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.

NATIONAL TAB

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
TOTALS		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
NET AIRFLOW	-200	-116

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	-0.0042
SIDE	0.0008
REAR	NA
AVERAGE	**-0.0017**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

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.

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

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		
Priority :		**Asset Tag :**	
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

Priority :

Asset Tag :

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

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 is165 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

Priority :

Asset Tag :

Originated Date : 08/03/2023 - Dylan Crisman - National TAB

Project Issue File Details

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

Priority :

Asset Tag :

Originated Date : 08/03/2023 - Dylan Crisman - National TAB

Project Issue File Details

EF-2
08/03/2023

CheckList List

- TECH - SITE PICTURES
- TECH - STEP 1: INITIAL WALKTHROUGH
- TECH - STEP 2: UNIT DATA AND EVAL
- TECH - STEP 3: TEST, ADJUST AND BALANCE
- TECH - STEP 4: FINAL TESTS
- TECH - STEP 4B: HOOD AND OVEN EVALUATION

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

CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	07/05/2023 - Brianna Biggs - National TAB		

CheckList Item Details

STORE FRONT

Comment:

AHU-1

Comment:

AHU-2

Comment:

EF-1

Comment:

EF-2

Comment:

EF-2
08/14/2023

HOOD-1

Comment:

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

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

Comment:

Yes

Is a UV warning sticker installed?

Comment:

Yes

Take picture of each air purifier and include in the report

Comment:

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

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

CheckList Information

Name :	TECH - STEP 4: FINAL TESTS	**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

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing

Comment:

None

List smoke candle type used

Comment:

CES102 45 second

Smoke test capture - Perimeter of hood

Comment:

100%

Smoke test capture - Top of cooking surface

Comment:

100% by oven

WITNESS

Date test was completed	Yes

Comment:

TAB tech name / Firm	Yes

Comment:

Site super name / Firm	Yes

Comment:

Owner representative name / Firm (if Applicable)	Yes

Comment:

Building pressure at front & back doors (All Systems On)	Yes

Comment:

ADDITIONAL

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Comment:

No. AHU-1 listed in issues needs service.

Thermostats are programmed?

Comment:

Yes

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

CheckList Information

Name :	TECH - STEP 4B: HOOD AND OVEN EVALUATION	**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

HOOD AND OVEN EVALUATION

Is the oven covered by a hood?

Comment:

Yes

What is the hood overhang over the front of the hood?

Comment:

18”

What is hood overhang over the left and right sides of the oven?

Comment:

22”

If vertical end panels are specified, are they installed?

Comment:

NA

SMOKE TEST AT HOOD

Comment:

100%

If oven is capable of turning on, it is required to be turned on for smoke test. Was oven on for smoke test?

Comment:

No

Smoke test the oven at the flue on the top of the hood - Capture %?

Comment:

100%

Smoke test the oven at perimeter of the oven - capture %?

Comment:

100%

Smoke test the oven at the perimeter of the hood - capture %?

Comment:

100%

IF NO HOOD IS INSTALLED ABOVE THE OVEN

If no hood is installed above the oven, and it is only a grille, smoke test at the top of the oven at the flue and note the capture %. If smoke capture is very poor, hold the candle up by the grille after a few seconds so that the smoke alarms don't get set off.

Comment:

NA

SMOKE TEST AT OVEN

Confirm that the internal fan turns on as you open the oven door?

Comment:

Yes

Smoke test at the oven doors as you are opening the door - capture %?

Comment:

NA

Smoke test at the oven doors when the doors are shut - capture %?

Comment:

100%

EXHAUST DISCHARGE AND OA INTAKES

Identify where the exhaust air is discharged and take pictures

Comment:

Are there are any outside air intakes nearby that would be able to re-entrain the exhaust smoke? Take pictures

Comment:

No

Are there any building entrances or windows near the exhaust discharge where smoke that will cause smoke to enter unwanted spaces?

Comment:

No

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

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

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)

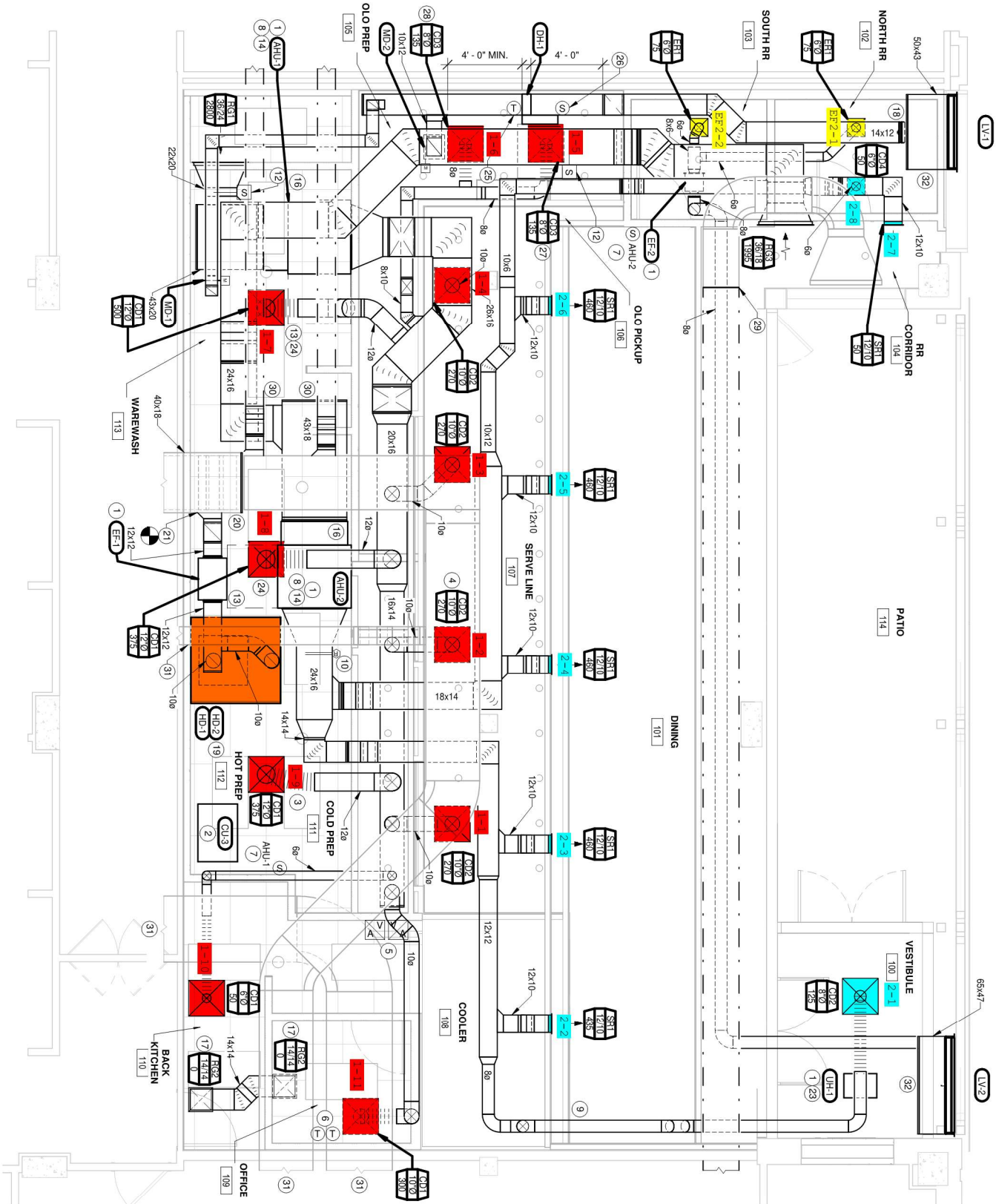
System/Unit: Kitchen Hood Type II

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



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

TRUE NORTH
PLAN NORTH