INFORMATION TAKEN FROM VFD. RECIEVED PERMISISION FROM CAPTIVE AIRE TO PUSH UNIT TO UNIT STICKER FLA (27.0A) BASED ON UNIT VOLTAGE OF 204V. [3] SERVED BY RIGHT HMI (THERMOSTAT) IN OFFICE.

National TAB

Project:08-15 CULVERS - WHEATON, IL

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	1.0	421	552	581	96.8
SGRD2	SUNDAE SERVICE	SD1	12"	600	1.0	447	560	608	101.3
SGRD3	FRYERS	SD5	10"	200	1.0	273	205	211	105.5
SGRD4	FRYERS	SD5	12"	375	1.0	354	391	358	95.5
SGRD5	FOOD PREP	SD5	12"	400	1.0	537	405	424	106.0
SGRD6	FOOD PREP	SD5	12"	400	1.0	429	445	416	104.0
SGRD7	GRIDDLE	SD5	10"	250	1.0	329	298	256	102.4
SGRD8	GRIDDLE	SD5	10"	275	1.0	304	336	281	102.2
SGRD9	EMPLOYEE RESTROOM	SD	6"	75	1.0	133	83	76	101.3
SGRD10	ALCOVE	SD5	8"	125	1.0	245	153	128	102.4
SGRD11	FOOD PREP	SD5	12"	350	1.0	504	405	371	106.0
SGRD12	DISHWASHING	SD5	12"	350	1.0	476	365	339	96.9
SGRD13	DISHWASHING	SD5	12"	350	1.0	487	329	363	103.7
SGRD14	OFFICE	SD1	12"	600	1.0	339	437	480	80.0
SGRD15	DRY GOOD	SD1	12"	600	1.0	451	608	635	105.8
SGRD16	DRY GOODS	SD1	12"	600	1.0	527	633	602	100.3

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National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: EF-A1 AREA:MOP ROOM

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XCR-B80	XCR-B80
Serial Num	-	1942448
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

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

Test Data		
	Design	**Actual**
CFM	75	76
Fan RPM	885	DD
Fan Rotation	-	CW
Motor RPM	-	DD
System SetPt	-	SPEED CONTROLLER SET TO MAX [1]
RL Voltage	-	119
RL Amperage	-	0.13
Total ESP	0.125"	0.09"
Fan Inlet SP	-	ATM
Fan Discharge SP	-	0.09"

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Notes:

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV1 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRED-095-D	XRED-090-VG-1-17-X
Serial Num	-	19429773
Type	DOWNBLAST	DOWNBLAST
Configuration	HORIZONTAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.0667	0.1
Motor Rpm	1550	300-1750
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	1.38
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	375	371
Fan RPM	1479	DD
Fan Rotation	-	INCORRECT
Motor RPM	-	DD
System SetPt	-	SPEED CONTROLLER MARKED "6"
RL Voltage	-	120
RL Amperage	-	1.08
Total ESP	0.5"	0.26"
Fan Inlet SP	-	-0.26"
Fan Discharge SP	-	ATM

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Notes: [1] FAN MOTOR REPLACED BALANCED TO DESIGN [2] MENS RR GRILLE IS NOT INSTALLED PROPERLY. SEE ISSUE PHOTOS.

National TAB

Project:08-15 CULVERS - WHEATON, IL

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	MENS RR	EG1	8X8	150	1.0	79	181	158	105.3
EGRD2	WOMENS RR	EG1	8X8	150	1.0	253	216	142	94.7
EGRD3	EMPLOYEE RR	EG1	8X8	75	1.0	108	84	71	94.7

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National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV2 AREA:HD1 GRIDDLE

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRUB-160XP-15	XRUB-160XP-15
Serial Num	-	19430007
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56
Horsepower	1.5	1.5
Motor Rpm	1725	1760
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	4.20
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VP44
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	2 TURNS OPEN
Fan Sheave Size	-	AK30
Fan Sheave Bore	-	1"
Belt CL Distance	-	6"
Num of Belts	-	1
Belt Size	-	AX24

Test Data		
	Design	**Actual**
CFM	1500	1530
Fan RPM	2411	2167
Fan Rotation	-	CW
Motor RPM	-	1775
RL Voltage	-	210/212/211
RL Amperage	-	3.1/3.1/3.2
Suction ESP	-	-1.03"
Discharge ESP	-	ATM
Total ESP	2.337"	1.03"

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Notes:

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: FAN - Exhaust

Comfort. Under control.

Asset: PRV3 AREA:HD2 FRYERS

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XRUB-140-7	XRUB-140-7
Serial Num	-	19430146
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	WEG
Frame	-	56
Horsepower	0.75	0.75
Motor Rpm	1725	1760
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	2.30
Service Factor	-	1.25

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	VP34S
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	1.5 TURNS OPEN
Fan Sheave Size	-	AK30
Fan Sheave Bore	-	3/4"
Belt CL Distance	-	5-3/4"
Num of Belts	-	1
Belt Size	-	AP23

Test Data		
	Design	**Actual**
CFM	1500	1622
Fan RPM	1377	1440
Fan Rotation	-	CW
Motor RPM	-	1778
RL Voltage	-	210/212/211
RL Amperage	-	1.9/1.9/2.0
Suction ESP	-	-0.58"
Discharge ESP	-	ATM
Total ESP	1.0"	0.58"

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Notes:

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XGEP-64-S	XGEP-64-S
Job / Serial Num	-	19451846
Type	TYPE I LOW PROXIMITY	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	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	-	258
Filter2 FPM	-	241
Filter3 FPM	-	237
Filter4 FPM	-	265
Filter Ave FPM(corr)	-	250
CFM	1500	1530

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

Performance Data		
	Design	**Actual**
Smoke Generation Type	-	45 SEC SMOKE EMITTER
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	NO

General		
	Design	**Actual**
Third Party Witness	-	VIDEO TAPED
Third Party Company	-	MCCON CONSTRUCTION
Tech Witness	-	MICHAEL MCDONNELL

Completed By: Michael McDonnell

Notes:

National TAB

Project: 08-15 CULVERS - WHEATON, IL

System/Unit: Kitchen Hood Type I

Comfort. Under control.

Asset: HD2 AREA:FRYER

Unit Data		
	Design	**Actual**
MFG	ACCUREX	ACCUREX
Model Num	XXEP-83-S	XXEP-83-S
Job / Serial Num	-	19451845
Type	TYPE I LOW PROXIMITY	TYPE I LOW PROXIMITY
Hood length	83"	83"
Hood Width	23"	23"

Test Data Exhaust		
	Design	**Actual**
Filter Type	X-TRACTOR	X-TRACTOR
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	-	234
Filter2 FPM	-	194
Filter3 FPM	-	200
Filter4 FPM	-	206
Filter5 FPM	-	226
Filter Ave FPM(corr)	-	212
CFM	1500	1622

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

Performance Data		
	Design	**Actual**
Smoke Generation Type	-	45 SEC SMOKE EMITTER
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	NO

General		
	Design	**Actual**
Third Party Witness	-	VIDEO TAPED
Third Party Company	-	MCCON CONSTRUCTION
Tech Witness	-	MICHAEL MCDONNELL

Completed By: Michael McDonnell

Notes: