

Report By:

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



Report: TAB REPORT  
Function: Test, Adjust, & Balance  
Date: 08/14/2023

**PROJECT**  
**07-31-23 SWEETGREEN - BLOOMINGTON, IN**  
**(TAB, IAQ)**

210 E KIRKWOOD AVE

BLOOMINGTON, IN 47408

Client

CORE BUILT CONTRACTING

2200 GREY AVE

EVANSTON, IL 60201

## 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.

### AHU's w/ Diffusers

Each of the AHU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each AHU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. If provided with outside air, the flow was measured via traverse. 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.

### 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.

## Issue List

- AHU-1 airflow is low due to possible duct leakage.
- AHU-2 ductwork has a large gap.
- Diffuser 2-1 (Vestibule) is missing a damper.
- EF-2 is not accessible
- OA ducts not accessible



**07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)**

**Project Issue Information**

**Issue Name :** AHU-1 airflow is low due to possible duct leakage.  
**Description :** Total airflow measured via supply and return duct traverses as 3520 CFM however the airflow measured at the diffusers is 1536 CFM. Indicates there is leakage. Unable to locate the source.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dylan Crisman  
**Status :** Open  
**Originated Date :** 08/03/2023 - Dylan Crisman - National TAB



**07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)**

**Project Issue Information**

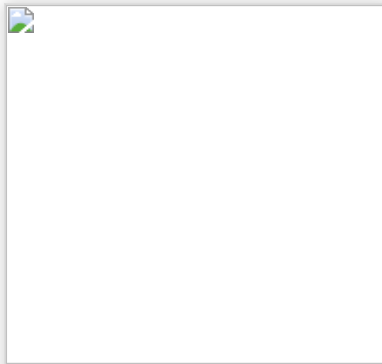
**Issue Name :** AHU-2 ductwork has a large gap.  
**Description :** AHU-2 ductwork has a gap that needs to be sealed above Hood 1. Recommend mechanical contractor complete.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dylan Crisman  
**Status :** Open  
**Originated Date :** 08/01/2023 - Dylan Crisman - National TAB

Project Issue Response Details

- **08/03/2023 National TAB - Dylan Crisman**
  - Updated with photos



943E916F\_11BE\_4B03\_82F5  
\_13819129B2AD  
08/03/2023



AHU-2  
08/03/2023



2F3236F7\_16A2\_433E\_AC23  
\_7FBE15682D98  
08/03/2023



**07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)**

**Project Issue Information**

**Issue Name :** Diffuser 2-1 (Vestibule) is missing a damper.  
**Description :** Airflow is 165 CFM out of 125 CFM design. Unable to reduce airflow any further due to damper not being installed. Recommend installing damper.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dylan Crisman  
**Status :** Open  
**Originated Date :** 08/03/2023 - Dylan Crisman - National TAB

Project Issue File Details



**DIFFUSER2-1  
08/03/2023**



**2981513D\_3C24\_4C53\_82..  
08/03/2023**



**07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)**

**Project Issue Information**

**Issue Name :** EF-2 is not accessible  
**Description :** Due to aluminum bracing and location of access point above ceiling there is no way to walk across to get to the exhaust fan. Unit is in design.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dylan Crisman  
**Status :** Open  
**Originated Date :** 08/03/2023 - Dylan Crisman - National TAB

Project Issue File Details



EF-2  
08/03/2023



**07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)**

**Project Issue Information**

**Issue Name :** OA ducts not accessible  
**Description :** Duct is ran from each unit into the single duct I have marked in picture. Cannot navigate a way to reach the split off ducts. Building pressure is slightly positive but could not calculate exact OA airflow without accessing ductwork.  
**Created By :** National TAB                      **Assigned To :** National TAB - Dylan Crisman  
**Status :** Open  
**Originated Date :** 08/03/2023 - Dylan Crisman - National TAB

Project Issue File Details



**OADUCTWORK**  
**08/03/2023**

### AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
AHU-1	KITCHEN	2950	1536	2800	3520	150	750	5.1%	48.8%						
AHU-2	DINING	2500	2414	1995	2414	505		20.2%	0.0%						
EF-1	KITCHEN HD											705	726		
EF-2	RESTROOMS													150	140
<b>TOTALS</b>		5450	3950	4795	5934	655	750			0	0	705	726	150	140

#### NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	655	750
TOTAL EXHAUST	855	866
<b>NET AIRFLOW</b>	<b>-200</b>	<b>-116</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	-0.0042
SIDE	0.0008
REAR	NA
<b>AVERAGE</b>	<b>-0.0017</b>

#### FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

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- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

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- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

#### NOTES:

1. OA could not be directly measured but based on building pressure and net airflow it is approximately 750 CFM.
2. Rear door pressure was +0.0089" wc. The door opens up to a maintenance hallway apart of the base building.

## CheckList List

- TECH - STEP 1: INITIAL WALKTHROUGH
- TECH - STEP 2: UNIT DATA AND EVAL
- TECH - STEP 3: TEST, ADJUST AND BALANCE



## 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)

### CheckList Information

**Name :** TECH - STEP 1: INITIAL WALKTHROUGH **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 07/05/2023 - Brianna Biggs - National TAB  
**Completed Date :**

### CheckList Item Details

#### INITIAL SITE WALKTHROUGH

Review Plan Review Checklist, has it been signed off and meets our standards to start balancing? If not contact processor to ensure job is ready.

**Comment:**

Yes

All diffusers and grilles are installed and match design?

**Comment:**

Yes

All hood filters installed and accounted for?

**Comment:**

Yes

Hoods are wired and have power?

**Comment:**

Yes

Hood is free of alarms?

**Comment:**

Yes

Thermostats have power?

**Comment:**

Yes

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

**Comment:**

Yes



## 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)

### CheckList Information

**Name :** TECH - STEP 2: UNIT DATA AND EVAL **Status :** Completed

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

**Requesting Organization :** National TAB

**Created Date :** 07/05/2023 - Brianna Biggs - National TAB

**Completed Date :**

### CheckList Item Details

UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

RTU's/AHU's

Economizers are assembled and functional?

**Comment:**

NA

DCV Max damper opening position is set to minimum?

**Comment:**

NA

Free cooling enthalpy set point set for lowest setting (Typically "D")

**Comment:**

NA

Motors are all operating below the FLA rating?

**Comment:**

Yes

Are belts tight?

**Comment:**

NA

If direct drive unit is the speed controller working.

**Comment:**

Yes

Is gas piping installed and valves turned on?

**Comment:**

Yes

Unit free of noticeable noise and vibrat

**Comment:**

Yes

**EF's**

Rotation is correct?

**Comment:**

Yes

Belts are tight?

**Comment:**

NA

Grease cup installed on hood fan?

**Comment:**

Yes

Hinge kit installed installed on hood fan?

**Comment:**

NA

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?

**Comment:**

NA

Flex conduit is long enough so that fan can be completely tilted back?

**Comment:**

NA

There is no major leakage around base of fan?

**Comment:**

No

Is the motor operating below the motor FLA rating?

**Comment:**

Yes

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

**Comment:**

NA

Unit free of noticeable noise and vibration?

**Comment:**

Yes

**MUA**

Rotation is correct?

**Comment:**

NA

Gas piping is installed and valves are in on position?

**Comment:**

NA

Heater tested and is functional?

**Comment:**

NA

Internal motorized damper is fully opening?

**Comment:**

NA

Motor is operating below the FLA rating?

**Comment:**

NA

Unit free of noticeable noise and vibration?

**Comment:**

NA

**HOODS**

Kitchen equipment installed in proper places?

**Comment:**

Yes

Can kitchen equipment be turned on for final smoke test?

**Comment:**

No

**DOCUMENTATION**

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

**Comment:**

Yes

AIR PURIFICATION INSPECTION

Yes

**Comment:**

PHI Air purifiers are installed?

**Comment:**

Yes

Are they installed after the evaporator coil or in the supply duct?

**Comment:**

Supply duct

Are they powered?

**Comment:**

Yes

If PKG installed inside of the blower compartment, is the wiring exposed to UV light protected with split loom or conduit?

**Comment:**

NA

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If Reme Halo, is it installed so that the air flow arrow is pointing correct direction?

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**Comment:**

Yes

---

Is a UV warning sticker installed?

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**Comment:**

Yes

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Take picture of each air purifier and include in the report

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**Comment:**

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## 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)

### CheckList Information

**Name :** TECH - STEP 3: TEST, ADJUST AND BALANCE      **Status :** Completed  
**Assigned Organization :** National TAB      **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 07/05/2023 - Brianna Biggs - National TAB  
**Completed Date :**

### CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?

**Comment:**

Yes

Is space comfortable in all areas?

**Comment:**

Yes

Is the space free of ventilation noise?

**Comment:**

Yes

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

**Comment:**

NA

# National TAB

Project: 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## System/Unit: AHU/RTU

Asset: AHU1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	TRANE	DAIKIN
Serial Num	-	A009918
Model Num	TPEFY096MH140A	FXMQ96MVJU
Type	AHU	AHU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	NA
OA Filter Size 1	-	NA
Num Final Filter 1	-	2
Final Filter Size 1	-	18X24X2

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	1	1
Rated Voltage	208	208
Rated Amperage	8.6	8.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	SWITCH SET TO HIGH
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Test Data		
	Design	Actual
SF CFM	2950	3520
SF RPM	-	SWITCH SET TO HIGH
RL Voltage	-	207.4
RL Amperage	-	7.9
SF Rotation	-	CW
RA Damper Position	-	NA
Min OA Damper Position	-	NA
Min OA Damper Type	-	NA
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.47"
Fan Discharge SP	-	0.18"
Total ESP	0.8"	0.65"

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

Completed By: Dylan Crisman on 08/03/2023

Notes:

Total airflow measured via supply and return duct traverses as 3520 CFM however the airflow measured at the diffusers is 1536 CFM. Indicates there is leakage. Unable to locate the source. OA duct not accessible for direct measurement.

Written By: Will Turnbough on 08/14/2023

# National TAB

Project:07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## AHU/RTU

### Diffuser Supply (GRD)

#### AHU1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	SERVE LINE	CD2	10"	270	1.0	81	98	98	36.3
SGRD2	SERVE LINE	CD2	10"	270	1.0	31	47	47	17.4
SGRD3	SERVE LINE	CD2	10"	270	1.0	28	30	30	11.1
SGRD4	SERVE LINE	CD2	10"	270	1.0	162	186		-
SGRD5	OLO PICKUP	CD3	8"	135	1.0	96	119	119	88.1
SGRD6	OLO PICKUP	CD3	8"	135	1.0	78	72	72	53.3
SGRD7	HOT PREP	CD1	12"	500	1.0	241	306	306	61.2
SGRD8	HOT PREP	CD1	12"	375	1.0	176	187	187	49.9
SGRD9	HOT PREP	CD1	12"	375	1.0	219	263	263	70.1
SGRD10	BACK KITCHEN	CD1	6"	50	1.0	39	55	55	110.0
SGRD11	OFFICE	CD1	10"	300	1.0	36	28	28	9.3
Total				2950		1187	1391	1205	40.85%

# National TAB

Project: 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## System/Unit: AHU/RTU

Asset: AHU2

AREA:DINING

Unit Data		
	Design	Actual
MFG	TRANE	DAIKIN
Serial Num	-	A011987
Model Num	TPEFY072MH140A	FXMG72MVJIJ
Type	AHU	AHU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	NA
OA Filter Size 1	-	NA
Num Final Filter 1	-	2
Final Filter Size 1	-	18X24X4

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	NL
Motor Rpm	-	NL
Phase	1	1
Rated Voltage	208	208
Rated Amperage	-	7.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	SWITCH SET TO HIGH
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Test Data		
	Design	Actual
SF CFM	2500	2414
SF RPM	-	SWITCH SET TO HIGH
RL Voltage	-	207.5
RL Amperage	-	7.3
SF Rotation	-	CW
RA Damper Position	-	NA
Min OA Damper Position	-	NA
Min OA Damper Type	-	NA
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.39"
Fan Discharge SP	-	0.29"
Total ESP	0.8"	0.68"

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

Completed By: Dylan Crisman on 08/03/2023

Notes:  
OA duct not accessible for direct measurement.

Written By: Will Turnbough on 08/14/2023

# National TAB

Project:07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## AHU/RTU

### Diffuser Supply (GRD)

#### AHU2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	VESTIBULE	CD2	8"	125	1.0	205	216	165	132.0
SGRD2	DINING	SR1	12/10	435	1.0	578	457	457	105.1
SGRD3	DINING	SR1	12/10	460	1.0	455	434	434	94.3
SGRD4	DINING	SR1	12/10	460	1.0	346	417	419	91.1
SGRD5	DINING	SR1	12/10	460	1.0	445	415	415	90.2
SGRD6	DINING	SR1	12/10	460	1.0	345	424	423	92.0
SGRD7	RR CORRIDOR	SR1	12/10	50	1.0	47	47	52	104.0
SGRD8	NORTH RR	CD4	6"	50	1.0	46	46	49	98.0
Total				2500		2467	2456	2414	96.56%

# National TAB

Project: 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)

## System/Unit: FAN - Exhaust



Asset: EF1

AREA:KITCHEN HOOD

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	SIF11DD	SIF11DD
Serial Num	-	5758353
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.50	NA
Motor Rpm	-	NA
Phase	1	NA
Voltage (rated)	120	NA
Amperage (rated)	-	NA
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	-	726
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	65P
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.8"	0.89"
Fan Inlet SP	-	0.58"
Fan Discharge SP	-	0.31"

Completed By: Dylan Crisman on 08/03/2023

# National TAB

Project: 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## System/Unit: FAN - Exhaust

Asset: EF2

AREA:RESTROOMS

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CFA250CA	CFA250CA
Serial Num	-	5758353
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.22	NA
Motor Rpm	-	NA
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NA
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	150	140
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	NA
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.8"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	NA

Completed By: Dylan Crisman on 08/03/2023

# National TAB

Project:07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)

## FAN - Exhaust



### Diffuser Ret/Exh (GRD)

#### EF2/RESTROOMS

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	NORTH RR	ER1	6"	75	1.0	69		71	94.7
EGRD2	SOUTH RR	ER1	6"	75	1.0	72		69	92.0
Total				150		141	0	140	93.33%

Completed By: Dylan Crisman on 08/03/2023

# National TAB

Project: 07-31-23 SWEETGREEN - BLOOMINGTON, IN (TAB, IAQ)



## System/Unit: Kitchen Hood Type II

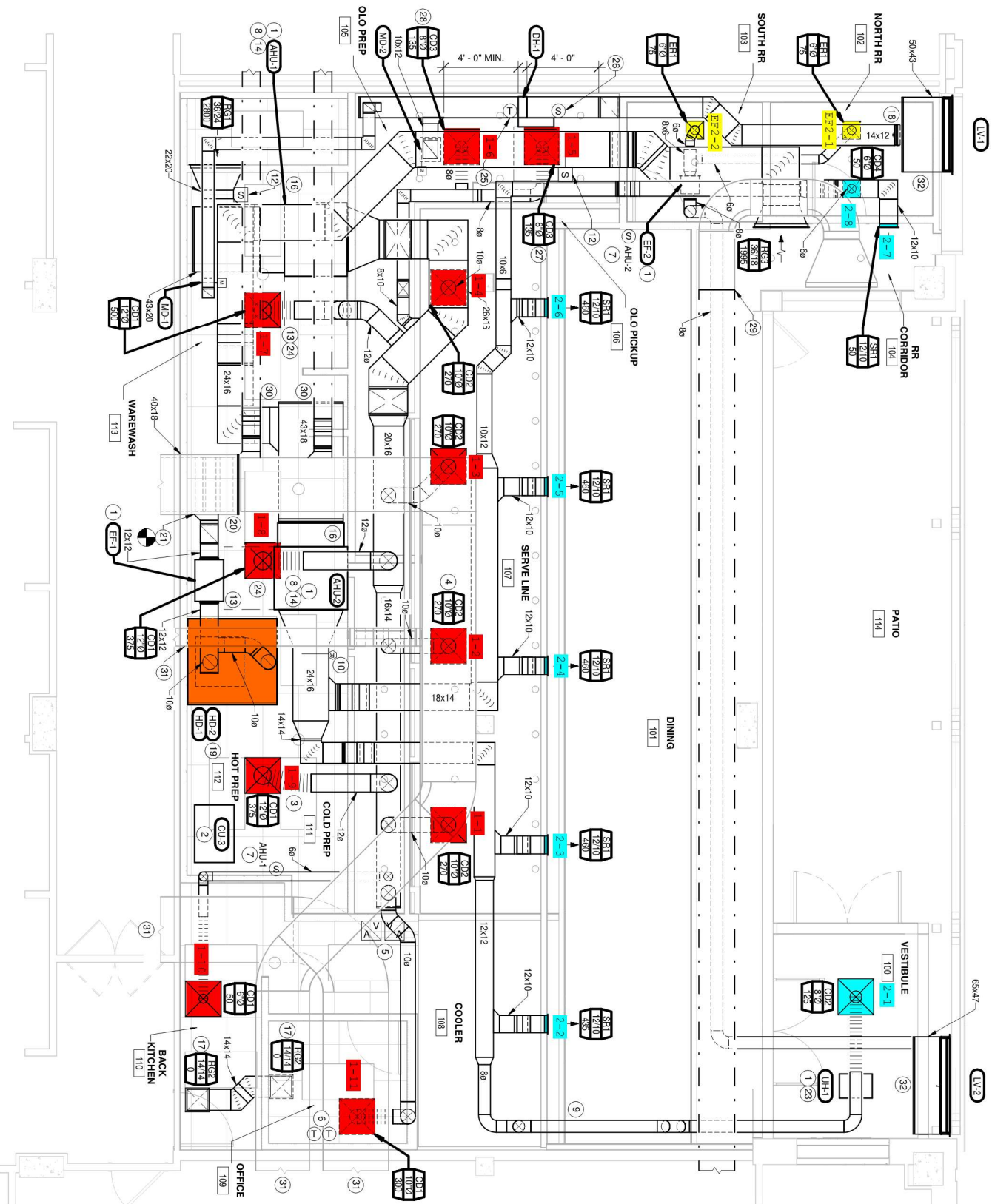
Asset: HD1





AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6012 VHB	6012 VHB
Serial Num	-	5758353
Type	TYPE II CANOPY	TYPE II CANOPY
Hood length	58	58"
Hood Width	60	60"

Test Data		
	Design	Actual
Exhaust CFM	705	726

Completed By: Dylan Crisman on 08/03/2023



 TRUE PLAN  
 NORTH  
 HVAC PLAN  
 1/4" = 1'-0"