Report By:

National TAB
1329 E. KEMPER ROAD
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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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 SPARTANSBURG, 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

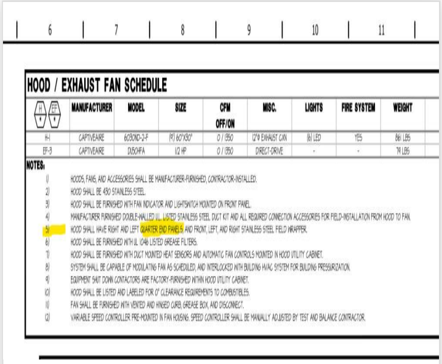
Priority : High

Asset Tag : HD1

Originated Date : 01/15/2026 - Alex Bauer - National TAB

Project Issue File Details

01/15/2026



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HOOD / EXHAUST FAN SCHEDULE

H / EF	MANUFACTURER	MODEL	SIZE	CFM OFF/ON	MISC.	LIGHTS	FIRE SYSTEM	WEIGHT
H-1	CAPTIVEAIRE	6030ND-2-F	(9') 60"X30"	0 / 1350	12"Ø EXHAUST CXN	(6) LED	YES	861 LBS
EF-3	CAPTIVEAIRE	DU50HFA	1/2 HP	0 / 1350	DIRECT-DRIVE	-	-	79 LBS

NOTES:

1) HOODS, FANS, AND ACCESSORIES SHALL BE MANUFACTURER-FURNISHED, CONTRACTOR-INSTALLED.
2) HOOD SHALL BE 430 STAINLESS STEEL.
3) HOOD SHALL BE FURNISHED WITH FAN INDICATOR AND LIGHTSWITCH MOUNTED ON FRONT PANEL.
4) MANUFACTURER FURNISHED DOUBLE-WALLED UL LISTED STAINLESS STEEL DUCT KIT AND ALL REQUIRED CONNECTION ACCESSORIES FOR FIELD-INSTALLATION FROM HOOD TO FAN.
5) HOOD SHALL HAVE RIGHT AND LEFT QUARTER END PANELS, AND FRONT, LEFT, AND RIGHT STAINLESS STEEL FIELD WRAPPER.
6) HOOD SHALL BE FURNISHED WITH UL 1046 LISTED GREASE FILTERS.
7) HOOD SHALL BE FURNISHED WITH DUCT MOUNTED HEAT SENSORS AND AUTOMATIC FAN CONTROLS MOUNTED IN HOOD UTILITY CABINET.
8) SYSTEM SHALL BE CAPABLE OF MODULATING FAN AS SCHEDULED, AND INTERLOCKED WITH BUILDING HVAC SYSTEM FOR BUILDING PRESSURIZATION.
9) EQUIPMENT SHUT DOWN CONTACTORS ARE FACTORY-FURNISHED WITHIN HOOD UTILITY CABINET.
10) HOOD SHALL BE LISTED AND LABELED FOR 0" CLEARANCE REQUIREMENTS TO COMBUSTIBLES.
11) FAN SHALL BE FURNISHED WITH VENTED AND HINGED CURB, GREASE BOX, AND DISCONNECT.
12) 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 SPARTANSBURG, SC

Project Issue Information

Issue Name : Incorrect Kitchen Diffusers

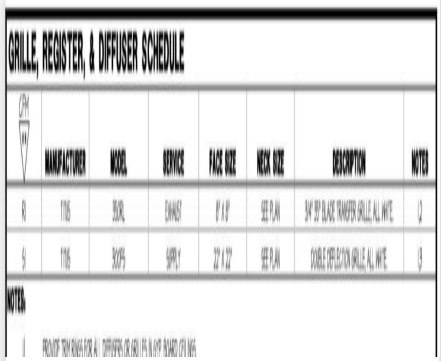
Description : The kitchen diffusers 3-1 through 3-4 are the incorrect type. They need to be the Titus S1 diffuser with the installed dampers to control the airflow.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Low	**Asset Tag :**	RT-3
Originated Date :	01/13/2026 - Alex Bauer - National TAB		

Project Issue File Details

01/13/2026

01/13/2026



01/13/2026

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

- Open QT1125_Completed_Balance_Schedule.xlsx

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
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:	

01-12-26 QT #1125 SPARTANSBURG, SC

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:	

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

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: 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

01/13/2026

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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

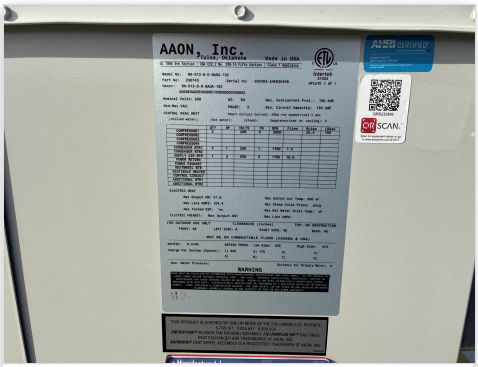
Completed By: Alex Bauer on 01/13/2026

Notes:
Diffuser 2-1 could not be adjusted.

Written By: Alex Bauer on 01/13/2026

Unit Data - PHOTO LOG

01/13/2026



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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

01/13/2026

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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%

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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

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

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

Completed By: Alex Bauer on 01/13/2026

Notes:
No damper for EF1-4.

Written By: Alex Bauer on 01/12/2026

Unit Data - PHOTO LOG

01/13/2026

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%

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

01/13/2026

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

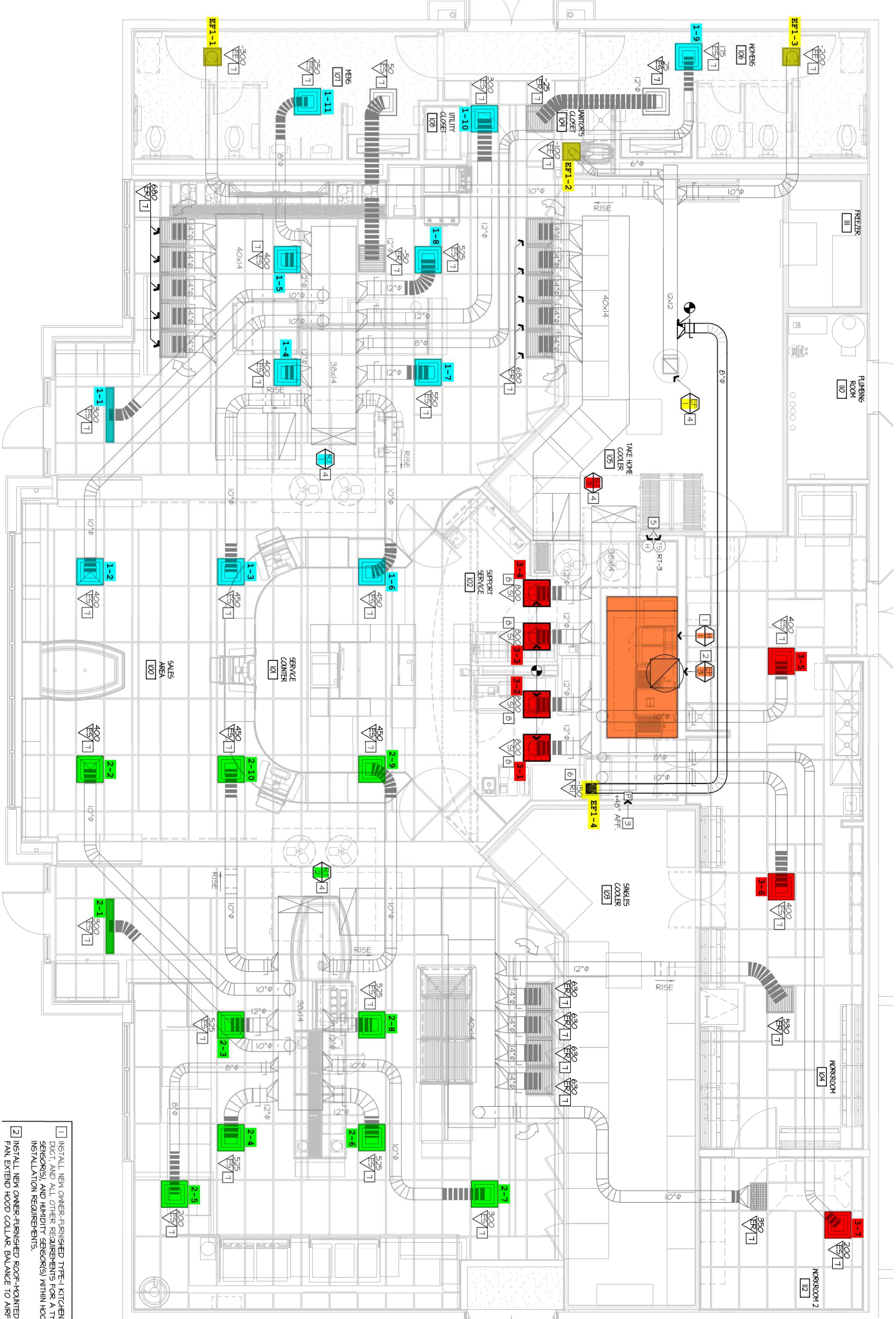
Completed By: Alex Bauer on 01/13/2026

Unit Data - PHOTO LOG

01/13/2026

01/13/2026

1. Open IMG_0525.mp4



1 INSTALL NEW OWNER-FURNISHED TYPE-I KITCHEN HOOD EXHAUST FAN, HOOD, DUCT, AND ALL OTHER REQUIREMENTS FOR A TYPICAL SYSTEM. INCLUDE GREASE SENSOR(S), AND HUMIDITY SENSOR(S) WITHIN HOOD. REFER TO MECHANICAL FOR INSTALLATION REQUIREMENTS.

2 INSTALL NEW OWNER-FURNISHED ROOF-MOUNTED EXHAUST FAN. CONNECT FAN EXTEND HOOD COLLAR. BALANCE TO AIRFLOW RATE SHOWN.