Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 01/30/2026

Completed By: National TAB

PROJECT

02-09-26 QT #1131 SPARTANBURG, SC

489 W MAIN STR

SPARTANBURG, SC

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 02-09-26 QT #1131 SPARTANBURG, 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

- EF-1 Not Operational
- Incorrect Kitchen Diffusers
- Kitchen Dampers Inaccessible
- RTU-2 Condensate Drain
- RTU-3 Inaccessible Dampers

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Project Issue Information

Issue Name : EF-1 Not Operational

Description : EF-1 is not running. The speed dial does not turn on the fan like it should and the breaker is switched on. It is recommended an electrician inspects the fan motor or wiring.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Urgent	**Asset Tag :**	EF1
Originated Date :	03/11/2026 - Alex Bauer - National TAB		

Project Issue File Details

1. Open 79485076624_710E5B36_B7A7_409A_987F_9B078AB69FFA.mp4
   03/11/2026

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03/11/2026

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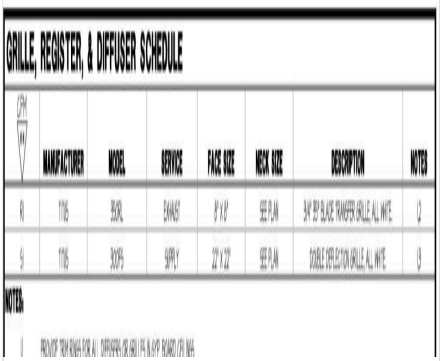
Project Issue Information

Issue Name : Incorrect Kitchen Diffusers

Description : The kitchen diffusers 3-1 through 3-4 are the incorrect type. The need to be the TITUS 300FS diffuser with the installed deflection blades.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	High	**Asset Tag :**	RT-3
Originated Date :	03/11/2026 - Alex Bauer - National TAB		

Project Issue File Details



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Project Issue Information

Issue Name : Kitchen Dampers Inaccessible

Description : Diffusers 3-1 through 3-4 have inaccessible dampers because the lights in the ceiling tiles are blocking the ceiling tiles from being pushed out of the way to access the dampers.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	High	**Asset Tag :**	RT-3
Originated Date :	03/11/2026 - Alex Bauer - National TAB		

Project Issue File Details

03/11/2026

03/11/2026

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Project Issue Information

Issue Name : RTU-2 Condensate Drain

Description : The condensate pipe for RTU-2 is missing a coupling and is not fitted together.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Low	**Asset Tag :**	RT-2
Originated Date :	03/11/2026 - Alex Bauer - National TAB		

Project Issue File Details

03/11/2026

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Project Issue Information

Issue Name : RTU-3 Inaccessible Dampers

Description : The dampers for diffusers 3-5 and 3-6 are inaccessible. They are located above a solid ceiling where they cannot be reached to be adjusted.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	High	**Asset Tag :**	RT-3
Originated Date :	03/11/2026 - Alex Bauer - National TAB		

Project Issue File Details

03/11/2026

03/11/2026

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	855	350	369				
RTU-2	SALES	800	855	350	320				
RTU-3	BOH/KITCHEN	800	807	350	362				
EF-1	WOMEN'S RR					225	0	225	0
EF-2	MEN'S RR					525	558	525	558
EF-3	HOOD					1350	1323	0	0
TOTALS		2400	2517	1050	1051	2100	1881	750	558

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2517
TOTAL EXHAUST	2100	1881
NET AIRFLOW	300	636

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0018
SIDE	0.0014
REAR	0.0038
AVERAGE	**0.0023**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1051
TOTAL EXHAUST	750	558
NET AIRFLOW	300	493

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0142
SIDE	0.0117
REAR	0.0041
AVERAGE	**0.01**

NOTES:

See issues list about EF-1.

CheckList List

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

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CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/30/2026 - Trinity Dodds - National TAB		
Completed Date :	03/11/2026 - Alex Bauer - 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 :	01/30/2026 - Trinity Dodds - National TAB		
Completed Date :	03/11/2026 - Alex Bauer - 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	N/A
Comment:	

As EF-1 is not operational, the lack of noise and vibration cannot be verified.

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CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/30/2026 - Trinity Dodds - National TAB		
Completed Date :	03/11/2026 - Alex Bauer - 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?	N/A
Comment:	

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CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/30/2026 - Trinity Dodds - National TAB		
Completed Date :	03/11/2026 - Alex Bauer - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

OVEN, FRYER.

List smoke candle type used

Comment:

45 SECOND SMOKE CANDLE

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	03/10/2026

Comment:

TAB tech name / Firm

Comment:

ALEX BAUER/NTAB

Site super name / Firm

Comment:

NA

Owner representative name / Firm (if Applicable)

Comment:

NA

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:

National TAB

Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201111-ANEK05837
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4170
SF RPM	-	1261
OA CFM (Hoods On)	800	855
OA CFM (Hoods Off)	350	369
RL Voltage	-	142 VFD
RL Amperage	-	8.81 VFD
VFD Max SetPt	-	43 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	33%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.57"
Fan Suction SP	-	-0.71"
Fan Discharge SP	-	0.69"
Total ESP	-	1.26"
Fan Total SP	-	1.40"

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

Completed By: Alex Bauer on 03/11/2026

Notes:
Labeled as RTU-3 in the field.

Written By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG

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National TAB

Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201111-ANEK05835
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	3876
SF RPM	-	1109
OA CFM (Hoods On)	800	855
OA CFM (Hoods Off)	350	320
RL Voltage	-	109 VFD
RL Amperage	-	7.72 VFD
VFD Max SetPt	-	37.8
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	33%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.49"
Fan Suction SP	-	-0.63"
Fan Discharge SP	-	0.44"
Total ESP	-	0.93"
Fan Total SP	-	1.07"

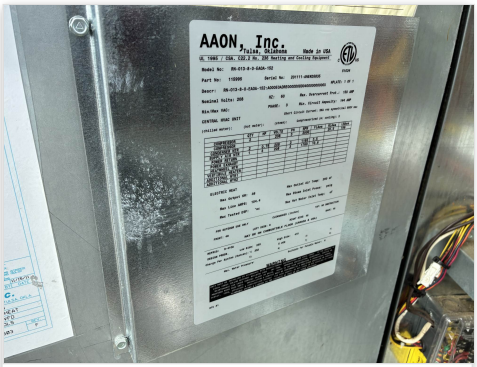
General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	NO

Completed By: Alex Bauer on 03/11/2026

Notes:
This is RTU-1 in the field.

Written By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG



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Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201111-ANEK05836
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4261
SF RPM	-	1144
OA CFM (Hoods On)	800	807
OA CFM (Hoods Off)	350	362
RL Voltage	-	118 VFD
RL Amperage	-	9.30 VFD
VFD Max SetPt	-	39 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	33%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.56"
Fan Suction SP	-	-0.76"
Fan Discharge SP	-	0.62"
Total ESP	-	1.18"
Fan Total SP	-	1.38"

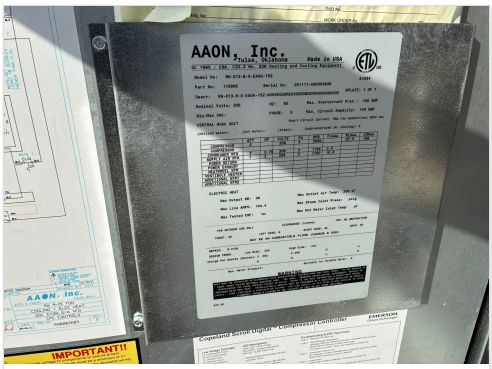
General	
	Actual
Fan Rotation Correct	YES
Unit Filters Clean	YES
Condensate Drain Installed	YES

Completed By: Alex Bauer on 03/11/2026

Notes:
This is RTU-2 in the field.

Written By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG



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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	832	920	832	104.0
SGRD2	SUPPORT SERVICE	SI	12"	800	1	684	738	684	85.5
SGRD3	SUPPORT SERVICE	SI	12"	800	1	599	691	599	74.9
SGRD4	SUPPORT SERVICE	SI	12"	800	1	967	1019	967	120.9
SGRD5	DOCK	ES	12"	750	1	870	930	870	116.0
SGRD6	WORKROOM	ES	8"	250	1	309	370	309	123.6
Total				4200		4261	4668	4261	101.45%

National TAB

Project: 02-09-26 QT #1131 SPARTANBURG, 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	-	410SD81218-00/0007407
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	FASCO
Frame	-	NA
Horsepower	-	0.125
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	225	0
Fan RPM	-	0
Fan Rotation	-	NA
Motor RPM	-	0
System SetPt	-	NA
RL Voltage	-	0
RL Amperage	-	0
Total ESP	-	0
Fan Inlet SP	-	0
Fan Discharge SP	-	ATM

Notes:
The fan is not running - see issues list.

Written By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG

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Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MEN'S RR/COMBI

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	120 ACE 120C15D
Serial Num	-	410SD81218-00/0004903
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	NBK MOTORS
Frame	-	48Y
Horsepower	-	0.25
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	525	558
Fan RPM	-	1395
Fan Rotation	-	CCW
Motor RPM	-	1395
System SetPt	-	90%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.44"
Fan Inlet SP	-	-0.44"
Fan Discharge SP	-	ATM

Completed By: Alex Bauer on 03/11/2026

Notes:
The combi-oven diffuser does not have a damper.

Written By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG

03/11/2026

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Diffuser Ret/Exh (GRD)

EF2/MEN'S RR/COMBI

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	SUPPORT SERVICE	RI	8"	150	1	308	320	308	205.3
Total				150		308	320	308	205.33%

National TAB

Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	8318543
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

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

Test Data		
	Design	**Actual**
CFM	1350	1323
Fan RPM	-	1179
Fan Rotation	-	CCW
Motor RPM	-	1179
System SetPt	-	56.8 Hz
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.37"
Fan Inlet SP	-	-0.37"
Fan Discharge SP	-	ATM

Completed By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG

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Project: 02-09-26 QT #1131 SPARTANBURG, SC

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

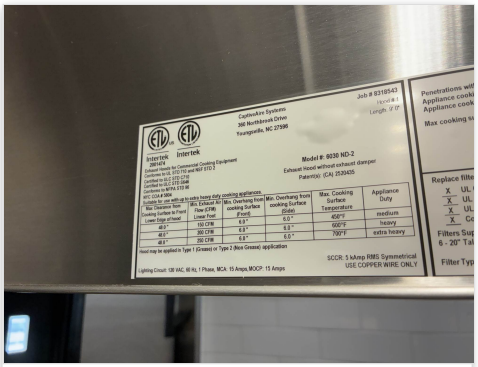
Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2
Job / Serial Num	-	8318543
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

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	-	112
Filter2 FPM	-	113
Filter3 FPM	-	129
Filter4 FPM	-	80
Filter5 FPM	-	103
Filter6 FPM	-	103
Filter Ave FPM(corr)	-	106
CFM	1350	1323

Cooking Equipment	
	Actual
Item 1	OVEN
Item 2	FRYER

Completed By: Alex Bauer on 03/11/2026

Unit Data - PHOTO LOG



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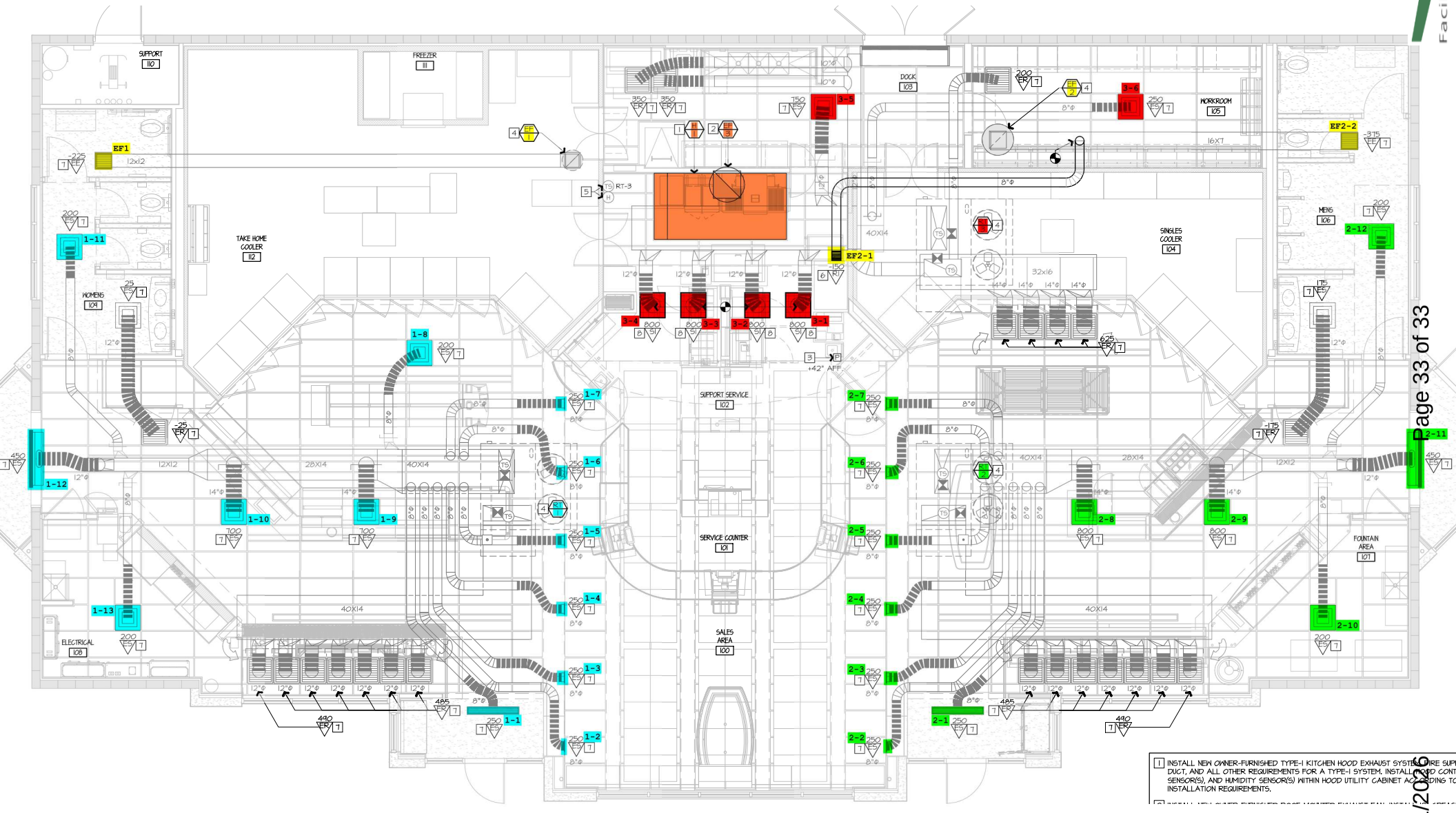

Date: 3/11/2016