Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 05/30/2024

PROJECT

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

1641 GREENHOUSE RD

HOUSTON, TX 77084

Client

CAVA

702 H ST NW

2nd floor

Washington, DC 20001

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

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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.

Issue List

- Dirty Evaporator filters on RTUs
- Low Hood Exhaust Air Flow
- MUA Gas Line
- RTU-2 Insulation

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

Project Issue Information

Issue Name : Dirty Evaporator filters on RTUs

Description : Both RTUs have dirty construction filters. Filters were removed for testing. Recommend replacing with appropriate size pleated MERV rated filters.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 08/12/2024 - Wesley John - National TAB

Project Issue File Details

08/12/2024

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

Project Issue Information

Issue Name : Low Hood Exhaust Air Flow

Description : Kitchen exhaust fan is set to 100% fan speed but operating at 87% of design air flow. Cannot determine cause of low flow. Hood is still performing as designed.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

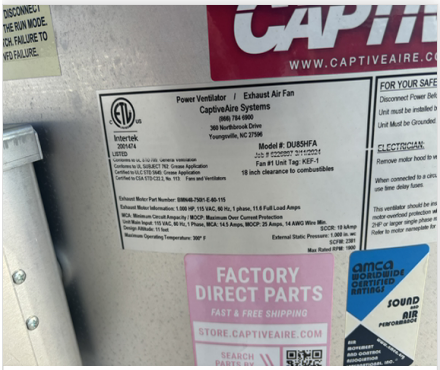
Status : Open

Priority :

Asset Tag :

Originated Date : 08/12/2024 - Wesley John - National TAB

Project Issue File Details



08/12/2024

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

Project Issue Information

Issue Name : MUA Gas Line

Description : MUA gas line is not connected. Recommend connecting and testing unit for gas heat functionality.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

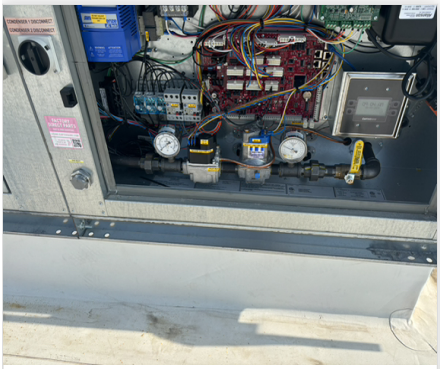
Status : Open

Priority :

Asset Tag :

Originated Date : 08/12/2024 - Wesley John - National TAB

Project Issue File Details



08/12/2024

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

Project Issue Information

Issue Name : RTU-2 Insulation

Description : RTU-2 suction door insulation peeled off. Recommend securing with stick pins. Tech placed it in compressor compartment.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 08/12/2024 - Wesley John - National TAB

Project Issue File Details

08/12/2024

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	KITCHEN	4500	4640	3825	3957	675	683	15.0%	14.7%						
RTU-2	DINING	3600	3679	3350	3418	250	261	6.9%	7.1%						
MUA-1	COOKLINE									1976	1824				
KEF-1	KITCHEN HD											2381	2082		
EF-2	RESTROOMS													250	260
TOTALS		8100	8319	7175	7375	925	944			1976	1824	2381	2082	250	260

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2901	2768
TOTAL EXHAUST	2631	2342
NET AIRFLOW	270	426

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.014
SIDE	-
REAR	0.011
AVERAGE	**0.0125**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

CheckList List

- TECH - SITE PICTURES

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :			

CheckList Item Details

STORE FRONT

Comment:

08/12/2024

RTU-1

Comment:

08/12/2024

RTU-2

Comment:

08/12/2024

KEF-1

Comment:

08/12/2024

EF-2

Comment:

08/12/2024

MUA-1

Comment:

08/12/2024

HD-1

Comment:

08/12/2024

CheckList List

- FIV - EF'S
- FIV - HVAC DUCTWORK
- FIV – HOODS
- FIV – MUA
- FPT - BUILDING PRESSURE AND HOOD CONTAINMENT
- FPT - KEF'S
- FPT - RTU's
- FPT – MUA

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FIV - EF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

Unit Tag matches the design and submittal MFG and Model	Pass
Comment:	
Each exhaust fan is proper tagged for proper identification with tags sized and placed on the fan for visual ease	Pass
Comment:	
Fans are installed in the correct location and orientation	Pass
Comment:	
All packing, material and debris has been removed from the blower/wheel housing and the motor compartment	Pass
Comment:	
Fan wheels turn easily by hand (turn power off prior to testing)	Pass
Comment:	
Fans grease duct curb top plate is properly transitioned to the fan inlet and flush on top of the curb, sealed to the fan base to prevent leakage	Pass
Comment:	

Exhaust fans have external disconnects and are connected to allow full hinging of each exhaust fan	Pass
Comment:	
Fan is properly hinged and supported when hinged fully back for grease duct access (for Halton fans, ensure the base mounted disconnect is not hitting the fan base/curb when fully hinged back)	Pass
Comment:	
Grease cups are properly installed and connected to the fan base grease drain to prevent spilling outside of the grease cup	Pass
Comment:	
Exhaust fans are located 5ft from parapet wall and 10ft from any fresh air intake.	Pass
Comment:	

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FIV - HVAC DUCTWORK	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

KVS - GREASE DUCT (HOOD SYSTEM)

Grease duct is sized and routed per plan	Pass
Comment:	
Grease duct is properly supported	Pass
Comment:	
Grease duct has code required negative pitch from fan inlet back to the hood riser connection	Pass
Comment:	
Grease duct has required clean-out doors installed, labeled, and accessible for removal/cleaning. Doors are located as required by code	Pass
Comment:	
Grease duct clean-out doors are secured using tool less fasteners and seal fully when hand tightened	Pass
Comment:	
Grease duct is centered in the curb and transitions as required to ensure the fan inlet is fully covered by the grease duct opening. Duct top plate flanges to the edges of the curb and is secured and flat so that the fan sits flush and square.	Pass

Comment:

Grease duct is wrapped if welded duct, or is double wall round duct?	Pass

Comment:

DOUBLE WALL ROUND DUCT

KVS - MUA DUCT (HOOD SYSTEM)

MUA duct is routed and sized as per plan	Pass

Comment:

MUA duct is properly supported	Pass

Comment:

MUA duct seams are sealed air tight using proper sealant and application for SMACNA pressure rating of duct systems	Yes

Comment:

MUA duct is externally insulated and taped to prevent vapor barrier from being breached	Pass

Comment:

MUA duct drop box and transitions are done to encourage laminar flow and avoid restrictions	Pass

Comment:

Branch take-off's have accessible dampers exposed for the TAB team to adjust each line as necessary	Pass

Comment:

Flex duct (if used) is supported and straight with no more than one (1) hard 90 degree elbow and less than 5ft in total length	Pass

Comment:

Connection to the hood MUA plenum is secured and foil taped to prevent air leakage	Pass

Comment:

RESTROOM DUCT

Restroom duct is routed and sized per plan	Pass
Comment:	
Restroom duct is properly supported	Pass
Comment:	
Duct seams are sealed	Yes
Comment:	
Dampers are accessible to TAB team for balancing	Pass
Comment:	
Flex duct (if used) is supported and straight with no more than one (1) hard 90 degree elbow and less than 5ft in total length	Pass
Comment:	
Duct is secured to exhaust register	Pass
Comment:	
Gravity damper is installed, opens and closes freely, and is sealed to prevent air leakage	Pass
Comment:	
Duct to curb transition is centered and sized to ensure it covers the entire fan inlet. Curb top plate is flush and secured to the ends of the curb.	Pass
Comment:	
HVAC DUCT	
Kitchen and Dining room duct is routed and sized as per plan	Pass
Comment:	
Ducts are properly supported	Pass
Comment:	
Ductwork is externally insulated	Yes

Comment:

Duct seams are sealed air tight using proper sealant and application for SMACNA pressure rating of duct systems	Pass

Comment:

Ducts are securely insulated as per specificatins and foil taped to prevent air barrier from being breached	Pass

Comment:

Takeoffs are installed to serve required terminal diffusers and are equipped with accessible dampers for TAB team access and can be opened or closed fully with no impingements	Pass

Comment:

Flex duct (if used) is supported and straight with no more than one (1) hard 90 degree elbow and less than 5ft in total length	Pass

Comment:

Takeoff to diffuser is installed securely to prevent slippage and air leakage	Pass

Comment:

All diffuser neck or opening sizes are installed as planned	Pass

Comment:

Supply and Return duct transitions to top of RTU curb, sized to full width and length of opening and is flashed fully to the sides of the curb.	Pass

Comment:

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CheckList Information

Name :	FIV – HOODS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

HOOD INSTALLATION DETAILS

Kitchen hoods tags match design and submitted information	Pass
Comment:	
Kitchen hoods are hung Level using 1/2" threaded rod	Pass
Comment:	
Kitchen hoods are supported using beam clamps and/or Unistrut per required structural and local AHJ requirements	Pass
Comment:	
Kitchen hoods are hung level front to back and side to side	Pass
Comment:	
Kitchen hoods are hung at 80" AFF	Pass
Comment:	
Kitchen Hoods are flush against the wall along the bottom and each of it's side walls.	Pass
Comment:	

Caulk is applied (less than 1/8" thick) from the hood against all wall surfaces or between connecting side to side hoods to prevent grease accumulation inside any crevice.	Pass
Comment:	
There are no penetrations into the hood canopy other than fire system nozzles	Pass
Comment:	
The hood is in "As New" condition with no visible damage, rust, pitting, or other blemishes	Pass
Comment:	
All protective film has been peeled away from the wall or other areas of impingement to assure it can be easily and fully removed prior to cleaning.	Pass
Comment:	
HOOD ACCESSORIES	
End panels are installed	Pass
Comment:	
Hood filters are installed	Pass
Comment:	
Grease cups are installed	Pass
Comment:	
Ceiling Wrappers are installed and the ceiling grid is fixed to the top of the ceiling wrappers	Pass
Comment:	
Hood control panel has been identified and is located as per plan, is accessible, and contains all components and temperature sensors to meet local interlock (normal and abnormal conditions) and heat auto on/off functionality.	Pass
Comment:	

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FIV – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

MUA Tag information matches design and submittal criteria	Pass
Comment:	
MUA Fan has a permanent tag for identification located on the unit located and sized for visual ease	Pass
Comment:	
MUA is installed in the proper location and orientation	Pass
Comment:	
MUA intake is a minimum 10ft from any exhaust, roof vent or dirty air source	Pass
Comment:	
Blower compartment and internal heater area is free of packing material, debris, and dirt	Pass
Comment:	
Blower wheel turns freely by hand (turn power off prior to testing)	Pass
Comment:	
All MUA compartment and control doors are fully accessible, minimum 36" clearance for service allowing the doors to fully open without restriction	Pass

Comment:

MUA Electrical disconnect is external to the unit and properly wired	Pass

Comment:

Outdoor air awning is installed and fitted with proper OA mesh filters	Pass

Comment:

Condensate drain is installed (for cooling MUA's) with proper traps, clean-outs, and drain away from the unit to an acceptable roof drain	Pass

Comment:

Refrigeration line sets are installed and connected properly with adequate supports per specifications	Pass

Comment:

Condenser is installed away from any grease producing exhaust fans and located as per roof plan	Pass

Comment:

Condenser's electrical disconnect is external to the unit and properly wired (if applicable)	Pass

Comment:

Condenser hail guards are installed (if applicable)	Pass

Comment:

All Condenser compartment and control doors are fully accessible, minimum 36" clearance for service allowing the doors to fully open without restriction (if applicable)	Pass

Comment:

Gas line is installed per specification and properly supported	N/A

Comment:

GAS LINE NOT INSTALLED. SEE ISSUES.

Gas line is installed per specification and properly supported and contains maintenance shut-off valve, trap, and regulator (if line pressure requires it). MUA is equipped with inlet gas pressure gauge to validate incoming gas pressure is suitable	N/A

Comment:

GAS LINE NOT INSTALLED. SEE ISSUES.

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FPT - BUILDING PRESSURE AND HOOD CONTAINMENT	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

FINAL TESTS	
HOOD CAPTURE TEST	
List equipment turned on for testing	
Comment:	
ALL	
List smoke candle type used	
Comment:	
OBSERVED COOKING	
Smoke test capture - Perimeter of hood (%)	
Comment:	
100	
Smoke test capture - Top of cooking surface (%)	
Comment:	
100	
WITNESS	
Date test was completed	08/09/2024

Comment:

TAB tech name / Firm

Comment:

WESLEY JOHN / NATIONAL TAB

Site super name / Firm

Comment:

OPEN STORE. NO SITE SUPER PRESENT.

Owner representative name / Firm (if Applicable)

Comment:

N/A

BUILDING PRESSURE

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

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FPT - KEF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

Exhaust fans wheel rotation is correct	Pass
Comment:	
TAB firm has balanced the exhaust fans to proper design levels	Fail
Comment: KITCHEN EXHAUST FAN SET TO 100% AND MEASURED AT 87% OF DESIGN AIR FLOW.	
All motor and electrical readings are below the full load rating of each fan	Fail
Comment: KITCHEN EXHAUST FAN MEASURED SLIGHTLY ABOVE FULL LOAD AMP RATING (11.9 OUT OF 11.6 AMPS). FAN KEPT AT THIS SETTING TO AID IN HOOD PERFORMANCE.	
Exhaust Fans do not have any unusual noise or vibration while operating	Pass
Comment:	
Smoke and Grease from exhaust fans appear to properly elevate above the parapet wall and off the roof.	Pass
Comment:	
Hoods have been started up by the manufacturers rep?	Pass
Comment:	

Hoods free of alarms?	Pass
Comment:	
Exhaust fans modulate to high speed when kitchen equipment is on and at cooking temperatures? If not, adjust modulation/offset down.	Pass
Comment:	

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FPT - RTU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

THERMOSTAT PROGRAMMING AND CALIBRATION

Time is correct on the thermostats	Pass
Comment:	
Occupied Time = 7:30 AM	Pass
Comment:	
Occupied Heat setpoint = 68	Pass
Comment:	
Occupied Cooling setpoint = 72	Pass
Comment:	
Dehumidification Setpoint = 55%	Pass
Comment:	
Occupied Fan = On	Pass
Comment:	

Unoccupied Time = 12:00AM	Pass
Comment:	
Unoccupied Heat setpoint = 60	Pass
Comment:	
Occupied Cooling setpoint = 80	Pass
Comment:	
Unoccupied Fan = Auto	Pass
Comment:	
Actual measured temperature is within +/-1 degree of temperature displayed on thermostat. If not calibrate the sensor	Pass
Comment:	
Actual measured RH is within +/-3 % of displayed RH at RTU or thermostat. If not calibrate the sensor	Pass
Comment:	
CONTROL WIRING VALIDATION	
Economizer Dry Bulb sensor wired	Pass
Comment:	
Economizer Dry Bulb sensor operational	Pass
Comment:	
OCP/OCC terminal wired correctly	Pass
Comment:	
Thermostat Wired correctly (R,C,Y1,Y2,W1,W2)	Pass
Comment:	
Humidity Sensor Wired correctly	Pass

Comment:

CALIBRATION & PROGRAMMING

RTU OA DB StPt, Reading Accuracy (+/- 2 degrees / 10 minute time to calibrate to actual reading)	N/A

Comment:

NO WHERE TO SET THIS ON THESE UNITS.

RTU MAT StPt, Reading Accuracy (+/- 2 degrees / 10 minute time to calibrate to actual reading)	N/A

Comment:

NO WHERE TO SET THIS ON THESE UNITS.

RTU MAT Low StPt

Comment:

NO WHERE TO SET THIS ON THESE UNITS.

RTU Low T Lockout

Comment:

NO WHERE TO SET THIS ON THESE UNITS.

Economizer set to 28 BTU/lb enthalpy setpoint.	N/A

Comment:

NO WHERE TO SET THIS ON THESE UNITS.

Temperature tests

Outside air temperature / humidity

Comment:

95.8 F / 58.1%

Full cooling LAT/H

Comment:

RTU-1 56.1 F / 83.4% RTU-2 56.7 F / 82.0%

Full heating LAT/H

Comment:

OUTDOOR AIR TEMP TOO HIGH TO TEST HEATING.

OUTDOOR AIR / RELIEF DAMPER	
If power exhaust installed, set point is higher than the OA damper setpoint	N/A
Comment:	
If power exhaust installed, open the OA damper above the power exhaust setpoint and ensure that the power exhaust turns on	N/A
Comment:	
If relief damper is installed, ensure that it is installed properly and can open freely.	N/A
Comment:	
OCCUPANCY VALIDATION	
Place the thermostat in "unoccupied" - Does the OA damper close fully	Pass
Comment:	
Stage cooling and Heating in "unoccupied" - Does the unit properly stage and does the OA damper remain closed	Pass
Comment:	
Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in High speed	Pass
Comment:	
Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in Low speed (if applicable)	Pass
Comment:	

06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

CheckList Information

Name :	FPT – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	05/30/2024 - Brianna Biggs - National TAB		
Completed Date :	08/12/2024 - Wesley John - National TAB		

CheckList Item Details

TAB firm has balanced the MUA to within proper design limits	Pass
Comment: MUA KEPT TO NEAR 90% OF DESIGN AIR FLOW TO COMPENSATE FOR LOW EXHAUST AIR FLOW.	
Blower wheel rotation is correct	Pass
Comment:	
MUA does not have any unusual noise or vibration while operating	Pass
Comment:	
Motor and electrical measurements are below the full load rating	Pass
Comment:	
Startup has been completed by the manufacturers rep?	Pass
Comment:	
Heater tested and is functional?	N/A
Comment: HEATER NOT TESTED. UNIT NOT CONNECTED TO GAS.	
Cooling is tested and is functional?	Yes

Comment:

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	340H796240232240100003
Model Num	YSJ150A3	ECC150A3E0A0007M
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	16x16
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	3.0	3.0
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.8

Drive Data	
	Actual
Motor Sheave Size	1VP56
Motor Bore Size	7/8"
Motor Sheave SetPt	3.0 TURNS OPEN
Fan Sheave Size	BK95
Fan Sheave Bore	1"
Belt CL Distance	20 1/2"
Num of Belts	1
Belt Size	B66
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	4500	4640
SF RPM	-	952
RA CFM	3825	3957
OA CFM	675	683
RL Voltage	-	208/209/209
RL Amperage	-	8.6/8.4/8.5
SF Rotation	-	CCW
RA Damper Position	-	NA
Min OA Damper Position	-	1 1/2"
Min OA Damper Type	-	SINGLE BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.78"
Fan Suction SP	-	-1.21"
Fan Discharge SP	-	0.54"
Total ESP	1.20"	1.32"
Fan Total SP	-	1.75"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Wesley John on 08/12/2024

National TAB

Project:06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

AHU/RTU

Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	R1	20X6	350	0.64	325	292	337	96.3
SGRD2	DINING	R1	20X6	350	0.64	30	28	319	91.1
SGRD3	DINING	R1	20X6	350	0.64	502	457	384	109.7
SGRD4	DINING	R1	20X6	350	0.64	212	196	346	98.9
SGRD5	DINING	R1	20X6	350	0.64	555	506	379	108.3
SGRD6	DINING	R1	20X6	350	0.64	364	330	361	103.1
SGRD7	DINING	R1	20X6	350	0.64	459	415	355	101.4
SGRD8	DINING	R1	20X6	350	0.64	576	511	373	106.6
SGRD9	DINING	R1	20X6	350	0.64	567	514	364	104.0
SGRD10	DINING	R1	20X6	350	0.64	443	392	368	105.1
SGRD11	DINING	R1	20X6	350	0.64	548	490	381	108.9
SGRD12	DINING	R1	20X6	350	0.64	408	361	370	105.7
SGRD13	WOMENS RR	D2	6"	50	1.0	81	74	54	108.0
SGRD14	HALL	D2	6"	100	1.0	108	99	104	104.0
SGRD15	MENS RR	D2	6"	50	1.0	37	35	47	94.0
SGRD16	HALL	D2	6"	100	1.0	67	62	98	98.0
Total				4500		5282	4762	4640	103.11%

Completed By: Wesley John on 08/12/2024

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: AHU/RTU

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	TRANE	TRANE
Serial Num	-	230950003MX
Model Num	YSJ120A3	ECC120A3E0A3YXA
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	16x16
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	3	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.7

Drive Data	
	Actual
Motor Sheave Size	1VP60
Motor Bore Size	7/8"
Motor Sheave SetPt	CLOSED
Fan Sheave Size	BK115
Fan Sheave Bore	1"
Belt CL Distance	20"
Num of Belts	1
Belt Size	B66
Belt Alignment	CORRECT

Test Data		
	Design	**Actual**
SF CFM	3600	3679
SF RPM	-	920
RA CFM	3350	3418
OA CFM	250	261
RL Voltage	-	210/211/211
RL Amperage	-	6.7/5.0/6.1
SF Rotation	-	CCW
RA Damper Position	-	N/A
Min OA Damper Position	-	1"
Min OA Damper Type	-	SINGLE BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.61"
Fan Suction SP	-	-0.89"
Fan Discharge SP	-	0.55"
Total ESP	1.20"	1.16"
Fan Total SP	-	1.44"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Wesley John on 08/12/2024

National TAB

Project:06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

AHU/RTU

Diffuser Supply (GRD)

RTU2/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	FRONT KITCHEN	L1	10"	340	1.0	269	296	348	102.4
SGRD2	FRONT KITCHEN	L1	10"	340	1.0	243	263	341	100.3
SGRD3	FRONT KITCHEN	L1	10"	340	1.0	279	302	358	105.3
SGRD4	FRONT KITCHEN	L1	10"	340	1.0	230	254	347	102.1
SGRD5	HOOD 1	ACPSP	140X6	780	4.55	715	770	751	96.3
SGRD6	FRONT KITCHEN	L1	10"	255	1.0	291	323	257	100.8
SGRD7	KITCHEN	D1	10"	250	1.0	286	310	270	108.0
SGRD8	KITCHEN	L1	10"	255	1.0	252	280	273	107.1
SGRD9	KITCHEN	D1	10"	250	1.0	250	278	256	102.4
SGRD10	KITCHEN	D1	10"	300	1.0	370	411	322	107.3
SGRD11	OFFICE	D1	8"	150	1.0	263	285	156	104.0
Total				3600		3448	3772	3679	102.19%

Completed By: Wesley John on 08/12/2024

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: FAN - Exhaust

Asset: EF2 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	COOK
Model Num	G-080-VG	90C17DL
Serial Num	-	060PK98016
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	DOWNBLAST	DOWNBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	JAKEL
Frame	-	NL
Horsepower	0.05	57 W
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	1.1
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	250	260
Fan RPM	-	DIRECT DRIVE
Fan Rotation	-	CCW
Motor RPM	-	DIRECT DRIVE
System SetPt	-	HIGH
RL Voltage	-	121
RL Amperage	-	0.9
Total ESP	0.3"	0.29"
Fan Inlet SP	-	-0.29"
Fan Discharge SP	-	ATM

Completed By: Wesley John on 08/12/2024

National TAB

Project:06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF2/RESTROOMS

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	MENS RR	G2	6"	125	1	124	-	129	103.2
EGRD2	WOMENS RR	G2	6"	125	1	138	-	131	104.8
Total				250		262	0	260	104%

Completed By: Wesley John on 08/12/2024

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: FAN - Exhaust

Asset: KEF1 AREA:HOOD-1

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	6226897
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO
Frame	-	NL
Horsepower	1	1
Motor Rpm	-	1800
Phase	1.0	1.0
Voltage (rated)	115	115
Amperage (rated)	-	11.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	2381	2082
Fan RPM	1567	1800
Fan Rotation	-	CCW
Motor RPM	-	1800
System SetPt	-	100%
RL Voltage	-	121
RL Amperage	-	11.9
Total ESP	1.0"	0.89"
Fan Inlet SP	-	-0.89"
Fan Discharge SP	-	ATM

Completed By: Wesley John on 08/12/2024

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: FAN - Supply

Asset: MUA1 AREA:HOOD-1

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	A1-D.250-15D-MPU	A1-D.250-15D-MPU
Serial Num	-	6226897
Type	MUA	MUA
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO
Frame	-	145T
Horsepower	1.0	2.0
Motor Rpm	-	1740
Phase	1	3
Voltage (rated)	115	208
Amperage (rated)	-	6.06
Service Factor	-	1.15

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	N/A
Flame Status (pass/fail)	-	N/A
Inlet Air Temp SetPt	55.0 F	55.0 F
Discharge Air Temp SetPt	60.0 F	60.0 F
Air Flow Switch SP Actual	-	0.29"

Test Data		
	Design	**Actual**
CFM	1976	1824
SF RPM	2162	1873
Motor RPM	-	1873
SF System SetPt	-	64.6 Hz
RL Voltage	-	138 VFD
RL Amperage	-	4.7 VFD
Total ESP	-	0.42"
Fan Discharge SP	-	0.42"

General	
	Actual
Fan Rotation Correct	YES

Completed By: Wesley John on 08/09/2024

Notes:
UNIT NOT CONNECTED TO GAS. HEAT NOT TESTED.
FLOW KEPT NEAR 90% OF DESIGN TO COMPENSATE FOR LOW HOOD EXHAUST AIR FLOW.

Written By: Wesley John on 08/12/2024

National TAB

Project: 06-03-24 CAVA HOUSTON, TX (GREENHOUSE RD)

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:COOKLINE

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	6030 ND-2-ACPSP-F	6030 ND-2
Job / Serial Num	-	6226897
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	127"	127"
Hood Width	60"	60"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	14"	14"
Supply Plenum Length	139"	139"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16x20	16x20
Filter Qty 1	7	7
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	14.56	14.56
Filter1 FPM	-	123
Filter2 FPM	-	143
Filter3 FPM	-	172
Filter4 FPM	-	165
Filter5 FPM	-	142
Filter6 FPM	-	116
Filter7 FPM	-	138
Filter Ave FPM(corr)	-	143
CFM	2381	2082

Cooking Equipment	
	Actual
Item 1	OVEN
Item 2	RANGE
Item 3	GRIDDLE
Item 4	FRYER

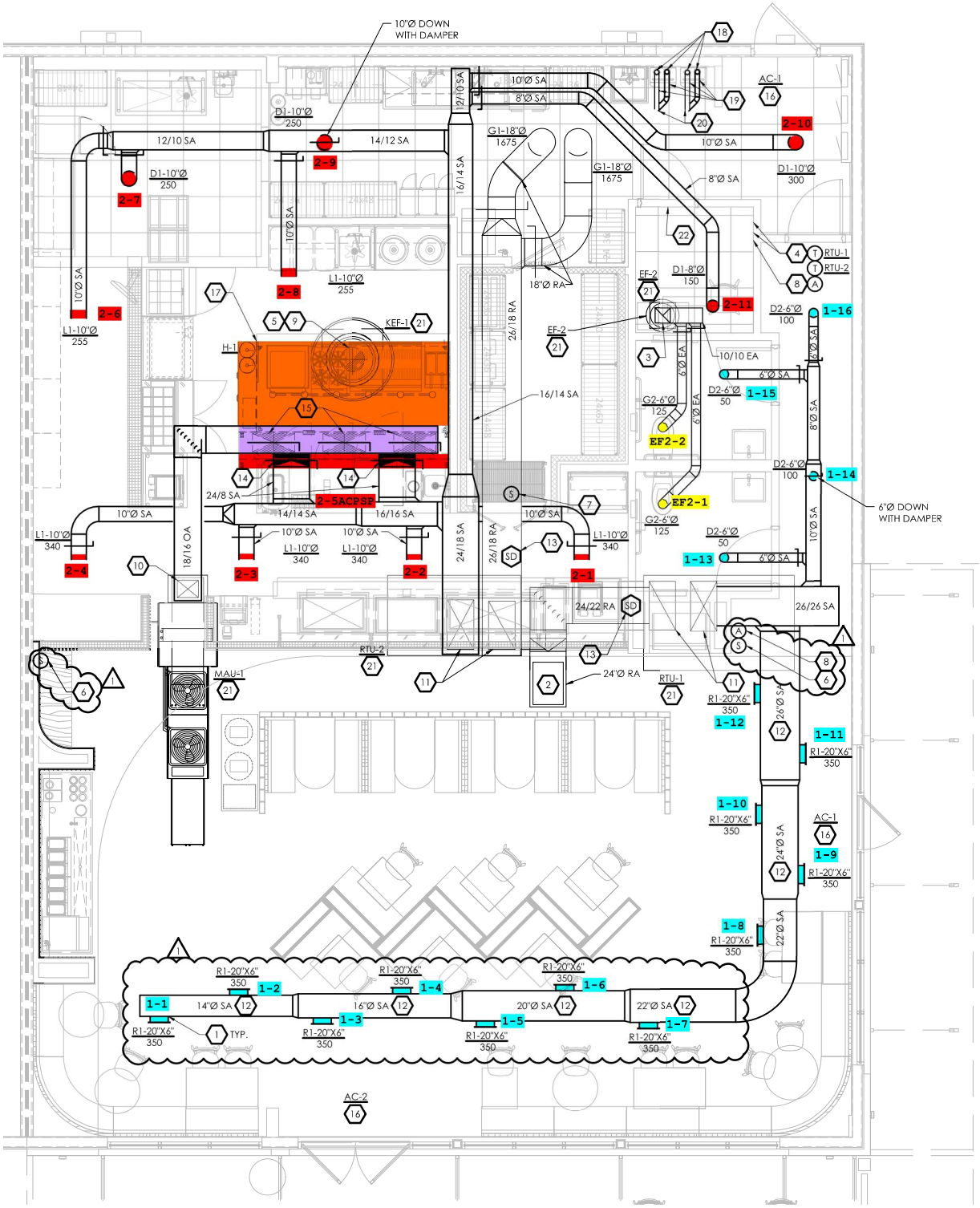
Test Data Supply		
	Design	**Actual**
Total AK Area	13.51	13.51
Kv factor (Vel)	0.90	0.90
Num of Readings	-	11
Reading1 FPM	-	124
Reading2 FPM	-	135
Reading3 FPM	-	139
Reading4 FPM	-	147
Reading5 FPM	-	120
Reading6 FPM	-	145
Reading7 FPM	-	169
Reading8 FPM	-	179
Reading9 FPM	-	155
Reading10 FPM	-	157
Reading11 FPM	-	183
Ave FPM(corr)	-	150
CFM	1976	1824

Completed By: Wesley John on 08/12/2024

Notes:
HOOD EXHAUST OPERATING AT 87% OF DESIGN AIR FLOW AT 100% SET POINT.
MUA KEPT AT 90% OF DESIGN AIR FLOW TO MAINTAIN DESIGN NET.

Written By: Wesley John on 08/12/2024

LANDLORD SHALL BE RESPONSIBLE FOR ALL ROOFTOP PACKAGED UNITS (RTU-1 & RTU-2) ASSOCIATED WORK INCLUDING PROVIDING AND INSTALLING UNIT, STRUCTURAL ANGLE/SUPPORTS, ROOF CURB, DUCT DROPS, ELECTRICAL WIRING, GAS PIPING AND STARTUP/COMMISSIONING.



1 M101

MECHANICAL PLAN

1/4" = 1'-0"