Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 02/05/2025

Completed By: National TAB

PROJECT

01-27-25 CAVA FISHERS, IN (116TH ST)

11594 WHISTLE DRIVE

FISHERS, IN 46037

Client

CAVA

702 H ST NW

2nd floor

Washington, DC 20001

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

Table Of Contents

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

FCU's w/ Diffusers
Each of the FCU's were measured at their terminal devices utilizing a flow hood. The sum of these readings is equal to the total flow for that particular unit. The total flow of each FCU was then adjusted to within tolerance of the specified design. Each terminal diffuser was balanced to within tolerance of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s). Any equipment that fell outside of this 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.

Ceiling Exhaust Fans
The ceiling exhaust fans were measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. 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

- FCU1 missing diffuser 1-11
- FCU1 missing linear grilles
- FCU1/FCU2 cooling lines not connected
- FCU1/FCU2 motorized dampers for OA not operational
- FCU1/FCU2 need new filters
- FCU1/FCU2 using temporary thermostats
- FCU2 all sidewall grilles missing air scoop dampers
- MAU control door cannot open fully
- MAU no condensate line installed
- MAU not interlocked with hood

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU1 missing diffuser 1-11

Description : Missing diffuser on FCU1 in the back labeled 1-11 on the GRD.

Created By : National TAB

Assigned To : National TAB - Jacob Davidson

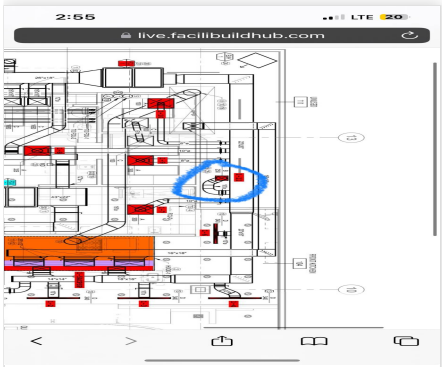
Status : Open

Priority : Urgent

Asset Tag :

Originated Date : 01/27/2025 - Jacob Davidson - National TAB

Project Issue File Details



01/27/2025

01/27/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU1 missing linear grilles

Description : None of the linear grilles are installed on FCU1. These grilles will control the airflow to these diffusers so airflow cannot be set currently.

Created By : National TAB

Assigned To : National TAB - Jacob Davidson

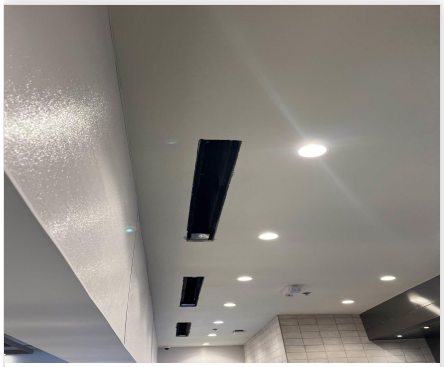
Status : Open

Priority : High

Asset Tag :

Originated Date : 01/27/2025 - Jacob Davidson - National TAB

Project Issue File Details



01/27/2025

01/27/2025

01/27/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU1/FCU2 cooling lines not connected

Description : Cooling lines have not been connected to units so cooling is not active at the time of TAB and cannot be measured.

Created By :	National TAB	**Assigned To :**	National TAB - Jacob Davidson
Status :	Open		
Priority :	Medium	**Asset Tag :**	
Originated Date :	01/29/2025 - Jacob Davidson - National TAB		

Project Issue File Details

01/29/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

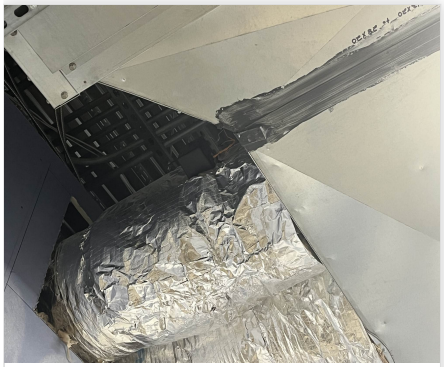
Project Issue Information

Issue Name : FCU1/FCU2 motorized dampers for OA not operational

Description : Motorized dampers for OA should be connected to 120V and synced with the occupied/unoccupied signal from a time clock. Currently neither OA damper is powered.

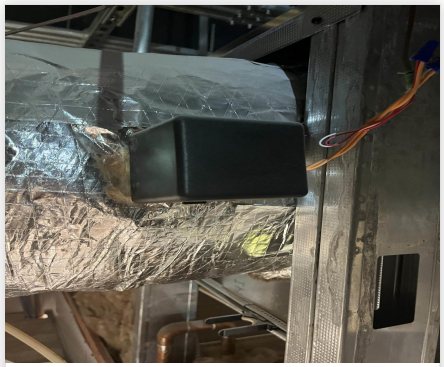
Created By :	National TAB	**Assigned To :**	National TAB - Jacob Davidson
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	01/28/2025 - Jacob Davidson - National TAB		

Project Issue File Details



01/28/2025

01/28/2025



01/28/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU1/FCU2 need new filters

Description : Filters are dirty for both FCU. Recommend replacing. They both take 4 - 16x24X2 filters.

Created By : National TAB

Assigned To : National TAB - Jacob Davidson

Status : Open

Priority : Low

Asset Tag :

Originated Date : 01/28/2025 - Jacob Davidson - National TAB

Project Issue File Details

01/28/2025

01/28/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU1/FCU2 using temporary thermostats

Description : Both FCU are using temporary stats and setpoints will not be able to be saved.

Created By : National TAB

Assigned To : National TAB - Jacob Davidson

Status : Open

Priority : High

Asset Tag :

Originated Date : 01/27/2025 - Jacob Davidson - National TAB

Project Issue File Details

01/27/2025

01/27/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : FCU2 all sidewall grilles missing air scoop dampers

Description : All sidewall grilles on FCU2 do not have air scoop dampers per their design on M-501. Tech will not be able to balance air to each diffusers design CFM.

Created By :	National TAB	**Assigned To :**	National TAB - Jacob Davidson
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	01/28/2025 - Jacob Davidson - National TAB		

Project Issue Response Details

- **01/28/2025 National TAB - Jacob Davidson**
  - Pics added

01/28/2025

01/28/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : MAU control door cannot open fully

Description : Control door does not maintain minimum 36” clearance.

Created By :	National TAB	**Assigned To :**	National TAB - Jacob Davidson
Status :	Open		
Priority :	Medium	**Asset Tag :**	
Originated Date :	01/27/2025 - Jacob Davidson - National TAB		

Project Issue File Details

01/27/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : MAU no condensate line installed
Description : Condensate drain is not installed on MAU.

Created By : National TAB
Assigned To : National TAB - Jacob Davidson
Status : Open
Priority : Low
Asset Tag :
Originated Date : 01/28/2025 - Jacob Davidson - National TAB

Project Issue File Details

01/28/2025

01-27-25 CAVA FISHERS, IN (116TH ST)

Project Issue Information

Issue Name : MAU not interlocked with hood

Description : Hood and MAU do not seem to be synchronized. A CAT5 cable was never installed between the VFD and hood panel. Unit was able to be set manually as a freestanding unit.

Created By :	National TAB	**Assigned To :**	National TAB - Jacob Davidson
Status :	Open		
Priority :	Urgent	**Asset Tag :**	
Originated Date :	01/27/2025 - Jacob Davidson - National TAB		

Project Issue File Details

01/27/2025

01/27/2025

01/27/2025

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
FCU-1	KITCHEN	3475	3455	3127	3455	348	0	10.0%	0.0%						
FCU-2	DINING	3055	3288	2566	3288	489	0	16.0%	0.0%						
MUA-1	KITCHEN HOOD									1976	1974				
KF-1	KITCHEN HOOD											2381	2402		
CEF-1	RESTROOM													100	131
CEF-2	RESTROOM													100	130
TOTALS		6530	6743	5693	6743	837	0			1976	1974	2381	2402	200	261

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2813	1974
TOTAL EXHAUST	2581	2663
NET AIRFLOW	232	-689

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	-0.0161
SIDE	
REAR	-0.0096
AVERAGE	**-0.0129**

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:

Both FCU have their OA dampers closed because they were not powered for the duration of the TAB. OA was unable to be set manually.

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

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FIV - EF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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)	N/A
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:	

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FIV - HVAC DUCTWORK	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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:	
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	Fail
Comment: MISSING DAMPERS ON FCU2 FRONT DINING ROOM	
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:	
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	N/A
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:	
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.	N/A
Comment:	

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FIV - RTU'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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	N/A
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	N/A
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	N/A
Comment:	
Hail guards installed on outdoor condenser coils	N/A
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	N/A
Comment:	
Economizer wired to control board	N/A
Comment:	
Evaporator coil filters are properly installed with specified MERV rating	Pass
Comment: NEEDS NEW FILTERS	
Economizer damper is installed properly	Pass
Comment:	
Economizer OA temperature / enthalpy sensors installed and wired	N/A

Comment:	
Thermostat and humidity (if applicable) control wires wired to RTU terminals	N/A
Comment:	
Condensate drain installed per specification	Pass
Comment:	
Condensate line drains away from unit to a approved roof drain	N/A
Comment:	
Belts are tight?	N/A
Comment:	
Pulleys aligned?	N/A
Comment:	
MERV rated filters are installed and are clean?	Fail
Comment: MERV FILTERS ARE NOT CLEAN	

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FIV – HOODS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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.	Fail
Comment: HOOD AND MAU ARE NOT INTERLOCKED.	

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FIV – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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	Fail

Comment:

CONTROL DOOR DOES NOT MEET CLEARANCE REQUIREMENTS

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	

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	Fail

Comment:

CONDENSATE DRAIN NOT INSTALLED

Refrigeration line sets are installed and connected properly with adequate supports per specifications	N/A

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)	N/A

Comment:

Condenser hail guards are installed (if applicable)	N/A

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	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:

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FPT - BUILDING PRESSURE AND HOOD CONTAINMENT	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - 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 S102 SMOKE EMITTER

Smoke test capture - Perimeter of hood (%)

Comment:

100%

Smoke test capture - Top of cooking surface (%)

Comment:

100%

WITNESS

Date test was completed	01/29/2025

Comment:

TAB tech name / Firm

Comment:

JACOB DAVIDSON

Site super name / Firm

Comment:

RON HAUSFELD / OLIO 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:

NEGATIVE. TECH WAS UNABLE TO SET OA BECAUSE OA DAMPERS WERE NOT ENERGIZED AND COULD NOT BE OPENED MANUALLY.

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FPT - KEF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - National TAB		

CheckList Item Details

Exhaust fans wheel rotation is correct	Pass
Comment:	
TAB firm has balanced the exhaust fans to proper design levels	Pass
Comment:	
All motor and electrical readings are below the full load rating of each fan	Pass
Comment:	
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:

HOOD HAS A CORE FAULT ERROR MESSAGE

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

Comment:

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FPT - RTU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - National TAB		

CheckList Item Details

THERMOSTAT PROGRAMMING AND CALIBRATION

Time is correct on the thermostats	Fail
Comment: TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.	
Occupied Time = 7:30 AM	Fail
Comment: TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.	
Occupied Heat setpoint = 68	Fail
Comment: TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.	
Occupied Cooling setpoint = 72	Fail
Comment: TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.	
Dehumidification Setpoint = 55%	Fail
Comment: TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.	
Occupied Fan = On	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Unoccupied Time = 12:00AM	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Unoccupied Heat setpoint = 60	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Occupied Cooling setpoint = 80	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Unoccupied Fan = Auto	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Actual measured temperature is within +/-1 degree of temperature displayed on thermostat. If not calibrate the sensor	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Actual measured RH is within +/-3 % of displayed RH at RTU or thermostat. If not calibrate the sensor	Fail

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

CONTROL WIRING VALIDATION	
Economizer Dry Bulb sensor wired	N/A

Comment:

Economizer Dry Bulb sensor operational	N/A

Comment:

OCP/OCC terminal wired correctly	N/A

Comment:

Thermostat Wired correctly (R,C,Y1,Y2,W1,W2)	N/A

Comment:

Humidity Sensor Wired correctly	N/A

Comment:

CALIBRATION & PROGRAMMING

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

Comment:

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

Comment:

RTU MAT Low StPt

Comment:

N/A ONLY MOTORIZED DAMPER SET FOR OCCUPIED/UNOCCUPIED FOR ECONOMIZER

RTU Low T Lockout

Comment:

N/A ONLY MOTORIZED DAMPER SET FOR OCCUPIED/UNOCCUPIED FOR ECONOMIZER

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

Comment:

Temperature tests

Outside air temperature / humidity

Comment:

42.1 DEGREES F / 33.6% RH

Full cooling LAT/H

Comment:

COOLING NOT HOOKED UP TO EITHER FCU AT THIS TIME.

Full heating LAT/H

Comment:

FCU1 98.5 DEGREES F / 19.5%RH FCU2 99.6 DEGREES F / 21.7%RH

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	N/A

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Stage cooling and Heating in "unoccupied" - Does the unit properly stage and does the OA damper remain closed	N/A

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in High speed	N/A

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

Place the thermostat in "Occupied" - Does the OA damper open to the TAB preset minimum position in Low speed (if applicable)	N/A

Comment:

TEMP THERMOSTATS INSTALLED. UNABLE TO SET SETPOINTS.

01-27-25 CAVA FISHERS, IN (116TH ST)

CheckList Information

Name :	FPT – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/22/2025 - Brianna Biggs - National TAB		
Completed Date :	02/05/2025 - Jacob Davidson - National TAB		

CheckList Item Details

TAB firm has balanced the MUA to within proper design limits	Pass
Comment:	
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:	
Heater tested and is functional?	Fail
Comment:	
Cooling is tested and is functional?	No

Comment:

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: AHU/RTU

Asset: FCU1 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	4724U29311
Model Num	40RFAA12A2A6	40RFAA12A2A6AUA0A0
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	NONE
OA Filter Size 1	-	NONE
Num Final Filter 1	-	4
Final Filter Size 1	-	16X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	2.4
Motor Rpm	-	NA
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	3

Test Data		
	Design	**Actual**
SF CFM	3475	3455
SF RPM	-	DD ECM
RA CFM	3127	3455
OA CFM	348	0
RL Voltage	-	497/497/498
RL Amperage	-	2.4/2.5/2.6
SF Rotation	-	CCW
SF System SetPt	-	9.96 VDC POSITION C 100%
RA Damper Position	-	N/A
Min OA Damper Position	-	CLOSED
Min OA Damper Type	-	MOTORIZED DAMPER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	0.17"
Fan Suction SP	-	-0.34"
Fan Discharge SP	-	0.24"
Total ESP	1.0"	0.58"
Fan Total SP	-	0.41"

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

Completed By: Jacob Davidson on 01/29/2025

Notes:
ECONOMIZER IS JUST A MOTORIZED DAMPER THAT OPENS FULLY OR CLOSES FULLY. THE DAMPER WAS NOT POWERED AND COULD NOT BE MANUALLY OPENED FOR AIRFLOW

Written By: Jacob Davidson on 01/29/2025

Unit Data - PHOTO LOG

01/28/2025

National TAB

Project:01-27-25 CAVA FISHERS, IN (116TH ST)

AHU/RTU

Diffuser Supply (GRD)

FCU1/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	QUEUEING	D	10"	340	1	390	389	389	114.4
SGRD2	QUEUEING	D	10"	340	1	391	394	394	115.9
SGRD3	QUEUEING	D	10"	340	1	286	293	293	86.2
SGRD4	QUEUEING	D	10"	340	1	289	291	291	85.6
SGRD5	KITCHEN HOOD	ACPSP	140X6	600	4.55	546	567	567	94.5
SGRD6	KITCHEN	D	10"	340	1	346	367	367	107.9
SGRD7	KITCHEN	A	10"	300	1	369	284	284	94.7
SGRD8	KITCHEN	A	10"	325	1	296	316	316	97.2
SGRD9	KITCHEN	A	8"	200	1	246	201	201	100.5
SGRD10	KITCHEN	A	8"	100	1	99	106	106	106.0
SGRD11	BACK KITCHEN	B	10"	250	1	291	247	247	98.8
Total				3475		3549	3455	3455	99.42%

Completed By: Jacob Davidson on 01/29/2025

Asset	Notes	Date	Written By
SGRD1	LINEAR FACE WITH DAMPER IS NOT INSTALLED AT THIS TIME. UNABLE TO CONTROL AIRFLOW	01/29/2025	Jacob Davidson
SGRD2	LINEAR FACE WITH DAMPER IS NOT INSTALLED AT THIS TIME. UNABLE TO CONTROL AIRFLOW	01/29/2025	Jacob Davidson
SGRD3	LINEAR FACE WITH DAMPER IS NOT INSTALLED AT THIS TIME. UNABLE TO CONTROL AIRFLOW	01/29/2025	Jacob Davidson
SGRD4	LINEAR FACE WITH DAMPER IS NOT INSTALLED AT THIS TIME. UNABLE TO CONTROL AIRFLOW	01/29/2025	Jacob Davidson
SGRD6	LINEAR FACE WITH DAMPER IS NOT INSTALLED AT THIS TIME. UNABLE TO CONTROL AIRFLOW	01/29/2025	Jacob Davidson

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: AHU/RTU

Asset: FCU2 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	CARRIER	CARRIER
Serial Num	-	4724U29312
Model Num	40RFAA12A2A6	40RFAA12A2A6AUA0A0
Type	FCU	FCU
Configuration	VERTICAL	HORIZONTAL
Num OA Filters 1	-	NONE
OA Filter Size 1	-	NONE
Num Final Filter 1	-	4
Final Filter Size 1	-	16X24X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	2.4
Motor Rpm	-	NA
Phase	3	3
Rated Voltage	480	460
Rated Amperage	-	3

Test Data		
	Design	**Actual**
SF CFM	3055	3288
SF RPM	-	DD ECM
RA CFM	2566	3288
OA CFM	489	0
RL Voltage	-	497/497/498
RL Amperage	-	2.3/2.4/2.5
SF Rotation	-	CCW
SF System SetPt	-	8.63VDC POSITION C 50%
RA Damper Position	-	N/A
Min OA Damper Position	-	CLOSED
Min OA Damper Type	-	MOTORIZED DAMPER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.20"
Fan Suction SP	-	-0.37"
Fan Discharge SP	-	0.25"
Total ESP	1.0"	0.62"
Fan Total SP	-	0.45"

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

Completed By: Jacob Davidson on 01/29/2025

Notes:
ECONOMIZER IS JUST A MOTORIZED DAMPER THAT OPENS FULLY OR CLOSES FULLY. THE DAMPER WAS NOT POWERED AND COULD NOT BE MANUALLY OPENED FOR AIRFLOW

Written By: Jacob Davidson on 01/29/2025

Unit Data - PHOTO LOG

01/28/2025

National TAB

Project:01-27-25 CAVA FISHERS, IN (116TH ST)

AHU/RTU

Diffuser Supply (GRD)

FCU2/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	DINING	E	5.5"X17.25"	250	0.593	348	272	272	108.8
SGRD2	DINING	E	5.5"X17.25"	250	0.593	388	304	304	121.6
SGRD3	DINING	E	5.5"X17.25"	250	0.593	354	279	279	111.6
SGRD4	DINING	E	5.5"X17.25"	240	0.593	300	243	243	101.3
SGRD5	DINING	E	5.5"X17.25"	240	0.593	339	289	289	120.4
SGRD6	DINING	E	5.5"X17.25"	250	0.593	478	344	344	137.6
SGRD7	DINING	E	5.5"X17.25"	250	0.593	308	259	259	103.6
SGRD8	DINING	E	5.5"X17.25"	250	0.593	382	304	304	121.6
SGRD9	HALL	B	10"	300	1	208	279	279	93.0
SGRD10	HALL	B	10"	300	1	157	284	284	94.7
SGRD11	HALL	B	10"	300	1	101	278	278	92.7
SGRD12	RESTROOM	B	6"	75	1	89	79	79	105.3
SGRD13	RESTROOM	B	6"	75	1	78	74	74	98.7
Total				3030		3530	3288	3288	108.51%

Completed By: Jacob Davidson on 01/29/2025

Asset	Notes	Date	Written By
SGRD2	SCOOP DAMPER NOT INSTALLED. UNABLE TO REDUCE AIRFLOW	01/29/2025	Jacob Davidson
SGRD3	SCOOP DAMPER NOT INSTALLED. UNABLE TO REDUCE AIRFLOW	01/29/2025	Jacob Davidson
SGRD5	SCOOP DAMPER NOT INSTALLED. UNABLE TO REDUCE AIRFLOW	01/29/2025	Jacob Davidson
SGRD6	SCOOP DAMPER NOT INSTALLED. UNABLE TO REDUCE AIRFLOW	01/29/2025	Jacob Davidson
SGRD8	SCOOP DAMPER NOT INSTALLED. UNABLE TO REDUCE AIRFLOW	01/29/2025	Jacob Davidson

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: AHU/RTU

Asset: MUA1 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	ECON-AIR
Serial Num	-	6787784
Model Num	CAS-HVAC1-I.200-15-5T-MPU	EARTU-I.200-15-5T-MPU
Type	MUA	MAU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 BIRD SCREEN
OA Filter Size 1	-	18X28.75
Num Final Filter 1	-	2 METAL MESH
Final Filter Size 1	-	16X20X2
Num Final Filter 2	-	8
Final Filter Size 2	-	16X16X2

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	145T
Horsepower	2	2
Motor Rpm	-	1745
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	5.64/2.82

Test Data		
	Design	**Actual**
SF CFM	1976	1974
SF RPM	-	1646
RA CFM	0	0
OA CFM	1976	1974
RL Voltage	-	187V VFD
RL Amperage	-	5.1A VFD
SF Rotation	-	CCW
SF System SetPt	-	56.6HZ
RA Damper Position	-	0%
Min OA Damper Position	-	100%
Min OA Damper Type	-	ECONOMIZER

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	NO, NOT INSTALLED

Completed By: Jacob Davidson on 01/28/2025

Notes:
MAU WAS SET MANUALLY WHILE NOT BEING CONNECTED TO THE HOOD PANEL. COOLING AND HEATING ARE NOT CURRENTLY OPERATIONAL.

Written By: Jacob Davidson on 01/29/2025

Unit Data - PHOTO LOG

01/28/2025

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: FAN - Exhaust

Asset: CEF1 AREA:RESTROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	SP-A250	GEMINI 140 SERIES SONEBUSTER
Serial Num	-	N/A
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	100	131
Fan RPM	-	1550
Fan Rotation	-	CW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	119V
RL Amperage	-	0.31A

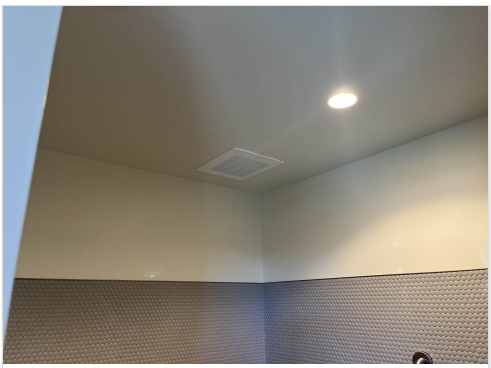
Motor Data		
	Design	**Actual**
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	1550 RPM
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.40/0.22
Service Factor	-	NL

Completed By: Jacob Davidson on 01/28/2025

Notes:
UNIT DOES NOT HAVE A SPEED CONTROLLER AND COULD ONLY BE SET TO HIGH OR LOW SPEED. AT LOW SPEED THE UNIT WAS ONLY READING 80CFM. OPTED TO GO FOR HIGH SPEED AS THAT WILL KEEP THE SPACE NEGATIVE.

Written By: Jacob Davidson on 01/29/2025

Unit Data - PHOTO LOG



01/28/2025

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: FAN - Exhaust

Asset: CEF2 AREA:RESTROOMS

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	SP-A250	GEMINI 140 SERIES SONEBUSTER
Serial Num	-	N/A
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	100	130
Fan RPM	-	1550
Fan Rotation	-	CW
Motor RPM	-	1550
System SetPt	-	HIGH
RL Voltage	-	119V
RL Amperage	-	0.32A

Motor Data		
	Design	**Actual**
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.40/0.22
Service Factor	-	NL

Completed By: Jacob Davidson on 01/28/2025

Notes:
UNIT DOES NOT HAVE A SPEED CONTROLLER AND COULD ONLY BE SET TO HIGH OR LOW SPEED. AT LOW SPEED THE UNIT WAS ONLY READING 80CFM. OPTED TO GO FOR HIGH SPEED AS THAT WILL KEEP THE SPACE NEGATIVE.

Written By: Jacob Davidson on 01/29/2025

Unit Data - PHOTO LOG

01/28/2025

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: FAN - Exhaust

Asset: KF1 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	USBI18DD-RM	USBI18DD-RM
Serial Num	-	6787784
Type	INLINE	UTILITY
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	3	3
Motor Rpm	-	NA
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	9.4
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	2381	2402
Fan RPM	1333	DD ECM
Fan Rotation	-	CCW
Motor RPM	-	DD ECM
System SetPt	-	48.4HZ
RL Voltage	-	145V VFD
RL Amperage	-	7.1A VFD
Total ESP	2.030"	UTO
Fan Inlet SP	-	UTO
Fan Discharge SP	-	UTO

Completed By: Jacob Davidson on 01/28/2025

Notes:
UNABLE TO GET PRESSURES ON A UTILITY FAN

Written By: Jacob Davidson on 01/27/2025

Unit Data - PHOTO LOG

01/28/2025

National TAB

Project: 01-27-25 CAVA FISHERS, IN (116TH ST)

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2-ACPSP-F	6030 ND-2-ACPSP-F
Job / Serial Num	-	6787784
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	140"	140"

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	-	158
Filter2 FPM	-	165
Filter3 FPM	-	174
Filter4 FPM	-	184
Filter5 FPM	-	178
Filter6 FPM	-	156
Filter7 FPM	-	145
Filter Ave FPM(corr)	-	165
CFM	2381	2402

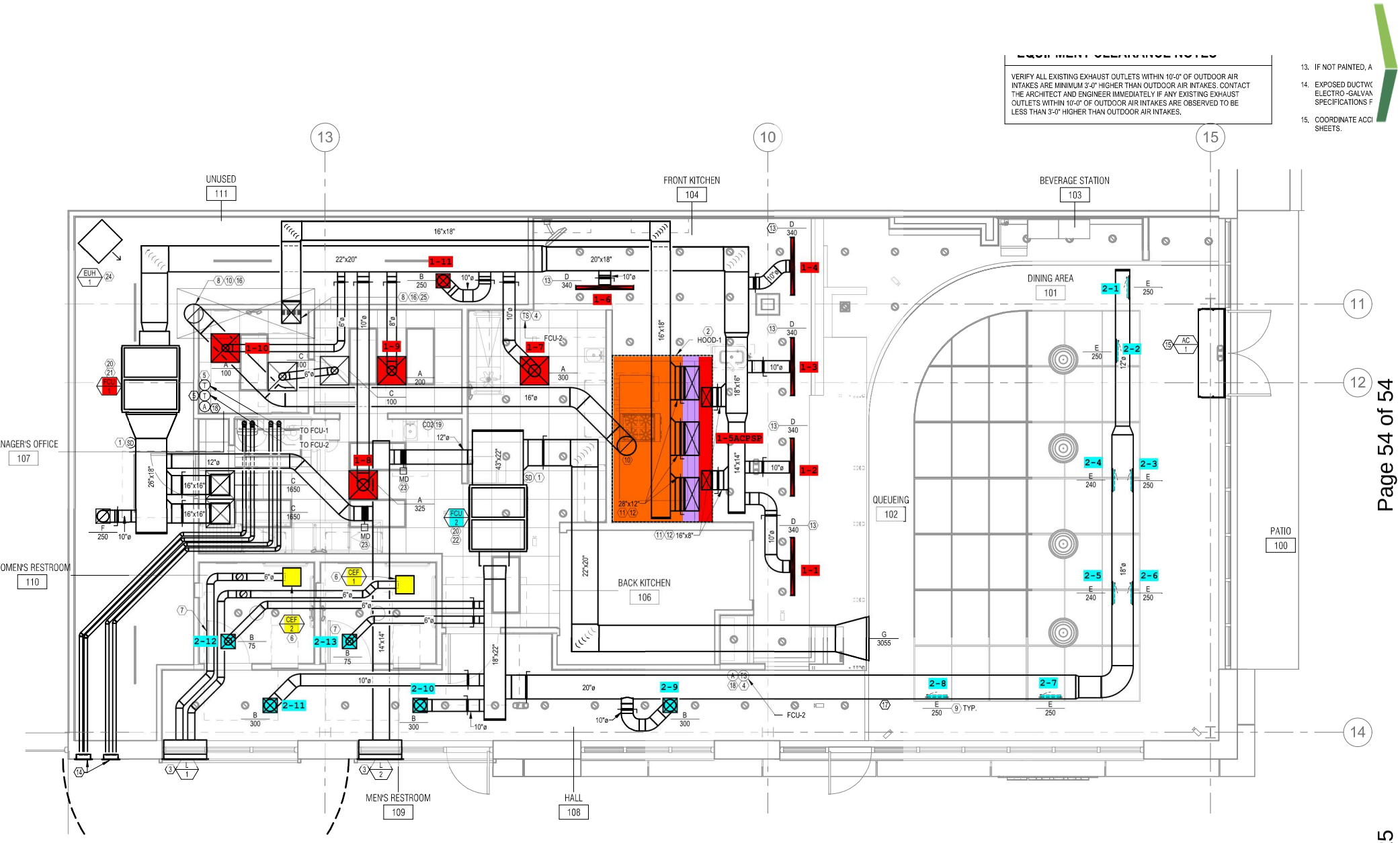
Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	GRIDDLE
Item 3	STOVETOP
Item 4	OVEN

Test Data Supply		
	Design	**Actual**
Total Area	13.61	13.61
Kv factor (Vel)	0.89	0.89
Num of Readings	-	10
Reading1 FPM	-	200
Reading2 FPM	-	130
Reading3 FPM	-	141
Reading4 FPM	-	193
Reading5 FPM	-	160
Reading6 FPM	-	140
Reading7 FPM	-	180
Reading8 FPM	-	160
Reading9 FPM	-	131
Reading10 FPM	-	195
Ave FPM(corr)	-	163
CFM	1976	1974

Completed By: Jacob Davidson on 01/28/2025

Unit Data - PHOTO LOG

01/28/2025



N

MECHANICAL PLAN

SCALE: 1/4" = 1'-0"

Date: 2/5/2025