Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 06/20/2024

PROJECT

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

7017 Hwy 6 N

HOUSTON, TX 77084

Client

CAVA

702 H ST NW

2nd floor

Washington, DC 20001

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

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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

- Hood Alarm
- KEF Low Air Flow
- MUA Damper
- MUA Heating/Cooling
- Room temp sensor installed next to hood.

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

Project Issue Information

Issue Name : Hood Alarm

Description : Core #01 pressure switch fault alarm on hood. Recommend troubleshooting.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 08/05/2024 - Wesley John - National TAB

Project Issue File Details

08/05/2024

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

Project Issue Information

Issue Name : KEF Low Air Flow

Description : KEF is operating at 82% of design air flow at max amps. Cannot determine cause of air flow deficiency.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

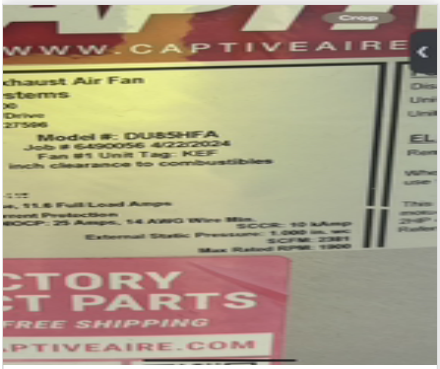
Status : Open

Priority :

Asset Tag :

Originated Date : 08/05/2024 - Wesley John - National TAB

Project Issue File Details



08/05/2024

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

Project Issue Information

Issue Name : MUA Damper

Description : MUA automatic damper did not open. Damper was opened manually for testing. Recommend troubleshooting damper

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 08/05/2024 - Wesley John - National TAB

Project Issue File Details

08/05/2024

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

Project Issue Information

Issue Name : MUA Heating/Cooling

Description : MUA heating and cooling did not function. Recommend troubleshooting.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 08/05/2024 - Wesley John - National TAB

Project Issue File Details

08/05/2024

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

Project Issue Information

Issue Name :	Room temp sensor installed next to hood.		
Description :	Room temp sensor installed next to hood making it an inaccurate temp source during normal operations.		
Created By :	National TAB	**Assigned To :**	National TAB - Will Turnbough
Status :	Open		
Priority :	High	**Asset Tag :**	
Originated Date :	06/25/2024 - Cody Collett - National TAB		

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	3400	3452	3050	3089	350	363	10.3%	10.5%						
RTU-2	DINING	4000	4067	3350	3430	650	637	16.3%	15.7%						
MUA-1	COOKLINE									1976	1787				
KEF-1	KITCHEN HD											2381	1951		
EF-2	MENS RESTROOM													125	122
EF-3	WOMENS RESTROOM													125	124
TOTALS		7400	7519	6400	6519	1000	1000			1976	1787	2381	1951	250	246

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2976	2787
TOTAL EXHAUST	2631	2197
NET AIRFLOW	345	590

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.009
SIDE	-
REAR	0.012
AVERAGE	**0.0105**

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

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

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FIV - EF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - 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:	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FIV - HVAC DUCTWORK	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	08/05/2024 - 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	N/A
Comment: RESTROOM EXHAUST FANS ARE CEILING MOUNTED	
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.	N/A
Comment: RESTROOM EXHAUST FANS ARE CEILING MOUNTED	
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:	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FIV - RTU'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - Wesley John - National TAB		

CheckList Item Details

RTU IDENTIFICATION, ORIENTATION & LOCATION

Each RTU is tagged for proper identification with tags sized and placed on the fan for visual ease	Pass
Comment:	
Identify and ensure the RTU label information and size is correct	Pass
Comment:	
Ensure proper location of unit	Pass
Comment:	
Ensure orientation of curb & RTU is per plan	Pass
Comment:	
Ensure Packing in the blower compartment has been removed	Pass
Comment:	

RTU - INSTALLATION DETAILS

With disconnect switch "off" spin the indoor and outdoor fan wheel's by hand and ensure they spin freely	Pass

Comment:

Ensure Roof Curb is fully flashed by roofing material and secured and curb is level	Pass

Comment:

Inspect the interior of the supply heat exchange compartment and return air compartment - validate that the duct is flashed and sealed to the top of the curb to prevent leakage or short cycling	Pass

Comment:

Hail guards installed on outdoor condenser coils	Pass

Comment:

RTU - ACCESSORIES

Power connected & disconnect installed	Pass

Comment:

Gas line connected per specification (size, painting, supports, shut-off valves, traps)	Pass

Comment:

OA hood & filters installed	Pass

Comment:

Economizer wired to control board	Pass

Comment:

Evaporator coil filters are properly installed with specified MERV rating	Fail

Comment:

CARRIER PROVIDED FIBERGLASS FILTERS INSTALLED. RECOMMEND INSTALLING PROPER FILTERS.

Economizer damper is installed properly	Pass

Comment:

Economizer OA temperature / enthalpy sensors installed and wired	Pass

Comment:	
Thermostat and humidity (if applicable) control wires wired to RTU terminals	Pass
Comment:	
Condensate drain installed per specification	Pass
Comment:	
Condensate line drains away from unit to a approved roof drain	Pass
Comment:	
Belts are tight?	N/A
Comment:	
Pulleys aligned?	N/A
Comment:	
MERV rated filters are installed and are clean?	Fail
Comment: CARRIER PROVIDED FIBERGLASS FILTERS INSTALLED. RECOMMEND INSTALLING PROPER FILTERS.	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FIV – HOODS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - 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:	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FIV – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - 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)	N/A
Comment:	
Gas line is installed per specification and properly supported	Pass
Comment:	
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	Pass

Comment:

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FPT - BUILDING PRESSURE AND HOOD CONTAINMENT	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - Wesley John - 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 CARTRIDGE

Smoke test capture - Perimeter of hood (%)

Comment:

100

Smoke test capture - Top of cooking surface (%)

Comment:

100

WITNESS

Date test was completed	07/22/2024

Comment:

TAB tech name / Firm

Comment:

WESLEY JOHN / NATIONAL TAB

Site super name / Firm

Comment:

ERIC SIMMONS / WARWICK CONSTRUCTION

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

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FPT - KEF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - 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: KEF-1 IS SET TO 100% AND OVER AMPING. FAN MEASURED AT 82% OF DESIGN AIR FLOW.	
All motor and electrical readings are below the full load rating of each fan	Fail
Comment: KEF-1 MEASURED AT 12.0 OUT OF 11.6 FULL LOAD AMPS. FAN KEPT AT 12.0 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?	Fail
Comment: "MUA INTERLOCK 1" AND "CORE #01 PRESSURE SWITCH FAULT" ALARMS ON HOOD.	
Exhaust fans modulate to high speed when kitchen equipment is on and at cooking temperatures? If not, adjust modulation/offset down.	Pass
Comment:	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FPT - RTU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - Wesley John - National TAB		

CheckList Item Details

THERMOSTAT PROGRAMMING AND CALIBRATION

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

Unoccupied Time = 12:00AM	Yes
Comment:	
Unoccupied Heat setpoint = 60	Yes
Comment:	
Occupied Cooling setpoint = 80	Yes
Comment:	
Unoccupied Fan = Auto	Yes
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)	Pass

Comment:

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

Comment:

RTU MAT Low StPt

Comment:

53.0 F

RTU Low T Lockout

Comment:

32.0 F

Economizer set to 28 BTU/lb enthalpy setpoint.	Pass

Comment:

Temperature tests

Outside air temperature / humidity

Comment:

90.8 F / 52.6%

Full cooling LAT/H

Comment:

RTU-1 56.8 F / 88.8% RTU-2 56.1 F / 88.2%

Full heating LAT/H

Comment:

OUTDOOR AIR TEMPERATURE 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: HEATING NOT TESTED DUE TO HIGH OUTDOOR AIR TEMPERATURE	
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:	

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	FPT – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - Wesley John - National TAB		

CheckList Item Details

TAB firm has balanced the MUA to within proper design limits	Pass
Comment: MUA AIR FLOW KEPT TO 90% TO COMPENSATE FOR LOW HOOD 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?	Fail
Comment: MUA INTERLOCK ALARM ON HOOD. MUA AUTOMATIC DAMPER OPENED MANUALLY TO PERFORM TAB.	
Heater tested and is functional?	Fail
Comment: GAS HEAT DID NOT FIRE.	

Cooling is tested and is functional?	No

Comment:

COOLING DID NOT OPERATE.

06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/20/2024 - Brianna Biggs - National TAB		
Completed Date :	07/24/2024 - Wesley John - National TAB		

CheckList Item Details

STORE FRONT

Comment:

07/22/2024

RTU-1

Comment:

07/24/2024

RTU-2

Comment:

07/22/2024

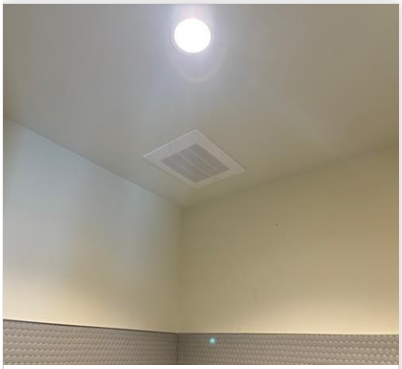
KEF-1

Comment:

07/22/2024

EF-2

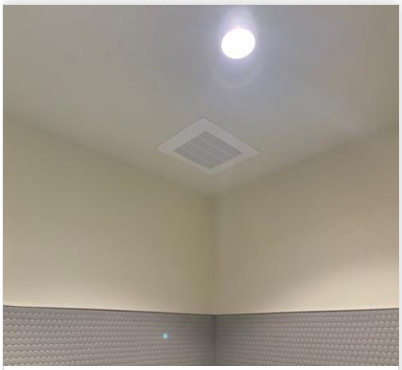
Comment:



07/22/2024

EF-3

Comment:



07/22/2024

MUA-1

Comment:

07/22/2024

HOOD-1

Comment:

07/22/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

System/Unit: AHU/RTU

Asset: RTU1 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	1424P69413
Model Num	48HCD09	48FCDN09B2A6A6W0A0
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	20x36x1
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	3	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	3

Test Data		
	Design	**Actual**
SF CFM	3400	3452
SF RPM	-	1810
RA CFM	3050	3089
OA CFM	350	363
RL Voltage	-	491/488/489
RL Amperage	-	2.6/2.8/2.6
SF Rotation	-	CCW
SF System SetPt	-	8.4 VDC
RA Damper Position	-	89%
Min OA Damper Position	-	2.95 VDC (11%)
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.78"
Fan Suction SP	-	-1.29"
Fan Discharge SP	-	0.43"
Total ESP	1.0	1.21"
Fan Total SP	-	1.72"

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

Completed By: Wesley John on 07/23/2024

Diffuser Supply (GRD)

RTU1/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	REGISTER	L1	10"	250	1.0	218	-	274	109.6
SGRD2	REGISTER	L1	10"	250	1.0	228	-	267	106.8
SGRD3	REGISTER	L1	10"	250	1.0	183	-	230	92.0
SGRD4	REGISTER	L1	10"	250	1.0	213	-	241	96.4
SGRD5	KITCHEN HOOD	ACPSP	127X6	780	4.52	890	-	803	102.9
SGRD6	KITCHEN	D1	10"	350	1.0	318	-	360	102.9
SGRD7	KITCHEN	D1	10"	280	1.0	348	-	273	97.5
SGRD8	KITCHEN	D1	10"	280	1.0	335	-	266	95.0
SGRD9	KITCHEN	D1	10"	280	1.0	350	-	283	101.1
SGRD10	KITCHEN	D1	10"	280	1.0	348	-	294	105.0
SGRD11	OFFICE	D1	8"	150	1.0	90	-	161	107.3
Total				3400		3521	0	3452	101.53%

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

System/Unit: AHU/RTU

Asset: RTU2 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	1424P69412
Model Num	48HCD12	48FCDN12B3A6A6W0A0
Type	RTU	RTU
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE
Num OA Filters 1	-	1
OA Filter Size 1	-	20x36x1
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	3	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	5.6

Test Data		
	Design	**Actual**
SF CFM	4000	4067
SF RPM	-	2082
RA CFM	3350	3430
OA CFM	650	637
RL Voltage	-	491/489/489
RL Amperage	-	3.7/3.4/3.5
SF Rotation	-	CCW
SF System SetPt	-	8.9 VDC
RA Damper Position	-	90%
Min OA Damper Position	-	2.85 VDC (10%)
Min OA Damper Type	-	OPPOSED BLADE

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.89"
Fan Suction SP	-	-1.17"
Fan Discharge SP	-	0.67"
Total ESP	1.0	1.56"
Fan Total SP	-	1.84"

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

Completed By: Wesley John on 07/23/2024

Notes:
DINING GRILLES INACCESSIBLE DUE TO HEIGHT AND DECORATIVE LATTICE PLACED BELOW DUCT. GRILLES WERE MEASURED FOR AIR FLOW VIA TOTAL DUCT TRAVERSE. NO DRAFTING OBSERVED. DINING ROOM FEELS TO BE A CONSISTENT TEMPERATURE THROUGHOUT.

Written By: Wesley John on 07/23/2024

National TAB

Project:06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

AHU/RTU

Diffuser Supply (GRD)

RTU2/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	LOBBY	R1		450	TRAVERSE	-	-		-
SGRD2	LOBBY	R1		250	TRAVERSE	-	-		-
SGRD3	LOBBY	R1		450	TRAVERSE	-	-		-
SGRD4	LOBBY	R1		250	TRAVERSE	-	-		-
SGRD5	LOBBY	R1		250	TRAVERSE	-	-		-
SGRD6	LOBBY	R1		250	TRAVERSE	-	-		-
SGRD7	LOBBY	R1		250	TRAVERSE	-	-		-
SGRD8	LOBBY	R1		400	TRAVERSE	-	-		-
SGRD9	LOBBY	R1		400	TRAVERSE	-	-		-
SGRD10	LOBBY	R1		400	TRAVERSE	-	-		-
SGRD11	LOBBY	R1		400	TRAVERSE	3836	-	3819	954.8
SGRD12	CORRIDOR	D2	8"	150	1.0	133	-	143	95.3
SGRD13	BATHROOM	D2	6"	50	1.0	75	-	52	104.0
SGRD14	BATHROOM	D2	6"	50	1.0	70	-	53	106.0
Total				4000		4114	0	4067	101.68%

Completed By: Wesley John on 07/23/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MENS RESTROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	COOK
Model Num	SP-A290	GEMINI 140
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Motor Data		
	Design	**Actual**
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	0.03	15 W
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	125	122
Fan RPM	-	1550
Fan Rotation	-	CCW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	120
RL Amperage	-	0.3
Total ESP	0.3"	N/A
Fan Inlet SP	-	N/A
Fan Discharge SP	-	N/A

Completed By: Wesley John on 07/23/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

System/Unit: FAN - Exhaust

Asset: EF3 AREA:WOMENS RESTROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	COOK
Model Num	SP-A290	GEMINI 140
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	CEILING	CEILING

Motor Data		
	Design	**Actual**
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	0.03	15 W
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	125	124
Fan RPM	-	1550
Fan Rotation	-	CCW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	120
RL Amperage	-	0.3
Total ESP	0.03"	N/A
Fan Inlet SP	-	N/A
Fan Discharge SP	-	N/A

Completed By: Wesley John on 07/23/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

System/Unit: FAN - Exhaust

Asset: KEF1 AREA:HOOD-1

Unit Data		
	Design	**Actual**
MFG	CAPTIVE-AIRE	CAPTIVE-AIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	6490056
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	UPBLAST	UPBLAST

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

Test Data		
	Design	**Actual**
CFM	2381	1951
Fan RPM	1567	1672
Fan Rotation	-	CCW
Motor RPM	-	1672
System SetPt	-	100%
RL Voltage	-	121
RL Amperage	-	12.0
Total ESP	1.0"	0.90"
Fan Inlet SP	-	-0.90"
Fan Discharge SP	-	ATM

Completed By: Wesley John on 07/23/2024

Notes:
FAN IS SLIGHTLY OVER AMPING AT SET POINT. FAN WHEEL TACHED AT 1672 RPM. SET POINT KEPT AT 100% TO AID IN SMOKE CAPTURE.

Written By: Wesley John on 07/23/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

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	-	6490056
Type	MUA	MUA
Configuration	VERTICAL DISCHARGE	VERTICAL DISCHARGE

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO
Frame	-	145T
Horsepower	2.0	2.0
Motor Rpm	-	1745
Phase	3	3
Voltage (rated)	460	460
Amperage (rated)	-	2.82
Service Factor	-	1.15

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	NO
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	-	0.39"

Test Data		
	Design	**Actual**
CFM	1976	1787
SF RPM	2143	1745
Motor RPM	-	1745
SF System SetPt	-	60.0 Hz
RL Voltage	-	263 @ VFD
RL Amperage	-	1.9 @ VFD
Total ESP	-	0.38"
Fan Discharge SP	-	0.38"

General	
	Actual
Fan Rotation Correct	YES

Completed By: Wesley John on 07/23/2024

Notes:
MUA KEPT AT 90% OF DESIGN AIR FLOW TO COMPENSATE FOR LOW HOOD EXHAUST AIR FLOW.

Written By: Wesley John on 07/23/2024

National TAB

Project: 06-24-24 CAVA HOUSTON, TX (COPPERFIELD)

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-ACPSP-F
Job / Serial Num	-	6490056
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	-	130
Filter2 FPM	-	136
Filter3 FPM	-	128
Filter4 FPM	-	146
Filter5 FPM	-	137
Filter6 FPM	-	131
Filter7 FPM	-	133
Filter Ave FPM(corr)	-	134
CFM	2381	1951

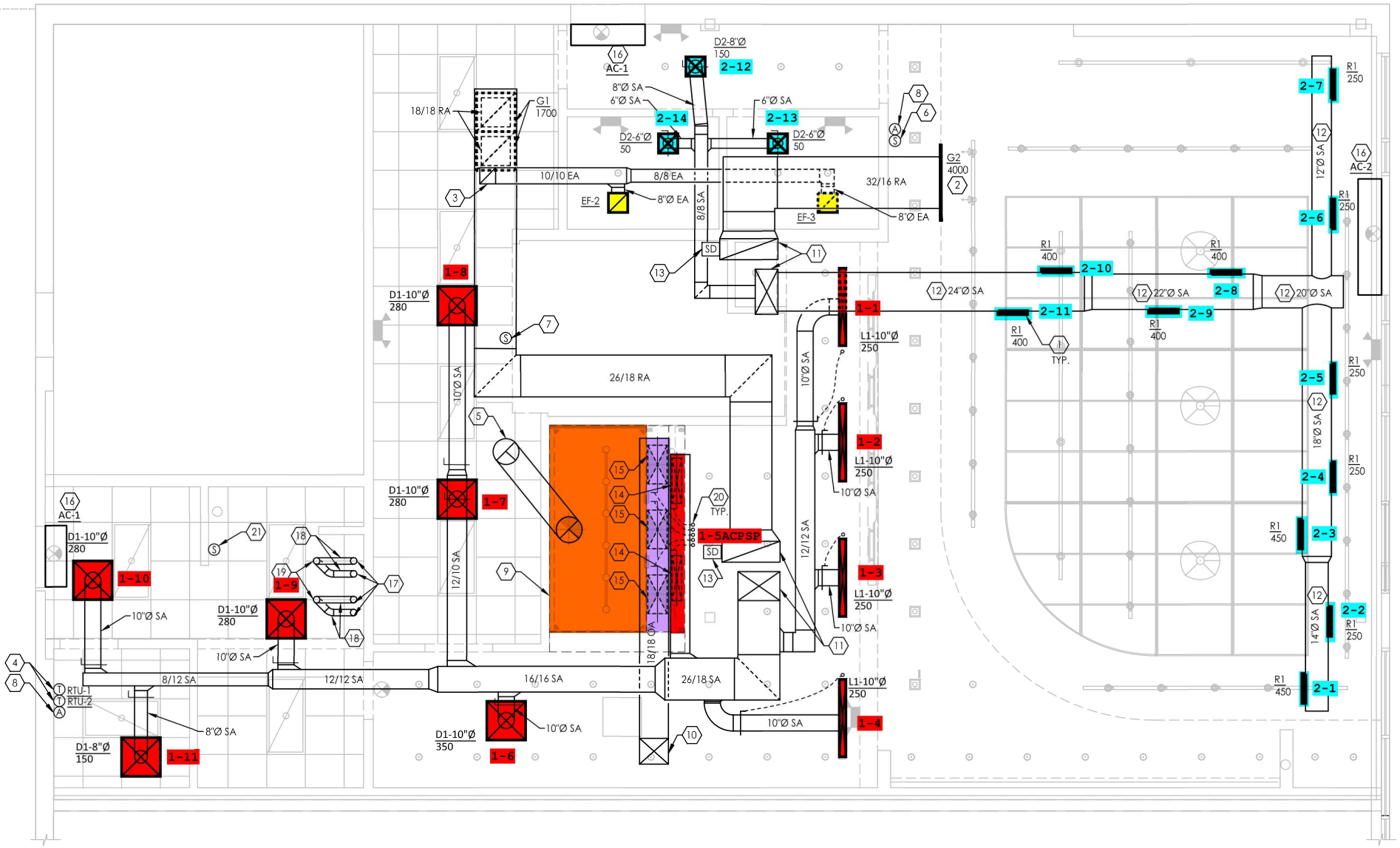
Cooking Equipment	
	Actual
Item 1	OVEN
Item 2	RANGE
Item 3	GRIDDLE
Item 4	FRYER

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	-	161
Reading2 FPM	-	143
Reading3 FPM	-	135
Reading4 FPM	-	153
Reading5 FPM	-	145
Reading6 FPM	-	138
Reading7 FPM	-	157
Reading8 FPM	-	151
Reading9 FPM	-	135
Reading10 FPM	-	157
Reading11 FPM	-	143
Ave FPM(corr)	-	147
CFM	1976	1787

Completed By: Wesley John on 07/23/2024

Notes:
KEF-1 IS OVER AMPING AT 82% OF DESIGN AIR FLOW. MUA KEPT AT 90% OF DESIGN AIR FLOW TO COMPENSATE.

Written By: Wesley John on 07/23/2024



1 MECHANICAL PLAN

1/4" = 1'-0"

Date: 8/5/2024