

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 02/16/2024

PROJECT
02-05-24 PERRY'S - VERNON HILLS, IL

122 HAWTHORN CENTER

VERNON HILLS, IL 60061

Client

Air Supply HVAC
8N450 TAMLING CT
UNIT B
BARTLETT, IL 60103

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

RTU's (Roof Top Units) w/ Diffusers

Each of the RTU's were measured at their terminal devices to establish a total flow for that unit. On RTU systems with slot diffusers, the airflow measurements have error and are not completely reliable due to the "continuous" construction of the diffusers. For these units, the rpm and static pressures were also measured and compared to a fan curve for further verification of supply airflow. Additionally, a BTU calculation was performed to further validate airflow. These readings and calculations were used to adjust each RTU to within tolerance of the engineer's design flow. The outlets for units with the flow diffusers were balanced to even airflow as much as possible. For the kitchen units, each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

Kitchen Exhaust Hood & Associated Fans

Each kitchen exhaust fan was measured at the hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to within tolerance of the design flow. Any EF's that fell outside of this tolerance is noted throughout the report.

DOAS (Make Up Air Unit) w/ PSP

Total flow for the MAU (Make-up Air Unit) unit was measured by readings taken at the discharge of the hood's perforated supply plenum. Readings taken with a velocity matrix were averaged and multiplied by a manufacturer's corrected area. This system also includes a diffuser, this was measured with a flow hood. Adjustments to fan speed and system dampers were made to bring the unit to within design tolerance. Any MUA's that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

Final Building Tests

After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances of $-0.02''$ W.C. to $+0.02''$ W.C. 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

- 01. Symbio RTUs: Humidity Alarm
- 02. Exhaust Hood Alarms
- 03. Thermostats Not Programmable
- 04. RTU-1 Thermostat: Down Button Broken
- 05. Building Pressure: Building Not Sealed
- 06. RTU-4: High on airflow
- 07. EF-5 (Smoker): High on Airflow



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 01. Symbio RTUs: Humidity Alarm
Description : All Symbio RTUs have an alarm regarding space humidity input. Space humidity is being displayed as 1000001.0% at the RTUs. Space humidity arbitrator displays 65535.0%. Space humidity input displays -25.0%. Unsure how or if RTUs are reading space humidity. No sensors installed. Recommend Trane / EOR is contacted for clarification.

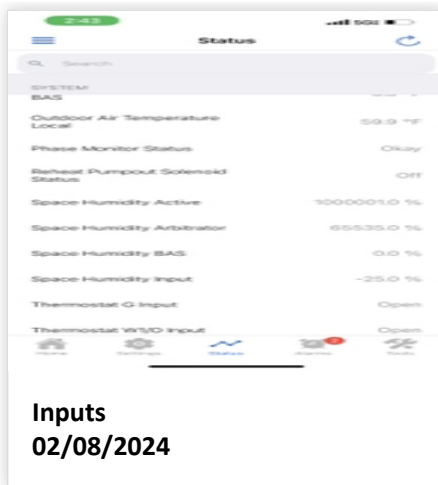
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell

Status : Open

Priority : Urgent **Asset Tag :**

Originated Date : 02/08/2024 - Michael McDonnell - National TAB

Project Issue File Details





02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 02. Exhaust Hood Alarms
Description : Exhaust hood HMI is displaying two faults: 1. Core #1 Fault and 2. Pressure Switch Fault. Core fault is due to fire suppression system not yet set up. Recommend faults are addressed and cleared. Hoods functional.

Created By : National TAB **Assigned To :** National TAB - Michael McDonnell

Status : Open

Priority : High **Asset Tag :**

Originated Date : 02/15/2024 - Michael McDonnell - National TAB

Project Issue File Details



Faults
02/15/2024



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 03. Thermostats Not Programmable
Description : Thermostats for majority of RTUs are Honeywell Home thermostats. Thermostat is not capable of scheduling with Fan operation and not intended for commercial use. Recommend fully programmable thermostats are installed. Per MC, Trane indicated proper thermostats are on back order.
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell
Status : Open
Priority : Medium **Asset Tag :**
Originated Date : 02/16/2024 - Michael McDonnell - National TAB

Project Issue File Details



Honeywell_Home
02/16/2024



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 04. RTU-1 Thermostat: Down Button Broken
Description : The down arrow on the thermostat does not appear functional. Could not program thermostat as a result.
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell
Status : Open
Priority : Medium **Asset Tag :**
Originated Date : 02/16/2024 - Michael McDonnell - National TAB

Project Issue File Details



RTU-1(1)
02/16/2024



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 05. Building Pressure: Building Not Sealed
Description : Building pressure could not be accurately measured as building is not yet sealed. Front door is not yet installed and several doors are not fully installed. Net airflow is positive.
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell
Status : Open
Priority : InfoOnly **Asset Tag :**
Originated Date : 02/16/2024 - Michael McDonnell - National TAB

Project Issue File Details



Not_Sealed
02/16/2024



FRONT_DOOR
02/16/2024



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 06. RTU-4: High on airflow

Description : RTU-4 is multispeed unit scheduled for 600cfm with speed taps. Plans call for constant volume. Unit is within design at Speed tap 1, where G is landed. Manual indicates placing W(heat) at 4 and Y (cool) at tap 2, puts heating and cooling to low speed, this is 940cfm. Not possible to wire all stages to same speed. No indication if jumpers are allowed.

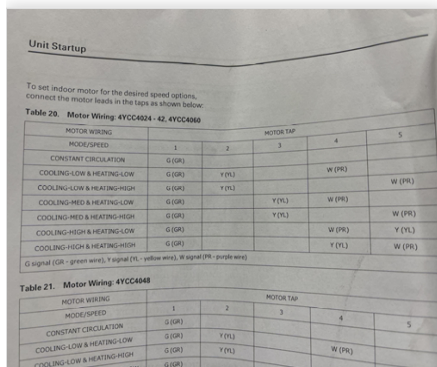
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell

Status : Open

Priority : InfoOnly **Asset Tag :**

Originated Date : 02/08/2024 - Michael McDonnell - National TAB

Project Issue File Details



Speedtaps
02/08/2024



02-05-24 PERRY'S - VERNON HILLS, IL

Project Issue Information

Issue Name : 07. EF-5 (Smoker): High on Airflow
Description : EF-5 measured at 1343/1000 cfm. Fan does not have a speed controller installed and no speed control is listed in exhaust fan schedule. EF-5 is to be controlled through smoker operation, but control is not fully functional. Control bypassed and fan measured at max single speed.
Created By : National TAB **Assigned To :** National TAB - Michael McDonnell
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 02/15/2024 - Michael McDonnell - National TAB

Project Issue File Details



Project Issue Response Details

- **02/15/2024 National TAB - Michael McDonnell**
 - A speed control will need to be installed and functional to bring EF-5 into design. Not anticipated to cause any issues as EF-5 only operates when smoker is fully evacuated of smoke.

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	ENTRY	1600	1583	1400	1365	200	218	12.5%	13.8%						
RTU-2	BAR DINING	4000	3944	3240	3176	760	768	19.0%	19.5%						
RTU-3	BAR DINING	1280	1314	1080	1105	200	209	15.6%	15.9%						
RTU-4	RR	600	940	450	786	150	154	25.0%	16.4%						
RTU-5	PRIVATE I	960	988	760	805	200	183	20.8%	18.5%						
RTU-6	PRIVATE II	2400	2325	1990	1937	410	388	17.1%	16.7%						
RTU-7	PRIVATE III	2400	2504	1880	1942	520	562	21.7%	22.4%						
RTU-8	MAIN D II	3200	3126	2160	2101	1040	1025	32.5%	32.8%						
RTU-9	MAIN D I	4000	3962	3160	3144	840	818	21.0%	20.6%						
RTU-10	ROOM 79	2400	2505	2185	2299	215	206	9.0%	8.2%						
RTU-11	OFFICES	4800	4919	3925	4083	875	836	18.2%	17.0%						
RTU-12	SERVICE	4800	4651	3925	3751	875	900	18.2%	19.4%						
RTU-13	BAR	2720	2766	2240	2323	480	443	17.6%	16.0%						
MUA-1	DIFFUSER									300	290				
EF-1	EXH-L									564	532	1311	1315		
EF-2	EXH-M									990	1043	2250	2271		
EF-3	EXH-R									1139	1094	1808	1835		
EF-4	PREP											1800	1864		
EF-1	RR													600	551
EF-2	DISHES													600	608
EF-3	MOP													100	107
EF-4	TOILET													75	78
EF-5	SMOKER													1000	1343
TOTALS		35160	35527	28395	28817	6765	6710			2993	2959	7169	7285	2375	2687

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	9758	9669
TOTAL EXHAUST	9544	9972
NET AIRFLOW	214	-303

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	[1]
SIDE	[1]
REAR	[1]
AVERAGE	#DIV/0!

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:

[1] Unable to measure Building Pressure as building is not completely sealed. [2] EF-2 (Dishwasher) and EF-5 (Smoker) run Intermittently

CheckList List

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



02-05-24 PERRY'S - VERNON HILLS, IL

CheckList Information

Name : TECH - SITE PICTURES **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/24/2024 - Brian Turnbough - National TAB

CheckList Item Details

STORE FRONT

Comment:



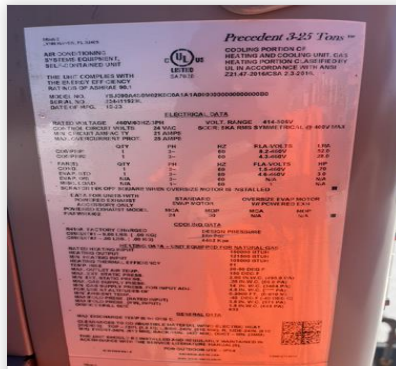
PERRYS_VERNON_HILLS_I..
02/16/2024

RTU-1

Comment:



RTU-7
02/12/2024



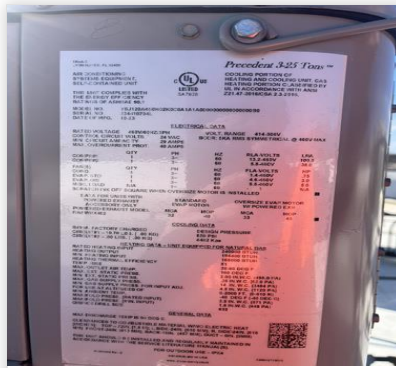
UnitLabel(1)
02/12/2024

RTU-8

Comment:



RTU-8
02/12/2024



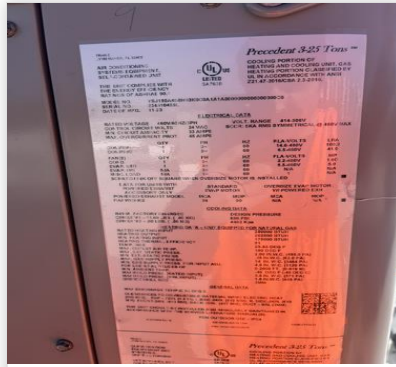
UnitLabel(1)
02/12/2024

RTU-9

Comment:



RTU-9
02/12/2024



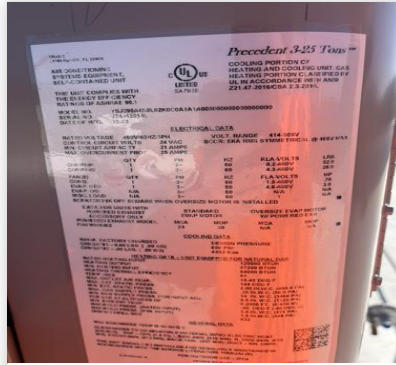
UnitLabel(1)
02/12/2024

RTU-10

Comment:



RTU-10
02/12/2024



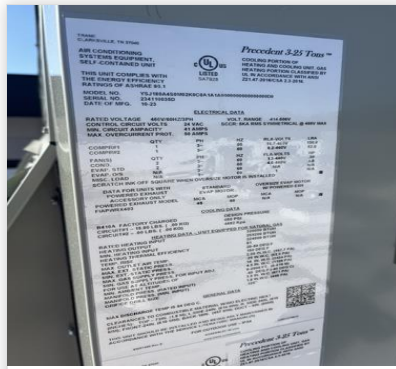
UnitLabel(1)
02/12/2024

RTU-11

Comment:



RTU-11
02/12/2024



UnitLabel(1)
02/12/2024

RTU-12

Comment:



RTU-12
02/12/2024



UnitLabel(1)
02/12/2024

RTU-13

Comment:



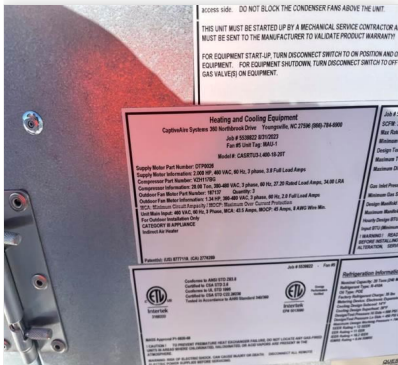
RTU-13
02/12/2024



UnitLabel(1)
02/12/2024

MAU-1

Comment:



MAU_LABEL
02/16/2024



MAU
02/16/2024

EF-1

Comment:



EF_1
02/16/2024



EF_1_LABEL
02/16/2024

EF-2

Comment:



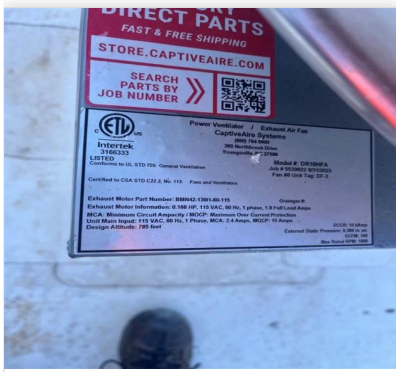
EF-2-Dishwasher
02/12/2024



UnitLabel(1)
02/12/2024

EF-3

Comment:



EF_3_LABEL
02/16/2024



EF_3
02/16/2024

EF-4

Comment:



EF-4
02/12/2024



UnitLabel(1)
02/12/2024

EF-5

Comment:



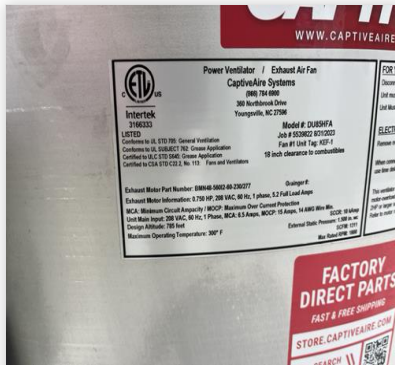
EF-5-Smoker
02/12/2024

KEF-1

Comment:



KEF-1-HD3
02/12/2024



Label
02/12/2024



Curb
02/12/2024

KEF-2

Comment:



KEF-2-HD2
02/12/2024



Label
02/12/2024



Curb
02/12/2024

KEF-3

Comment:



KEF-3-HD1
02/12/2024



Label
02/12/2024



Curb
02/12/2024

KEF-4

Comment:



KEF_4_CURB
02/16/2024



KEF_4
02/16/2024

HOOD-1

Comment:



HD-1-Left(1)
02/12/2024

HOOD-2

Comment:



HD-2-Center
02/12/2024

HOOD-3

Comment:



HD-3-Right
02/12/2024

HOOD-4

Comment:



**HD-4-Rear
02/12/2024**

DISHWASHER

Comment:



**DishwasherExhaust.jpe..
02/12/2024**



02-05-24 PERRY'S - VERNON HILLS, IL

CheckList Information

Name : TECH - STEP 1: INITIAL SITE WALKTHROUGH **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/24/2024 - Brian Turnbough - National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design? Yes

Comment:

RTU-13 diffuser 13-4 installation incomplete. Diffuser was drywalled over. Corrected by MC. /// Resolved ///

All hood filters installed and accounted for? Yes

Comment:

Hoods are wired and have power? Yes

Comment:

Hood is free of alarms? No

Comment:

No, hood has pressure switch and core fire system alarm. Alarm should cease once ANSUL and fire are installed.

Thermostats have power? Yes

Comment:

Honeywell Home thermostats are not programmable for this application. Recommend different thermostats. RTU-1 thermostat down button broken.

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

Comment:

Yes



02-05-24 PERRY'S - VERNON HILLS, IL

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/24/2024 - Brian Turnbough - 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

Comment:

RTU-6 Economizer was not functional on arrival. Corrected by M.C. /// RESOLVED ///

DCV Max damper opening position is set to minimum? Yes

Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D") Yes

Comment:

Motors are all operating below the FLA rating? Yes

Comment:

Are belts tight?

Comment:

Yes

If direct drive unit is the speed controller working.

Comment:

Yes

Is gas piping installed and valves turned on?

Yes

Comment:

Unit free of noticeable noise and vibration

Yes

Comment:

EF's

Rotation is correct?

Yes

Comment:

Belts are tight?

Comment:

NA, all fans are Direct Drive

Grease cup installed on hood fan?

Yes

Comment:

Hinge kit installed installed on hood fan?

Yes

Comment:

All fans lean to the West.

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

Yes

Comment:

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

Yes

Comment:

There is no major leakage around base of fan?

Yes

Comment:

Is the motor operating below the motor FLA rating?

Yes

Comment:

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

Comment:

Unit free of noticeable noise and vibration?	Yes
--	-----

Comment:

MUA

Rotation is correct?	Yes
----------------------	-----

Comment:

Gas piping is installed and valves are in on position?	Yes
--	-----

Comment:

Heater tested and is functional?	Yes
----------------------------------	-----

Comment:

Internal motorized damper is fully opening?	Yes
---	-----

Comment:

Motor is operating below the FLA rating?	Yes
--	-----

Comment:

Unit free of noticeable noise and vibration?	Yes
--	-----

Comment:

HOODS

Kitchen equipment installed in proper places?	Yes
---	-----

Comment:

Can kitchen equipment be turned on for final smoke test?	N/A
--	-----

Comment:

Cooking equipment not yet started up.

DOCUMENTATION

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

Comment:

Yes



02-05-24 PERRY'S - VERNON HILLS, IL

CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/24/2024 - Brian Turnbough - National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
----------------------------	-----

Comment:

Is space comfortable in all areas?	Yes
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Comment:

Is the space free of ventilation noise?	Yes
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Comment:

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

Comment:

NA



02-05-24 PERRY'S - VERNON HILLS, IL

CheckList Information

Name : TECH - STEP 4: FINAL TESTS **Status :** Not Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 01/24/2024 - Brian Turnbough - National TAB

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

None

List smoke candle type used

Comment:

45 second smoke emitter

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

02/14/2024

Comment:

TAB tech name / Firm

Comment:

Michael McDonnell

Site super name / Firm

Comment:

International Contractors Inc.

Owner representative name / Firm (if Applicable)

Comment:

NA

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

Comment:

Unable to accurately measure building pressure; front door not installed, not all doors sealed. Do not anticipate any issues, total building airflow is net positive.

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:

Thermostats are Honeywell Home thermostats. Unable to be programmed for this application.



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: MAU1

AREA:HOODS

Unit Data		
	Design	Actual
MFG	CAPTIVE AIRE	CAPTIVE AIRE
Serial Num	-	5539822
Model Num	CASRTU3-I.400-18-20T	CASRTU3-I.400-18-20T
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	-	184T
Horsepower	2.0	2.0
Motor Rpm	-	1165
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	3.76

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	2993	2959
SF RPM	-	1165
RA CFM	-	0
OA CFM	-	2959
RL Voltage	-	354 V @ VFD
RL Amperage	-	2.7 @ VFD
SF Rotation	-	CORRECT
RA Damper Position	-	0%
Min OA Damper Position	-	100%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
Fan Discharge SP	-	0.268"
Total ESP	-	0.268"

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

Completed By: Michael McDonnell on 02/16/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU1

AREA:ENTRY/HOST/LOBBY

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	233610941L
Model Num	YHC060	YHC060
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	4
Final Filter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	1.00	1.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	1.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VL34
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 TURNS OPEN
Fan Sheave Size	-	AK49
Fan Sheave Bore	-	3/4"
Belt CL Distance	-	9.5"
Num of Belts	-	1
Belt Size	-	AX29
Belt Alignment	-	VERIFIED

Test Data		
	Design	Actual
SF CFM	1600	1583
SF RPM	-	799
RA CFM	1400	1365
OA CFM	200	218
RL Voltage	-	489/493/493
RL Amperage	-	1.4/1.4/1.3
SF Rotation	-	CORRECT
Min OA Damper Position	-	1/4"
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.13"
Fan Suction SP	-	-0.33"
Fan Discharge SP	-	0.42"
Total ESP	0.75"	0.55"
Fan Total SP	-	0.75"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU2

AREA:BAR DINING

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234510437L
Model Num	YHD150	YSJ150
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	18X24X2
Num Final Filter 2	-	3
Final Filter Size 2	-	18X18X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	3.00	5.0
Motor Rpm	-	1940
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	5.5

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	69%
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	4000	3944
SF RPM	-	1339
RA CFM	3240	3176
OA CFM	760	768
RL Voltage	-	494/494/480
RL Amperage	-	2.0/1.8/2.0
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 78% LOW: 69%
Min OA Damper Position	-	HIGH: 22% LOW: 31%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.45"
Fan Suction SP	-	-0.71"
Fan Discharge SP	-	0.76"
Total ESP	0.75	1.21"
Fan Total SP	-	1.47"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU3

AREA:BAR

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	233610933L
Model Num	YHC048	YHC048
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	4
Final Filter Size 1	-	16X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	1.00	1.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	1.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	3"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	3.5 TURNS OPEN
Fan Sheave Size	-	AK51
Fan Sheave Bore	-	3/4"
Belt CL Distance	-	10.5"
Num of Belts	-	1
Belt Size	-	AX29
Belt Alignment	-	VERIFIED

Test Data		
	Design	Actual
SF CFM	1280	1314
SF RPM	-	880
RA CFM	1080	1105
OA CFM	200	209
RL Voltage	-	494/494/497
RL Amperage	-	1.5/1.5/1.6
SF Rotation	-	CORRECT
Min OA Damper Position	-	1/4" OPEN
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.25"
Fan Suction SP	-	-0.44"
Fan Discharge SP	-	0.38"
Total ESP	0.75"	0.63"
Fan Total SP	-	0.82"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU4

AREA:WOMENS RR

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	23332116FA
Model Num	4YCC4030	4YCC4030
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	14.5X18.5
Num Final Filter 1	-	1
Final Filter Size 1	-	FILTER MEDIA

Motor Data		
	Design	Actual
Horsepower	0.33	0.5
Motor Rpm	-	NL
Phase	1	1
Rated Voltage	208	208/230
Rated Amperage	-	3.9

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	HEATING: LOW (TAP 4) COOLING LOW (TAP 2)
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	600	940
SF RPM	-	DD
RA CFM	450	786
OA CFM	150	154
RL Voltage	-	208
RL Amperage	-	1.5
SF Rotation	-	CORRECT
Min OA Damper Position	-	HIGH: 1/4" LOW: 1/2"
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.21"
Fan Suction SP	-	-0.32"
Fan Discharge SP	-	0.46"
Total ESP	0.75"	0.67"
Fan Total SP	-	0.78"

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

Completed By: Michael McDonnell on 02/15/2024

Notes:

[1] UNIT IS WITHIN IN DESIGN WHEN ON TAP 1 (G-FAN ONLY) AT 605 CFM. FAN INCREASES SPEED FOR HEAT AND COOL. HEAT IS LANDED ON TAP 4 AND COOL ON TAP 2. PER THE MANUAL THIS IS LOW SPEED CONFIGURATION FOR BOTH STAGES. UNABLE TO RUN HEAT OR COOL AT TAP 1.

Written By: Michael McDonnell on 02/16/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU5

AREA:PRIVATE DINING I

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	233610167L
Model Num	YHC037	YHC037
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	26.75X15.25
Num Final Filter 1	-	2
Final Filter Size 1	-	20X30X2

Motor Data		
	Design	Actual
Motor MFG	-	GENTEQ
Horsepower	0.75	0.75
Motor Rpm	-	NL
Phase	3	1
Rated Voltage	480	208
Rated Amperage	-	3.7

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	1.8 VDC
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	960	988
SF RPM	-	DD
RA CFM	760	805
OA CFM	200	183
RL Voltage	-	210
RL Amperage	-	0.6
SF Rotation	-	CW, CORRECT
Min OA Damper Position	-	1/4"
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	E

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.18"
Fan Suction SP	-	-0.30"
Fan Discharge SP	-	0.28"
Total ESP	0.75"	0.46"
Fan Total SP	-	0.58"

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

Completed By: Michael McDonnell on 02/16/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU6

AREA:PRIVATE DINING II

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234412019L
Model Num	YHC092	YSJ090
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Horsepower	1.00	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	55%
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	2400	2325
SF RPM	-	1018
RA CFM	1990	1937
OA CFM	410	388
RL Voltage	-	491/493/495
RL Amperage	-	1.1/1.2/1.1
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 80% LOW: 71%
Min OA Damper Position	-	HIGH: 20% LOW: 29%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.26"
Fan Suction SP	-	-0.46"
Fan Discharge SP	-	0.52"
Total ESP	0.75"	0.78"
Fan Total SP	-	0.98"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU7

AREA:PRIVATE DINING III

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234411929L
Model Num	YHC092	YHC092
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	2.75	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	55%
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	2400	2504
SF RPM	-	1018
RA CFM	1880	1942
OA CFM	520	562
RL Voltage	-	495/497/494
RL Amperage	-	1.1/1.1/1.1
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 80% LOW: 68%
Min OA Damper Position	-	HIGH: 20% LOW: 32%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.52"
Fan Discharge SP	-	0.45"
Total ESP	0.75"	0.76"
Fan Total SP	-	0.97"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU8

AREA:MAIN DINING II

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234410704L
Model Num	YHC120	YSJ120
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	2.75	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	68%
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	3200	3126
SF RPM	-	1258
RA CFM	2160	2101
OA CFM	1040	1025
RL Voltage	-	497/497/494
RL Amperage	-	1.6/1.6/1.6
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 75% LOW: 63%
Min OA Damper Position	-	HIGH: 25% LOW: 37%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-0.79"
Fan Discharge SP	-	0.62"
Total ESP	0.75	1.10"
Fan Total SP	-	1.41"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU9

AREA:MAIN DINING I

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234510465L
Model Num	YHD150	YSJ150
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	37.5X24
OA Filter Size 1	-	3
Num Final Filter 1	-	3
Final Filter Size 1	-	18X24X2
Num Final Filter 2	-	3
Final Filter Size 2	-	18X18X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	3.00	5.0
Motor Rpm	-	1940
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	5.5

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	74%
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	4000	3962
SF RPM	-	1435
RA CFM	3160	3144
OA CFM	840	818
RL Voltage	-	496/498/494
RL Amperage	-	2.2/2.3/2.3
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 73% LOW: 64%
Min OA Damper Position	-	HIGH: 027% LOW: 36%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.60"
Fan Suction SP	-	-0.87"
Fan Discharge SP	-	0.70"
Total ESP	0.75"	1.30"
Fan Total SP	-	1.57"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU10

AREA:ROOM 79

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234412034L
Model Num	YHC092	YSJ090A
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	1.00	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	55%
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	2400	2505
SF RPM	-	1017
RA CFM	2185	2299
OA CFM	215	206
RL Voltage	-	496/497/494
RL Amperage	-	1.0/1.0/1.0
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 92% LOW: 85%
Min OA Damper Position	-	HIGH: 8% LOW: 15%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.25"
Fan Suction SP	-	-0.56"
Fan Discharge SP	-	0.52"
Total ESP	0.75"	0.77"
Fan Total SP	-	1.08"

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

Completed By: Michael McDonnell on 02/15/2024

Notes:
090 SINGLE COMPRESSOR, PLANS CALL FOR 092= 7.5 TON, DUAL COMPRESSOR.

Written By: Michael McDonnell on 02/05/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU13

AREA:BAR

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234411963L
Model Num	YHC102	YSJ090
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	3
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	2.00	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	67%
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	2720	2766
SF RPM	-	1138
RA CFM	2260	2323
OA CFM	480	443
RL Voltage	-	495/494/498
RL Amperage	-	1.6/1.6/1.6
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 90% LOW: 81%
Min OA Damper Position	-	HIGH: 10% LOW: 19%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.53"
Fan Suction SP	-	-0.81"
Fan Discharge SP	-	0.51"
Total ESP	0.75"	1.04"
Fan Total SP	-	1.32"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU11

AREA: SCULLERY/RR/OFFICES/PREP/STORAGE/DELIVERY

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234110035D
Model Num	YHD180	YHD180
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	65X17
Num Final Filter 1	-	8
Final Filter Size 1	-	20X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Frame	-	NL
Horsepower	3.00	3.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	408	460
Rated Amperage	-	4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	57%
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	4800	4919
SF RPM	-	1054
RA CFM	3925	4083
OA CFM	875	836
RL Voltage	-	495/497/494
RL Amperage	-	2.0/2.0/2.0
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 82% LOW: 71%
Min OA Damper Position	-	HIGH: 18% LOW: 29%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.37"
Fan Suction SP	-	-0.68"
Fan Discharge SP	-	0.48"
Total ESP	1.00	0.85"
Fan Total SP	-	1.16"

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

Completed By: Michael McDonnell on 02/15/2024



National TAB

Project:02-05-24 PERRY'S - VERNON HILLS, IL

AHU/RTU

Diffuser Supply (GRD)

RTU11/SCULLERY/RR/OFFICES/PREP/STORAGE/DELIVERY

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
RTU11-SGRD1	CHAIR STORAGE	SD-4	6"	100	1.0	124	86	108	108.0
RTU11-SGRD2	PREP	SD-1	10"	325	1.0	409	288	343	105.5
RTU11-SGRD3	PREP	SD-1	12"	325	1.0	665	444	354	108.9
RTU11-SGRD4	PREP	SD-1	12"	325	1.0	701	493	355	109.2
RTU11-SGRD5	PREP	SD-1	12"	325	1.0	451	336	351	108.0
RTU11-SGRD6	PREP	SD-1	12"	325	1.0	642	456	319	98.2
RTU11-SGRD7	PREP	SD-3	10X12	300	1.0	384	326	311	103.7
RTU11-SGRD8	PREP	SD-1	12"	325	1.0	422	287	331	101.8
RTU11-SGRD9	PREP	SD-1	12"	325	1.0	535	375	329	101.2
RTU11-SGRD10	COOLER I	SD-1	12"	325	1.0	326	224	318	97.8
RTU11-SGRD11	PREP	SD-1	10"	325	1.0	344	226	294	90.5
RTU11-SGRD12	SCULLERY	SD-1	10"	325	1.0	429	298	316	97.2
RTU11-SGRD13	SCULLERY	SD-1	12"	325	1.0	631	431	346	106.5
RTU11-SGRD14	UNISEX TOILET	SD-4	6"	25	1.0	105	67	23	92.0
RTU11-SGRD15	OFFICE I	SD-5	10"	250	1.0	336	229	262	104.8
RTU11-SGRD16	OFFICE II	SD-5	10"	250	1.0	108	81	267	106.8
RTU11-SGRD17	DELIVERY	SD-1	10"	300	1.0	346	240	292	97.3
Total				4800		6958	4887	4919	102.48%

Completed By: Michael McDonnell on 02/08/2024



National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: AHU/RTU

Asset: RTU12

AREA:SERVICE

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234510470L
Model Num	YHD150	YHD150
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num Final Filter 1	-	3
Final Filter Size 1	-	18X18X2
Num Final Filter 2	-	3
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	EBM-PAPST
Horsepower	3.00	5.0
Motor Rpm	-	1850
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	5.5

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	77%
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	4800	4651
SF RPM	-	1495
RA CFM	3925	3751
OA CFM	875	900
RL Voltage	-	491/492/488
RL Amperage	-	2.3/2.3/2.4
SF Rotation	-	CORRECT
RA Damper Position	-	HIGH: 83% LOW: 71%
Min OA Damper Position	-	HIGH: 17% LOW: 29%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.89"
Fan Suction SP	-	-1.12"
Fan Discharge SP	-	0.48"
Total ESP	1.00"	1.37"
Fan Total SP	-	1.60"

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

Completed By: Michael McDonnell on 02/16/2024



National TAB

Project:02-05-24 PERRY'S - VERNON HILLS, IL

AHU/RTU

Diffuser Supply (GRD)

RTU12/SERVICE

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
RTU12-SGRD1	BUSSER/BREA D	SD-1	12"	375	1.0	570	341	370	98.7
RTU12-SGRD2	SERVICE	SD-1	12"	425	1.0	487	426	445	104.7
RTU12-SGRD3	SERVICE	SD-1	12"	475	1.0	451	544	438	92.2
RTU12-SGRD4	SERVICE	SD-1	12"	475	1.0	546	431	509	107.2
RTU12-SGRD5	SERVICE	SD-1	12"	475	1.0	489	417	461	97.1
RTU12-SGRD6	SERVICE	SD-1	12"	475	1.0	511	417	436	91.8
RTU12-SGRD7	SERVICE	SD-1	12"	475	1.0	423	419	447	94.1
RTU12-SGRD8	SERVICE	SD-1	12"	475	1.0	279	419	486	102.3
RTU12-SGRD9	SERVICE	SD-1	12"	350	1.0	349	384	367	104.9
RTU12-SGRD10	SERVICE BAR	SD-1	12"	375	1.0	504	544	341	90.9
RTU12-SGRD11	SERVICE BAR	SD-1	12"	375	1.0	250	267	351	93.6
Total				4750		4859	4609	4651	97.92%

Completed By: Michael McDonnell on 02/08/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: EF2

AREA:DISHWASHER

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU33HFA	DU33HFA
Serial Num	-	5539822
Type	UPBLASTE	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.33	1/3
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	4.3
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	600	608
Fan RPM	1227	1340
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1340
System SetPt	-	65%
RL Voltage	-	120
RL Amperage	-	1.4
Total ESP	0.4"	0.48"
Fan Inlet SP	-	-0.48"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

Notes:
[1] INTERLOCKED WITH DISHWASHER OPERATION. DOES NOT RUN CONTINUOUSLY.

Written By: Michael McDonnell on 02/16/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: EF3

AREA:MOP

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR10HFA	DR10HFA
Serial Num	-	5539822
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower	0.17	1/6
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.9

Test Data		
	Design	Actual
CFM	100	107
Fan RPM	1124	1123
Fan Rotation	-	CCW
Motor RPM	-	1123
System SetPt	-	59%
RL Voltage	-	118
RL Amperage	-	1.6
Total ESP	0.3"	0.11"
Fan Inlet SP	-	-0.11"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: EF4

AREA:TOILET

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR10HFA	DR10HFA
Serial Num	-	5539822
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.17"	1/6
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.9

Test Data		
	Design	Actual
CFM	75	78
Fan RPM	1087	1094
Fan Rotation	-	CCW
Motor RPM	-	1094
System SetPt	-	58%
RL Voltage	-	118
RL Amperage	-	1.6
Total ESP	0.3"	0.16"
Fan Inlet SP	-	-0.16"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: EF5

AREA:SMOKER

Unit Data		
	Design	Actual
MFG	ENERVEX	ENERVEX
Model Num	GSV014	GSV014
Serial Num	-	1210016
Type	DOWNBLAST	FLUE
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	NL
Horsepower	0.25	NL
Motor Rpm	-	1600
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NL

Test Data		
	Design	Actual
CFM	1000	1343
Fan RPM	-	1600
Fan Rotation	-	CORRECT
Motor RPM	-	1600
System SetPt	-	SINGLE SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.5"	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

Notes:

[1] FAN IS SINGLE SPEED, NO SPEED CONTROLLER LISTED IN EXHAUST FAN SCHEDULE. SPEED CONTROL WILL NEED TO BE INSTALLED TO BRING FAN INTO DESIGN. NOT ANTICIPATED TO CAUSE ANY ISSUE AS FAN RUNS ONLY TO EVACUATE SMOKE AND NOT CONTINUOUSLY.

Written By: Michael McDonnell on 02/16/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: KEF1

AREA:EXH-L

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5539822
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.750	0.75
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	5.2

Test Data		
	Design	Actual
CFM	1311	1315
Fan RPM	-	1080
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1080
System SetPt	-	60%
RL Voltage	-	210
RL Amperage	-	1.8
Total ESP	1.500"	0.61"
Fan Inlet SP	-	-0.61"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: KEF2

AREA:EXH-M

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5539822
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	1.000	1.0
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	6.9

Test Data		
	Design	Actual
CFM	2288	2271
Fan RPM	-	1494
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1494
System SetPt	-	83%
RL Voltage	-	209
RL Amperage	-	1.8
Total ESP	1.200"	0.91"
Fan Inlet SP	-	-0.91"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: KEF3

AREA:EXH-R

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5539822
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.75	0.75
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	5.2

Test Data		
	Design	Actual
CFM	1808	1835
Fan RPM	-	1224
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1224
System SetPt	-	68%
RL Voltage	-	211
RL Amperage	-	2.2
Total ESP	1.300"	0.56"
Fan Inlet SP	-	-0.56"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

Notes:
LABELED KEF-1 ON ROOF

Written By: Michael McDonnell on 02/15/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: KEF4

AREA:PREP

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU180HFA	DU180HFA
Serial Num	-	5539822
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	184T
Horsepower	2.000	2.0
Motor Rpm	-	1165
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	7.51
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	1800	1864
Fan RPM	-	922
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	922
System SetPt	-	47.5 HZ
RL Voltage	-	89 @VFD
RL Amperage	-	4.9
Total ESP	1.900"	0.73"
Fan Inlet SP	-	-0.73"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/15/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: FAN - Exhaust



Asset: EF1

AREA:RR

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR33HFA	DR33HFA
Serial Num	-	5539822
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO-GREEN
Frame	-	NL
Horsepower	0.33	0.33
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	4.3
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	600	551
Fan RPM	1227	1240
Fan Rotation	-	CCW
Motor RPM	-	1240
System SetPt	-	62P
RL Voltage	-	119
RL Amperage	-	3.7
Total ESP	0.4"	0.20"
Fan Inlet SP	-	-0.20"
Fan Discharge SP	-	ATM

Completed By: Michael McDonnell on 02/12/2024

Notes:

[1] PLANS INDICATE EXHAUST AIRFLOW OF 600CFM. THERE ARE ONLY 7 EXHAUST GRILLES AT 75 CFM EACH,

Written By: Michael McDonnell on 02/16/2024

National TAB

Project:02-05-24 PERRY'S - VERNON HILLS, IL

FAN - Exhaust



Diffuser Ret/Exh (GRD)

EF1/RR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EF1-EGRD1	RR	LSD-2	6"	75	1.0	80	80	80	106.7
EF1-EGRD2	RR	LSD-2	6"	75	1.0	82	82	82	109.3
EF1-EGRD3	RR	LSD-2	6"	75	1.0	82	82	82	109.3
EF1-EGRD4	RR	LSD-2	6"	75	1.0	76	76	76	101.3
EF1-EGRD5	RR	LSD-2	6"	75	1.0	78	78	78	104.0
EF1-EGRD6	RR	LSD-2	6"	75	1.0	76	76	76	101.3
EF1-EGRD7	RR	LSD-2	6"	75	1.0	77	77	77	102.7
Total				525		551	551	551	104.95%

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:EXH-L

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-PSP-F	6030 ND-2-PSP-F
Job / Serial Num	-	5539822
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	69"	69"
Hood Width	60"	60"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	9"	9"
Supply Plenum Length	70"	70"

Test Data Supply		
	Design	Actual
Total AK Area	4.375	4.375
Kv factor (Vel)	0.81	0.81
Num of Readings	-	4
Reading1 FPM	-	139
Reading2 FPM	-	132
Reading3 FPM	-	156
Reading4 FPM	-	173
Ave FPM(corr)	-	121.5
CFM	564	532

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	20X16	20X16
Filter Qty 1	4	4
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	8.32	8.32
Filter1 FPM	-	158
Filter2 FPM	-	162
Filter3 FPM	-	165
Filter4 FPM	-	150
Filter Ave FPM(corr)	-	158
CFM	1311	1315

Cooking Equipment		
	Design	Actual
Item 1	-	OVEN
Item 2	-	BROILER

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: Kitchen Hood Type I



Asset: HD2

AREA:EXH-M

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-PSP-F	6030 ND-2-PSP-F
Job / Serial Num	-	5539822
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	120"	120"
Hood Width	60"	60"
Supply Plenum Type	-	PSP
Supply Plenum Width	9"	9"
Supply Plenum Length	120*	120"

Test Data Supply		
	Design	Actual
Total AK Area	7.5	7.5
Kv factor (Vel)	0.81	0.81
Num of Readings	-	6
Reading1 FPM	-	179
Reading2 FPM	-	170
Reading3 FPM	-	167
Reading4 FPM	-	169
Reading5 FPM	-	173
Reading6 FPM	-	172
Ave FPM(corr)	-	139.053
CFM	990	1043

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	20X16	20X16
Filter Qty 1	7	7
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	14.56	14.56
Filter1 FPM	-	148
Filter2 FPM	-	160
Filter3 FPM	-	167
Filter4 FPM	-	165
Filter5 FPM	-	156
Filter6 FPM	-	149
Filter7 FPM	-	148
Filter Ave FPM(corr)	-	156
CFM	2250	2271

Cooking Equipment		
	Design	Actual
Item 1	-	BROILER
Item 2	-	RANGE/OVEN
Item 3	-	STOVE

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: Kitchen Hood Type I



Asset: HD3

AREA:EXH-R

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-PSP-F	6030 ND-2-PSP-F
Job / Serial Num	-	5539822
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	124"	124"
Hood Width	60"	60"
Supply Plenum Type	-	PSP
Supply Plenum Width	9"	9"
Supply Plenum Length	136"	136"

Test Data Supply		
	Design	Actual
Total AK Area	8.5	8.5
Kv factor (Vel)	0.81	0.81
Num of Readings	-	6
Reading1 FPM	-	178
Reading2 FPM	-	150
Reading3 FPM	-	150
Reading4 FPM	-	158
Reading5 FPM	-	155
Reading6 FPM	-	162
Ave FPM(corr)	-	128.65
CFM	1139	1094

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	20X16	20X16
Filter Qty 1	7	7
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	14.56	14.56
Filter1 FPM	-	116
Filter2 FPM	-	113
Filter3 FPM	-	141
Filter4 FPM	-	133
Filter5 FPM	-	127
Filter6 FPM	-	134
Filter7 FPM	-	121
Filter Ave FPM(corr)	-	126
CFM	1808	1835

Cooking Equipment		
	Design	Actual
Item 1	-	BROILER
Item 2	-	FRYER
Item 3	-	FRYER

Completed By: Michael McDonnell on 02/12/2024

National TAB

Project: 02-05-24 PERRY'S - VERNON HILLS, IL

System/Unit: Kitchen Hood Type I



Asset: HD4

AREA:PREP

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2	6030 ND-2
Job / Serial Num	-	5539822
Type	TYPE 1 CANOPY	TYPE I CANOPY
Hood length	142"	138"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	CAPTRATE SOLO
Filter Size 1	20X16	20X16
Filter Qty 1	8	8
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	16.64	16.64
Filter1 FPM	-	110
Filter2 FPM	-	110
Filter3 FPM	-	111
Filter4 FPM	-	122
Filter5 FPM	-	121
Filter6 FPM	-	117
Filter7 FPM	-	108
Filter8 FPM	-	103
Filter Ave FPM(corr)	-	112
CFM	1800	1864

Cooking Equipment		
	Design	Actual
Item 1	-	OVEN
Item 2	-	BOILER

Completed By: Michael McDonnell on 02/12/2024

