Report By:

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

Report: TAB REPORT

Function: Test, Adjust, & Balance

Date: 09/22/2023

PROJECT

09-18-23 WALGREENS #3909 - ARLINGTON, TX

10001 N MACARTHUR BLVD

ARLINGTON, TX 75063

Client

Walgreens

200 WILMOT RD

DEERFIELD, IL 60015

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.

Commissioning Activities

Equipment was inspected to ensure that the installation meets Walgreens requirements. Control and equipment setpoints were checked and after balancing was completed performance of each unit was verified. The full list of items that were verified along with any that failed are contained in the checklists in this report.

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 per Walgreens standards. Each outlet was then adjusted to within tolerance. 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. 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

- EH-1 Motor Fault
- RTU 4 - IAQ Fault

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Project Issue Information

Issue Name : EH-1 Motor Fault

Description : EH-1 Motor Fault. Unit not operational upon heating/ cooling call. Motor is hot with verified power supplied.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

Status : Open

Priority :

Asset Tag :

Originated Date : 09/23/2023 - Darius Payne - National TAB

Project Issue File Details

1. Open IMG_2340.mp4
   09/23/2023

553963D5_AE3F_4B61_B5..
09/23/2023

25E654CF_CA04_4E40_A5..
09/23/2023

09-18-23 WALGREENS #3909 - ARLINGTON, TX

Project Issue Information

Issue Name : RTU 4 - IAQ Fault

Description : RTU 4 - Control board displaying IAQ Fault during TAB inspection.

Created By : National TAB

Assigned To : National TAB - Will Turnbough

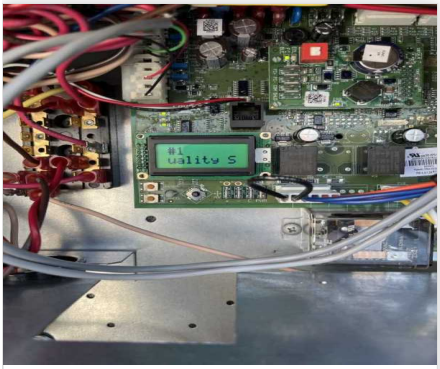
Status : Open

Priority :

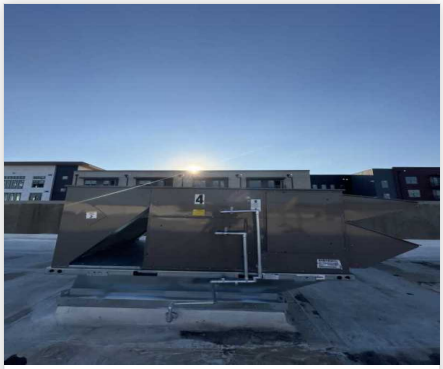
Asset Tag :

Originated Date : 09/23/2023 - Darius Payne - National TAB

Project Issue File Details



A58BDF07_7B8A_47BF_BD..
09/23/2023



136BFECA_5785_4825_9C..
09/23/2023

F2B06BCE_0DBE_47F0_9E..
09/23/2023

CheckList List

- TECH - SITE PICTURES

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CheckList Information

Name :	TECH - SITE PICTURES	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

STORE FRONT	Yes

Comment:

WG1
09/19/2023

WG2
09/19/2023

RTU-1	Yes

Comment:

RTU1-1
09/19/2023

RTU-2	Yes

Comment:

RTU2-1
09/19/2023

RTU2-2
09/19/2023

RTU-3	Yes

Comment:

RTU3-1
09/19/2023

RTU3-2
09/19/2023

RTU-4	Yes
Comment:	
EF-1	Yes
Comment:	
EF-2	Yes
Comment:	
EF-3	Yes
Comment:	
EF-4	Yes
Comment:	
EH-1	Yes
Comment:	

CheckList List

- TECH - 01 RTU INSTALLATION CHECKLIST
- TECH - 02 EXHAUST FANS INSPECTIONS
- TECH - 03 START-UP CONTROLS PROGRAMMING
- TECH - 04 EMS/SENSOR VALIDATION
- TECH - 05 TAB CHECKLIST
- TECH - 06 FUNCTIONAL TESTS
- TECH - 07 TEMPERATURE SETPOINTS
- TECH - 08 ENTRANCE HEATERS

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CheckList Information

Name :	TECH - 01 RTU INSTALLATION CHECKLIST	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		
Completed Date :	09/21/2023 - Darius Payne - National TAB		

CheckList Item Details

General / Exterior Inspections

Verify all required equipment has been replaced per TA and BOM.	Pass
Comment: Verified all new equipment per Submittal report for each RTU & EH.	
All units are installed in the proper locations	Pass
Comment: Units installed on rooftop as shown on design plan.	
Units are labeled correctly	Pass
Comment: All RTU units properly labeled.	
Asset tag installed	Pass
Comment: Asset tags installed on Units.	
Roof is clear of debris.	Pass
Comment: Rooftop verified clear of debris.	

Maintenance access for all unit access panels is acceptable and panels open freely.	Pass

Comment:

Yes, access for maintenance per pan opens freely.

Cabinet and general installation is complete.	Pass

Comment:

Yes, both cabinet & general installation is completed.

Unit is secure to curb and level horizontally and vertically.	Pass

Comment:

Yes, units are secure to curb & level.

Access doors close tightly with no leaks	Pass

Comment:

All access doors sealed without leakage.

Condensate and gas piping is properly supported.	Pass

Comment:

Piping property supported.

Costgaurd is installed per scope of work and piping unions are cemented.

Comment:

Yes, Costgard is installed per scope of work with cemented piping unions.

Additional Comments

Comment:

RTU 3 condensation drain clogged.

Interior Inspections

Fan rotation is correct	Pass

Comment:

Fan rotations are correct on each RTU. Rotation id clockwise facing blower motor at each unit.

Pulleys are correctly aligned and both motor and fan sheave pins are tightened in place.	Pass

Comment:

RTU 3 for pharmacy required pulled adjustment to center belt adjust RPM's. All other units aligned with pins in place.

Return air and outside air dampers close tightly with no gaps	Pass

Comment:

Yes, all RTU dampers close tightly with no additional gaps in place.

Cabinet and coils are not damaged and in like new condition.	Pass

Comment:

Yes, cabinet & coils undamaged in new condition(s).

Inside of unit is clean and clear of debris.	Pass

Comment:

Yes, internals of all RTU's are clear of debris.

Validate condesate is piped to splash block, draing, or roof drain per code requirements	Fail

Comment:

RTU 3 condensation drain clogged.

Verify filters are installed, clean and of proper size. Verify there is no air by-pass around filters.	Pass

Comment:

Yes, all RTU filters are properly sized without air by-pass.

Curb is sealed with no air leakage.	Pass

Comment:

Yes, all RTU curbs are clear of air leaks.

Additional Comments:

Comment:

RTU 3 Condensate drain line to roof runoff is clogged. Creating water build up around Pharmacy.

Fire/Smoke Alarm Systems

In duct smoke detectors are installed	Pass

Comment:

Yes, in duct smoke detectors installed in each RTU.

Fire alarm panel status (visual inspection where possible)

Comment:

Fire alarm panel status operational during inspection.

Additional Comments:	
Comment:	

Electrical	
Electrical wiring is complete with no visible damage	Pass
Comment: Yes, all electrical wiring secured and complete during inspection.	
Electrical connections are tight with sealtight around any unit penetrations.	Pass
Comment: Yes, all electrical connections tight with seal tight parameters.	
Disconnect switch is installed in accessible location near or on unit.	Pass
Comment: Yes, disconnect switch installed and accessible at each RTU.	
Verify overcurrent protection is HACR type, installed and sized correctly and labeled in panel.	
Comment: Yes, overcurrent protection installed correctly & labeled within panel.	
Maintenance electrical outlet is installed and functional.	Pass
Comment: Yes, maintenance electrical outlet installed & tested at each unit.	
Main distribution panel is labeled correctly.	Pass
Comment: Yes, main distribution panel per RTU's labeled accurately.	
Unit ground wire is secured.	Pass
Comment: Yes, unit ground properly secured.	
Additional Comments:	
Comment: None.	

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CheckList Information

Name :	TECH - 02 EXHAUST FANS INSPECTIONS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		
Completed Date :	09/21/2023 - Darius Payne - National TAB		

CheckList Item Details

Fan rotation is correct	Pass

Comment:

Yes, all exhaust fan rotations verified as correct.

Pulleys are aligned and belts are tensioned properly	

Comment:

N/A, All units are Direct Driven.

Speed controller installed and functional (direct drive)	

Comment:

Yes, speed controllers installed & functional.

Fan is secured to the curb	Pass

Comment:

All fans secured to curb during inspection.

Back draft damper is installed and functional	Pass

Comment:

Back Draft damp installed & operational during inspection.

No exterior damage to the fan	Pass

Comment:

No exterior fan damage found during inspection.

No unusual noise or vibration	Pass

Comment:

No abnormalities notes during inspection.

Controls are functional	Pass

Comment:

All controls functional during TAB Inspection.

Additional Comments:

Comment:

4 Total Exhaust Fans & 1 EH located during TAB Inspection. Versus 5 shown on plan.

Notes/Comments :

EF-4 shut off by mechanical contractor per management request. Unit now serves the Management Office.

Date :09/21/2023

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CheckList Information

Name :	TECH - 03 START-UP CONTROLS PROGRAMMING	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

Programming: SE 3.3, 3.4, 4.0

Controller-Network-Address: RTU number + 3	Pass
Comment:	
Controller-Network-FCBusMode = Wired Field Bus	Pass
Comment:	
Controller-Network-BaudRate = Auto	Pass
Comment:	
Controller-Network-Device ID = RTU number + 3	Pass
Comment:	
Details-Occ-OffDurUnocc = No	Pass
Comment:	
Details-Clg-Setup-Clg-En = Yes	Pass
Comment:	

Details-Clg-Setup-ClgAdapTunEn = Yes	Pass

Comment:

Details-Htg-Setup-Htg-En = Yes	Pass

Comment:

Details-Htg-Setup-#HtgStgs = 2 Stages	Pass

Comment:

Details-Htg-Setup-HtgAdapTunEn = Yes	Pass

Comment:

Details-Htg-Setup-#GasVlvs = 1 (Set to 0 for Hp and Elect Heat)	Pass

Comment:

Details-Fan-Setup-Fan Ctl-Type = No VFD select "Single Speed", W/VFD select "Fixed Variable"	Pass

Comment:

RTU 1 & 2 are at "Fixed Variable, RTU 3 & 4 set at "Single Speed."

Details-Fan-Setup-FanOnOcc = Yes	Pass

Comment:

Details-Fan-Setup-FanOnDlyHeat = 30s (Set to 0 for HP or Electric Heat)	Pass

Comment:

Details-Fan-Setup-FanOnly-%Cmd = 50%	Pass

Comment:

Details-Fan-Setup-1ClgStg-%Cmd = 70%	Pass

Comment:

Details-Fan-Setup-2Clgstg-%Cmd = 100% (2stage Unit) or 80% (3 and 4 stage)	Pass

Comment:

Details-Fan-Setup-3ClStg-%Cmd = 100% (3 stage unit) or 90% (4 stage)	Pass

Comment:

Details-Fan-Setup-4ClStg-%Cmd = 100% (4 Stage unit)	Pass

Comment:

Details-Fan-Setup-1HtgStg-%Cmd = 100%	Pass

Comment:

Details-Fan-Setup-2HtgStg-%Cmd = 100%	Pass

Comment:

Details-Econ-Setup-Econ-En = Yes	Pass

Comment:

Details-Econ-Setup-Econ-MinPos = Set to minimum outside air requirements.	Pass

Comment:

Min Pos set at 10%.

Details-Econ-Setup-LowSpdFan-MinPos = Set minimum 1% above EconMinPos	Pass

Comment:

Details-Econ-Setup-FreeClg-Sel = Single Enthalpy	Pass

Comment:

Details-Econ-Setup-EconOAEnth-Sp 4= 24 Btu/lb	Pass

Comment:

Details-Econ-Setup-Dvent-Mode = Enable	Pass

Comment:

Details-Econ-Setup-DventMaxEconPos = 50%	Pass

Comment:

Details-Econ-Setup-DventIAP-Sp = 1000

Comment:

Details-Econ-Setup-EconFltDetectEn = Enable

Comment:

Additional Comments:

Comment:

Non ZR Units only:

Details-HGR-Setup-HGR-En = No

Comment:

Details-HGR-Setup-HGRAlt-En = No

Comment:

Details - HGR-Setup-HGRUnocc-En = No

Comment:

Details-HGR-Setup-Mode = No

Comment:

Additional Comments:

Comment:

ZR Units - Reheat Units only:

Details-HGR-Setup-HGR-En = Yes

Comment:

Details-HGR-Setup-HGRAlt-En = Yes

Comment:

Details - HGR-Setup-HGRUnocc-En = Yes

Comment:

Details-HGR-Setup-Mode = No

Comment:

Additional Comments:

Comment:

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CheckList Information

Name :	TECH - 04 EMS/SENSOR VALIDATION	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

RTU supply air temp sensor location located per start-up binder.

Comment:

RTU return air temp sensor location located per start-up binder.

Comment:

RTU return air smoke detector (when applicable) is located per start-up binder.

Comment:

Space temperature sensor has been replaced and location meets requirements.

Comment:

Space humidity sensor has been replaced and location meets requirements.

Comment:

Unit is being controlled by a space temperature sensor or thermostat

Comment:

EMS has been connected and validated with TOC or Gridpoint. Screen shot is available.

Comment:

No splicing of EMS/Sensor/Thermostat wiring is visible

Comment:

(If Applicable) 2 Stage Thermostat to SE Board Control Wiring meets detail in start-up binder.

Comment:

(If Applicable) 2 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.

Comment:

(If Applicable) 4 Stage Thermostat to 4 Stage Unit meets detail in start-up binder.

Comment:

(If Applicable) 3 Stage Thermostat wiring meets detail in start-up binder.

Comment:

(If Applicable) 3 Stage Thermostat with Humidity sensor wiring meets detail in start-up binder.

Comment:

(If Applicable) EH Thermostat with SCR control wiring meets detail in start-up binder.

Comment:

Temperature setpoints are set for correction region and space (see ASHRAE / temperature setpoint chart in procedure)

Comment:

Additional Comments:

Comment:

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CheckList Information

Name :	TECH - 05 TAB CHECKLIST	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

Outside air damper set to minimum air flow requirement and damper position marked.

Comment:

Total Supply, return, and outside air volumes meet design tolerances (+/-10%)

Comment:

Enclosed area diffusers (Pharmacies, manager office, employee room, restrooms, electrical rooms) balanced within +/-10%?

Comment:

Open area diffusers (Sales floor and stock room) balanced within +/-25% of design?

Comment:

Store pressure meets tolerances (see formula in balance schedule). Make sure to account for existing exhaust fans airflows as shown on original drawings that are non-functioning.

Comment:

Outside air and return air dampers modulate freely.

Comment:

Start-up report from the installing contractor is reviewed and all information if filled out. All required measurements are within typical ranges.

Comment:

(If Applicable) VFD is set-up and operational. (N/A = not applicable)

Comment:

Verify amp draw of motor is within unit specification, not operating in overamped condition.

Comment:

Sales floor temperature and humidity measurement

Comment:

Pharmacy temperature and humidity measurement

Comment:

Stock Room temperature and humidity measurement

Comment:

Outdoor air temperature and humidity measurement

Comment:

Additional Comments:

Comment:

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CheckList Information

Name :	TECH - 06 FUNCTIONAL TESTS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

Cooling Functional Test

Overwrite the thermostat or sensor to put the unit into cooling mode.	Pass
Comment:	
Compressors enable.	Pass
Comment:	
If fan has VFD, the fan increases speed.	N/A
Comment:	
Document the discharge air temperature.	
Comment:	
After 10 minutes, Discharge air temperature is below 55 degrees.	
Comment:	
Cooling mode is operational	Pass
Comment:	
Additional Comments:	

Comment:

Heating Functional Test

Overwrite the thermostat or sensor to put the unit into heating mode.	Pass

Comment:

Heat exchanger enables.	Pass

Comment:

If fan has VFD, the fan increases speed.	N/A

Comment:

Document the discharge air temperature.

Comment:

After 10 minutes, Discharge air temperature is above 85 degrees.

Comment:

Heating mode is operational	Pass

Comment:

Additional Comments

Comment:

Dehumidification Functional Test

Overwrite the humidistat to put the unit into dehumidification mode.

Comment:

Compressors enable.

Comment:

Hot Gas Reheat Valve opens

Comment:

If fan has VFD, the fan increases speed.

Comment:

Document the discharge air temperature.

Comment:

Dehumidification Mode is operational. (Pass/Fail/NA)

Comment:

Additional Comments:

Comment:

Economizer Functional Test

Overwrite the humidistat to put the unit into economizer mode.	Pass

Comment:

Humidistat override for economizer mode functional.

Economizer modulates from minimum position to 100% open. (Pass/Fail/NA)

Comment:

Yes, economizer modulates from 0-100%open.

Additional Comments:

Comment:

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CheckList Information

Name :	TECH - 07 TEMPERATURE SETPOINTS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		

CheckList Item Details

Temperature setpoints must be set using provided charts are based on state and space that each RTU serves. Confirm with controls company that these are set correctly

Comment:

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CheckList Information

Name :	TECH - 08 ENTRANCE HEATERS	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/14/2023 - Brianna Biggs - National TAB		
Completed Date :	09/21/2023 - Darius Payne - National TAB		

CheckList Item Details

Sensor is located within 15' of entrance area	Pass

Comment:

Yes, right of main entrance on wall.

Confirm proper operation of entrance heater and associated controls	Fail

Comment:

Entrance heater non-responsive to calls for heat. Contactors close & motor buzzes without operation.

Balance supply air quantity to manufacturer recommended supply airflow.	Fail

Comment:

Unable to test due to non-responsive fan motor.

Confirm listed temperature rise and discharge air temperature based on approved BOM/submittal	Fail

Comment:

Unable to test due to non-responsive fan motor.

Notes/Comments :

EH-1 serving main entrance non-responsive during TAB. Due to fan motor fault.

Date :09/21/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: AHU/RTU

Asset: RTU1 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2G3760766
Model Num	AW18N3DQ4S1ARS32A2	AW15N3DQ4S1ARS32A2
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	33X22
Num Final Filter 1	-	9
Final Filter Size 1	-	16X25

Test Data		
	Design	**Actual**
SF CFM	6125	6851
SF RPM	1017	2991
RA CFM	4900	5683
OA CFM	1225	968
RL Voltage	-	481,485,486
RL Amperage	-	6.2,6.4,5.9
SF Rotation	-	CW
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	184TZ
Horsepower	7.5	5
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	6.7

Performance Data		
	Design	**Actual**
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.2"	
Fan Total SP	-	

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	8
Fan Sheave Bore	-	1 7/8
Belt CL Distance	-	
Num of Belts	-	1
Belt Size	-	BX40
Belt Alignment	-	CENTER

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

Notes:
ORIGINAL DIFFUSER DESIGN TOTALS =7150
ADJUSTED DIFFUSER DESIGN. ***Adjusted Design @6500 CFM Per Plan Design.

Written By: Darius Payne on 09/19/2023

National TAB

Project:09-18-23 WALGREENS #3909 - ARLINGTON, TX

AHU/RTU

Diffuser Supply (GRD)

RTU1/

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES		24X6	167					-
SGRD2	SALES		24X6	167					-
SGRD3	SALES		24X6	167					-
SGRD4	SALES		24X6	167					-
SGRD5	CUSTOMER SERVICE		9X9	216					-
SGRD6	PASSAGE 2		12X12	337					-
SGRD7	PASSAGE 2		12X12	334					-
SGRD8	FFICE		15X15	379					-
SGRD9	PHOTO		18X18	614					-
SGRD10	SALES		1X818	894					-
SGRD11	SALES		18X18	894					-
SGRD12	SALES		18X18	894					-
SGRD13	SALES		18X18	894					-
Total				6124		0	0	0	0%

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: AHU/RTU

Asset: RTU2 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2G3748356
Model Num	AW15N3DQ4S1AES62A2	AW15N3DQ4S1AES62A
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	32X22
Num Final Filter 1	-	9
Final Filter Size 1	-	16X25

Test Data		
	Design	**Actual**
SF CFM	5250	5271
SF RPM	996	1200
RA CFM	4200	4104
OA CFM	1050	1007
RL Voltage	-	462,464,461
RL Amperage	-	5.9,6.2,6.3
SF Rotation	-	CW
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	184TZ
Horsepower	5	5
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	6.7

Performance Data		
	Design	**Actual**
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.0"	
Fan Total SP	-	

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	8
Fan Sheave Bore	-	1 7/8
Belt CL Distance	-	
Num of Belts	-	1
Belt Size	-	BX40
Belt Alignment	-	CENTER

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

Notes:
ORIGINAL DIFFUSER DESIGN TOTALS=6300
ADJUSTED DIFFUSER DESIGN TOTALS.

Written By: Brianna Biggs on 09/14/2023

National TAB

Project:09-18-23 WALGREENS #3909 - ARLINGTON, TX

AHU/RTU

Diffuser Supply (GRD)

RTU2/

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES		18X18	1148	2.78	1108	1204	1278	111.3
SGRD2	SALES		18X18	1148	2.78	1133	1224	1248	108.7
SGRD3	VALUABLE RM		6X6	75	2.78	1092	1197	1358	1810.7
SGRD4	PASSAGE 1		12X12	385	2.78	1123	1268	1333	346.2
SGRD5	EMPLOYEE RM		9X9	198					-
SGRD6	SALES		18X18	1148					-
SGRD7	SALES		18X18	1148					-
Total				5250		4456	4893	5217	99.37%

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: AHU/RTU

Asset: RTU3 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2E3656498
Model Num	ZJ037N08D4B5HAA2A4	ZJ061N08D4B5GCA2R4
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	22X30
Num Final Filter 1	-	4
Final Filter Size 1	-	16X24

Test Data		
	Design	**Actual**
SF CFM	1050	1886
SF RPM	875	
RA CFM	1050	1886
OA CFM	0	0
RL Voltage	-	482,483.478
RL Amperage	-	3.3,3.5,3.5
SF Rotation	-	CW
RA Damper Position	-	100%
Min OA Damper Position	-	0%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	1.50	2
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	208-230/460
Rated Amperage	-	8.2-8.4/4.2

Performance Data		
	Design	**Actual**
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.2"	
Fan Total SP	-	

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	5
Motor Bore Size	-	1
Motor Sheave SetPt	-	4
Fan Sheave Size	-	7
Fan Sheave Bore	-	1
Belt CL Distance	-	11
Num of Belts	-	1
Belt Size	-	A47
Belt Alignment	-	CENTER

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

Notes:
Drain line for RTU 3 is clogged, recommended nitrogen flush.

Written By: Darius Payne on 09/19/2023

National TAB

Project:09-18-23 WALGREENS #3909 - ARLINGTON, TX

AHU/RTU

Diffuser Supply (GRD)

RTU3/

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	PHARMACY		9X9	100	1			301	301.0
SGRD2	PHARMACY		12X12	162	1			310	191.4
SGRD3	PHARMACY		12X12	162	1			291	179.6
SGRD4	PHARMACY		12X12	162	1			343	211.7
SGRD5	PHARMACY		12X12	162	1			293	180.9
SGRD6	PHARMACY		18X18	303	1			348	114.9
Total				1051		0	0	1886	179.45%

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: AHU/RTU

Asset: RTU4 AREA:

Unit Data		
	Design	**Actual**
MFG	YORK	YORK
Serial Num	-	N2E3676891
Model Num	ZJ061N08D4B5HAA2A4	ZJ037C00D4B5GC
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	30x22
Num Final Filter 1	-	4
Final Filter Size 1	-	16x25

Motor Data		
	Design	**Actual**
Motor MFG	-	CENTURY
Frame	-	56HZ
Horsepower	2	1.5
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	2.5

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4
Motor Bore Size	-	3/4
Motor Sheave SetPt	-	4
Fan Sheave Size	-	6
Fan Sheave Bore	-	1
Belt CL Distance	-	10
Num of Belts	-	1
Belt Size	-	A47
Belt Alignment	-	CENTER

Test Data		
	Design	**Actual**
SF CFM	1750	1118
SF RPM	1045	
RA CFM	1400	1259
OA CFM	350	241
RL Voltage	-	484,484,479
RL Amperage	-	1.9,1.9,2.1
SF Rotation	-	CW
RA Damper Position	-	90%
Min OA Damper Position	-	10%
Min OA Damper Type	-	MOTORIZED
OA Enthalpy Setpt	-	

Performance Data		
	Design	**Actual**
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	1.2"	
Fan Total SP	-	

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

Notes:
IAQ Fault on unit during TAB.

Written By: Darius Payne on 09/19/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: FAN - Exhaust

Asset: EF1 AREA:WOMENS RR

Unit Data		
	Design	**Actual**
MFG	GREENHECK	PENNBARRY
Model Num	SP-127	NL
Serial Num	-	NL
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	60HZ
Horsepower	190W	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	NL

Drive Data		
	Design	**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

Test Data		
	Design	**Actual**
CFM	300	242
Fan RPM	1580	LOW
Fan Rotation	-	CCW
Motor RPM	-	LOW
RL Voltage	-	120,120
RL Amperage	-	1.5,1.7
Suction ESP	-	ATM
Discharge ESP	-	ATM
Total ESP	0.375"	ATM

Completed By: Darius Payne on 09/19/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MENS RR

Unit Data		
	Design	**Actual**
MFG	GREENHECK	PENNBARRY
Model Num	SP-127	DX11Q
Serial Num	-	G23PZ33840
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	60HZ
Horsepower	120W	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	NL

Drive Data		
	Design	**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

Test Data		
	Design	**Actual**
CFM	240	244
Fan RPM	1000	LOW
Fan Rotation	-	CCW
Motor RPM	-	LOW
RL Voltage	-	120,119
RL Amperage	-	1.4,1.6
Suction ESP	-	ATM
Discharge ESP	-	ATM
Total ESP	0.375"	ATM

Completed By: Darius Payne on 09/19/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: FAN - Exhaust

Asset: EF3 AREA:BREAK ROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	PENNBARRY
Model Num	SP-150	DX11Q
Serial Num	-	Q23PZ33837
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	60HZ
Horsepower	120W	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	NL

Drive Data		
	Design	**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

Test Data		
	Design	**Actual**
CFM	240	344
Fan RPM	1000	MEDIUM
Fan Rotation	-	CCW
Motor RPM	-	LO
RL Voltage	-	1.8,2.0
RL Amperage	-	119,120
Suction ESP	-	ATM
Discharge ESP	-	ATM
Total ESP	0.375"	ATM

Completed By: Darius Payne on 09/19/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: FAN - Exhaust

Asset: EF4 AREA:OFFICE

Unit Data		
	Design	**Actual**
MFG	GREENHECK	PENNBARRY
Model Num	G-85-G	DX11Q
Serial Num	-	G23PZ33839
Type	CENTRIFUGAL	CENTRIFUGAL
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	GENTEQ
Frame	-	60HZ
Horsepower	1/30	1/5
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.0
Service Factor	-	NL

Drive Data		
	Design	**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

Test Data		
	Design	**Actual**
CFM	300	324
Fan RPM	1300	LO
Fan Rotation	-	CCW
Motor RPM	-	MEDIUM
RL Voltage	-	121,120,
RL Amperage	-	2.1,2.2
Suction ESP	-	ATM
Discharge ESP	-	ATM
Total ESP	0.125"	ATM

Completed By: Darius Payne on 09/19/2023

National TAB

Project: 09-18-23 WALGREENS #3909 - ARLINGTON, TX

System/Unit: FAN - Exhaust

Asset: EH1 AREA:PHOTO

Unit Data		
	Design	**Actual**
MFG	GREENHECK	MESTEK
Model Num	GB-100-4-R2	PV15
Serial Num	-	A2301908271001001
Type	CENTRIFUGAL	BELT DRIVEN
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	56HZ
Horsepower	1/4	3/4
Motor Rpm	-	1725
Phase	1	3
Voltage (rated)	120	230/460
Amperage (rated)	-	3/1.5
Service Factor	-	1.25

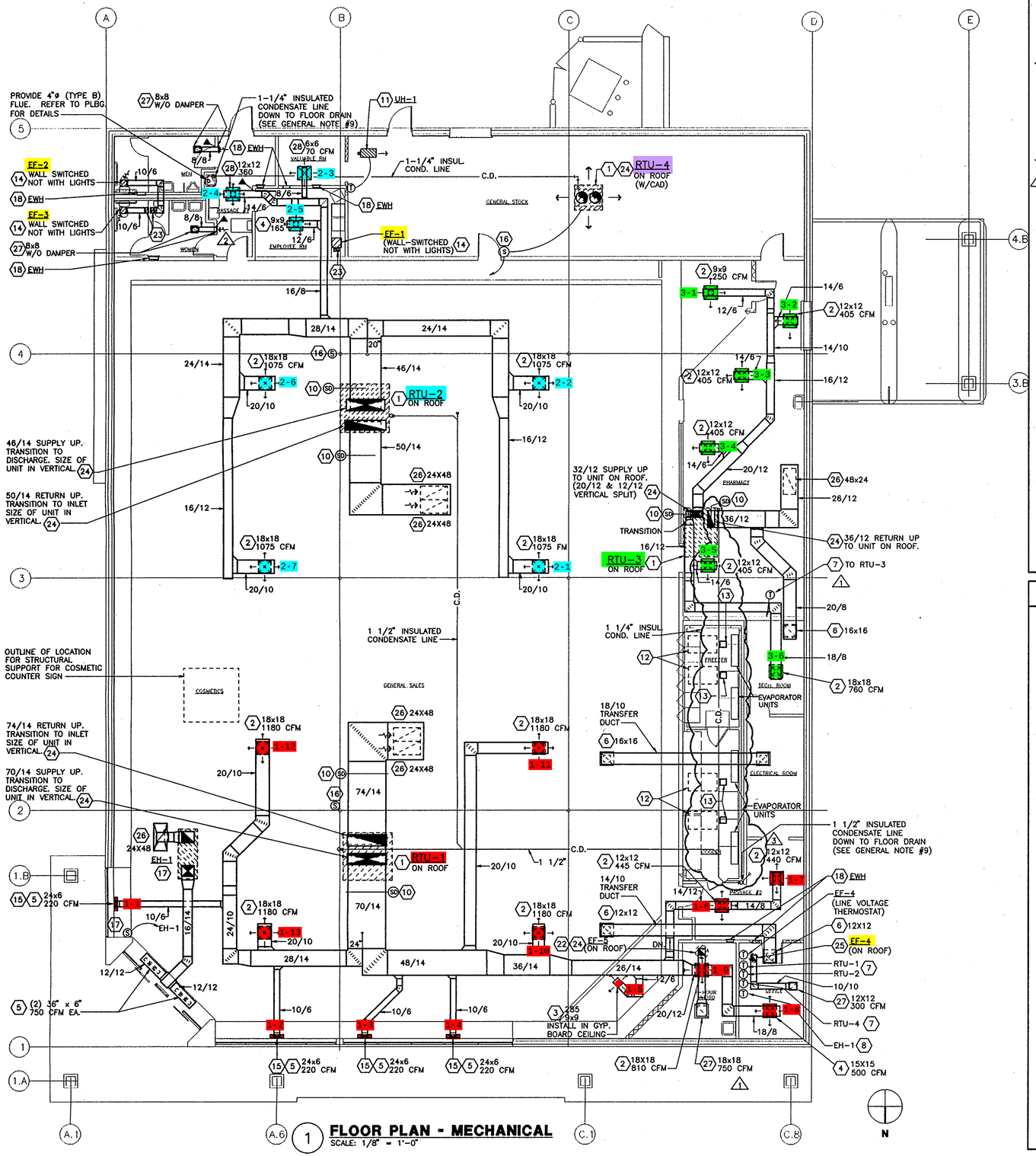
Drive Data		
	Design	**Actual**
Motor Sheave Size	-	5
Motor Bore Size	-	5/8
Motor Sheave SetPt	-	4
Fan Sheave Size	-	7
Fan Sheave Bore	-	1
Belt CL Distance	-	12
Num of Belts	-	1
Belt Size	-	B38

Test Data		
	Design	**Actual**
CFM	750	0
Fan RPM	1185	NR
Fan Rotation	-	NR
Motor RPM	-	NR
RL Voltage	-	NR
RL Amperage	-	NR
Suction ESP	-	NR
Discharge ESP	-	NR
Total ESP	0.375"	NR

Completed By: Darius Payne on 09/21/2023

Notes:
Unit (EH-1) not responsive during TAB inspection. Call set for heat & call set for cool. Upon setpoint adjustment for call, motor buzzes. Motor is also hot at surface. Fault may be due to bad motor windings.

Written By: Darius Payne on 09/20/2023



FLOOR PLAN - MECHANICAL

SCALE: 1/8" = 1'-0"

LEGEND

- SUPPLY AIR
- RETURN / EXHAUST AIR
- TEE – TURNING VANES AND ADJUSTABLE SPLITTER DAMPER
- ELBOW – TURNING VANES
- MANUAL DAMPER
- FIRE DAMPER (RE: SPEC. SECTION 15840)
- Ø MOTOR (SEE SCHEDULE ON DRAWING M2.1)
- T THERMOSTAT (MOUNT 5'-0" UP) SEE CONTROL DIAGRAM, DRAWING M2.2.
- S SENSOR FOR HONEYWELL THERMOSTAT (T7300); SEE CONTROL DIAGRAM, DWG.M2.2, (MOUNT 6'-0" UP)
- S SEE CONTROL DIAGRAM, DWG.M2.2, (MOUNT 6'-0" UP)
- CAD CONCENTRIC AIR DIFFUSER AND BOX SHALL BE MICRO METL 1013 SERIES OR APPROVED EQUAL. MOUNT BOX TOP AT UNDERSIDE OF BAR JOIST.
- CFM CUBIC FEET PER MINUTE
- EF EXHAUST FAN
- EH ENTRANCE HEATER
- EWH ELECTRIC WALL HEATER
- SAD SUPPLY AIR DIFFUSER (SEE DETAIL 1/M2.1); CFM AND SIZE AS NOTED.
- SAG SUPPLY AIR GRILLE (SEE DETAIL 2/M2.1), CFM AND SIZE AS NOTED.
- SF SUPPLY FAN
- RAG RETURN AIR GRILLE (SEE DETAIL 3/M2.1), CFM AND SIZE AS NOTED.
- RTU ROOF TOP UNIT
- UH UNIT HEATER

NOTES

1 – ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, ORDINANCES, ETC.

2 – SEE ALL OTHER DRAWINGS AND WALGREENS SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

3 – PROVIDE BURGLAR PROOFING IN ALL OPENINGS GOING THRU ROOF OR WALL (12"X12" OR LARGER, EXCEPT SCUTTLE), SEE DETAIL 5/M2.1.

4 – ALL FRESH AIR INTAKES ON ROOF SHALL BE LOCATED A MINIMUM OF 15'-0" AWAY FROM ANY EXHAUST DUCT, BLOWER DISCHARGE, PLUMBING VENT, ETC.

5 – HVAC ROOF-TOP UNIT TO INCLUDE FLEXIBLE CONNECTIONS, TURN VANES, AND VIBRATION ELIMINATORS. OUTSIDE AIR INTAKE TO BESIZED FOR A MINIMUM OF 100% OUTSIDE AIR FOR ECONOMIZER SYSTEMS.

6 – ALL DUCTWORK TO BE GALVANIZED SHEET METAL. (LINED DUCTWORK WILL NOT BE ACCEPTED)

7 – ALL HVAC SUPPLY AND RETURN AIR DUCTS SHALL HAVE 1 1/2" EXTERNAL INSULATION. (OR MORE IF CODE REQUIRES)

8 – EACH HVAC UNIT TO HAVE ITS OWN CONTROLS. SEE DRAWING M2.2 FOR HVAC CONTROL WIRING DIAGRAM.

9 – PROVIDE CONDENSATE DRAIN (CD) WITH TRAP, WITHIN EACH HVAC UNIT, PIPE DOWN THRU ROOF WITHIN CURB, CONNECT INTO CD LINE ABOVE CEILING. INSULATE ALL CONDENSATE LINES, SIMILAR TO DOMESTIC COLD WATER PIPING.

10– ALL HVAC SYSTEMS TO BE BALANCED (BY AN INDEPENDENT CERTIFIED AIR BALANCE CONTRACTOR WITH A MINIMUM OF 5 YEARS EXPERIENCE) AFTER COMPLETION OF WORK.

11– NOT USED

12– PROVIDE FLUE TO ROOF (WITH WEATHER CAP) FOR GAS FIRED WATER HEATER (IF APPLICABLE), SEE DETAIL 3/P2.1.

13– EQUIPMENT MANUFACTURER SHALL PROVIDE ON EACH NEW WALGREEN STORE FACTORY SUPERVISED "CHECK, TEST & START" SERVICE, UTILIZING STANDARD WALGREEN FORMS AS PROVIDED BY FACILITIES PLANNING AND DESIGN DEPARTMENT. HVAC CONTRACTOR SHALL VERIFY COMPLIANCE WITH PLANS AND SPECIFICATIONS AND SHALL FORWARD TO THE WALGREEN CO., COMPLETED C.T.S. FORMS, ALONG WITH THREE COPIES OF SERVICE AND INSTALLATION MANUALS, PARTS LIST AND ALL RELATED WARRANTIES. SUBMITTAL SHALL BE IN BOOK FORM AND APPLICABLE TO ACTUAL EQUIPMENT INSTALLED.

14– HVAC UNITS MUST BE INSTALLED LEVEL ON ROOF.

15– THERMOSTAT SENSOR WIRING TO BE RUN INSIDE PIPE COLUMNS.

16– DO NOT INSTALL SUPPLY AIR DIFFUSERS IN CEILING PANEL ADJACENT TO ROW OF LIGHT FIXTURES. COORDINATE DIFFUSERS WITH REFLECTED CEILING PLAN ON DWG. A1.2.

17– FLEXIBLE DUCT LENGTH NOT TO EXCEED A MAXIMUM OF 7'-0".

18– SUPPLY AND/OR RETURN AIR CEILING PLENUMS WILL NOT BE ACCEPTED.

19– DO NOT INSTALL UNIT HEATER ABOVE STOCK ROOM SHELVING.

20– ELECTRIC WALL HEATERS (EWH) AND ELECTRIC UNIT HEATERS (EUH) ARE PROVIDED UNDER THE ELECTRICAL CONTRACT, SHOWN HERE FOR HVAC INFORMATION ONLY.

21– GAS PIPING SHALL BE RUN ABOVE CEILING, (OUT THRU ROOF, WITHIN UNIT CURB), PROVIDE SHUT-OFF VALVE AT EACH PIECE OF EQUIPMENT (NOT BELOW ROOF FOR RTU'S).

MECHANICAL KEYED NOTES

(1) HVAC ROOF-TOP UNIT. SEE GENERAL NOTES (ABOVE) AND SCHEDULE ON DRAWING M2.1 FOR ADDITIONAL INFORMATION.

(2) S.A.D. (TYPE "A"). CFM AND SIZE AS NOTED. SEE SCHEDULE AND DETAIL #1 ON SHEET M2.1

(3) S.A.D. (TYPE "E"). MOUNT AT GYP. BOARD CEILING. CFM AND SIZE AS NOTED. SEE DETAIL #1 AND GRILLE SCHEDULE ON SHEET M2.1

(4) S.A.D. (TYPE "C"), THERMALLY POWERED VARIABLE AIR VOLUME (VAV) DIFFUSER. ACUTHERM THERMA-FUSER HC OR KRUEGER VARIFUSER AVDP SERIES. CFM AND SIZE AS NOTED.

(5) S.A.G. (TYPE "B"). CFM AND SIZE AS NOTED. SEE SCHEDULE AND DETAIL #2 ON SHEET M2.1.

(6) R.A.G. (TYPE "G"). CFM AND SIZE AS NOTED. SEE SCHEDULE AND DETAIL #3 ON SHEET M2.1.

(7) THERMOSTAT 5'-0" AFF FOR HEATING AND COOLING. SEE SHEET M2.2 FOR DETAILS AND PROGRAMING.

(8) THERMOSTAT 5'-0" AFF FOR HEATING ONLY. SEE SHEET M2.2 FOR DETAILS AND PROGRAMING.

(9) NOT USED.

(10) INSTALL SMOKE DETECTOR IN AIR STREAM. DETECTOR FURNISHED BY ELECTRICAL CONTRACTOR.

(11) GAS FIRED, POWER VENTED UNIT HEATER (SEE SCHEDULE DWG. M2.1). BOTTOM 12'-0" UP THERMOSTAT MOUNTED 5'-0" UP ON WALL. (SET AT 68 F). PROVIDE 4" FLUE TO ROOF WITH WEATHER CAP. SEE DETAIL 14/M2.1.

(12) ROOF-TOP CONDENSING UNIT FOR WALK-IN COOLER/FREEZER. SEE DETAIL 8/M2.1 FOR ADDITIONAL INFORMATION.

(13) PIPE PORTAL FOR WALK-IN COOLER/FREEZER CONDENSING UNIT REFRIGERANT AND ELECTRICAL LINES. SEE DETAIL 6/M2.1

(14) EXHAUST FAN (WITH BACK DRAFT DAMPER), WITH EXHAUST DUCT UP THROUGH ROOF TO VENTILATION HOOD. TRANSITION FROM EXHAUST DUCT TO EXHAUST FAN AS REQUIRED, CFM AS NOTED ON SCHEDULE, SHEET M2.1.

(15) ADJUST FRONT HORIZONTAL BARS TO AN ANGLE OF 45 SO THAT THE AIR FLOWS AWAY FROM THE WINDOW. THIS IS TO HELP PREVENT CONDENSATION ON THE GLASS IN HOT, HUMID CLIMATE CONDITIONS.

(16) THERMOSTATIC REMOTE SENSOR MOUNTED 6'-0" AFF. PROVIDE STAINLESS STEEL COVER (RE: ARCHITECTURAL DWGS.) ROUTE WIRING WITHIN COLUMN (OR WALL). SEE DETAIL 13/M2.1.

(17) ROOF-TOP ENCLOSED BLOWER/ENTRANCE HEATER. INCLUDE VIBRATION ELIMINATORS AND FLEXIBLE CONNECTIONS, 100% RETURN AIR WITH SENSOR AT ENTRANCE AND THERMOSTAT IN OFFICE. SEE SCHEDULE FOR ADDITIONAL INFORMATION.

(18) ELECTRIC WALL HEATER (EWH) FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. SEE DRAWING E1.2 FOR FURTHER INFORMATION.

(19) NOT USED.

(20) NOT USED.

(21) NOT USED.

(22) 12/12 DUCT FROM 750 CFM EXHAUST GRILLE TO EXHAUST FAN ON ROOF. TRANSITION AS REQ'D. SEE SCHEDULE AND DETAIL #4 ON SHEET M2.1.

(23) 12/6 DUCT FROM EXHAUST FAN UP TO VENTILATOR ON ROOF. TRANSITIONS AS REQ'D. SEE VENTILATOR DETAIL 7/M2.1.

(24) ALL OPENINGS 12"X12" AND LARGER THROUGH ROOF OR WALLS SHALL BE EQUIPPED WITH BURGLAR BARS. SEE DETAIL 5/M2.1.

(25) 10/10 DUCT FROM 300 CFM 12x12 EXHAUST GRILLE TO EXHAUST FAN ON ROOF. TRANSITION AS REQUIRED. SEE SCHEDULE AND DETAIL #4 ON SHEET M2.1.

(26) R.A.G. (TYPE "D"). CFM AND SIZE AS NOTED. SEE SCHEDULE AND DETAIL #3 ON SHEET M2.1.

(27) R.A.G. (TYPE "F"). CFM AND SIZE AS NOTED. SEE SCHEDULE ON SHEET M2.1.

(28) S.A.D. (TYPE "E") CFM AND SIZE AS NOTED. SEE SCHEDULE AND DETAIL #1 ON SHEET M2.1

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Architecture • Planning • Interior Design
One Greenway Plaza
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Houston, Texas 77046
(713) 850-7660

REVISIONS

1	4-10-96	REVISIONS FOR CONSTRUCTION
2	4-24-96	ADDED FIRE DAMPERS
3	6-12-96	CRITERIA UPGRADE DM 7/9/96

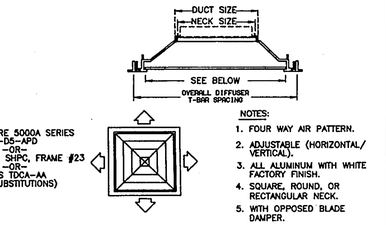
STATE OF TEXAS · KELVIN KALMANS · 84070 · REGISTERED PROFESSIONAL ENGINEER

LAI Project No.	95182.000
Walgreen Store Number	03909
Issued for Permit	
Issued for Bidding	
Issued for Construction	

M1.1
Mechanical Floor Plan

Date: Jan. 16, 1996

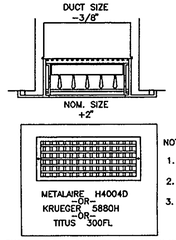
SUPPLY AIR DIFFUSER DETAIL



NOTES:
1. FOUR WAY AIR PATTERN.
2. ADJUSTABLE (HORIZONTAL/VERTICAL).
3. ALL ALUMINUM WITH WHITE FACTORY FINISH.
4. SQUARE, ROUND, OR RECTANGULAR NECK.
5. WITH OPPOSED BLADE DAMPER.

1 M2.1

SUPPLY AIR GRILLE DETAIL

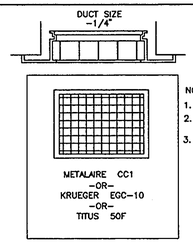


NOTES:
1. ADJUSTABLE, DOUBLE DEFLECTION.
2. ALL ALUMINUM WITH WHITE FACTORY FINISH.
3. WITH APPOSED BLADE DAMPER.

(NO SUBSTITUTION ACCEPTED FOR METALAIRE, KRUEGER, AND TITUS)

2 M2.1

RETURN AIR GRILLE DETAIL

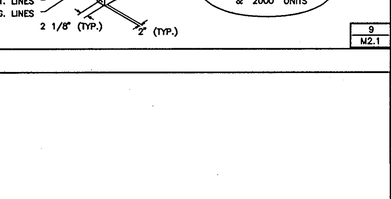


NOTES:
1. 0 DEGREE DEFLECTION.
2. ALL ALUMINUM WITH WHITE FACTORY FINISH.
3. 1"X1"X1" EGGCRATE GRID.

(NO SUBSTITUTIONS ACCEPTED FOR METALAIRE, KRUEGER, AND TITUS)

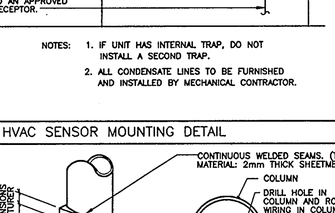
3 M2.1

ROOF TOP EXHAUST BLOWER DETAIL



4 M2.1

BURGLAR PROOFING DETAIL

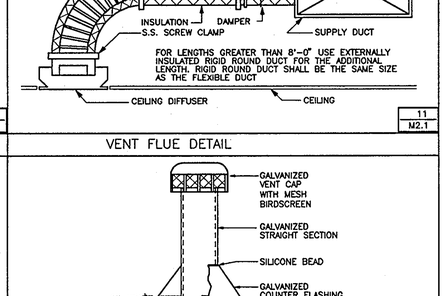


NOTE:
2" x 3/8" STEEL WELDED FRAME ALL SIDES WITH 3/4" DIA. STEEL RODS ON 6" (MAX.) CENTERS (BOTH WAYS) WELDED TO FRAME AND EACH OTHER. ANCHOR FRAME TO CURB WITH 1/2" DIA. STEEL BOLTS (TAMPER-PROOF) ON 6" (MAX.) CENTERS, MIN. 2 PER SIDE.

ONLY REQUIRED FOR OPENINGS 12" X 12" AND LARGER.

5 M2.1

ALUMINUM DUCT FOR REFRIGERANT LINES (DETAIL A)

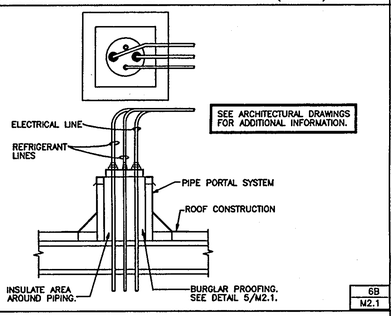


SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

NOTE: CONTRACTOR TO SELECT EITHER PIPE PORTAL DETAIL 6A OR 6B.

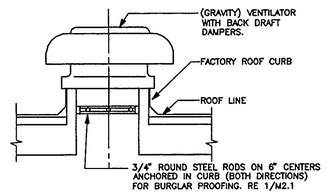
6A M2.1

ALUMINUM DUCT FOR REFRIGERANT LINES (DETAIL B)



6B M2.1

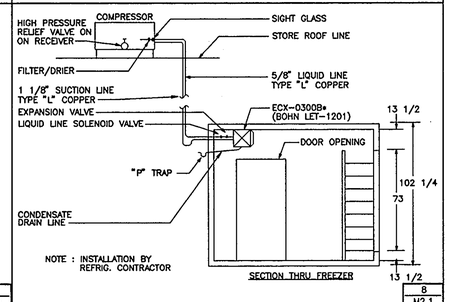
ROOF TOP VENTILATOR DETAIL



MANUFACTURER: ACME, COOK, GREENHECK, JENN-AIRE OR PENN.

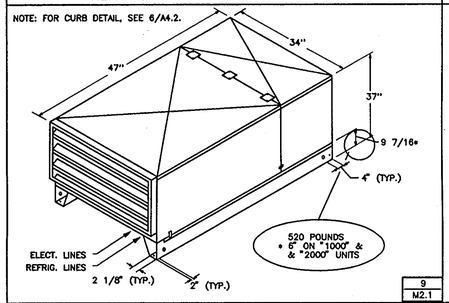
7 M2.1

REFRIGERATION PIPING SCHEMATIC



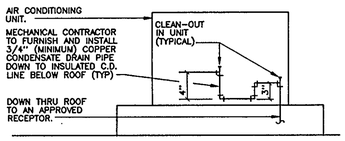
8 M2.1

REFRIGERATION CONDENSOR DETAIL



9 M2.1

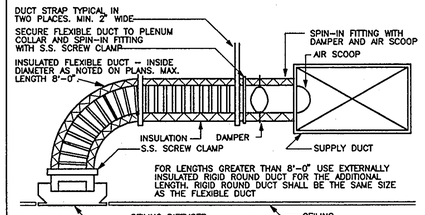
HVAC UNIT CONDENSATE DRAIN TRAP DETAIL



NOTES:
1. IF UNIT HAS INTERNAL TRAP, DO NOT INSTALL A SECOND TRAP.
2. ALL CONDENSATE LINES TO BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR.

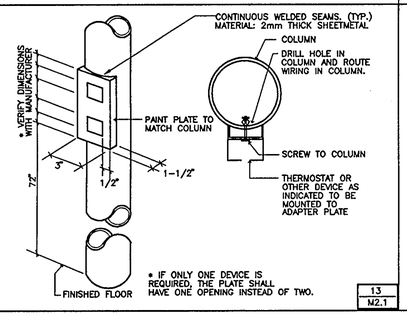
10 M2.1

CEILING DIFFUSER CONNECTION DETAIL



11 M2.1

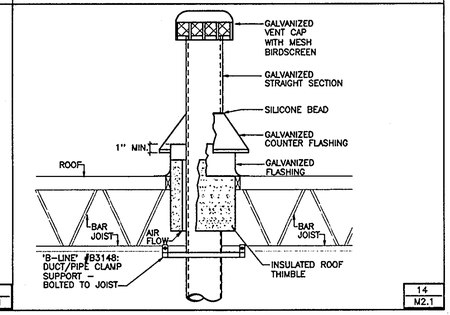
HVAC SENSOR MOUNTING DETAIL



* IF ONLY ONE DEVICE IS REQUIRED, THE PLATE SHALL HAVE ONE OPENING INSTEAD OF TWO.

13 M2.1

VENT FLUE DETAIL



14 M2.1

GRILLE SCHEDULE

MARK	DESCRIPTION	TYPE VOLUME CONTROL	CONSTRUCT. MATERIAL	FINISH	MANUFACTURER	MODEL	REMARKS
A	SUPPLY AIR DIFFUSER	ALUM OBD	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	5000A M-6-D5 5SHPC TDCA-AA	SUPPLY AIR DIFFUSER, 24"X24" FACE. FRAME STYLE FOR EXPOSED T-BAR CEILING.
B	SUPPLY AIR GRILLE	ALUM OBD	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	H4004D 5880H 300FL	DOUBLE DEFLECTION SUPPLY AIR GRILLE WITH EXPOSED ADJUSTMENT KNOB.
C	VAV DIFFUSER	ALUM OBD	STEEL	OFF WHITE	ACUTHERM	THERMAFUSER HC	SELF CONTAINED VARIABLE VOLUME DIFFUSER, 24"X24" FACE. FRAME STYLE FOR EXPOSED T-BAR CEILING.
D	RETURN AIR GRILLE	--	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	CC1 EGC-10 50F	EGGCRATE TYPE RETURN AIR GRILLE. FRAME STYLE FOR EXPOSED T-BAR CEILING. 24"X48" FACE.
E	SUPPLY AIR DIFFUSER	ALUM OBD	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	5500A 5SHPC TDCA-AA	SURFACE MOUNTED.
F	EXHAUST/RETURN AIR REGISTER	ALUM OBD	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	RHD S5580H 3FL	FIXED 45 DEGREE RETURN AIR GRILLE. FRAME TO BE SURFACE MOUNTED WITH DAMPER.
G	RETURN AIR GRILLE	--	ALUM.	OFF WHITE	METAL-AIRE KRUEGER TITUS	CC1 EGC-10 50F	EGGCRATE TYPE RETURN AIR GRILLE. FRAME STYLE FOR EXPOSED T-BAR CEILING. 24"X24" FACE.

UNIT HEATER SCHEDULE

UNIT	AREA SERVED	BTU/HR INPUT	CFM	MOTOR HP.	MOTOR VOLT PHASE	RPM	TYPE	MAKE AND MODEL
UH-1	RECEIVING	50,000	650	1/40	120-1-60	1550	INDOOR POWER VENTED	REZNOR FE50
EH-1	ENTRANCE	175,000	1500	1/2	120-1-60	760	OUTDOOR POWER VENTED	REZNOR RGB175 MIN. COMBUSTION EFFICIENCY SHALL BE 75% AT MAX. RATED OUTPUT

FAN SCHEDULE

UNIT	AREA SERVED	CFM.	SP.	MOTOR HP	MOTOR VOLTS PHASE	RPM	TYPE	MAKE AND MODEL
EF-1	LOUNGE	300	0.125	190 WATTS	120 1	1580	CEILING MOUNTED EXHAUST FAN	GREENHECK #SP-127 W/ BACKDRAFT DAMPER AND WHITE PLASTIC GRILLE.
EF-2	MEN TOILET RM.	240	0.375	120 WATTS	120 1	1000	CEILING MOUNTED EXHAUST FAN	GREENHECK #SP-150 W/ BACKDRAFT DAMPER AND WHITE PLASTIC GRILLE.
EF-3	WOMEN TOILET RM.	240	0.375	120 WATTS	120 1	1000	CEILING MOUNTED EXHAUST FAN	GREENHECK #SP-150 W/ BACKDRAFT DAMPER AND WHITE PLASTIC GRILLE.
EF-4	OFFICE	300	0.125	1/30	120 1	1300	ROOF MOUNTED EXHAUST FAN	GREENHECK #G-85-G W/ MOTORIZED BACKDRAFT DAMPER, FACTORY ROOF CURB (GPS) AND BIRDSCREEN.
EF-5	PHOTO	750	0.250	1/6	120 1	1140	ROOF MOUNTED EXHAUST FAN	GREENHECK #G-100-B W/ MOTORIZED BACKDRAFT DAMPER, FACTORY ROOF CURB (GPS) AND BIRDSCREEN.

HEATING/COOLING UNIT SCHEDULE

NOTE: AT 95 DEG. CONDENSER ENTRANCE AIR TEMPERATURE & ARI CONDITIONS.

UNIT	AREA SERVED	FUSE SIZE MAX AMP 480 VOLTS 3 PHASE	BLOWER CFM. S.A.	BLOWER CFM. O.A.	BLOWER MOTOR HP. AMPS	BLOWER MOTOR VOLTS/ PHASE	COMPRESSOR ELECT. REQ. FL AMPS	COMPRESSOR ELECT. REQ. VOLTS/ PHASE	COMPRESSOR COOLING CAPACITY TOTAL	COMPRESSOR COOLING CAPACITY SENSIBLE	AIR COOLED CONDENSER ELECT. REQ. FL AMPS	AIR COOLED CONDENSER ELECT. REQ. HP.	AIR COOLED CONDENSER ELECT. REQ. VOLTS/ PHASE	GAS FIRED FURNACE BTU/HR RATE INPUT	GAS FIRED FURNACE BTU/HR RATE OUTPUT	MAKE/MODEL/WEIGHT/FILTERS
RTU-1	GENERAL SALES	SEE ELECT. DRAWINGS	8,080	606	10.0 14.6	460/3	35.6	460/3	212,982	187,257	5.6	2 AT 1	460/3	270,000	216,000	W/(1)(5)(6)(7)(8)(9)(10)(11)
RTU-2	GENERAL SALES	SEE ELECT. DRAWINGS	4,895	812	5.0 7.9	460/3	28.2	460/3	153,339	125,560	2.4	3 AT 1/2	460/3	270,000	216,000	W/(2)(5)(6)(7)(8)(9)(10)(11)
RTU-3	PHARMACY	SEE ELECT. DRAWINGS	2,630	124	1.5 2.6	460/3	9.6	460/3	62,390	58,414	0.6	1/4	460/3	72,000	59,040	W/(3)(5)(6)(7)(8)(9)(10)(11)
RTU-4	STOCK ROOM	SEE ELECT. DRAWINGS	955	114	1.5 2.2	460/3	5.1	460/3	25,995	23,110	0.4	1/4	460/3	72,000	59,040	W/(4)(5)(6)(7)(8)(9)(10)(11)

NOTES:
1) CARRIER 48HJD025, 2,735 LBS, WITH DISPOSABLE FILTERS.
2) CARRIER 48HJE017, 2,510 LBS, WITH DISPOSABLE FILTERS.
3) CARRIER 48HJD007, 715 LBS, WITH DISPOSABLE FILTERS.
4) CARRIER 48HJE004, 630 LBS, WITH FILTER RACK & DISPOSABLE FILTERS. PROVIDE "MICRO METL" CURB ADAPTOR, FLEX DUCT PACKAGE, AND CONCENTRIC DIFFUSER PAC.
5) EXTENDED 5 YEAR WARRANTY ON COMPRESSOR.
6) EXTENDED 10 YEAR WARRANTY ON HEAT EXCHANGER.
7) WARRANTIES OR A COPY OF WARRANTIES IS TO BE GIVEN TO WALGREEN'S PROJECT ARCHITECT UPON COMPLETION OF PROJECT.
8) ECONOMIZER SYSTEMS NOT REQUIRED.
9) UNITS SHALL HAVE THE HIGHEST EFFICIENCY RATINGS AVAILABLE FROM THE MANUFACTURER FOR BOTH HEATING AND COOLING.
10) SEE ME1.1 FOR OUTSIDE AIR CALCULATIONS.
11) ROOF CURB.

ROOF TOP HVAC UNITS (TONNAGE/EFFICIENCY RATING)

(Manufacturer shall be Carrier, Lennox, Trane, or York, only the exact Trade or Signature Name and the Highest Efficiency Units Available From Each of These Manufacturers will be Acceptable.)

MANUFACTURER	3 / SEER	6 / SEER	15 / EER	20 / EER
CARRIER	HJE004 13.0	HJ007 11.0	HJ017 10.3	HJ025 9.3
LENNOX	16-413 10.1	24-653 10.0	LGA/LCA 180 9.2	LGA/LCA 240 9.0
TRANE	037 12.0	061 12.0	181 10.0	241 9.0
YORK	036 11.1	060 11.0	180 9.5	240 9.5

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(713) 492-7477

Levinson Associates, Inc.
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One Greenway Plaza
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REVISIONS

STATE OF TEXAS
KEVIN KAMAN
REGISTERED
PROFESSIONAL
ENGINEER
1-16

LAI Project No.	95182.000
Walgreen Store Number	03909
Issued for Permit	
Issued for Bidding	
Issued for Construction	

6-12-96

M2.1
Mechanical Schedule & Details

Date: Jan. 16, 1996

OUTSIDE AIR CALCULATIONS

ROOF TOP UNIT #1

			CFM OA	CFM SA	Z
RETAIL SALES					
4640 Sq. Ft.	x (8 PEOPLE / 1000 Sq. Ft.) x (15 CFM / 1 PERSON)	=	556 CFM	5885 CFM	.094
OFFICE					
140 Sq. Ft.	x (7 PEOPLE / 1000 Sq. Ft.) x (20 CFM / 1 PERSON)	=	20 CFM	500 CFM	.040
PHOTO					
140 Sq. Ft.	x .05 CFM/Sq. Ft.	=	7 CFM	810 CFM	.008
PASSAGE #2					
345 Sq. Ft.	x .05 CFM/Sq. Ft.	=	17 CFM	885 CFM	.019
			600 CFM	7,990 CFM	

X = 600/8080 = .075

Y = .075/(1 + .075 − .094) = .075

CFM OUTSIDE AIR = 8,080 CFM SA x .075 = 606 CFM OA

ROOF TOP UNIT #2

RETAIL SALES					
4640 Sq. Ft.	x (8 PEOPLE / 1000 Sq. Ft.) x (15 CFM / 1 PERSON)	=	556 CFM	4300 CFM	.129
EMPLOYEE LOUNGE					
4 PEOPLE x 15 CFM / PERSON x .5 DIVERSITY		=	30 CFM	165 CFM	.181
PASSAGE #1					
120 Sq. Ft.	x .05 CFM/Sq. Ft.	=	6 CFM	120 CFM	.050
REST ROOMS					
4 PEOPLE x 50 CFM / FIXTURE		=	200 CFM	240 CFM	---
VALUABLE ROOM					
70 Sq. Ft.	x .15 CFM/Sq. Ft.	=	11 CFM	70 CFM	.157
			803 CFM	4,895 CFM	

X = 803/4895 = .164

Y = .164/(1 + .164 − .181) = .166

CFM OUTSIDE AIR = 4895 CFM SA x .166 = 812 CFM OA

ROOF TOP UNIT #3

PHARMACY					
920 Sq. Ft.	x (8 PEOPLE / 1000 Sq. Ft.) x (15 CFM / 1 PERSON)	=	110 CFM	1870 CFM	.058
TECH. ROOM					
119 Sq. Ft.	x (8 PEOPLE / 1000 Sq. Ft.) x (15 CFM / 1 PERSON)	=	14 CFM	760 CFM	.018
			124 CFM	2,630 CFM	

X = 124/2630 = .047

Y = .047/(1 + .047 − .058) = .047

CFM OUTSIDE AIR = 2630 CFM SA x .047 = 124 CFM OA

ROOF TOP UNIT #4

STOCK ROOM

1,140 Sq. Ft. x .10 CFM/Sq. Ft. = 114 CFM

SECTION 15F
AUTOMATIC TEMPERATURE CONTROL

1. SCOPE OF WORK
THE CONTRACTOR UNDER THIS HEADING SHALL BE THE HEATING AND AIR CONDITIONING CONTRACTOR WHO SHALL FURNISH ALL CONTROL EQUIPMENT, ENGINEERING SERVICES, JOB DRAWINGS AND FIELD SUPERVISION FOR TEMPERATURE CONTROL.
THIS SPECIFICATION IS INTENDED TO COVER EQUIPMENT FOR THE AUTOMATIC TEMPERATURE CONTROL FOR:
HEATING
VENTILATION
AIR CONDITIONING

2. SERVICE AND GUARANTEE
THE CONTROL SYSTEM AS HEREIN SPECIFIED SHALL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIAL UNDER NORMAL USE AND SERVICE. IF WITHIN TWELVE (12) MONTHS FROM DATE OF ACCEPTANCE BY THE ENGINEER, ANY OF THE EQUIPMENT HEREIN DESCRIBED IS PROVED TO BE DEFECTIVE IN WORKMANSHIP OR MATERIAL, IT SHALL BE REPLACED OR REPAIRED FREE OF CHARGE.
THIS CONTRACTOR SHALL, AFTER COMPLETION OF THE ORIGINAL TEST OF THE INSTALLATION AND ACCEPTANCE BY THE ENGINEER, PROVIDE ANY SERVICE INCIDENTAL TO THE PROPER PERFORMANCE OF THE TEMPERATURE CONTROL SYSTEM UNDER GUARANTEES OUTLINED ABOVE FOR THE PERIOD OF ONE (1) YEAR. AFTER COMPLETION OF THE INSTALLATION, THIS CONTRACTOR SHALL REGULATE AND ADJUST ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT. HE SHALL PLACE THEM IN COMPLETE OPERATING CONDITION SUBJECT TO THE APPROVAL OF WALGREEN CO..

3. DRAWINGS AND LAYOUTS
THIS CONTRACTOR SHALL SUBMIT TO WALGREEN CO. A COMPLETE SHOP DRAWING OF THE ENTIRE CONTROL SYSTEM BEFORE STARTING WORK. UPON COMPLETION OF ALL WORK, HE SHALL PROVIDE, FOUR COPIES OF AS-BUILT LAYOUTS OF THE CONTROL SYSTEM TO WALGREEN CO. ENGINEERING DEPARTMENT.

4. INSTALLATION OF VALVES AND DAMPERS MOTORS
ALL CONTROL VALVES AND DAMPER MOTORS, WHERE REQUIRED, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.

5. POSITIONING OF DAMPERS
ALL DAMPERS SHALL BE POSITIONED BY THE VENTILATION CONTRACTOR. VENTILATION CONTRACTOR SHALL ALSO MARK POSITIONS OF DAMPERS ON AS-BUILT LAYOUTS.

6. CONTROL MOTORS
ALL MOTORS MUST BE SPRING RETURN AND MUST HAVE OIL IMMERSED GEAR TRAIN.

7. ELECTRIC WIRING
ALL WIRING AND MOUNTING OF TEMPERATURE CONTROL DEVICES SHALL BE PROVIDED UNDER THE ELECTRICAL CONTRACT AND SHALL BE IN ACCORDANCE WITH ALL EXISTING CODES. THE ELECTRICAL CONTRACTOR SHALL RUN ALL CONDUIT IN ACCORDANCE WITH SCHEMATIC DIAGRAM. THIS CONTRACTOR SHALL PROVIDE FINAL JOB WIRING DRAWINGS TO THE ELECTRICAL CONTRACTOR FOR INSTALLATION.

8. HONEYWELL T7300 – SEQUENCE OF OPERATIONS
THE HEATING AND COOLING SETPOINTS SHALL BE INDIVIDUALLY ADJUSTABLE FOR BOTH OCCUPIED AND UNOCCUPIED PERIODS. THE THERMOSTATS SHALL HAVE A MINIMUM DEADBAND OF 2 F AND A MAXIMUM DEADBAND OF 48 F (NO MECHANICAL HEATING OR COOLING SHALL OPERATE WITHIN THIS DEADBAND). SPACE TEMPERATURE DEVIATION ABOVE COOLING SETPOINT OR BELOW THE HEATING SETPOINT SHALL GENERATE A DEMAND SIGNAL TO CONTROL THE SYSTEM AS FOLLOWS:

A. HEATING
1) THE THERMOSTAT SHALL CONTROL THE HEATING OUTPUTS BASED ON THE DEMAND SIGNAL COMMUNICATED FROM THE THERMOSTAT PROGRAM, TAKING INTO ACCOUNT BOTH SPACE TEMPERATURE DEVIATION (PROPORTIONAL ERROR) AND THE DURATION OF THAT TEMPERATURE DEVIATION (INTEGRAL ERROR).

2) THE OUTDOOR AIR DAMPER SHALL BE AT A MINIMUM POSITION DURING THE OCCUPIED PERIOD, AND SHALL BE CLOSED DURING THE UNOCCUPIED PERIOD OF THE HEATING MODE.

3) AUXILIARY HEAT SHALL BE CONTROLLED AT 2°F BELOW HEATING SETPOINT ON HEAT PUMP SYSTEMS.

B. COOLING
THE THERMOSTAT SHALL CONTROL THE COOLING OUTPUTS BASED ON THE DEMAND SIGNAL COMMUNICATED FROM THE THERMOSTAT PROGRAM, TAKING INTO ACCOUNT BOTH SPACE TEMPERATURE DEVIATION (PROPORTIONAL ERROR) AND THE DURATION OF THAT TEMPERATURE DEVIATION (INTEGRAL ERROR).

C. HEATING SETBACK AND COOLING SETUP
INITIATION OF HEATING SETBACK OR COOLING SETUP FOR EACH OF 7 DAYS SHALL BE PROVIDED BY A PROGRAMMED TIME SCHEDULE MANUALLY ENTERED INTO THE THERMOSTAT. WHEN ALL OR A PORTION OF A MANUALLY PROGRAMMED SCHEDULE IS UNAVAILABLE, THE THERMOSTAT SHALL CONTROL THE UNAVAILABLE PROGRAM FUNCTIONS TO OCCUPIED MODE AND DEFAULT SETPOINT RANGES AS FOLLOWS:

TABLE OF DEFAULT SETPOINT RANGES				
	OCCUPIED		UNOCCUPIED	
	°F	°C	°F	°C
HEATING	68	20	55	13
COOLING	78	26	90	32

D. SETPOINT RECOVERY FROM UNOCCUPIED TO OCCUPIED
THE THERMOSTAT SHALL EMPLOY INTELLIGENT RECOVERY™. THIS SHALL SELECT THE OPTIMUM TIME TO BEGIN BUILDING WARM UP OR COOL DOWN BASED ON SETPOINTS AND OCCUPIED PROGRAM.

1) THE TEMPERATURE SHALL RAMP 5 DEGREES PER HOUR FOR BOTH HEATING AND COOLING ON A CONVENTIONAL SYSTEM.

2) THE TEMPERATURE SHALL RAMP 3 DEGREES PER HOUR FOR HEATING AND 5 DEGREES FOR COOLING ON A HEAT PUMP SYSTEM.

E. FAN OPERATION
1) FAN OPERATION SHALL BE CONSTANT DURING THE OCCUPIED PERIOD WHEN USED WITH A CONVENTIONAL SYSTEM.

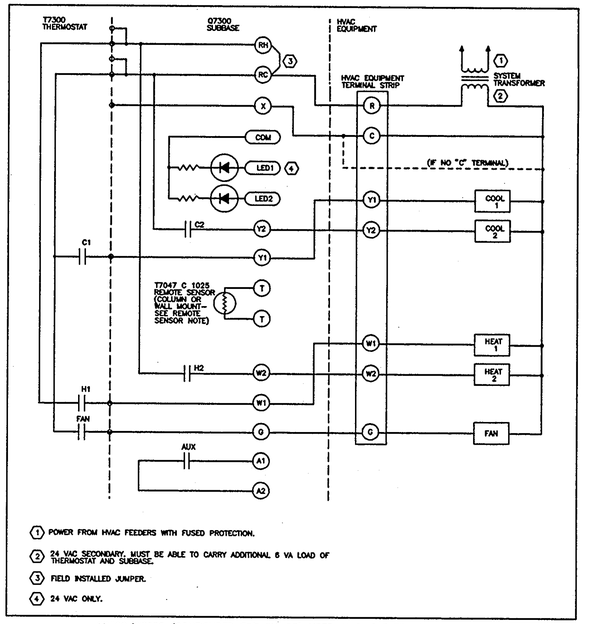
2) FAN OPERATION SHALL BE INTERMITTENT DURING THE UNOCCUPIED PERIOD.

F. HEATING AND COOLING OPERATION MINIMUM ON/OFF TIMES
THE THERMOSTAT SHALL INCORPORATE A PROGRAM TO MAINTAIN MINIMUM-STAGE OPERATION TIMES OF 2 MINUTES "ON" AND 4 MINUTES "OFF" FOR COMPRESSOR STAGES, AND 2 MINUTES "ON" AND 2 MINUTES "OFF" FOR HEAT (GAS OR ELECTRIC RESISTIVE).

9. PERFORMANCE OF WORK
ALL WORK OUTLINED ABOVE SHALL BE DONE BY THE TEMPERATURE CONTROL CONTRACTOR UNLESS NOTED OTHERWISE.

BILL OF MATERIAL			
THE FOLLOWING CONTROLS TO BE FURNISHED BY TEMPERATURE CONTROL CONTRACTOR			
NO.	QUANTITY	MAKE	REMARKS
T1	1 (PER UNIT)	HONEYWELL T7075B1006	-20° F TO 80° F SCALE 1 DEGREE DIFFERENCE (USE AS COMPRESSOR LOCKOUT SET AT 50° F).
T2	1 (PER UNIT)	HONEYWELL T7300A1005 MODEL Q7300A1018	NOTE: FOR PHARMACY UNIT USE T7300/Q7300B1008
	1 (PER UNIT)	HONEYWELL T7047C1025	REMOTE SENSOR (NOTE: EXCEPT PHARMACY UNIT)

REMOTE SENSOR NOTE:
REMOTE SENSOR (T7047C1025) IS TO BE MOUNTED ON COLUMN (OR WALL), 6'-0" UP, WITH THE SUBBASE (T/Q7300) LOCATED IN OFFICE (AS SHOWN ON PLAN). CONNECT REMOTE SENSOR TO T-T TERMINALS OF SUBBASE VIA TWO (2) #16 AWG WIRES. SEE CONTROL WIRING DIAGRAM.
(NOTE: NOT TO INCLUDE PHARMACY UNIT.)



T7300/Q7300 (CONFIGURED FOR 2H-2C) USED IN SINGLE TRANSFORMER, 2 STAGE HEATING/ 2 STAGE COOLING SYSTEM WITHOUT ECONOMIZER.

HVAC CONTROL DIAGRAM (EACH UNIT)

T-7300 THERMOSTATS (HONEYWELL)
NO SUBSTITUTIONS

(CONTROLS WITH OTHER NAMEPLATES, SUCH AS "LENNOX" AND "YORK", WHICH ARE MADE BY HONEYWELL AND PERFORM EXACTLY AS HONEYWELL ARE ACCEPTABLE).

PROGRAM		
1) COOLING 76° F 2) HEATING 72° F	}	OCCUPIED SALES AND PHARMACY
1) COOLING 78° F 2) HEATING 68° F	}	OCCUPIED GENERAL STOCKROOM
1) COOLING 85° F 2) HEATING 60° F	}	NOT OCCUPIED SALES/ GENERAL STOCKROOM
1) COOLING 80° F 2) HEATING 68° F	}	NOT OCCUPIED PHARMACY
OCCUPIED (ON) 8 AM UNOCCUPIED (OFF) 10 PM		

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REVISIONS

LAI Project No. 95182.000
Walgreen Store Number 03909
Issued for Permit
Issued for Bidding
Issued for Construction

6-12-96

M2.2
HVAC Control Wiring Diagrams

Date: Jan. 16, 1996