Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 10/23/2025

Completed By: National TAB

PROJECT

10-06-25 QT #1109 ANDERSON, SC

2901 N MAIN ST

ANDERSON, SC

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

Table Of Contents

Project Summary

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

RTU's (Roof Top Units)
Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the typical QT set point at the Emerson controller and then making manually adjustments on the roof. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

Kitchen Exhaust Hood & Associated Fans
The 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.

Restroom Exhaust Fans
The restroom exhaust fans were measured with a flow hood. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

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 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

- NEITHER EF WORKING
- RTU 3 WRONG COOK LINE DIFFUSERS

10-06-25 QT #1109 ANDERSON, SC

Project Issue Information

Issue Name : NEITHER EF WORKING

Description : Neither of the exhaust fans are running. Balancing could not take place, both units have power.

Created By : National TAB

Assigned To : National TAB - Brianna Biggs

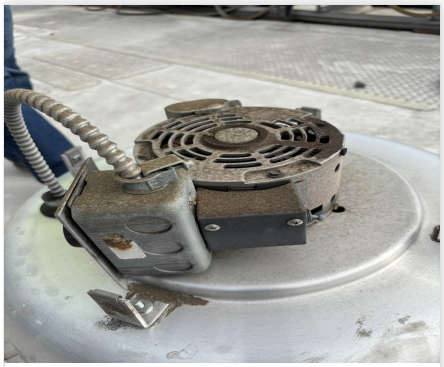
Status : Open

Priority : Urgent

Asset Tag :

Originated Date : 10/10/2025 - Christian Moller - National TAB

Project Issue File Details



10/10/2025

10/10/2025

10-06-25 QT #1109 ANDERSON, SC

Project Issue Information

Issue Name : RTU 3 WRONG COOK LINE DIFFUSERS

Description : The diffusers for RTU 3 in front of the hood are wrong. Plans call for 4 double deflection grilles.

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	Low	**Asset Tag :**	RT-3
Originated Date :	10/10/2025 - Christian Moller - National TAB		

Project Issue File Details

10/10/2025

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	800	744	350	355				
RTU-2	SALES	800	765	350	323				
RTU-3	BOH/KITCHEN	800	758	350	372				
EF-1	WOMEN'S RR					225	0	225	0
EF-2	MEN'S RR					525	0	525	0
EF-3	HOOD					1350	1310	0	0
TOTALS		2400	2267	1050	1050	2100	1310	750	0

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2267
TOTAL EXHAUST	2100	1310
NET AIRFLOW	300	957

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0035
SIDE	
REAR	
AVERAGE	**0.0035**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1050
TOTAL EXHAUST	750	0
NET AIRFLOW	300	1050

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	
SIDE	
REAR	
AVERAGE	

NOTES:

CheckList List

- 01: RTU’s/AHU’s
- 02: Exhaust Fans
- 03: Hoods
- QT - 04: Final Tests

10-06-25 QT #1109 ANDERSON, SC

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/24/2025 - Trinity Dodds - National TAB		

CheckList Item Details

RTU's/AHU's

10/24/2025

10/24/2025

10/24/2025

RTU OA SETPOINTS MARKED

Comment:

10/24/2025

10/24/2025

10/24/2025

Evaporator and Condenser coils are clean?	Pass
Comment:	
Gas piping is installed and valves are turned on?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

10-06-25 QT #1109 ANDERSON, SC

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/24/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - National TAB		

CheckList Item Details

EF's

Hinge kit installed installed on hood fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
No major leakage around the fan base	Pass
Comment:	
Unit is free of noise and vibration	Pass
Comment:	

10-06-25 QT #1109 ANDERSON, SC

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/24/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - National TAB		

CheckList Item Details

HOODS

Hood is free of alarms?	Pass
Comment:	
Hood is free of damage?	Pass
Comment:	
End panels are installed per prototype?	Pass
Comment:	

10-06-25 QT #1109 ANDERSON, SC

CheckList Information

Name :	QT - 04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/24/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

NONE

List smoke candle type used

Comment:

S102-45 second candles

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	10/14/2025

Comment:

TAB tech name / Firm

Comment:

Christian Moller / NTAB

Site super name / Firm

Comment:

Kevin Green / Ascent 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)	Pass

Comment:

Front: +0.0035"

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201205-ANEK06791
Model Num	NA	RN - 013-8-0-EAOA - 152
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45x25
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	AAON
Frame	-	NL
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4158
SF RPM	-	994
RA CFM	3400	3414
OA CFM	800	744
RL Voltage	-	211/211/209
RL Amperage	-	4.5/3.8/4.3
SF Rotation	-	CCW
SF System SetPt	-	LOW; 25Hz HIGH; 33.9Hz
RA Damper Position	-	HOODS OFF; 77.8% HOODS ON; 74%
Min OA Damper Position	-	HOODS OFF; 26% HOODS ON; 22.2%
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.36”
Fan Suction SP	-	-0.49”
Fan Discharge SP	-	0.47”
Total ESP	-	0.85”
Fan Total SP	-	0.96”

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

Completed By: Christian Moller on 10/07/2025

Unit Data - PHOTO LOG

10/07/2025

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201205 - ANEK06792
Model Num	NA	RN-013-8-0-EA0A-152
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45x25
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	AAON
Frame	-	NL
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4373
SF RPM	-	1024
RA CFM	3400	3608
OA CFM	800	765
RL Voltage	-	209/211/210
RL Amperage	-	5.0/5.0/4.1
SF Rotation	-	CCW
SF System SetPt	-	LOW; 20.4 Hz HIGH; 34.9Hz
RA Damper Position	-	LOW; 74% HIGH; 77.8Hz
Min OA Damper Position	-	LOW; 26% HIGH; 22.2%
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.40”
Fan Suction SP	-	-0.57”
Fan Discharge SP	-	0.62”
Total ESP	-	0.97”
Fan Total SP	-	1.19”

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

Completed By: Christian Moller on 10/07/2025

Unit Data - PHOTO LOG

10/07/2025

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201205-ANEK06793
Model Num	NA	RN - 013-8-0-EAOA - 152
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45x25

Motor Data		
	Design	**Actual**
Motor MFG	-	AAON
Frame	-	NL
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4054
SF RPM	-	1024
RA CFM	3400	3296
OA CFM	800	758
RL Voltage	-	211/211/209
RL Amperage	-	4.5/4.8/5.1
SF Rotation	-	CCW
SF System SetPt	-	LOW; 14.4Hz HIGH; 34.9Hz
RA Damper Position	-	LOW; 74% HIGH; 77.83%
Min OA Damper Position	-	LOW; 26% HIGH; 22.17%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.50"
Fan Suction SP	-	-0.63"
Fan Discharge SP	-	0.66"
Total ESP	-	1.13"
Fan Total SP	-	1.29"

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

Completed By: Christian Moller on 10/10/2025

Unit Data - PHOTO LOG

10/10/2025

National TAB

Project:10-06-25 QT #1109 ANDERSON, SC

AHU/RTU

Diffuser Supply (GRD)

RT-3/BOH/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUPPORT SERVICE	SI	12"	800	1	574	802	802	100.3
SGRD2	SUPPORT SERVICE	SI	12"	800	1	432	760	760	95.0
SGRD3	SUPPORT SERVICE	SI	12"	800	1	479	772	772	96.5
SGRD4	SUPPORT SERVICE	SI	12"	800	1	326	755	755	94.4
SGRD5	WORKROOM	ES	12"	750	1	653	722	722	96.3
SGRD6	WORKROOM	ES	8"	250	1	112	243	243	97.2
Total				4200		2576	4054	4054	96.52%

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: FAN - Exhaust

Asset: EF1 AREA:WOMEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	90 ACEH 90C15DH
Serial Num	-	418SF11146-00/0000701
Type	-	UPBLAST
Configuration	-	VERTICAL

Test Data		
	Design	**Actual**
CFM	225	0
Fan RPM	-	0
Motor RPM	-	0
System SetPt	-	OFF
RL Voltage	-	0
RL Amperage	-	0
Total ESP	-	0

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.125
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NL

Completed By: Christian Moller on 10/15/2025

Notes:
[1] FAN NOT OPERATIONAL; NEEDS SERVICE.

Written By: Michael McDonnell on 10/28/2025

Unit Data - PHOTO LOG

10/07/2025

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	120 ACE 120C13D 33
Serial Num	-	418SE11146-00/0002001
Type	-	UPBLAST
Configuration	-	VERTICAL

Test Data		
	Design	**Actual**
CFM	525	0
Fan RPM	-	0
Motor RPM	-	0
System SetPt	-	OFF
RL Voltage	-	0
RL Amperage	-	0
Total ESP	-	0

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.250
Motor Rpm	-	1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	NL

Completed By: Christian Moller on 10/15/2025

Notes:
[1] FAN NOT OPERATIONAL; NEEDS SERVICE.

Written By: Michael McDonnell on 10/28/2025

Unit Data - PHOTO LOG

10/07/2025

Diffuser Ret/Exh (GRD)

EF2/MEN'S RR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	SUPPORT SERVICE	RI	8"	150	1.0	0	0	0	0.0
Total				150		0	0	0	0%

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7657307
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	CAPTIVEAIRE
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1310
Fan Rotation	-	CCW
System SetPt	-	HMI/55.8Hz
RL Voltage	-	206
RL Amperage	-	2.7
Total ESP	-	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 10/14/2025

Unit Data - PHOTO LOG

10/10/2025

National TAB

Project: 10-06-25 QT #1109 ANDERSON, SC

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	7657307
Type	-	UPBLAST
Hood length	-	122”
Hood Width	-	60”

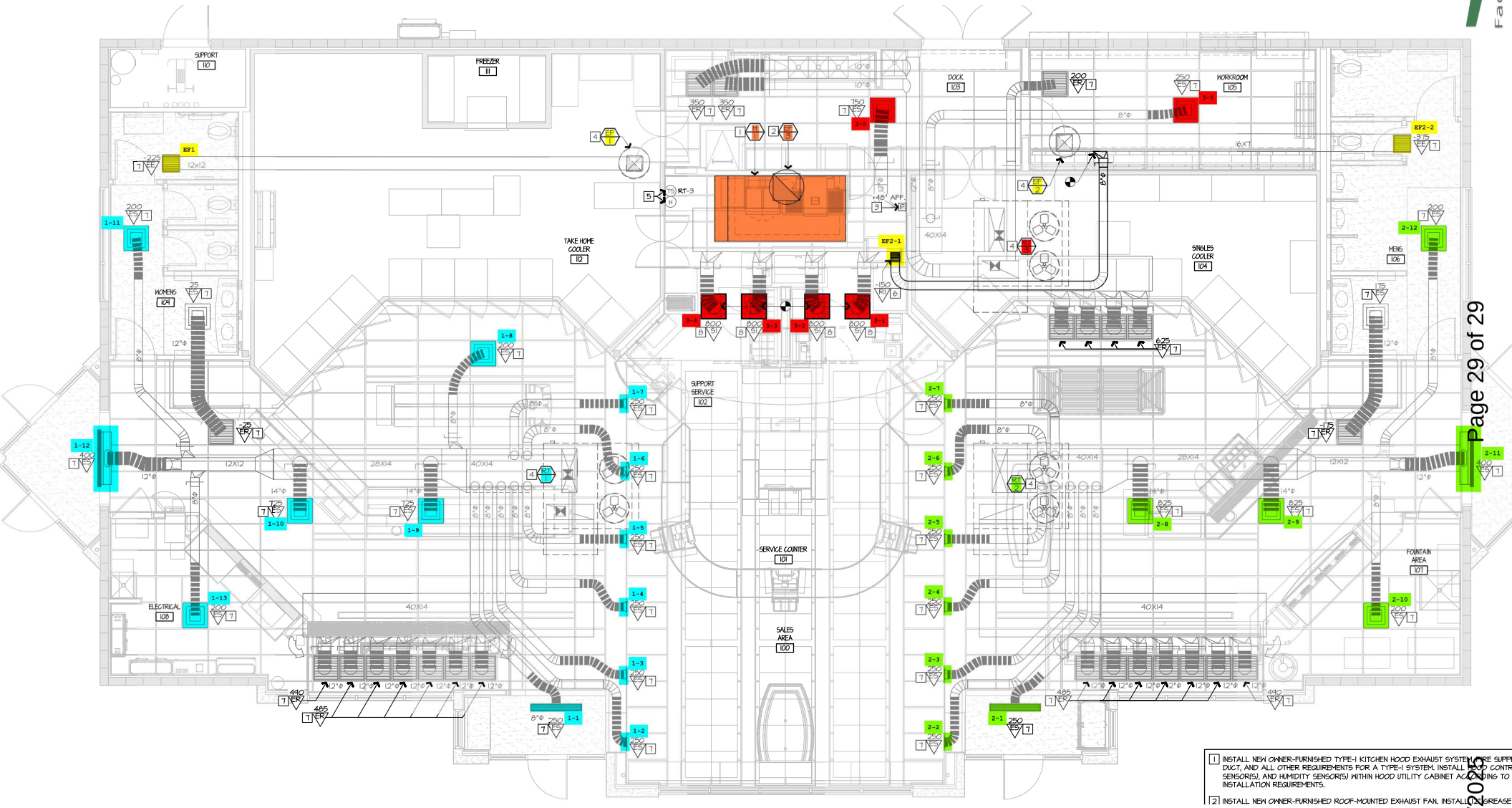
Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE FILTERS
Filter Size 1	-	16x20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	99
Filter2 FPM	-	112
Filter3 FPM	-	107
Filter4 FPM	-	105
Filter5 FPM	-	109
Filter6 FPM	-	108
Filter Ave FPM(corr)	-	107
CFM	1350	1310

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	PIZZA OVEN

Completed By: Christian Moller on 10/14/2025

Unit Data - PHOTO LOG

10/10/2025



[1] INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN HOOD EXHAUST SYSTEM. FIRE SUPPR DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYSTEM. INSTALL HOOD CONTR SENSOR(S), AND HUMIDITY SENSOR(S) WITHIN HOOD UTILITY CABINET ACCORDING TO INSTALLATION REQUIREMENTS.

[2] INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. INSTALL GREASE

Date: 10/29/2020