

Report By:

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

NATIONAL

TAB

Comfort. Under control.

**Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 04/07/2023**

PROJECT

02-20-23 LIVERY - MONTGOMERY, OH

9320 MONTGOMERY RD

MONTGOMERY , OH 45242

Client

**C&T DESIGN
4025 PORT UNION RD.
FAIRFIELD, OH 45014**

National TAB

Project: 02-20-23 LIVERY - MONTGOMERY, OH

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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.

STATS



ERV



F-7



F-12



F-11



F-10



F-8



F-9





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CheckList Information

Name : TECH - STEP 1: INITIAL WALKTHROUGH **Status :** Submitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	DIFFUSERS AND GRILLES INSTALLED AND MATCH DESIGN
All hood filters installed and accounted for?	HOOD FILTERS INSTALLED
Hoods are wired and have power?	HOODS WIRED AND HAVE POWER
Hood is free of alarms?	HOOD IS FREE OF ALARMS
Thermostats have power?	STATS HAVE POWER
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :



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CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** Submitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional?	NA
DCV Max damper opening position is set to minimum?	NA
Free cooling enthalpy set point set for lowest setting (Typically "D")	NA
Motors are all operating below the FLA rating?	MOTORS BELOW FLA
Are belts tight?	DIRECT DRIVE
If direct drive unit is the speed controller working.	NA
Is gas piping installed and valves turned on?	GAS PIPING INSTALLED & VALVE TURNED ON
Unit free of noticeable noise and vibration	NO NOISE OR VIBRATION

EF's

Rotation is correct?	ROTATION IS CORRECT
Belts are tight?	DIRECT DRIVE
Grease cup installed on hood fan?	GREASE CUP INSTALLED
Hinge kit installed installed on hood fan?	HINGE KIT INSTALLED
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	GREASE DUCT ADEQUATE

Flex conduit is long enough so that fan can be completely tilted back?	FLEX CONDUIT IS LONG ENOUGH
There is no major leakage around base of fan?	NO MAJOR LEAKAGE
Is the motor operating below the motor FLA rating?	MOTOR BELOW FLA
For restroom fan(s) is the back draft damper installed and can it fully open?	NA
Unit free of noticeable noise and vibration?	NO NOISE OR VIBRATION
MUA	
Rotation is correct?	ROTATION IS CORRECT
Gas piping is installed and valves are in on position?	GAS PIPING IS INSTALLED
Heater tested and is functional?	HEATER TEST AND FUNCITONAL
Internal motorized damper is fully opening?	DAMPER FULLY OPEN
Motor is operating below the FLA rating?	MOTOR BELOW FLA
Unit free of noticeable noise and vibration?	NO NOISE OR VIBRATION
HOODS	
Kitchen equipment installed in proper places?	YES
Can kitchen equipment be turned on for final smoke test?	YES
DOCUMENTATION	
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	YES

Notes/Comments :



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CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** Submitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	FREE OF DRAFTING
Is space comfortable in all areas?	SPACE COMFORTABLE IN ALL AREAS
Is the space free of ventilation noise?	FREE OF VENTILATION NOISE
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	NA

Notes/Comments :



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CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	Status :	Submitted
Assigned Organization :	National TAB	Asset :	
Requesting Organization :	National TAB		

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing	NA
List smoke candle type used	NA
Smoke test capture - Perimeter of hood	NA
Smoke test capture - Top of cooking surface	NA

WITNESS

Date test was completed	
TAB tech name / Firm	NA
Site super name / Firm	NA
Owner representative name / Firm (if Applicable)	NA
Building pressure at front & back doors (All Systems On)	FRONT:0.005"

ADDITIONAL

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	YES
Thermostats are programmed?	YES

Notes/Comments :



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CheckList Information

Name : TECH - STEP 5: FINAL DOCUMENTATION **Status :** Submitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

CheckList Item Details

FINAL DOCUMENTATION

Marked Data capture complete for all assets?	YES
Picture file sent to processing team or uploaded?	YES
Balance schedule complete and uploaded?	YES
Prelim report generated and reviewed?	YES

Notes/Comments :

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
F-7	VESTIBLE/RR	2000	1985	1535	1574	465	411	23.3%	20.7%						
F-8	DINING/BAR	2000	2034	1535	1603	465	431	23.3%	21.2%						
F-9	KITCHEN	2000	1970	1600	1558	400	412	20.0%	20.9%						
F-10	KITCHEN	2000	2035	1535	1574	465	461	23.3%	22.7%						
F-11	KITCHEN	2000	2084	1600	1661	400	423	20.0%	20.3%						
F-12	DINING	2000	1889	1535	1391	465	498	23.3%	26.4%						
HMUA	KITCHEN									3785	3497				
KEF-1														4390	4073
KEF-2														1050	970
TOTALS		12000	11997	9340	9361	2660	2636			3785	3497	0	0	5440	5043

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	6445	6133
TOTAL EXHAUST	5440	5043
NET AIRFLOW	1005	1090

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.002
SIDE	
REAR	
AVERAGE	0.002

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:

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 7

AREA:005

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1.0	1.0
Rated Voltage	115	115
Rated Amperage	-	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	1985
SF RPM	-	DD
RA CFM	1700	1574
OA CFM	465	411
RL Voltage	-	166
RL Amperage	-	11.8
OA Damper Position	-	0.75"
Brake Horse Power	-	0.95

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.32"
Fan Discharge SP	-	0.21"
Fan Total SP	-	0.53"

Completed By: Austin McFall

Notes:

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



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Diffuser Supply (GRD)

F 7/005

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
F 7-SGRD1	005	CD-4W-2	8	170	1	161		165	97.1
F 7-SGRD2	005	CD-4W-4	8	228	1	233		239	104.8
F 7-SGRD3	005	CD-4W-4	8	228	1	246		233	102.2
F 7-SGRD4	005	CD-4W-4	8	228	1	219		222	97.4
F 7-SGRD5	005	CD-4W-4	8	228	1	265		231	101.3
F 7-SGRD6	005	LD-2	48X5	228	1	187		222	97.4
F 7-SGRD7	005	CD-4W-4	8	228	1	308		229	100.4
F 7-SGRD8	005	CD-4W-4	8	228	1	263		219	96.1
F 7-SGRD9	005	CD-4W-4	8	215	1	278		225	104.7

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 8

AREA:005

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1.0	1.0
Rated Voltage	115	115
Rated Amperage	12.4	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	2034
SF RPM	-	DD
RA CFM	-	1603
OA CFM	465	431
RL Voltage	-	116
RL Amperage	-	11.4
OA Damper Position	-	0.75"
Brake Horse Power	-	0.92

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.25"
Fan Discharge SP	-	0.22"
Fan Total SP	-	0.47"

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Notes:

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



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Diffuser Supply (GRD)

F 8/005

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
F 8-SGRD1	MEN'S RR	CD-4W-2	8	170	1	222		166	97.6
F 8-SGRD2	DINING	CD-4W-4	8	228	1	187		222	97.4
F 8-SGRD3	DINING	CD-4W-4	8	228	1	215		219	96.1
F 8-SGRD4	DINING	CD-4W-4	8	228	1	231		236	103.5
F 8-SGRD5	DINING	CD-4W-4	8	228	1	212		219	96.1
F 8-SGRD6	DINING	CD-4W-4	8	228	1	231		235	103.1
F 8-SGRD7	DINING	CD-4W-4	8	228	1	239		241	105.7
F 8-SGRD8	DINING	LD-2	48X5	240	1	252		255	106.3
F 8-SGRD9	DINING	LD-2	48X5	240	1	333		241	100.4

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 9

AREA:010

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1	1.0
Rated Voltage	115	115
Rated Amperage	-	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	1970
SF RPM	-	DD
RA CFM	1600	1588
OA CFM	400	412
RL Voltage	-	116
RL Amperage	-	11.8
OA Damper Position	-	0.685"
Brake Horse Power	-	0.95

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.29"
Fan Discharge SP	-	0.24"
Fan Total SP	-	0.53"

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Notes:

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

F 9/010

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	010	CD-4W-5	10	285	1	403	277	277	97.2
SGRD2	010	CD-4W-5	10	285	1	217	266	266	93.3
SGRD3	010	CD-4W-5	10	285	1	297	279	279	97.9
SGRD4	010	CD-4W-5	10	285	1	291	293	293	102.8
SGRD5	010	CD-4W-5	10	285	1	0	288	288	101.1
SGRD6	010	CD-4W-5	10	285	1	289	291	291	102.1
SGRD7	010	CD-4W-5	10	285	1	587	276	276	96.8

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 10

AREA:BAR/DINING

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1	1.0
Rated Voltage	115	115
Rated Amperage	-	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	2035
SF RPM	-	DD
RA CFM	1535	1574
OA CFM	465	461
RL Voltage	-	116
RL Amperage	-	11.6
OA Damper Position	-	0.75"
Brake Horse Power	-	0.935

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.25"
Fan Discharge SP	-	0.22"
Fan Total SP	-	0.47"

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Notes:

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



Diffuser Supply (GRD)

F 10/BAR/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
F 10-SGRD1	BAR	CD-4W-5	10	295	1	302		302	102.4
F 10-SGRD2	BAR	CD-4W-5	10	295	1	323		323	109.5
F 10-SGRD3	BAR	CD-4W-5	10	295	1	319		319	108.1
F 10-SGRD4	HALLWAY	CD-4W-5	10	295	1	315		315	106.8
F 10-SGRD5	DINING	CD-4W-5	10	350	1	319		319	91.1
F 10-SGRD6	DINING	LD-2	48X5	235	1	213		213	90.6
F 10-SGRD7	DINING	LD-2	48X5	235	1	244		244	103.8

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 11

AREA:010

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1	1.0
Rated Voltage	115	115
Rated Amperage	-	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	2084
SF RPM	-	DD
RA CFM	1600	1661
OA CFM	400	423
RL Voltage	-	166
RL Amperage	-	11.7
OA Damper Position	-	0685"
Brake Horse Power	-	0.94

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.19"
Fan Discharge SP	-	0.22"
Fan Total SP	-	0.41"

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Notes:

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



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Diffuser Supply (GRD)

F 11/010

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	010	CD-4W-1	6	95	1	89		91	95.8
SGRD2	010	CD-4W-5	10	333	1	357		342	102.7
SGRD3	010	CD-4W-5	10	333	1	326		329	98.8
SGRD4	00	CD-4W-5	10	333	1	301		312	93.7
SGRD5	010	CD-4W-5	10	333	1	356		339	101.8
SGRD6	010	CD-4W-5	10	333	1	286		314	94.3
SGRD7	010	CD-4W-5	10	333	1	363		357	107.2

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: AHU/RTU



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Asset: F 12

AREA:004

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	NA
Model Num	NA	59SC5B120E24-22
Configuration	-	HORIZONTAL
Num PreFilter 1	-	1
PreFilter Size 1	-	20X25X1

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	1.0	1.0
Motor Rpm	-	NA
Phase	1	1.0
Rated Voltage	115	115
Rated Amperage	-	12.4
Service Factor	-	1.0

Test Data		
	Design	Actual
SF CFM	2000	1889
SF RPM	-	DD
RA CFM	1535	1437
OA CFM	465	498
RL Voltage	115	116
RL Amperage	-	11.2
OA Damper Position	-	0.75"
Brake Horse Power	-	0.90

Performance Data		
	Design	Actual
Fan Suction SP	-	-0.27"
Fan Discharge SP	-	0.22"
Fan Total SP	-	0.49"

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Project:02-20-23 LIVERY - MONTGOMERY, OH

AHU/RTU



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Diffuser Supply (GRD)

F 12/004

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	004	LD-3	48X6	285	1	259		259	90.9
SGRD2	004	LD-3	48X6	285	1	262		262	91.9
SGRD3	004	LD-3	48X6	285	1	277		277	97.2
SGRD4	004	LD-3	48X6	285	1	266		266	93.3
SGRD5	004	LD-3	48X6	285	1	267		267	93.7
SGRD6	004	LD-3	48X6	285	1	279		279	97.9
SGRD7	004	LD-3	48X6	285	1	279		279	97.9

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Project: 02-20-23 LIVERY - MONTGOMERY, OH

System/Unit: Energy Recovery Unit



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Asset: ERV1

AREA:

Unit Data		
	Design	Actual
MFG	NA	RENEWAIRE
Model Num	NA	HE-2XJINV-S15UU
Serial Num	-	NA
Num Exh-Filters 1	-	
Exh-Filter Size 1	-	
Num Exh-Filters 2	-	
Exh-Filter Size 2	-	
Num OA-Filters 1	-	
OA-Supply Size 1	-	
Num OA-Filters 2	-	
OA-Filter Size 2	-	

Exhaust Fan Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	1.0
Motor Rpm	-	NA
Phase	-	1
Voltage (rated)	-	120
Amperage (rated)	-	
Service Factor	-	1.0

OA Fan Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	1.0
Motor Rpm	-	NA
Phase	-	1
Voltage (rated)	-	120
Amperage (rated)	-	
Service Factor	-	1.0
Brake Horse Power	-	

Exhaust Fan Test Data		
	Design	Actual
Exh-ERU CFM	1840	1781
Exh-ERU RPM	-	DD
RL Voltage	-	120
RL Amperage	-	NR

Exhaust Fan Performance Data		
	Design	Actual

OA Fan Test Data		
	Design	Actual
OA-ERU CFM	1861	1801
OA-ERU RPM	-	DD
RL Voltage	-	120

OA Fan Performance Data		
	Design	Actual

Completed By: Austin McFall

Notes:

SDV Job #: 5465095 - LIVERY (MONTGOMERY,OH)**Service Region:** 361 - Cincinnati OH Service
Service Person: Travis Huff**Customer Number:** 866644 **Customer Name:** NATIONAL TAB**Address:** Livery Restaurant
9320 Montgomery Rd
Montgomery, OH 45242**Region Job #:** 5159811
Region Job Name: LIVERY (MONTGOMERY,OH)**Sales Region:** 120 - Air Solutions
Sales Person: Joe Hertenstein**Created By:** Travis Huff **Creation Date:** 2/20/2023 10:16 AM
Last Modified By: Travis Huff **Last Modified Date:** 2/27/2023 5:01 PM**Dining Room Pressure:** 0 **Kitchen Pressure:** 0
Hours On Job: 0 **Extra Hours:** 0**Completed:** Yes **Completed By:** Travis Huff
Completion Date: 2/27/2023 5:01 PM**UDS**

NONE

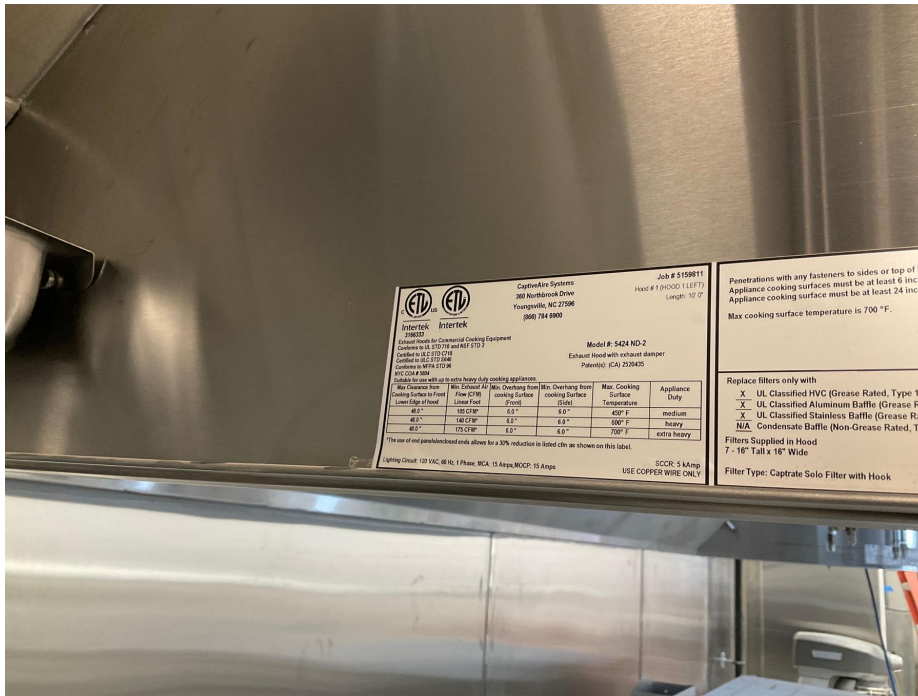
Hood Group 1**Exhaust CFM:** Design = 4390 Initial = 3833 Final = 4073 (92.8% of design)
Supply CFM: Design = 3785 Initial = 3497 Final = 3497 (92.4% of design)**Other Notes:**

Exhaust fan at FLA, unable to increase speed any further. Notified sales office who was on site. Duct to PSP missing in several locations for MAU, I was advised to measure CFM for MAU for hoods it was actually feeding until missing duct is installed.

Hood 1 (HOOD 1 LEFT) (HOOD 1 LEFT)**Model:** 5424ND-2-PSP-F **Length:** 10' 0.00"
Exhaust CFM: Design = 2300 Initial = 1776 Final = 2127 (92.5% of design)

Other Notes:

N/A



Installation

Hung Using appropriate material to safely secure hood. Design: **Yes** Actual: **No**

Other Notes:

No double-nut.

COOKING EQUIPMENT ON AND OPERATING Design: **Yes** Actual: **No**

COOKING EQUIPMENT INSTALLED AS CLOSE TO BACK WALL AS POSSIBLE Design: **Yes** Actual: **Yes**

END PANELS INSTALLED CORRECTLY Design: **Yes** Actual: **No**

Other Notes:

Quarter end panel not installed. Wall used as end panel.



INITIAL POSITION OF BALANCE DAMPER Actual: **0**

POSITION OF BALANCE DAMPER AFTER AIRFLOW Actual: **0**

Was a smoke test performed on Hood System? Design: **Yes** Actual: **Yes**

Filters

Type:	Captrate Solo				
Filter 1 Fan: Other	Size: 16x16	Initial Velocity: 169 fpm	Final Velocity: 182 fpm	Initial CFM: 274	Final CFM: 295
Filter 2 Fan: Other	Size: 16x16	Initial Velocity: 156 fpm	Final Velocity: 187 fpm	Initial CFM: 253	Final CFM: 303
Filter 3 Fan: Other	Size: 16x16	Initial Velocity: 170 fpm	Final Velocity: 197 fpm	Initial CFM: 275	Final CFM: 319
Filter 4 Fan: Other	Size: 16x16	Initial Velocity: 168 fpm	Final Velocity: 201 fpm	Initial CFM: 272	Final CFM: 326
Filter 5 Fan: Other	Size: 16x16	Initial Velocity: 161 fpm	Final Velocity: 194 fpm	Initial CFM: 261	Final CFM: 314
Filter 6 Fan: Other	Size: 16x16	Initial Velocity: 138 fpm	Final Velocity: 178 fpm	Initial CFM: 224	Final CFM: 288
Filter 7 Fan: Other	Size: 16x16	Initial Velocity: 134 fpm	Final Velocity: 174 fpm	Initial CFM: 217	Final CFM: 282

Supply CFM: Design = 1850 Initial = 828 Actual = 828 (44.8% of design) Fan: Other

PSP 1

Orientation: Front **Length:** 10' 0.00" **Width:** 16.00" **Banks:** 1
Blanks: 1
CFM: Design = 1848 Initial = 828 Final = 828 (44.8% of design)
Velocity: Design = 159 Initial = 71 Final = 71 (44.7% of design)

Readings:

Other Notes:

No duct ran from MAU to far left PSP of hood, notified sales office.

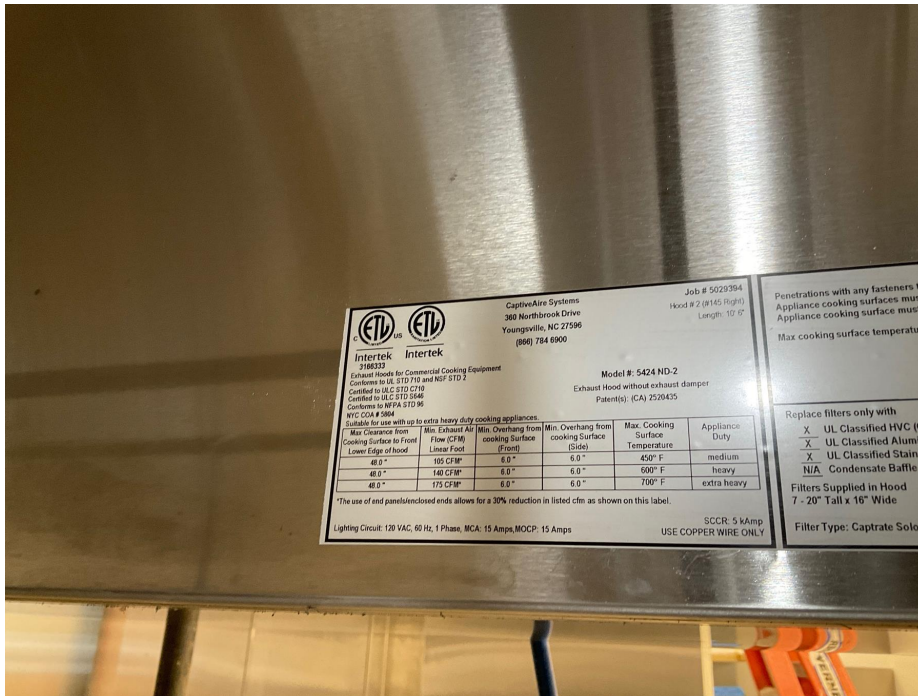
1: Initial: 1 fpm, Final: 1 fpm 2: Initial: 1 fpm, Final: 1 fpm 3: Initial: 1 fpm, Final: 1 fpm 4: Initial: 1 fpm, Final: 1 fpm
5: Initial: 1 fpm, Final: 1 fpm 6: Initial: 75 fpm, Final: 75 fpm 7: Initial: 74 fpm, Final: 74 fpm
8: Initial: 168 fpm, Final: 168 fpm 9: Initial: 220 fpm, Final: 220 fpm 10: Initial: 172 fpm, Final: 172 fpm

Hood 2 (HOOD 1 RIGHT) (HOOD 1 RIGHT)

Model: 5424ND-2-PSP-F **Length:** 11' 0.00"
Exhaust CFM: Design = 2090 Initial = 2057 Final = 1946 (93.1% of design)

Other Notes:

N/A



Installation

Hung Using appropriate material to safely secure hood. Design: **Yes** Actual: **No**

Other Notes:

No double-nut.

COOKING EQUIPMENT ON AND OPERATING Design: **Yes** Actual: **No**

COOKING EQUIPMENT INSTALLED AS CLOSE TO BACK WALL AS POSSIBLE Design: **Yes** Actual: **Yes**

END PANELS INSTALLED CORRECTLY Design: **Yes** Actual: **No**

Other Notes:

Right quarter end panel not installed.



INITIAL POSITION OF BALANCE DAMPER Actual: **0**

POSITION OF BALANCE DAMPER AFTER AIRFLOW Actual: **50**

Was a smoke test performed on Hood System? Design: **Yes** Actual: **Yes**

Filters

Type:	Captrate Solo				
Filter 1 Fan: Other	Size: 16x16	Initial Velocity: 151 fpm	Final Velocity: 154 fpm	Initial CFM: 245	Final CFM: 249
Filter 2 Fan: Other	Size: 16x16	Initial Velocity: 169 fpm	Final Velocity: 157 fpm	Initial CFM: 274	Final CFM: 254
Filter 3 Fan: Other	Size: 16x16	Initial Velocity: 161 fpm	Final Velocity: 150 fpm	Initial CFM: 261	Final CFM: 243
Filter 4 Fan: Other	Size: 16x16	Initial Velocity: 172 fpm	Final Velocity: 159 fpm	Initial CFM: 279	Final CFM: 258
Filter 5 Fan: Other	Size: 16x16	Initial Velocity: 173 fpm	Final Velocity: 163 fpm	Initial CFM: 280	Final CFM: 264
Filter 6 Fan: Other	Size: 16x16	Initial Velocity: 153 fpm	Final Velocity: 143 fpm	Initial CFM: 248	Final CFM: 232
Filter 7 Fan: Other	Size: 16x16	Initial Velocity: 158 fpm	Final Velocity: 156 fpm	Initial CFM: 256	Final CFM: 253
Filter 8 Fan: Other	Size: 16x16	Initial Velocity: 132 fpm	Final Velocity: 119 fpm	Initial CFM: 214	Final CFM: 193

Supply

Supply CFM: Design = 1935 Initial = 2669 Actual = 2669 (137.9% of design) Fan: Other

PSP 1

Orientation: Front **Length:** 12' 0.00" **Width:** 16.00" **Banks:** 1
Blanks: 1
CFM: Design = 1935 Initial = 2669 Final = 2669 (137.9% of design)
Velocity: Design = 140 Initial = 193 Final = 193 (137.9% of design)

Readings:

1: Initial: 162 fpm, Final: 162 fpm 2: Initial: 175 fpm, Final: 175 fpm 3: Initial: 188 fpm, Final: 188 fpm
4: Initial: 174 fpm, Final: 174 fpm 5: Initial: 119 fpm, Final: 119 fpm 6: Initial: 168 fpm, Final: 168 fpm
7: Initial: 208 fpm, Final: 208 fpm 8: Initial: 223 fpm, Final: 223 fpm 9: Initial: 236 fpm, Final: 236 fpm
10: Initial: 209 fpm, Final: 209 fpm 11: Initial: 213 fpm, Final: 213 fpm 12: Initial: 213 fpm, Final: 213 fpm

Hood Group 2

Exhaust CFM: Design = 1050 Initial = 970 Final = 970 (92.4% of design)
Supply CFM: Design = 945 Initial = 6 Final = 6 (0.6% of design)

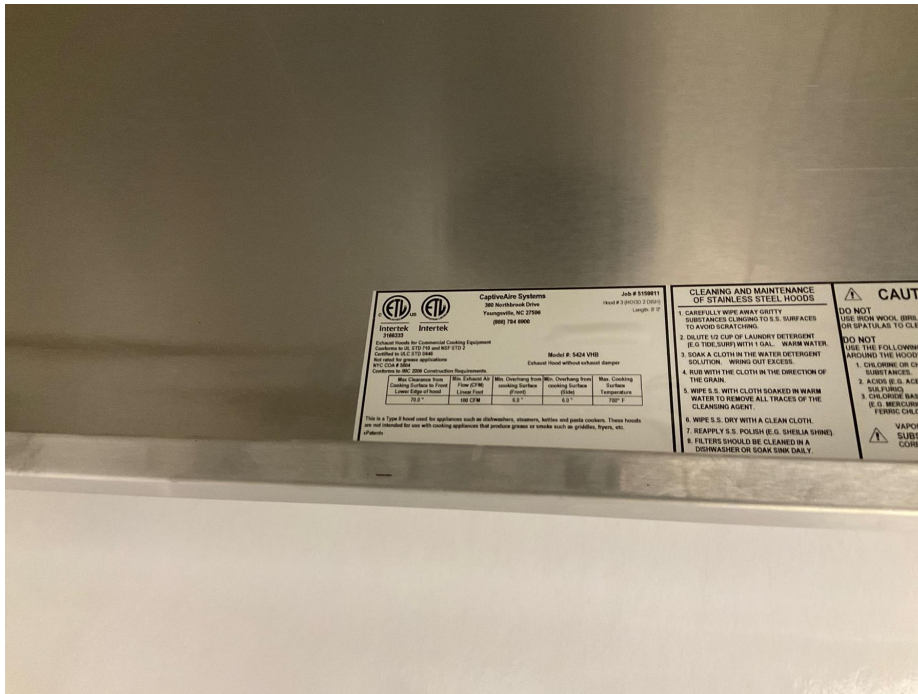
Hood 3 (HOOD 2 DISH) (HOOD 2 DISH)

Model: 5424VHB-G-PSP-F **Length:** 8' 0.00"
Exhaust CFM: Design = 1050 Initial = 970 Final = 970 (92.4% of design)

Other Notes:

Unable to gain access to fan in order to increase speed.

See attachment(s): [20230220141236.mp4]



Installation

Hung Using appropriate material to safely secure hood. Design: **Yes** Actual: **No**

Other Notes:

No double-nut.

COOKING EQUIPMENT ON AND OPERATING Design: **Yes** Actual: **Yes**

COOKING EQUIPMENT INSTALLED AS CLOSE TO BACK WALL AS POSSIBLE Design: **Yes** Actual: **Yes**

Was a smoke test performed on Hood System? Design: **Yes** Actual: **Yes**

Date: 4/7/2023

Supply

Supply CFM: Design = 945 Initial = 6 Actual = 6 (0.6% of design) Fan: Other

PSP 1

Orientation: Front **Length:** 8' 0.00" **Width:** 12.00" **Banks:** 1
Blanks: 1
CFM: Design = 944 Initial = 6 Final = 6 (0.6% of design)
Velocity: Design = 148 Initial = 0 Final = 0 (0% of design)

Readings:

Other Notes:

No duct work running to PSP from MAU.

1: Initial: 1 fpm, Final: 1 fpm 2: Initial: 1 fpm, Final: 1 fpm 3: Initial: 1 fpm, Final: 1 fpm 4: Initial: 1 fpm, Final: 1 fpm
5: Initial: 1 fpm, Final: 1 fpm 6: Initial: 1 fpm, Final: 1 fpm 7: Initial: 1 fpm, Final: 1 fpm 8: Initial: 1 fpm, Final: 1 fpm

AQEs

NONE

Fans

NONE

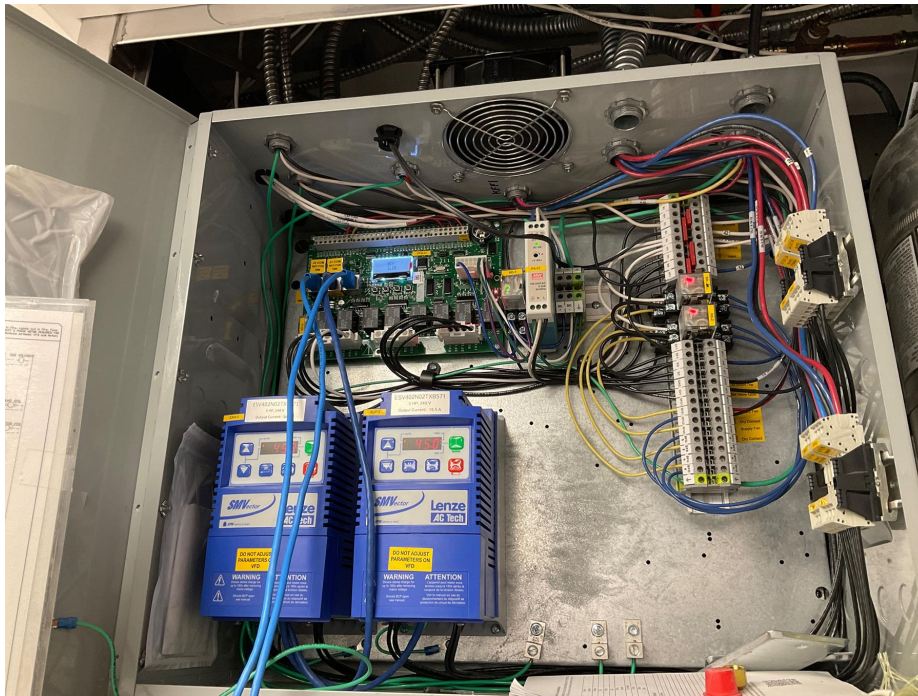
ECPs

ECP 1 - DCV-1111_MA4 (EMS1) (EMS1)

Package #: DCV-1111_MA4

Other Notes:

N/A



Smart Control

GAS VALVE RESET WORKS	Design: Yes	Actual: Yes
ROOM TEMPERATURE OFFSET	Design: 21	Actual: 21
HOW MANY FAN ZONES ARE THERE	Design: 1	Actual: 1
HYSTERESIS TEMPERATURE		Actual: 2
Room Sensor Type		Actual: Preset
What is Preset temperature set to?		Actual: 75

Date: 4/7/2023
 ALL TEMP SENSORS ARE WIRED IN
 No more light circuits exceed

Design: **Yes** Actual: **Yes**
 Design: **No** Actual: **No**

Do any of the light circuits exceed 1400W?

Design: **No**

Actual: **No**

ALL LIGHTS WORK

Design: **Yes**

Actual: **No**

Other Notes:

Only two lightbulbs installed in hood.



ALL FAULTS CLEARED

Design: **Yes**

Actual: **Yes**

ECPM03 HARDWARE REVISION

Design: **04**

Actual: **04**

ECPM03 PROGRAM VERSION

Design: **2.15.04**

Actual: **2.15.04**

CASHMI HARDWARE REVISION

Design: **03**

Actual: **03**

CASHMI PROGRAM VERSION

Design: **2.15.04**

Actual: **2.15.04**

ECPM03 DATE AND TIME ACCURATE

Design: **Yes**

Actual: **Yes**

Smoke Test Performed on all Hoods? Upload Video

Design: **Yes**

Actual: **Yes**

Other Notes:

Date: 4/7/2023_{N/A}

DCV

120V Line Ran from SF1 for MUA(s)	Design: Yes	Actual: Yes
Damper interlock wiring ran to MAU?	Design: Yes	Actual: Yes

VFDs

VFD 1

DESIGN CFM	Design: 4390	Actual: 4073
FAN DIRECTION	Design: Forward	Actual: Forward
TEMP SENSOR #s ASSIGNED	Design: T2, T3	Actual: T2, T3

DCV VFD

MODULATION RANGE	Design: 45	Actual: 45
OVERLOAD = P108	Design: 94	Actual: 93
MIN HZ	Design: 37.8	Actual: 39.9
MAX HZ	Design: 47.3	Actual: 49.9
ALL FAULTS CLEARED = P197 P508	Design: Yes	Actual: Yes
LOAD IN SEPARATE CONDUIT.	Design: Yes	Actual: Yes

VFD 2

DESIGN CFM	Design: 4835	Actual: 3497
FAN DIRECTION	Design: Forward	Actual: Forward

DCV VFD

SUPPLY FAN # ASSIGNED	Design: 3	Actual: 3
OVERLOAD = P108	Design: 90	Actual: 90
MAX HZ	Design: 66	Actual: 45
ALL FAULTS CLEARED = P197 P508	Design: Yes	Actual: Yes
LOAD IN SEPARATE CONDUIT.	Design: Yes	Actual: Yes

TANK

TANK ECP 1 (EMS1)

Location : Hood #2 5424ND-2-PSP-F: Utility Cabinet Wall Mounted

Other Notes:

PAK's for Tank system replaced due to shipping prior to 8/2022.

Building Alarm Tied In	Design: Yes	Actual: No
Trouble Relay Tied In	Design: Yes	Actual: No
TANK Board Version	Design: N/A	Actual: 1.63
TANK Board Updated to latest Software Version		Actual: Yes
TANK Board Software Version	Design: N/A	Actual: 1.9
Internet Connection Type		Actual: Cellular

TANK Fire Suppression 1 (TANK)

Location : Hood #2 - Utility Cabinet Right

Electrician

TANK Control Panel Wired	Design: Yes	Actual: Yes
UDS Appliance Kill Switch (if equipped) Wired	N/A	

Fire System Contractor w/CAS Supervision

Verify kitchen line up with drawings in NOLA?		Actual: Correct
Actuator is in Shipped position with shipping plates mounted upon arrival? Upload Picture.	Design: Yes	Actual: Yes

Other Notes:

N/A





Gas Valve is Functioning Properly	Design: Yes	Actual: Yes
Gas Valve Wired (In Conduit)	Design: Yes	Actual: Yes
Are all overlapping nozzles within 35-50" of cooking surface?	Design: Yes	Actual: Yes
Nozzles Within 15" From Front/Back of Hazard Zone	Design: Yes	Actual: Yes
Verify overlapping nozzles are located at centerline of the 30" hazard zone (front to back) same height, aimed straight down?	Design: Yes	Actual: Yes
Is there a Salamander or Upright Broiler Present?	Design: Yes	Actual: No
Does the depth of any appliance cooking surface exceed the listed size in the Appliance Coverage Detail chart?	Design: No	Actual: No
All dedicated appliances, duct and plenum are utilizing TANK appliance nozzles (3070-3/8H-10-SS)?	Design: Yes	Actual: Yes
Is end plenum nozzle installed 0-6" into plenum (From end of hood/hazard to center of nozzle)?	Design: Yes	Actual: Yes
Are TANK appliance nozzles spaced no more than 12"(From end of Hazard zone to center of first nozzle and end of hazard zone to center of last nozzle)?	Design: Yes	Actual: Yes
Did the appliance lineup change from the original design?	Design: No	Actual: No
Did the fire system appliance drops change from the original design?	Design: No	Actual: No
Does Fire System cover a Wok?		Actual: No
Does dedicated TANK appliance nozzle piping exceed maximum pipe length of 10 ft?	Design: No	Actual: No
Does plenum branch piping exceed maximum pipe length of 3ft?	Design: No	Actual: No
Does the Supply line piping to first overlapping nozzle exceed 42 ft?	Design: No	Actual: No

Is Back-shelf a minimum of 18" Vertically off Appliance **N/A**

Back-shelf Overhang less than 12" **N/A**

No appliance drop has more than 2 nozzles?	Design: True	Actual: True
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Is all piping except appliance drops 3/8" Blackiron, Chrome plated, Stainless Steel or 1/2" Copper?	Design: Yes	Actual: Yes
Is all appliance drop piping 3/8" polished stainless steel or polished chrome-plated black iron?		Actual: Yes
Tilt Skillet and Fryers are Covered Adequately	Design: Yes	Actual: Yes
Manual Activation Device Wired into a Fire Loop (Must be 4 wire, in conduit)	Design: Yes	Actual: Yes
MAD Installed 10'-20' from Hood at a Point of Egress and 42"-48" AFF	Design: Yes	Actual: Yes

Extra Fire Stat Added **N/A**

Fire stats are wired in a fire loop with 842 degree high temp wire when ran on top of hoods	Design: Yes	Actual: Yes
CAS Service Supervised, Assisted or Wired All Supervised Loop Connections		Actual: Supervised

CAS Service

Fire System Activates on Battery Backup	Design: Yes	Actual: Yes
System Activates on 120V power only	Design: Yes	Actual: Yes
Manual Activation Device Reset button resets system.	Design: Yes	Actual: Yes
Audible Alarm Sounds	Design: Yes	Actual: Yes
Battery Date Code (The actual date FST wrote on batteries with paint pen during SDV)		Actual: 2/21/2023 11:32:05 PM
Verify the correct amount of TANK appliance nozzles cover the cross-sectional Perimeter or Diameter of the Duct Riser? (If 0 - 75" perimeter equals 1 nozzles, 75 - 150" 2 nozzles, above 150" 3 nozzles)	Design: Yes	Actual: Yes
Is the system commissioned with the actuator bolted onto the TANK Fire Suppression system tank? Upload Picture.	Design: Yes	Actual: No

Other Notes:

N/A





Is pressure switch installed and functioning properly?

Design: **Yes**

Actual: **Yes**

Monitor the pressure gauge on the PAK. The pressure must not read above 0.5 psi for a minimum of 15 minutes.

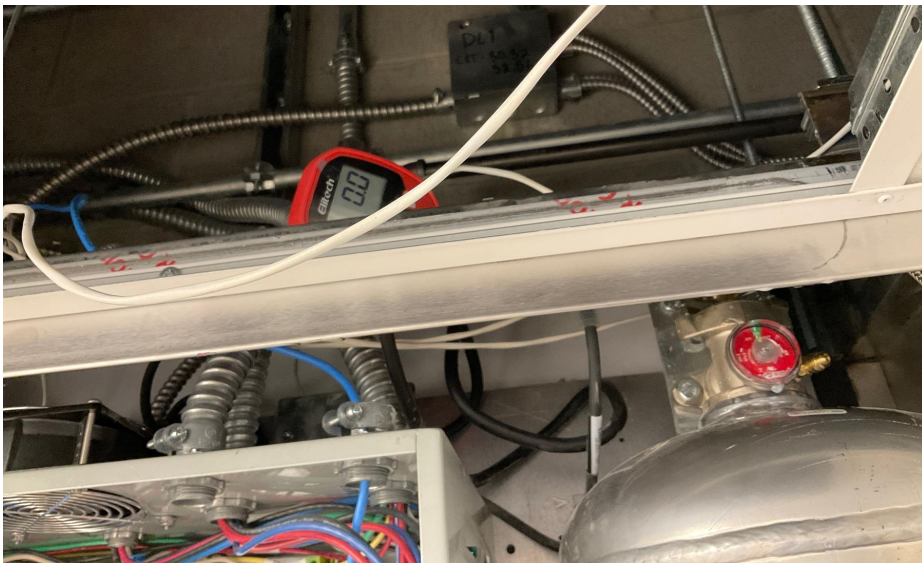
Design: **N/A**

Actual: **Complete**

Other Notes:

N/A





CAUTION!: If pressure reads above 0.5 psi, immediately remove the primary actuator hose from the primary tank

Actual: **Ok**

Is appliance specific protection piped with adequate protection? Upload picture.

Design: **Yes**

Actual: **Yes**

Other Notes:

N/A





Use coil liquid leak detector around PAK and braided hose to check for leaks. Are there any leaks present?

Design: **No**

Actual: **No**

Do TANK bottles have 200 PSI with gauges functioning properly? Upload picture

Design: **Yes**

Actual: **Yes**

Other Notes:

N/A



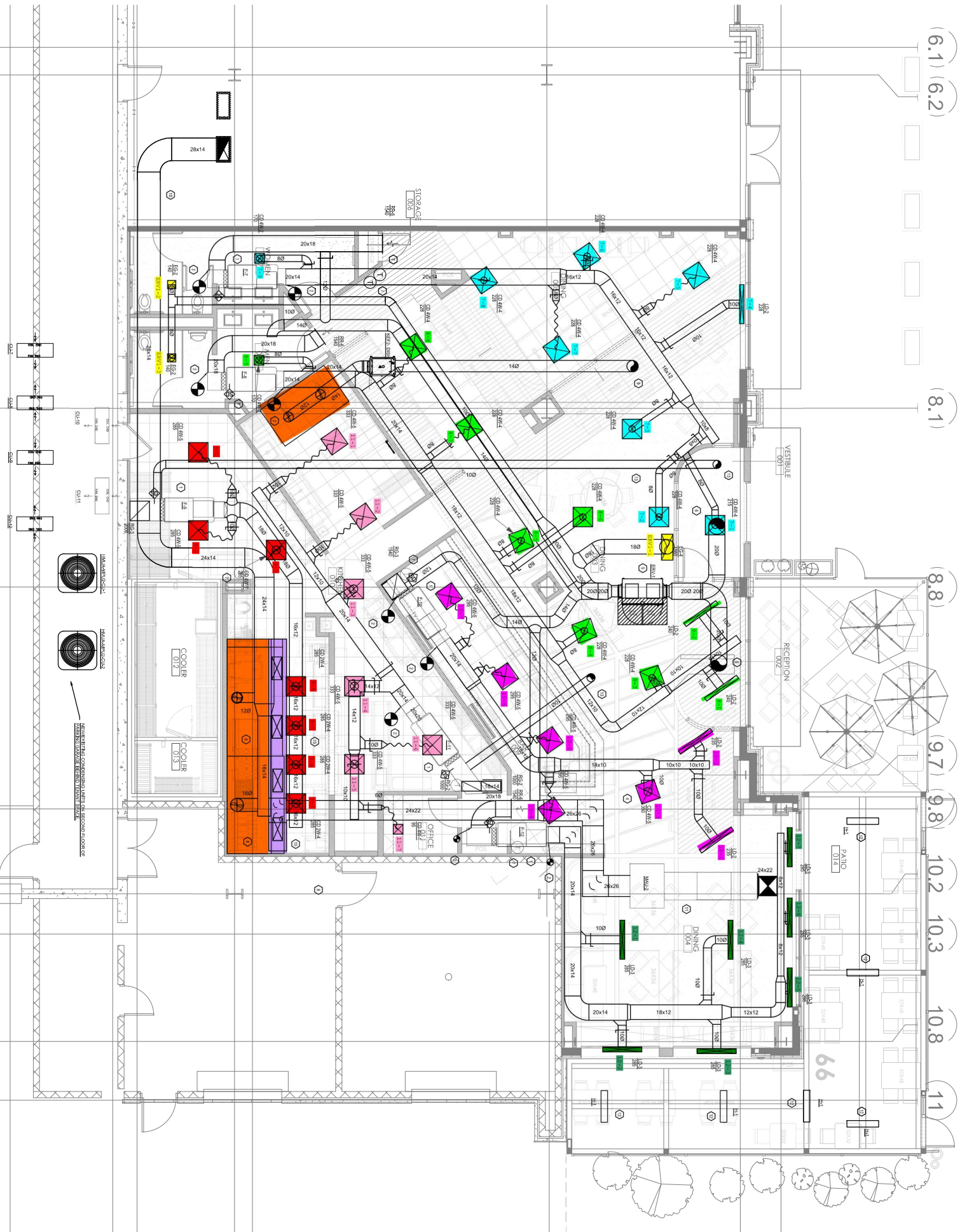


Do all nozzles have metal caps?	Design: Yes	Actual: Yes
Verify Nozzle Flow Points/Tank Capabilities. Does Nozzles FP exceed Tank Capacity?	Design: No	Actual: No
Take a photo of Fire System Tag		Actual: Ok
Tanks installed securely with straps and mounting hardware?	Design: Yes	Actual: Yes
After inspection of system, lubricate and change O-ring of primary actuator hose (p/n 19020).	Design: Replaced	Actual: Replaced
All Faults Are Cleared	Design: Yes	Actual: Yes
Are DIP switches set correctly according to number of Fire Groups?	Design: Yes	Actual: Yes

NONE

PCU Installations

NONE



MECHANICAL FLOOR PLAN
MECHANICAL COMPRESSING UNITS ON SECOND FLOOR OF
MECHANICAL COMPRESSING UNITS ON SECOND FLOOR OF