

Report By:

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**Report: TAB REPORT**  
**Function: Test, Adjust, & Balance**  
**Date: 07/14/2023**

# PROJECT

**06-05-23 SWEETGREEN - PEABODY, MA**  
**(TAB, IAQ)**

210 ANDOVER ST

PEABODY, MA 01960

## Client

Majestic Construction  
344 JOHN DIETSCH BLVD  
UNIT 14  
NORTH ATTLEBORO, MA

## 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.

### 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.

### 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
RTU-1	DINING	4800	4683	4200	4683	600	0	12.5%	0.0%						
RTU-2	KITCHEN	3000	3282	2250	2460	750	822	25.0%	25.0%						
TX-1	RESTROOMS													280	261
GX-1	KITCHEN													1200	758
<b>TOTALS</b>		7800	7965	6450	7143	1350	822			0	0	0	0	1480	1019

#### NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1350	822
TOTAL EXHAUST	1480	1019
<b>NET AIRFLOW</b>	<b>-130</b>	<b>-197</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.0006
SIDE	
REAR	0.0023
<b>AVERAGE</b>	<b>0.006</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:

## 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





**IMG\_0945**  
**07/17/2023**

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TX-1

**Comment:**



**IMG\_0956**  
**07/17/2023**

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GX-1

**Comment:**



**IMG\_0955**  
**07/17/2023**

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EXHAUST DISCHARGE POINT

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**Comment:**



**IMG\_0957**  
**07/17/2023**



## 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

### CheckList Information

**Name :** TECH - STEP 1: INITIAL WALKTHROUGH **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 06/01/2023 - Brianna Biggs - National TAB  
**Completed Date :** 06/27/2023 - Jordan Best - National TAB

### 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:**

NO

All hood filters installed and accounted for?

**Comment:**

NA

Hoods are wired and have power?

**Comment:**

NA

Hood is free of alarms?

**Comment:**

NA

Thermostats have power?

**Comment:**

YES

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

**Comment:**

YES



## 06-05-23 SWEETGREEN - PEABODY, MA (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 :** 06/01/2023 - Brianna Biggs - National TAB

**Completed Date :** 06/29/2023 - Jordan Best - National TAB

### CheckList Item Details

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

RTU's/AHU's

Economizers are assembled and functional?

**Comment:**

RTU1 ECON NOT FUNCTIONAL

DCV Max damper opening position is set to minimum?

**Comment:**

YES (RTU2)

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

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If direct drive unit is the speed controller working.

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**Comment:**

YES

---

Is gas piping installed and valves turned on?

---

**Comment:**

YES

---

Unit free of noticeable noise and vibrat

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**Comment:**

YES

---

**EF's**

---

Rotation is correct?

---

**Comment:**

YES

---

Belts are tight?

---

**Comment:**

NA

---

Grease cup installed on hood fan?

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**Comment:**

NA

---

Hinge kit installed installed on hood fan?

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**Comment:**

NA

---

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

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**Comment:**

NA

---

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

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**Comment:**

NA

There is no major leakage around base of fan?

**Comment:**

NA

Is the motor operating below the motor FLA rating?

**Comment:**

NA

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:**

NA

**DOCUMENTATION**

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

**Comment:**

YES

AIR PURIFICATION INSPECTION

N/A

**Comment:**

UNABLE TO VERIFY LOCATION DUE TO HARD CEILING

PHI Air purifiers are installed?

**Comment:**

NA

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

**Comment:**

DUCT

Are they powered?

**Comment:**

NA

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:**

NA

Is a UV warning sticker installed?

**Comment:**

NA

Take picture of each air purifier and include in the report

**Comment:**



## 06-05-23 SWEETGREEN - PEABODY, MA (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 :** 06/01/2023 - Brianna Biggs - National TAB  
**Completed Date :** 06/29/2023 - Jordan Best - National TAB

### 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



## 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

### CheckList Information

**Name :** TECH - STEP 4: FINAL TESTS **Status :** Completed

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

**Requesting Organization :** National TAB

**Created Date :** 06/01/2023 - Brianna Biggs - National TAB

**Completed Date :** 06/29/2023 - Jordan Best - National TAB

### CheckList Item Details

#### FINAL TESTS

#### HOOD CAPTURE TEST

List equipment turned on for testing

**Comment:**

NA

List smoke candle type used

**Comment:**

NA

Smoke test capture - Perimeter of hood

**Comment:**

NA

Smoke test capture - Top of cooking surface

**Comment:**

NA

#### WITNESS

Date test was completed

**Comment:**

06/27/2023

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TAB tech name / Firm

**Comment:**

NTABI / JORDAN BEST

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Site super name / Firm

**Comment:**

MAJESTIC CONSTRUCTION / JOE CHIRICO

---

Owner representative name / Firm (if Applicable)

**Comment:**

NA

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

**Comment:**

0.0006 0.0023

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**ADDITIONAL**

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

**Comment:**

YES

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Thermostats are programmed?

**Comment:**

YES



## 06-05-23 SWEETGREEN - PEABODY, MA (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 :** 06/01/2023 - Brianna Biggs - National TAB  
**Completed Date :** 06/27/2023 - Jordan Best - National TAB

### CheckList Item Details

#### HOOD AND OVEN EVALUATION

Is the oven covered by a hood?

**Comment:**

NO

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

**Comment:**

NA

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

**Comment:**

NA

If vertical end panels are specified, are they installed?

**Comment:**

NA

#### SMOKE TEST AT HOOD

**Comment:**

NA

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

**Comment:**

NA

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

**Comment:**

NA

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

**Comment:**

NA

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

**Comment:**

NA

**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:**

NA

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:**

NA

**EXHAUST DISCHARGE AND OA INTAKES**

Identify where the exhaust air is discharged and take pictures

**Comment:**

YES

Are there 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

**Notes/Comments :**

SMOKE TEST NOT PERFORMED DUE TO RISK OF TRIPPING SMOKE ALARM FOR ENTIRE SHOPPING CENTER

**Date :**06/27/2023

# National TAB

Project: 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## System/Unit: AHU/RTU



Asset: RTU1

AREA:DINING

Unit Data		
	Design	Actual
MFG	TRANE	LENNOX
Serial Num	-	5622K04698
Model Num	WSJ150A4S0D	KHA150S4
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14" x 23"
Num Final Filter 1	-	4
Final Filter Size 1	-	20" x 25" x 2"

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	3	NA
Motor Rpm	-	NA
Phase	3	NA
Rated Voltage	460	NA
Rated Amperage	-	NA

Test Data		
	Design	Actual
SF CFM	4800	4683
SF RPM	-	NA
RA CFM	4200	4683
OA CFM	600	0
RL Voltage	-	490.8 / 490.6 / 493.1
RL Amperage	-	7.78 / 6.38 / 9.1
SF Rotation	-	CCW
RA Damper Position	-	100%
Min OA Damper Position	-	NA
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.35"
Fan Suction SP	-	-1.23
Fan Discharge SP	-	0.71"
Total ESP	1.0"	1.58"
Fan Total SP	-	1.94"

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

Completed By: Jordan Best on 06/29/2023

Notes:

UNABLE TO SET OA DUE TO LACK OF ACCESS TO SIEMENS CONTROL BOARD. WI-FI STICK COMPATIBLE WITH BOARD REQUIRED FOR ADJUSTING ECON.

Written By: Jordan Best on 06/29/2023

# National TAB

Project:06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU1/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	EXIT VESTIBULE	CD1	12X12	400	1	342	371	371	92.8
SGRD2	RESTROOM	CD2	6X6	50	1	38	52	52	104.0
SGRD3	RESTROOM	CD2	6X6	50	1	72	47	47	94.0
SGRD4	DINING	LS1	12"	370	1	234	342	342	92.4
SGRD5	DINING	LS1	12"	370	1	248	338	338	91.4
SGRD6	DINING	LS1	12"	370	1	358	336	336	90.8
SGRD7	DINING	LS1	12"	370	1	316	338	338	91.4
SGRD8	SERVELINE	LS1	12"	340	1	245	308	308	90.6
SGRD9	SERVELINE	CD1		300	1	198	271	271	90.3
SGRD10	SERVELINE	LS1		370	1	343	356	356	96.2
SGRD11	SERVELINE	LS1		370	1	321	347	347	93.8
SGRD12	SERVELINE	CD1		300	1	243	291	291	97.0
SGRD13	SERVELINE	LS1		370	1	315	343	343	92.7
SGRD14	SERVELINE	CD1		300	1	207	287	287	95.7
SGRD15	SERVELINE	LS1		370	1	294	363	363	98.1
SGRD16	SERVELINE	CD1		300	1	256	293	293	97.7
Total				5000		4030	4683	4683	93.66%

Completed By: Jordan Best on 07/04/2023

# National TAB

Project: 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## System/Unit: AHU/RTU



Asset: RTU2

AREA: KITCHEN

Unit Data		
	Design	Actual
MFG	TRANE	LENNOX
Serial Num	-	5621H02203
Model Num	WHC092H4RKA	KHB122H4EN1G
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	15.5" x 25"
Num Final Filter 1	-	4
Final Filter Size 1	-	20" X 25" X 2"

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	2.75	NA
Motor Rpm	-	NA
Phase	3	NA
Rated Voltage	460	NA
Rated Amperage	-	NA

Test Data		
	Design	Actual
SF CFM	3000	3268
SF RPM	-	NA
RA CFM	2250	2460
OA CFM	750	822
RL Voltage	-	491.8 / 491.3 / 493.3
RL Amperage	-	1.9 / 1.87 / 2.04
SF Rotation	-	CCW
RA Damper Position	-	NA
Min OA Damper Position	-	4.45V
Min OA Damper Type	-	ECON
OA Enthalpy Setpt	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.22"
Fan Suction SP	-	-0.79"
Fan Discharge SP	-	0.78"
Total ESP	1.0"	1"
Fan Total SP	-	1.57"

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

Completed By: Jordan Best on 06/28/2023

# National TAB

Project:06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## AHU/RTU



### Diffuser Supply (GRD)

#### RTU2/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	KITCHEN	CD1	10X10	300	1	219	328	328	109.3
SGRD2	KITCHEN	CD1	10X10	200	1	156	218	218	109.0
SGRD3	KITCHEN	CD1	10X10	300	1	214	322	322	107.3
SGRD4	KITCHEN	CD1	10X10	200	1	174	219	219	109.5
SGRD5	KITCHEN	CD1	10X10	300	1	211	328	328	109.3
SGRD6	KITCHEN	CD1	10X10	300	1	216	329	329	109.7
SGRD7	KITCHEN	CD1	12X12	400	1	321	436	436	109.0
SGRD8	KITCHEN	CD1	10X10	200	1	193	220	220	110.0
SGRD9	KITCHEN	CD1	12X12	400	1	278	435	435	108.8
SGRD10	KITCHEN	CD1	12X12	400	1	342	433	433	108.3
Total				3000		2324	3268	3268	108.93%

Completed By: Jordan Best on 07/04/2023

# National TAB

Project: 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## System/Unit: FAN - Exhaust



Asset: GX1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	SIF11-DD	SIF13-DD
Serial Num	-	5719027
Type	INLINE	INLINE
Configuration	HORIZONTAL	HORIZONTAL

Test Data		
	Design	Actual
CFM	1200	758
Fan RPM	2256	1805
Fan Rotation	-	NA
Motor RPM	-	NA
System SetPt	-	100
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	1.0"	NA
Fan Inlet SP	-	-0.44"
Fan Discharge SP	-	0.87"

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	2	NA
Motor Rpm	-	NA
Phase	3	NA
Voltage (rated)	460	NA
Amperage (rated)	-	NA
Service Factor	-	NA

Completed By: Jordan Best on 06/29/2023

Notes:

Fan nearly inaccessible due to hard ceiling. Only able to adjust set point and view RPM. Flow was originally hindered by stuck backdraft damper, addressed this issue but was still unable to raise flow to design. Suspect leakage in duct work but could not verify due to hard ceiling throughout space.

Written By: Jordan Best on 06/29/2023

# National TAB

Project:06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## FAN - Exhaust



### Diffuser Ret/Exh (GRD)

#### GX1/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	KITCHEN	EG1	12X12	950	1	337	402	496	52.2
EGRD2	KITCHEN	EG1	12X12	250	1	164	201	262	104.8
Total				1200		501	603	758	63.17%

Completed By: Jordan Best on 07/04/2023

# National TAB

Project: 06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## System/Unit: FAN - Exhaust



Asset: TX1

AREA:RESTROOMS

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	SIF10-DD	SIF10-DD
Serial Num	-	5719027
Type	INLINE	IN-LINE
Configuration	HORIZONTAL	HORIZONTAL

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	0.18	NA
Motor Rpm	-	NA
Phase	1	NA
Voltage (rated)	115	NA
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	Actual
CFM	240	261
Fan RPM	1200	1036
Fan Rotation	-	NA
Motor RPM	-	1036
System SetPt	-	56
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.5"	NA
Fan Inlet SP	-	NA
Fan Discharge SP	-	NA

Completed By: Jordan Best on 06/27/2023

Notes:  
Fan nearly inaccessible due to hard ceiling. Only able to adjust set point and view RPM.

Written By: Jordan Best on 06/27/2023

# National TAB

Project:06-05-23 SWEETGREEN - PEABODY, MA (TAB, IAQ)

## FAN - Exhaust



Diffuser Ret/Exh (GRD)

### TX1/RESTROOMS

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	STORAGE	EG1	6X6	140	1	183	154	154	110.0
EGRD2	RESTROOM	EG1	8X8	50	1	62	55	53	106.0
EGRD3	RESTROOM	EG1	8X8	50	1	97	54	54	108.0
Total				240		342	263	261	108.75%

