

**Report By:**

National TAB  
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SUITE 4210  
CINCINNATI, OH 45246



**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 01/21/2026**  
**Completed By: National TAB**

# PROJECT

## 01-12-26 QT #1125 SPARTANSBURG, SC

2810 E MAIN STR

SPARTANSBURG, SC

**Client**

QUIKTRIP  
4705 SOUTH 129TH EAST AVENUE  
TULSA, OK 74134

# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

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# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC  
Function: Test, Adjust, & Balance

## 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

- Hood End Panels Not Installed
- Incorrect Kitchen Diffusers

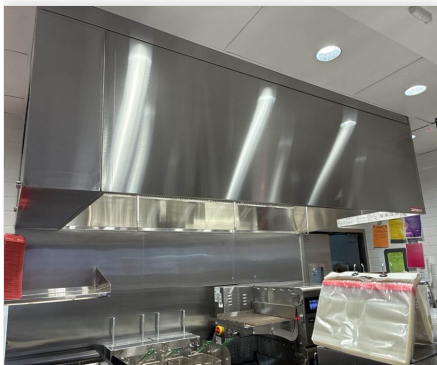


**01-12-26 QT #1125 SPARTANBURG, SC**

**Project Issue Information**

**Issue Name :** Hood End Panels Not Installed  
**Description :** There are no hood end panels installed as per the Hood Schedule.  
**Created By :** National TAB **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** Low **Asset Tag :** HD1  
**Originated Date :** 01/15/2026 - Alex Bauer - National TAB

**Project Issue File Details**



**01/15/2026**

HOOD / EXHAUST FAN SCHEDULE							
MANUFACTURER	MODEL	SIZE	CFM OPTION	MISC.	LIGHTS	FIRE SYSTEM	WEIGHT
CFE	8000FA	120" X 120"	1200	CFE FANBOX CAB	81 LED	YES	80 LBS
CFE	8000FA	120" X 120"	1200	CFE FANBOX CAB	81 LED	YES	80 LBS

**NOTES:**

- HOODS, FANS, AND ACCESSORIES SHALL BE MANUFACTURER-FURNISHED CONTRACTOR-INSTALLED.
- HOOD SHALL BE 40" STAINLESS STEEL.
- HOOD SHALL BE FURNISHED WITH FAN BELLOWS AND SUPPORTS MOUNTED ON FRONT PANEL.
- MANUFACTURER-FURNISHED DOUBLE WALLS SHALL BE 16 GAUGE STAINLESS STEEL, DUCT KIT AND ALL REQUIRED CONNECTION ACCESSORIES FOR FIELD INSTALLATION FROM HOOD TO FAN.
- HOOD SHALL HAVE FRONT AND LEFT **QUARTER SHEET METAL** AND FRONT, LEFT AND RIGHT STAINLESS STEEL FIELD WRAPPER.
- HOOD SHALL BE FURNISHED WITH ONE LISTED GRADE FILTERS.
- HOOD SHALL BE FURNISHED WITH DUCT MOUNTED 80% SENSITIVE AND KNOCKOUT FAN CONTROLS MOUNTED IN HOOD DUCT BY CABINET.
- SYSTEM SHALL BE CAPABLE OF 100% FPM FAN BE SCHEDULED AND VIBRATIONLESS WITH BALANCE HANG SYSTEM FOR SILENCE PRESERVATION.
- EQUIPMENT AND DUCT CONNECTIONS ARE FACTORY-FURNISHED WITH HOOD DUCT BY CABINET.
- HOOD SHALL BE LISTED AND LABELS FOR IT CLEARANCE REQUIREMENTS TO COMPLY WITH.
- FAN SHALL BE LISTED WITH INTERIOR AND EXTERIOR LABEL GRADE BOX AND DISCONNECT.
- VARIABLE SPEED CONTROLLER PRE-MOUNTED IN FAN HOUSING SPEED CONTROLLER SHALL BE MANUALLY ADJUSTED BY TEST AND BALANCE CONTRACTOR.

**01/15/2026**



01-12-26 QT #1125 SPARTANBURG, SC

Project Issue Information

**Issue Name :** Incorrect Kitchen Diffusers  
**Description :** The kitchen diffusers 3-1 through 3-4 are the incorrect type. They need to be the Titus S1 diffuser with the installed dampers to control the airflow.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** Medium                                      **Asset Tag :** RT-3  
**Originated Date :** 01/13/2026 - Alex Bauer - National TAB

Project Issue File Details



01/13/2026



01/13/2026

**GRILLE, REGISTER, & DIFFUSER SCHEDULE**

MANUFACTURER	MODEL	SERVICE	FACE SIZE	DECK SIZE	DESCRIPTION	NOTES
RT	T105	3000	24X24	24X24	34" 20" BLAKE TYPED GRILLE AL. W/TE.	12
S	T105	3005	22X22	22X22	20" BLAKE TYPED GRILLE AL. W/TE.	13

**NOTES:**  
 1. PRELIMINARY SCHEDULE FOR GRILLE, REGISTER, & DIFFUSER SCHEDULE.

01/13/2026

### 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	779	350	431				
RTU-2	SALES	800	827	350	362				
RTU-3	BOH/KITCHEN	800	807	350	417				
EF-1	RR/JANITOR					750	787	750	787
EF-3	HOOD					1350	1348	0	0
<b>TOTALS</b>		<b>2400</b>	<b>2413</b>	<b>1050</b>	<b>1210</b>	<b>2100</b>	<b>2135</b>	<b>750</b>	<b>787</b>

### HOODS ON

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2413
TOTAL EXHAUST	2100	2135
<b>NET AIRFLOW</b>	<b>300</b>	<b>278</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.003
SIDE	0.004
REAR	0.03
<b>AVERAGE</b>	<b>0.0123</b>

### HOODS OFF

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1210
TOTAL EXHAUST	750	787
<b>NET AIRFLOW</b>	<b>300</b>	<b>423</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0263
SIDE	0.0263
REAR	0.0074
<b>AVERAGE</b>	<b>0.02</b>

**NOTES:**

See issues list.

## CheckList List

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



01-12-26 QT #1125 SPARTANSBURG, SC

CheckList Information

**Name :** 01: RTU's/AHU's **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 01/02/2026 - Trinity Dodds - National TAB

**Completed Date :** 01/13/2026 - Alex Bauer - National TAB

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
-----------------------------	------

Comment:

Condenser coils are clean?	Pass
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Comment:

Gas piping is installed and valves are turned on?	N/A
---	-----

Comment:

Unit free of noticeable noise and vibration	Pass
---	------

Comment:



01-12-26 QT #1125 SPARTANSBURG, SC

**CheckList Information**

**Name :** 02: Exhaust Fans **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 01/02/2026 - Trinity Dodds - National TAB  
**Completed Date :** 01/13/2026 - 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 Pass

Comment:



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**CheckList Information**

**Name :** 03: Hoods **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 01/02/2026 - Trinity Dodds - National TAB  
**Completed Date :** 01/15/2026 - 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?** Fail

**Comment:**

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01-12-26 QT #1125 SPARTANSBURG, SC

**CheckList Information**

**Name :** 04: Final Tests **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 01/02/2026 - Trinity Dodds - National TAB

**Completed Date :** 01/13/2026 - 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:**

SMOKE PELLET.

**Smoke test capture % - Perimeter of hood**

**Comment:**

100%

**Smoke test capture % - Top of cooking surface**

**Comment:**

100%

**WITNESS**

**Date test was completed**

01/13/2026

**Comment:**

---

**TAB tech name / Firm**

**Comment:**

ALEX BAUER/NTAB

---

**Site super name / Firm**

**Comment:**

NA

---

**Owner representative name / Firm (if Applicable)**

**Comment:**

NA

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**BUILDING PRESSURE**

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

Pass

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**Comment:**

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# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202403-ANEK30408
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

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

Test Data		
	Design	Actual
SF CFM	4200	4347
SF RPM	-	1355
OA CFM (Hoods On)	800	779
OA CFM (Hoods Off)	350	431
RL Voltage	-	159 VFD
RL Amperage	-	7.65 VFD
VFD Max SetPt	-	46.2 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	CLOSED

Performance Data	
	Actual
MA Plenum SP	-0.60"
Fan Suction SP	-0.81"
Fan Discharge SP	0.49"
Total ESP	1.09"
Fan Total SP	1.30"

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

Completed By: Alex Bauer on 01/13/2026

# Unit Data - PHOTO LOG



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# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202403-ANEK30409
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

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

Test Data		
	Design	Actual
SF CFM	4200	4096
SF RPM	-	1302
OA CFM (Hoods On)	800	827
OA CFM (Hoods Off)	350	362
RL Voltage	-	148 VFD
RL Amperage	-	7.54 VFD
VFD Max SetPt	-	44.4 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	CLOSED

Performance Data	
	Actual
MA Plenum SP	-0.65"
Fan Suction SP	-0.85"
Fan Discharge SP	0.28"
Total ESP	1.50"
Fan Total SP	1.13"

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

Completed By: Alex Bauer on 01/13/2026

Notes:  
Diffuser 2-1 could not be adjusted.

Written By: Alex Bauer on 01/13/2026





# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

## System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202403-ANEK30407
Model Num	RN-013-8-0-HA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5

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

Test Data		
	Design	Actual
SF CFM	4200	4086
SF RPM	-	1619
OA CFM (Hoods On)	800	807
OA CFM (Hoods Off)	350	417
RL Voltage	-	214 VFD
RL Amperage	-	10.4 VFD
VFD Max SetPt	-	55 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	CLOSED

Performance Data	
	Actual
MA Plenum SP	-0.86"
Fan Suction SP	-1.08"
Fan Discharge SP	1.94"
Total ESP	2.80"
Fan Total SP	3.02"

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

Completed By: Alex Bauer on 01/13/2026

# Unit Data - PHOTO LOG



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# National TAB

Project:01-12-26 QT #1125 SPARTANSBURG, 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	736	752	736	92.0
SGRD2	SUPPORT SERVICE	SI	12"	800	1	831	858	831	103.9
SGRD3	SUPPORT SERVICE	SI	12"	800	1	770	867	770	96.3
SGRD4	SUPPORT SERVICE	SI	12"	800	1	728	848	728	91.0
SGRD5	DOCK	ES	10"	400	1	439	708	439	109.8
SGRD6	WORKROOM	ES	10"	400	1	372	507	372	93.0
SGRD7	WORKROOM	ES	8"	200	1	210	224	210	105.0
Total				4200		4086	4764	4086	97.29%



# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

## System/Unit: FAN - Exhaust

Asset: EF1

AREA:RR/JANITOR

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DR50HFA
Serial Num	6712325
Type	DOWNBLAST
Configuration	VERTICAL

Test Data		
	Design	Actual
CFM	750	787
Fan Rotation	-	CCW
System SetPt	-	LOW
Total ESP	-	0.34"
Fan Inlet SP	-	-0.34"
Fan Discharge SP	-	ATM

Motor Data	
	Actual
Motor MFG	HSSA
Frame	48Y
Horsepower	0.50
Motor Rpm	1625
Phase	1
Voltage (rated)	115
Amperage (rated)	5.6
Service Factor	1

Completed By: Alex Bauer on 01/13/2026

**Notes:**

NO DAMPER INSTALLED OR ACCESSIBLE FOR COMBO-OVEN EXHAUST GRILLE. UNABLE TO LOWER TO DESIGN, NOT ANTICIPATED TO CAUSE ANY ISSUE.

Written By: Michael McDonnell on 01/27/2026

**Unit Data - PHOTO LOG**



**01/13/2026**



# National TAB

Project:01-12-26 QT #1125 SPARTANSBURG, SC

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	SUPPORT SERVICE	RI	8"	150	1	172	350	172	114.7
Total				150		172	350	172	114.67%

Asset	Notes	Date	Written By
EGRD4	NO DAMPER INSTALLED, NOT ANTICIPATED TO CAUSE ANY ISSUE.	01/27/2026	Michael McDonnell



# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, SC

## System/Unit: FAN - Exhaust

Asset: EF3

AREA:KITCHEN HD

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Model Num	DU50HFA
Serial Num	8189416
Type	UPBLAST
Configuration	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	48
Horsepower	1/2	0.50
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	6.2

Test Data		
	Design	Actual
CFM	1350	1348
Fan RPM	-	1585
Fan Rotation	-	CCW
Motor RPM	-	1585
System SetPt	-	55.8 Hz
Total ESP	-	0.21"
Fan Inlet SP	-	-0.21"
Fan Discharge SP	-	ATM

Completed By: Alex Bauer on 01/13/2026

## Unit Data - PHOTO LOG



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# National TAB

Project: 01-12-26 QT #1125 SPARTANSBURG, 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	-	8189416
Type	-	TYPE I CANOPY
Hood length	-	120"
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	-	110
Filter2 FPM	-	144
Filter3 FPM	-	96
Filter4 FPM	-	139
Filter5 FPM	-	72
Filter6 FPM	-	90
Filter Ave FPM(corr)	-	108
CFM	1350	1348

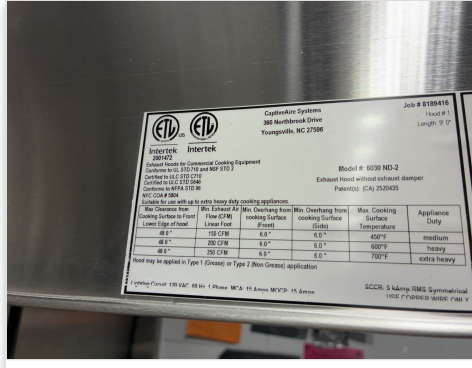
Cooking Equipment	
	Actual
Item 1	OVEN
Item 2	FRYER

Completed By: Alex Bauer on 01/13/2026

# Unit Data - PHOTO LOG

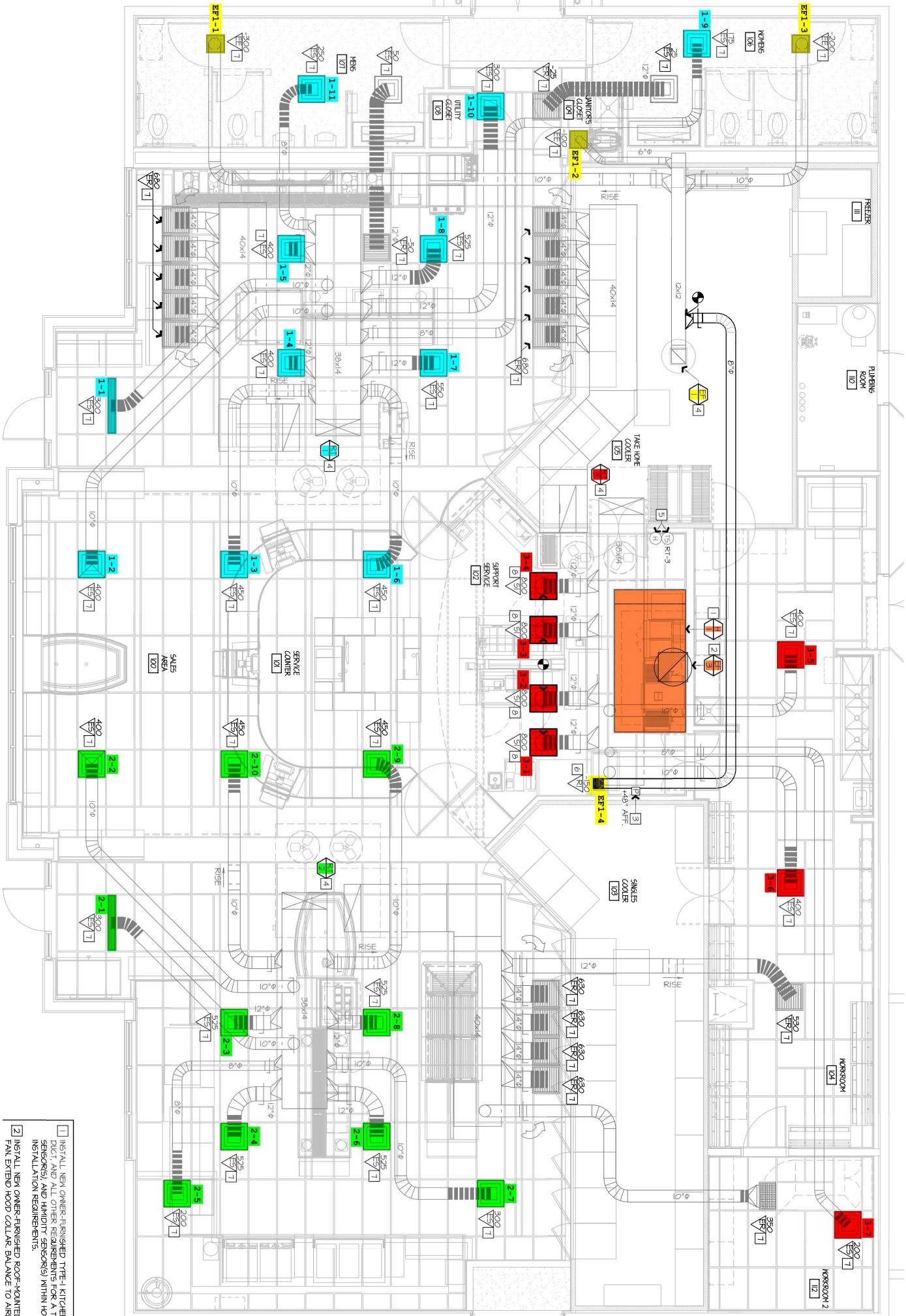


01/13/2026



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1. [Open](#) IMG\_0525.mp4



- 1 INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN COOKTOP EXHAUST SYSTEM DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYSTEM (SENSORS AND HUMIDITY SENSORS) WITHIN HOOD ROOM. SEE INSTALLATION REQUIREMENTS.
- 2 INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. FAN EXTERIOR HOOD COLLAR, BALANCE TO AIRFLOW. LOCATE 5'