



PRMH20250495

Unit Rating

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.333 (SN: 7522416-6YGF7CNP)

1A 1B 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

RN-010-3-0-G602-000:A000-E0B-DCE-C0A-D0EA0B5-00-00000000X

Tag: AC- TIRE INSTALL HEAT PUMP

(Values do not account for changes described in SPA)

Job Information

Job Name: Costco - WA-OR Tire Centers
Job Number: SUBMITTAL 06.06.2023
Site Altitude: 500 ft
Refrigerant: R-410A

Unit Information

**WEIGHT AND PERFORMANCE DO NOT INCLUDE SPA

Approx. Op./Ship Weights: 1095 / 1095 lbs. (±5%)
Supply CFM/ESP: 4000 / 0.5 in. wg.
Pre-Filter FV / Qty: 450.00 fpm / 4
Final Filter FV / Qty: 450.00 fpm / 4
Outside CFM: 500
Ambient Temperature: 108.9 °F DB / 75 °F WB
Return Temperature: 84.7 °F DB / 67.6 °F WB

Static Pressure

External: 0.50 in. wg.
Evaporator: 0.42 in. wg.
Filters Clean: 0.28 in. wg.
Dirt Allowance: 0.35 in. wg.

Economizer: 0.12 in. wg.
Heating: 0.00 in. wg.
Cabinet: 0.22 in. wg.
Total: 1.89 in. wg.

Cooling Section

	Gross	Net
Total Capacity:	111.59	105.20 MBH
Sensible Capacity:	110.41	104.03 MBH
Latent Capacity:	1.17 MBH	
Mixed Air Temp:	87.72 °F DB	68.59 °F WB
Entering Air Temp:	87.72 °F DB	68.59 °F WB
Lv Air Temp (Coil):	60.84 °F DB	59.60 °F WB
Lv Air Temp (Unit)	62.33 °F DB	60.13 °F WB
Supply Air Fan:	1 x RNA185 @ 2.24 BHP	
SA Fan RPM / Width:	1900 / 4.140"	
Evaporator Coil:	8.5 ft ² / 4 Rows / 14 FPI	
Evaporator Face Velocity:	470.2 fpm	

Heating Section(**)

Primary Heat Type: Heat Pump
Total Capacity: 81.4 MBH
Integrated Heat Capacity: 72.2 MBH
OA Temp: 27.0 °F DB / 27.0 °F WB
RA Temp: 75.0 °F DB / 62.0 °F WB
Entering Air Temp: 69.0 °F DB / 58.7 °F WB
Leaving Air Temp: 86.0 °F DB / 64.6 °F WB
Auxiliary Heat Type: No Heat
Heating CFM: 4000
Fan Temp Rise: 1.5 °F

Rating Information

Application EER @ Op. Conditions: 8.4

Application COP_H @ Op. Conditions: 2.54

Electrical Data

Rating: 460/3/60
Unit FLA: 23
SCCR: 5 KAIC

Minimum Circuit Amp: 27
Maximum Overcurrent: 40

	Qty	HP	VAC	Phase	RPM	FLA	RLA
Compressor 1:	1		460	3			14.8
Condenser Fans:	1	1.00	460	1	1110	3.6	
Supply Fan:	1	3.00	460	3	1760	4.8	

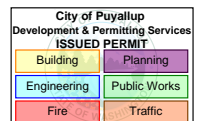
Cabinet Sound Power Levels*

Octave Bands:	63	125	250	500	1000	2000	4000	8000
Discharge LW(dB):	88	86	90	87	78	76	73	67
Return LW(dB):	82	80	79	73	68	64	58	48

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

(**)Fan motor temperature rise is not included in the heat capacity and temps.

Full-Sized legible color report must be on site and made available by the Permittee for all inspections.





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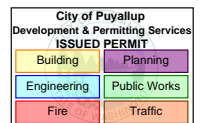
Job Information

Job Name: Costco - WA-OR Tire Centers Job Number: SUBMITTAL 06.06.2023
OA CFM: 500 SA CFM: 4000

Performance Data Table

Outside Air		Mixed Air		Leaving Air		Heat Pump Capacity	Heat Pump Integrated Capacity	Heating COP
DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	MBH	MBH	
62.0	56.2	73.4	61.3	104.7	71.2	132.1	132.1	3.85
57.0	51.6	72.8	60.8	101.7	70.1	122.3	122.3	3.69
52.0	47.1	72.1	60.4	99.1	69.2	114.0	114.0	3.54
47.0	42.6	71.5	59.9	96.4	68.2	105.6	105.6	3.37
42.0	38.0	70.9	59.5	94.0	67.3	97.7	97.7	3.21
37.0	33.5	70.3	59.2	88.7	65.5	90.9	78.1	2.65
32.0	28.8	69.6	58.8	87.0	64.8	84.2	73.6	2.56
27.0	24.3	69.0	58.5	85.3	64.2	78.2	69.4	2.47
22.0	19.7	68.4	58.2	83.7	63.6	72.7	65.3	2.37
17.0	15.0	67.8	57.8	82.1	63.0	67.4	61.3	2.27
12.0	10.4	67.1	57.6	80.5	62.4	62.3	57.2	2.16
7.0	5.7	66.5	57.3	79.0	61.8	57.9	53.3	2.05
2.0	0.1	65.9	56.9	77.2	61.1	52.4	48.2	1.89

*Invalid operating point - Compressor operating outside of operating envelope.





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18.5" STAR Plenum

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JOB INFORMATION:

Job Name: Costco - WA-OR Tire
Job Tag: Centers
Rep Firm: AC- TIRE INSTALL HEAT
Date: PUMP
503
06/06/2023

WHEEL SPECIFICATION:

Max RPM: 2,200
Diameter x Qty: 18.5 in. x 1
CFM: 3
Tip Speed: 4000
Inertia: 9,202 FPM
3 WR²

OPERATING CONDITIONS:

Air Flow: 4,000 CFM
Static Pressure: 1.89 in. Wg.
Plenum DP: 0.00 in. Wg.
Inlet Grill DP: 0.00 in. Wg.
TSP: 1.89 in. Wg.
Site Altitude: 500.00 Ft
TSP @ Sea Level: 1.93 in. Wg.

MOTOR SELECTION:

Rated HP / Bypass: 3 / No
Frame Size: 182T
Nominal RPM: 1760
VAC/PH/HZ: 460/3/60
Efficiency: Premium / 0.895
Enclosure Type: ODP
Max Inertial Load: 29 WR²

FAN PERFORMANCE:

RPM: 1900
BHP: 2.24
Efficiency: 53.1%
In/Out Velocity: 2286/2395 FPM
Plenum Out Velocity: 67 FPM

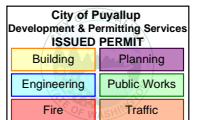
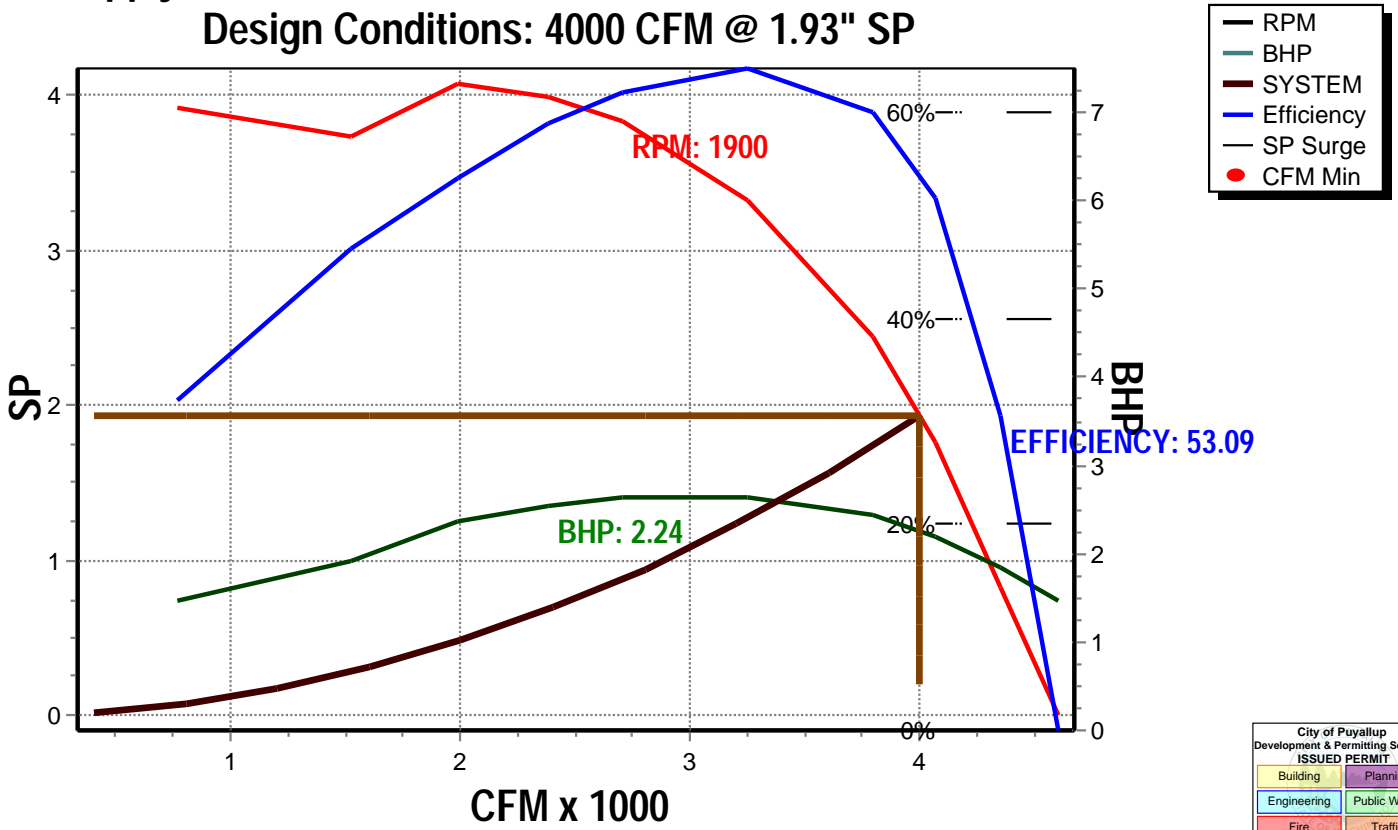
FAN SOUND POWER (Inlet/Outlet):

Octave Band:	(Re 10 ⁻¹² watts)							
	1	2	3	4	5	6	7	8
	88	86	90	88	81	79	77	71
	88	86	90	88	81	79	77	71

SOUND POWER A-Weighted: 90 / 90 dB

Max Duct SP with Blocked Airway: 4.1 in. Wg. @ 1900 rpm

Supply Fan Model: RNA185 @ 1900 RPM and 100% Width Design Conditions: 4000 CFM @ 1.93" SP





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Unit Submittal

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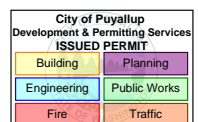
Costco - WA-OR Tire Centers
SUBMITTAL 06.06.2023

Unit Submittal For:
Unit Submittal Date:

Johnson Barrow
June 06, 2023

	Base Option	Description
R	Series	Roof Top Unit
N	Generation	Ninth Generation
010	Unit Size	Ten
3	Voltage	460V/3Ø/60Hz
0	Interior Protection	Standard
G	Refrigerant Style	R-410A Two-Step Compressor - High Efficiency
6	Unit Configuration	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	1A. RA/OA Section	Economizer
0	1B. RA/EA Blower Configuration	Standard - None
0	1C. RA/EA Blower	Standard - None
0	1D. RA/EA Blower Motor	Standard - None
E	2. OA Control	DDC Actuator
0	3. Heat Options	Standard
B	4. Maintenance Options	115V Convenience Outlet - Factory Wired
D	5A. SA Blower Configuration	1 Blower + Premium Efficiency Motor + 1 VFD
C	5B. SA Blower	18.5" Direct Drive Backward Curved Plenum
E	5C. SA Motor	3.0 hp - 1760 rpm
C	6A. Pre Filter Type	Lint Screen Pre Filter
0	6B. Unit Filter Type	2" Pleated - 30% Eff
A	6C. Filter Options	Clogged Filter Switch
D	7. Refrigeration Control	Adjustable Comp. Lock Out
0	8. Refrigeration Options	Standard
E	9. Refrigeration Accessories	ECM Condenser Fan - Head Pressure Control
A	10. Power Options	Non-fused Disconnect Power Switch - 100 Amps
0	11. Safety Options	Standard
B	12. Controls	Phase & Brown Out Protection
5	13. Special Controls	Field Installed DDC Controls by Others + Isolation Relays
0	14A. Outside Air Configuration	Standard - None
0	14B. Preheat Sizing	Standard - None
0	15. Glycol Percent	Water or No WSHP
0	16. Interior Cabinet Options	Standard - Double Wall + R-13 Foam Insulation + Stainless Steel Drain Pan
0	17. Exterior Cabinet Options	Standard
0	18. Electrical Rating	Standard - 5 KAIC
0	19. Code Options	Standard - ETL U.S.A. Listing
0	20. Crating	Standard
0	21. Water-Cooled Cond.	Standard - None
0	22. Control Vendors	Standard
X	23. Type	Special Price Authorization + AAON Gray Paint





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Control Terminals

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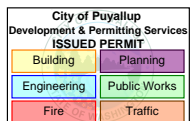
Job Name: Costco - WA-OR Tire Centers For: Johnson Barrow
Job Number: SUBMITTAL 06.06.2023 Date: June 06, 2023

Terminals Available/Required for Controlling the Unit

Terminal	Description
[R]	24VAC Control Voltage
[E]	Common
[G]	Supply Fan Enable + Isolation Relay
[Y1]	Cooling Stage 1 Enable/ Heat Pump - Heating Stage 1 Enable + Isolation Relay
[O]	Reversing Valve (Cooling) Enable + Isolation Relay
[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.
[C1] & [C2]	Clogged Filter Switch
[PBO1] & [PBO2]	Phase & Brown Out

Terminations Found On VFD(s)

Supply Fan VFD(s)	J1000:std 1-5HP VFD Upgrade J1000 to V1000 by SPA for run status
[AM] & [AC]	Current Feedback (0-10VDC = 0-100%)
[MA] & [MC]	Fault Status (NC, 250VAC/30VDC, 1A)

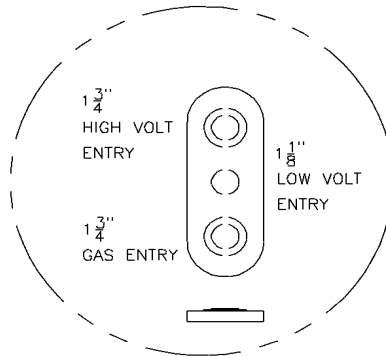


RN SERIES A - CABINET ECONOMIZER ~ 6-10 TON

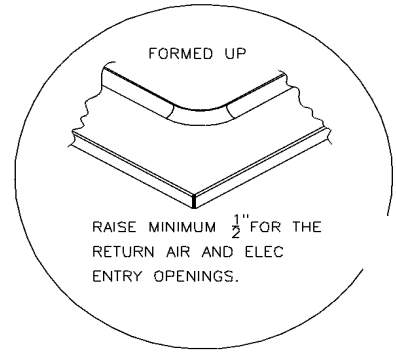
CLEARANCES	
LOCATION	• UNIT SIZE •
	6 - 10 TON
OUTSIDE AIR (BACK)	36*
CONTROLS SIDE (FRONT)	48
LEFT SIDE	6
RIGHT SIDE	48
TOP	UNOBSTRUCTED

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

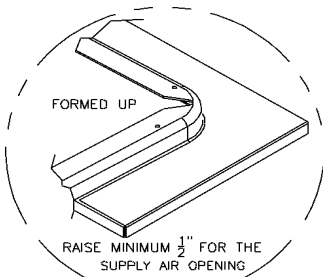
NOTE: THE RNA UNIT IS NOT COMPATIBLE WITH PREVIOUS GENERATIONS OF AAON CURBS. AN ADAPTER CURB IS AVAILABLE IN ECAT.



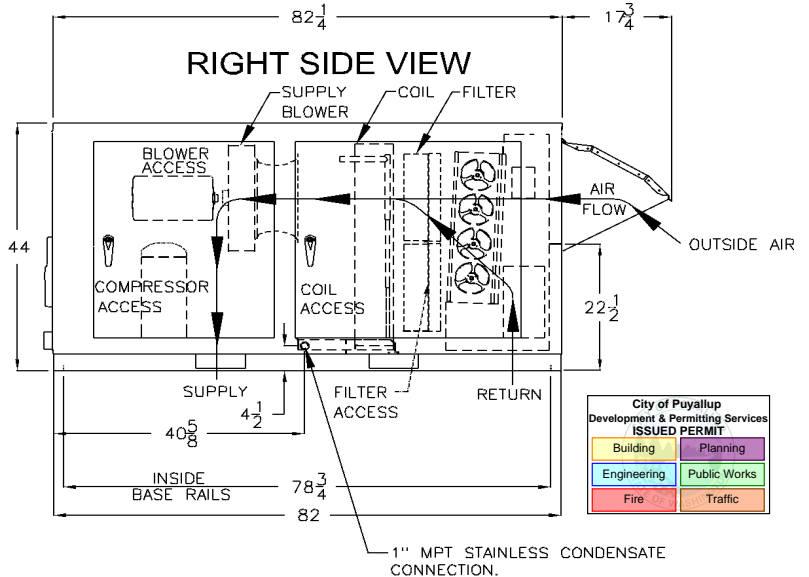
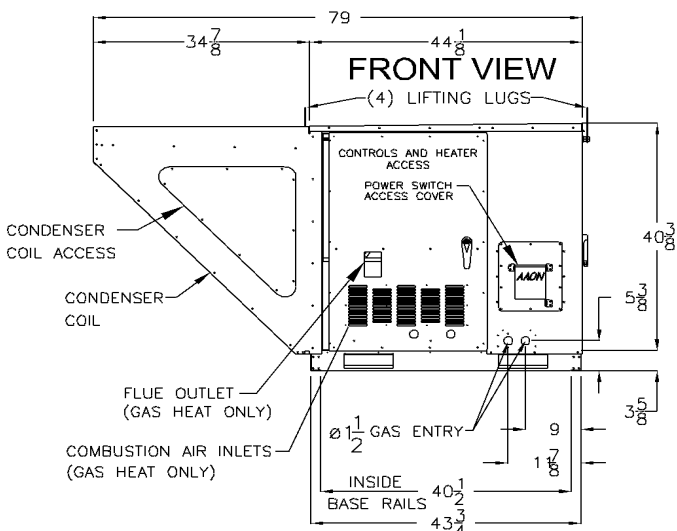
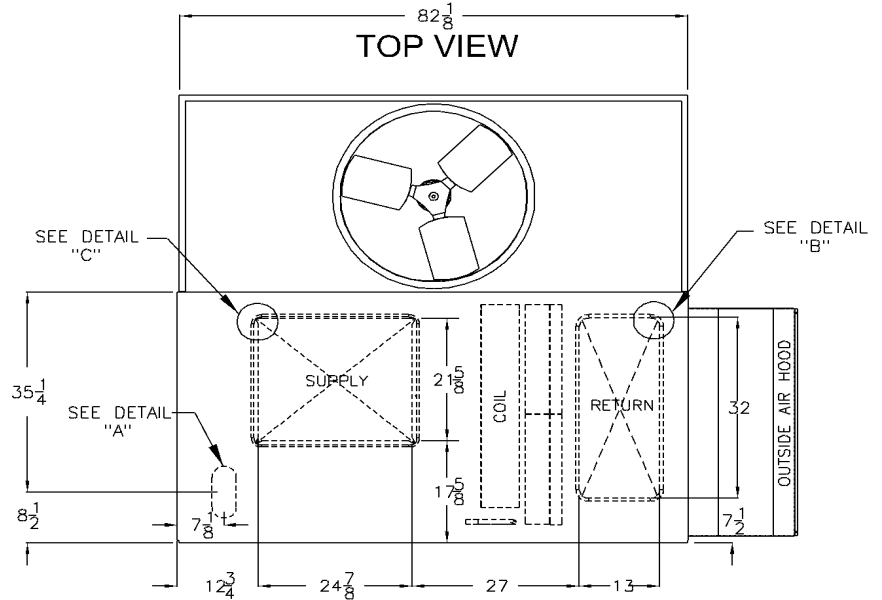
DETAIL A



DETAIL B



DETAIL C



City of Puyallup
Development & Permitting Services
ISSUED PERMIT

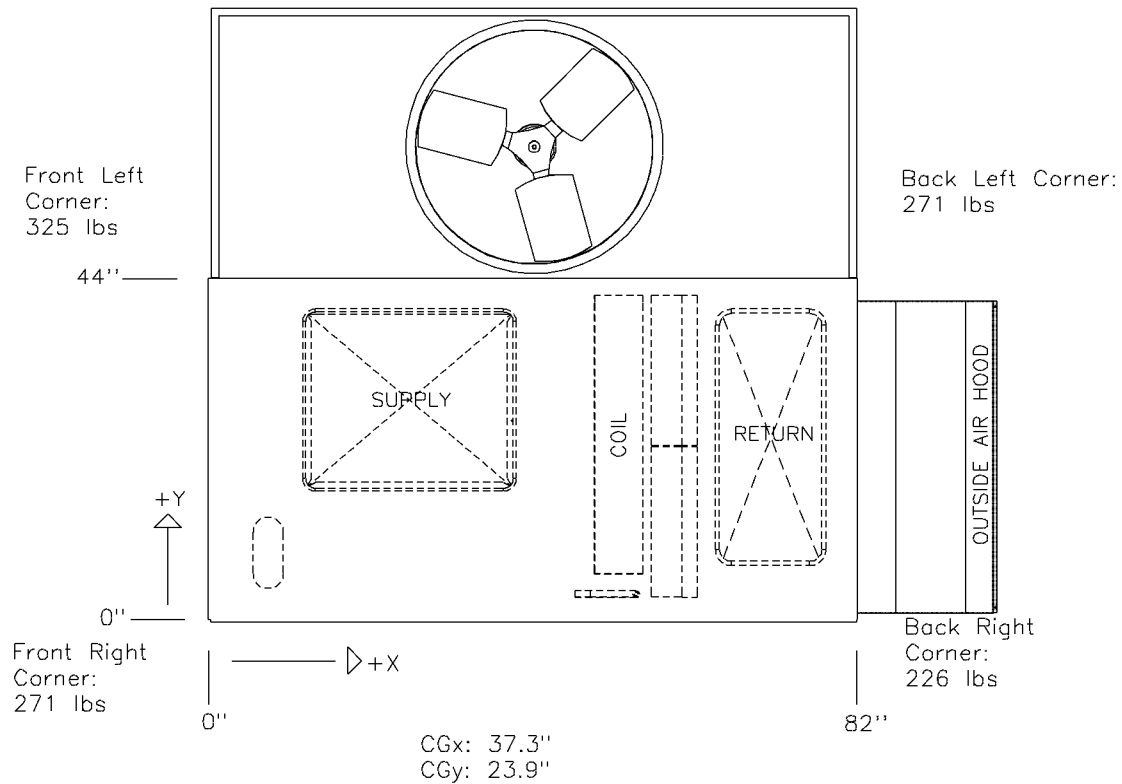
Building	Planning
Engineering	Public Works
Fire	Traffic

RNA CABINET AIR COOLED CONDENSING UNIT



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Total Weight:
1095 lbs (±5%)

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

