



Unit Rating

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RN-013-8-0-H809-000:A000-U00-DSF-AG0-00E0H04-EK-00A00000B

Tag: AC-8, 10 R410A

Job Information

Job Name: PHS 500 Building
Job Number: Job #35
Site Altitude: 0 ft
Refrigerant: R-410A

Static Pressure

External: 1.50 in. w.g.
Cooling Coil: 0.33 in. w.g.
Filters Clean: 0.31 in. w.g.
Dirt Allowance: 0.35 in. w.g.

Cooling Section

	Gross	Net
Total Capacity:	161.3 MBH	151.3 MBH
Sensible Capacity:	161.3 MBH	151.3 MBH
Latent Capacity:	0.0 MBH	
Mixed Air Temp (DB/WB):	84.1 °F	63.4 °F
Entering Air Temp (DB/WB):	84.1 °F	63.4 °F
Lv Air Temp (Coil) (DB/WB):	53.7 °F	51.8 °F
Lv Air Temp (Unit) (DB/WB):	55.5 °F	52.5 °F

Supply Air Fan: 1 x 220D70 @ 3.55 BHP Ea.
SA Fan RPM / Width: 1731 RPM / 3.450 in
SA Fan FEI: 1.23

Evaporator Coil: 14.9 ft² / 6 Rows / 14 FPI
Evaporator Face Velocity: 334.9 fpm

Unit Information

Approx. Op./Ship Weights: 1794 lbs / 1794 lbs (±5%)
Ambient Temperature (DB/WB): 88.0 °F / 64.0 °F
Coil Filter FV / Qty: 360.0 fpm / 4
Supply Airflow/ESP: 5000 SCFM / 1.50 in. w.g.
Outside Airflow: 3500 SCFM
Return Temperature (DB/WB): 75.0 °F / 62.0 °F

Economizer: 0.22 in. w.g.
Preheat: 0.02 in. w.g.
Cabinet: 0.14 in. w.g.
Total: 2.85 in. w.g.

Heating Section

Preheat Type:
Total Capacity: 22.5 kW
Capacity Used: 22.3 kW
OA Temp (DB/WB): 34.0 °F / 31.9 °F
Preheat Leaving Temp: 54.0 °F / 42.9 °F
Input: 22.5 kW
Electric Preheat FLA: 62.5
Max Discharge Temp (DB): 80.0 °F
Max Ambient Temp (DB): 60.0 °F

Integrated Heat Capacity: 104.2 MBH
Primary Heat Type: Heat Pump
Total Capacity: 120.1 MBH
OA Temp (DB/WB): 34.0 °F / 32.0 °F
RA Temp (DB/WB): 70.0 °F / 60.0 °F
Entering Air Temp (DB/WB): 58.8 °F / 48.7 °F
Leaving Air Temp (DB/WB): 77.6 °F / 56.6 °F
Input (Emergency/Aux): /

Fan Temp Rise: 1.8 Δ°F
Auxiliary Heating Type: No Heat

Rating Information

Application EER @ Op. Conditions: 10.8 BTU/h·W
Application COP @ Op. Conditions: 2.83 W/W

Electrical Data

Circuit 1

Rating: 208V/3Ø/60Hz
Unit FLA: 78
SCCR: 5 KAIC

Minimum Circuit Amp: 97
Maximum Overcurrent: 100

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		208	3			20.4
Compressor 2:	1		208	3			20.3
Condenser Fan:	2	1.00	208	1	1100	7.4	
Supply Fan:	1	5.00	208	3	1760	15.2	

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW (dB):	93	91	97	88	81	79	76	70
Return LW (dB):	82	80	85	73	69	63	53	40

*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.



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RN-013-8-0-H809-000:A000-U00-DSF-AG0-00E0H04-EK-00A00000B

Job Information

Job Name: PHS 500 Building
OA CFM: 3500

Job Number: Job #35
SA CFM:

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heat Wheel Heating Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	MBH	W/W
62.0	56.2	64.4	57.4	97.3	68.6	181.1	181.1		4.10
57.0	51.6	60.9	54.3	91.2	65.4	168.0	168.0		4.01
52.0	47.1	57.4	51.3	85.4	62.2	155.7	155.7		3.92
47.0	42.6	53.9	48.4	79.7	59.0	144.3	144.3		3.82
42.0	38.0	50.4	45.6	74.2	55.9	134.0	134.0		3.72
37.0	33.5	46.9	42.8	*	*	*	*		*
32.0	28.8	43.4	40.1	*	*	*	*		*
27.0	24.3	39.9	37.3	*	*	*	*		*
22.0	19.7	36.4	34.6	*	*	*	*		*
17.0	15.0	32.9	31.8	*	*	*	*		*
12.0	10.4	29.4	29.4	*	*	*	*		*
7.0	5.7	27.0	27.0	*	*	*	*		*
2.0	0.1	24.0	24.0	*	*	*	*		*

*Invalid operation point - Compressor operating outside of operating envelope



22" STAR Plenum

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 347.1

JOB INFORMATION:

Job Name: PHS 500 Building
Job Tag: AC-8, 10 R410A
Date: 4/12/2024 12:00:00 AM

WHEEL SPECIFICATION:

Max RPM: 2200
Diameter x Qty: 22 in. x 1
CFM: 5000
Inertia: 5WR²

OPERATING CONDITIONS

Air Flow: 5000
Fan Energy Index (FEI): 1.23
Static Pressure: 2.85 in. Wg
Relief Dampers DP: 0 in. Wg
TSP: 2.85 in. Wg
Site Altitude: 0 ft
TSP @ Sea Level: 2.85 in. Wg

MOTOR SELECTION

Rated HP / Bypass: 5 x 1 / No
Frame Size: 184T
Nominal RPM: 1760
VAC/PH/HZ: 208V/3Ø/60Hz
Enclosure Type: ODP
Max Inertial Load: 0 WR²

FAN PERFORMANCE:

RPM: 1731
BHP: 3.55
Efficiency: 63.28%
Max Duct SP with Blocked Airway: 0 in. Wg @ 1731 RPM

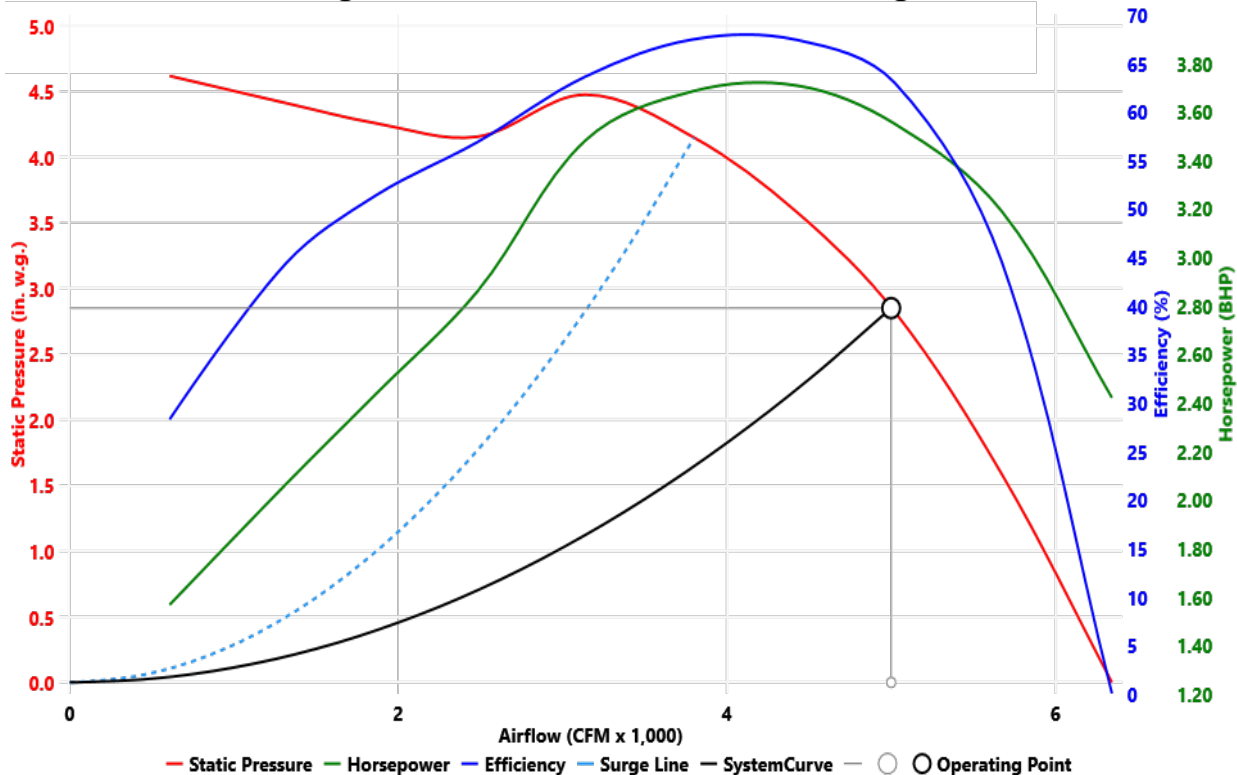
FAN SOUND POWER (Inlet/Outlet)

Octave Band:		(Re 10 ⁻¹² watts)					
1	2	3	4	5	6	7	8
93	91	97	90	84	82	80	74
93	91	97	90	84	82	80	74

SOUND POWER A-Weighted: 74 dB

Max Duct SP with Blocked Airway:

Supply Fan Model: 220D70 @ 1731 RPM and 100% Width Design Conditions: 5000 CFM @ 2.85 in. w.g. SP





Unit Submittal

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RN-013-8-0-H809-000:A000-U00-DSF-AG0-00E0H04-EK-00A00000B

Tag: AC-8, 10 R410A

Job Name: PHS 500 Building

Unit Worksheet For:

Job Number: Job #35

Unit Worksheet Date: 4/12/2024

	Base Option	Description
RN	Generation	Rooftop - Ninth Generation
013	Unit Size	Thirteen
8	Voltage	208V/3φ/60Hz
0	Interior Protection	Standard
H	Refrigerant Style	R-410A Variable Capacity Scroll Compressor + Two-Step Compressor - High Efficiency
8	Unit Configuration	Alpha Class - Air-Source Heat Pump + 6 Row Evap. Coil
0	Coil Coating	Standard
9	Cooling/Heat Pump Staging	Modulating Heat Pump + No Auxiliary Heat - 1 VCC + 1 Staged Comp.
0	Heating Type	No Heating
0	Heating Designation	No Heating
0	Heating Staging	No Heating

	Feature Option	Description
A	F1A. RA/OA Section	Economizer
0	F1B. RA/EA Blower Configuration	Standard - None
0	F1C. RA/EA Blower	Standard - None
0	F1D. RA/EA Blower Motor	Standard - None
U	F2. OA Control	2 Position Actuator
0	F3. Heat Options	Standard
0	F4. Maintenance Options	Standard
D	F5A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
S	F5B. SA Blower	22" Direct Drive Backward Curved Plenum - 70% Width
F	F5C. SA Motor	5.0 hp - 1760 rpm
A	F6A. Pre Filter Type	2" Pleated Pre Filter - 30% Eff
G	F6B. Unit Filter Type	4" Pleated - 85% Eff - MERV 13
0	F6C. Filter Options	Standard
0	F7. Refrigeration Control	Standard - Fixed 55°F Comp. Cooling Lock Out + Adjustable Comp. Heating Lock Out
0	F8. Refrigeration Options	Standard
E	F9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
0	F10. Power Options	Standard Power Block
H	F11. Safety Options	Remote Safety Shutdown Terminals
0	F12. Controls	Standard
4	F13. Special Controls	Field Installed DDC Controls by Others
E	F14A. Outside Air Configuration	Modulating Electric OA Preheat
K	F14B. Preheat Sizing	22.5 kW
0	F15. Glycol Percent	Water or No WSHp
0	F16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
A	F17. Exterior Cabinet Options	Base Insulation
0	F18. Electrical Rating	Standard - 5 KAIC
0	F19. Code Options	Standard - ETL U.S.A. Listing
0	F20. Crating	Standard
0	F21. Water-Cooled Cond.	Standard - None
0	F22. Control Vendors	Standard
B	F23. Type	Standard - Includes AAON Gray Paint



1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RN-013-8-0-H809-000:A000-U00-DSF-AG0-00E0H04-EK-00A00000B

Tag: AC-8, 10 R410A

Job Name: PHS 500 Building

For:

Job Number: Job #35

Date:

April 12, 2024

Terminals Available/Required for Controlling the Unit

Terminals	Decription
[R]	24VAC Control Voltage
[C]	Common
[G]	Supply Fan Enable
[DC1-] & [DC1+]	Variable Capacity Compressor 1 (1.44-5VDC) Signal
[SP1-] & [SP1+]	Suction Pressure Sensor - Compressor 1 (0.5-4.5VDC)
[A1] & [A2]	Economizer Enable
[S1-] & [S2+]	Supply Fan 1 - w/ 1 VFD: Signal (0-10VDC)
	VFD frequency reference signal control point must handle a rated 20k ohm input impedance.
[BI1] & [BI2]	Remote Safety Shutdown
[PHE]	Electric Preheat Enable
[PH+] & [PH-]	Preheat Set Point Reset

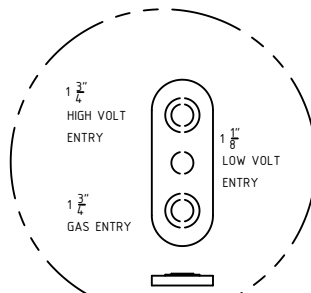
Terminations Found on VFD(s)

Supply Fan VFD(s)	
[AM] & [AC]	Current Feedback (0-10VDC = 0-100%)
[MA] & [MC]	Fault Status (NC, 250VAC/30VDC, 1A)

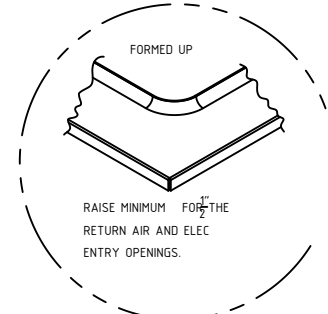
RN SERIES

B - CABINET WITH ECONOMIZER AND ELECTRIC PREHEAT ~ 9-15 TON

CLEARANCES	
LOCATION	• UNIT SIZE • 9 - 15 TON
OUTSIDE AIR (BACK)	48
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	48
TOP	UNOBSTRUCTED



DETAIL A

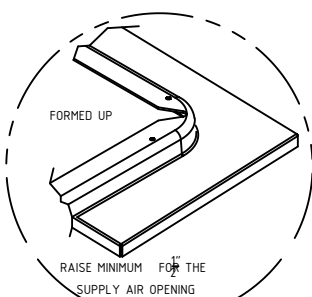


DETAIL B

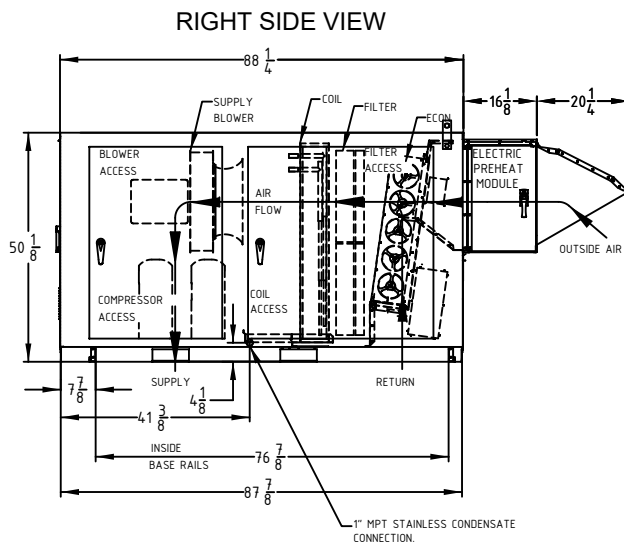
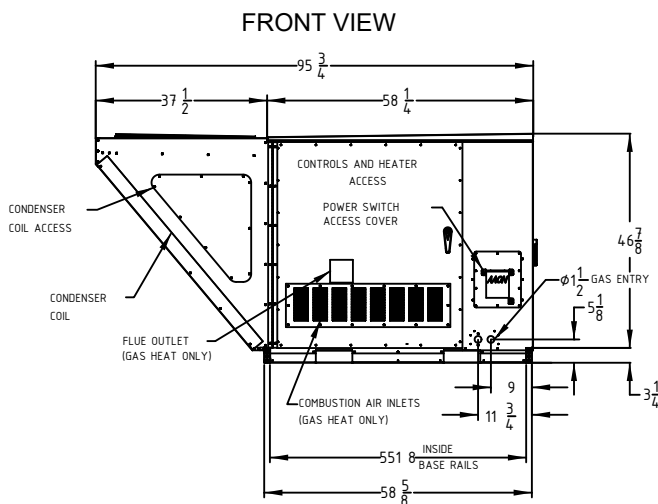
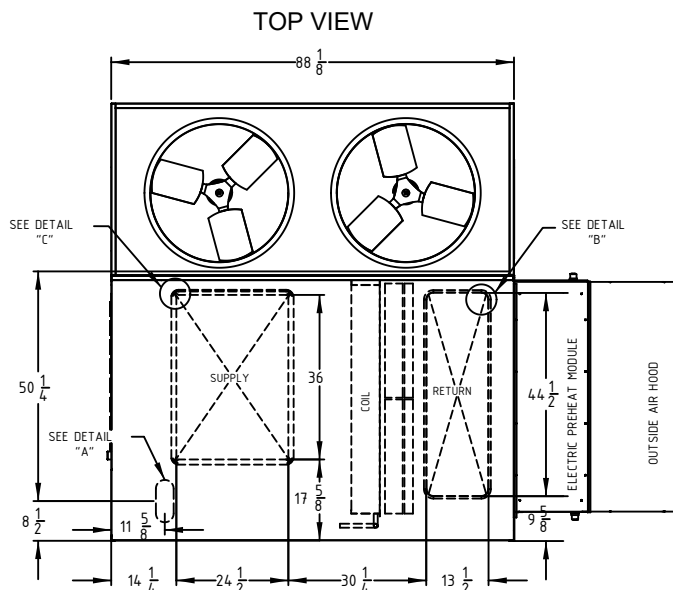
NUMBER OF CONDENSER FANS

9 & 11 TON - 1 FAN

13 & 15 TON - 2 FANS



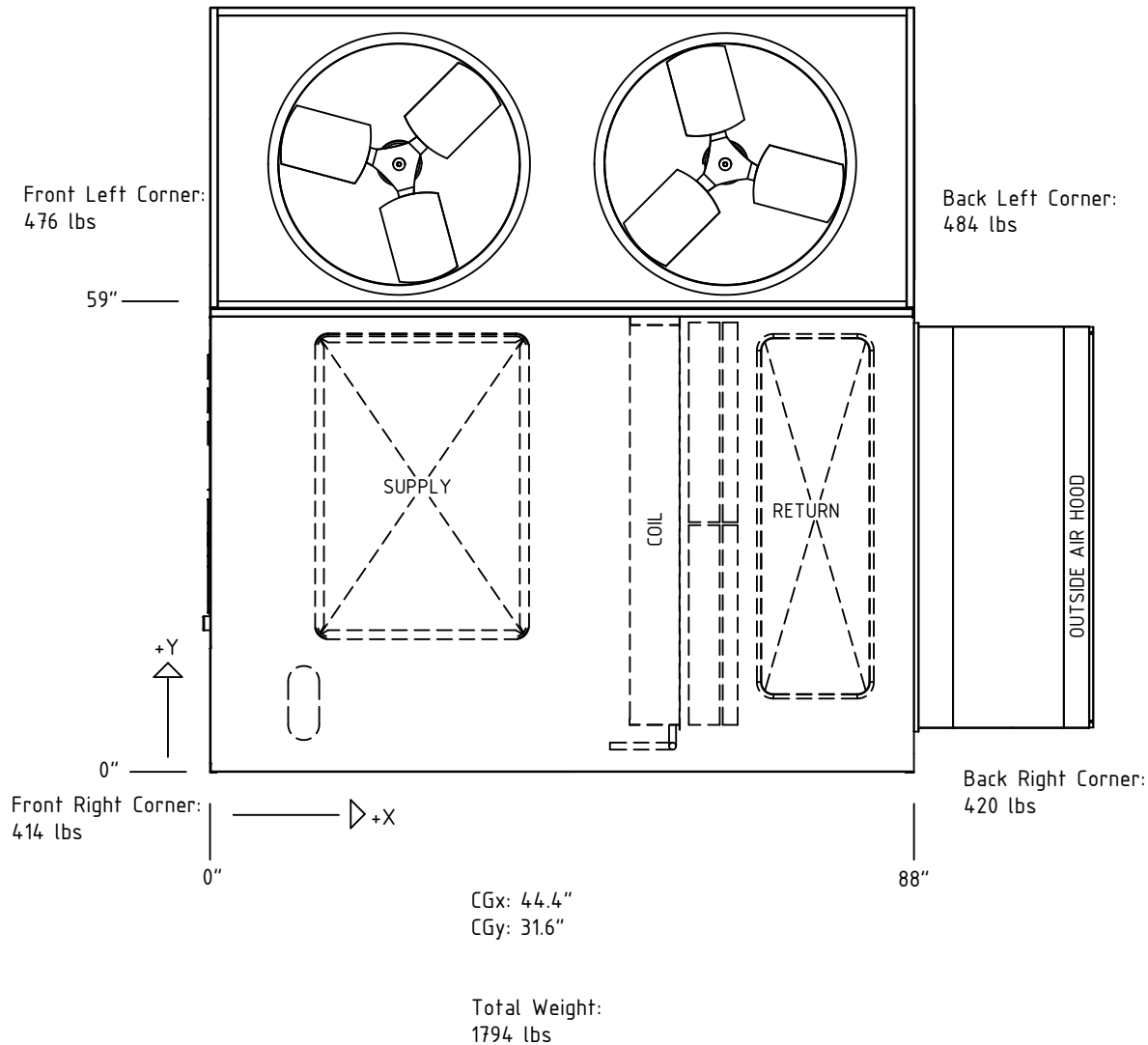
DETAIL C



RNB CABINET AIR COOLED CONDENSING UNIT



RN-013-8-0-H809-000:A000-U00-DSF-AG0-00E0H04-EK-00A00000B



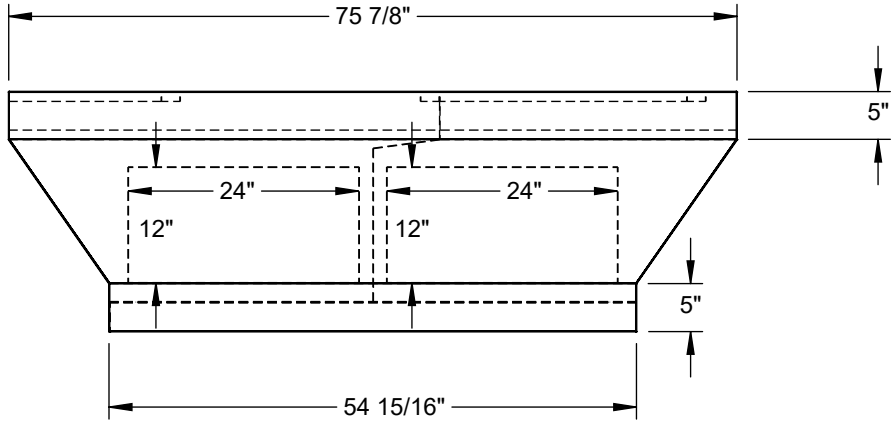
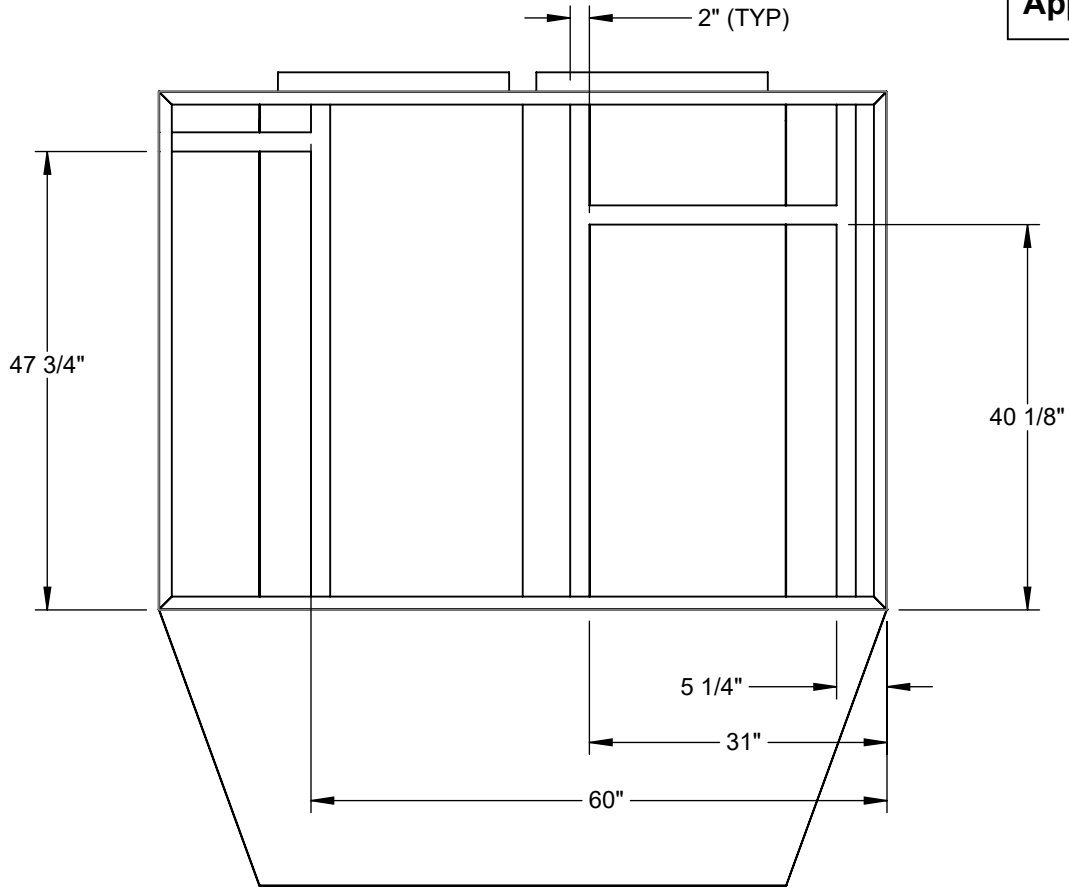
Disclaimer:
This weight estimate does not account for any SPAs.

OPTIONS:
MATERIAL: 18ga. GALV STEEL
INSULATED PANELS (WHERE REQUIRED)
1" 1-1/2LB DUCT INSULATION (R VALUE 3.85)
GASKET PROVIDED WITH CURB
1 1/2" ADDED TO EXISTING CURB O.D.

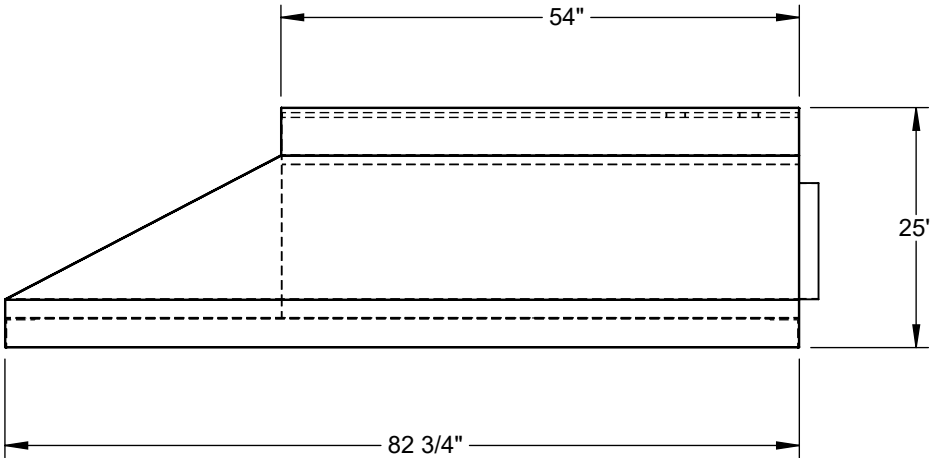
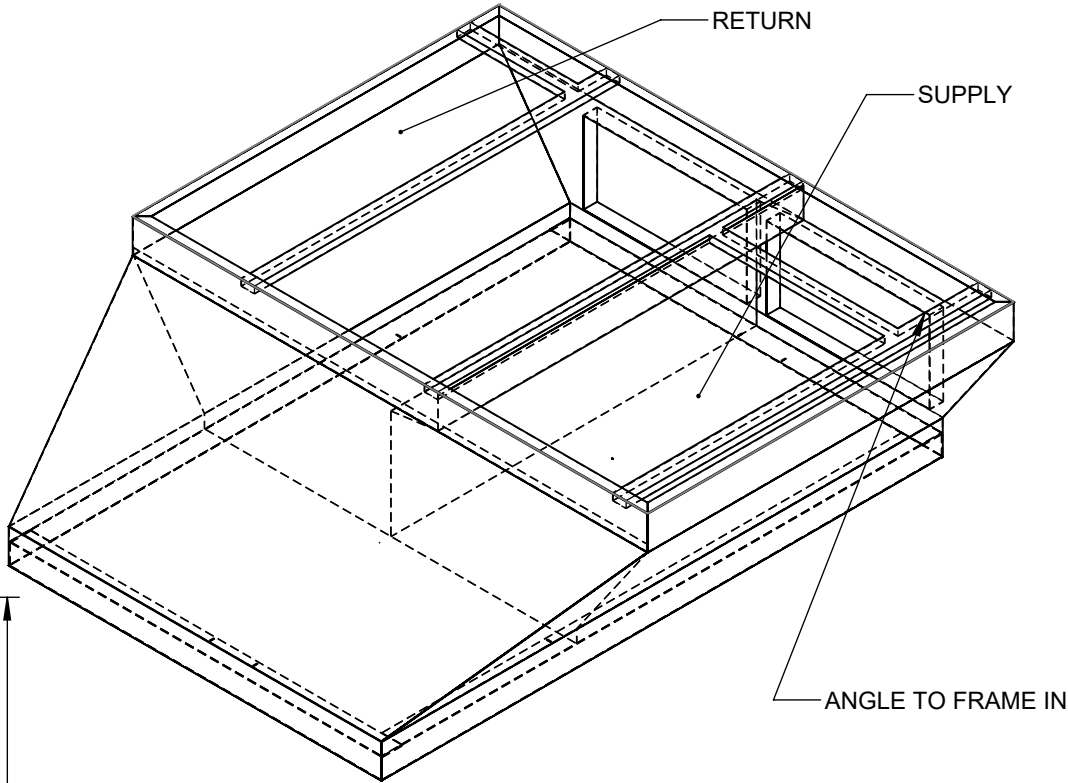
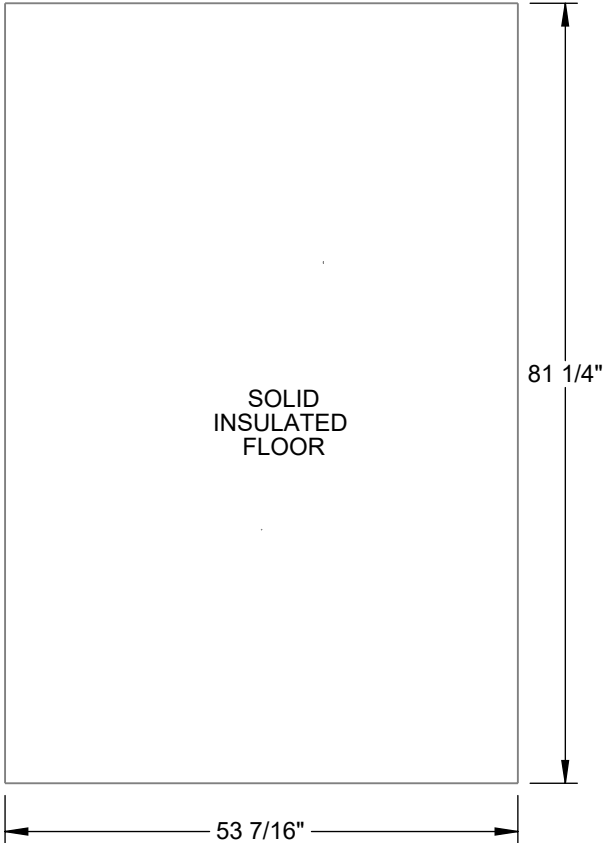
DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REVISIONS				
REV.	ECO#	DESCRIPTION	DATE	APPROVED
1		INITIAL DRAWING	4/12/2024	ZC

Attn: _____
Tag: _____
Approval: _____



EXISTING CURB LAYOUT



CURB SHOWN IS CDI STANDARD CONFIGURATION CDI RESERVES THE RIGHT TO CHANGE LAYOUT WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED PRIOR TO PLACING AN ORDER.

OPERATIONAL HEIGHT OF CDI ADAPTER IS 3" LESS THAN OVERALL CURB HEIGHT SHOWN.

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	DRAWN: zcupples		4/12/2024			
	CHECKED:			APPROXIMATE CURB WEIGHT (LBS.) 243.85		
	DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]					
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS			Contact us @ www.cdicurbs.com or 1-888-234-7001	ECO #:		REV: 1
				SCALE: 1:20	SHEET: 1 OF 6	



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RQ-002-8-V-G602-000:A000-E00-PKC-AG0-00E0H00-EG-00000000B

Tag: AC-7 R410A

Job Information

Job Name: PHS 500 Building
Job Number: Job #35
Site Altitude: 0 ft
Refrigerant: R-410A

Static Pressure

External: 1.00 in. w.g.
Cooling Coil: 0.05 in. w.g.
Filters Clean: 0.15 in. w.g.
Dirt Allowance: 0.35 in. w.g.

Cooling Section

	Gross	Net
Total Capacity:	25.6 MBH	24.2 MBH
Sensible Capacity:	23.3 MBH	22.0 MBH
Latent Capacity:	2.2 MBH	
Mixed Air Temp (DB/WB):	78.9 °F	62.6 °F
Entering Air Temp (DB/WB):	78.9 °F	62.6 °F
Lv Air Temp (Coil) (DB/WB):	51.7 °F	51.0 °F
Lv Air Temp (Unit) (DB/WB):	53.2 °F	51.7 °F

Supply Air Fan: 1 x RQ185D60 @ 0.43 BHP Ea.
SA Fan RPM / Width: 1360 RPM / 1.750 in
SA Fan FEI: 1.51

Evaporator Coil: 5.3 ft² / 3 Rows / 14 FPI
Evaporator Face Velocity: 152.4 fpm

Rating Information

Listing Model RQ-002-3-0-BBAC-S0-21-000-A

Cooling Capacity: 25.0 MBH
Cooling EER: 13.1 BTU/h-W
Cooling SEER: 15.9 BTU/h-W

*Rated in accordance with AHRI 210/240

Application EER @ Op. Conditions: 12.7 BTU/h-W
Application COP @ Op. Conditions: 2.79 W/W
SEER @ AHRI Conditions: 15.9 BTU/h-W

Electrical Data

Circuit 1

Rating: 208V/3Ø/60Hz
Unit FLA: 28
SCCR: 5 KAIC

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		208	3			6.5
Condenser Fan:	1	0.33	208	1	1100	2.8	
Supply Fan:	1	1.00	208	1	1760	7.0	

Unit Information

Approx. Op./Ship Weights: 915 lbs / 915 lbs (±5%)
Ambient Temperature (DB/WB): 88.0 °F / 64.0 °F
Coil Filter FV / Qty: 144.0 fpm / 2
Supply Airflow/ESP: 800 SCFM / 1.00 in. w.g.
Outside Airflow: 240 SCFM
Return Temperature (DB/WB): 75.0 °F / 62.0 °F

Economizer: 0.09 in. w.g.
Preheat: 0.02 in. w.g.
Cabinet: 0.01 in. w.g.
Total: 1.65 in. w.g.

Heating Section

Preheat Type:
Total Capacity: 7.5 kW
Capacity Used: 2.1 kW
OA Temp (DB/WB): 33.0 °F / 31.9 °F
Preheat Leaving Temp: 60.0 °F / 46.3 °F
Input: 7.5 kW
Electric Preheat FLA: 20.8
Max Discharge Temp (DB): 80.0 °F
Max Ambient Temp (DB): 60.0 °F

Integrated Heat Capacity: 17.6 MBH
Primary Heat Type: Heat Pump
Total Capacity: 20.2 MBH
OA Temp (DB/WB): 33.0 °F / 32.0 °F
RA Temp (DB/WB): 75.0 °F / 62.0 °F
Entering Air Temp (DB/WB): 70.5 °F / 57.8 °F
Leaving Air Temp (DB/WB): 90.7 °F / 65.0 °F
Input (Emergency/Aux): /

Fan Temp Rise: 1.5 Δ°F
Auxiliary Heating Type: No Heat

Heating High Temp Capacity: 23.8 MBH
Heating HSPF: 8.4 BTU/h-W



Unit Rating

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Ecat Version: 347.1

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW (dB):	78	78	78	69	63	61	57	51
Return LW (dB):	76	71	68	60	58	56	49	42

*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.

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Job Information

Job Name:	PHS 500 Building	Job Number:	Job #35
OA CFM:	240	SA CFM:	

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heat Wheel Heating Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	MBH	W/W
62.0	56.2	71.1	60.3	104.9	71.3	29.4	29.4		4.19
57.0	51.6	69.6	59.1	101.2	69.6	27.6	27.6		4.09
52.0	47.1	68.1	58.0	97.5	68.1	25.7	25.7		3.95
47.0	42.6	66.6	56.9	93.9	66.5	23.9	23.9		3.81
42.0	38.0	65.1	55.9	90.5	65.1	22.3	22.3		3.65
37.0	33.5	63.6	54.9	83.9	62.5	20.9	17.9		3.04
32.0	28.8	62.1	54.0	81.3	61.3	19.4	17.0		2.96
27.0	24.3	60.6	53.1	78.7	60.2	18.1	16.1		2.87
22.0	19.7	59.1	52.2	76.1	59.0	16.9	15.1		2.77
17.0	15.0	57.6	51.3	73.6	57.8	15.6	14.2		2.67
12.0	10.4	56.1	50.5	71.0	56.7	14.5	13.3		2.57
7.0	5.7	54.6	49.7	*	*	*	*		*
2.0	0.1	53.1	48.8	*	*	*	*		*

*Invalid operation point - Compressor operating outside of operating envelope



18.5" STAR Plenum

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 347.1

JOB INFORMATION:

Job Name: PHS 500 Building
Job Tag: AC-7 R410A
Date: 4/12/2024 12:00:00 AM

WHEEL SPECIFICATION:

Max RPM: 2200
Diameter x Qty: 18.5 in. x 1
CFM: 800
Inertia: 3WR²

OPERATING CONDITIONS

Air Flow: 800
Fan Energy Index (FEI): 1.51
Static Pressure: 1.65 in. Wg
Relief Dampers DP: 0 in. Wg
TSP: 1.65 in. Wg
Site Altitude: 0 ft
TSP @ Sea Level: 1.65 in. Wg

MOTOR SELECTION

Rated HP / Bypass: 1 x 1 / No
Frame Size:
Nominal RPM: 1760
VAC/PH/HZ: 208V/1Ø/60Hz
Enclosure Type: ODP
Max Inertial Load: 0 WR²

FAN PERFORMANCE:

RPM: 1360
BHP: 0.43
Efficiency: 48.39%
Max Duct SP with Blocked Airway: 0 in. Wg @ 1360 RPM

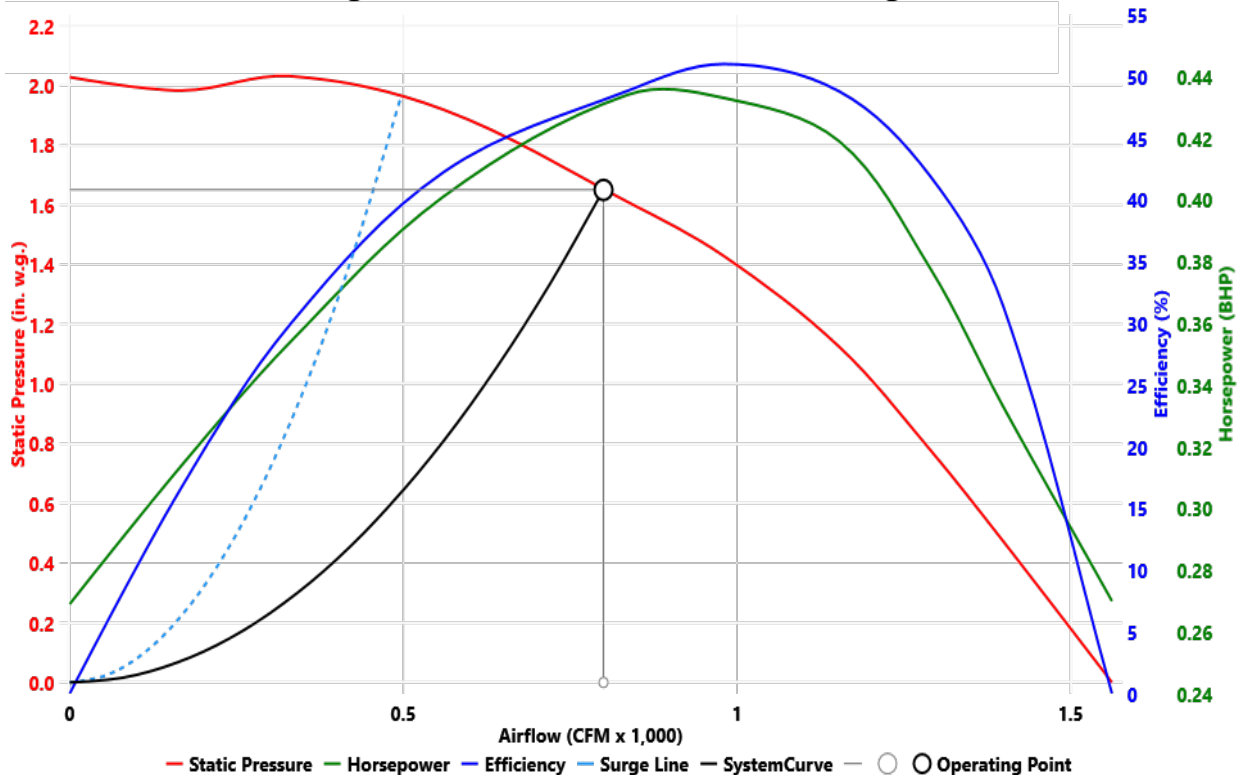
FAN SOUND POWER (Inlet/Outlet)

Octave Band: (Re 10 ⁻¹² watts)							
1	2	3	4	5	6	7	8
78	78	78	74	69	67	64	58
78	78	78	74	69	67	64	58

SOUND POWER A-Weighted: 58 dB

Max Duct SP with Blocked Airway:

Supply Fan Model: RQ185D60 @ 1360 RPM and 100% Width Design Conditions: 800 CFM @ 1.65 in. w.g. SP





Unit Submittal

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RQ-002-8-V-G602-000:A000-E00-PKC-AG0-00E0H00-EG-00000000B

Tag: AC-7 R410A

Job Name: PHS 500 Building

Job Number: Job #35

Unit Worksheet For:

Unit Worksheet Date: 4/12/2024

	Base Option	Description
RQ	Generation	Rooftop - Tenth Generation
002	Unit Size	Two
8	Voltage	208V/3φ/60Hz
V	Interior Protection	Vertical Discharge and Return
G	Refrigerant Style	R-410A Two-Step Compressor - High Efficiency
6	Unit Configuration	Alpha Class - Air-Source Heat Pump
0	Coil Coating	Standard
2	Cooling/Heat Pump Staging	2 Stage Heat Pump + No Auxiliary Heat
0	Heating Type	No Heating
0	Heating Designation	No Heating
0	Heating Staging	No Heating

	Feature Option	Description
A	F1A. RA/OA Section	Economizer
0	F1B. RA/EA Blower Configuration	Standard - None
0	F1C. RA/EA Blower	Standard - None
0	F1D. RA/EA Blower Motor	Standard - None
E	F2. OA Control	DDC Actuator
0	F3. Heat Options	Standard
0	F4. Maintenance Options	Standard
P	F5A. SA Blower Configuration	1 Blower + High Efficiency EC Motor
K	F5B. SA Blower	19" Direct Drive Backward Curved Plenum - 60% Width
C	F5C. SA Motor	1 HP 1750 rpm
A	F6A. Pre Filter Type	2" Pleated Pre Filter - 30% Eff
G	F6B. Unit Filter Type	4" Pleated - 85% Eff - MERV 13
0	F6C. Filter Options	Standard
0	F7. Refrigeration Control	Standard - Fixed 55°F Comp. Cooling Lock Out + Adjustable Comp. Heating Lock Out
0	F8. Refrigeration Options	Standard
E	F9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
0	F10. Power Options	Standard Power Block
H	F11. Safety Options	Remote Safety Shutdown Terminals
0	F12. Controls	Standard
0	F13. Special Controls	Terminal Block for Thermostat Control
E	F14A. Outside Air Configuration	Modulating Electric OA Preheat
G	F14B. Preheat Sizing	7.5 kW
0	F15. Glycol Percent	Water or No WSHp
0	F16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
0	F17. Exterior Cabinet Options	Standard
0	F18. Electrical Rating	Standard - 5 KAIC
0	F19. Code Options	Standard - ETL U.S.A. Listing
0	F20. Crating	Standard
0	F21. Water-Cooled Cond.	Standard - None
0	F22. Control Vendors	Standard
B	F23. Type	Standard - Includes AAON Gray Paint



Terminals

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ
RQ-002-8-V-G602-000:A000-E00-PKC-AG0-00E0H00-EG-00000000B

Tag: AC-7 R410A
Job Name: PHS 500 Building For:
Job Number: Job #35 Date: April 12, 2024

Terminals Available/Required for Controlling the Unit

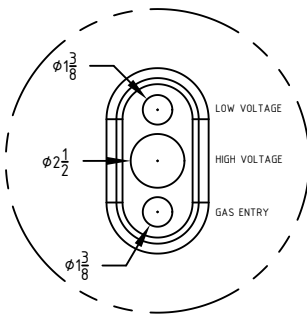
Terminals	Decription
[R]	24VAC Control Voltage
[C]	Common
[G]	Supply Fan Enable
[Y1]	Cooling Stage 1 Enable/ Heat Pump - Heating Stage 1 Enable
[Y2]	Cooling Stage 2 Enable/ Heat Pump - Heating Stage 2 Enable
[O]	Reversing Valve (Cooling) Enable
[EC1-] & [EC2+]	Economizer Signal (2-10VDC)
[S1-] & [S2+]	Supply Fan ECM Motor Signal (0-10VDC)
[BI1] & [BI2]	Remote Safety Shutdown
[PHE]	Electric Preheat Enable
[PH+] & [PH-]	Preheat Set Point Reset

RQ CABINET WITH ECONOMIZER AND ELECTRIC PREHEAT VERTICAL ~ 1-6 TON

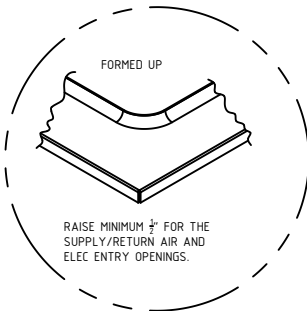
CLEARANCES

LOCATION	• UNIT SIZE • 1 - 6 TON
OUTSIDE AIR (BACK)	36*
HXC (FRONT)	36
LEFT SIDE	24
RIGHT SIDE	48
TOP	UNOBSTRUCTED

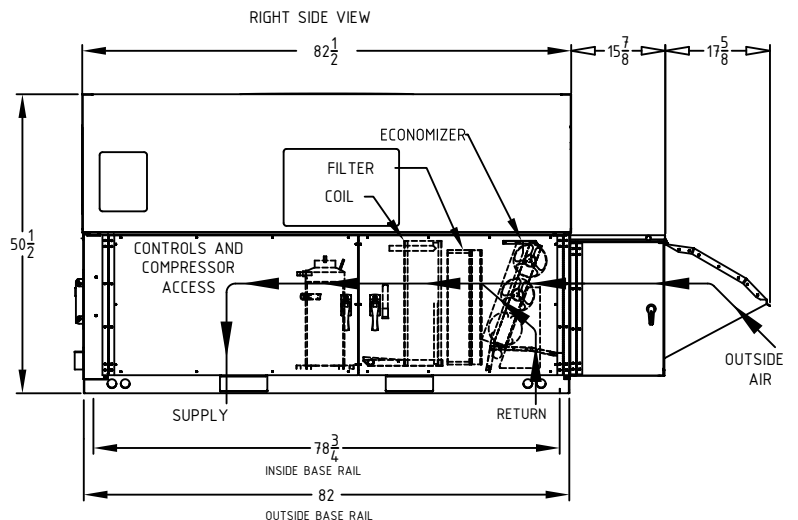
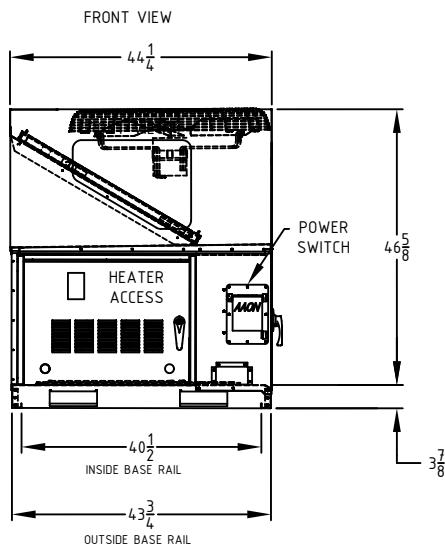
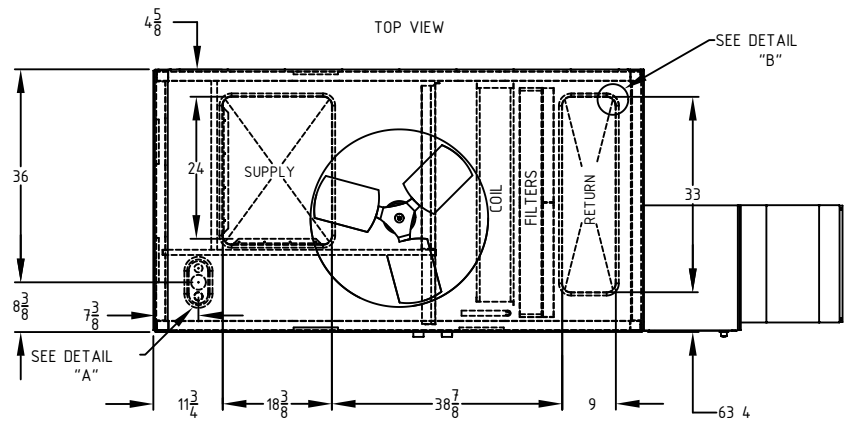
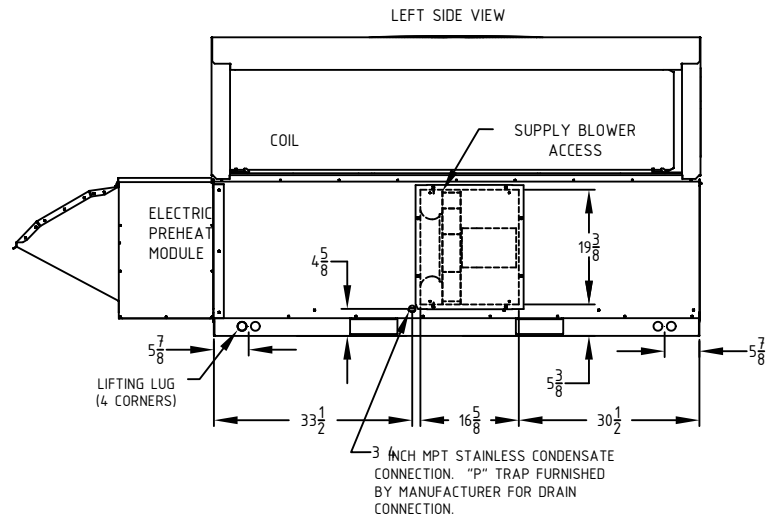
*CLEARANCE IS MEASURED
FROM THE END OF THE
OUTSIDE AIR RAIN HOOD
ON THE ELECTRIC PREHEAT



DETAIL A



DETAIL B



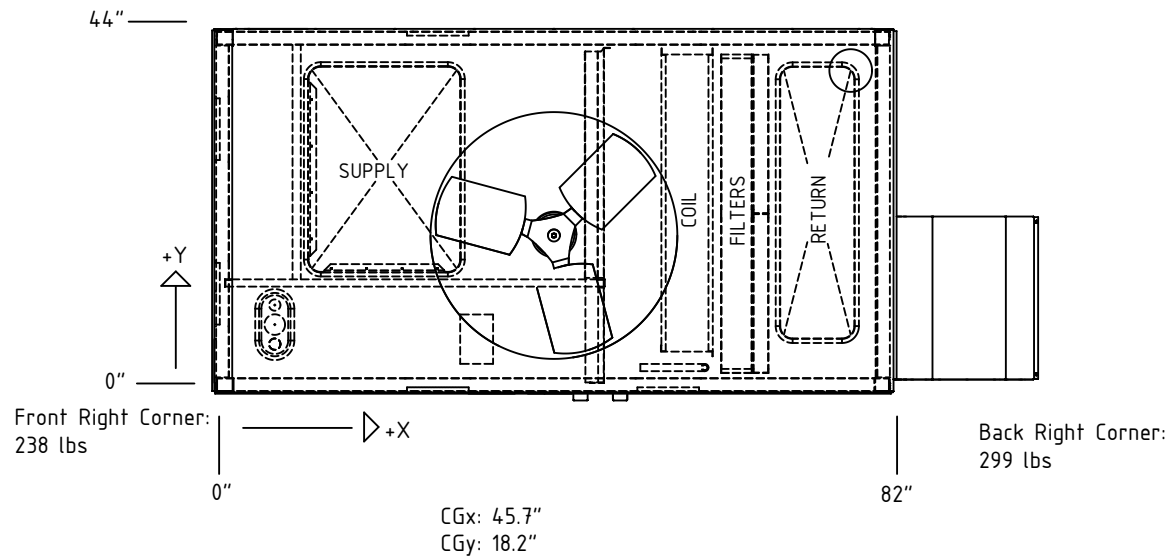
RQ CABINET VERTICAL AIR COOLED CONDENSING UNIT



RQ-002-8-V-G602-000:A000-E00-PKC-AG0-00E0H00-EG-00000000B

Front Left Corner:
168 lbs

Back Left Corner:
211 lbs



CGx: 45.7"
CGy: 18.2"

Total Weight:
915 lbs

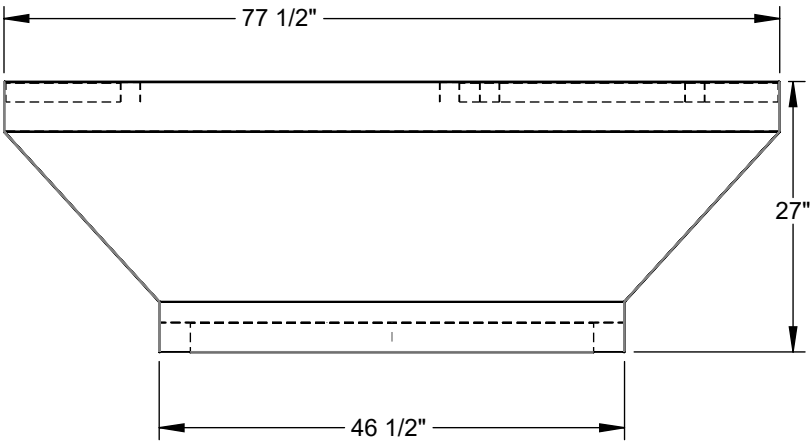
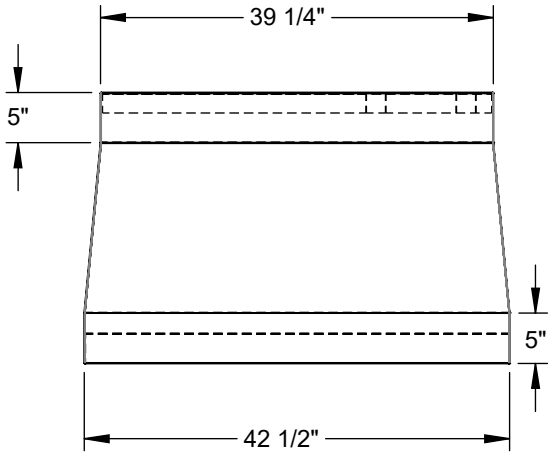
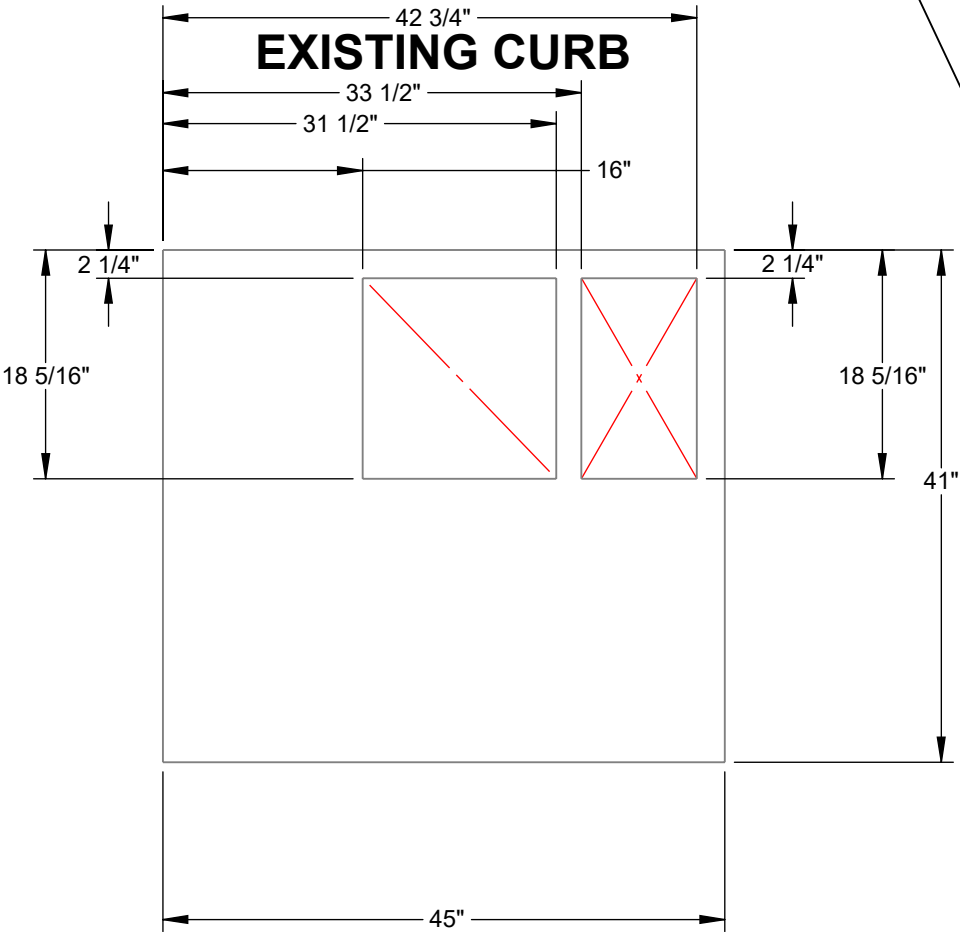
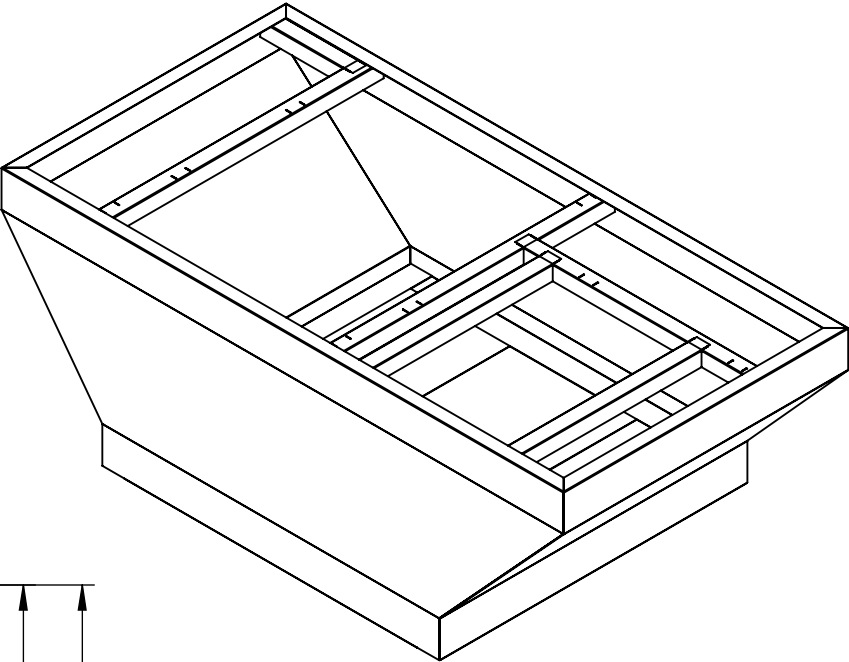
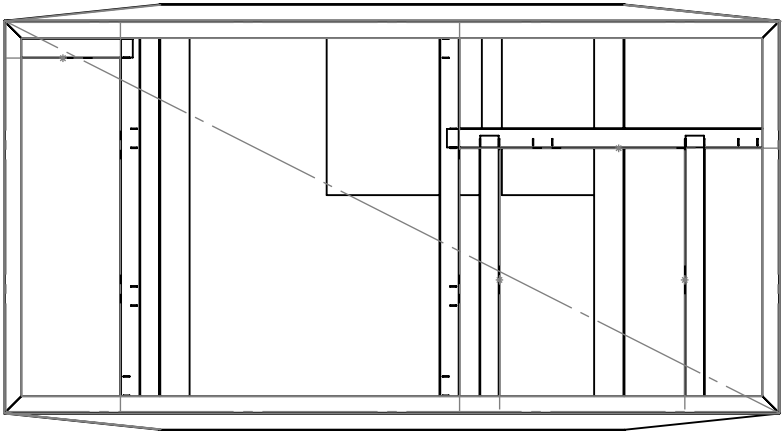
Disclaimer:
This weight estimate does not account for any SPAs.

OPTIONS:
INSULATED PANELS (WHERE REQUIRED)
1" 1-1/2LB DUCT INSULATION (R VALUE 3.85)
GASKET PROVIDED WITH CURB

DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	INITIAL DRAWING		

Attn: _____
Approval: _____
RTU TAG(S): _____



CDI WILL REVIEW THIS ADAPTER TO ENSURE THAT IT IS STRUCTURALLY SOUND & HAS PROPER AIRFLOW & MAY MAKE CHANGES AS NEEDED

Material: 18 ga. G-90 Galv Steel
Existing Curb Oversized by: 1.5 Inches
Operational Height(Raise unit by):24 Inches

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	DRAWN: driveworks		3/26/2024			
	CHECKED:			DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]		
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS	3RD ANGLE PROJECTION		Contact us @ www.cdicurbs.com or 1-888-234-7001		APPROXIMATE CURB WEIGHT (LBS.)	ECO #:
			136			
			SCALE: 1:16		SHEET: 1 OF 4	REV: 1



Unit Rating

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RQ-005-8-V-G602-000:A000-E00-QJD-AG0-00E0000-EG-00000000B

Tag: AC-11, 12 R410A

Job Information

Job Name: PHS 500 Building
Job Number: Job #35
Site Altitude: 0 ft
Refrigerant: R-410A

Static Pressure

External: 1.25 in. w.g.
Cooling Coil: 0.45 in. w.g.
Filters Clean: 0.45 in. w.g.
Dirt Allowance: 0.35 in. w.g.

Cooling Section

	Gross	Net
Total Capacity:	60.0 MBH	55.0 MBH
Sensible Capacity:	57.5 MBH	52.6 MBH
Latent Capacity:	2.5 MBH	
Mixed Air Temp (DB/WB):	78.9 °F	62.6 °F
Entering Air Temp (DB/WB):	78.9 °F	62.6 °F
Lv Air Temp (Coil) (DB/WB):	52.1 °F	51.8 °F
Lv Air Temp (Unit) (DB/WB):	54.3 °F	52.8 °F

Supply Air Fan: 1 x RQ185 @ 1.59 BHP Ea.
SA Fan RPM / Width: 1771 RPM / 3.000 in
SA Fan FEI: 1.17

Evaporator Coil: 5.3 ft² / 6 Rows / 14 FPI
Evaporator Face Velocity: 381.0 fpm

Rating Information

Listing Model RQ-005-3-0-BBBC-S0-21-000-A

Cooling Capacity: 55.5 MBH
Cooling EER: 12.4 BTU/h-W
Cooling SEER: 15.0 BTU/h-W

*Rated in accordance with AHRI 210/240

Application EER @ Op. Conditions: 10.3 BTU/h-W
Application COP @ Op. Conditions: 2.65 W/W
SEER @ AHRI Conditions: 15.0 BTU/h-W

Electrical Data

Circuit 1

Rating: 208V/3Ø/60Hz
Unit FLA: 31
SCCR: 5 KAIC

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		208	3			17.6
Condenser Fan:	2	0.33	208	1	1100	2.8	
Supply Fan:	1	2.00	208	3	1760	7.5	

Unit Information

Approx. Op./Ship Weights: 1018 lbs / 1018 lbs (±5%)
Ambient Temperature (DB/WB): 88.0 °F / 64.0 °F
Coil Filter FV / Qty: 360.0 fpm / 2
Supply Airflow/ESP: 2000 SCFM / 1.25 in. w.g.
Outside Airflow: 600 SCFM
Return Temperature (DB/WB): 75.0 °F / 62.0 °F

Economizer: 0.10 in. w.g.
Preheat: 0.02 in. w.g.
Cabinet: 0.06 in. w.g.
Total: 2.66 in. w.g.

Heating Section

Preheat Type:
Total Capacity: 7.5 kW
Capacity Used: 3.2 kW
OA Temp (DB/WB): 33.0 °F / 31.9 °F
Preheat Leaving Temp: 50.0 °F / 41.4 °F
Input: 7.5 kW
Electric Preheat FLA: 20.8
Max Discharge Temp (DB): 80.0 °F
Max Ambient Temp (DB): 60.0 °F

Integrated Heat Capacity: 38.6 MBH
Primary Heat Type: Heat Pump
Total Capacity: 44.3 MBH
OA Temp (DB/WB): 33.0 °F / 32.0 °F
RA Temp (DB/WB): 75.0 °F / 62.0 °F
Entering Air Temp (DB/WB): 67.5 °F / 56.6 °F
Leaving Air Temp (DB/WB): 85.2 °F / 63.1 °F
Input (Emergency/Aux): /

Fan Temp Rise: 2.2 Δ°F
Auxiliary Heating Type: No Heat

Heating High Temp Capacity: 56.5 MBH
Heating HSPF: 8.7 BTU/h-W



Unit Rating

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Ecat Version: 347.1

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW (dB):	86	83	87	80	71	69	67	61
Return LW (dB):	83	75	76	69	66	63	57	49

*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RQ-005-8-V-G602-000:A000-E00-QJD-AG0-00E0000-EG-00000000B

Job Information

Job Name:	PHS 500 Building	Job Number:	Job #35
OA CFM:	600	SA CFM:	

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heat Wheel Heating Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	MBH	W/W
62.0	56.2	71.1	60.3	101.4	70.2	65.8	65.8		3.93
57.0	51.6	69.6	59.1	97.6	68.5	61.0	61.0		3.76
52.0	47.1	68.1	58.0	94.0	66.9	56.5	56.5		3.60
47.0	42.6	66.6	56.9	90.5	65.4	52.5	52.5		3.44
42.0	38.0	65.1	55.9	87.4	64.0	48.9	48.9		3.30
37.0	33.5	63.6	54.9	81.4	61.6	45.6	39.1		2.76
32.0	28.8	62.1	54.0	78.9	60.5	42.5	37.1		2.69
27.0	24.3	60.6	53.1	76.5	59.3	39.7	35.2		2.62
22.0	19.7	59.1	52.2	74.1	58.2	37.1	33.3		2.54
17.0	15.0	57.6	51.3	71.7	57.1	34.6	31.5		2.47
12.0	10.4	56.1	50.5	*	*	*	*		*
7.0	5.7	54.6	49.7	*	*	*	*		*
2.0	0.1	53.1	48.8	*	*	*	*		*

*Invalid operation point - Compressor operating outside of operating envelope



18.5" STAR Plenum

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Ecat Version: 347.1

JOB INFORMATION:

Job Name: PHS 500 Building
Job Tag: AC-11, 12 R410A
Date: 4/12/2024 12:00:00 AM

WHEEL SPECIFICATION:

Max RPM: 2200
Diameter x Qty: 18.5 in. x 1
CFM: 2000
Inertia: 3WR²

OPERATING CONDITIONS

Air Flow: 2000
Fan Energy Index (FEI): 1.17
Static Pressure: 2.66 in. Wg
Relief Dampers DP: 0 in. Wg
TSP: 2.66 in. Wg
Site Altitude: 0 ft
TSP @ Sea Level: 2.66 in. Wg

MOTOR SELECTION

Rated HP / Bypass: 2 x 1 / No
Frame Size: 56
Nominal RPM: 1760
VAC/PH/HZ: 208V/3Ø/60Hz
Enclosure Type: ODP
Max Inertial Load: 0 WR²

FAN PERFORMANCE:

RPM: 1771
BHP: 1.59
Efficiency: 52.75%
Max Duct SP with Blocked Airway: 0 in. Wg @ 1771 RPM

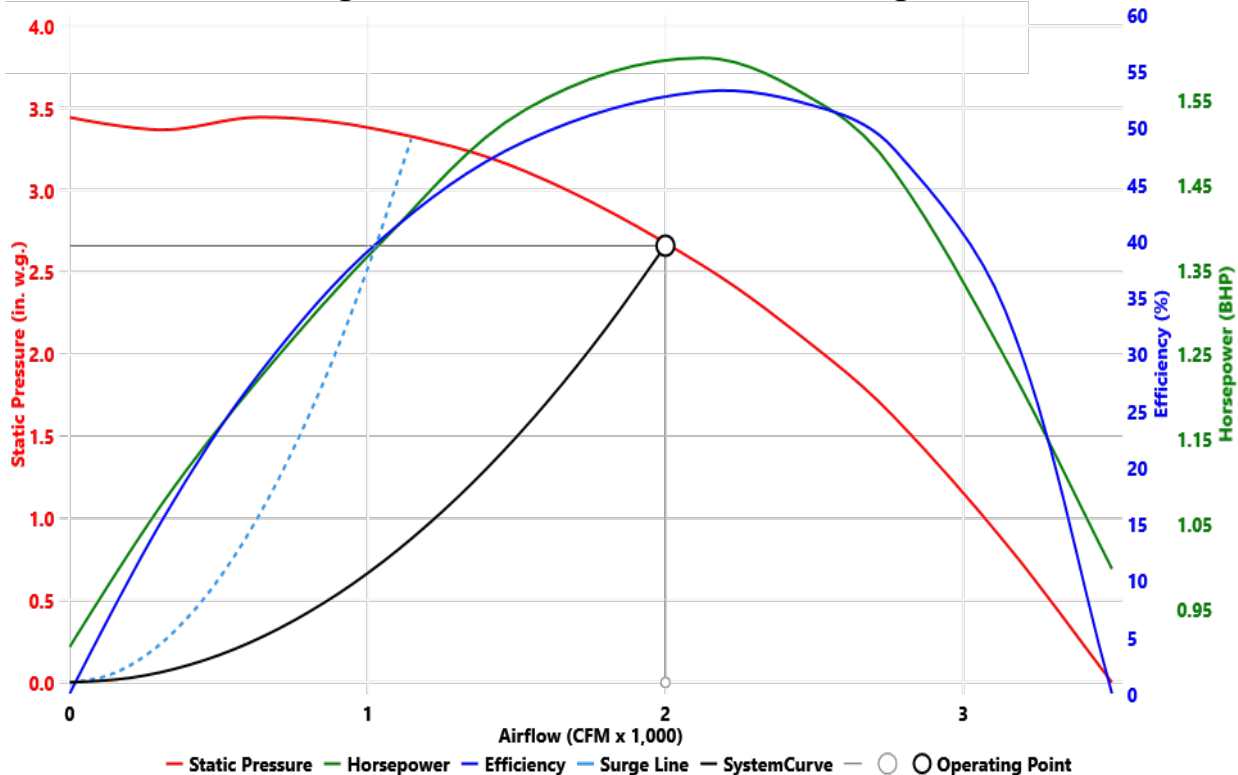
FAN SOUND POWER (Inlet/Outlet)

Octave Band:				(Re 10 ⁻¹² watts)			
1	2	3	4	5	6	7	8
86	83	87	85	78	76	74	68
86	83	87	85	78	76	74	68

SOUND POWER A-Weighted: 68 dB

Max Duct SP with Blocked Airway:

Supply Fan Model: RQ185 @ 1771 RPM and 100% Width Design Conditions: 2000 CFM @ 2.66 in. w.g. SP





Unit Submittal

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RQ-005-8-V-G602-000:A000-E00-QJD-AG0-00E0000-EG-00000000B

Tag: AC-11, 12 R410A

Job Name: PHS 500 Building

Unit Worksheet For:

Job Number: Job #35

Unit Worksheet Date: 4/12/2024

	Base Option	Description
RQ	Generation	Rooftop - Tenth Generation
005	Unit Size	Five
8	Voltage	208V/3φ/60Hz
V	Interior Protection	Vertical Discharge and Return
G	Refrigerant Style	R-410A Two-Step Compressor - High Efficiency
6	Unit Configuration	Alpha Class - Air-Source Heat Pump
0	Coil Coating	Standard
2	Cooling/Heat Pump Staging	2 Stage Heat Pump + No Auxiliary Heat
0	Heating Type	No Heating
0	Heating Designation	No Heating
0	Heating Staging	No Heating

	Feature Option	Description
A	F1A. RA/OA Section	Economizer
0	F1B. RA/EA Blower Configuration	Standard - None
0	F1C. RA/EA Blower	Standard - None
0	F1D. RA/EA Blower Motor	Standard - None
E	F2. OA Control	DDC Actuator
0	F3. Heat Options	Standard
0	F4. Maintenance Options	Standard
Q	F5A. SA Blower Configuration	1 Blower + Inverter Rated 3 Phase Motor + VFD
J	F5B. SA Blower	19" Direct Drive Backward Curved Plenum
D	F5C. SA Motor	2 HP 1760 rpm
A	F6A. Pre Filter Type	2" Pleated Pre Filter - 30% Eff
G	F6B. Unit Filter Type	4" Pleated - 85% Eff - MERV 13
0	F6C. Filter Options	Standard
0	F7. Refrigeration Control	Standard - Fixed 55°F Comp. Cooling Lock Out + Adjustable Comp. Heating Lock Out
0	F8. Refrigeration Options	Standard
E	F9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
0	F10. Power Options	Standard Power Block
0	F11. Safety Options	Standard
0	F12. Controls	Standard
0	F13. Special Controls	Terminal Block for Thermostat Control
E	F14A. Outside Air Configuration	Modulating Electric OA Preheat
G	F14B. Preheat Sizing	7.5 kW
0	F15. Glycol Percent	Water or No WSHp
0	F16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
0	F17. Exterior Cabinet Options	Standard
0	F18. Electrical Rating	Standard - 5 KAIC
0	F19. Code Options	Standard - ETL U.S.A. Listing
0	F20. Crating	Standard
0	F21. Water-Cooled Cond.	Standard - None
0	F22. Control Vendors	Standard
B	F23. Type	Standard - Includes AAON Gray Paint



Terminals

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RQ-005-8-V-G602-000:A000-E00-QJD-AG0-00E0000-EG-00000000B

Tag: AC-11, 12 R410A

Job Name: PHS 500 Building

For:

Job Number: Job #35

Date:

April 12, 2024

Terminals Available/Required for Controlling the Unit

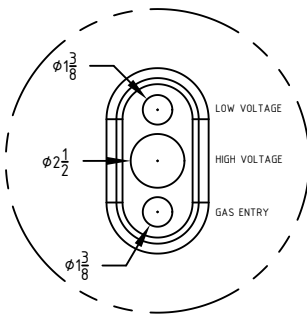
Terminals	Decription
[R]	24VAC Control Voltage
[C]	Common
[G]	Supply Fan Enable
[Y1]	Cooling Stage 1 Enable/ Heat Pump - Heating Stage 1 Enable
[Y2]	Cooling Stage 2 Enable/ Heat Pump - Heating Stage 2 Enable
[O]	Reversing Valve (Cooling) Enable
[EC1-] & [EC2+]	Economizer Signal (2-10VDC)
[S1-] & [S2+]	Supply Fan 1 - w/1 VFD: Signal (0-10VDC)
	VFD frequency reference signal control point must handle a rated 20k ohm input impedance.
[PHE]	Electric Preheat Enable
[PH+] & [PH-]	Preheat Set Point Reset

RQ CABINET WITH ECONOMIZER AND ELECTRIC PREHEAT VERTICAL ~ 1-6 TON

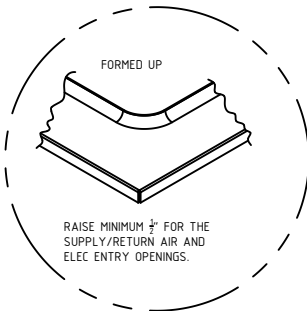
CLEARANCES

LOCATION	• UNIT SIZE • 1 - 6 TON
OUTSIDE AIR (BACK)	36*
HXC (FRONT)	36
LEFT SIDE	24
RIGHT SIDE	48
TOP	UNOBSTRUCTED

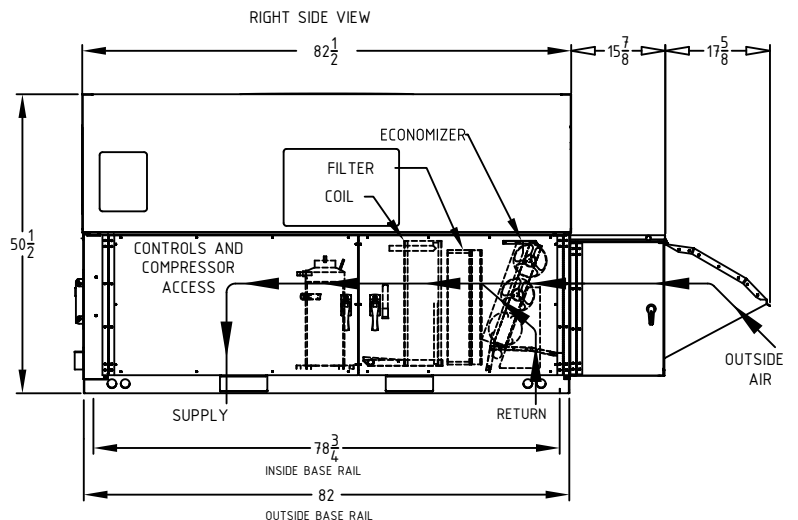
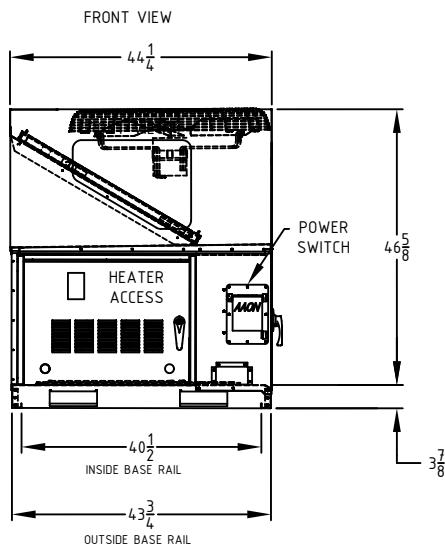
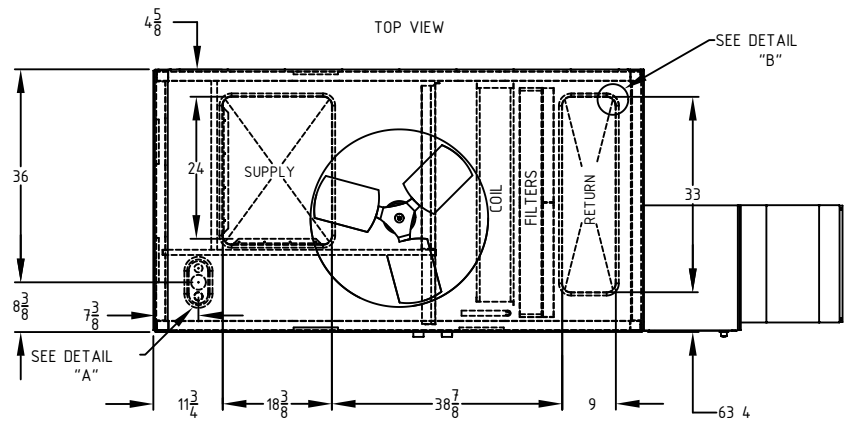
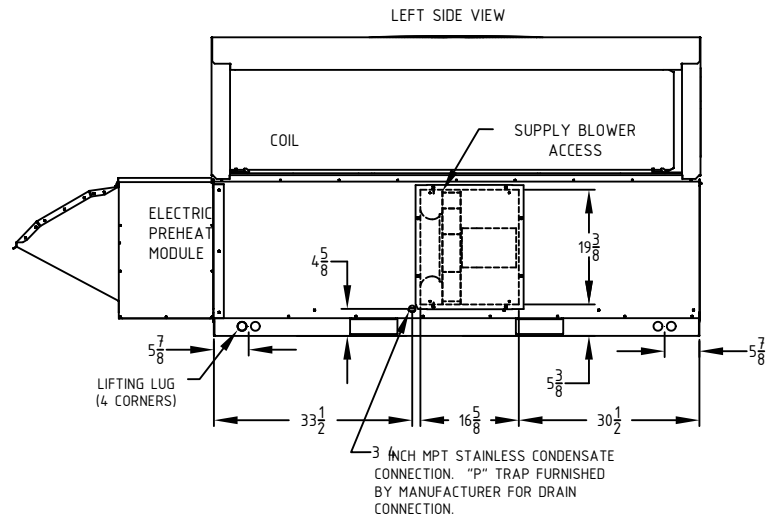
*CLEARANCE IS MEASURED
FROM THE END OF THE
OUTSIDE AIR RAIN HOOD
ON THE ELECTRIC PREHEAT



DETAIL A



DETAIL B



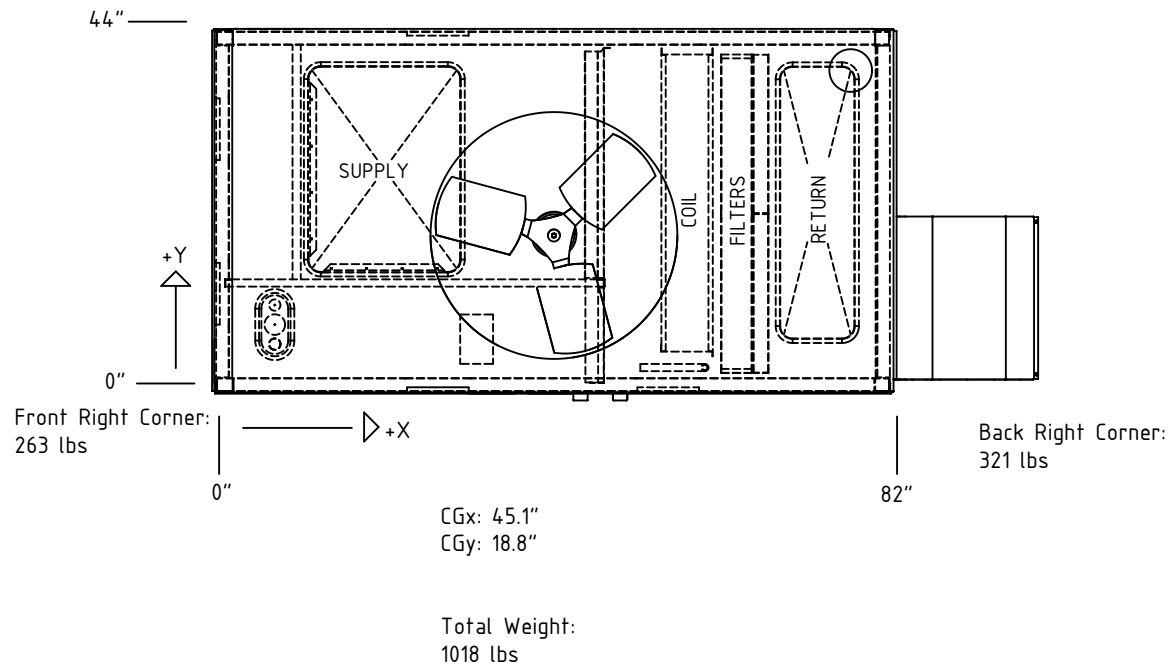
RQ CABINET VERTICAL AIR COOLED CONDENSING UNIT



RQ-005-8-V-G602-000:A000-E00-QJD-AG0-00E0000-EG-00000000B

Front Left Corner:
196 lbs

Back Left Corner:
239 lbs



Disclaimer:
This weight estimate does not account for any SPAs.

OPTIONS:
INSULATED PANELS (WHERE REQUIRED)
1" 1-1/2LB DUCT INSULATION (R VALUE 3.85)
GASKET PROVIDED WITH CURB

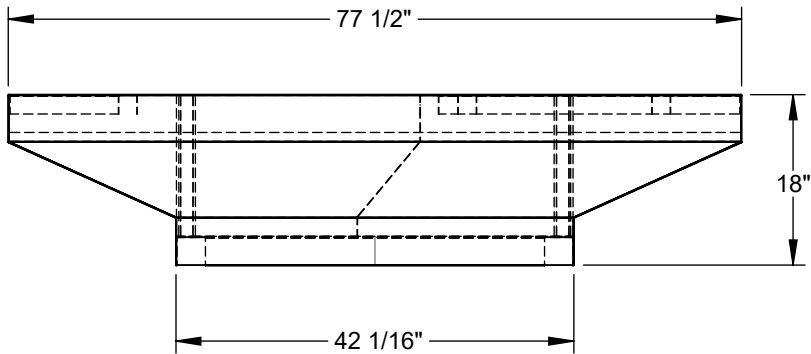
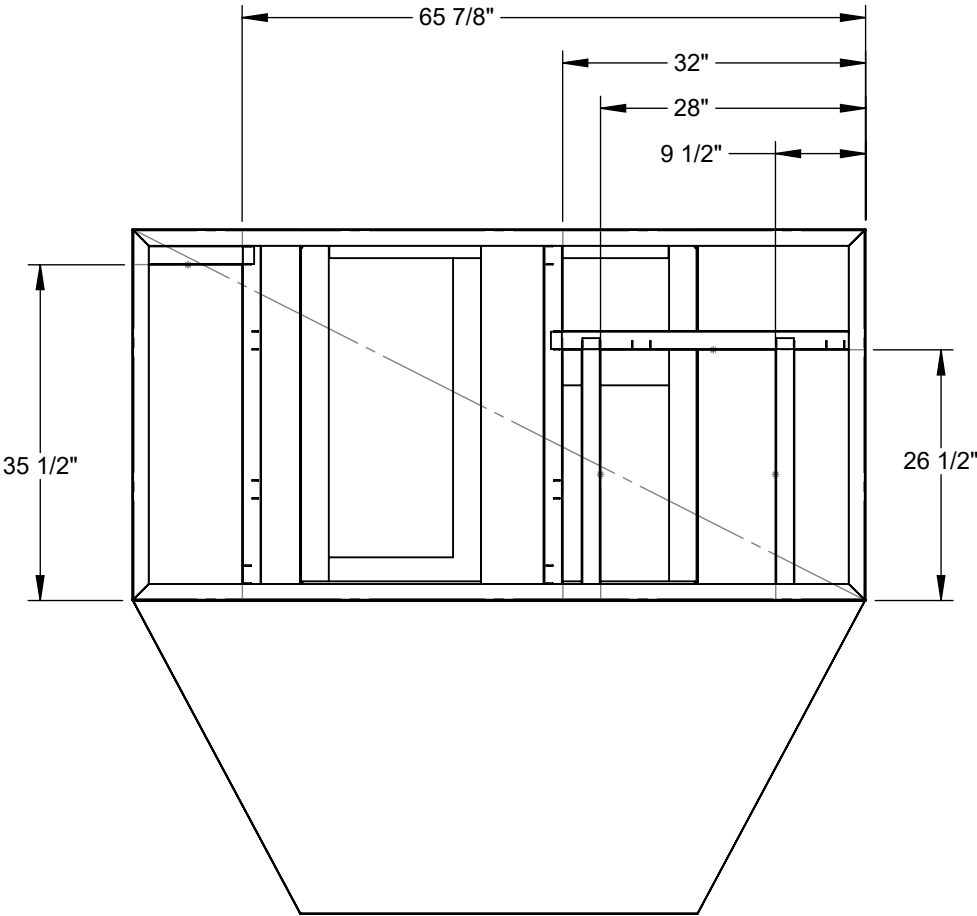
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Attn: _____

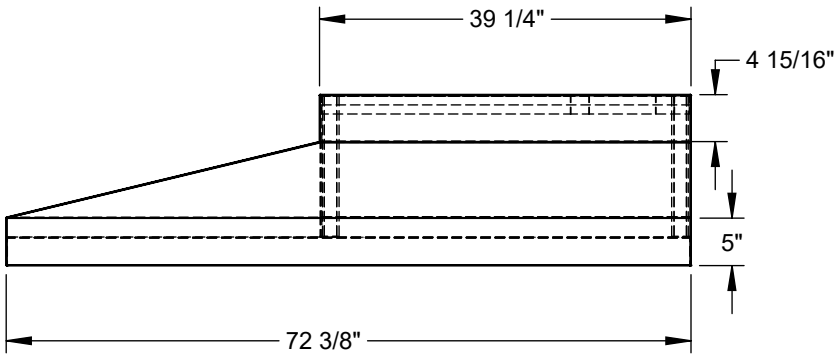
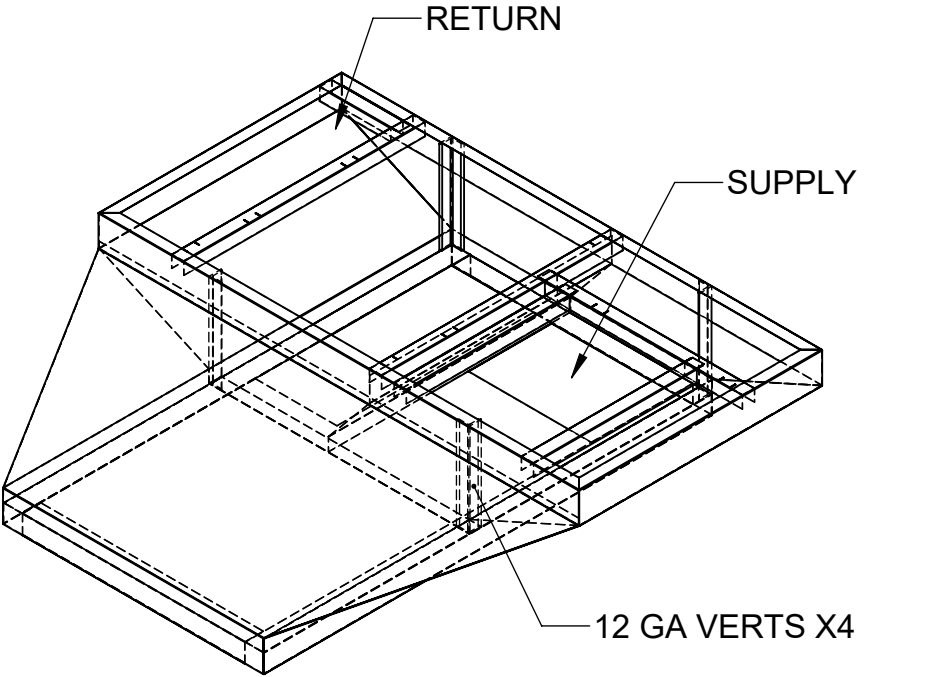
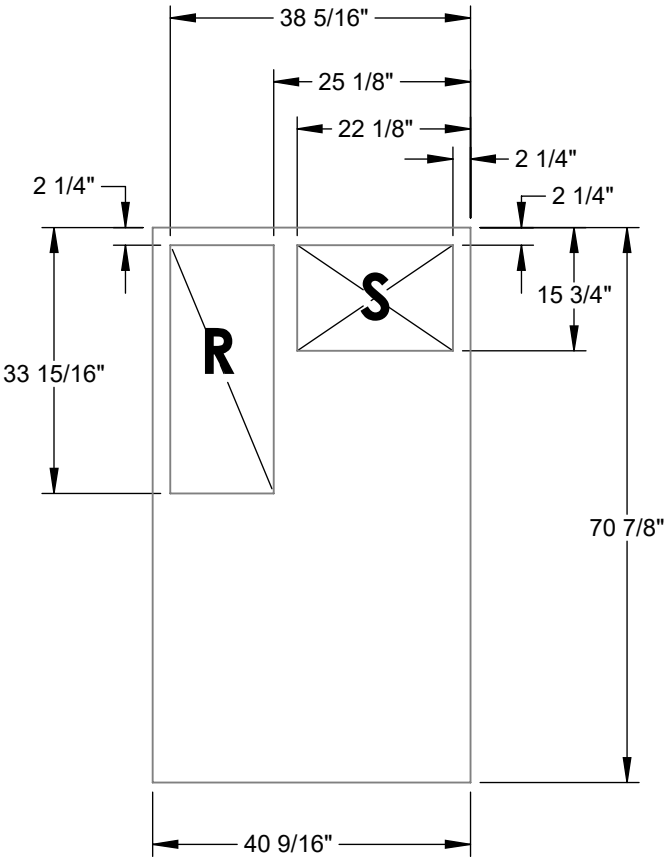
Approval: _____

RTU TAG(S): _____

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	INITIAL DRAWING	09/28/2018	OO
2	UPDATED TO HEM	07/08/2022	JB



EXISTING CURB



Material: 18 ga. G-90 Galv Steel

Existing Curb Oversized by: 1.5 Inches

Operational Height(Raise unit by):15 Inches

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		DRAWN: flopez		8/26/2022		1-4000-9237			
		CHECKED:							
				DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]					
*VERIFY EXISTING CURB OD *VERIFY SUPPLY AND RETURN OPENINGS *NOTE ANY CHANGES *CALL WITH ANY QUESTIONS *FAX BACK IF DRAWING IS OK AS IS		3RD ANGLE PROJECTION 	 Contact us @ www.cdicurbs.com or 1-888-234-7001	APPROXIMATE CURB WEIGHT (LBS.)		ECO #:		REV:	
				198.09				1	
								SCALE: 1:16	



Unit Rating

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

RN-007-8-0-G602-000:A000-E00-DTD-AG0-00E0000-EG-00000000B

Tag: AC-9 R410A

Job Information

Job Name: PHS 500 Building
Job Number: Job #35
Site Altitude: 0 ft
Refrigerant: R-410A

Static Pressure

External: 1.50 in. w.g.
Cooling Coil: 0.15 in. w.g.
Filters Clean: 0.17 in. w.g.
Dirt Allowance: 0.35 in. w.g.

Cooling Section

	Gross	Net
Total Capacity:	73.2 MBH	68.8 MBH
Sensible Capacity:	64.1 MBH	59.7 MBH
Latent Capacity:	9.1 MBH	
Mixed Air Temp (DB/WB):	78.9 °F	62.6 °F
Entering Air Temp (DB/WB):	78.9 °F	62.6 °F
Lv Air Temp (Coil) (DB/WB):	51.7 °F	50.5 °F
Lv Air Temp (Unit) (DB/WB):	53.5 °F	51.3 °F

Supply Air Fan: 1 x RN170 @ 1.49 BHP Ea.
SA Fan RPM / Width: 1714 RPM / 3.810 in
SA Fan FEI: 1.24

Evaporator Coil: 8.5 ft² / 3 Rows / 14 FPI
Evaporator Face Velocity: 258.6 fpm

Unit Information

Approx. Op./Ship Weights: 1161 lbs / 1161 lbs (±5%)
Ambient Temperature (DB/WB): 88.0 °F / 64.0 °F
Coil Filter FV / Qty: 247.5 fpm / 4
Supply Airflow/ESP: 2200 SCFM / 1.50 in. w.g.
Outside Airflow: 660 SCFM
Return Temperature (DB/WB): 75.0 °F / 62.0 °F

Economizer: 0.14 in. w.g.
Preheat: 0.02 in. w.g.
Cabinet: 0.09 in. w.g.
Total: 2.39 in. w.g.

Heating Section

Preheat Type:
Total Capacity: 7.5 kW
Capacity Used: 4.4 kW
OA Temp (DB/WB): 33.0 °F / 31.9 °F
Preheat Leaving Temp: 54.0 °F / 43.4 °F
Input: 7.5 kW
Electric Preheat FLA: 20.8
Max Discharge Temp (DB): 80.0 °F
Max Ambient Temp (DB): 60.0 °F

Integrated Heat Capacity: 48.9 MBH
Primary Heat Type: Heat Pump
Total Capacity: 56.1 MBH
OA Temp (DB/WB): 33.0 °F / 32.0 °F
RA Temp (DB/WB): 75.0 °F / 62.0 °F
Entering Air Temp (DB/WB): 68.7 °F / 57.1 °F
Leaving Air Temp (DB/WB): 89.1 °F / 64.4 °F
Input (Emergency/Aux): /

Fan Temp Rise: 1.8 Δ°F
Auxiliary Heating Type: No Heat

Rating Information

Application EER @ Op. Conditions: 10.1 BTU/h-W
Application COP @ Op. Conditions: 2.56 W/W

Electrical Data

Circuit 1

Rating: 208V/3Ø/60Hz
Unit FLA: 31
SCCR: 5 KAIC

Minimum Circuit Amp: 36
Maximum Overcurrent: 50

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		208	3			20.3
Condenser Fan:	1	0.33	208	1	1100	2.8	
Supply Fan:	1	2.00	208	3	1760	7.5	

Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW (dB):	82	81	84	79	72	70	67	61
Return LW (dB):	77	76	73	65	62	57	46	36

*Sound power levels are given for informational purposes only. The sound levels are not guaranteed.



Unit Rating

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1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SIZ SIZ

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Job Information

Job Name: PHS 500 Building
OA CFM: 660

Job Number: Job #35
SA CFM:

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heat Wheel Heating Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	MBH	W/W
62.0	56.2	71.1	60.3	106.7	71.8	85.2	85.2		3.68
57.0	51.6	69.6	59.1	102.4	70.0	78.6	78.6		3.57
52.0	47.1	68.1	58.0	98.3	68.3	72.6	72.6		3.45
47.0	42.6	66.6	56.9	94.5	66.7	67.1	67.1		3.34
42.0	38.0	65.1	55.9	90.8	65.1	62.1	62.1		3.22
37.0	33.5	63.6	54.9	84.0	62.6	57.6	49.5		2.70
32.0	28.8	62.1	54.0	81.3	61.3	53.5	46.8		2.64
27.0	24.3	60.6	53.1	78.7	60.1	49.7	44.1		2.58
22.0	19.7	59.1	52.2	76.2	59.0	46.6	41.8		2.53
17.0	15.0	57.6	51.3	73.6	57.8	42.9	39.1		2.45
12.0	10.4	56.1	50.5	71.0	56.7	39.9	36.6		2.37
7.0	5.7	54.6	49.7	68.4	55.6	37.0	34.0		2.28
2.0	0.1	53.1	48.8	*	*	*	*		*

*Invalid operation point - Compressor operating outside of operating envelope



17" STAR Plenum

2425 South Yukon Ave • Tulsa, OK 74107 • Ph: (918) 583-2266
Ecat Version: 347.1

JOB INFORMATION:

Job Name: PHS 500 Building
Job Tag: AC-9 R410A
Date: 4/12/2024 12:00:00 AM

WHEEL SPECIFICATION:

Max RPM: 2400
Diameter x Qty: 17 in. x 1
CFM: 2200
Inertia: 3WR²

OPERATING CONDITIONS

Air Flow: 2200
Fan Energy Index (FEI): 1.24
Static Pressure: 2.39 in. Wg
Relief Dampers DP: 0 in. Wg
TSP: 2.39 in. Wg
Site Altitude: 0 ft
TSP @ Sea Level: 2.39 in. Wg

MOTOR SELECTION

Rated HP / Bypass: 2 x 1 / No
Frame Size: 145T
Nominal RPM: 1760
VAC/PH/HZ: 208V/3Ø/60Hz
Enclosure Type: ODP
Max Inertial Load: 0 WR²

FAN PERFORMANCE:

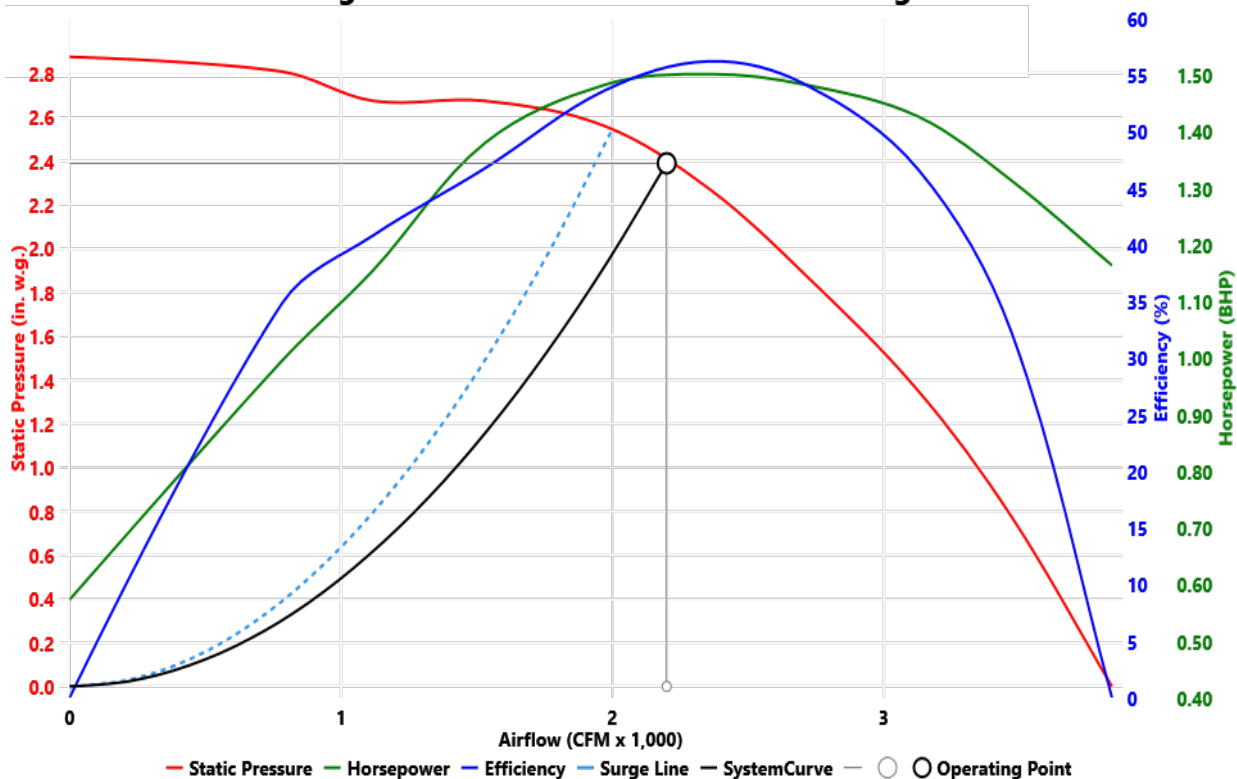
RPM: 1714
BHP: 1.49
Efficiency: 55.63%
Max Duct SP with Blocked Airway: 0 in. Wg @ 1714 RPM
Max Duct SP with Blocked Airway:

FAN SOUND POWER (Inlet/Outlet)

Octave Band:	(Re 10 ⁻¹² watts)						
1	2	3	4	5	6	7	8
82	81	84	81	75	73	71	65
82	81	84	81	75	73	71	65

SOUND POWER A-Weighted: 65 dB

Supply Fan Model: RN170 @ 1714 RPM and 100% Width Design Conditions: 2200 CFM @ 2.39 in. w.g. SP





Unit Submittal

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Ecat Version: 347.1

1C 1D 2 3 4 5A 5B 5C 6A 6B 6C 7 8 9 10 11 12 13 14A 14B 15 16 17 18 19 20 21 22 23 SZ1 SZ2

RN-007-8-0-G602-000:A000-E00-DTD-AG0-00E0000-EG-00000000B

Tag: AC-9 R410A

Job Name: PHS 500 Building

Job Number: Job #35

Unit Worksheet For:

Unit Worksheet Date: 4/12/2024

	Base Option	Description
RN	Generation	Rooftop - Ninth Generation
007	Unit Size	Seven
8	Voltage	208V/3φ/60Hz
0	Interior Protection	Standard
G	Refrigerant Style	R-410A Two-Step Compressor - High Efficiency
6	Unit Configuration	Alpha Class - Air-Source Heat Pump
0	Coil Coating	Standard
2	Cooling/Heat Pump Staging	2 Stage Heat Pump + No Auxiliary Heat
0	Heating Type	No Heating
0	Heating Designation	No Heating
0	Heating Staging	No Heating

	Feature Option	Description
A	F1A. RA/OA Section	Economizer
0	F1B. RA/EA Blower Configuration	Standard - None
0	F1C. RA/EA Blower	Standard - None
0	F1D. RA/EA Blower Motor	Standard - None
E	F2. OA Control	DDC Actuator
0	F3. Heat Options	Standard
0	F4. Maintenance Options	Standard
D	F5A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
T	F5B. SA Blower	17" Direct Drive Backward Curved Plenum
D	F5C. SA Motor	2.0 hp - 1760 rpm
A	F6A. Pre Filter Type	2" Pleated Pre Filter - 30% Eff
G	F6B. Unit Filter Type	4" Pleated - 85% Eff - MERV 13
0	F6C. Filter Options	Standard
0	F7. Refrigeration Control	Standard - Fixed 55°F Comp. Cooling Lock Out + Adjustable Comp. Heating Lock Out
0	F8. Refrigeration Options	Standard
E	F9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
0	F10. Power Options	Standard Power Block
0	F11. Safety Options	Standard
0	F12. Controls	Standard
0	F13. Special Controls	Terminal Block for Thermostat Control
E	F14A. Outside Air Configuration	Modulating Electric OA Preheat
G	F14B. Preheat Sizing	7.5 kW
0	F15. Glycol Percent	Water or No WSHp
0	F16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
0	F17. Exterior Cabinet Options	Standard
0	F18. Electrical Rating	Standard - 5 KAIC
0	F19. Code Options	Standard - ETL U.S.A. Listing
0	F20. Crating	Standard
0	F21. Water-Cooled Cond.	Standard - None
0	F22. Control Vendors	Standard
B	F23. Type	Standard - Includes AAON Gray Paint



Terminals

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Ecat Version: 347.1

1 C 1 D 2 3 4 5 A 5 B 5 C 6 A 6 B 6 C 7 8 9 10 11 12 13 14 A 14 B 15 16 17 18 19 20 21 22 23 SIZ SIZ

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Tag: AC-9 R410A

Job Name: PHS 500 Building

For:

Job Number: Job #35

Date:

April 12, 2024

Terminals Available/Required for Controlling the Unit

Terminals	Decription
[R]	24VAC Control Voltage
[C]	Common
[G]	Supply Fan Enable
[Y1]	Cooling Stage 1 Enable/ Heat Pump - Heating Stage 1 Enable
[O]	Reversing Valve (Cooling) Enable
[EC1-] & [EC2+]	Economizer Signal (2-10VDC)
[S1-] & [S2+]	Supply Fan 1 - w/ 1 VFD: Signal (0-10VDC)
	VFD frequency reference signal control point must handle a rated 20k ohm input impedance.
[PHE]	Electric Preheat Enable
[PH+] & [PH-]	Preheat Set Point Reset

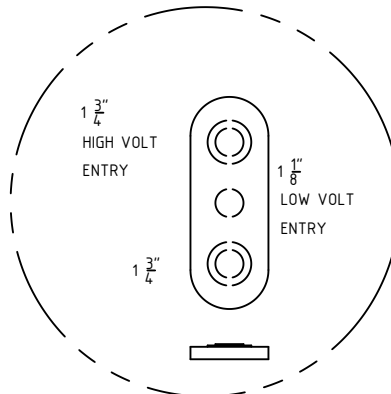
RN SERIES A - CABINET ECONOMIZER WITH ELECTRIC PREHEAT ~ 6-10 TON

CLEARANCES

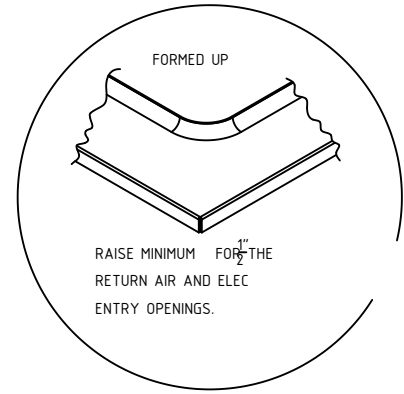
LOCATION	• UNIT SIZE • 6 - 10 TON
OUTSIDE AIR (BACK)	36*
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	48
TOP	UNOBSTRUCTED

*CLEARANCE IS MEASURED FROM THE END OF THE OUTSIDE AIR RAIN HOOD ON THE ELEC. PREHEAT

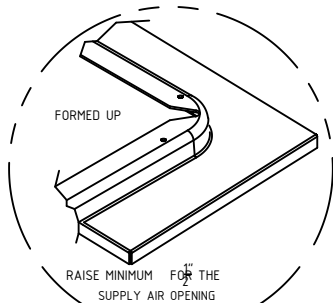
NOTE: THE RNA UNIT IS NOT COMPATIBLE WITH PREVIOUS GENERATIONS OF AAON CURBS. AN ADAPTER CURB IS AVAILABLE IN ECAT.



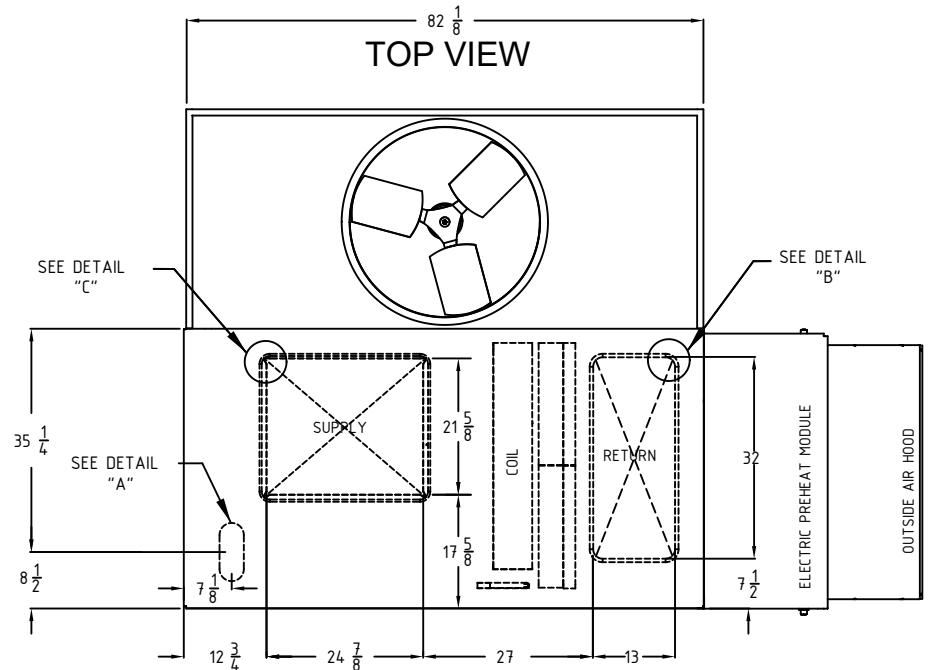
DETAIL A



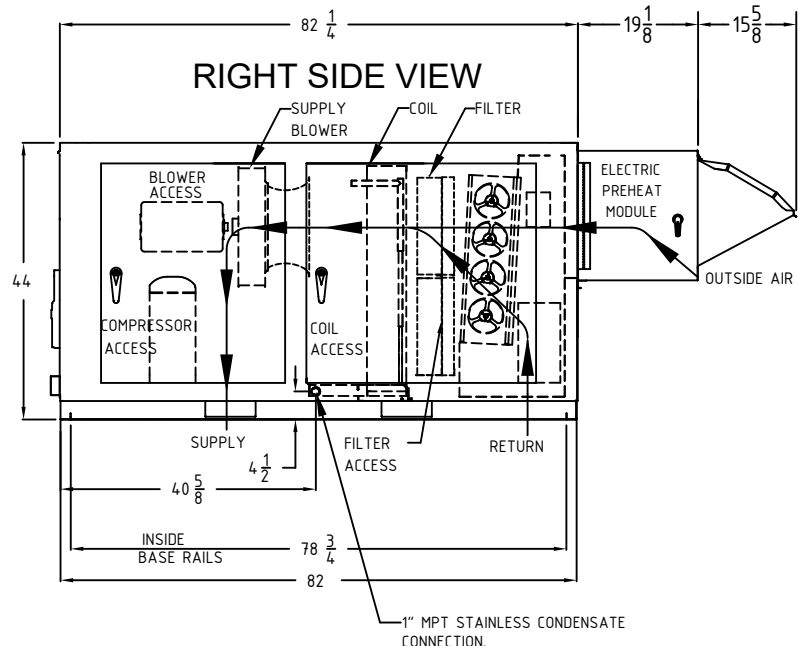
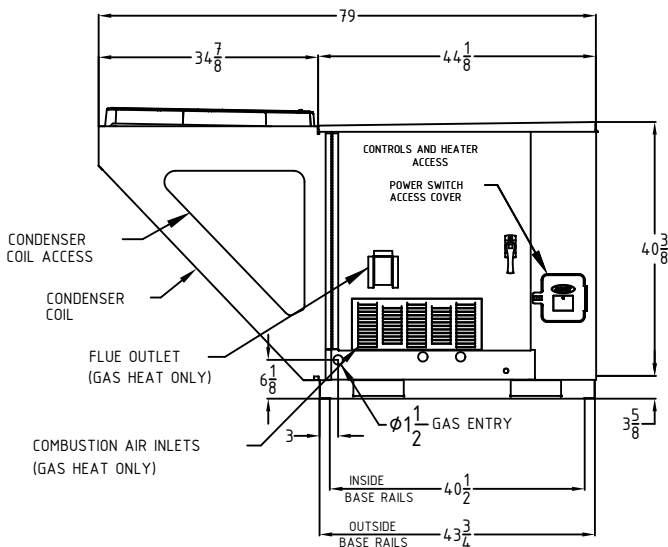
DETAIL B



DETAIL C



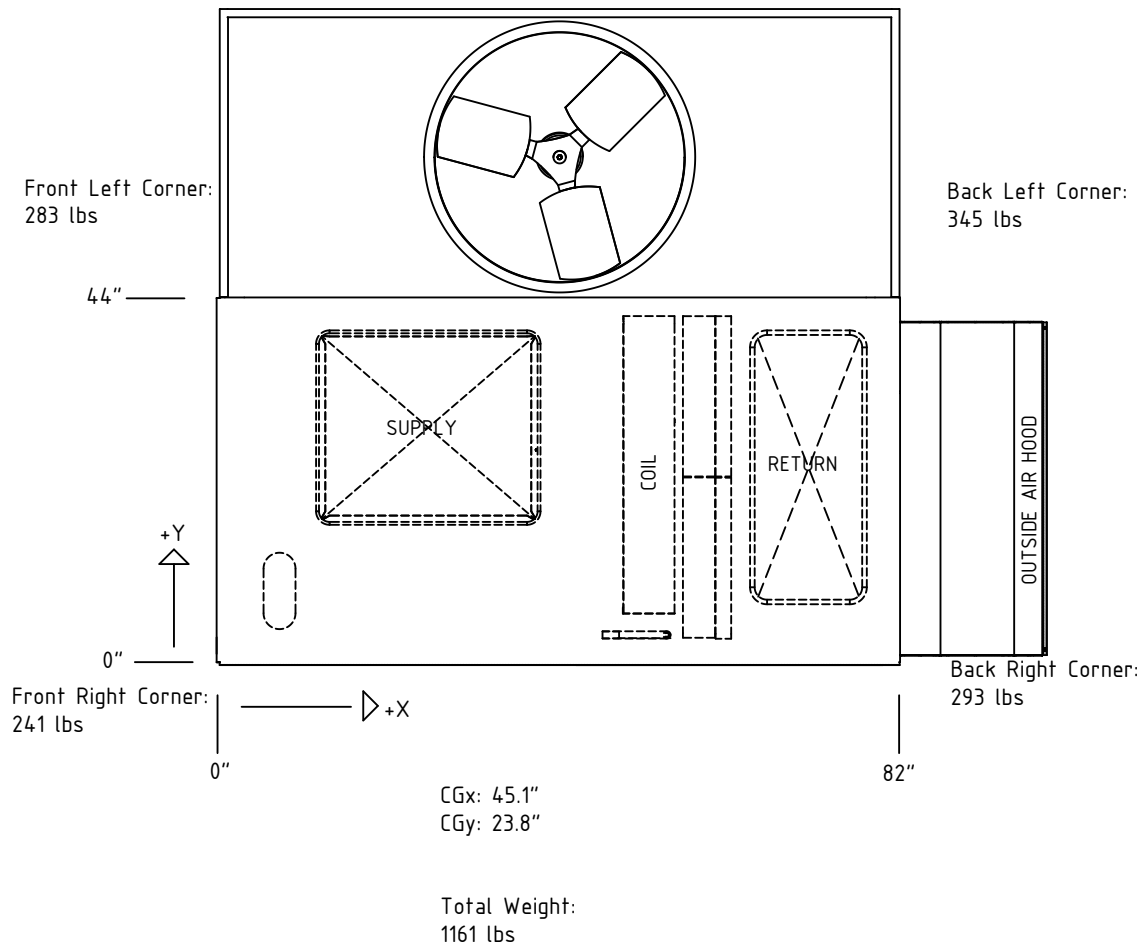
FRONT VIEW



RNA CABINET AIR COOLED CONDENSING UNIT

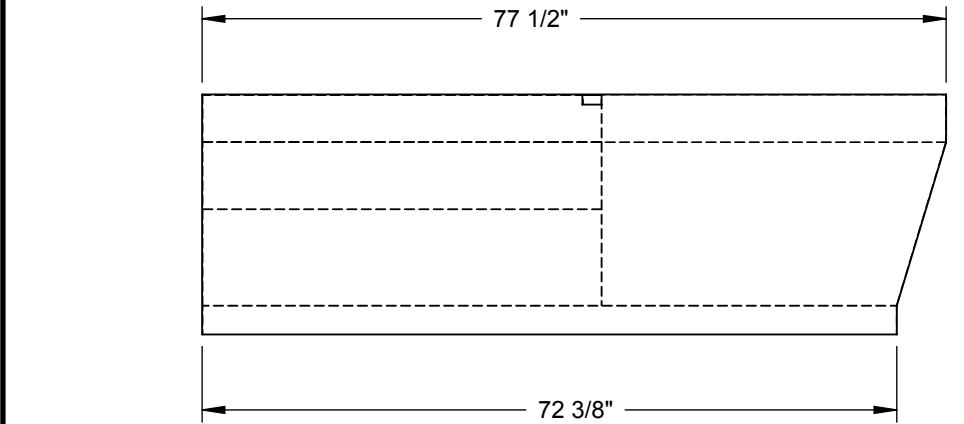
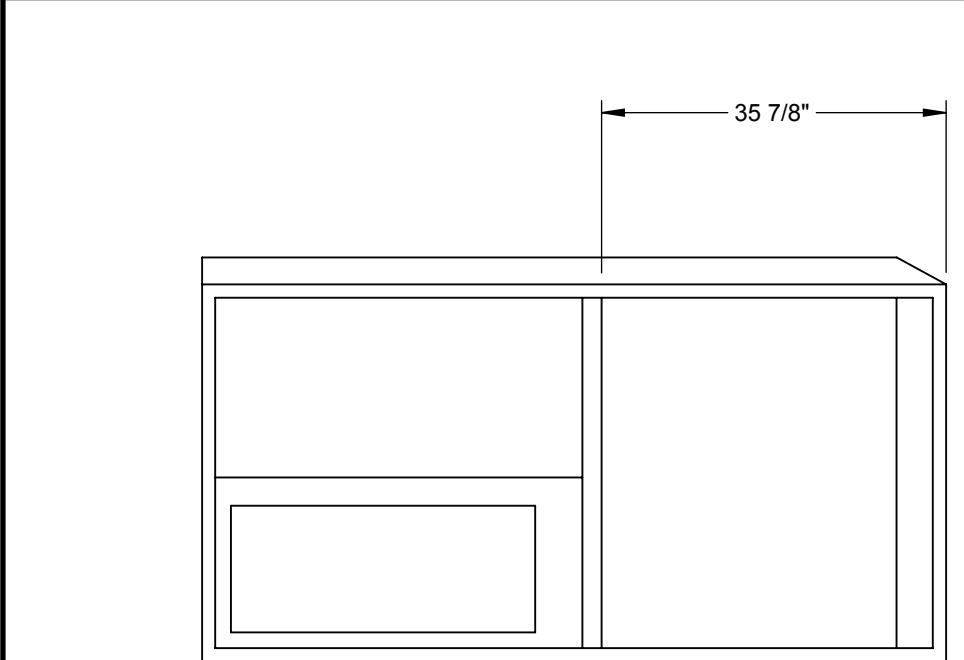


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Disclaimer:
This weight estimate does not account for any SPAs.

NOTES:
MATERIAL: 18ga. GAL STEEL
1 1/2" ADDED TO EXISTING CURB O.D.
GASKET PROVIDED WITH CURB
1" 1-1/2LB DUCT INSULATION (R VALUE 3.85)

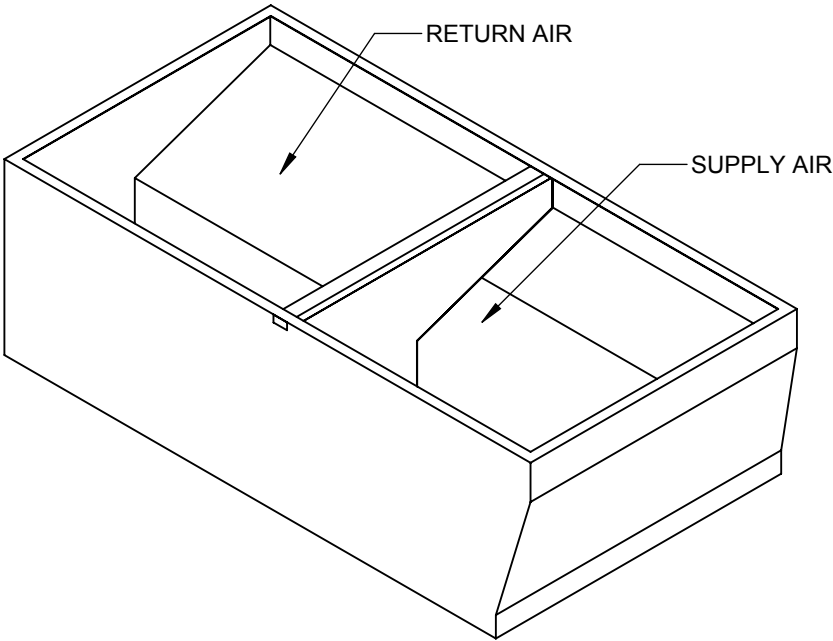


DIMENSIONED AND TOLERENCED PER ANSI Y14.5M-1982

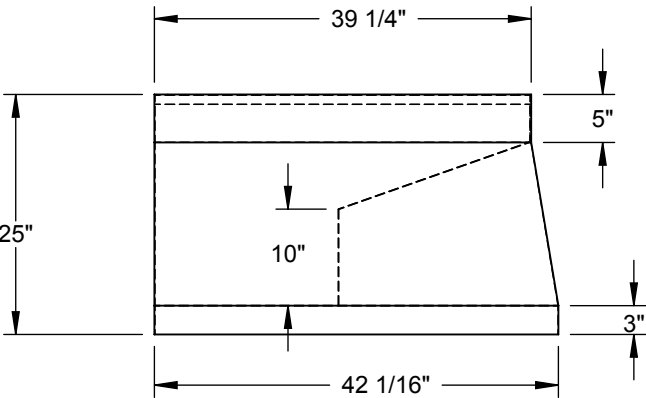
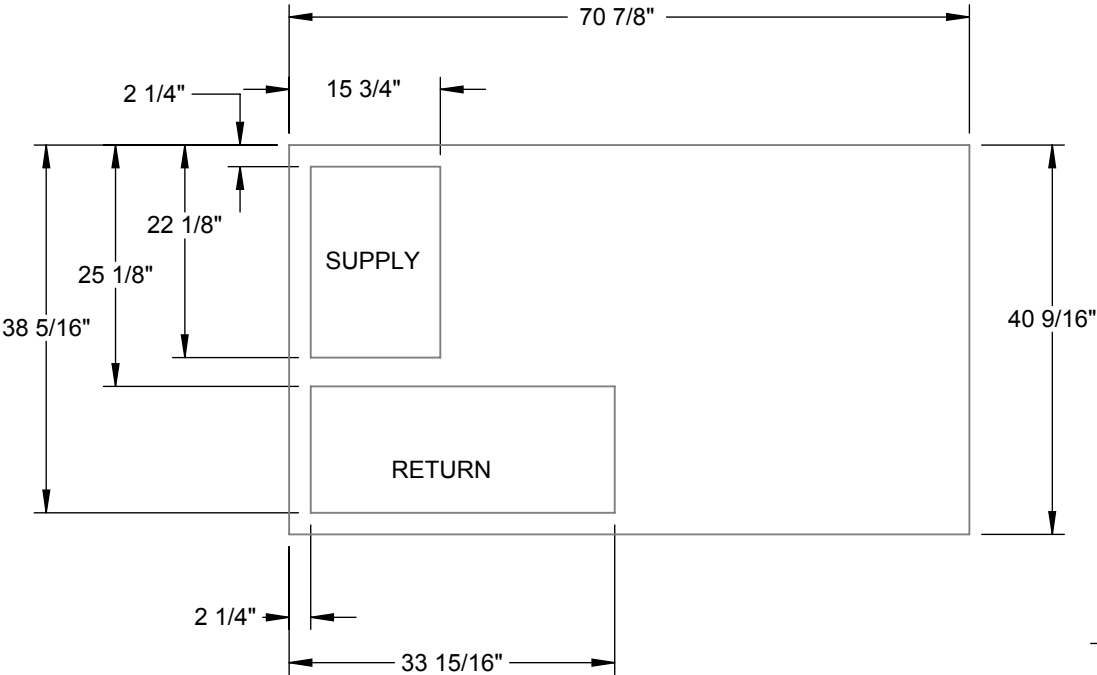
Attn: _____ Tag: _____

Approval: _____

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	INITIAL DWG	01/19/2011	GKF



EXISTING CURB LAYOUT



CURB SHOWN IS CDI STANDARD CONFIGURATION
CDI RESERVES THE RIGHT TO CHANGE LAYOUT
WITHOUT NOTIFICATION. IF CURB IS NEEDED IN A
DIFFERENT CONFIGURATION CDI MUST BE NOTIFIED
PRIOR TO PLACING AN ORDER.

*VERIFY EXISTING CURB OD
*VERIFY SUPPLY AND RETURN OPENINGS
*NOTE ANY CHANGES
*CALL WITH ANY QUESTIONS
*FAX BACK IF DRAWING IS OK AS IS

CURB WEIGHT (LBS.)	APPROVALS		DATE	TITLE: 1-4000-9214 QUOTE #:		
151.81	DRAWN: gfletcher	CHECKED:	7/6/2015			
UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE:			Monday, July 06, 2015 3:47:33 PM		FILE NAME:	
.X ± 0.05 .XX ± 0.03 .XXX ± 0.01			CDI 17560 TYLER ST NW ELK RIVER, MN 55330 (763)391-7790 (763)391-7851		DRAWING NO.: 1-4000-9214	
DIMENSIONS ARE AS FOLLOWS: 1.00 in [25.40 mm]			3RD ANGLE PROJECTION		ECO #:	
					SCALE: 1:20	
					SHEET: 1 OF 3	
					REV: 1	