

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
08-08 PENN STATION - SPRINGFIELD, OH**

3471 E NATIONAL RD

SPRINGFIELD, OH 45505

Client

**C&T DESIGN
4025 PORT UNION RD.
FAIRFIELD, OH 45014**

National TAB

Project: 08-08 PENN STATION - SPRINGFIELD, OH

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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) w/ Diffusers

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. . Any EF's that fell outside of this tolerance is noted throughout the report.

MUA (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. Adjustments to the fan speed were made in order 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 $-0.02''$ 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.

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	3000	3103	2250	2283	750	820	25.0%	26.4%						
RTU-2	KITCHEN	3000	2937	2250	2139	750	798	25.0%	27.2%						
MUA-1	COOKLINE									1650	1602				
KEF-1	GRILL											1120	1050		
KEF-2	OVEN											700	648		
KEF-3	FRY											833	826		
EF-1	RESTROOM													75	79
TOTALS		6000	6040	4500	4422	1500	1618			1650	1602	2653	2524	75	79

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3150	3220
TOTAL EXHAUST	2728	2603
NET AIRFLOW	422	617

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.009
SIDE	
REAR	-0.002
AVERAGE	0.0035

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:

08-08 PENN STATION - SPRINGFIELD, OH

Project Issue Information

Issue Name : Diffuser missing

Description : One air duct is missing a diffuser in the kitchen. (diffuser 1-8)

Created By : National TAB

Assigned To : National TAB - Joe Hertenstein

Status : Closed

Originated Date : 08/09/2022 - Jack Bain - National TAB

Project Issue File Details



FuseIT5bcc12898c5949e...



MISSING_DIFFUSER.jpg

08-08 PENN STATION - SPRINGFIELD, OH

Project Issue Information

Issue Name : No damper
Description : No damper on diffuser 2-4
Created By : National TAB **Assigned To :** National TAB - Joe Hertenstein
Status : Open
Originated Date : 08/10/2022 - Jack Bain - National TAB

Project Issue File Details



FuselTc458b5a43f4a4cc...

08-08 PENN STATION - SPRINGFIELD, OH

Project Issue Information

Issue Name : No end panel on hood 3

Description : No end panel on hood 3

Created By : National TAB

Assigned To : National TAB - Joe Hertenstein

Status : Open

Originated Date : 08/10/2022 - Jack Bain - National TAB

Project Issue File Details



FuselT12e584939840404...

08-08 PENN STATION - SPRINGFIELD, OH

Project Issue Information

Issue Name : Outside air dampers

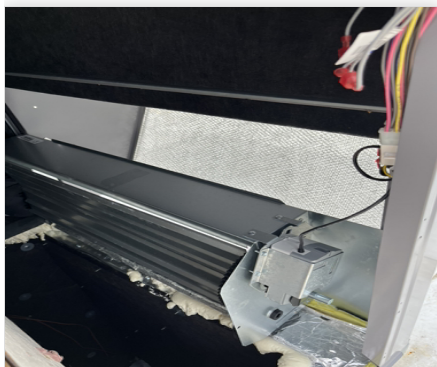
Description : On both units the outside air dampers are wide open or are missing a piece. Also unsure how the damper is controlled if everything is correctly installed.

Created By : National TAB **Assigned To :** National TAB - Joe Hertenstein

Status : Open

Originated Date : 08/09/2022 - Jack Bain - National TAB

Project Issue File Details



FuseITbd03fa608458470...

Project Issue Response Details

- **08/10/2022** **National TAB - Jack Bain**
 - Pieces won't be installed till next week so we are taping off the unsealed areas with cardboard for outside air readings.

- **08/09/2022** **National TAB - Joe Hertenstein**
 - TO BE ABLE TO BALANCE TOTAL AIRFLOW, & TRY TO SET OUTSIDE AIR, TEMPORARILY CLOSE OFF WITH CARDBOARD & TAPE & DOCUMENT. CONTACT GC/MC TO GET PERMANENT SOLUITION.

RTU-2



FuseIT069a1be7923e423...



FuseIT6ec0eeb177c54b5...

MAU-1

Yes



FuseIT33fe182fff16416...

KEF-1

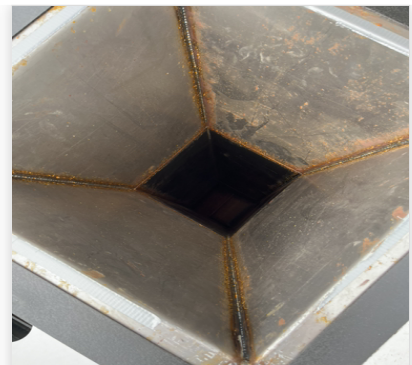
Yes



FuseITf779bd263c9c432...



FuseITe6fbf4e281c9497...



File.jpeg

KEF-2

Yes



FuseITb4d8c998fba5489...



FuseIT5b159feb9d674a6...



File.jpeg

KEF-3

Yes



FuseITbedb473350394ca...



File.jpeg



FuseIT0802d37eaa1c48a...

EF-1

Yes



FuseIT9d8de1b2d9324fb...

HOOD-1

Yes



FuseITa78e841449824f0...

HOOD-2

Yes



FuseITc32812eccf1141c...

Grease Duct

Yes



FuseIT2f071d40df3d451...



FuseITbeb3aff1b7ae431...



File.jpeg

Notes/Comments :



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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

Review Plan Review Checklist, has it been signed off and meets our standards to start balancing? If not contact processor to ensure job is ready.	YES
All diffusers and grilles are installed and match design?	NO - ISSUES MADE (DIFFUSER 1-8 MISSING AS WELL AS BATHROOM EXHAUST FAN)
All hood filters installed and accounted for?	YES
Hoods are wired and have power?	YES
Hood is free of alarms?	NO B2 LIGHTING ERROR IS STILL PRESENT
Thermostats have power?	YES
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :



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08-08 PENN STATION - SPRINGFIELD, OH

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?	NO - Economizers are working but are missing a piece, temporarily fixed with cardboard to read outside air. Also, we have to manually adjust outside air damper.
DCV Max damper opening position is set to minimum?	NO
Free cooling enthalpy set point set for lowest setting (Typically "D")	N/A
Motors are all operating below the FLA rating?	YES
Are belts tight?	YES
If direct drive unit is the speed controller working.	YES
Is gas piping installed and valves turned on?	VALVES NOT TURNED ON
Unit free of noticeable noise and vibration	YES

EF's

Rotation is correct?	YES
Belts are tight?	N/A
Grease cup installed on hood fan?	Yes
Hinge kit installed installed on hood fan?	Yes
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes

Flex conduit is long enough so that fan can be completely tilted back?	Yes
There is no major leakage around base of fan?	Good
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?	N/A
Unit free of noticeable noise and vibration?	YES

MUA

Rotation is correct?	Yes
Gas piping is installed and valves are in on position?	No gas line not set up yet
Heater tested and is functional?	No gas installed yet
Internal motorized damper is fully opening?	Yes
Motor is operating below the FLA rating?	Yes
Unit free of noticeable noise and vibration?	Yes

HOODS

Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	No

DOCUMENTATION

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



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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 :

08-08 PENN STATION - SPRINGFIELD, OH

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 bomb
Smoke test capture - Perimeter of hood	Good capture
Smoke test capture - Top of cooking surface	Yes

WITNESS

Date test was completed	August 10th
TAB tech name / Firm	Austin/Jack National Tab
Site super name / Firm	Mike Bentel
Owner representative name / Firm (if Applicable)	NA
Building pressure at front & back doors (All Systems On)	0.007

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
---	-----

PROGRAM THERMOSTATS

Occupied 7:15AM-10:15PM: 68 Heat/72 Cool (NOTE: 3 degree MAX setback)	NO - MC WILL PROGRAM THERMOSTATS.
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Notes/Comments :

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: AHU/RTU



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Asset: RTU1

AREA:DINING

Unit Data		
	Design	Actual
MFG	LENNOX	CARRIER
Serial Num	-	0422P31428
Model Num	LGH092H	48TCED08A2A5A0A0G0
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5x19.5"
Num Final Filter 1	-	4
Final Filter Size 1	-	20x16x2"

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Motor Rpm	-	1735
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	8.1-7.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	4 3/4"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	5 turns out
Fan Sheave Size	-	8"
Fan Sheave Bore	-	1"
Belt CL Distance	-	17 1/2
Num of Belts	-	1
Belt Size	-	AX52
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	3000	3103
SF RPM (Initial)	-	784
SF RPM	-	784
RA CFM	2250	2283
OA CFM	750	820
RL Voltage	-	204.4-206.3-205.8
RL Amperage Initial	-	6.3 - 6 - 4.4
RL Amperage	-	6.3-6-4.4
SF Rotation	-	COUNTERCLOCKWISE
RA Damper Position	-	Open
OA Damper Position	-	7/8"
OA Damper Type	-	Motorized outside air damper
Min OA Damper Position	-	7/8"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.188
Fan Suction SP	-	-0.422
Fan Discharge SP	-	0.650
Total ESP	-	0.838
Fan Total SP	-	1.072

General		
	Design	Actual
Unit free of Damage	-	Good
Unit Completely Assembled	-	Good
Unit Leveled	-	Yes
Curb & Unit Installed Air Tight	-	Yes
Controls Complete	-	No
Unit Filters Clean	-	Yes
Evap Coil Clean	-	Yes
Condensor Coil Clean	-	Yes
Condensor Fins Straight	-	Yes
Condensate Drain Installed	-	Yes

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Notes:

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Project:08-08 PENN STATION - SPRINGFIELD, OH

AHU/RTU



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Diffuser Supply (GRD)

RTU1/DINING

Asset											
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	CFM(2)	FINAL CFM	% to design	AK	VEL(1)	VEL(2)
SGRD1	ENTRY		10"	400	451	-	433	108.3			
SGRD2	ENTRY		10"	400	410	-	422	105.5			
SGRD3	DINING		10"	300	311	-	324	108.0			
SGRD4	DINING		10"	300	108	-	291	97.0			
SGRD5	DINING		10"	300	375	-	318	106.0			
SGRD6	DINING		10"	300	381	-	311	103.7			
SGRD7	DINING		10"	300	315	-	295	98.3			
SGRD8	SERVING AREA		10"	300							
SGRD9	DINING		10"	330	412	-	322	97.6			
SGRD10	RESTROOM		6"	70	88	-	69	98.6			

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: AHU/RTU



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Asset: RTU2

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	LENNOX	CARRIER
Serial Num	-	5221P44649
Model Num	LGH092H	48TCED08A2A5A0A0G0
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35.5x19.5"
Num Final Filter 1	-	4
Final Filter Size 1	-	20x16x2"

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Motor Rpm	-	1735
Phase	-	3
Rated Voltage	-	208-230
Rated Amperage	-	8.1-7.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	4 3/4"
Motor Bore Size	-	7/8"
Motor Sheave SetPt	-	5 turns out
Fan Sheave Size	-	8"
Fan Sheave Bore	-	1"
Belt CL Distance	-	17.5"
Num of Belts	-	1
Belt Size	-	AX52
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	3000	2937
SF RPM (Initial)	-	758
SF RPM	-	758
RA CFM	2250	2139
OA CFM	750	798
RL Voltage	-	208-206-208
RL Amperage	-	5.9-5.6-4.9
SF Rotation	-	Counterclockwise
RA Damper Position	-	Open
OA Damper Position	-	7/8"
OA Damper Type	-	Motorized outside air damper
Min OA Damper Position	-	7/8"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.266
Fan Suction SP	-	-0.467
Fan Discharge SP	-	0.795
Total ESP	-	1.061
Fan Total SP	-	1.262

General		
	Design	Actual
Unit free of Damage	-	Yes
Unit Completely Assembled	-	Yes
Unit Leveled	-	Yes
Curb & Unit Installed Air Tight	-	Yes
Controls Complete	-	No
Unit Filters Clean	-	Yes
Evap Coil Clean	-	Yes
Condensor Coil Clean	-	Yes
Condensor Fins Straight	-	Yes
Condensate Drain Installed	-	Yes

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Notes:

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Project:08-08 PENN STATION - SPRINGFIELD, OH

AHU/RTU



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Diffuser Supply (GRD)

RTU2/KITCHEN

Asset								
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	PREP AREA		10"	300	495	290	290	96.7
SGRD2	PREP AREA		10"	300	239	294	294	98.0
SGRD3	RISER ROOM		6"	100	96	107	107	107.0
SGRD4	PREP AREA		10"	300	363	388	388	129.3
SGRD5	SERVING		10"	350	333	331	331	94.6
SGRD6	SERVING		10"	350	283	329	329	94.0
SGRD7	SERVING		10"	350	268	320	320	91.4
SGRD8	HD1 ACPSP	3ft^2	12"	600	494	561	561	93.5
SGRD9	HD3 ACPSP	2.08ft^2	10"	350	373	317	317	90.6

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: FAN - Exhaust



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Asset: EF1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	NA	NA
Model Num	NA	NA
Serial Num	-	
Type	-	
Series	-	
Configuration	-	VERTICAL

Test Data		
	Design	Actual
CFM	75	79

Motor Data		
	Design	Actual
Motor MFG	-	ENERGY STAR
Phase	-	1
Voltage (rated)	-	160
Amperage (rated)	-	0.29
Service Factor	-	1

Drive Data		
	Design	Actual

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: FAN - Exhaust



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Asset: KEF1

AREA:GRILL

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5330282
Type	UPBLAST	UPBLAST
Series	-	
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.75	0.750
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	8.9
Service Factor	-	1

Drive Data		
	Design	Actual

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Notes:

Test Data		
	Design	Actual
CFM	1120	1050
Fan RPM	1215	1139
Fan Rotation	-	Counterclockwise
Motor RPM	-	1139
System SetPt	-	48%
RL Voltage	-	115
RL Amperage	-	5.8
Total ESP	1.15"	0.47"
Fan Inlet SP	-	-0.47"
Fan Discharge SP	-	atm

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: FAN - Exhaust



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Asset: KEF2

AREA:OVEN

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU33HFA	DU33HFA
Serial Num	-	5330282
Type	UPBLAST	UPBLAST
Series	-	
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.333	0.333
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	4.3
Service Factor	-	1

Drive Data		
	Design	Actual

Test Data		
	Design	Actual
CFM	700	648
Fan RPM	1360	1258
Fan Rotation	-	Counterclockwise
Motor RPM	-	1258
System SetPt	-	85%
RL Voltage	-	115
RL Amperage	-	3.6
Total ESP	0.6"	0.75"
Fan Inlet SP	-	-0.75
Fan Discharge SP	-	atm

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: FAN - Exhaust



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Asset: KEF3

AREA:FRY

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	5330282
Type	UPBLAST	UPBLAST
Series	-	
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Horsepower	0.75	0.750
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	8.9
Service Factor	-	1

Drive Data		
	Design	Actual

Test Data		
	Design	Actual
CFM	833	826
Fan RPM	1144	1134
Fan Rotation	-	COUNTERCLOCKWISE
Motor RPM	-	1134
System SetPt	-	50%
RL Voltage	-	115
RL Amperage	-	5.9
Total ESP	1.15"	0.53"
Fan Inlet SP	-	-0.53
Fan Discharge SP	-	Atm
Total Fan SP	-	1.15

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: FAN - Supply



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Asset: MAU1

AREA:COOKLINE

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	ECON-AIR
Model Num	A1-D.250-15D	EA1-D.250-15D
Serial Num	-	5330282
Type	MAU	MAU
Series	-	
Configuration	HORIZONTAL	VERTICAL
Num Filters Size 1	-	3
Filter Size 1	-	18X15"

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	145T
Horsepower	1.5	1.5
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	208-230
Amperage (rated)	-	4.03
Service Factor	-	1.15

Drive Data		
	Design	Actual

Gas Heat		
	Design	Actual
Air Flow Switch SP SetPt	-	0.357

Electric Coil		
	Design	Actual

Hot Water Coil		
	Design	Actual

Steam Coil		
	Design	Actual

Condensor DX Coil		
	Design	Actual

Condensor Fan		
	Design	Actual

Test Data		
	Design	Actual
CFM	1650	1602
SF RPM	1855	1740
SF Rotation	-	Counterclockwise
Motor RPM	-	1740
Motor Frequency	-	60
SF System SetPt	-	50.1
RL Voltage	-	208
RL Amperage	-	3.36
Fan Discharge SP	-	0.357

Combustion Fan Motor Data		
	Design	Actual

Combustion Gas Duct		
	Design	Actual

Chilled Water Coil		
	Design	Actual

Evaporator DX Coil		
	Design	Actual

Evaporative Cooler		
	Design	Actual

Compressors		
	Design	Actual

General		
	Design	Actual
Unit free of Damage	-	Yes
Unit Completely Assembled	-	Yes
Unit Leveled	-	Yes
Curb & Unit Installed Air Tight	-	Yes
Controls Complete	-	Yes
Fan Rotation Correct	-	Yes
Fan Belt Condition	-	Good
Unit Filters Clean	-	Yes

Completed By: Dan Hertenstein

Notes:

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Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD1

AREA:FRY

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	3650 BD-2	3650 BD-2
Job / Serial Num	-	5330282
Type	TYPE I LOW PROXIMITY	TYPE I
Hood length	72"	72"
Hood Width	36"	36"
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	10"	14"
Supply Plenum Length	72"	72"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X16	16x16"
Filter Qty 1	4	4
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	6.48	6.48
Filter1 FPM	-	160
Filter2 FPM	-	155
Filter3 FPM	-	173
Filter4 FPM	-	159
Filter Ave FPM(corr)	-	162
CFM	1120	1050

Cooking Equipment		
	Design	Actual
Item 1	-	Griddle

Test Data Supply		
	Design	Actual
Total AK Area	7	7
Kv factor (Vel)	-	0.87
Num of Readings	-	6
Reading1 FPM	-	174
Reading2 FPM	-	154
Reading3 FPM	-	155
Reading4 FPM	-	103
Reading5 FPM	-	133
Reading6 FPM	-	194
Ave FPM(corr)	-	152
CFM	1000	926

Performance Data		
	Design	Actual
Exh-Supply Net CFM	120	124
Smoke Generation Type	-	45 second
Cooking Equip Heat On	-	No
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES
Riser Temp F (idle) Riser 1	-	71
Ambient Room Temp	-	72

General		
	Design	Actual
Third Party Witness	-	N/A
Third Party Company	-	N/A
Tech Witness	-	Austin

Completed By: Dan Hertenstein

Notes:

National TAB

Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD2

AREA:BACK

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	LINCOLN
Model Num	4412 PS- OVN	1116-004-U-KF015
Job / Serial Num	-	2201100102016
Type	TYPE I LOW PROXIMITY	TYPE I
Hood length	21"	21"
Hood Width	44"	44"

Test Data Exhaust		
	Design	Actual
Filter Type	BAFFLE	BAFFLE
Filter Size 1	10X20	10x20"
Filter Qty 1	2	2
Filter AK factor size 1	-	1.2
Filter Total AK Area	-	2.4
Filter1 FPM	-	263
Filter2 FPM	-	277
Filter Ave FPM(corr)	-	270
CFM	700	648

Cooking Equipment		
	Design	Actual
Item 1	-	TOASTER OVEN

Completed By: Dan Hertenstein

Notes:

Test Data Supply		
	Design	Actual

Performance Data		
	Design	Actual
Smoke Generation Type	-	45 Second
Cooking Equip Heat On	-	No
Hood Capture %	-	100%
Riser Temp F (idle) Riser 1	-	71
Ambient Room Temp	-	72

General		
	Design	Actual
Third Party Witness	-	NA
Third Party Company	-	NA
Tech Witness	-	Austin

National TAB

Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD3

AREA:FRY

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	3650 BD-2	3650 BD-2
Job / Serial Num	-	5330282
Type	TYPE I LOW PROXIMITY	TYPE I
Hood length	50"	50"
Hood Width	36"	36"
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	14"	14"
Supply Plenum Length	50"	50"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE	CAPTRATE SOLO
Filter Size 1	16X16	16x16"
Filter Qty 1	3	3
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	4.86	4.86
Filter1 FPM	-	174
Filter2 FPM	-	169
Filter3 FPM	-	167
Filter Ave FPM(corr)	-	170
CFM	833	826

Cooking Equipment		
	Design	Actual
Item 1	-	Fryer

Completed By: Dan Hertenstein

Notes:

Test Data Supply		
	Design	Actual
Total AK Area	4.86	4.86
Kv factor (Vel)	0.89"	0.87
Num of Readings	-	4
Reading1 FPM	-	186
Reading2 FPM	-	137
Reading3 FPM	-	142
Reading4 FPM	-	175
Ave FPM(corr)	-	160
CFM	650	676

Performance Data		
	Design	Actual
Exh-Supply Net CFM	183	150
Smoke Generation Type	-	45 Second
Cooking Equip Heat On	-	No
Hood Capture %	-	99%
End Panels Installed (Y/N)	-	No
Riser Temp F (idle) Riser 1	-	71
Ambient Room Temp	-	72

General		
	Design	Actual
Third Party Witness	-	NA
Third Party Company	-	NA
Tech Witness	-	Austin

National TAB

Project: 08-08 PENN STATION - SPRINGFIELD, OH

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: PSP1

AREA:BACK

Unit Data		
	Design	Actual
MFG	PSP	PSP
Model Num	BACK	BACK
Supply Plenum Type	ACPSP	ACPSP
Supply Plenum Width	14"	14"
Supply Plenum Length	72"	72"

Test Data Exhaust		
	Design	Actual

Cooking Equipment		
	Design	Actual

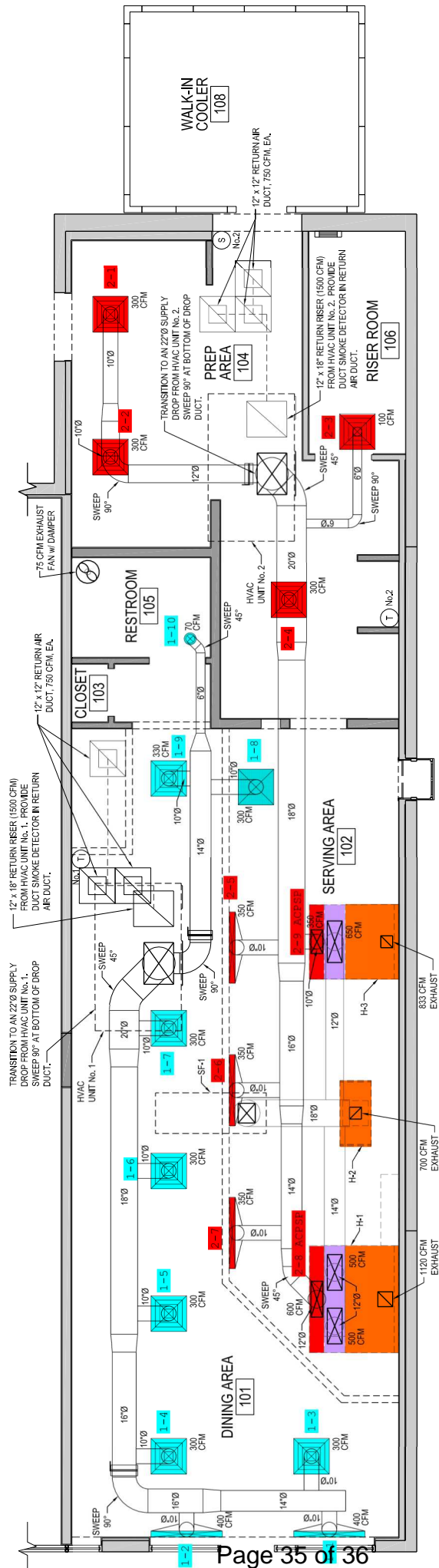
Test Data Supply		
	Design	Actual
AK factor	1	
Total AK Area	7	
Kv factor (Vel)	0.89"	
Num of Readings	-	
Reading1 FPM	-	
Reading2 FPM	-	
Reading3 FPM	-	
Reading4 FPM	-	
Reading5 FPM	-	
Reading6 FPM	-	
Reading7 FPM	-	
Reading8 FPM	-	
Reading9 FPM	-	
Reading10 FPM	-	
Reading11 FPM	-	
Reading12 FPM	-	
Reading13 FPM	-	
Reading14 FPM	-	
Ave FPM(corr)	-	
CFM	500	

Performance Data		
	Design	Actual

General		
	Design	Actual

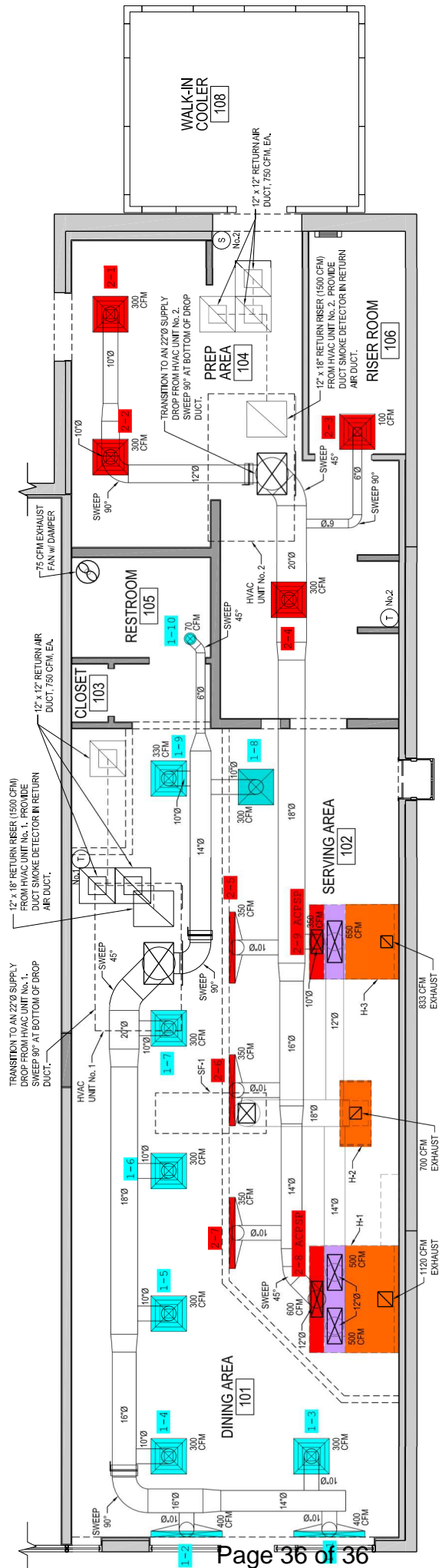
Completed By: Brianna Biggs

Notes:



HVAC PLAN
1/4"=1'-0"
NORTH





HVAC PLAN
1/4"=1'-0"
NORTH

