**Report By:**

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

**Report: TAB**

**Function: Test, Adjust, & Balance**

**Date: 10/28/2024**

**Completed By: National TAB**

# PROJECT

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

4750 HARTLAND PKWY

LEXINGTON, KY 40515

Client

Kroger Division 024

# National TAB

**Project: 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)**

## Table Of Contents

## 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

The RTU's were first inspected to ensure that there are no defects or issues that may impact operation of the unit. Then each of the RTU’s were measured at their terminal devices with a flow hood or by a total flow measurement via traverses. The sum of these readings is equal to the total flow for that particular unit. The total flow of each RTU was then adjusted within tolerance of the specified design. The outside airflow was measured by reading the intake filter with a velocity and multiplying by the free area. Adjustments were made to the damper until the airflow was within the required tolerances. Any equipment that fell outside of this design is noted throughout the report.

# CheckList List

- RTU CHECKLIST
- SITE PICTURES

# 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

## CheckList Information

| | | | |
|---|---|---|---|
| **Name :** | RTU CHECKLIST | **Status :** | Not Completed |
| **Assigned Organization :** | National TAB | **Asset :** | |
| **Requesting Organization :** | National TAB | | |
| **Created Date :** | 10/25/2024 - Wale Odofin - National TAB | | |

## CheckList Item Details

**RTU's/AHU's**

**Economizers are assembled and functional?**

**Comment:**

Yes with the exception of RTU-5 detailed in issues.

**Motors are all operating below the FLA rating?**

**Comment:**

Yes

**Are belts tight?**

**Comment:**

Yes

**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 vibration**

**Comment:**

Yes

---

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

**Comment:**

Yes

---

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

**Comment:**

Yes

---

**Pulleys are properly aligned**

**Comment:**

Yes

---

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

**Comment:**

Yes

---

**Disconnect Switch Installed**

**Comment:**

Yes

---

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

**Comment:**

Yes with the exception of RTU-5 detailed in issues.

---

**Additional Comments or recommendations:**

**Comment:**

---

**Documentation**

---

**If issues, have NTAB team and Brinco Management been notified ?**

**Comment:**

---

**If any issues, have Facilibuild issues been created explaining in detail?**

**Comment:**

Yes

**Pictures**

**All Issues**

**Comment:**

Rtu 5 duct leakage at drop down. Rtu 5 economizer controller potentiometers do not actuate economizer but economizer closes when fan off. Rtu-6 oa high above design even when economizer is fully closed.

**Each Piece of equipment**

**Comment:**

**10/29/2024**

**10/29/2024**

**Front of store**

**Comment:**

**Roof Top Layout**

**Comment:**

# 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

## CheckList Information

| | | | |
|---|---|---|---|
| **Name :** | SITE PICTURES | **Status :** | Not Completed |
| **Assigned Organization :** | National TAB | **Asset :** | |
| **Requesting Organization :** | National TAB | | |
| **Created Date :** | 10/25/2024 - Wale Odofin - National TAB | | |

## CheckList Item Details

**STORE FRONT**

**Comment:**

---

**RTU 5**

**Comment:**

**10/29/2024**

**10/29/2024**

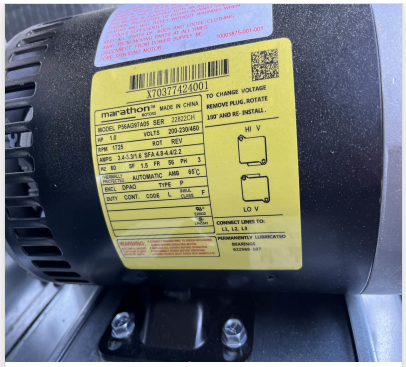
**10/29/2024**

---

**RTU 6**

**Comment:**


10/29/2024




10/29/2024

10/29/2024

## Issue List

- RTU-5 Duct leakage above ceiling.
- RTU-5 Economizer controller does not actuate OA/Return damper.
- RTU-5 GRD
- RTU-5 Thermostat in mixed air compartment.
- RTU-5 Unable to meet design CFM.
- RTU-6 Has an additional diffuser.
- RTU-6 Unable to reduce OA.

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

| | | | |
|---|---|---|---|
| **Issue Name :** | RTU-5 Duct leakage above ceiling. | | |
| **Description :** | RTU-5 Duct leakage above ceiling at drop down into space; airflow can be felt and heard above ceiling. | | |
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | High | **Asset Tag :** | RTU5 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

| | | | |
|---|---|---|---|
| **Issue Name :** | RTU-5 Economizer controller does not actuate OA/Return damper. | | |
| **Description :** | RTU-5 Economizer controller does not actuate OA/Return damper. OA damper does fully close when fan is no longer running. Changing economizer controller setpoint does not open or close OA damper. OA is always in an approximately 10% open position. | | |
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | High | **Asset Tag :** | RTU5 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

# 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

## Project Issue Information

**Issue Name :** RTU-5 GRD
**Description :** RTU-5 GRD

| | | | |
|---|---|---|---|
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | InfoOnly | **Asset Tag :** | RTU5 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

Project Issue File Details


**10/29/2024**

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

| | | | |
|---|---|---|---|
| **Issue Name :** | RTU-5 Thermostat in mixed air compartment. | | |
| **Description :** | RTU-5 Thermostat is in mixed air compartment. Unit is not measuring temperature in the space. | | |
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | Medium | **Asset Tag :** | RTU5 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

| | | | |
|---|---|---|---|
| **Issue Name :** | RTU-5 Unable to meet design CFM. | | |
| **Description :** | RTU-5 Unable to meet design CFM at max fan speed. | | |
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | High | **Asset Tag :** | RTU5 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

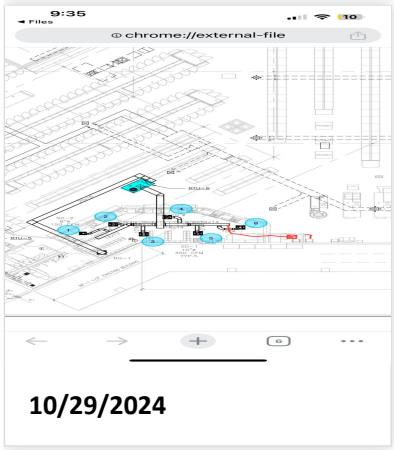
**Issue Name :** RTU-6 Has an additional diffuser.

**Description :** RTU-6 Has an additional diffuser that is not on the MSET. CFM set to 100 with guidance from westly.

| | | | |
|---|---|---|---|
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | InfoOnly | **Asset Tag :** | RTU6 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

Project Issue Response Details

- **10/29/2024 National TAB - Cody Collett**
  - PICTURE




**10/29/2024**

## 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)

### Project Issue Information

| | | | |
|---|---|---|---|
| **Issue Name :** | RTU-6 Unable to reduce OA. | | |
| **Description :** | RTU-6 Unable to reduce OA; OA air damper fully closed. | | |
| **Created By :** | National TAB | **Assigned To :** | National TAB - Will Turnbough |
| **Status :** | Open | | |
| **Priority :** | High | **Asset Tag :** | RTU6 |
| **Originated Date :** | 10/29/2024 - Cody Collett - National TAB | | |

# National TAB

**Project: 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)**

## System/Unit: AHU/RTU

**Asset: RTU5** AREA:

| Unit Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **MFG** | NA | TRANE |
| **Serial Num** | - | 232211213I |
| **Model Num** | NA | YHC060F4RMA2CF0C1AB6 |
| **Type** | - | RTU |
| **Configuration** | - | VERTICAL |
| **Num OA Filters 1** | - | 1 |
| **OA Filter Size 1** | - | 15”x35.5” |
| **Num Final Filter 1** | - | 4 |
| **Final Filter Size 1** | - | 15.5”x 24.5” |

| Motor Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **Motor MFG** | - | TRANE |
| **Frame** | - | NL |
| **Horsepower** | - | 1 |
| **Motor Rpm** | - | NL |
| **Phase** | - | 1 |
| **Rated Voltage** | - | 460 |
| **Rated Amperage** | - | 4.0 |

| Drive Data | |
|---|---|
| | **Actual** |
| **Motor Sheave Size** | DD |
| **Motor Bore Size** | DD |
| **Motor Sheave SetPt** | DD |
| **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** | 2000 | 1499 |
| **SF RPM** | - | NA |
| **RA CFM** | - | 1499 |
| **OA CFM** | 250 | 403 |
| **RL Voltage** | - | 481 |
| **RL Amperage** | - | 3.5 |
| **SF Rotation** | - | CW |
| **SF System SetPt** | - | 5/HIGHEST |
| **RA Damper Position** | - | 90% |
| **Min OA Damper Position** | - | 10% |
| **Min OA Damper Type** | - | Crossbar linked |
| **OA Enthalpy Setpt** | - | E |

| Performance Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **MA Plenum SP** | - | -0.31” |
| **Fan Suction SP** | - | -0.52” |
| **Fan Discharge SP** | - | 0.81” |
| **Total ESP** | - | 1.12” |
| **Fan Total SP** | - | 1.33” |

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

Completed By: Cody Collett on 10/28/2024

### Diffuser Supply (GRD)

**RTU5/**

| Asset | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Asset Name** | **Location** | **Type** | **Size** | **DESIGN CFM** | **AK** | **CFM(1)** | **CFM(2)** | **FINAL CFM** | **% to design** |
| RTU5-SGRD1 | | | | 650 | 1 | 780 | 800 | 682 | 104.9 |
| RTU5-SGRD2 | | | | 250 | 1 | 191 | 191 | 211 | 84.4 |
| RTU5-SGRD3 | | | | 250 | 1 | 183 | 198 | 216 | 86.4 |
| RTU5-SGRD4 | | | | 250 | 1 | 190 | 196 | 218 | 87.2 |
| RTU5-SGRD5 | | | | 200 | 1 | 157 | 164 | 172 | 86.0 |
| Total | | | | 1600 | | 1501 | 1549 | 1499 | 93.69% |

**Completed By: Cody Collett on 10/28/2024**

# National TAB

**Project: 10-28-24 KROGER #024-721 - LEXINGTON, KY (WIW)**

## System/Unit: AHU/RTU

**Asset: RTU6** AREA:

| Unit Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **MFG** | NA | TRANE |
| **Serial Num** | - | 232711397I |
| **Model Num** | NA | YHC060E4RMA2EF0C1A1B6B |
| **Type** | - | RTU |
| **Configuration** | - | VERTICAL |
| **Num OA Filters 1** | - | 1 |
| **OA Filter Size 1** | - | 15”x35.5” |
| **Num Final Filter 1** | - | 4 |
| **Final Filter Size 1** | - | 15.5”x 24.5” |

| Motor Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **Motor MFG** | - | MARATHON |
| **Frame** | - | NL |
| **Horsepower** | - | 1.0 |
| **Motor Rpm** | - | 1725 |
| **Phase** | - | 3 |
| **Rated Voltage** | - | 200-230/460 |
| **Rated Amperage** | - | 3.4-3.3/1.6 |

| Drive Data | |
|---|---|
| | **Actual** |
| **Motor Sheave Size** | NA |
| **Motor Bore Size** | NA |
| **Motor Sheave SetPt** | NA |
| **Fan Sheave Size** | 4-3/4” |
| **Fan Sheave Bore** | 3/4” |
| **Belt CL Distance** | 10” |
| **Num of Belts** | 1 |
| **Belt Size** | AX29 |

| Test Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **SF CFM** | 2000 | 2084 |
| **SF RPM** | - | 942 |
| **RA CFM** | - | 1607 |
| **OA CFM** | 250 | 477 |
| **RL Voltage** | - | 482/488/486 |
| **RL Amperage** | - | 1.5/1.3/1.4 |
| **SF Rotation** | - | CW |
| **SF System SetPt** | - | 50% |
| **RA Damper Position** | - | 100% |
| **Min OA Damper Position** | - | 0% |
| **Min OA Damper Type** | - | Crossbar linked |
| **OA Enthalpy Setpt** | - | E |

| Performance Data | | |
|---|---|---|
| | **Design** | **Actual** |
| **MA Plenum SP** | - | -0.33" |
| **Fan Suction SP** | - | -0.54" |
| **Fan Discharge SP** | - | 0.37" |
| **Total ESP** | - | 0.70" |
| **Fan Total SP** | - | 0.91" |

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

Completed By: Cody Collett on 10/28/2024

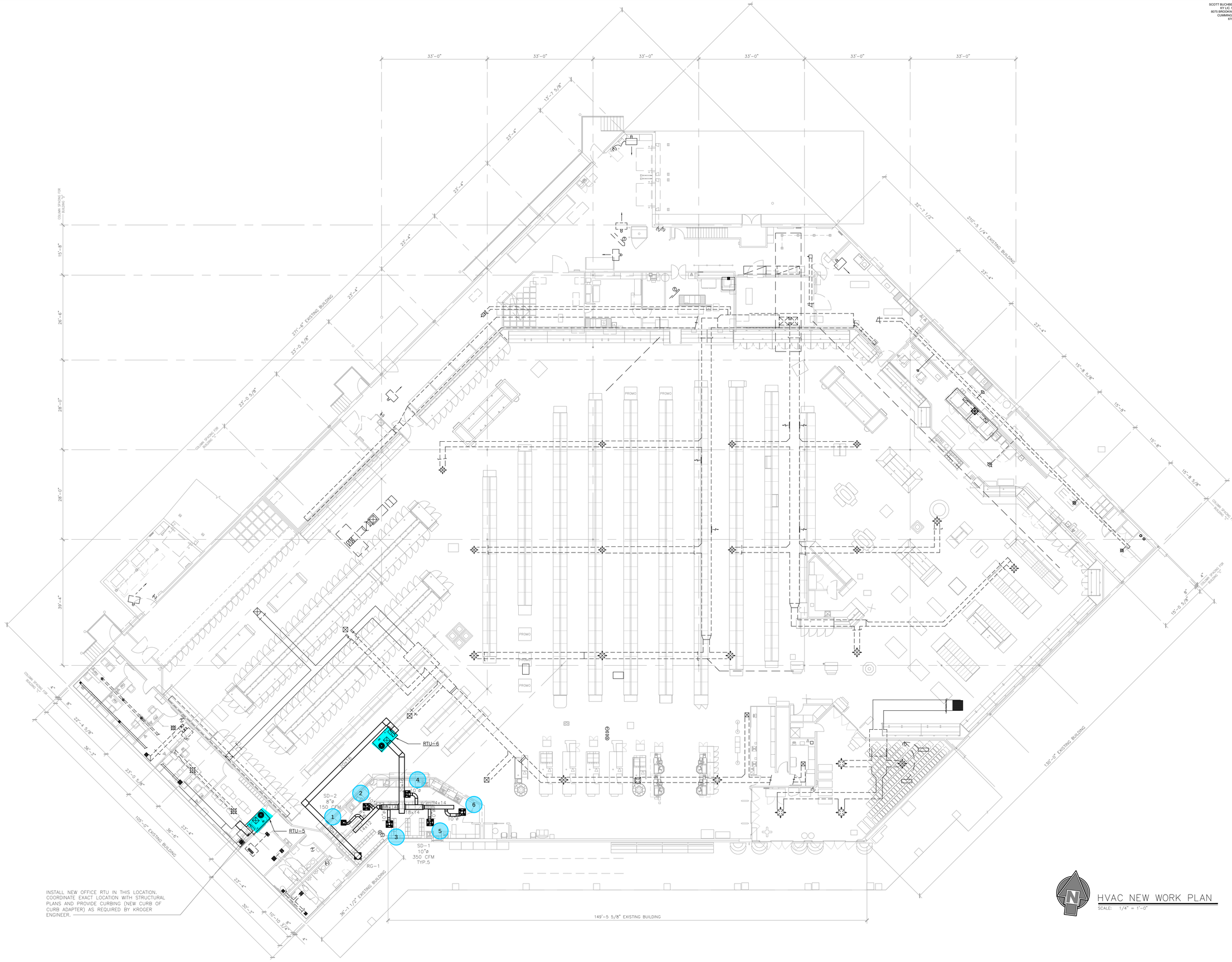
### Diffuser Supply (GRD)

**RTU6/**

| Asset | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Asset Name** | **Location** | **Type** | **Size** | **DESIGN CFM** | **AK** | **CFM(1)** | **CFM(2)** | **FINAL CFM** | **% to design** |
| RTU6-SGRD8 | | | | | | | | | |
| SGRD1 | NA | SD2 | 8" | 150 | 1 | 455 | 455 | 157 | 104.7 |
| SGRD2 | NA | SD1 | 10" | 350 | 1 | 521 | 521 | 340 | 97.1 |
| SGRD3 | NA | SD1 | 10" | 350 | 1 | 29 | 29 | 382 | 109.1 |
| SGRD4 | NA | SD1 | 10" | 350 | 1 | 56 | 56 | 379 | 108.3 |
| SGRD5 | NA | SD1 | 10" | 350 | 1 | 510 | 510 | 384 | 109.7 |
| SGRD6 | NA | SD1 | 10" | 350 | 1 | 334 | 334 | 346 | 98.9 |
| SGRD7 | | | | 100 | 1 | 265 | 265 | 96 | 96.0 |
| Total | | | | 2000 | | 2170 | 2170 | 2084 | 104.2% |

**Completed By: Cody Collett on 10/28/2024**

SCOTT BUCHBERGER, PE
KY LIC. NO.: 25180
8075 BROOKWOOD WAY
CUMMING, GA 30041
678-717-8652




HVAC NEW WORK PLAN
SCALE: 1/4" = 1'-0"

D&E DOLLAR &EWERS
ARCHITECTURE, INC.
111 E.Jackson Avenue • Suite 101
Knoxville,Tennessee • 37915
phone: 865-546-9374 • fax: 865-673-9028
e-mail: design@dollar-ewers.com

COMMONWEALTH OF KENTUCKY
SCOTT BUCHBERGER
25180
LICENSED PROFESSIONAL ENGINEER
09/01/2022

| NO. | REVISIONS |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

A Minor Captial Remodel for:

**KROGER STORE #L-721**

**4750 HARTLAND PARKWAY, LEXINGTON, KENTUCKY, 40515**

HVAC NEW WORK PLAN



ISSUE DATE: SEPTEMBER 2, 2022

PROJECT NO.: 222021-4/ASBC# 22-0205-4

SHEET NUMBER: M1.1