

**Report By:**

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105 Stone Village Drive  
Fort Mill, SC 29708



**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 02/16/2026**  
**Completed By: National TAB**

**PROJECT**  
**02-16-26 QT #1017 DENVER, NC**

7259 N CAROLINA 73 HWY

DENVER, NC

**Client**

QUIKTRIP  
4705 SOUTH 129TH EAST AVENUE  
TULSA, OK 74134

# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

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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.

## Issue List

- EF-2 overramping at design
- Wrong Cook Line Diffusers



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Project Issue Information

**Issue Name :** EF-2 overamping at design  
**Description :** EF-2 once sped up to design CFM is over amping at the motor. Combi oven grille is low on airflow, this issue needs to be fixed to bring that grille to design.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** Urgent                                      **Asset Tag :** EF2  
**Originated Date :** 02/16/2026 - Christian Moller - National TAB

Project Issue File Details



02/16/2026



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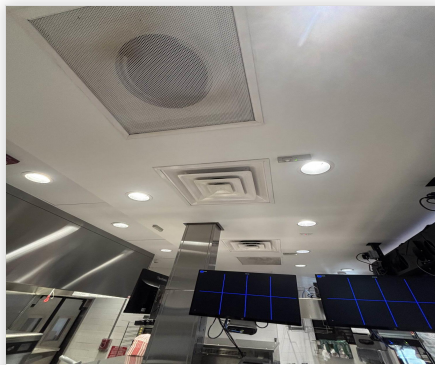
Project Issue Information

**Issue Name :** Wrong Cook Line Diffusers  
**Description :** The cook line diffusers for RTU 3 are the wrong models. The Louvered Supply Grilles with adjustable deflection blades are the correct diffusers.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dan Hertenstein  
**Status :** Open  
**Priority :** High                                      **Asset Tag :** RT-3  
**Originated Date :** 02/16/2026 - Christian Moller - National TAB

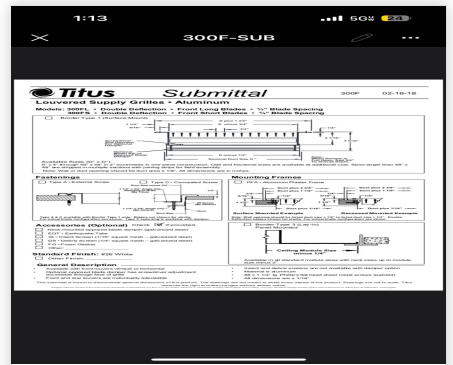
Project Issue File Details



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### 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	820	350	381				
RTU-2	SALES	800	845	350	358				
RTU-3	BOH/KITCHEN	800	763	350	367				
EF-1	WOMEN'S RR					225	218	225	218
EF-2	MEN'S RR					525	300	525	300
EF-3	HOOD					1350	1285	0	0
<b>TOTALS</b>		2400	2428	1050	1106	2100	1803	750	518

### HOODS ON

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2428
TOTAL EXHAUST	2100	1803
<b>NET AIRFLOW</b>	300	625

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.026
SIDE	
REAR	0.023
<b>AVERAGE</b>	<b>0.0245</b>

### HOODS OFF

#### NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1106
TOTAL EXHAUST	750	518
<b>NET AIRFLOW</b>	300	588

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.025
SIDE	
REAR	0.021
<b>AVERAGE</b>	<b>0.023</b>

NOTES:

## CheckList List

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



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CheckList Information

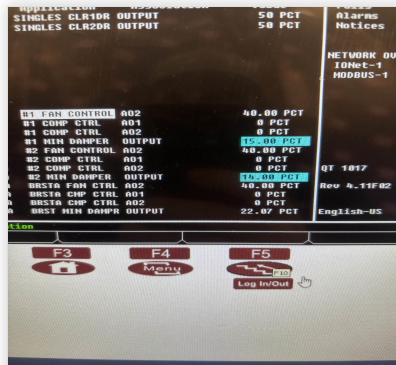
Name : 01: RTU's/AHU's Status : Completed  
 Assigned Organization : National TAB Asset :  
 Requesting Organization : National TAB  
 Created Date : 02/06/2026 - Trinity Dodds - National TAB  
 Completed Date : 02/16/2026 - Christian Moller - National TAB

CheckList Item Details

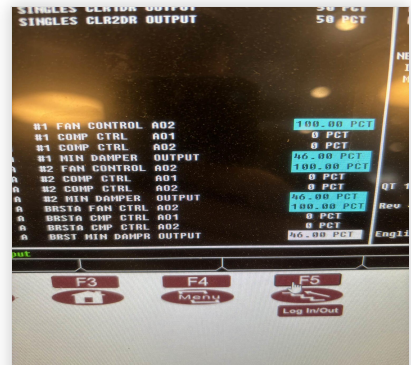
RTU's/AHU's



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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:



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**CheckList Information**

**Name :** 02: Exhaust Fans **Status :** Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/06/2026 - Trinity Dodds - National TAB

**Completed Date :** 02/16/2026 - 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:



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**CheckList Information**

**Name :** 03: Hoods **Status :** Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/06/2026 - Trinity Dodds - National TAB

**Completed Date :** 02/16/2026 - 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:**



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CheckList Information

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

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

**Requesting Organization :** National TAB

**Created Date :** 02/06/2026 - Trinity Dodds - National TAB

**Completed Date :** 02/16/2026 - Christian Moller - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

Pizza oven, Fryer

List smoke candle type used

Comment:

None, only observed cooking

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

02/16/2026

**Comment:**

---

**TAB tech name / Firm**

**Comment:**

Christian Moller / NTAB

---

**Site super name / Firm**

**Comment:**

Randy Edmonds / Ascent Construction

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

**Comment:**

N/A

---

**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

**Comment:**

Hood on: Front: 0.026" Back: 0.023" Hood off: Front: 0.025" Back: 0.021"



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201304-ANEK08084
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X24
Num Final Filter 1	2
Final Filter Size 1	56X45

Motor Data	
	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	4387
SF RPM	-	DD
OA CFM (Hoods On)	800	820
OA CFM (Hoods Off)	350	381
RL Voltage	-	215/218/217
RL Amperage	-	4.0/4.6/4.8
VFD Max SetPt	-	33.6Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	15%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.23"
Fan Suction SP	-	-0.38"
Fan Discharge SP	-	0.33"
Total ESP	-	0.61"
Fan Total SP	-	0.71"

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

Completed By: Christian Moller on 02/16/2026

**Unit Data - PHOTO LOG**



**02/16/2026**



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	201304-ANEK08085
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X24
Num Final Filter 1	2
Final Filter Size 1	56X45

Motor Data	
	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	4170
SF RPM	-	DD
OA CFM (Hoods On)	800	845
OA CFM (Hoods Off)	350	358
RL Voltage	-	216/217/218
RL Amperage	-	3.5/4.7/4.9
VFD Max SetPt	-	32.4Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	14%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.21"
Fan Suction SP	-	-0.36"
Fan Discharge SP	-	0.28"
Total ESP	-	0.57"
Fan Total SP	-	0.64"

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

Completed By: Christian Moller on 02/16/2026

## Unit Data - PHOTO LOG



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# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

## System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	201304-ANEK08086
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	45X24
Num Final Filter 1	2
Final Filter Size 1	56X45

Motor Data	
	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	4260
SF RPM	-	DD
OA CFM (Hoods On)	800	763
OA CFM (Hoods Off)	350	367
RL Voltage	-	216/217/217
RL Amperage	-	3.7/4.9/5.1
VFD Max SetPt	-	34Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	22.07%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.22"
Fan Suction SP	-	-0.38"
Fan Discharge SP	-	0.24"
Total ESP	-	0.60"
Fan Total SP	-	0.62"

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

Completed By: Christian Moller on 02/16/2026

## Unit Data - PHOTO LOG



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# National TAB

Project:02-16-26 QT #1017 DENVER, NC

## 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	658	881	841	105.1
SGRD2	SUPPORT SERVICE	SI	12"	800	1	639	869	849	106.1
SGRD3	SUPPORT SERVICE	SI	12"	800	1	724	779	758	94.8
SGRD4	SUPPORT SERVICE	SI	12"	800	1	481	782	763	95.4
SGRD5	DOCK	ES	12"	750	1	368	688	784	104.5
SGRD6	WORKROOM	ES	8"	250	1	142	271	265	106.0
Total				4200		3012	4270	4260	101.43%



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

## 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	-	410SE49284- 00/0005502
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	FASCO
Frame	-	U24B1
Horsepower	-	1/8
Motor Rpm	-	1600
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	225	218
Fan RPM	-	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	SPEED CONTROLLER / MEDIUM SPEED
RL Voltage	-	113
RL Amperage	-	0.6
Total ESP	-	0.24"
Fan Inlet SP	-	-0.24"
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 02/16/2026

**Unit Data - PHOTO LOG**



**02/16/2026**



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

## System/Unit: FAN - Exhaust

Asset: EF2

AREA: MEN'S RR/COMBI

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	120ACE 120C15D
Serial Num	-	410SE51527- 00/0000702
Type	-	DOWNBLAST
Configuration	-	VERTICAL

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

Test Data		
	Design	Actual
CFM	525	300
Fan RPM	-	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	SPEED CONTROLLER / LOW SPEED
RL Voltage	-	114
RL Amperage	-	3.3
Total ESP	-	0.18"
Fan Inlet SP	-	-0.18"
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 02/16/2026

Notes:

[1]Overramping at design. SEE ISSUES.

Written By: Christian Moller on 02/16/2026

**Unit Data - PHOTO LOG**



**02/16/2026**



# National TAB

Project:02-16-26 QT #1017 DENVER, NC

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	68	68	68	45.3
Total				150		68	68	68	45.33%



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

## System/Unit: FAN - Exhaust

Asset: EF3

AREA: KITCHEN HD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	8424867
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	CAPTIVEAIRE
Frame	-	NL
Horsepower	0.5	0.5
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	3.7
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1350	1285
Fan RPM	-	DD
Fan Rotation	-	CORRECT
Motor RPM	-	DD
System SetPt	-	HMI/50.8Hz
RL Voltage	-	211
RL Amperage	-	2.4
Total ESP	0.75"	0.56"
Fan Inlet SP	-	-0.56"
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 02/16/2026

## Unit Data - PHOTO LOG



02/16/2026



# National TAB

Project: 02-16-26 QT #1017 DENVER, NC

## 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	-	8424867
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	108"	108"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO FILTER	BAFFLE FILTERS
Filter Size 1	20X16	20X16
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	113
Filter2 FPM	-	103
Filter3 FPM	-	108
Filter4 FPM	-	98
Filter5 FPM	-	102
Filter6 FPM	-	98
Filter Ave FPM(corr)	-	103
CFM	1350	1285

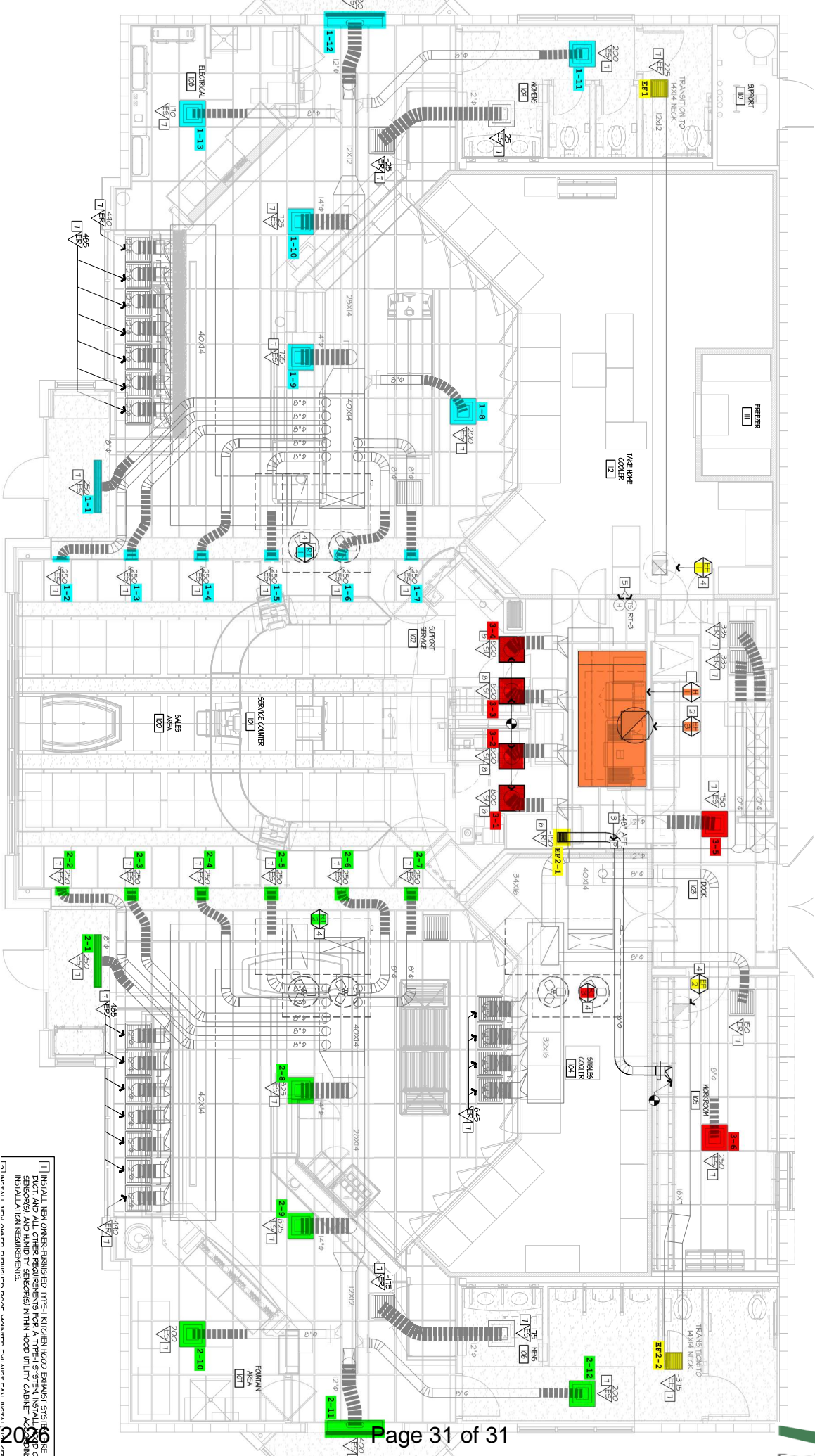
Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	PIZZA OVEN

Completed By: Christian Moller on 02/16/2026

**Unit Data - PHOTO LOG**



**02/16/2026**



INSTALL NEW OWNER-FURNISHED TYPE-KITCHEN HOOD EXHAUST SYSTEMS BE SHIP  
 500' AND ALL OTHER REQUIREMENTS FOR A TYPE-K SYSTEM INSTALLATION AND TO  
 MEET ALL APPLICABLE CODES WITHIN HOOD EXHAUST SYSTEMS WITHIN HOOD EXHAUST  
 INSTALLATION REQUIREMENTS.