



Submittal

Prepared For: Superior Mechanical
Attn: Ben Wyke

Date: August 10, 2022

Engineer:
Barrett, Woodyard & Associates
Austin Urey, P.E.

Job Name:
Camp North End, The Revelry Upfit

Trane U.S. Inc. is pleased to provide the following submittal for your review and approval.

Product Summary

Qty Product
6 6-25 Ton Packaged Precedent Units

Notes:

1. This submittal is based on mechanical specifications & drawings sealed 6-27-2022.
2. All electrical requirements shall be coordinated / confirmed with electrical contractor prior to ordering equipment.
3. The following items are not included unless otherwise noted:
 - Equipment startup*
 - Labor warranty*
 - Electrical overcurrent protection*
 - Thermostat covers*
 - Gas pressure regulators*
 - Smoke detectors*
 - Controls & interlock wiring*
 - Seismic restraints*
 - BAS interface card*

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The attached information describes the equipment we propose to furnish for this project and is submitted for your approval.
Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

Table of Contents

Product Summary	1
PREC (Items A1 - A6)	3
Tag Data	3
Product Data.....	3
Performance Data.....	4
Mechanical Specifications	5
Dimensional Drawings	7
Weight, Clearance & Rigging	13
Accessory	16

Tag Data - PREC (Qty: 6)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ120A4S0L**H0C0A1B0A0020000000000000000
A2	RTU-2	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ120A4S0L**H0C0A1B0A0020000000000000000
A3	RTU-3	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ180A4S0L**H0C0A1B0A0020000000000000000
A4	RTU-4	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ180A4S0L**H0C0A1B0A0020000000000000000
A5	RTU-5	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ150A4S0L**H0C0A1B0A0020000000000000000
A6	RTU-6	1	3 - 25 Ton PKGD Precedent Unitary Rooftop	YSJ150A4S0L**H0C0A1B0A0020000000000000000

Product Data - PREC**All Units**

DX Cooling / Gas Heat
 Standard efficiency, R-410A refrigerant
 460 volts, 60 hertz, 3 phase
 Symbio 700 controls
 Dehumidification coil (modulating HGRH)
 Duct mounted humidity sensor (Fld)
 Digital display zone sensor

Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2

10 tons nominal cooling capacity
 Low gas heat
 Economizer with comparative enthalpy controls & barometric relief
 Hinged access panels with 2-in MERV 8 filters
 Through the base electric
 Non-fused disconnect switch
 Powered 15A convenience outlet
 Condensate overflow switch (COS)
 14" tall full perimeter knockdown curb

Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4

15 tons nominal cooling capacity
 Low gas heat
 Economizer with comparative enthalpy controls & barometric relief
 Hinged access panels with 2-in MERV 8 filters
 Through the base electric
 Non-fused disconnect switch
 Powered 15A convenience outlet
 Condensate overflow switch (COS)
 14" tall full perimeter knockdown curb

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6

12.5 tons nominal cooling capacity
 Low gas heat
 Economizer with comparative enthalpy controls & barometric relief
 Hinged access panels with 2-in MERV 8 filters
 Through the base electric
 Non-fused disconnect switch
 Powered 15A convenience outlet
 Condensate overflow switch (COS)
 14" tall full perimeter knockdown curb

Performance Data - 6- 25 Ton PKGD Precedent Unitary Rooftops (PREC)

Tags	RTU-1	RTU-2	RTU-3	RTU-4	RTU-5	RTU-6
Summer Ambient (F)	95.00	95.00	95.00	95.00	95.00	95.00
Airflow Application	Downflow	Downflow	Downflow	Downflow	Downflow	Downflow
Design Airflow (cfm)	4000	4000	6000	6000	5000	5000
Design ESP (in H2O)	0.500	0.500	0.500	0.500	0.500	0.500
Cooling Entering Dry Bulb (F)	73.20	76.30	76.10	76.20	77.10	77.00
Cooling Entering Wet Bulb (F)	63.80	65.80	66.60	66.60	67.00	67.00
Cooling Leaving Unit Dry Bulb (F)	55.83	57.99	58.14	58.15	59.70	59.69
Cooling Leaving Unit WB (F)	54.24	56.32	56.84	56.84	57.76	57.76
Design ESP + Component SP (in H2O)	0.930	0.930	0.750	0.750	1.080	1.080
Gross Total Capacity (MBh)	118.32	122.28	188.34	188.32	154.62	154.63
Gross Sensible Capacity (MBh)	81.59	85.87	124.11	124.72	103.95	103.44
Net Sensible Heat Ratio (%)	68.00	69.00	65.00	65.00	66.00	65.00
Coil LAT DB (F)	54.12	56.30	56.94	56.95	57.70	57.69
Coil LAT WB (F)	53.52	55.62	56.35	56.36	56.97	56.97
Fan Motor Heat (MBh)	4.26	4.29	4.67	4.67	6.73	6.73
Refrigerant charge (HFC-410A) - Ckt 1 (lb)	10.7	10.7	14.5	14.5	11.6	11.6
Saturated Discharge Temperature (F)	118.49	118.81	121.34	121.34	122.45	122.45
Saturated Suction Temperature (F)	47.81	50.00	51.02	51.01	51.20	51.21
Supply Motor Horsepower (hp)	3.100	3.100	3.100	3.100	3.100	3.100
Supply Operating Horsepower (hp)	1.740	1.740	1.610	1.610	2.390	2.390
Supply RPM (rpm)	1374	1374	1073	1073	1547	1547
Compressor Power (kW)	8.62	8.66	12.84	12.84	11.14	11.14
System Power (kW)	11.22	11.26	17.31	17.31	14.01	14.01
EER @ AHRI (EER)	11.0	11.0	10.8	10.8	10.8	10.8
IEER @ AHRI (EER)	14.6	14.6	14.0	14.0	14.0	14.0
MCA (A)	29.00	29.00	41.00	41.00	33.00	33.00
MOP (A)	40.00	40.00	50.00	50.00	45.00	45.00
Compressor 1 RLA (A)	13.20	13.20	16.70	16.70	14.60	14.60
Compressor 2 RLA (A)	5.80	5.80	8.20	8.20	6.50	6.50
Condenser Fan FLA (A)	1.40	1.40	1.10	1.10	2.20	2.20
Evaporator Fan FLA (A)	4.60	4.60	4.60	4.60	5.50	5.50
Heating Input Capacity (MBh)	150.00	150.00	250.00	250.00	150.00	150.00
Output Heating Capacity (MBh)	121.50	121.50	202.50	202.50	121.50	121.50
Heating Leaving Air Temperature (F)	93.13	93.13	92.25	96.25	87.50	87.50
Approx Configured Weight (lb)	1136.0	1136.0	1955.0	1955.0	1431.0	1431.0
Approx Installed Weight (lb)	1281.0	1281.0	2292.0	2292.0	1587.0	1587.0
Ambient (In HGRH) (F)	75.00	75.00	75.00	75.00	75.00	75.00
Entering Dry Bulb (in HGRH) (F)	73.00	73.00	73.00	73.00	73.00	73.00
Entering Wet Bulb (in HGRH) (F)	64.00	64.00	64.00	64.00	64.00	64.00
Leaving dry bulb w HGRH (F)	69.91	69.91	73.58	73.58	72.10	72.10
Net Sensible Heat Ratio w HGRH (Number)	1.43	1.51	2.05	2.06	1.54	1.53
HGRH Capacity (MBh)	61.49	61.49	122.49	122.49	92.46	92.46
Reheat Coil LAT DB (HGRH) (F)	68.60	68.60	72.79	72.79	70.46	70.46
Reheat Coil LAT WB (HGRH) (F)	59.27	59.27	60.75	60.75	59.50	59.50
Moisture Removal Rate (HGRH) (gph)	36.71	36.71	56.06	56.06	52.69	52.69
Supply Fan Count (Number)	1.00	1.00	2.00	2.00	1.00	1.00

Mechanical Specifications - PREC**Item: A1 - A6 Qty: 6 Tag(s): RTU-1, RTU-2, RTU-3, RTU-4, RTU-5, RTU-6****General**

- Packaged rooftop units cooling, heating capacities, and efficiencies are AHRI Certified within scope of AHRI Standard 210-240 for 6 to 25 Tons and ANSI Z21.47 and 10 CFR Part 431 pertaining to Commercial Warm Air Furnaces (all gas heating units).
- Convertible airflow.
- Symbio controls operating range between 0°F and 125°F in cooling mode standard from the factory.
- Factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory.
- Colored and numbered wiring internal to the unit for simplified identification.
- Units cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

Powered Convenience Outlet

- Powered GFCI, 120V/15A, 2 plug, convenience outlet.
- When convenience outlet is powered, a service receptacle disconnect will be available.
- Convenience outlet is powered from the line side of the disconnect and therefore will not be affected by the position of the disconnect.

Casing

- Zinc coated, heavy gauge, galvanized steel.
- Weather resistant pre-painted metal with galvanized substrate.
- Meets ASTM B117, 672 hour salt spray test.
- Removable single side maintenance access panels.
- Lifting handles in maintenance access panels (can be removed and reinstalled by removing fasteners while providing a water and airtight seal).
- Exposed vertical panels and top covers in the indoor air section insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material.
- Base pan shall have no penetrations within the perimeter of the curb other than the raised 1 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up.
- Base of the unit insulated with 1/8 inch, foil-faced, closed-cell insulation.
- Unit base provisions for forklift and/or crane lifting on three sides of unit.

Microchannel Coils

- Optimal heat transfer performance due to flat, streamlined tubes with small ports, and metallurgical tube-to-fin bond.
- Reduce system refrigerant charge by up to 50% leading to better compressor reliability.
- Compact all-aluminum microchannel coils reduce the unit weight.
- Recyclable all aluminum coils All aluminium construction minimizes galvanic corrosion.
- Strong aluminum brazed structure provides better fin protection.
- Flat streamlined tubes more dust resistant and easy to clean.
- Coils leak tested at the factory to ensure the pressure integrity.

Compressors

- All units have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps.
- Suction gas-cooled motor with voltage utilization range of plus or minus 10 percent of unit nameplate voltage.
- Internal overloads standard with scroll compressors.
- Crankcase heaters are standard on all compressors.
- All units have dual compressors.

Filters

- Optional 2-inch MERV 8 filters provided.

Frostat

- Utilized as a safety device.
- Opens to prevent freezing temperatures on evaporator coil.
- Temperature will need to rise to 50°F before closing.
- Utilized in low airflow or high outside air applications (cooling only).

Gas Heating Section

- The heating section shall have a progressive tubular heat exchanger with corrosion-resistant aluminized steel tubes and burners as standard on all models.
- Induced draft combustion blower shall be used to pull the combustion products through the firing tubes.
- Heater shall use a direct spark ignition (DSI) system.
- On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition.
- After three unsuccessful ignition attempts, entire heating system shall be locked out until manually reset at the thermostat/zone sensor.
- Units shall be suitable for use with natural gas or propane (field-installed kit).

Heat Exchanger

- Compact cabinet features a tubular heat exchanger in low, medium and high heat capacities.
- Corrosion-resistant aluminized steel tubes and burners are standard on all models.
- Induced draft blower to pull the gas mixture through the burner tubes.
- Direct spark ignition and a flame sensor as a safety device to validate the flame.

Roof Curb

- Designed to mate with the unit's downflow supply and return.
- Provide support and a watertight installation when installed properly.
- Shall allow field-fabricated rectangular supply/return ductwork to be connected directly to the curb.
- Curb shall be shipped knocked down for field assembly.
- Shall include wood nailer strips.

Through-the-Base Electrical with Disconnect Switch

- 3-pole, molded case, disconnect switch with provisions for through-the-base electrical connections.
- Disconnect switch installed within unit in a watertight enclosure.
- Wiring provided from the switch to the unit high voltage terminal block.
- Switch cULus agency recognized.

Note: Disconnect switch sized per NEC and cULus guidelines but will not be used in place of unit overcurrent protection.

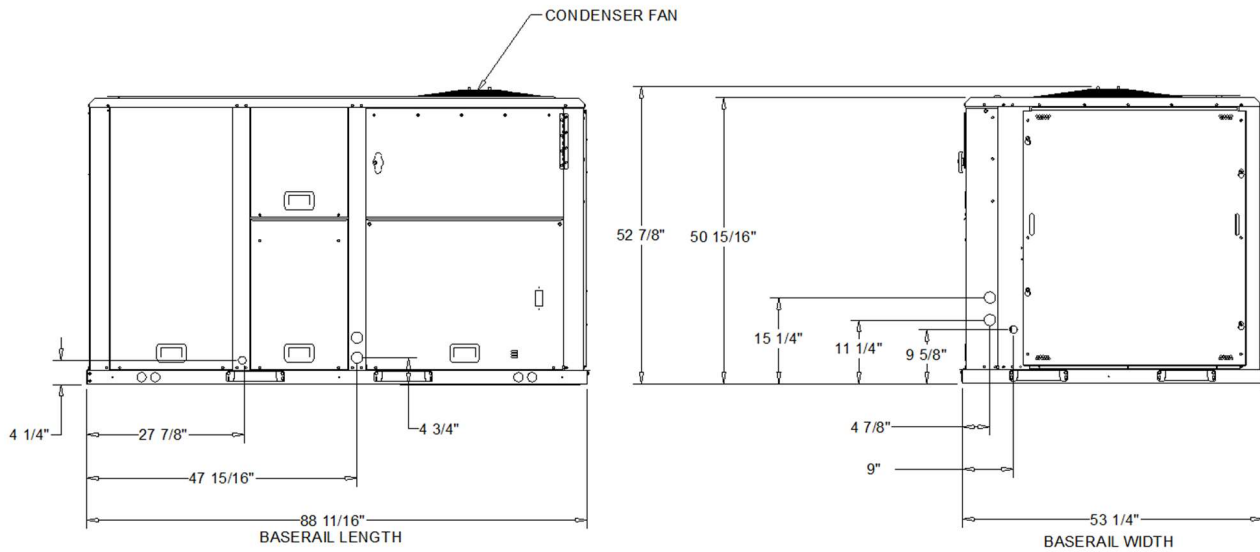
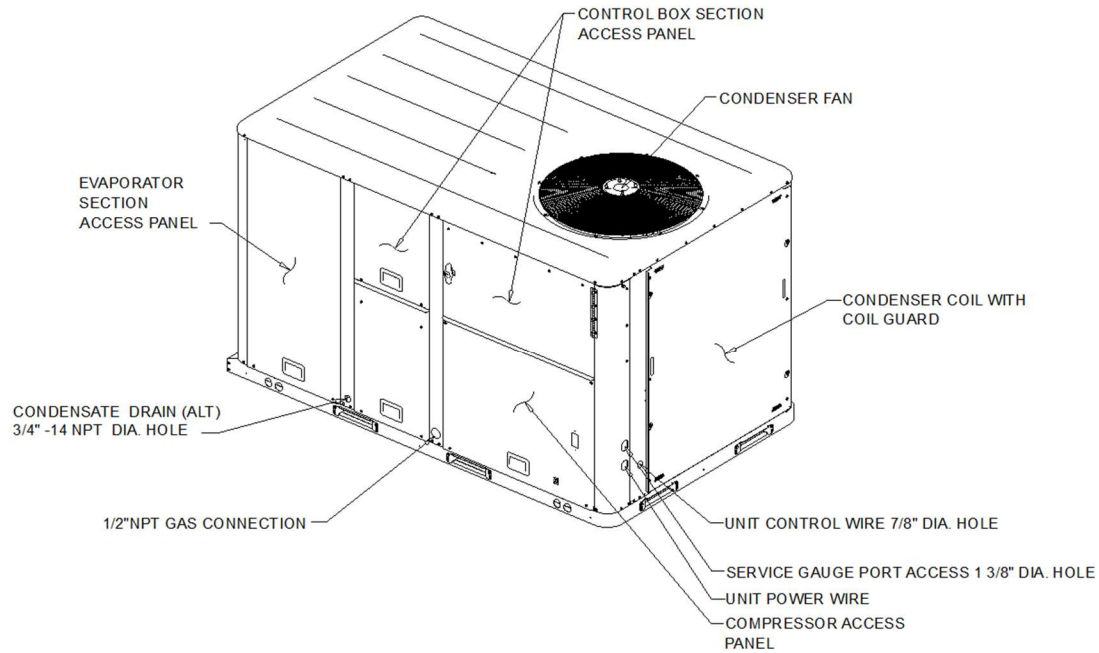
Economizer (Standard)

- Provided with barometric relief.
- Fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control.
- Barometric relief shall provide a pressure operated damper that shall be gravity closing.
- Barometric relief shall prohibit entrance of outside air during the equipment's off cycle.
- Comparative enthalpy control provided.
- Arrives in shipping position and shall be moved to the operating position by the installing contractor.

Dimensional Drawings - PREC

Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2

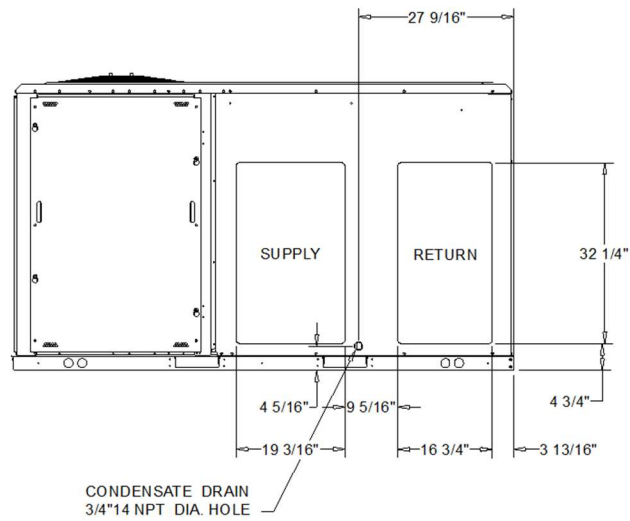
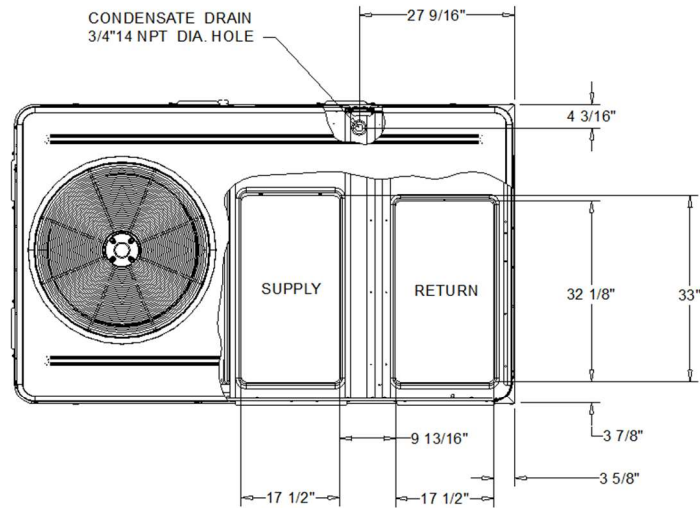
NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



10 TON STANDARD GAS/ELECTRIC UNIT
DIMENSION DRAWING

Dimensional Drawings - PREC

Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2



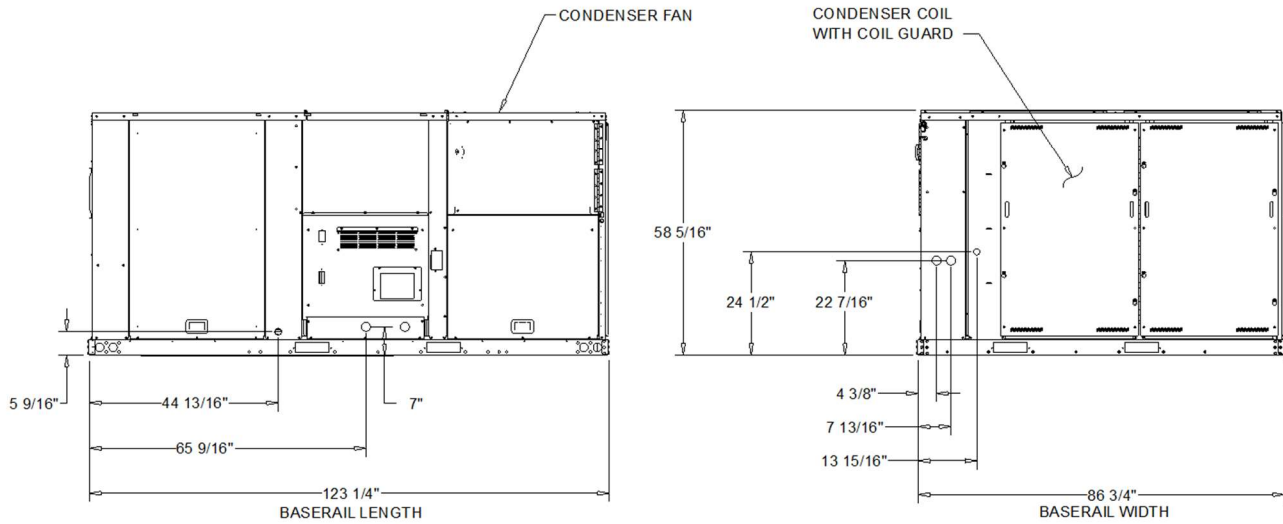
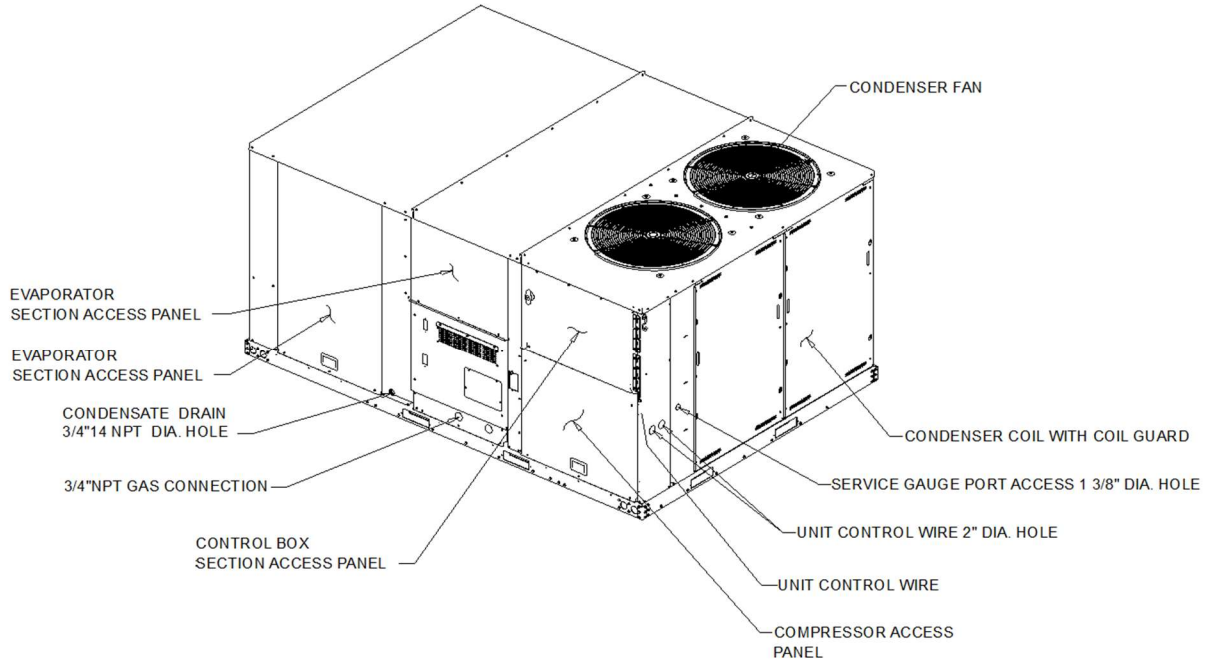
10 TON STANDARD GAS/ELECTRIC UNIT
DIMENSION DRAWING

Dimensional Drawings - PREC

Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4

NOTES:

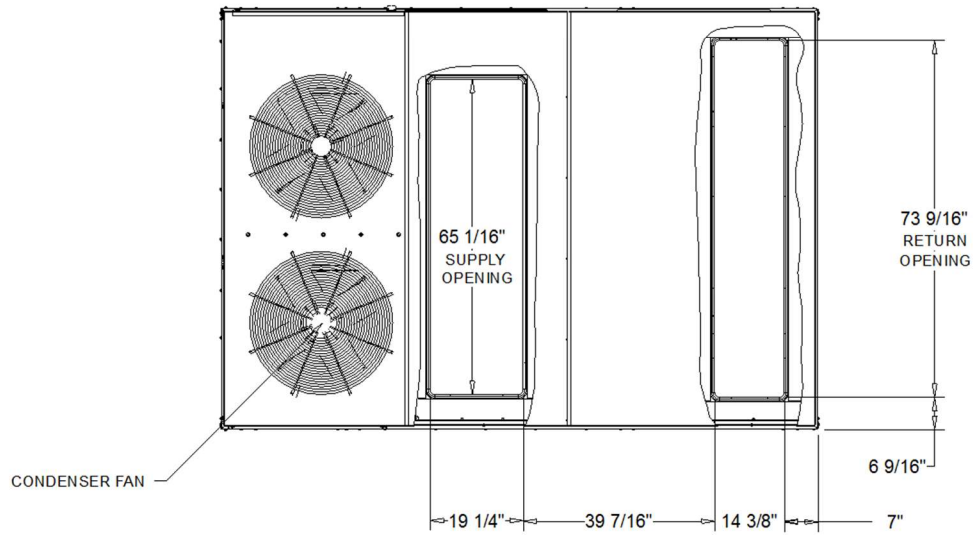
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2. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



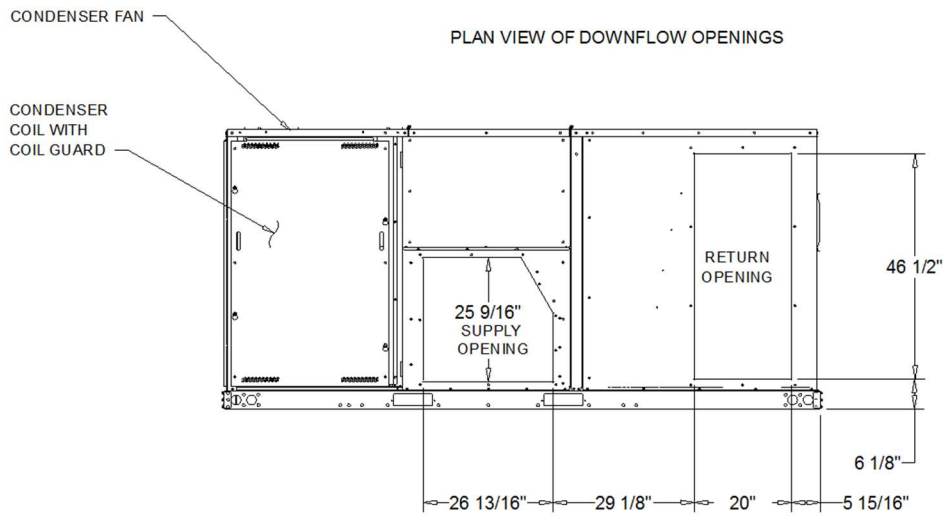
15 TON STANDARD GAS/ELECTRIC UNIT
DIMENSION DRAWING

Dimensional Drawings - PREC

Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4



PLAN VIEW OF DOWNFLOW OPENINGS



HORIZONTAL AIR FLOW OPENING

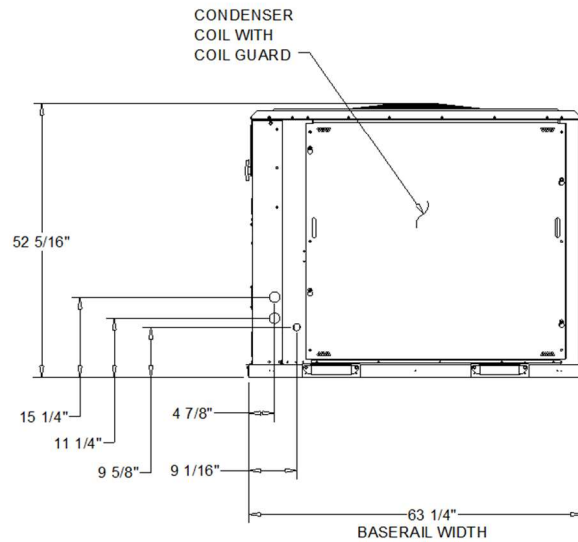
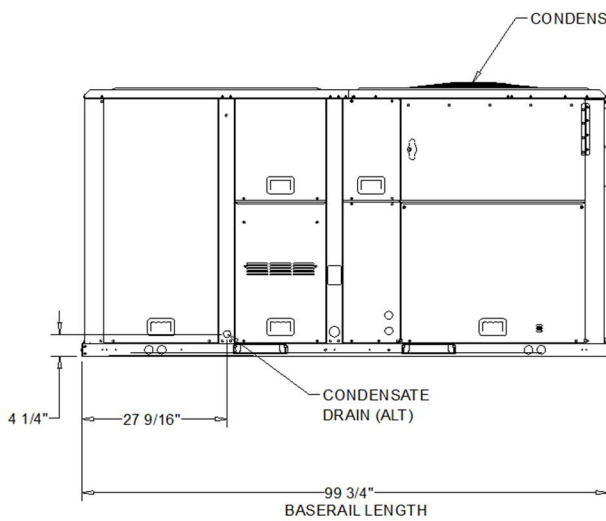
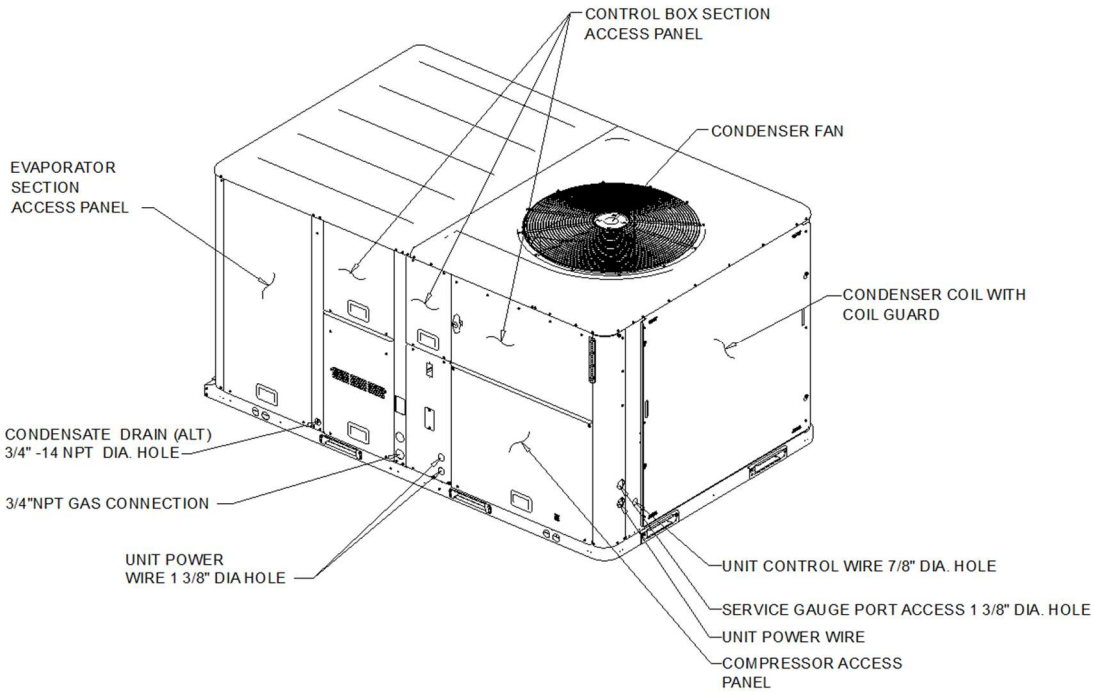
15 TON STANDARD GAS/ELECTRIC UNIT
 DIMENSION DRAWING

Dimensional Drawings - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6

NOTES:

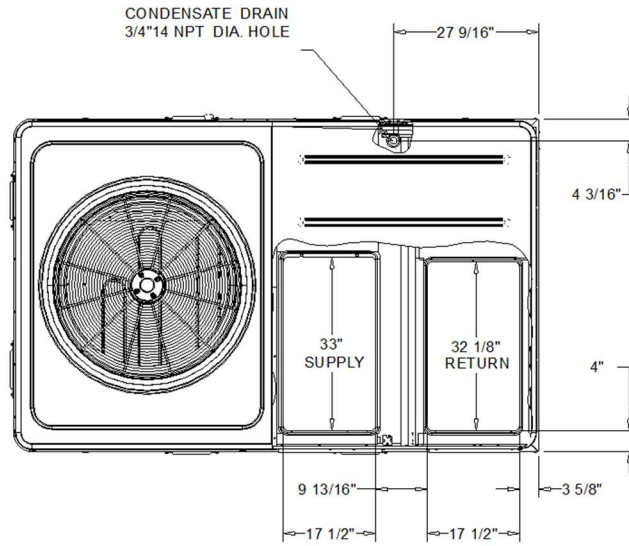
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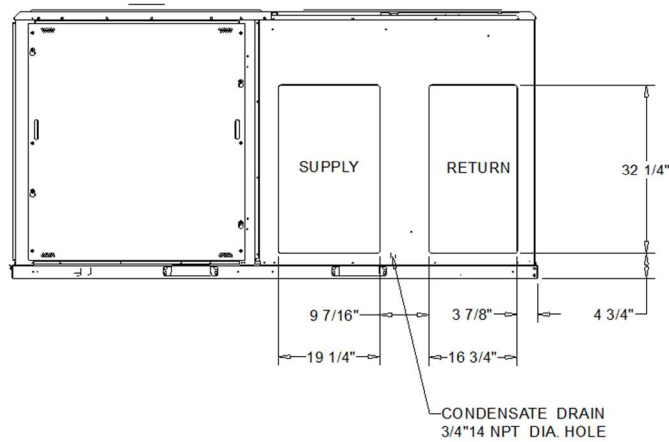
12.5 TON STANDARD GAS/ELECTRIC UNIT
 DIMENSION DRAWING

Dimensional Drawings - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6



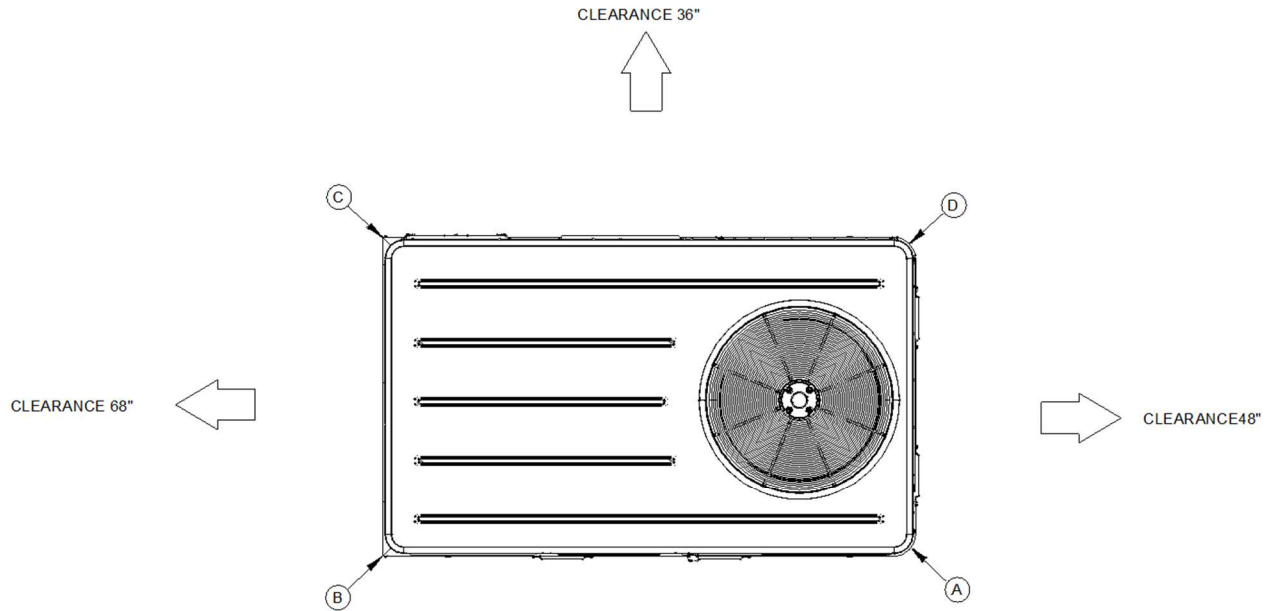
PLAN VIEW OF DOWNFLOW OPENINGS



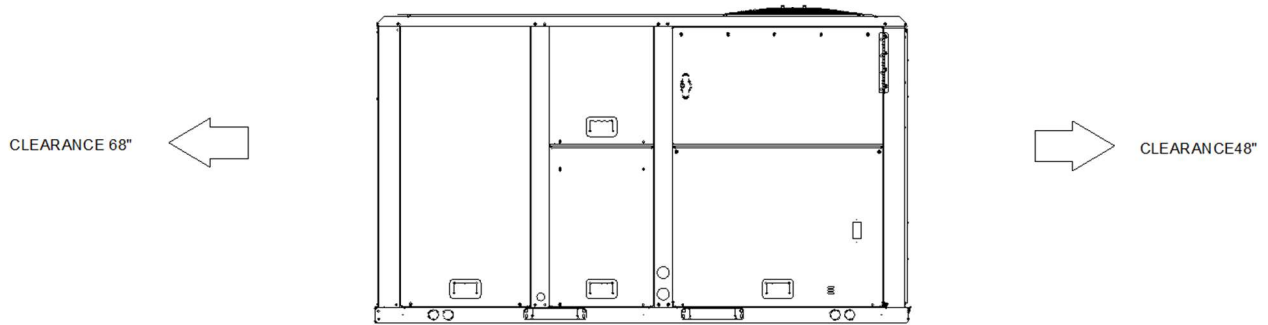
HORIZONTAL AIR FLOW OPENING

12.5 TON STANDARD GAS/ELECTRIC UNIT
DIMENSION DRAWING

Weight, Clearance & Rigging - PREC
Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2



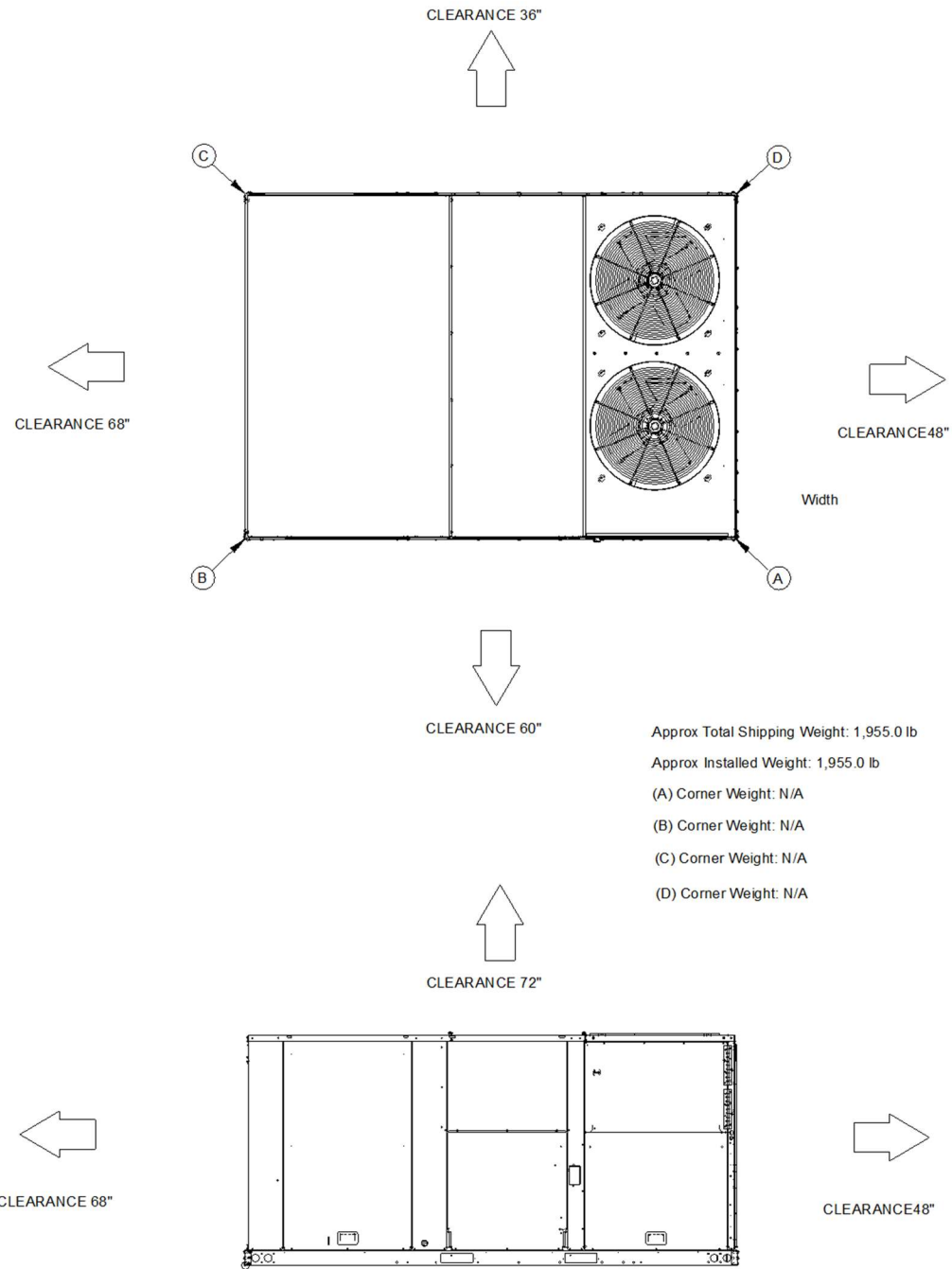
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 Approx Installed Weight: 1,136.0 lb
 (A) Corner Weight: N/A
 (B) Corner Weight: N/A
 (C) Corner Weight: N/A
 (D) Corner Weight: N/A



10 TON STANDARD GAS/ELECTRIC UNIT
 WEIGHTS AND CLEARANCES

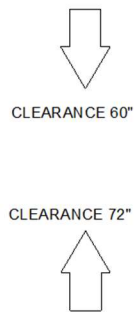
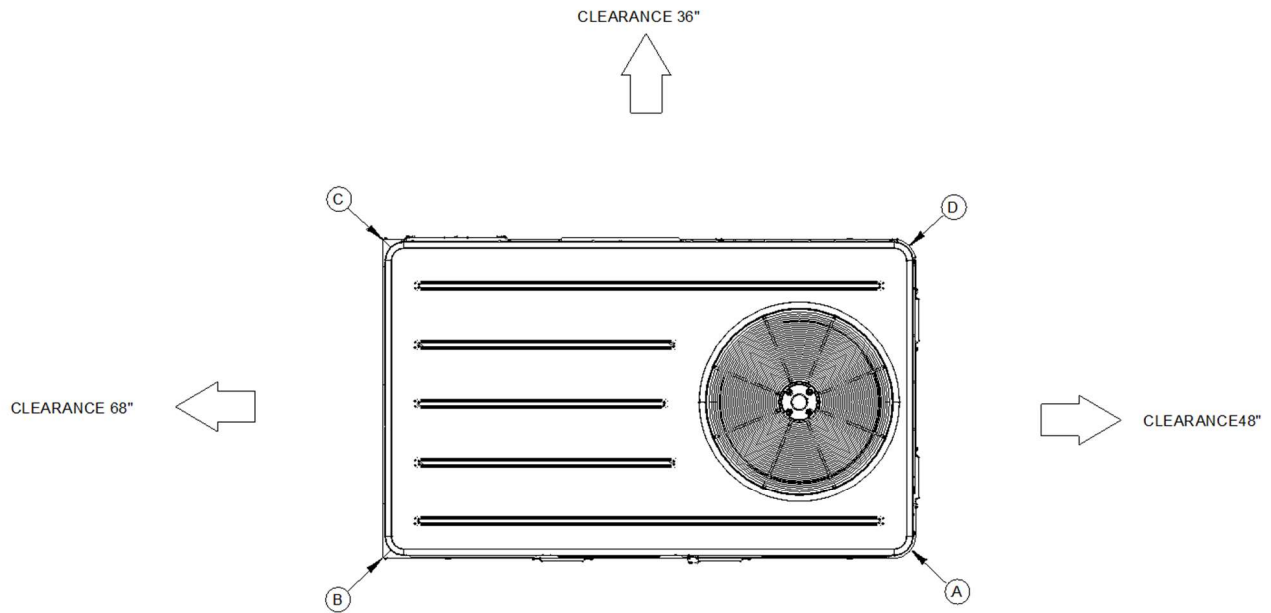
Weight, Clearance & Rigging - PREC

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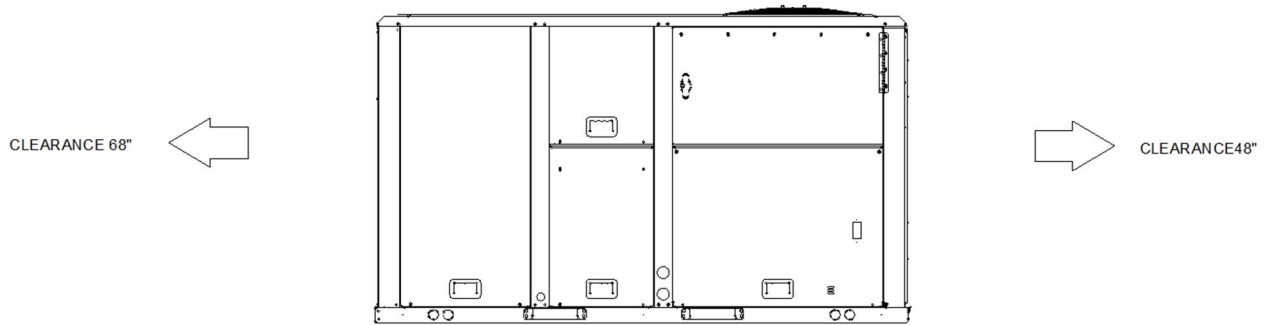


15 TON STANDARD GAS/ELECTRIC UNIT
WEIGHTS AND CLEARANCES

Weight, Clearance & Rigging - PREC
Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6



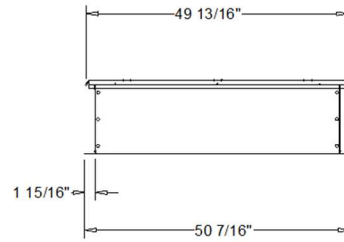
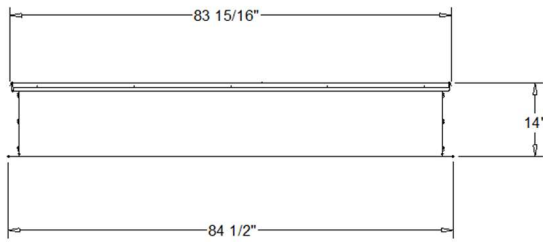
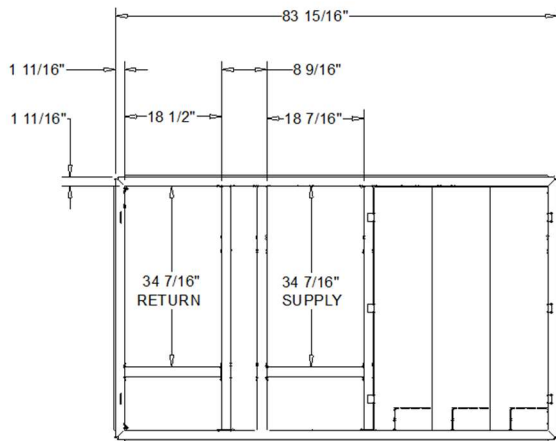
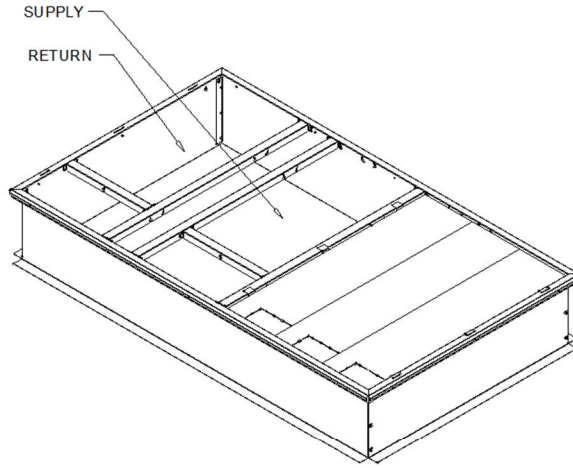
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Approx Installed Weight: 1,431.0 lb
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(C) Corner Weight: N/A
(D) Corner Weight: N/A



WEIGHTS AND CLEARANCES

Accessory - PREC

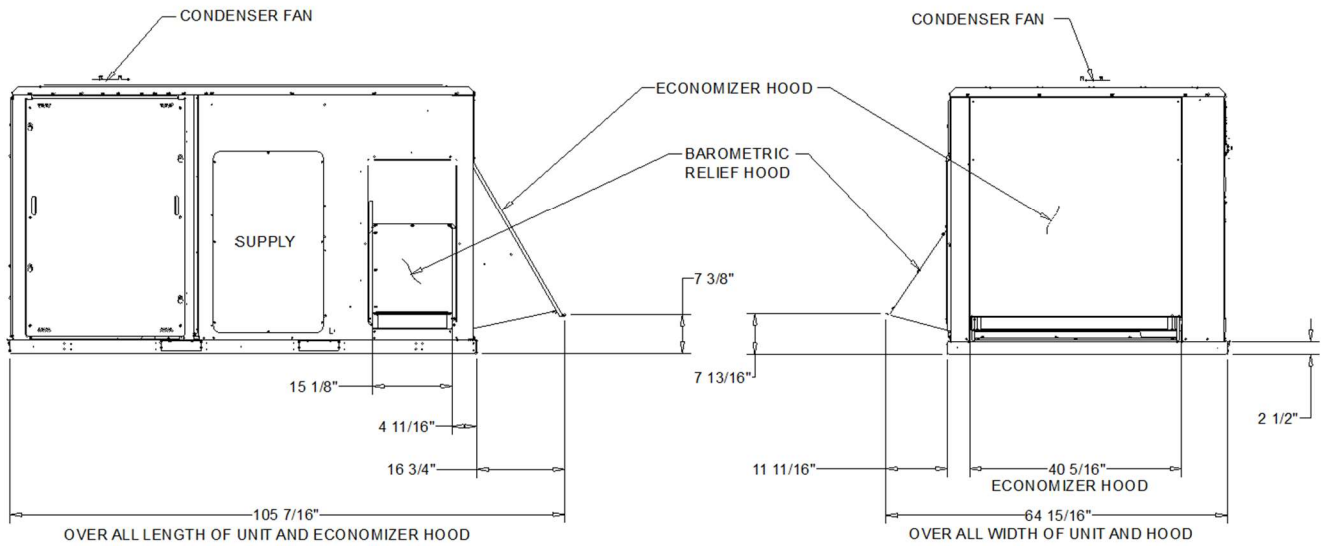
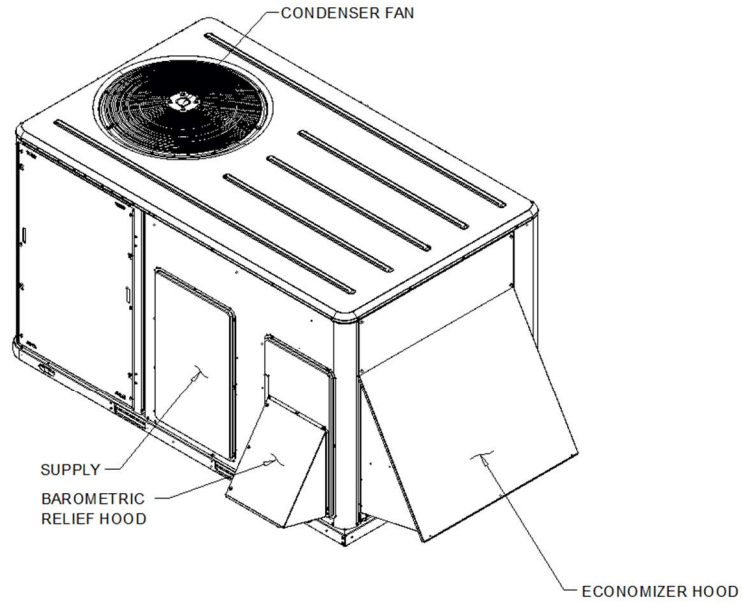
Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2



ROOF CURB (FIELD ACCESSORY)
10 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2

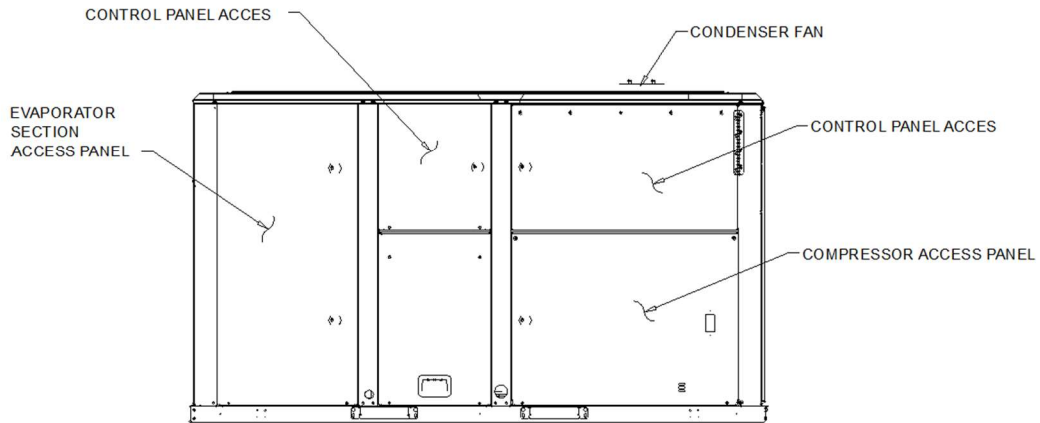
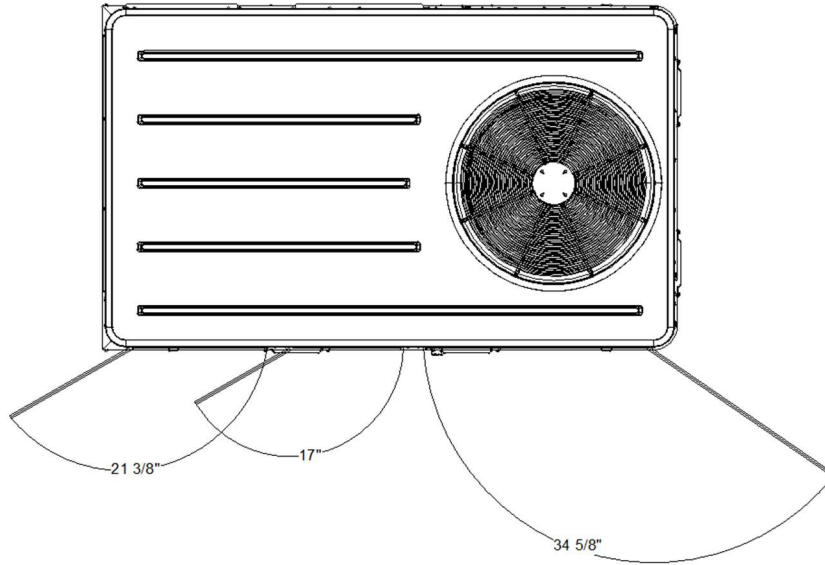


ECONOMIZER AND BAROMETIC AIR DAMPER(S) (OPTION)

10 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A1, A2 Qty: 2 Tag(s): RTU-1, RTU-2

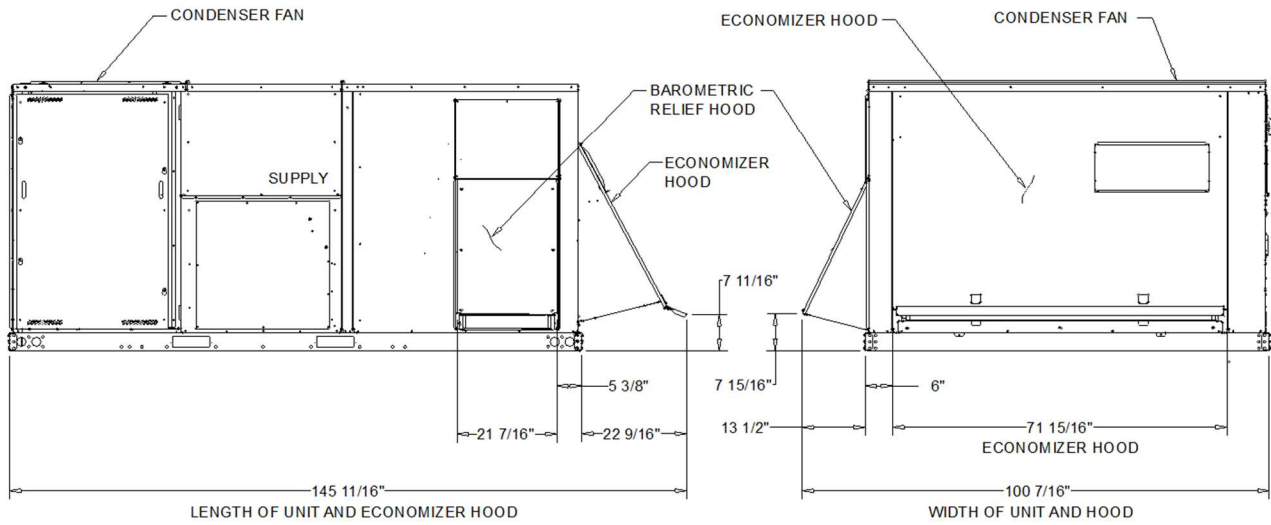
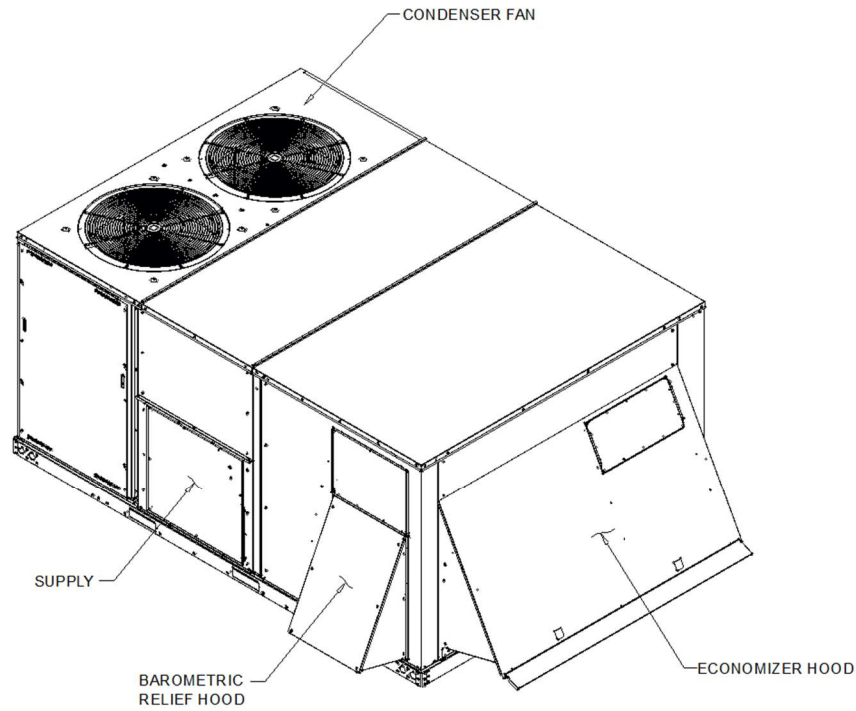


SWING DIAMETER FOR HINGED DOOR(S) (OPTION)

10 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

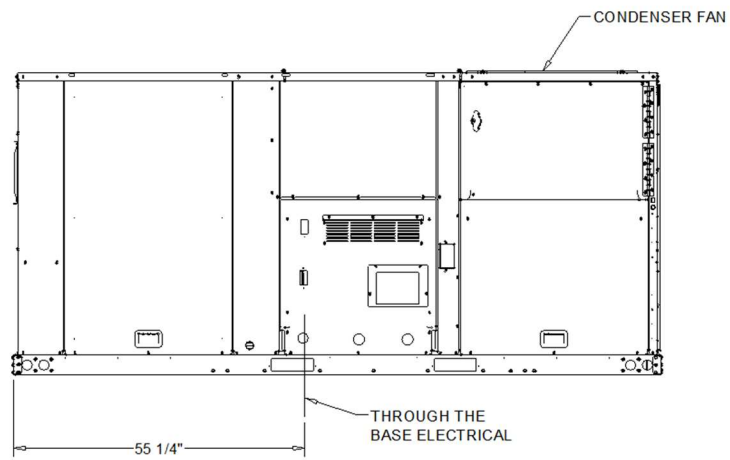
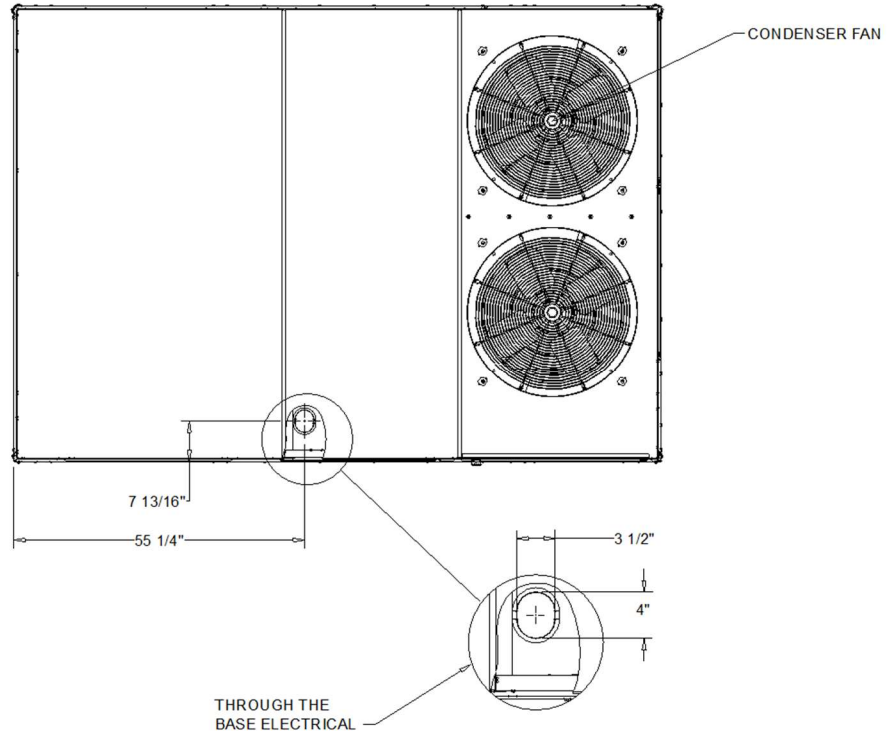
Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4



ECONOMIZER AND BAROMETIC AIR DAMPER(S) (OPTION)

Accessory - PREC

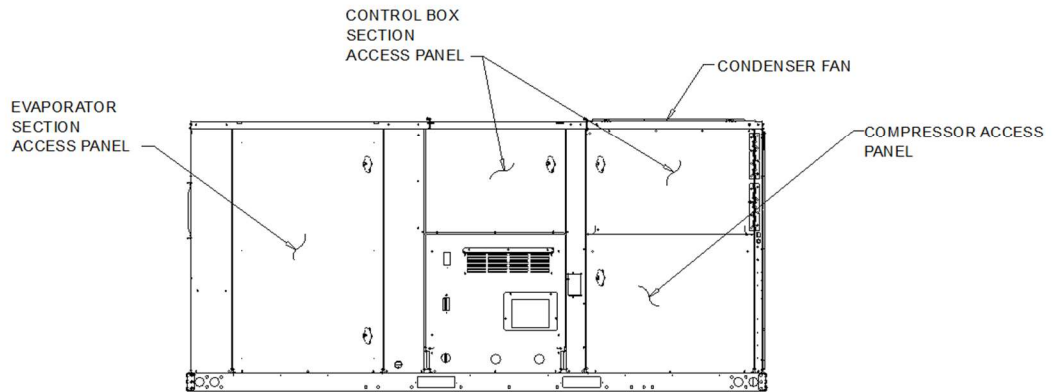
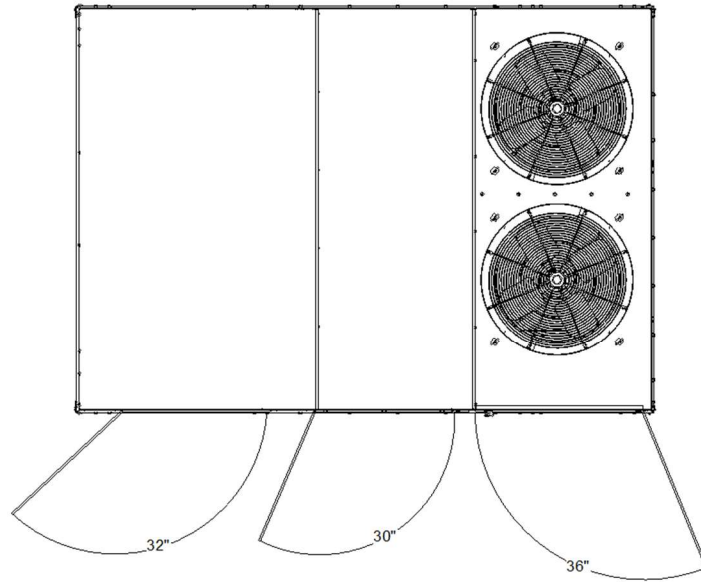
Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4



THROUGH-THE-BASE ELECTRICAL (OPTION)

Accessory - PREC

Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4

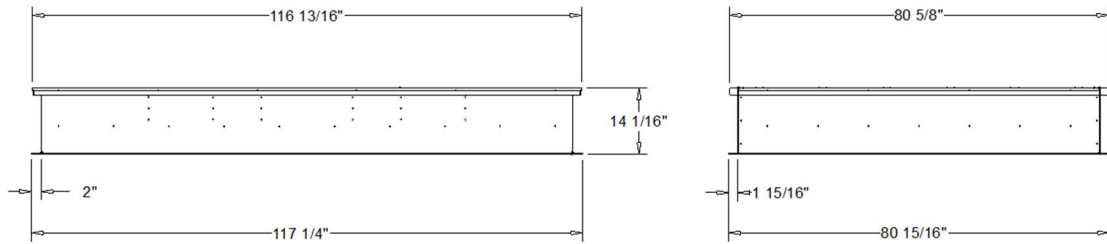
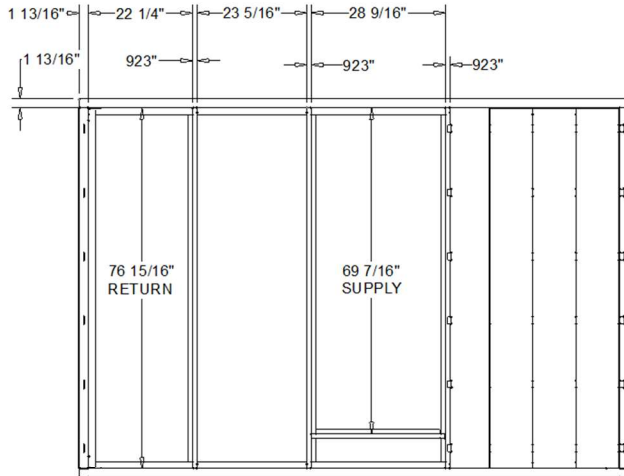
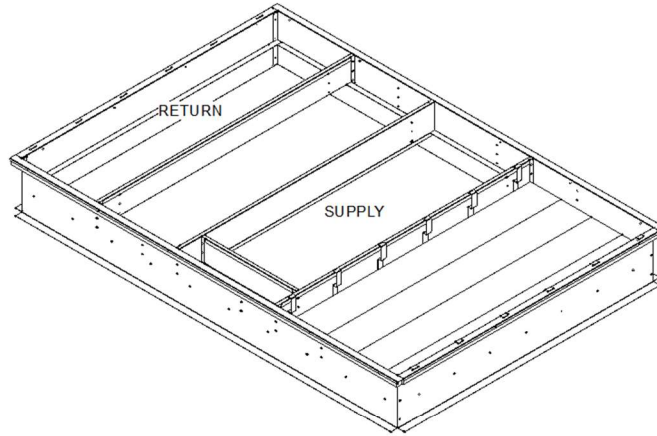


SWING DIAMETER FOR HINGED DOOR(S) (OPTION)

15 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

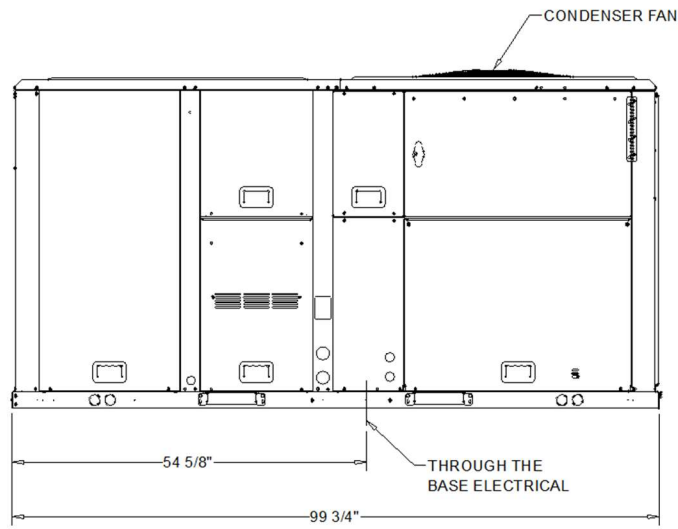
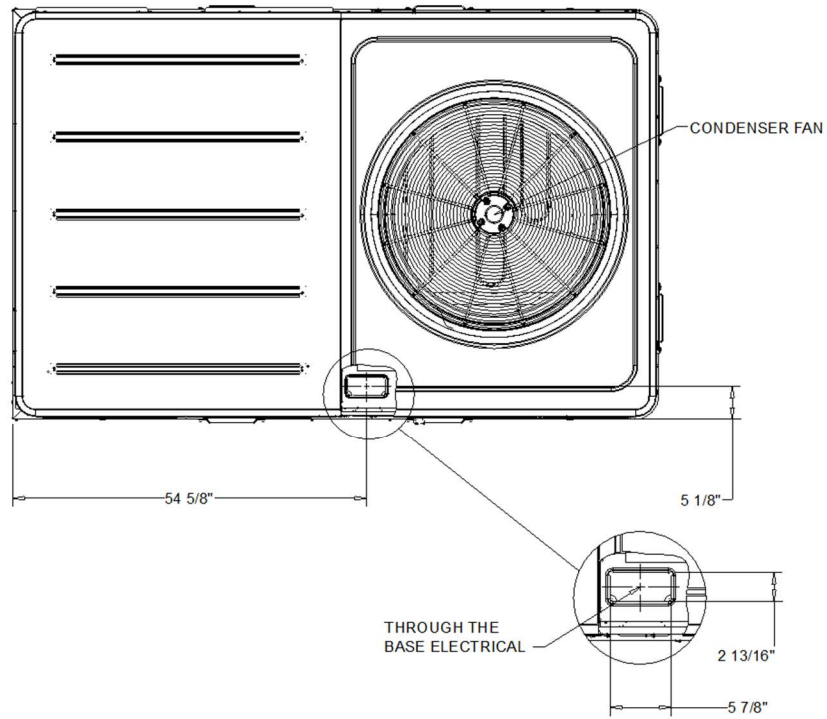
Item: A3, A4 Qty: 2 Tag(s): RTU-3, RTU-4



ROOF CURB (FIELD ACCESSORY)
15 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6

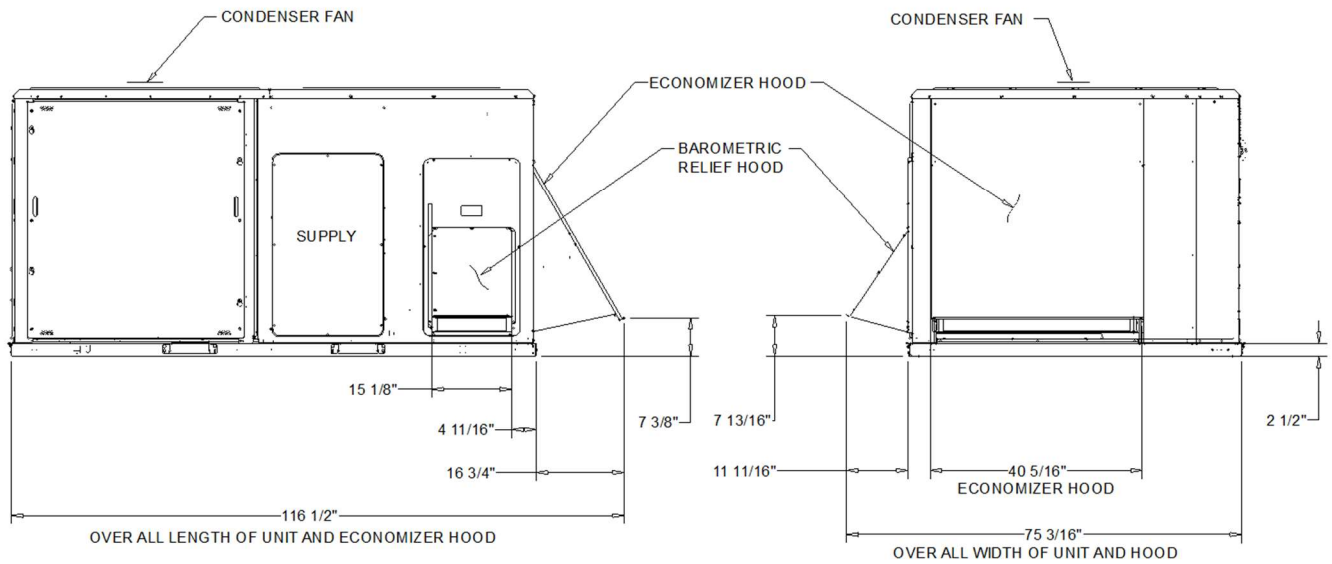
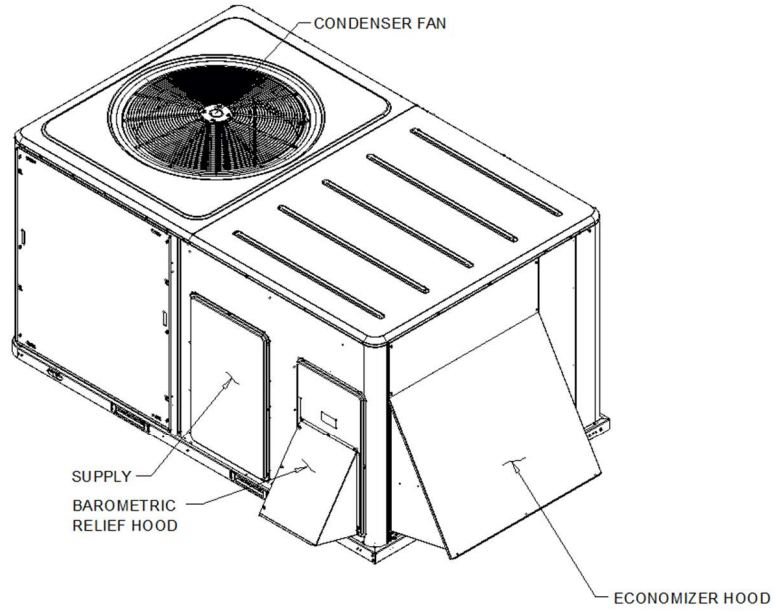


THROUGH-THE-BASE ELECTRICAL (OPTION)

12.5 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6

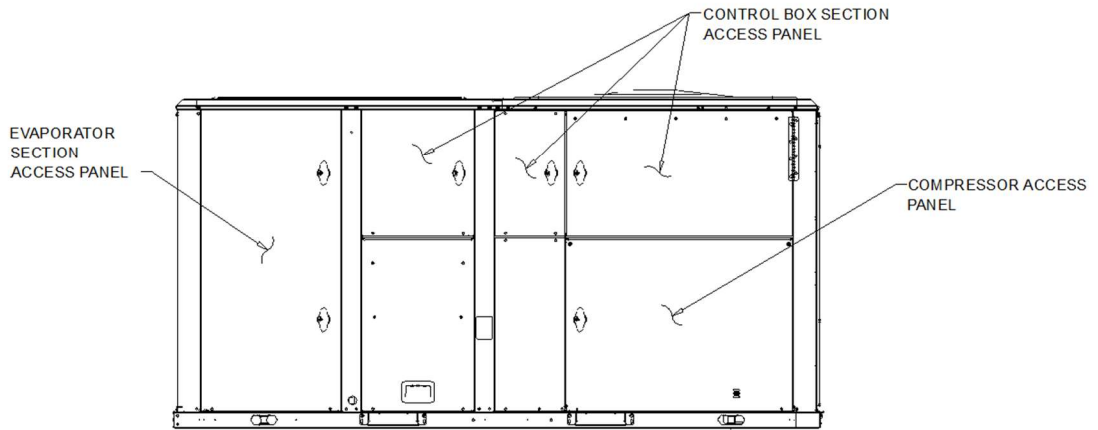
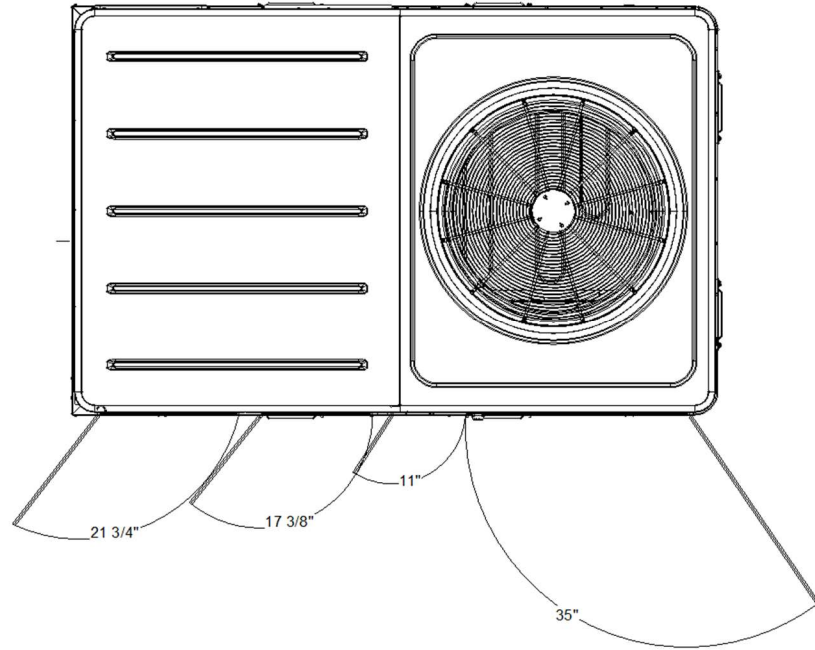


ECONOMIZER AND BAROMETIC AIR DAMPER(S) (OPTION)

12.5 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6

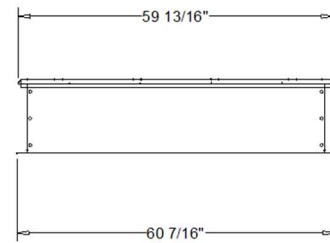
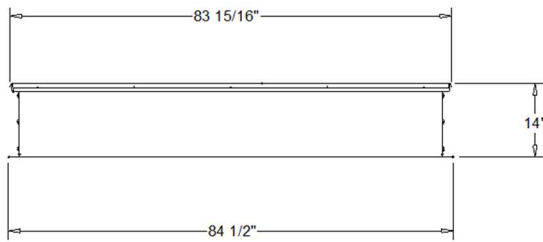
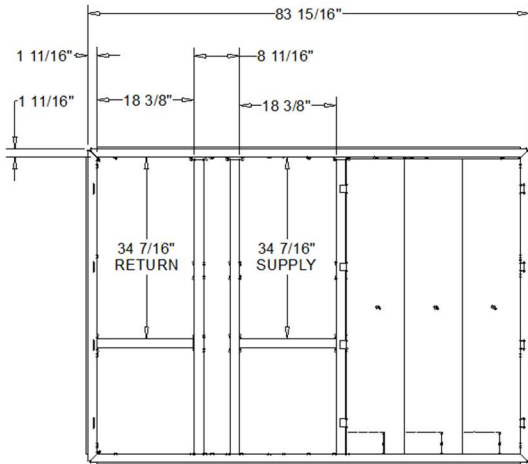
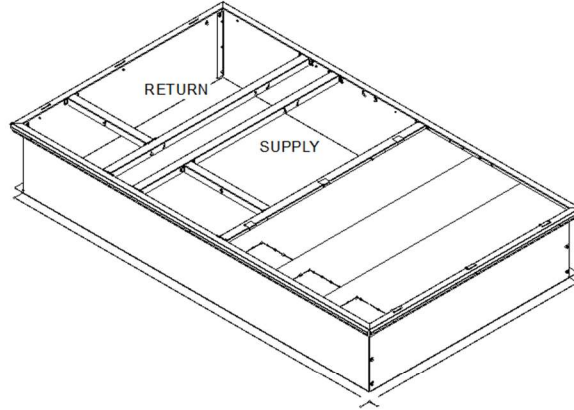


SWING DIAMETER FOR HINGED DOOR(S) (OPTION)

12.5 TON STANDARD GAS/ELECTRIC UNIT

Accessory - PREC

Item: A5, A6 Qty: 2 Tag(s): RTU-5, RTU-6



ROOF CURB (FIELD ACCESSORY)
12.5 TON STANDARD GAS/ELECTRIC UNIT