

**Report By:**

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



**Report: TAB Report**  
**Function: Test, Adjust, & Balance**  
**Date: 04/23/2025**  
**Completed By: National TAB**

**PROJECT**  
**03-03-25 FIREBIRDS LIBERTY TOWNSHIP,**  
**OH**

7685 BLAKE ST

LIBERTY TOWNSHIP, OH 45069

**Client**

FIREBIRD RESTAURANTS  
8700 Red Oak Blvd, Unit J  
  
CHARLOTTE, NC 28217

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

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## Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail 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) w/ Diffusers

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

### Kitchen Exhaust Hood & Associated Fans

Each 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. . Any EF's that fell outside of this tolerance is noted throughout the report.

### MUA (Make Up Air Unit) w/ PSP

Total flow for the MAU (Make-up Air Unit) unit was measured by readings taken at the discharge of the hood's perforated supply plenum. Readings taken with a velocity matrix were averaged and multiplied by a manufacturer's corrected area. Adjustments to the fan speed were made in order to bring the unit to within design tolerance. Any MUA's that fell outside of this tolerance is noted throughout the report.

### General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

### 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 of  $-0.02''$  wc to  $+0.02''$  wc 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

- Diffuser 1-10
- Ef-3 CURB LEAKAGE
- EF-3 Unable to use hinge kit.



**03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH**

**Project Issue Information**

**Issue Name :** Diffuser 1-10  
**Description :** Diffuser 1-10 flex has come loose from diffuser. Airflow will not meet design until rectified.  
**Created By :** National TAB                      **Assigned To :** National TAB - Will Turnbough  
**Status :** Open  
**Priority :** Medium                                      **Asset Tag :**  
**Originated Date :** 04/23/2025 - Gabe Merk - National TAB

Project Issue File Details



04/23/2025



04/23/2025



**03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH**

**Project Issue Information**

**Issue Name :** Ef-3 CURB LEAKAGE  
**Description :** Unable to balance ef-3 due to excessive curb leakage.  
**Created By :** National TAB                      **Assigned To :** National TAB - Will Turnbough  
**Status :** Open  
**Priority :** Urgent                                      **Asset Tag :**  
**Originated Date :** 04/23/2025 - Gabe Merk - National TAB

Project Issue File Details



04/23/2025



**03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH**

**Project Issue Information**

**Issue Name :** EF-3 Unable to use hinge kit.  
**Description :** EF-3 Unable to use hinge kit due to installation location of supplied power.  
**Created By :** National TAB                      **Assigned To :** National TAB - Will Turnbough  
**Status :** Open  
**Priority :** Medium                                      **Asset Tag :** KEF3  
**Originated Date :** 03/03/2025 - Cody Collett - National TAB

**National TAB**

**Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH**

- [Open](#) BALANCE\_SCHEDULE\_FIREBIRDS\_LIBERTY\_TOWNSHIP.xlsx

## CheckList List

- 01: RTU's/AHU's
- 02: EF's
- 03: MUA
- 04: HOODS
- 05: FINAL TESTS



03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

CheckList Information

**Name :** 01: RTU's/AHU's **Status :** Not Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/27/2025 - Brianna Biggs - National TAB

CheckList Item Details

RTU's/AHU's

Thermostats installed and have power?	Pass
---------------------------------------	------

Comment:

All diffusers and grilles are installed and match design?	Pass
---	------

Comment:

Economizers are assembled and functional?	N/A
---	-----

Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D")	N/A
--	-----

Comment:

Motors are all operating below the FLA rating?	Pass
--	------

Comment:

Are belts tight?	N/A
------------------	-----

Comment:

If direct drive unit is the speed controller working?	Pass
---	------

**Comment:**

---

**Is gas piping installed and valves turned on?**

Fail

**Comment:**

No gas connected to building.

---

**Unit free of noticeable noise and vibration**

Pass

**Comment:**

---

**Deflectors on spiral duct grilles so that the dining area is free of drafting?**

Pass

**Comment:**

---

**Final outside air damper position is marked with permanent marker?**

**Comment:**

Outside air not set at this time due to wind conditions preventing accurate readings.



03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

CheckList Information

**Name :** 02: EF's **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/27/2025 - Brianna Biggs - National TAB

CheckList Item Details

EF's

<b>Rotation is correct?</b>	Pass
-----------------------------	------

**Comment:**

<b>Belts are tight?</b>	Pass
-------------------------	------

**Comment:**

<b>Hinge kit installed installed on hood fan?</b>	Pass
---	------

**Comment:**

<b>Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?</b>	Pass
--	------

**Comment:**

<b>Flex conduit is long enough so that fan can be completely tilted back?</b>	Pass
---	------

**Comment:**

With exception of EF-3 which is obstructed from lifting do to supplied power location.

<b>There is no major leakage around base of fan?</b>	Pass
--	------

**Comment:**

<b>Is the motor operating below the motor FLA rating?</b>	Pass
---	------

**Comment:**

---

**For restroom fan(s) is the back draft damper installed and can it fully open?**

Pass

---

**Comment:**

---

**Unit free of noticeable noise and vibration?**

Pass

---

**Comment:**

---



03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

CheckList Information

**Name :** 03: MUA **Status :** Not Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/27/2025 - Brianna Biggs - National TAB

CheckList Item Details

MUA

<b>Rotation is correct?</b>	Pass
-----------------------------	------

**Comment:**

<b>Gas piping is installed and valves are in on position?</b>	Fail
---	------

**Comment:**

No gas connected to building.

<b>Internal motorized damper is fully opening?</b>	Pass
--	------

**Comment:**

<b>Motor is operating below the FLA rating?</b>	Pass
---	------

**Comment:**

<b>Unit free of noticeable noise and vibration?</b>	Pass
---	------

**Comment:**



03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

CheckList Information

**Name :** 04: HOODS **Status :** Not Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 02/27/2025 - Brianna Biggs - National TAB

CheckList Item Details

HOODS

All hood filters installed and accounted for?	Yes
---	-----

Comment:

Hoods are wired and have power?	Yes
---------------------------------	-----

Comment:

Hood is free of alarms?	No
-------------------------	----

Comment:

Hood is free of damage?	Yes
-------------------------	-----

Comment:

Quarter or full vertical end panels are installed if specified?	Yes
---	-----

Comment:



03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

CheckList Information

**Name :** 05: FINAL TESTS **Status :** Not Completed

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

**Requesting Organization :** National TAB

**Created Date :** 02/27/2025 - Brianna Biggs - National TAB

CheckList Item Details

FINAL CHECKS

**Are sidewall grille deflector blades adjusted to eliminate drafting in the dining room?** Pass

**Comment:**

**Is space free of drafting in general?** Pass

**Comment:**

**Is space comfortable in all areas?** Fail

**Comment:**

Cannot test due to lack of gas connection to the building preventing the ability to do a temperature walk.

**Is the space free of ventilation noise?** Fail

**Comment:**

RTU-1 airflow can be hear in the dining room but is not at an unexpected level of noise and it is not whistling from airflow.

**List kitchen equipment turned on for testing**

**Comment:**

NONE No gas connected to building.

**List smoke candle type used**

**Comment:**

45 second smoke candle.

**HOOD CAPTURE TEST**

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

**Comment:**

100%

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

**Comment:**

100%

**WITNESS**

**Date test was completed**

03/06/2025

**Comment:**

**TAB tech name / Firm**

**Comment:**

Cody Collett

**Site super name / Firm**

**Comment:**

**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)**

**Comment:**

Unable to set OA at this time due to wind conditions. Unable to balance EF-3 at this time (explained in issue).

**PICTURES**

**Equipment pictures are added to each asset?**

Yes

**Comment:**

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

System/Unit: AHU/RTU



Asset: DOAS1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	6679945
Model Num	CASRTU3-I.500-24-30T	CASHVAC3-I.500-24-30T
Type	RTU	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16X25X2
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	4
Final Filter Size 2	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	215T
Horsepower	5	5
Motor Rpm	-	1165
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	14.3/7.15

Test Data		
	Design	Actual
SF CFM	4300	4460
SF RPM	-	949
RA CFM	0	0
OA CFM	4300	4460
RL Voltage	-	129
RL Amperage	-	10.9
SF Rotation	-	CCW
SF System SetPt	-	48.9HZ
RA Damper Position	-	0%
Min OA Damper Position	-	100%
Min OA Damper Type	-	OPPOSED BLADE
OA Enthalpy Setpt	-	N/A

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

Completed By: Gabe Merk on 04/23/2025

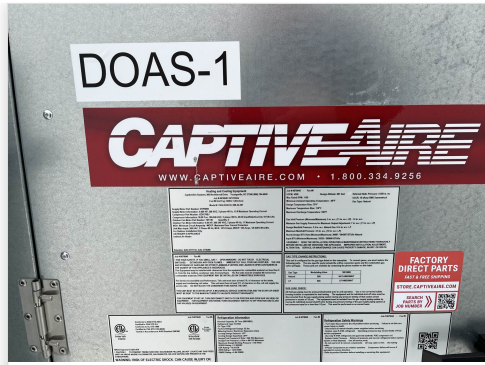
Notes:  
Volts and amps read from HMI VFD status.

Written By: Cody Collett on 03/06/2025

## Unit Data - PHOTO LOG



03/04/2025



03/04/2025



03/04/2025

## Motor Data - PHOTO LOG



03/04/2025

# National TAB

Project:03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## AHU/RTU



### Diffuser Supply (GRD)

#### DOAS1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	KITCHEN	CD	12"	400	1	20	250	428	107.0
SGRD2	DISH	CD	12"	400	1	451	491	410	102.5
SGRD3	DISH	CD	12"	400	1	456	459	402	100.5
SGRD4	DISH	CD	12"	400	1	341	360	428	107.0
SGRD5	PREP	CDK	12"	300	1	314	319	271	90.3
SGRD6	COOKLINE	CDK	12"	300	1	299	302	295	98.3
SGRD7	COOKLINE	CDK	12"	300	1	319	323	307	102.3
SGRD8	COOKLINE	CDK	12"	300	1	340	348	304	101.3
SGRD9	COOKLINE	CDK	12"	300	1	263	279	329	109.7
SGRD10	COOKLINE	CDK	12"	300	0.785	373	392	327	109.0
SGRD11	PREP	CDK	12"	300	1	351	351	313	104.3
SGRD12	PREP	CDK	12"	300	1	333	346	330	110.0
SGRD13	PREP	CDK	12"	300	1	403	419	316	105.3
Total				4300		4263	4639	4460	103.72%

Completed By: Cody Collett on 03/05/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

System/Unit: AHU/RTU



Asset: RTU1

AREA:DINING/BAR

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	6679945
Model Num	CASRTU3-I.400-18-20T	CASHVAC3-I.400-18-20T
Type	RTU	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16X25X2
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	4
Final Filter Size 2	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	184T
Horsepower	5	5
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	13.6/6.8

Test Data		
	Design	Actual
SF CFM	3700	3762
SF RPM	-	1499
RA CFM	1900	1899
OA CFM	1800	1863
RL Voltage	-	149
RL Amperage	-	10.6
SF Rotation	-	CCW
SF System SetPt	-	51.4HZ
RA Damper Position	-	MECHANICAL LINKAGE
Min OA Damper Position	-	4.9DCV
Min OA Damper Type	-	OPPOSED BKADE
OA Enthalpy Setpt	-	N/a

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

Completed By: Gabe Merk on 04/23/2025

Notes:  
Volts and amps read from HMI VFD status.

Written By: Cody Collett on 03/06/2025

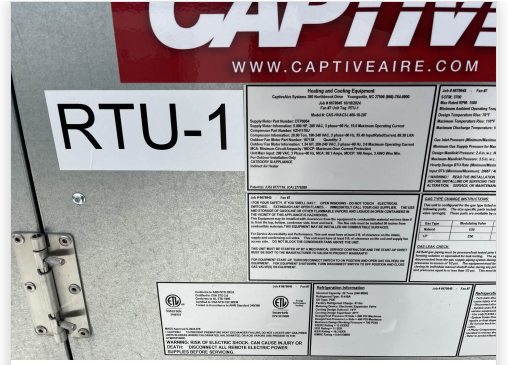
## Unit Data - PHOTO LOG



03/04/2025



03/04/2025



03/04/2025

## Motor Data - PHOTO LOG



03/04/2025

# National TAB

Project:03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU1/DINING/BAR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	ENTRY VESTIBULE	LSD	10"	200	1	17	36	210	105.0
SGRD2	DINING	SR	14X6	250	0.382	199	261	261	104.4
SGRD3	DINING	SR	14X6	250	0.382	191	254	254	101.6
SGRD4	BAR	LSD	10"	250	1	84	117	245	98.0
SGRD5	DINING	SR	14X6	250	0.382	191	262	262	104.8
SGRD6	BEVERAGE	CD	8"	150	1	119	162	162	108.0
SGRD7	BEVERAGE	CD	8"	150	1	143	164	164	109.3
SGRD8	DINING	SR	16X6	325	0.482	272	298	298	91.7
SGRD9	BAR	LAD	10"	250	1	107	155	267	106.8
SGRD10	DINING	SR	16X6	325	0.482	378	316	316	97.2
SGRD11	DINING	SR	16X6	325	0.482	419	329	329	101.2
SGRD12	DINING	SR	16X6	325	0.482	296	335	335	103.1
SGRD13	DINING	SR	16X6	325	0.482	242	341	341	104.9
SGRD14	DINING	SR	16X6	325	0.482	268	318	318	97.8
Total				3700		2926	3348	3762	101.68%

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

System/Unit: AHU/RTU



Asset: RTU2

AREA:DINING

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	6679945
Model Num	CASRTU3-I.300-18-15T	CASHVAC3-I.300-18-15T
Type	RTU	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	16X25X2
Num Final Filter 1	-	4
Final Filter Size 1	-	20X25X2
Num Final Filter 2	-	4
Final Filter Size 2	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	184T
Horsepower	2	2
Motor Rpm	-	1165
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	7.31

Test Data		
	Design	Actual
SF CFM	2500	2337
SF RPM	-	1146
RA CFM	700	501
OA CFM	1800	1836
RL Voltage	-	157
RL Amperage	-	5.8
SF Rotation	-	CCW
SF System SetPt	-	59HZ
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	5.5DCV
Min OA Damper Type	-	OPPOSED BLADE
OA Enthalpy Setpt	-	N/a

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

Completed By: Gabe Merk on 04/23/2025

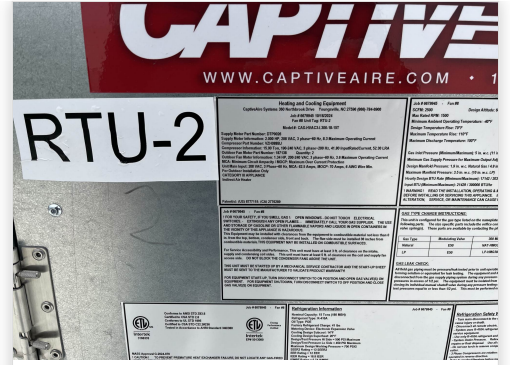
## Unit Data - PHOTO LOG



03/04/2025



03/04/2025



03/04/2025

## Motor Data - PHOTO LOG



03/04/2025

# National TAB

Project:03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINING	SR	22X6	400	0.535	344	344	374	93.5
SGRD2	DINING	SR	22X6	400	0.535	351	351	382	95.5
SGRD3	DINING	SR	22X6	400	0.535	331	331	365	91.3
SGRD4	DINING	SR	22X6	400	0.535	355	355	383	95.8
SGRD5	DINING	SR	22X6	400	0.535	343	343	361	90.3
SGRD6	KITCHEN	SR	6X6	20	0.25	76	76	22	110.0
SGRD7	OFFICE	CD	8"	180	1	231	231	172	95.6
SGRD8	MENS RR	CD	8"	150	1	74	74	143	95.3
SGRD9	WOMENS RR	CD	8"	150	1	244	244	135	90.0
Total				2500		2349	2349	2337	93.48%

Completed By: Cody Collett on 03/06/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Exhaust



Asset: KEF1

AREA:HOOD 33 LEFT

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU180HFA	DU180HFA
Serial Num	-	6679945
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	182/4T
Horsepower	2	2
Motor Rpm	-	1170
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	6.44/3.22
Service Factor	-	1.25

Test Data		
	Design	Actual
CFM	2300	2446
Fan RPM	1212	998
Fan Rotation	-	CCW
Motor RPM	-	998
System SetPt	-	51.2HZ
RL Voltage	-	97.8
RL Amperage	-	4.8
Total ESP	1.5"	0.74"
Fan Inlet SP	-	-0.74"
Fan Discharge SP	-	ATM

Completed By: Gabe Merk on 04/23/2025

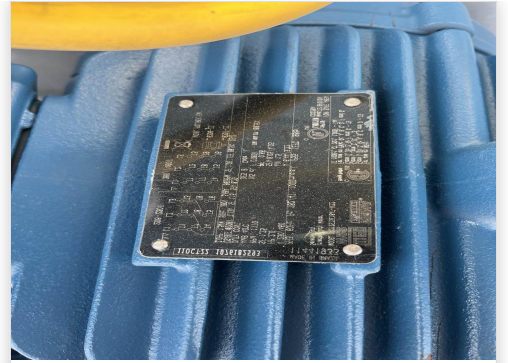
# Unit Data - PHOTO LOG



03/04/2025



03/04/2025



03/04/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Exhaust



Asset: KEF2

AREA:HOOD 33 RIGHT

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU180HFA	DU180HFA
Serial Num	-	6679945
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	182/4T
Horsepower	2	2
Motor Rpm	-	1170
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	6.44/3.22
Service Factor	-	1.25

Test Data		
	Design	Actual
CFM	2300	2263
Fan RPM	1212	881
Fan Rotation	-	CCW
Motor RPM	-	881
System SetPt	-	45.2HZ
RL Voltage	-	87.8
RL Amperage	-	4
Total ESP	1.5"	0.64"
Fan Inlet SP	-	-0.64"
Fan Discharge SP	-	ATM

Completed By: Gabe Merk on 04/23/2025

# Unit Data - PHOTO LOG



03/04/2025



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# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Exhaust



Asset: KEF3

AREA:HOOD 38 GRILL

Unit Data		
	Design	Actual
MFG	NA	CANARM
Model Num	NA	HRE-2001P33S43031
Serial Num	-	NL
Type	-	UTILITY SET
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	CANARM
Frame	-	182T
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Voltage (rated)	-	208-230/460
Amperage (rated)	-	9.4-8.6/4.3
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	3200	2920
Motor RPM	-	1760
System SetPt	-	60 HZ
RL Voltage	-	INACCESSIBLE
RL Amperage	-	5.5 VFD
Total ESP	-	N/A
Fan Inlet SP	-	INACCESSIBLE
Fan Discharge SP	-	ATM

**Notes:**

- Motor bore 1"
- Motor sheave 4"
- Fan sheave 6"
- Fan bore 1-1/8"

UNABLE TO BALANCE DUE TO ROOF CURB LEAKAGE. 4/23/25  
 UNIT READ OUT WITH ROOF CURB TAPED SHUT. UNABLE TO INCREASE UNIT CFM WITH INCREASING SPEED

Written By: Will Turnbough on 04/23/2025



# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Exhaust



Asset: KEF4

AREA:HOOD PREP

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU180HFA	DU180HFA
Serial Num	-	6679945
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	182/4T
Horsepower	2	2
Motor Rpm	-	1170
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	6.44/3.22
Service Factor	-	1.25

Test Data		
	Design	Actual
CFM	2200	2196
Fan RPM	1129	875
Fan Rotation	-	CCW
Motor RPM	-	875
System SetPt	-	44.9hz
RL Voltage	-	79.9
RL Amperage	-	4.1
Total ESP	1.4"	0.46"
Fan Inlet SP	-	-0.46"
Fan Discharge SP	-	ATM

Completed By: Gabe Merk on 04/23/2025

# Unit Data - PHOTO LOG



03/04/2025



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- [Open IMG\\_2690\\_1136091965.j..](#)
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# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Exhaust



Asset: KEF(DISH)5

AREA:DISH HOOD

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU33HFA	DU33HFA
Serial Num	-	6679945
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	48Y
Horsepower	0.333	1/3
Motor Rpm	-	1350
Phase	1	1
Voltage (rated)	115	115/230
Amperage (rated)	-	5.7/2.9
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	800	843
Fan Rotation	-	CCW
System SetPt	-	Manual dial
RL Voltage	-	NA
RL Amperage	-	5.3
Total ESP	0.5"	0.74"
Fan Inlet SP	-	-0.74"
Fan Discharge SP	-	ATM

Completed By: Gabe Merk on 04/23/2025

Notes:  
Volts not safely accessible.

Written By: Cody Collett on 03/06/2025

# Unit Data - PHOTO LOG



03/04/2025



03/04/2025



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# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

System/Unit: FAN - Exhaust



Asset: TEF-1

AREA:

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	G-090-VG-1-1-17-X
Serial Num	-	25654050
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	VARIGREEN
Frame	-	NL
Horsepower	-	1/10
Motor Rpm	-	300-1750
Phase	-	1
Voltage (rated)	-	115/208-230
Amperage (rated)	-	1.38/0.84
Service Factor	-	NL

Test Data		
	Design	Actual
CFM	400	396
Fan RPM	-	1006
Fan Rotation	-	CW
Motor RPM	-	1006
System SetPt	-	5.75 potentiometer
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.19"
Fan Inlet SP	-	-0.19"
Fan Discharge SP	-	ATM

Completed By: Gabe Merk on 04/23/2025

Notes:

Signs of arc flash (black metal) on disconnect switch and electrical tape as a patch over a frayed wire. Did not measure volts or amps due to safety concerns.

Written By: Cody Collett on 03/06/2025

# Unit Data - PHOTO LOG



03/04/2025



03/04/2025



03/04/2025

# National TAB

Project:03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## FAN - Exhaust



### Diffuser Ret/Exh (GRD)

#### TEF-1/

Asset								
Asset Name	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
TEF-1-EGRD1			200	1	372	201	215	107.5
TEF-1-EGRD2			200	1	279	131	181	90.5
Total			400		651	332	396	99%

Completed By: Cody Collett on 03/06/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: FAN - Supply



Asset: MUA1

AREA:COOKLINE

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	A2-D.500-20D-MPU	A2-D.500-20D-MPU
Serial Num	-	6679945
Type	MUA	MUA
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	184T
Horsepower	5	5
Motor Rpm	-	1750
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	13.6/6.8
Service Factor	-	1.15

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	Yes
Flame Status (pass/fail)	-	Pass
Inlet Air Temp SetPt	-	55/65
Discharge Air Temp SetPt	-	60
Air Flow Switch SP Actual	-	0.25"

Test Data		
	Design	Actual
CFM	3800	3977
SF RPM	1660	1105
Motor RPM	-	1105
SF System SetPt	-	37.9HZ
RL Voltage	-	58.7
RL Amperage	-	6.7
Total ESP	-	0.21"
Fan Discharge SP	-	0.21"

General	
	Actual
Fan Rotation Correct	YES

Completed By: Gabe Merk on 04/23/2025

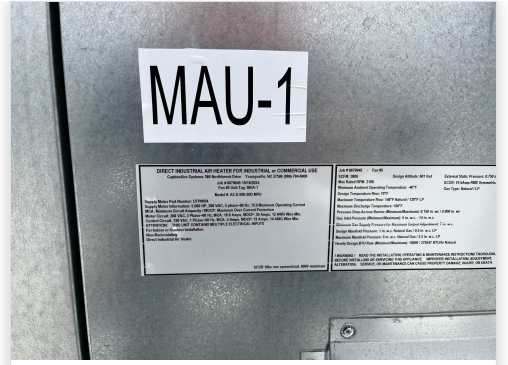
# Unit Data - PHOTO LOG



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03/04/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

System/Unit: Kitchen Hood Type I



Asset: HD-GRILL38

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND-2	6030 ND-2
Job / Serial Num	-	6679945
Type	TYPE I CANOOPY	TYPE I CANOOPY
Hood length	98"	98"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X20	16X20
Filter Qty 1	6	6
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	12.48	12.48
Filter1 FPM	-	220
Filter2 FPM	-	231
Filter3 FPM	-	246
Filter4 FPM	-	247
Filter5 FPM	-	233
Filter6 FPM	-	229
Filter Ave FPM(corr)	-	487
CFM	3200	2920

Cooking Equipment	
	Actual
Item 1	GRILL

Notes:  
 FLOW NOT INCREASING WITH INCREASING VFD SPEED.  
 FLOW DECREASED WHEN VFD SET ABOVE 60 HZ.

Written By: Gabe Merk on 04/23/2025

# Unit Data - PHOTO LOG



03/04/2025



03/04/2025

		Copeland Air Systems 200 Northbank Drive Tracy, CA 95376 phone 714 820-	July 8 2015/16 Trace # 210-28 (14) Length: 8' 7"	Fabrications with any features to reduce or eliminate cooking surfaces must be at the Appliance cooking surface must be at least Max cooking surface temperature to 750°
INTERIOR Approved for Commercial Cooking Equipment Approved for 2017 (14) and 2015 (13) Certified to UL 253 (14) Certified to UL 253 (13) 2017 (14) and 2015 (13)		Model # 6000 KD-2 Exhaust Hood and Mechanical Ductwork Property: CA 202455	Replaces filters only with: 1. UL Classified MFC (Grease Filter) 2. UL Classified Aluminum Baffle 3. UL Classified Stainless Baffle 4. UL Classified Stainless Mesh-Grate Filters Designed to Fit: 6' 20" Tall x 18" Wide Filter Type: Captured Solo Filter with	
This unit is not to be used with any other type of cooking application. For the information of the user, the following table lists the cooking surface cooking surface, hood, and fan speed settings for the unit.		Cooking Surface Width (inches) Temperature Fan Speed Fan Speed Fan Speed Fan Speed	Max Cooking Surface Temperature (°F) (°C) (°F) (°C)	Application Type (Grease) (Aluminum) (Stainless) (Mesh-Grate)
20"	18"	350°	175°	Grease
24"	18"	350°	175°	Aluminum
30"	18"	350°	175°	Stainless
36"	18"	350°	175°	Mesh-Grate

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: Kitchen Hood Type I



Asset: HD-L33

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2-APSP-F	5424 ND-2-APSP-F
Job / Serial Num	-	6679945
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	138"	138"
Hood Width	54"	54"
Supply Plenum Type	-	MUA PSP
Supply Plenum Width	16"	16'
Supply Plenum Length	150"	150"

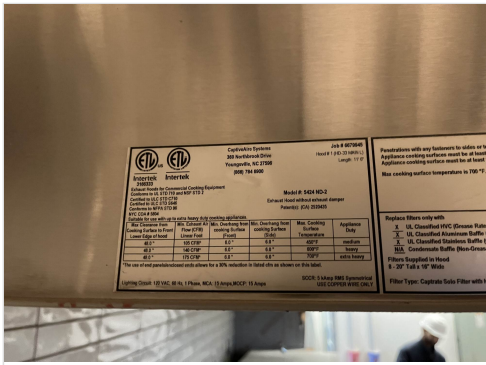
Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X20	16X20
Filter Qty 1	8	8
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	16.64	16.64
Filter1 FPM	-	135
Filter2 FPM	-	142
Filter3 FPM	-	158
Filter4 FPM	-	169
Filter5 FPM	-	164
Filter6 FPM	-	151
Filter7 FPM	-	134
Filter8 FPM	-	130
Filter Ave FPM(corr)	-	147
CFM	2300	2446

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	FLAT TOP GRIDDLE
Item 3	PREP

Test Data Supply		
	Design	Actual
Total Area	16.66	16.66
Kv factor (Vel)	0.92	0.92
Num of Readings	-	9
Reading1 FPM	-	162
Reading2 FPM	-	125
Reading3 FPM	-	126
Reading4 FPM	-	134
Reading5 FPM	-	135
Reading6 FPM	-	109
Reading7 FPM	-	109
Reading8 FPM	-	72
Reading9 FPM	-	77
Ave FPM(corr)	-	116
CFM	1900	1777

Completed By: Gabe Merk on 04/23/2025

# Unit Data - PHOTO LOG



03/04/2025



03/04/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: Kitchen Hood Type I



Asset: HD-PREP70

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6024 ND-2	6024 ND-2
Job / Serial Num	-	6679945
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	132"	132"
Hood Width	60"	60"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X20	16X20
Filter Qty 1	8	8
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	16.64	16.64
Filter1 FPM	-	120
Filter2 FPM	-	130
Filter3 FPM	-	143
Filter4 FPM	-	151
Filter5 FPM	-	157
Filter6 FPM	-	131
Filter7 FPM	-	122
Filter8 FPM	-	107
Filter Ave FPM(corr)	-	274
CFM	2200	2196

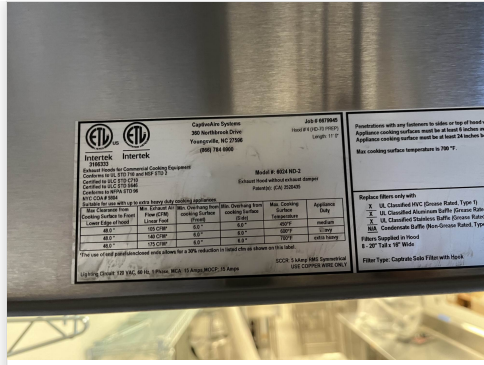
Cooking Equipment	
	Actual
Item 1	OVEN/STOVE
Item 2	SKILLET

Completed By: Gabe Merk on 04/23/2025

# Unit Data - PHOTO LOG



03/04/2025



03/04/2025

# National TAB

Project: 03-03-25 FIREBIRDS LIBERTY TOWNSHIP, OH

## System/Unit: Kitchen Hood Type I



Asset: HD-R33

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2-APSP-F	5424 ND-2-ACSP-F
Job / Serial Num	-	667945
Type	TYPE I CANOPY	TYPE I CANOPY
Hood length	138"	138"
Hood Width	54"	54"
Supply Plenum Type	-	MUA PSP
Supply Plenum Width	16"	16"
Supply Plenum Length	138"	138"

Test Data Supply		
	Design	Actual
Total Area	15.33	15.33
Kv factor (Vel)	0.92	0.92
Num of Readings	-	10
Reading1 FPM	-	144
Reading2 FPM	-	171
Reading3 FPM	-	155
Reading4 FPM	-	159
Reading5 FPM	-	167
Reading6 FPM	-	158
Reading7 FPM	-	155
Reading8 FPM	-	153
Reading9 FPM	-	146
Reading10 FPM	-	154
Ave FPM(corr)	-	143
CFM	1900	2200

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE SOLO	CAPTRATE SOLO
Filter Size 1	16X20	16X20
Filter Qty 1	8	8
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	16.64	16.64
Filter1 FPM	-	123
Filter2 FPM	-	137
Filter3 FPM	-	146
Filter4 FPM	-	167
Filter5 FPM	-	160
Filter6 FPM	-	133
Filter7 FPM	-	120
Filter8 FPM	-	104
Filter Ave FPM(corr)	-	283
CFM	2300	2263

Cooking Equipment	
	Actual
Item 1	PREP
Item 2	STOVE
Item 3	COOLER
Item 4	OVEN

Completed By: Gabe Merk on 04/23/2025

Notes:

MUA PSP cannot be reduced/balanced with HD-L33 due to no access to the dampers for HD-R33 due to installation location, height of stainless steel above hood and location of MUA duct relative to other items above the hoods. MUA total is within design tolerance.

Written By: Cody Collett on 03/05/2025

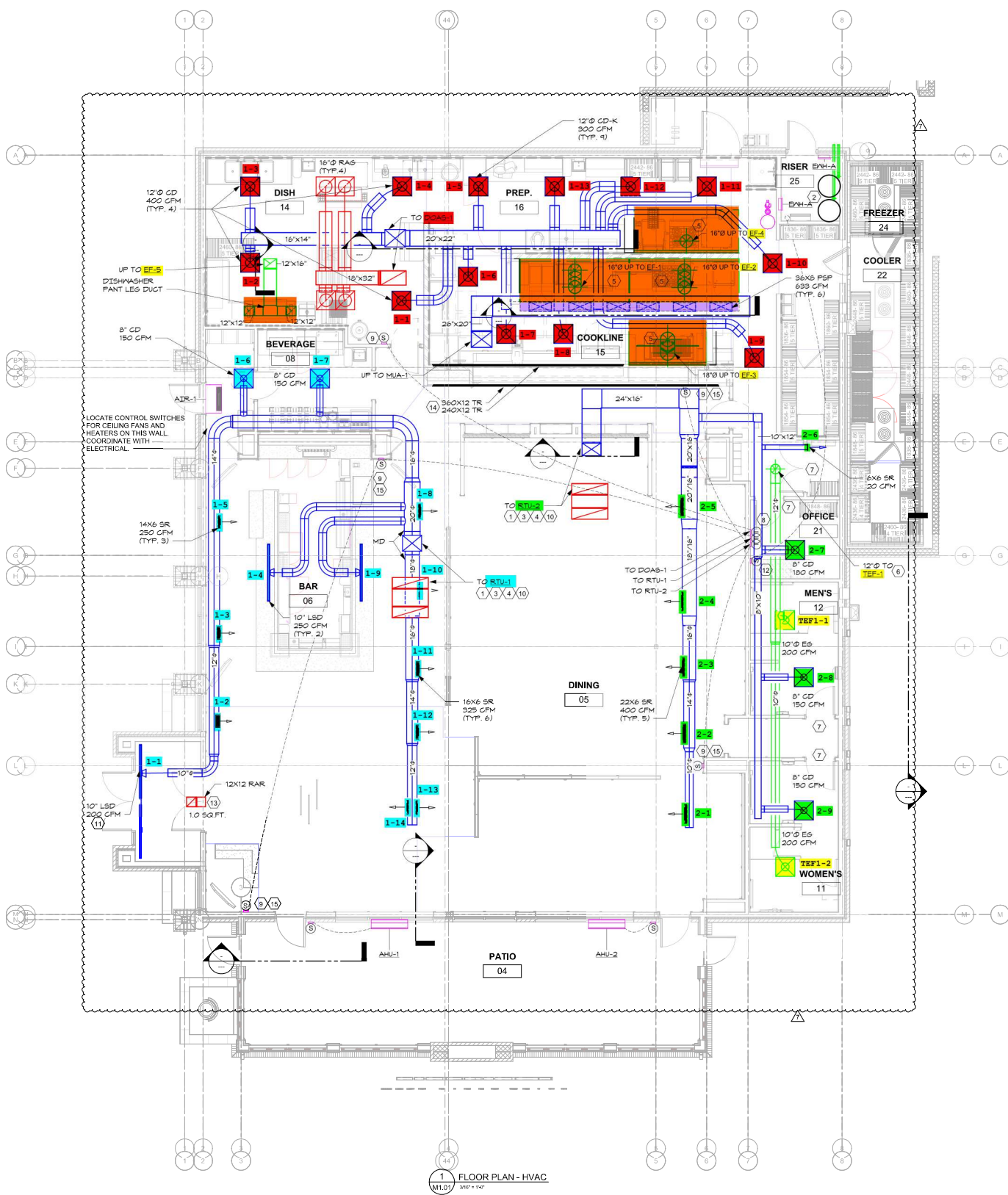
# Unit Data - PHOTO LOG



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1 FLOOR PLAN - HVAC  
M1.0 3/6" x 1/8"