

**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**  
**04-14-25 REI 048 MADISON, WI**

7483 West Towne Way

Madison, WI 53719

**Client**

Brinco Mechanical Management Services, Inc.  
125 South Main St  
Freeport, NY 11520

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

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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)

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. 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.

## Issue List

- RTU-1: Curb Adapter Restriction
- RTU-2: Curb Alignment
- RTU-2: Economizer Operation
- RTUs: Return Grilles



**04-14-25 REI 048 MADISON, WI**

**Project Issue Information**

**Issue Name :** RTU-1: Curb Adapter Restriction  
**Description :** RTU-1 is barely achieving design airflow at 90% fan speed. Increasing fan speed further above 90% did not increase airflow. Appears unit has multiple curb adapters stacked. This is likely highly restrictive and the likely cause of low airflow. Additionally, the condition of ductwork may be impacting this units performance.  
**Created By :** National TAB                      **Assigned To :** National TAB - Michael McDonnell  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 04/23/2025 - Michael McDonnell - National TAB



04-14-25 REI 048 MADISON, WI

**Project Issue Information**

**Issue Name :** RTU-2: Curb Alignment  
**Description :** Unit not aligned on curb properly due to proximity of skylight. As a result, unit is discharging air onto the roof. The supply air discharge is leaking.  
**Created By :** National TAB                      **Assigned To :** National TAB - Michael McDonnell  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 04/23/2025 - Michael McDonnell - National TAB



04-14-25 REI 048 MADISON, WI

**Project Issue Information**

**Issue Name :** RTU-2: Economizer Operation  
**Description :** Unit econ was found full open and unit in constant heat. Wire appears to be cut on econ controls that is not cut on others and economizer would not respond to inputs / test commands, needs service. Manually set and locked damper position at actuator motor. Input OA damper positions based on same model unit with similar performance/settings.  
**Created By :** National TAB                      **Assigned To :** National TAB - Michael McDonnell  
**Status :** Open  
**Priority :** High                                      **Asset Tag :**  
**Originated Date :** 04/23/2025 - Michael McDonnell - National TAB



04-14-25 REI 048 MADISON, WI

**Project Issue Information**

**Issue Name :** RTUs: Return Grilles

**Description :** Return grilles for all RTUs appear very dirty. Recommend they are cleaned.

**Created By :** National TAB

**Assigned To :** National TAB - Michael McDonnell

**Status :** Open

**Priority :** Medium

**Asset Tag :**

**Originated Date :** 04/23/2025 - Michael McDonnell - National TAB

## CheckList List

- REI TECHNICIAN CHECKLIST



**Comment:**

Yes

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**Units are labeled and installed on proper curb**

**Comment:**

Labels are incorrect. RTU-5 and RTU-1 labels are swapped per Submittal. All units appear installed in the correct locations. All are same model except smaller unit, RTU-1 (labeled RTU-5), serving office space.

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**Unit ductwork properly installed / sealed on curb**

**Comment:**

RTU-2 is not aligned with its curb, see issue.

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**Pulleys are properly aligned**

**Comment:**

All units are direct drive.

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**Condensate lines and P-Traps installed correctly**

**Comment:**

Condensate drains are installed.

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**Disconnect Switch Installed**

**Comment:**

Yes

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**Outside air dampers/Economizers installed and functioning**

**Comment:**

Not on RTU-2, as mentioned.

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**Additional Comments or recommendations:**

**Comment:**

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**Front of store**

**Comment:**

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**Roof Top Layout**

**Comment:**

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU1

AREA:OFFICES

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3942C09477
Model Num	48FCFM07A2M5-3W0A0	48FCFM07A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	28X13
Num Final Filter 1	-	4
Final Filter Size 1	-	16X16X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	5.5

Test Data		
	Design	Actual
SF CFM	2100	1894
SF RPM	-	2346
RA CFM	1785	1587
OA CFM	315	307
RL Voltage	-	213/213/213
RL Amperage	-	3.8/3.7/3.7
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 90% LOW: 54%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 17% LOW: 28%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.82"
Fan Suction SP	-	-1.04"
Fan Discharge SP	-	0.71"
Total ESP	0.50"	1.53"
Fan Total SP	-	175"

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

Completed By: Michael McDonnell on 04/23/2025

Notes:

[1] LABELED RTU-5 ON ROOF

[2] UNIT APPEARS TO HAVE TWO CURB ADAPTERS INSTALLED, RESTRICTING AIRFLOW, SEE ISSUE.

Written By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU2

AREA: CENTER (NORTH)

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63346
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	3074 [1]
SF RPM	-	1537
RA CFM	2550	2613
OA CFM	450	461
RL Voltage	-	213/214/214
RL Amperage	-	2.9/2.7/3.0
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 72% LOW: 44%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	[3] HIGH: 13% LOW: 20%
Min OA Damper Type	-	ECONOMIZER [2]

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.74"
Fan Suction SP	-	-1.0"
Fan Discharge SP	-	0.56"
Total ESP	0.50"	1.30"
Fan Total SP	-	1.56"

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

Completed By: Michael McDonnell on 04/23/2025

Notes:

[1] UNIT IS NOT ALIGNED WITH CURB AND SUPPLY AIR IS DISCHARGING ON ROOF, SEE ISSUE.

[2] ECONOMIZER IS BROKEN, APPEARS WIRE IS CUT. MANUALLY SET AND LOCKED DAMPER AT HIGH SPEED POSITION.

[3] INPUT OA SETPOINTS BASED ON OTHER UNITS.

Written By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU3

AREA: CENTER (SOUTH)

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63349
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	2976
SF RPM	-	1617
RA CFM	2550	2552
OA CFM	450	424
RL Voltage	-	213/213/213
RL Amperage	-	3.2/3.2/3.3
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 78% LOW: 47%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 13% LOW: 19%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.01"
Fan Suction SP	-	-1.31"
Fan Discharge SP	-	0.48"
Total ESP	0.50"	1.49"
Fan Total SP	-	1.79"

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

Completed By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU4

AREA:SOUTH EAST

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63348
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	3053
SF RPM	-	1537
RA CFM	2550	2574
OA CFM	450	479
RL Voltage	-	213/213/213
RL Amperage	-	3.0/2.9/2.9
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 72% LOW: 44%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 15% LOW: 22%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.01"
Fan Suction SP	-	-1.26"
Fan Discharge SP	-	0.52"
Total ESP	0.50"	1.53"
Fan Total SP	-	1.78"

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

Completed By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU5

AREA:NORTH EAST

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63347
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	2986
SF RPM	-	1577
RA CFM	2550	2548
OA CFM	450	438
RL Voltage	-	213/214/214
RL Amperage	-	3.1/3.2/3.3
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 76% LOW: 46%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 11% LOW: 18%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.08"
Fan Suction SP	-	-1.30"
Fan Discharge SP	-	0.54"
Total ESP	0.50"	1.62"
Fan Total SP	-	1.84"

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

Completed By: Michael McDonnell on 04/23/2025

Notes:  
[1] LABELED RTU-1 ON ROOF

Written By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU6

AREA:NORTH WEST

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63350
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	2992
SF RPM	-	1658
RA CFM	2550	2577
OA CFM	450	415
RL Voltage	-	213/213/214
RL Amperage	-	3.8/3.9/3.9
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 80% LOW: 48%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 10% LOW: 17%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.32"
Fan Suction SP	-	-1.55"
Fan Discharge SP	-	0.57"
Total ESP	0.50"	1.89"
Fan Total SP	-	2.12"

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

Completed By: Michael McDonnell on 04/23/2025

Notes:  
[1] CURB ADAPTER INSTALLED

Written By: Michael McDonnell on 04/23/2025

# National TAB

Project: 04-14-25 REI 048 MADISON, WI

System/Unit: AHU/RTU



Asset: RTU7

AREA:SOUTH WEST

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	3824P63351
Model Num	48FCFM08A2M5-3W0A0	48FCFM08A2M5-3W0A0
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35X19
Num Final Filter 1	-	4
Final Filter Size 1	-	16X20X2

Motor Data		
	Design	Actual
Motor MFG	-	NA
Frame	-	NA
Horsepower	-	NL
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.4

Test Data		
	Design	Actual
SF CFM	3000	3022
SF RPM	-	1658
RA CFM	2550	2589
OA CFM	450	433
RL Voltage	-	213/214/214
RL Amperage	-	4.0/3.8/3.8
SF Rotation	-	CORRECT
SF System SetPt	-	HIGH: 80% LOW: 48%
RA Damper Position	-	MECHANICALLY LINKED
Min OA Damper Position	-	HIGH: 11% LOW: 19%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.28"
Fan Suction SP	-	-1.55"
Fan Discharge SP	-	0.57"
Total ESP	0.50"	1.85"
Fan Total SP	-	2.12"

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

Completed By: Michael McDonnell on 04/23/2025

Notes:  
[1] CURB ADAPTER INSTALLED

Written By: Michael McDonnell on 04/23/2025