

Report By:

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**Report: TAB REPORT**  
**Function: Test, Adjust, & Balance**  
**Date: 02/29/2024**

**PROJECT**  
**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

1484 NORTH MILWAUKEE AVE

CHICAGO, IL 60622

Client

CAVA

702 H ST NW

2nd floor

Washington, DC 20001

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

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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

- Building Pressure is negative.
- EF1 hinge kit not installed
- EF2 extra diffuser
- EF2 no backdraft damper
- HD1 alarm faults
- HD1 space above hood needs to be sealed
- RTU1 missing humidity sensor in space
- RTU1 space humidity alarm
- RTU1/RTU2 final filters needed



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** Building Pressure is negative.  
**Description :** The space is balanced (+330 CFM) however the building pressure is very negative (-0.20"). Pressure was also fluctuating significantly. With all fans off, the building is very negative as well (-0.18"). This means that either an adjacent tenant or the base building is causing a pressure issue. Recommend consulting the landlord.  
**Created By :** National TAB                      **Assigned To :** National TAB - Brianna Biggs  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 03/08/2024 - Will Turnbough - National TAB



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** EF1 hinge kit not installed  
**Description :** Hinge kit is not installed on EF1 to lift fan up to clean in the future.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :**    **Asset Tag :**  
**Originated Date :** 02/28/2024 - Jacob Davidson - National TAB

Project Issue File Details



EF1  
02/28/2024



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** EF2 extra diffuser  
**Description :** An extra diffuser was found above ceiling for the mop sink that was not on any plans. This was required by the AHJ. Airflow measured as is.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** InfoOnly                                      **Asset Tag :**  
**Originated Date :** 02/29/2024 - Jacob Davidson - National TAB

Project Issue File Details



**Extradiffuser**  
**02/29/2024**



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** EF2 no backdraft damper  
**Description :** EF2 has no backdraft damper installed.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :**    **Asset Tag :**  
**Originated Date :** 02/28/2024 - Jacob Davidson - National TAB

Project Issue File Details



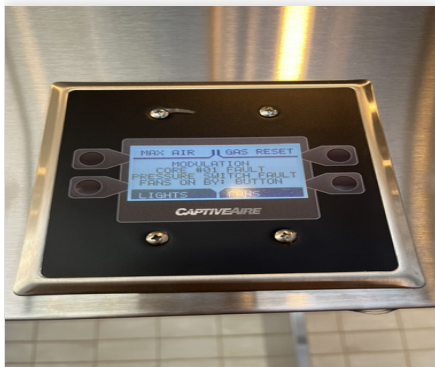


## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### Project Issue Information

**Issue Name :** HD1 alarm faults  
**Description :** HD1 has alarm faults "Core #01 Fault" and "Pressure Switch Fault". These flash whether the fans are on or off  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** Medium                                      **Asset Tag :**  
**Originated Date :** 02/26/2024 - Jacob Davidson - National TAB

#### Project Issue File Details



**Fault**  
**02/26/2024**



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** HD1 space above hood needs to be sealed  
**Description :** Space above the hood isn't sealed and is open to the attic space. May interfere with getting accurate building pressure.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** Low                                      **Asset Tag :**  
**Originated Date :** 02/26/2024 - Jacob Davidson - National TAB

Project Issue File Details



**Spaceabovehood  
02/26/2024**

Project Issue Response Details

- **02/27/2024 National TAB - Jacob Davidson**
  - Spoke to GC and parts for the rest of the hood are on order. If needed, plastic can cover the space temporarily for testing.



**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** RTU1 missing humidity sensor in space  
**Description :** RTU1 is scheduled for humidity control but there is no humidity sensor in the space where the plans call for it.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 02/29/2024 - Jacob Davidson - National TAB

Project Issue File Details



**Plans**  
02/29/2024



**Space**  
02/29/2024

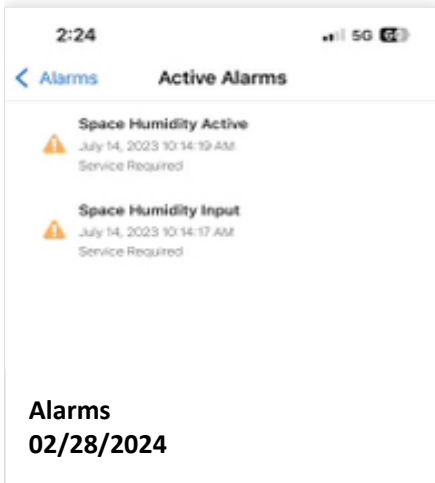


**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** RTU1 space humidity alarm  
**Description :** RTU1 has a space humidity input alarm on its controller that needs to be investigated. Likely due to the humidity sensor not being installed.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 02/28/2024 - Jacob Davidson - National TAB

Project Issue File Details





**02-26-24 CAVA - CHICAGO, IL (WICKER PARK)**

**Project Issue Information**

**Issue Name :** RTU1/RTU2 final filters needed  
**Description :** RTU1 and RTU2 need their final MERV pleated filters. Both units take 3 16X24X2 filters and 2 18X24X2 filters.  
**Created By :** National TAB                      **Assigned To :** National TAB - Jacob Davidson  
**Status :** Open  
**Priority :** Low                                      **Asset Tag :**  
**Originated Date :** 02/28/2024 - Jacob Davidson - National TAB

Project Issue File Details



**RTU2(1)**  
**02/28/2024**



**RTU1**  
**02/28/2024**

### AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	DINING	5000	5089	4200	4214	800	875	16.0%	17.2%						
RTU-2	KITCHEN	3800	3731	3380	3282	420	449	11.1%	12.0%						
MUA-1	COOKLINE									1976	2056				
EF-1	HOOD 1											2381	2402		
EF-2	RESTROOMS													500	648
<b>TOTALS</b>		8800	8820	7580	7496	1220	1324			1976	2056	2381	2402	500	648

#### NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3196	3380
TOTAL EXHAUST	2881	3050
<b>NET AIRFLOW</b>	<b>315</b>	<b>330</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H <sub>2</sub> O)
FRONT	-0.22
SIDE	-0.2
REAR	-0.19
<b>AVERAGE</b>	<b>-0.2033</b>

#### 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:

Base line building pressure with no fans running is -0.18". Tech is unable to overcome baseline building negative pressure.

## 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
- SITE PICTURES



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FIV - EF'S **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - National TAB

### CheckList Item Details

Unit Tag matches the design and submittal MFG and Model Fail

**Comment:**

EF2 IS NOT A COOK FAN

Each exhaust fan is proper tagged for proper identification with tags sized and placed on the fan for visual ease Fail

**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)

Fail

**Comment:**



**Nohingekit  
02/28/2024**

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:**



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FIV - HVAC DUCTWORK **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - National TAB

### CheckList Item Details

#### KVS - GREASE DUCT (HOOD SYSTEM)

Grease duct is sized and routed per plan Fail

**Comment:**

Duct not routed per plan, however airflow is at design.

Grease duct is properly supported Pass

**Comment:**

Grease duct has code required negative pitch from fan inlet back to the hood riser connection N/A

**Comment:**

Grease duct has required clean-out doors installed, labeled, and accessible for removal/cleaning. Doors are located as required by code N/A

**Comment:**

Grease duct clean-out doors are secured using tool less fasteners and seal fully when hand tightened N/A

**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

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

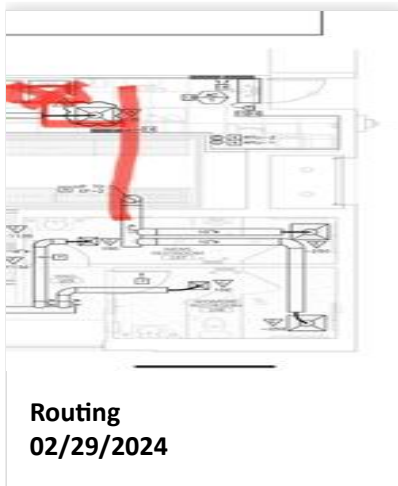
**Comment:**

**RESTROOM DUCT**

Restroom duct is routed and sized per plan

Fail

**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

Fail

**Comment:**



**Nodamper(1)**  
**02/29/2024**

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:**

---



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FIV - RTU'S **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - 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:**



**Filters**  
**02/28/2024**

Economizer damper is installed properly	Pass
<b>Comment:</b>	
Economizer OA temperature / enthalpy sensors installed and wired	Pass
<b>Comment:</b>	
Thermostat and humidity (if applicable) control wires wired to RTU terminals	Fail
<b>Comment:</b>	
Condensate drain installed per specification	N/A
<b>Comment:</b>	
Condensate line drains away from unit to a approved roof drain	Fail
<b>Comment:</b>	



**Ptrap**  
**02/28/2024**

---

Belts are tight?

N/A

**Comment:**

---

Pulleys aligned?

N/A

**Comment:**

---

MERV rated filters are installed and are clean?

Fail

**Comment:**

NEED FINAL FILTERS INSTALLED

---



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FIV – HOODS **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - National TAB

### CheckList Item Details

#### HOOD INSTALLATION DETAILS

Kitchen hoods tags match design and submitted information N/A

**Comment:**

NOTHING SUBMITTED TO MATCH

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 Fail

**Comment:**

Parts of ceiling wrapper were either damaged or stolen. They are on order to replace.

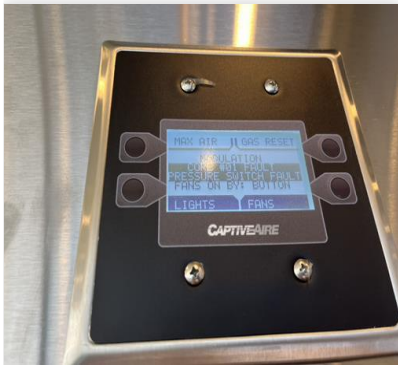


**Hoodwrap**  
**02/29/2024**

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:**

HMI has CORE#01 FAULT and PRESSURE SWITCH FAULT



**Faults**  
**02/29/2024**



**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

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:



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FPT - BUILDING PRESSURE AND HOOD CONTAINMENT **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - 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

02/29/2024

**Comment:**

---

TAB tech name / Firm

**Comment:**

---

JACOB DAVIDSON

---

Site super name / Firm

**Comment:**

---

PAT GABEL / VEQUITY 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:**

---

No, building is pulling in air due to many fans being used at the restaurant next door. The base building pressure with no units on is -0.18"

---



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FPT - KEF'S **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - 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 N/A

**Comment:**

UNABLE TO GET READINGS ON EF1

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:**

CORE#01 FAULT AND PRESSURE SWITCH FAULT

---

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

---

Pass

**Comment:**

SET TO NO MODULATION

---



## 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

### CheckList Information

**Name :** FPT - RTU's **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/20/2024 - Brianna Biggs - 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

Fail

**Comment:**

NO HUMIDITY SENSOR

---

**CALIBRATION & PROGRAMMING**

---

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

**Comment:**

---

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

**Comment:**

---

RTU MAT Low StPt

**Comment:**

---

RTU Low T Lockout

**Comment:**

---

Economizer set to 28 BTU/lb enthalpy setpoint.

**Comment:**

---

**Temperature tests**

---

Outside air temperature / humidity

**Comment:**

TEMP: 45.9 degrees F RH: 15.8%

---

Full cooling LAT/H

**Comment:**

RTU1 TEMP: 52.7 degrees F RH: 18.0% RTU2 TEMP: 52.6 degrees F RH: 14.9%

---

Full heating LAT/H

**Comment:**

RTU1 TEMP: 94.4 degrees F RH: 16.1% RTU2 TEMP: 100.3 degrees F RH: 12.5%

---

**OUTDOOR AIR / RELIEF DAMPER**

---

If power exhaust installed, set point is higher than the OA damper setpoint

Pass

**Comment:**

---

If power exhaust installed, open the OA damper above the power exhaust setpoint and ensure that the power exhaust turns on

Pass

---

**Comment:**

---

If relief damper is installed, ensure that it is installed properly and can open freely.

Pass

---

**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:**

---









**RTU1**  
**02/29/2024**

---

RTU-2

**Comment:**



**RTU2(1)**  
**02/29/2024**

---

EF-1

**Comment:**



**KEF1(1)**  
**02/29/2024**

---

EF-2

**Comment:**



**EF2(1)**  
**02/29/2024**

---

MUA-1

**Comment:**



**MAU**  
**02/29/2024**

---

HOOD-1

---

**Comment:**



**Hood1**  
**02/28/2024**

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)



## System/Unit: AHU/RTU

Asset: RTU1

AREA:

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234813469L
Model Num	YHJ150	YHJ150A3S0H03K000A1B1
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	23.5X37.5
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	3.1	5
Motor Rpm	-	NA
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	11.0

Test Data		
	Design	Actual
SF CFM	5000	5089
SF RPM	-	1088
RA CFM	4200	4214
OA CFM	800	875
RL Voltage	-	209/213/213
RL Amperage	-	6.7/6.9/7.1
SF Rotation	-	CW
RA Damper Position	-	79%
Min OA Damper Position	-	21%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.94"
Fan Suction SP	-	-1.27"
Fan Discharge SP	-	0.81"
Total ESP	1.0"	1.75"
Fan Total SP	-	2.08"

General		
	Design	Actual
Fan Rotation Correct	-	YES
Unit Filters Clean	-	NO, NEED FINAL FILTERS
Condensate Drain Installed	-	YES

Completed By: Jacob Davidson on 02/28/2024

Notes:  
SPEED SETPOINT: 85%

Written By: Jacob Davidson on 02/28/2024

# National TAB

Project:02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU1/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINING	D	18X10	525	0.841	547	555	540	102.9
SGRD2	DINING	D	18X10	525	0.841	588	542	553	105.3
SGRD3	DINING	D	18X10	525	0.841	590	501	522	99.4
SGRD4	DINING	D	18X10	525	0.841	601	509	531	101.1
SGRD5	DINING	D	18X10	525	0.841	531	552	542	103.2
SGRD6	DINING	D	18X10	525	0.841	491	539	537	102.3
SGRD7	DINING	D	18X10	525	0.841	569	609	551	105.0
SGRD8	DINING	D	18X10	525	0.841	564	601	506	96.4
SGRD9	QUEUE	C	8"	150	1	88	142	149	99.3
SGRD10	QUEUE	C	8"	150	1	94	139	145	96.7
SGRD11	QUEUE	C	8"	150	1	93	145	152	101.3
SGRD12	HALL	C	8"	150	1	91	148	158	105.3
SGRD13	WOMENS RR	C	8"	100	1	86	90	101	101.0
SGRD14	MENS RR	C	8"	100	1	86	93	102	102.0
Total				5000		5019	5165	5089	101.78%

Completed By: Jacob Davidson on 02/27/2024

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## System/Unit: AHU/RTU



Asset: RTU2

AREA:

Unit Data		
	Design	Actual
MFG	TRANE	TRANE
Serial Num	-	234711710L
Model Num	YHJ120	YHJ120A3S0L04K0000A1B1
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	23.5X37.5
Num Final Filter 1	-	3
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	2
Final Filter Size 2	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	3.1	3
Motor Rpm	-	NA
Phase	3	3
Rated Voltage	208	208-230
Rated Amperage	-	8.8

Test Data		
	Design	Actual
SF CFM	3800	3731
SF RPM	-	891
RA CFM	3380	3282
OA CFM	420	449
RL Voltage	-	209/213/213
RL Amperage	-	4.7/8.3/8.7
SF Rotation	-	CW
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.75"
Fan Suction SP	-	-1.10"
Fan Discharge SP	-	0.65"
Total ESP	1.0"	1.85"
Fan Total SP	-	1.75"

General		
	Design	Actual
Fan Rotation Correct	-	YES
Unit Filters Clean	-	NO, NEED NEW FILTERS
Condensate Drain Installed	-	YES

Completed By: Jacob Davidson on 02/29/2024

Notes:  
Speed Setpoint: 73%

Written By: Jacob Davidson on 02/29/2024

# National TAB

Project:02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU2/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	FRONT KITCHEN	B	10X10	350	1	278	305	316	90.3
SGRD2	FRONT KITCHEN	B	10X10	350	1	293	316	325	92.9
SGRD3	FRONT KITCHEN	B	10X10	350	1	306	325	339	96.9
SGRD4	FRONT KITCHEN	B	10X10	350	1	378	344	345	98.6
SGRD5	FRONT KITCHEN	B	10X10	350	1	370	329	332	94.9
SGRD6	FRONT KITCHEN	B	10X10	350	1	380	339	342	97.7
SGRD7	HOOD 1	ACPSP	139X6	600	4.52	705	745	645	107.5
SGRD8	FRONT KITCHEN	B	10X10	350	1	307	330	329	94.0
SGRD9	FRONT KITCHEN	B	10X10	350	1	343	389	357	102.0
SGRD10	BACK KITCHEN	A	8"	130	1	218	119	128	98.5
SGRD11	BACK KITCHEN	A	8"	135	1	154	132	134	99.3
SGRD12	BACK KITCHEN	A	8"	135	1	121	135	139	103.0
Total				3800		3853	3808	3731	98.18%

Completed By: Jacob Davidson on 02/27/2024

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## System/Unit: FAN - Exhaust



Asset: EF1

AREA:

Unit Data		
	Design	Actual
<b>MFG</b>	CAPTIVEAIRE	CAPTIVEAIRE
<b>Model Num</b>	DU85HFA	DU85HFA
<b>Serial Num</b>	-	6283173
<b>Type</b>	UPBLAST	UPBLAST
<b>Configuration</b>	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
<b>Motor MFG</b>	-	TELCO GREEN
<b>Frame</b>	-	NL
<b>Horsepower</b>	1	1
<b>Motor Rpm</b>	-	1800
<b>Phase</b>	1	1
<b>Voltage (rated)</b>	120	115
<b>Amperage (rated)</b>	-	11.6
<b>Service Factor</b>	-	1

Test Data		
	Design	Actual
<b>CFM</b>	2381	2402
<b>Fan RPM</b>	1574	DD ECM
<b>Fan Rotation</b>	-	CCW
<b>Motor RPM</b>	-	DD ECM
<b>System SetPt</b>	-	100% ECM
<b>RL Voltage</b>	-	NA
<b>RL Amperage</b>	-	NA
<b>Total ESP</b>	1.0"	1.07"
<b>Fan Inlet SP</b>	-	-1.07"
<b>Fan Discharge SP</b>	-	ATM

Completed By: Jacob Davidson on 02/28/2024

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## System/Unit: FAN - Exhaust



Asset: EF2

AREA:

Unit Data		
	Design	Actual
MFG	COOK	PENNBARRY
Model Num	90C17DH	DX11QGP
Serial Num	-	C23AY12661
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Frame	-	NL
Horsepower	1/8	1/8
Motor Rpm	-	350-1725
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	5.2
Service Factor	-	1

Test Data		
	Design	Actual
CFM	500	648
Fan RPM	1584	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	MARKED ON DIAL
RL Voltage	-	122V
RL Amperage	-	1.97A
Total ESP	0.35"	0.29"
Fan Inlet SP	-	-0.29
Fan Discharge SP	-	ATM

Completed By: Jacob Davidson on 02/28/2024

**Notes:**

An extra diffuser was added to the mop sink required by the city of Chicago. Tech read the diffuser as is since it was not on the plans. Restrooms are still balanced to 250 CFM each.

Written By: Jacob Davidson on 02/29/2024

# National TAB

Project:02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## FAN - Exhaust



### Diffuser Ret/Exh (GRD)

EF2/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EF2-EGRD1	WOMENS RR	E	10"	250	1	276	249	249	99.6
EF2-EGRD2	MENS RR	E	10"	250	1	288	257	257	102.8
EF2-EGRD3	MOP SINK	C	6"		1	142	142	142	-
Total				500		706	648	648	129.6%

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## System/Unit: FAN - Supply



Asset: MUA1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	A1-D.250-15D-MPU	A1-D.250-15D-MPU
Serial Num	-	6283173
Type	MUA	MAU
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	145T
Horsepower	2	2
Motor Rpm	-	1740
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	5.48/2.74
Service Factor	-	1.15

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	YES
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	55	55
Discharge Air Temp SetPt	60	60
Air Flow Switch SP Actual	-	0.36"

Test Data		
	Design	Actual
CFM	1976	2056
SF RPM	2167	1795
Motor RPM	-	1795
SF System SetPt	-	61.9HZ
RL Voltage	-	139V VFD
RL Amperage	-	4.1A VFD
Total ESP	-	NA
Fan Discharge SP	-	NA

General		
	Design	Actual
Fan Rotation Correct	-	YES

Completed By: Jacob Davidson on 02/29/2024

# National TAB

Project: 02-26-24 CAVA - CHICAGO, IL (WICKER PARK)

## System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	6030 ND-2
Job / Serial Num	-	6283173
Type	-	TYPE I CANOPY
Hood length	-	127"
Hood Width	-	60"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	-	14"
Supply Plenum Length	-	139"

Test Data Exhaust		
	Design	Actual
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	20X16
Filter Qty 1	-	7
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	14.56
Filter1 FPM	-	164
Filter2 FPM	-	166
Filter3 FPM	-	182
Filter4 FPM	-	179
Filter5 FPM	-	168
Filter6 FPM	-	154
Filter7 FPM	-	145
Filter Ave FPM(corr)	-	165
CFM	2381	2402

Cooking Equipment		
	Design	Actual
Item 1	-	OVEN
Item 2	-	STOVETOP
Item 3	-	GRILL
Item 4	-	FRYER

Test Data Supply		
	Design	Actual
Total AK Area	-	13.51
Kv factor (Vel)	-	0.89
Num of Readings	-	10
Reading1 FPM	-	175
Reading2 FPM	-	142
Reading3 FPM	-	167
Reading4 FPM	-	179
Reading5 FPM	-	170
Reading6 FPM	-	165
Reading7 FPM	-	177
Reading8 FPM	-	176
Reading9 FPM	-	160
Reading10 FPM	-	205
Ave FPM(corr)	-	171
CFM	1976	2056

Completed By: Jacob Davidson on 02/26/2024

