

Report By:

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



Report: TAB Report
Function: Test, Adjust, & Balance
Date: 10/22/2025
Completed By: National TAB

PROJECT
10-13-25 QT #1128 INMAN, SC

9620 ASHEVILLE HWY

INMAN, SC

Client

QUIKTRIP
4705 SOUTH 129TH EAST AVENUE
TULSA, OK 74134

National TAB

Project: 10-13-25 QT #1128 INMAN, SC

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Project: 10-13-25 QT #1128 INMAN, 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

- EF-1 speed controller not working
- RTU 3 cook line diffusers no deflection blades



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Project Issue Information

Issue Name : EF-1 speed controller not working
Description : EF-1's speed controller does not work, airflow cannot be decreased and is above design.
Created By : National TAB **Assigned To :** National TAB - Brianna Biggs
Status : Open
Priority : Urgent **Asset Tag :** EF1
Originated Date : 10/15/2025 - Christian Moller - National TAB

Project Issue File Details



10/17/2025



10/17/2025

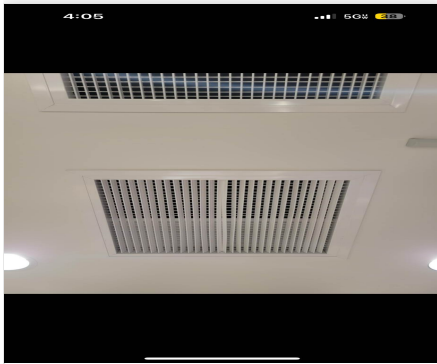


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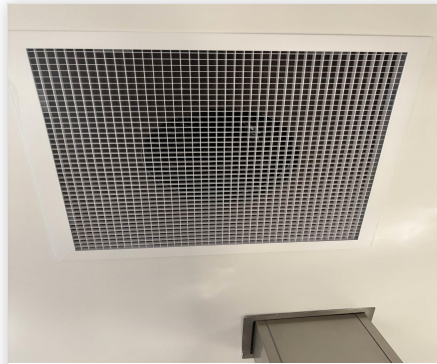
Project Issue Information

Issue Name : RTU 3 cook line diffusers no deflection blades
Description : Per the GC the diffusers ordered to replace the cook line SGRD's for RTU 3 are not being installed with the deflection blades. These are needed to mitigate drafting.
Created By : National TAB **Assigned To :** National TAB - Brianna Biggs
Status : Open
Priority : High **Asset Tag :** RT-3
Originated Date : 10/17/2025 - Christian Moller - National TAB

Project Issue File Details



10/17/2025



10/17/2025

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	737	350	375				
RTU-2	SALES	800	739	350	372				
RTU-3	BOH/KITCHEN	800	862	350	370				
EF-1	WOMEN'S RR					225	280	225	280
EF-2	MEN'S RR					525	549	525	549
EF-3	HOOD					1350	1360	0	0
TOTALS		2400	2338	1050	1117	2100	2189	750	829

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	2338
TOTAL EXHAUST	2100	2189
NET AIRFLOW	300	149

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0034
SIDE	
REAR	
AVERAGE	0.0034

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	1117
TOTAL EXHAUST	750	829
NET AIRFLOW	300	288

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0052
SIDE	
REAR	
AVERAGE	0.0052

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 : Not Completed
Assigned Organization : National TAB Asset :
Requesting Organization : National TAB
Created Date : 10/03/2025 - Trinity Dodds - National TAB

CheckList Item Details

RTU's/AHU's

Emerson Damper Setpoints

Comment:



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:



10-13-25 QT #1128 INMAN, SC

CheckList Information

Name : 02: Exhaust Fans **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 10/03/2025 - Trinity Dodds - National TAB
Completed Date : 10/17/2025 - 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:



10-13-25 QT #1128 INMAN, SC

CheckList Information

Name : 03: Hoods **Status :** Completed
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB
Created Date : 10/03/2025 - Trinity Dodds - National TAB
Completed Date : 10/17/2025 - 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 : 10/03/2025 - Trinity Dodds - National TAB

Completed Date : 10/17/2025 - Christian Moller - National TAB

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

None

List smoke candle type used

Comment:

S102 - 45 second candles

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed

10/16/2025

Comment:

TAB tech name / Firm

Comment:

Christian Moller / NTAB

Site super name / Firm

Comment:

Ryan Abbot / QT Project Manager

Owner representative name / Firm (if Applicable)

Comment:

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:

Front: +0.0034



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Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: AHU/RTU

Asset: RT-1

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	201702-ANEK15207
Model Num	NA	RN-013-8-0-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X25

Motor Data		
	Design	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
OA CFM (Hoods On)	800	737
OA CFM (Hoods Off)	350	375
RL Voltage	-	205/206/206
RL Amperage	-	7.2/6.6/7.2
VFD Max SetPt	-	38,6Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	20%
OA Damper Position (Hoods Off)	-	23%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.062"
Fan Suction SP	-	-0.12"
Fan Discharge SP	-	0.23"
Total ESP	-	0.182"
Fan Total SP	-	0.35"

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

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



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Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: AHU/RTU

Asset: RT-2

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	201702-ANEK15208
Model Num	NA	RN-013-8-0-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X25

Motor Data		
	Design	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	4179
OA CFM (Hoods On)	800	739
OA CFM (Hoods Off)	350	372
RL Voltage	-	208/212/207
RL Amperage	-	5.3/6.3/6.0
VFD Max SetPt	-	35.6Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	21%
OA Damper Position (Hoods Off)	-	21%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.091"
Fan Suction SP	-	-0.15"
Fan Discharge SP	-	0.17"
Total ESP	-	0.24"
Fan Total SP	-	0.32"

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

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



National TAB

Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: AHU/RTU

Asset: RT-3

AREA:BOH/KITCHEN

Unit Data		
	Design	Actual
MFG	NA	AAON
Serial Num	-	201702-ANEK15209
Model Num	NA	RN-013-8-0-152
Num OA Filters 1	-	1
OA Filter Size 1	-	45X25

Motor Data		
	Design	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	4429
OA CFM (Hoods On)	800	862
OA CFM (Hoods Off)	350	370
RL Voltage	-	207/207/208
RL Amperage	-	7.8/8.2/8.0
VFD Max SetPt	-	40Hz
VFD Min SetPt	-	24Hz
OA Damper Position (Hoods On)	-	30%
OA Damper Position (Hoods Off)	-	25%

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.074"
Fan Suction SP	-	-0.15"
Fan Discharge SP	-	0.23"
Total ESP	-	0.224"
Fan Total SP	-	0.38"

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

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



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Project:10-13-25 QT #1128 INMAN, 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		800	1	323	878	874	109.3
SGRD2	SUPPORT SERVICE	SI		800	1	287	765	862	107.8
SGRD3	SUPPORT SERVICE	SI		800	1	381	846	851	106.4
SGRD4	SUPPORT SERVICE	SI		800	1	279	837	862	107.8
SGRD5	WORKROOM	ES		750	1	212	746	732	97.6
SGRD6	WORKROOM	ES		250	1	138	257	248	99.2
Total				4200		1620	4329	4429	105.45%



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Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: FAN - Exhaust

Asset: EF1

AREA:WOMEN'S RR

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	120 ACE 120C13D 33
Serial Num	-	050SG76777- 00/0002101
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.25
Motor Rpm	-	1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.8
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	225	280
Fan Rotation	-	CCW
System SetPt	-	SPEED CONTROLLER / MEDIUM SPEED
RL Voltage	-	110
RL Amperage	-	0.98
Total ESP	-	0.30"
Fan Inlet SP	-	-0.30"
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 10/17/2025

Notes:

Speed controller does not work.

Written By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



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Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: FAN - Exhaust

Asset: EF2

AREA: MEN'S RR

Unit Data		
	Design	Actual
MFG	NA	COOK
Model Num	NA	90 ACEH 90C15DH
Serial Num	-	050SG16777 00/0000701
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.125
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.7
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	525	549
Fan Rotation	-	CCW
System SetPt	-	SPEED CONTROLLER / MEDIUM SPEED
RL Voltage	-	111
RL Amperage	-	2.4
Total ESP	-	0.13"
Fan Inlet SP	-	-0.13"
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



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Project:10-13-25 QT #1128 INMAN, SC

Diffuser Ret/Exh (GRD)

EF2/MEN'S RR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	SUPPORT SERVICE	RI	8"	150	1	112	148	148	98.7
Total				150		112	148	148	98.67%



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Project: 10-13-25 QT #1128 INMAN, SC

System/Unit: FAN - Exhaust

Asset: EF3

AREA: KITCHEN HD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7644869
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	CAPTIVEAIRE
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.6
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	1350	1360
Fan Rotation	-	CCW
System SetPt	-	HMI/55.8Hz
RL Voltage	-	207
RL Amperage	-	2.8
Total ESP	-	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



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Project: 10-13-25 QT #1128 INMAN, 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-F
Job / Serial Num	-	7644869
Type	-	TYPE I CANOPY
Hood length	-	122"
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	-	99
Filter2 FPM	-	115
Filter3 FPM	-	116
Filter4 FPM	-	107
Filter5 FPM	-	108
Filter6 FPM	-	111
Filter Ave FPM(corr)	-	109
CFM	1350	1360

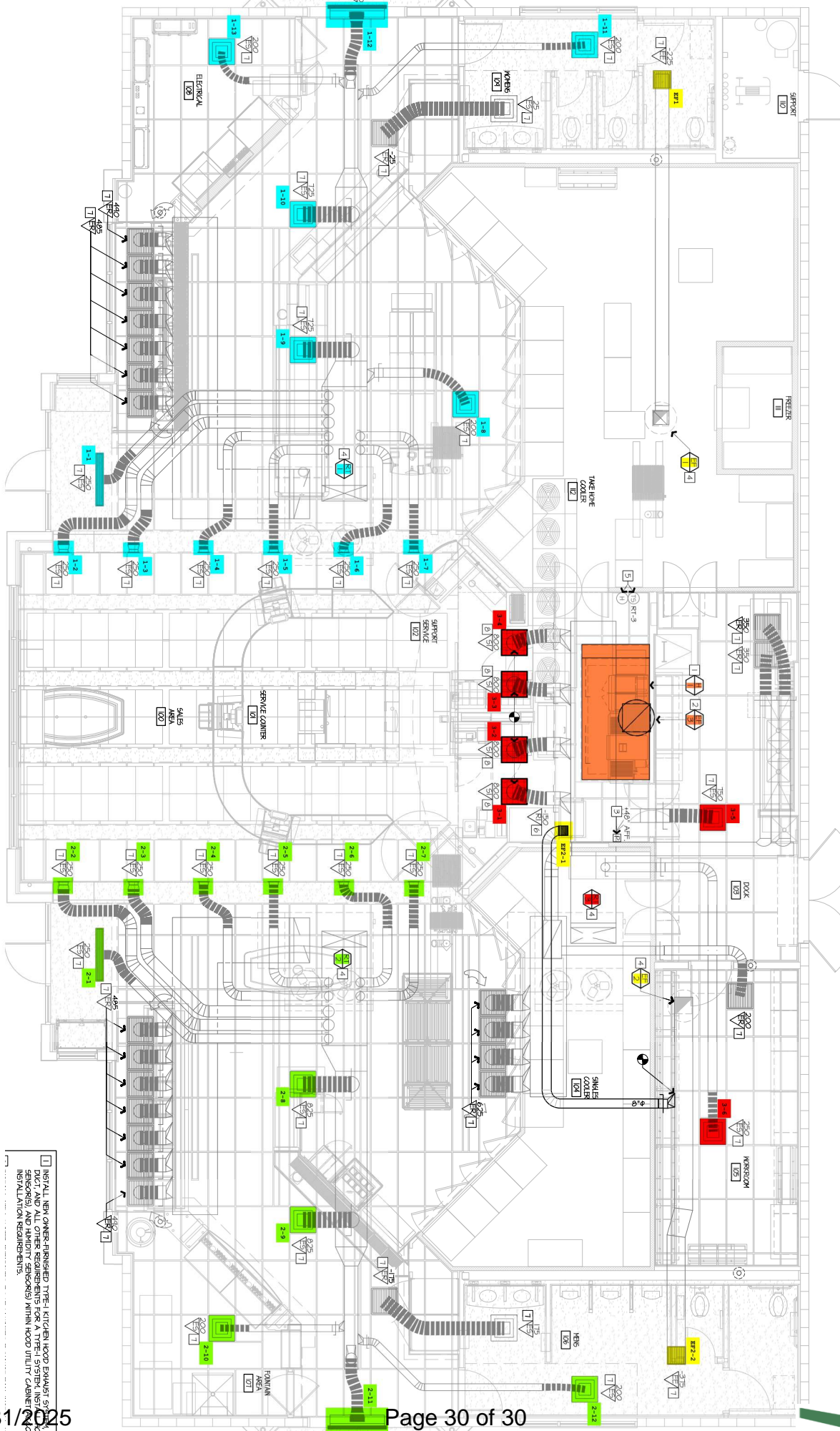
Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	PIZZA OVEN

Completed By: Christian Moller on 10/17/2025

Unit Data - PHOTO LOG



10/17/2025



□ INSTALL NEW OWNER-EMBRIGED TYPE-I KITCHEN HOOD EXHAUST SYSTEM PER S
 DUCT AND ALL OTHER REQUIREMENTS FOR A TYPE-I SYSTEM LISTED IN THE SPECIFICATIONS
 (SENSORS, AND HANDING SENSORS) WITHIN HOOD UTILTY CABINETS.
 INSTALLATION REQUIREMENTS.