Report By:

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NATIONAL TAB INTELLIGENCE

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 07/19/2024

PROJECT

07-15-24 CAVA RIVER FOREST, IL

7211 Lake St

RIVER FOREST , IL 60305

Client

CAVA

702 H ST NW

2nd floor

Washington, DC 20001

FaciliBuild
make it easy

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

Table Of Contents

Section	Page #
Summary	3
Remarks	4
Balance Schedule	6
Checklist Data	7
AHU/RTU	38
FAN - Exhaust	42
FAN - Supply	46
Kitchen Hood Type I	47
GRD Layout	48

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

- Cookline Diffusers

07-15-24 CAVA RIVER FOREST, IL

Project Issue Information

Issue Name : Cookline Diffusers

Description : Unable to balance cookline/linear diffusers around serving/cooking area due to hard ceiling and no access to the dampers located above the linear diffusers.

Created By : National TAB

Assigned To : National TAB - Dylan Crisman

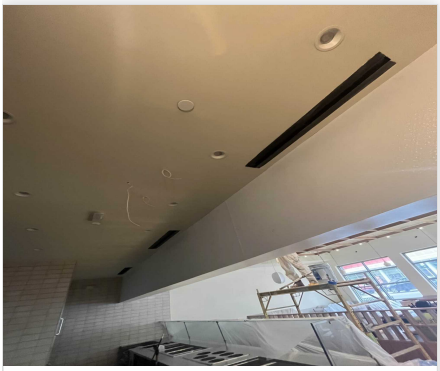
Status : Open

Priority : Low

Asset Tag :

Originated Date : 07/15/2024 - Dylan Crisman - National TAB

Project Issue File Details



07/15/2024

07/15/2024

07/15/2024

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU-1	DINING	3310	3194	2596	2448	714	746	21.6%	23.4%						
RTU-2	KITCHEN	4000	4075	3200	3271	800	804	20.0%	19.7%						
MUA-1	COOKLINE									1965	1986				
KEF-1	KITCHEN HOOD											2381	2329		
CEF-1	RESTROOM													100	88
CEF-2	RESTROOM													100	100
EF-3	TRASHROOM													200	197
TOTALS		7310	7269	5796	5719	1514	1550			1965	1986	2381	2329	400	385

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	3479	3536
TOTAL EXHAUST	2781	2714
NET AIRFLOW	698	822

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.0023
SIDE	0.0017
REAR	-0.0018
AVERAGE	**0.0007**

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

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FIV - EF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/15/2024 - Dylan Crisman - 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:	

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FIV - HVAC DUCTWORK	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/22/2024 - Zack Eismin - National TAB		

CheckList Item Details

KVS - GREASE DUCT (HOOD SYSTEM)

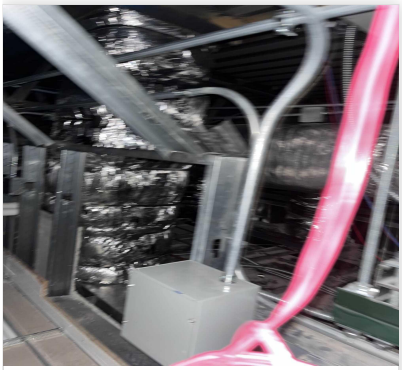
Grease duct is sized and routed per plan	Pass
Comment:	
Grease duct is properly supported	Pass
Comment:	
Grease duct has code required negative pitch from fan inlet back to the hood riser connection	Pass
Comment:	
Grease duct has required clean-out doors installed, labeled, and accessible for removal/cleaning. 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:

Wrapped



07/16/2024

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:	
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.	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: Dining is exposed round duct, internally insulated.	

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:

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FIV - RTU'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - 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	Pass

Comment:

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?	Pass

Comment:

Pulleys aligned?	Pass

Comment:

MERV rated filters are installed and are clean?	Pass

Comment:

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FIV – HOODS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - 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:	

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FIV – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - National TAB		

CheckList Item Details

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

Comment:	
MUA Electrical disconnect is external to the unit and properly wired	Pass
Comment:	
Outdoor air awning is installed and fitted with proper OA mesh filters	Pass
Comment:	
Condensate drain is installed (for cooling MUA's) with proper traps, clean-outs, and drain away from the unit to an acceptable roof drain	Pass
Comment:	
Refrigeration line sets are installed and connected properly with adequate supports per specifications	Pass
Comment:	
Condenser is installed away from any grease producing exhaust fans and located as per roof plan	Pass
Comment:	
Condenser's electrical disconnect is external to the unit and properly wired (if applicable)	Pass
Comment:	
Condenser hail guards are installed (if applicable)	Pass
Comment:	
All Condenser compartment and control doors are fully accessible, minimum 36" clearance for service allowing the doors to fully open without restriction (if applicable)	Pass
Comment:	
Gas line is installed per specification and properly supported	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:

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FPT - BUILDING PRESSURE AND HOOD CONTAINMENT	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - 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:

CE0163 45 sec 150 CF

Smoke test capture - Perimeter of hood (%)

Comment:

100%

Smoke test capture - Top of cooking surface (%)

Comment:

100%

WITNESS

Date test was completed 07/16/2024

Comment:

TAB tech name / Firm

Comment:

Dylan Crisman / NTi

Site super name / Firm

Comment:

Kevin Fiore / Vequity Construction

Owner representative name / Firm (if Applicable)

Comment:

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

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FPT - KEF'S	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - 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?	Pass

Comment:

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

Comment:

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FPT - RTU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - National TAB		

CheckList Item Details

THERMOSTAT PROGRAMMING AND CALIBRATION

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

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

Comment:

CALIBRATION & PROGRAMMING

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

Comment:

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

RTU Low T Lockout

Comment:

N/A

Economizer set to 28 BTU/lb enthalpy setpoint.	Pass

Comment:

Temperature tests

Outside air temperature / humidity

Comment:

80.6F/70.5%RH

Full cooling LAT/H

Comment:

RTU-1: 59.3F/88.6%RH RTU-2: 63.6F/91.5% RH

Full heating LAT/H

Comment:

RTU-1: 105.4F/ 38.3%RH RTU-2: 109.3F/ 31.5%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.	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:	

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	FPT – MUA	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - 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?	Pass
Comment:	
Heater tested and is functional?	Pass
Comment:	
Cooling is tested and is functional?	Yes

Comment:

07-15-24 CAVA RIVER FOREST, IL

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/12/2024 - Brianna Biggs - National TAB		
Completed Date :	07/16/2024 - Dylan Crisman - National TAB		

CheckList Item Details

STORE FRONT	Yes

Comment:

07/15/2024

RTU-1

Comment:

07/16/2024

RTU-2

Comment:

07/16/2024

KEF-1

Comment:

07/16/2024

CEF-1

Comment:

07/16/2024

CEF-2

Comment:

07/16/2024

EF-1	Yes

Comment:

07/16/2024

MUA-1

Comment:

07/16/2024

HD-1

Comment:

07/16/2024

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: AHU/RTU

Asset: RTU1 AREA:DINING

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5624E06536
Model Num	KGC102S4M	KGC102S4M
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	23X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	56Hz
Horsepower	-	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.0

Drive Data	
	Actual
Motor Sheave Size	4.5"
Motor Bore Size	7/8"
Motor Sheave SetPt	3.5 TURNS OPEN
Fan Sheave Size	6.5"
Fan Sheave Bore	1"
Belt CL Distance	22"
Num of Belts	1
Belt Size	AX58
Belt Alignment	VERIFIED

Test Data		
	Design	**Actual**
SF CFM	3400	3194
SF RPM	-	787
RA CFM	2686	2440
OA CFM	714	746
RL Voltage	-	209.6209.9/209.4
RL Amperage	-	7.0/6.8/6.8
SF Rotation	-	CW
SF System SetPt	-	3.5 TURNS OPEN
RA Damper Position	-	75%
Min OA Damper Position	-	25%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	D

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.15
Fan Suction SP	-	-0.38
Fan Discharge SP	-	0.32”
Total ESP	0.80"	0.47”
Fan Total SP	-	0.7”

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

Completed By: Dylan Crisman on 07/16/2024

Notes:
[1] UNABLE TO INCREASE AIRFLOW TO DIFFUSER.

Written By: Dylan Crisman on 07/16/2024

National TAB

Project:07-15-24 CAVA RIVER FOREST, IL

AHU/RTU

Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
RTU1-SGRD1	VESTIBULE	B	6"	100	1.0	50	79	79	79.0
RTU1-SGRD2	DINING	E	15.5X5.5	320	0.59	281	310	310	96.9
RTU1-SGRD3	DINING	E	15.5X5.5	180	0.59	343	181	181	100.6
RTU1-SGRD4	DINING	E	15.5X5.5	320	0.59	287	304	304	95.0
RTU1-SGRD5	DINING	E	15.5X5.5	320	0.59	371	329	329	102.8
RTU1-SGRD6	DINING	E	15.5X5.5	320	0.59	249	300	300	93.8
RTU1-SGRD7	DINING	E	15.5X5.5	320	0.59	326	326	326	101.9
RTU1-SGRD8	DINING	E	15.5X5.5	320	0.59	328	328	328	102.5
RTU1-SGRD9	DINING	E	15.5X5.5	320	0.59	265	297	297	92.8
RTU1-SGRD10	DINING	E	15.5X5.5	320	0.59	304	304	304	95.0
RTU1-SGRD11	DINING	E	15.5X5.5	320	0.59	259	290	290	90.6
RTU1-SGRD12	RR VESTIBULE	A	6"	50	1.0	70	51	51	102.0
RTU1-SGRD13	RESTROOM	B	6"	50	1.0	46	46	46	92.0
RTU1-SGRD14	RESTROOM	B	6"	50	1.0	49	49	49	98.0
Total				3310		3228	3194	3194	96.5%

Completed By: Dylan Crisman on 07/16/2024

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: AHU/RTU

Asset: RTU2 AREA:KITCHEN

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5624E07207
Model Num	KGC102S4M	KGC102S4M
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	23X14
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	INTERLINK
Frame	-	56Hz
Horsepower	-	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	8.0]

Drive Data	
	Actual
Motor Sheave Size	4.5"
Motor Bore Size	7/8"
Motor Sheave SetPt	3 TURNS OPEN
Fan Sheave Size	6.5"
Fan Sheave Bore	1"
Belt CL Distance	22"
Num of Belts	1
Belt Size	AX58
Belt Alignment	VERIFIED

Test Data		
	Design	**Actual**
SF CFM	4000	4075
SF RPM	-	841
RA CFM	3200	3271
OA CFM	800	804
RL Voltage	-	211.3/210.3/209.2
RL Amperage	-	7.1/7.2/7.0
SF Rotation	-	CW
SF System SetPt	-	3 TURNS OPEN
RA Damper Position	-	75%
Min OA Damper Position	-	25%
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	D

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.19”
Fan Suction SP	-	-0.45
Fan Discharge SP	-	0.38
Total ESP	0.80"	0.57
Fan Total SP	-	0.83”

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

Completed By: Dylan Crisman on 07/16/2024

Notes:
[1] Unable to balance linear diffusers 2-3,2-4,2-5,2-6 due to hard ceiling, no access to dampers above ceiling.

Written By: Dylan Crisman on 07/16/2024

National TAB

Project:07-15-24 CAVA RIVER FOREST, IL

AHU/RTU

Diffuser Supply (GRD)

RTU2/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
RTU2-SGRD1	BACK KITCHEN	A	10"	360	1.0	469	354	354	98.3
RTU2-SGRD2	BACK KITCHEN	A	10"	360	1.0	388	363	363	100.8
RTU2-SGRD3	COOKLINE	D	10"	275	1.0	140	218	218	79.3
RTU2-SGRD4	COOKLINE	D	10"	275	1.0	234	331	331	120.4
RTU2-SGRD5	COOKLINE	D	10"	275	1.0	249	305	305	110.9
RTU2-SGRD6	COOKLINE	D	10"	275	1.0	261	344	344	125.1
RTU2-SGRD7	KITCHEN HOOD	ACPSP		600	5.83	612	612	612	102.0
RTU2-SGRD8	KITCHEN	A	10"	360	1.0	361	346	346	96.1
RTU2-SGRD9	KITCHEN	A	10"	360	1.0	287	329	329	91.4
RTU2-SGRD10	MANAGERS OFFICE	A	6"	100	1.0	134	104	104	104.0
RTU2-SGRD11	CORRIDOR	A	10"	360	1.0	535	356	356	98.9
RTU2-SGRD12	UNFINISHED AREA	G	8X8	200	1.0	190	201	201	100.5
RTU2-SGRD13	UNFINISHED AREA	G	8X8	200	1.0	233	212	212	106.0
Total				4000		4093	4075	4075	101.88%

Completed By: Dylan Crisman on 07/15/2024

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: FAN - Exhaust

Asset: CEF1 AREA:WOMENS RR

Unit Data		
	Design	**Actual**
MFG	COOK	BROAN
Model Num	GC-148	L100E-A
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NL
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	0.3
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	100	88
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	HIGH SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.3"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

Completed By: Dylan Crisman on 07/16/2024

Notes:
[1] FAN IS LOW ON FLOW AT 88% OF DESIGN, 88/100CFM. UNIT IS WIRED FOR HIGH SPEED, NO SPEED CONTROLLER INSTALLED.

Written By: Dylan Crisman on 07/16/2024

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: FAN - Exhaust

Asset: CEF2 AREA:MENS RR

Unit Data		
	Design	**Actual**
MFG	COOK	BROAN
Model Num	GC-148	L100E-A
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	0.3
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	100	100
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	HIGH SPEED
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.3"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	ATM

Completed By: Dylan Crisman on 07/15/2024

National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: FAN - Exhaust

Asset: EF3 AREA:TRASH ROOM

Unit Data		
	Design	**Actual**
MFG	COOK	COOK
Model Num	90R17DEC 90 ACRUH	90R17DEC 90 ACRUH
Serial Num	-	006SL18679-00
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	1/6
Motor Rpm	-	1725
Phase	-	11
Voltage (rated)	-	120
Amperage (rated)	-	2.36
Service Factor	-	1.0

Test Data		
	Design	**Actual**
CFM	200	197
Fan RPM	-	862
Fan Rotation	-	CCW
Motor RPM	-	862
System SetPt	-	50%
RL Voltage	-	NA1
RL Amperage	-	NA
Total ESP	-	0.32"
Fan Inlet SP	-	-0.32"
Fan Discharge SP	-	ATM

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National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: FAN - Exhaust

Asset: KEF1 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU85HFA	DU85HFA
Serial Num	-	6740652
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO-GREEN
Frame	-	NL
Horsepower	-	1.0
Motor Rpm	-	1800
Phase	1	11
Voltage (rated)	115	115
Amperage (rated)	-	11.6
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	2381	2329
Fan RPM	1574	1368
Fan Rotation	-	CCW
Motor RPM	-	1368
System SetPt	-	76%
RL Voltage	-	119
RL Amperage	-	9.4
Total ESP	1.0"	0.68"
Fan Inlet SP	-	-0.68"
Fan Discharge SP	-	ATM

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National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: FAN - Supply

Asset: MUA1 AREA:KITCHEN HOOD

Unit Data		
	Design	**Actual**
MFG	CAPTIVAIRE	CAPTIVAIRE
Model Num	A1-D.250-15D-MPU	A1-D.250-15D-MPU
Serial Num	-	6740652
Type	MUA	MUA
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TECO-WESTINGHOUSE
Frame	-	145T
Horsepower	2	2.0
Motor Rpm	-	1745
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	5.64
Service Factor	-	1.15

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Fan Sheave Size	DD
Fan Sheave Bore	DD
Belt CL Distance	DD
Num of Belts	DD
Belt Size	DD
Belt Alignment Verified	DD

Gas Heat		
	Design	**Actual**
Heater Operates (y/n)	-	Y
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	55	55
Discharge Air Temp SetPt	60	60
Air Flow Switch SP Actual	-	0.33"

Test Data		
	Design	**Actual**
CFM	1965	1986
SF RPM	2134	2053
Motor RPM	-	2053
SF System SetPt	-	70.6Hz
RL Voltage	-	210@VFD
RL Amperage	-	5.0@VFD
Fan Discharge SP	-	ATM

General	
	Actual
Fan Rotation Correct	YES

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National TAB

Project: 07-15-24 CAVA RIVER FOREST, IL

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:

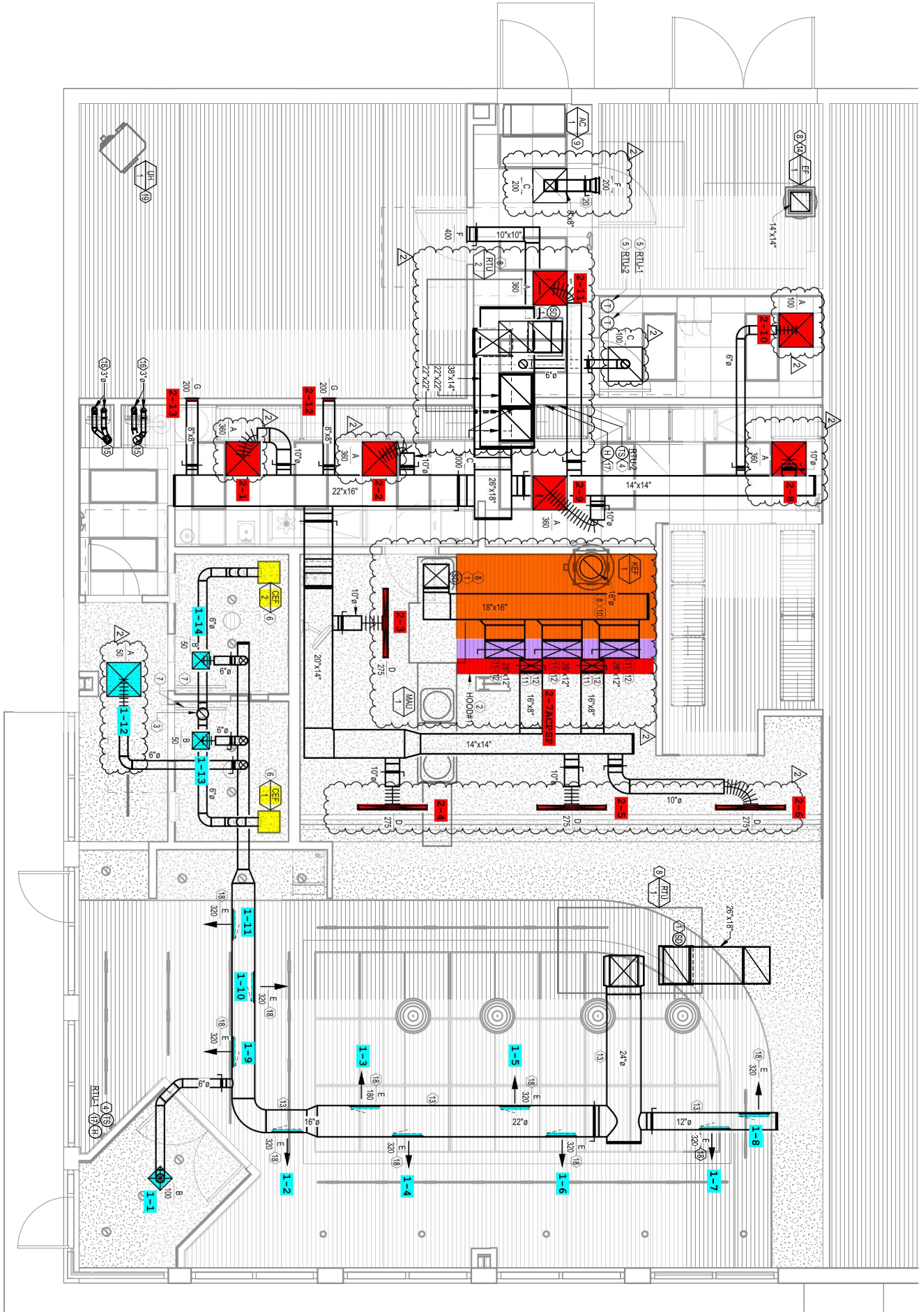
Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-S-ACPSP-F	6030 ND-S-ACPSP-F
Job / Serial Num	-	6740652
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	127"	127"
Hood Width	60"	60"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	14"	14"
Supply Plenum Length	140"	140"

Test Data Exhaust		
	Design	**Actual**
Filter Type	CAPTRATE SOLO FILTER	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	-	144
Filter2 FPM	-	157
Filter3 FPM	-	168
Filter4 FPM	-	178
Filter5 FPM	-	167
Filter6 FPM	-	161
Filter7 FPM	-	151
Filter Ave FPM(corr)	-	160
CFM	2381	2329

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

Test Data Supply		
	Design	**Actual**
Total AK Area	13.61	13.61
Kv factor (Vel)	.89	.89
Num of Readings	-	12
Reading1 FPM	-	145
Reading2 FPM	-	135
Reading3 FPM	-	151
Reading4 FPM	-	162
Reading5 FPM	-	124
Reading6 FPM	-	191
Reading7 FPM	-	178
Reading8 FPM	-	184
Reading9 FPM	-	199
Reading10 FPM	-	146
Reading11 FPM	-	160
Reading12 FPM	-	145
Ave FPM(corr)	-	164
CFM	1965	1986

Completed By: Dylan Crisman on 07/16/2024


N
1
M101
MECHANICAL PLAN
SCALE: 1/4" = 1'-0"
2-11
2-10
2-13
2-12
2-1
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2-9
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2-7ACPSP
1-14
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1-7
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RTU-1
RTU-2
RTU 1
RTU 2
AC 1
EF 1
KEF 1
MAU 1
CEF 1
CEF 2
UH 1
HOOD#1
10"x10"
14"x14"
22"x16"
26"x18"
18"x16"
20"x14"
16"x8"
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