Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 10/22/2025

Completed By: National TAB

PROJECT

10-13-25 QT # 1093 RICHBURG, SC

3190 LANCASTER HWY

RICHBURG, SC

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, 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

- Dampers inaccessible RTU 3
- EF 2 low flow/ diffuser face unattached
- Kitchen diffusers backorder
- Kitchin Hood not operational
- RTU 3 not operational

10-13-25 QT # 1093 RICHBURG, SC

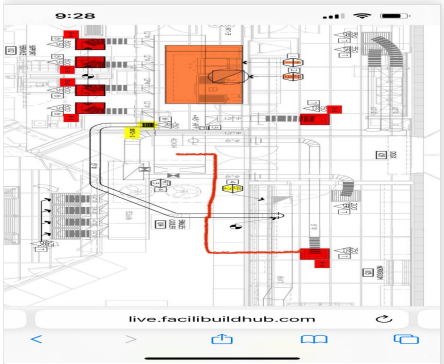
Project Issue Information

Issue Name : Dampers inaccessible RTU 3

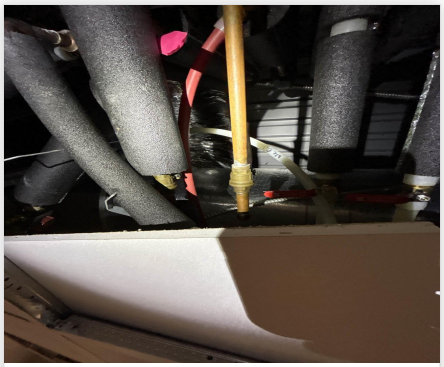
Description : The dampers in the kitchen are an inaccessible, and ductwork doesn't follow drawings. SGRD3-4, 3-5

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	Low	**Asset Tag :**	RT-3
Originated Date :	10/16/2025 - Jearod Ferrette - National TAB		

Project Issue File Details



10/16/2025



10/16/2025

10-13-25 QT # 1093 RICHBURG, SC

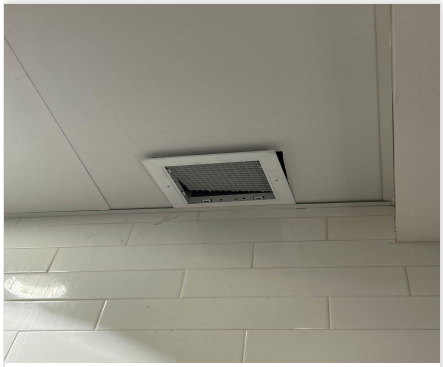
Project Issue Information

Issue Name : EF 2 low flow/ diffuser face unattached

Description : Exhaust fan currently at 72% of design. Motor dail set to max. The diffuser face not properly installed.

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	Low	**Asset Tag :**	EF2
Originated Date :	10/17/2025 - Jearod Ferrette - National TAB		

Project Issue File Details



10/17/2025

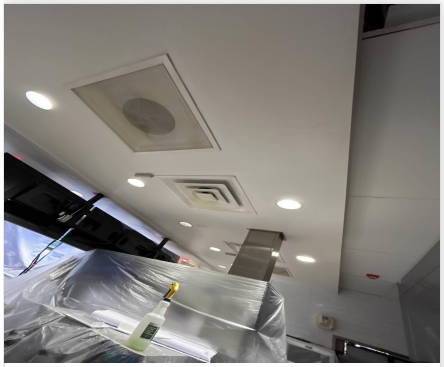
10-13-25 QT # 1093 RICHBURG, SC

Project Issue Information

Issue Name : Kitchen diffusers backorder
Description : Per the GC kitchen diffusers are on backorder.

Created By : National TAB
Assigned To : National TAB - Brianna Biggs
Status : Open
Priority : Low
Asset Tag : RT-3
Originated Date : 10/16/2025 - Jearod Ferrette - National TAB

Project Issue File Details



10/16/2025

10-13-25 QT # 1093 RICHBURG, SC

Project Issue Information

Issue Name :	Kitchin Hood not operational		
Description :	Per the PM hood not operational, would be ready for TAB the following Monday		
Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	High	**Asset Tag :**	HD1
Originated Date :	10/17/2025 - Jearod Ferrette - National TAB		

10-13-25 QT # 1093 RICHBURG, SC

Project Issue Information

Issue Name : RTU 3 not operational

Description : RTU 3 fan shut off after OA was set. The unit was power cycled with no change. There's a distinct clicking noise after power cycling. Also tried the store PC to force it, but still no change.

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	High	**Asset Tag :**	RT-3
Originated Date :	10/17/2025 - Jearod Ferrette - National TAB		

Project Issue File Details

10/17/2025

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

- Open QT_Balance_Schedule.xlsx

CheckList List

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

10-13-25 QT # 1093 RICHBURG, SC

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/03/2025 - Trinity Dodds - National TAB		
Completed Date :	10/16/2025 - Jearod Ferrette - National TAB		

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
Comment:	
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:	

10-13-25 QT # 1093 RICHBURG, SC

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/03/2025 - Trinity Dodds - 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	
Comment:	
Unit is free of noise and vibration	
Comment:	

10-13-25 QT # 1093 RICHBURG, SC

CheckList Information

Name :	03: Hoods	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	10/03/2025 - Trinity Dodds - National TAB		

CheckList Item Details

HOODS

Hood is free of alarms?

Comment:

Hood is free of damage?

Comment:

End panels are installed per prototype?

Comment:

10-13-25 QT # 1093 RICHBURG, SC

CheckList Information

Name : 04: Final Tests **Status :** Not Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/03/2025 - Trinity Dodds - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

List smoke candle type used

Comment:

SMOKE CANDLE

Smoke test capture % - Perimeter of hood

Comment:

Smoke test capture % - Top of cooking surface

Comment:

WITNESS

Date test was completed

Comment:

TAB tech name / Firm

Comment:

Site super name / Firm

Comment:

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:

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201710-ANEK16228
Model Num	NA	RN01380EA0A152
Num OA Filters 1	-	1
OA Filter Size 1	-	45.5X22.5

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

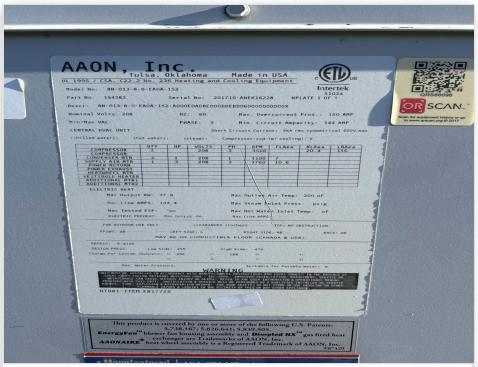
Test Data		
	Design	**Actual**
SF CFM	4200	4269
SF RPM	-	DD/ 43.8HZ
OA CFM (Hoods On)	800	872
OA CFM (Hoods Off)	350	377
RL Voltage	-	63.4VFD
RL Amperage	-	5.2VFD
VFD Max SetPt	-	43.8HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	37%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-0.61"
Fan Discharge SP	-	0.54"
Total ESP	-	1.02"
Fan Total SP	-	1.15"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Jearod Ferrette on 10/16/2025

Unit Data - PHOTO LOG



10/14/2025

10/14/2025

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201710ANEK16229
Model Num	NA	RN01380EA0A152
Num OA Filters 1	-	1
OA Filter Size 1	-	45.5X22.5

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

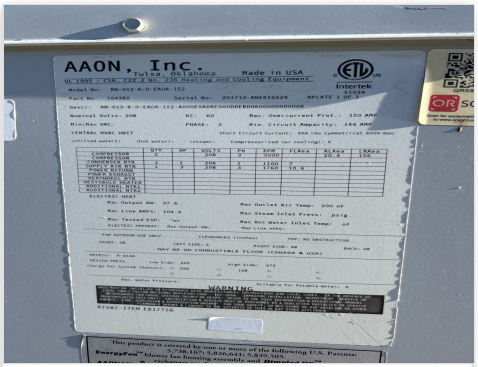
Test Data		
	Design	**Actual**
SF CFM	4200	4175
SF RPM	-	DD/ 43.2HZ
OA CFM (Hoods On)	800	824
OA CFM (Hoods Off)	350	369
RL Voltage	-	68.9VFD
RL Amperage	-	7.12 VFD
VFD Max SetPt	-	43.2HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	37%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.41"
Fan Suction SP	-	-0.58"
Fan Discharge SP	-	0.60"
Total ESP	-	1.01"
Fan Total SP	-	1.18"

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Completed By: Jearod Ferrette on 10/16/2025

Unit Data - PHOTO LOG



10/14/2025

10/14/2025

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201710-ANEK16230
Model Num	NA	RN01380EA0A152
Num OA Filters 1	-	1
OA Filter Size 1	-	45.5X22.5

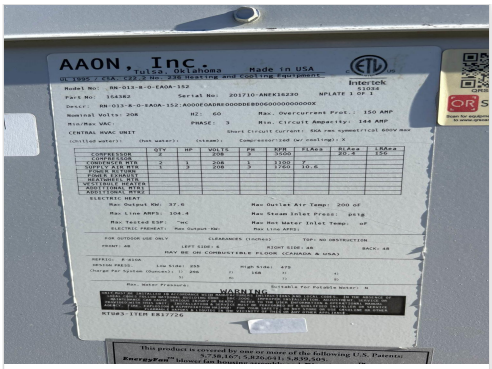
Motor Data		
	Design	**Actual**
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	NA

Test Data		
	Design	**Actual**
SF CFM	4200	4003
SF RPM	-	DD/42.2
OA CFM (Hoods On)	800	859
OA CFM (Hoods Off)	350	376
RL Voltage	-	
RL Amperage	-	
VFD Max SetPt	-	42.2
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	-	
Fan Total SP	-	

General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	NO
Condensate Drain Installed	YES

Unit Data - PHOTO LOG



10/14/2025

10/14/2025

National TAB

Project:10-13-25 QT # 1093 RICHBURG, 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	600		624	78.0
SGRD2	SUPPORT SERVICE	SI	12"	800	1	715		743	92.9
SGRD3	SUPPORT SERVICE	SI	12"	800	1	700		728	91.0
SGRD4	SUPPORT SERVICE	SI	12"	800	1	668		694	86.8
SGRD5	WORKROOM	ES	12"	750	1	798		829	110.5
SGRD6	WORKROOM	ES	8"	250	11	371		385	154.0
Total				4200		3852	0	4003	95.31%

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: FAN - Exhaust

Asset: EF1 AREA:WOMEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	NA
Model Num	NA	NA
Serial Num	-	410SG99678
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NBK
Frame	-	NA
Horsepower	-	1/8
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	225	219
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	55%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.26"
Fan Inlet SP	-	-0.26"
Fan Discharge SP	-	ATMO

Completed By: Jearod Ferrette on 10/16/2025

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	NA
Model Num	NA	NA
Serial Num	-	410SH16770
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	QUEACE
Frame	-	NA
Horsepower	-	1/4
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	525	383
Fan RPM	-	DD
Fan Rotation	-	CCW
Motor RPM	-	DD
System SetPt	-	MAX ON DAIL
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.17"
Fan Inlet SP	-	-0.17"
Fan Discharge SP	-	ATMO

Completed By: Jearod Ferrette on 10/17/2025

Unit Data - PHOTO LOG

10/14/2025

National TAB

Project:10-13-25 QT # 1093 RICHBURG, SC

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	130		130	86.7
Total				150		130	0	130	86.67%

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7644828
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	HSSA
Frame	-	48
Horsepower	1/2	1/2
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	6.2
Service Factor	-	1

Test Data		
	Design	**Actual**
CFM	1350	
Fan RPM	-	DD/
Fan Rotation	-	CCW
Motor RPM	-	DD/
System SetPt	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	-	
Fan Inlet SP	-	
Fan Discharge SP	-	ATMO

Unit Data - PHOTO LOG

10/14/2025

10/14/2025

National TAB

Project: 10-13-25 QT # 1093 RICHBURG, SC

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

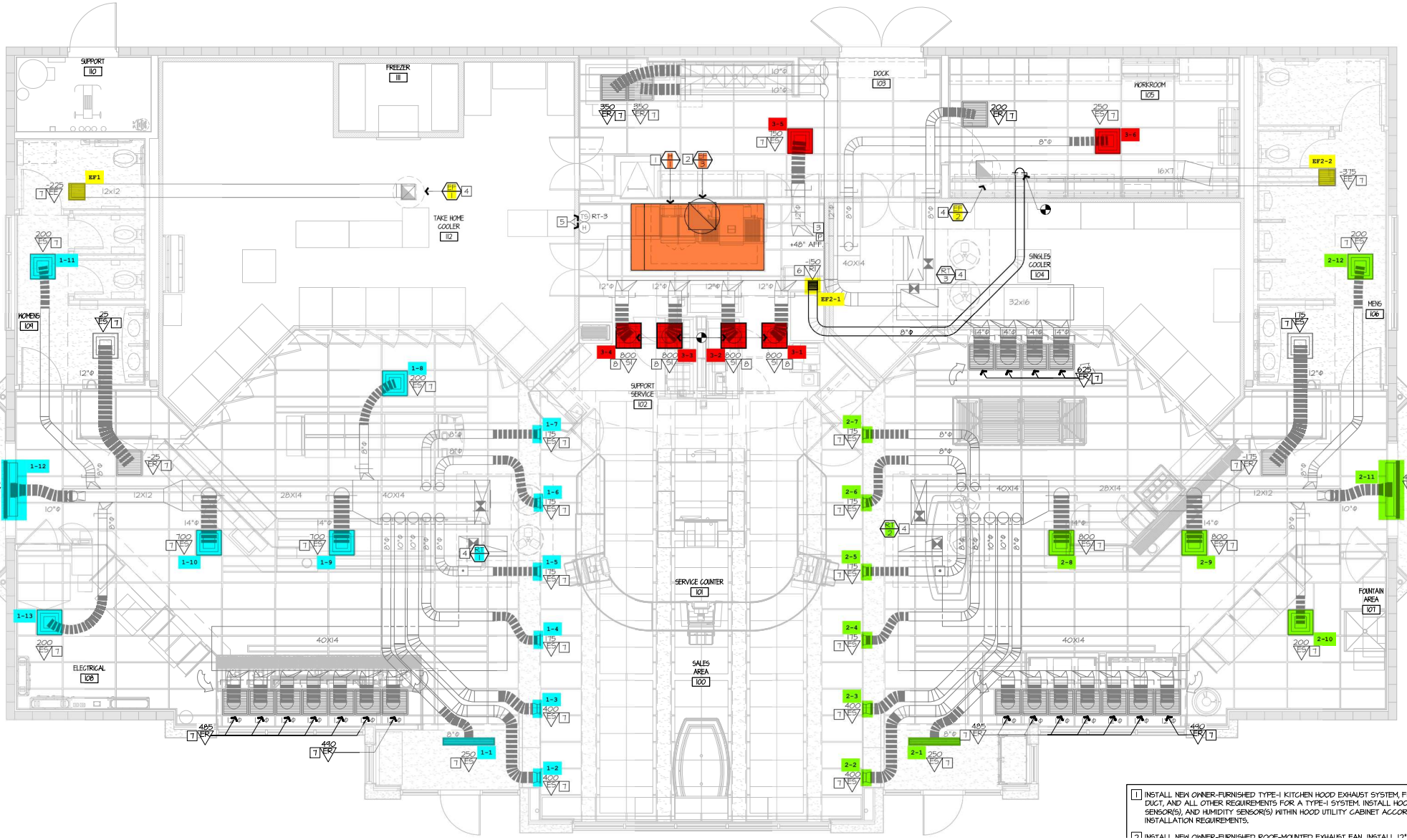
Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2-F
Job / Serial Num	-	7644828
Type	-	TYPE I CANOPY
Hood length	-	121"
Hood Width	-	60"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	CAPTRATE
Filter Size 1	-	16X20
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	
Filter2 FPM	-	
Filter3 FPM	-	
Filter4 FPM	-	
Filter5 FPM	-	
Filter6 FPM	-	
Filter Ave FPM(corr)	-	
CFM	1350	

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Unit Data - PHOTO LOG

10/16/2025



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

2 INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. INSTALL 12" ROUND DUCT

Date: 10/30/2025