Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 12/10/2025

Completed By: National TAB

PROJECT

12-07-25 QT #4236 WESTMINSTER, CO

8691 SHERIDAN BLVD

WESTMINSTER, CO

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 12-07-25 QT #4236 WESTMINSTER, CO

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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.

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

- Open QT_Balance_Schedule.xlsx

CheckList List

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

12-07-25 QT #4236 WESTMINSTER, CO

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/26/2025 - Trinity Dodds - National TAB		
Completed Date :	12/09/2025 - Sagar Patel - 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?	N/A
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

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CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/26/2025 - Trinity Dodds - National TAB		
Completed Date :	12/10/2025 - Sagar Patel - 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:	

12-07-25 QT #4236 WESTMINSTER, CO

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/26/2025 - Trinity Dodds - National TAB		
Completed Date :	12/10/2025 - Sagar Patel - 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:	

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CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	11/26/2025 - Trinity Dodds - National TAB		
Completed Date :	12/10/2025 - Sagar Patel - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Fryer, Oven

List smoke candle type used

Comment:

45 Second Smoke Emitter

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	12/10/2025

Comment:

Video

TAB tech name / Firm

Comment:

Sagar Patel / National TAB Intelligence

Site super name / Firm

Comment:

Not on Site

Owner representative name / Firm (if Applicable)

Comment:

N/A

BUILDING PRESSURE

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

Comment:

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202407-ANEK31178
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22X45
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data	
	Actual
Motor MFG	N/L
Frame	N/L
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

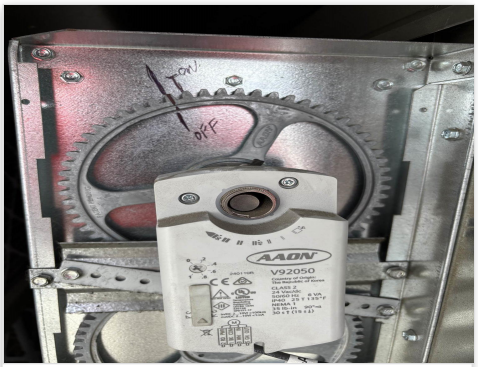
Test Data		
	Design	**Actual**
SF CFM	4200	4251
SF RPM	-	1408
OA CFM (Hoods On)	800	812
OA CFM (Hoods Off)	350	364
RL Voltage	-	168 VFD
RL Amperage	-	7.27 VFD
VFD Max SetPt	-	48 HZ
VFD Min SetPt	-	24 HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.44"
Fan Suction SP	-	-0.65"
Fan Discharge SP	-	0.29"
Total ESP	-	0.73"
Fan Total SP	-	0.94"

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

Completed By: Sagar Patel on 12/09/2025

Unit Data - PHOTO LOG



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Project: 12-07-25 QT #4236 WESTMINSTER, CO

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202407-ANEK31180
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22X45
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data	
	Actual
Motor MFG	N/L
Frame	N/L
Horsepower	N/L
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4148
SF RPM	-	1408
OA CFM (Hoods On)	800	784
OA CFM (Hoods Off)	350	337
RL Voltage	-	168 VFD
RL Amperage	-	7.43 VFD
VFD Max SetPt	-	48 HZ
VFD Min SetPt	-	24 HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.39"
Fan Suction SP	-	-0.64"
Fan Discharge SP	-	0.32"
Total ESP	-	0.71"
Fan Total SP	-	0.96"

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

Completed By: Sagar Patel on 12/09/2025

Unit Data - PHOTO LOG

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202407-ANEK31179
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22X45
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data	
	Actual
Motor MFG	N/L
Frame	N/L
Horsepower	N/L
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

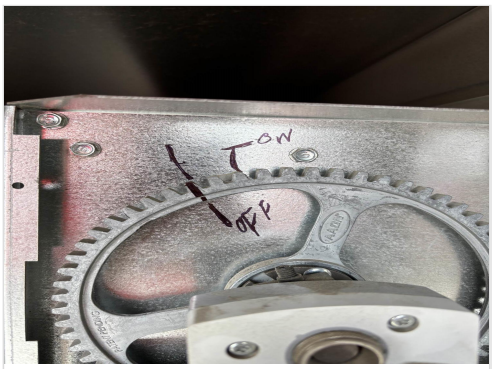
Test Data		
	Design	**Actual**
SF CFM	4200	4194
SF RPM	-	1408
OA CFM (Hoods On)	800	763
OA CFM (Hoods Off)	350	344
RL Voltage	-	168 VFD
RL Amperage	-	7.46 VFD
VFD Max SetPt	-	48 HZ
VFD Min SetPt	-	24 HZ
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	26%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.63"
Fan Suction SP	-	-0.85"
Fan Discharge SP	-	0.31"
Total ESP	-	0.94"
Fan Total SP	-	1.16"

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

Completed By: Sagar Patel on 12/10/2025

Unit Data - PHOTO LOG



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Project:12-07-25 QT #4236 WESTMINSTER, CO

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	871	853	863	107.9
SGRD2	SUPPORT SERVICE	SI	12"	800	1	664	754	739	92.4
SGRD3	SUPPORT SERVICE	SI	12"	800	1	734	763	757	94.6
SGRD4	SUPPORT SERVICE	SI	12"	800	1	727	761	761	95.1
SGRD5	DOCK	ES	10"	400	1	467	435	435	108.8
SGRD6	WORKROOM	ES	10"	400	1	473	454	426	106.5
SGRD7	WORKROOM	ES	8"	200	1	271	181	213	106.5
Total				4200		4207	4201	4194	99.86%

Completed By: Sagar Patel on 12/10/2025

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RR/JANITOR

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DR33HFA
Serial Num	-	7097101
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	N/L
Horsepower	-	0.33
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	4.3
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	775	771
Fan RPM	-	1159
Fan Rotation	-	CCW
Motor RPM	-	1159
System SetPt	-	58 P
RL Voltage	-	[1]
RL Amperage	-	[1]
Total ESP	-	0.28"
Fan Inlet SP	-	-0.28"
Fan Discharge SP	-	ATM

Completed By: Sagar Patel on 12/10/2025

Notes:
[1] UNABLE TO READ VOLTS AND AMPS SAFELY

Written By: Sagar Patel on 12/10/2025

Unit Data - PHOTO LOG

12/10/2025

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Project:12-07-25 QT #4236 WESTMINSTER, CO

Diffuser Ret/Exh (GRD)

EF1/RR/JANITOR

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD4	COMBI-OVEN	RI	8"	150			202	154	102.7
Total				150		0	202	154	102.67%

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7644898
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	N/L
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.8
Service Factor	-	N/L

Test Data		
	Design	**Actual**
CFM	1350	1373
Fan RPM	-	1195
Fan Rotation	-	CCW
Motor RPM	-	1195
System SetPt	-	52.8 HZ
RL Voltage	-	214
RL Amperage	-	1.6
Total ESP	-	0.24"
Fan Inlet SP	-	-0.24"
Fan Discharge SP	-	ATM

Completed By: Sagar Patel on 12/10/2025

Unit Data - PHOTO LOG

12/10/2025

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Project: 12-07-25 QT #4236 WESTMINSTER, CO

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	-	7644898
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

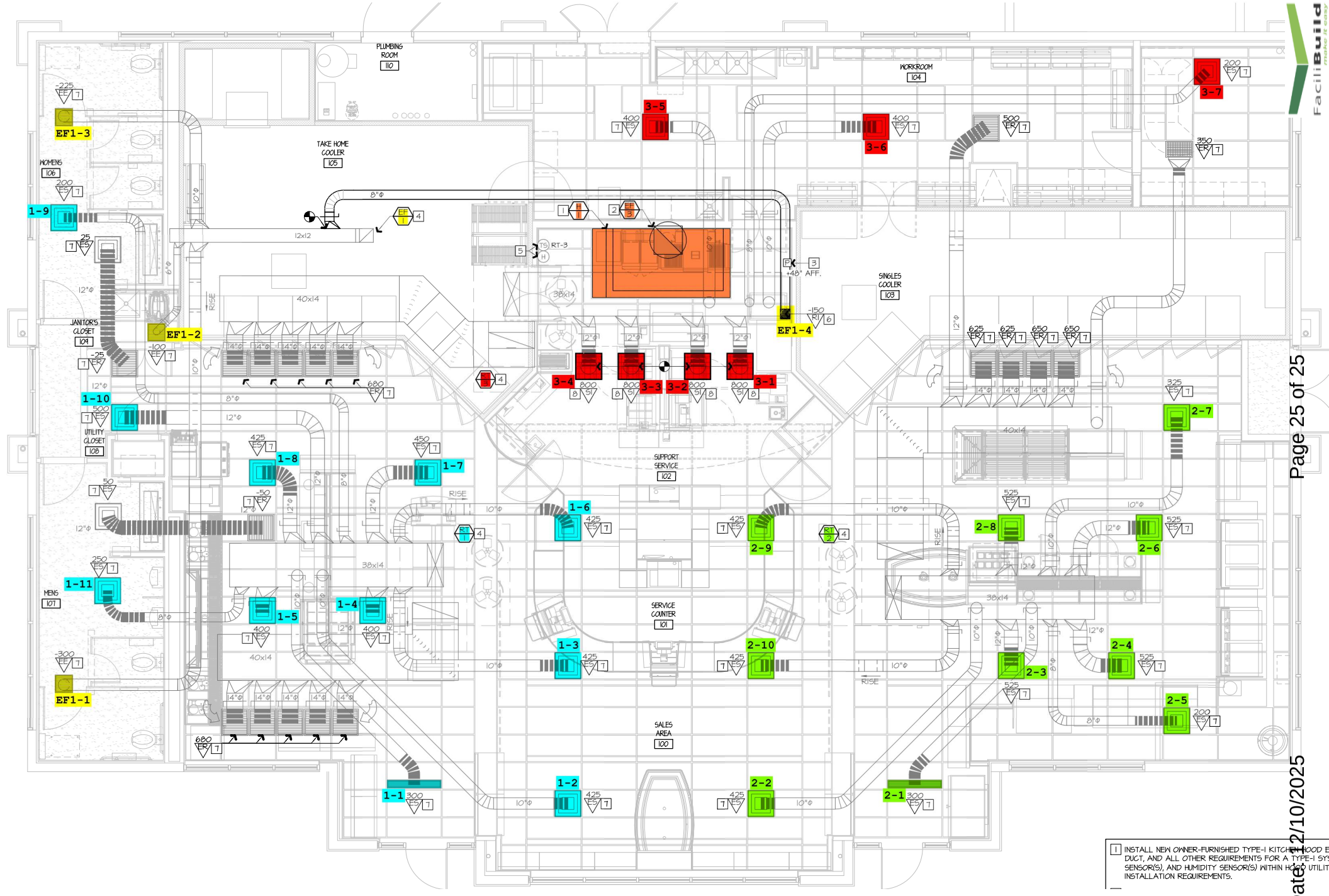
Test Data Exhaust		
	Design	**Actual**
Filter Type	-	CAPTRATE SOLO FILTER
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	104
Filter2 FPM	-	121
Filter3 FPM	-	127
Filter4 FPM	-	117
Filter5 FPM	-	104
Filter6 FPM	-	87
Filter Ave FPM(corr)	-	110
CFM	1350	1373

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	OVEN

Completed By: Sagar Patel on 12/10/2025

Unit Data - PHOTO LOG

12/10/2025



1 INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN HOOD E
DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYS
SENSOR(S), AND HUMIDITY SENSOR(S) WITHIN HOOD UTILIT
INSTALLATION REQUIREMENTS.

Date: 12/10/2025