Request For Proposal (RFP)
Proposal #HVAC2025-1
HVAC RTU Replacement Phase 2

Proposals Due:

5:00pm (Mountain Time) on Friday, January 3, 2025

Carbon Valley Parks and Recreation District
701 5th Street
Frederick, CO 80530

October 24, 2024

CARBON VALLEY PARKS & RECREATION DISTRICT

HVAC RTU REPLACEMENT

Table of Contents

HVAC RTU REPLACEMENT

Introduction

Carbon Valley Parks and Recreation District ("CVPRD" or "District") is requesting proposals as a publicly opened bid for HVAC equipment replacement as described in the scope of work from qualified commercial HVAC installers Each bid will be examined promptly after opening and the results will be announced to all participants.

General Requirements and Submittal Information

For a vendor that is submitting their proposal by mail to be considered, the District must receive one (1) original and five (5) copies of the proposal by 5:00pm (Mountain Time) on Friday, January 3, 2025, at the following address:

Carbon Valley Parks and Recreation District
ATTN: Scott Hickman
701 5th Street
Frederick, CO 80530
Email: shickman@cvprd.com

All proposals submitted by mail must be in a sealed package and clearly marked "CVPRD Recreation Center HVAC Proposal". The vendor's name and address should be clearly marked on the outside of the envelope.

For a vendor that is submitting electronically to be considered, the District must receive one (1) electronic copy (PDF is preferred) by 5:00pm (Mountain Time) on Friday, January 3, 2025

Proposals will not be accepted after the date and time stated above.

There is no expressed or implied obligation for the District to reimburse responding vendors for any expenses incurred in preparing proposals in response to this request.

The District reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the vendor of the conditions contained in this request for proposal, unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the District and the vendor selected.

Any proposal submitted by US Mail shall be sent by either certified or registered mail. Proposals must be received at the above address no later than 5:00 PM MST on January 3, 2025. Any proposal received

after this date shall not be considered and shall be returned unopened. The proposing vendor bears the risk of delays in delivery. The contents of any proposal shall not be disclosed as to be made available to competing entities during the negotiation process. Upon receipt of vendor proposals, each vendor shall be presumed to be thoroughly familiar with all specifications and requirements of this RFP. The failure or omission to examine any form, instrument or document shall in no way relieve vendors from any obligation in respect to this RFP. The District reserves the right to award the proposed contract to multiple vendors if the Executive Director determines that such an award is in the best interest of the District.

About the District

CVPRD is a Colorado special district, established in 1983 covering roughly 45 square miles, including the communities of Frederick, Firestone, Dacono and rural areas that surround the Tri-Towns in Colorado. Through the management of two facilities, the District offers new as well as traditional programming. The main recreation facility is a 50,000 square foot center that hosts a 25-yard, six lane lap pool, an activity pool with amenities such as logs, lazy river, 18-foot slide, and a kid's splash pool. The aquatics section also offers a steam room and a hot tub for guests. Outside of the pool area the facility houses a dance studio, one gymnasium, cardio room, fitness studios, a state-of-the-art weight room, a childcare facility and public meetings spaces. The second facility is across the street and houses the District's Gymnastics Center. The District also manages a 7500 square foot Community Center. The Carbon Valley Parks and Recreation District strives to increase and enhance recreational opportunities by providing a variety of quality programs and activities for the residents of Frederick, Firestone, Dacono and surrounding communities.

The District will administer the proposal process in accordance with the terms and dates outlined in this RFP; however, the District reserves the right to modify the activities, timelines, or any other aspect of the process at any time, at the District's discretion. By requesting proposals, the District is in no way obligated to award a contract or pay the expenses incurred in connection with the preparation or submission of a proposal. The award of any contract shall be contingent on the requisite staff and Board of Directors approval.

Scope of Services

a. Carbon Valley Parks and Recreation Department (CVPRD) wishes to replace existing roof top HVAC units RTU #4 and RTU #6 in August of 2025. Bidder is expected to replace equipment as described in "Addendum A" of this document.
b. Tie new units into the existing building control system that effectively integrates the equipment.
c. Recover, remove and dispose of existing Unit/units.
d. Tie into existing gas, electricity, and duct.
e. Startup and verify proper operation.

f. Crane, rigging and permit will be the responsibility of the vendor.
g. The contractor will be responsible for researching and providing rebates through power utilities, local, state and federal agencies for the best possible pricing for each unit.
h. CVPRD has identified Trane as the preferred equipment supplier, due to compatibility with existing equipment, factory warranty, and availability.
i. Work will begin August 18th, 2025, and must be complete by August 22, 2025. All equipment and work must be ordered and scheduled to meet this date.
j. Refer to addendum "A" for details.

Term of Engagement

It is the intent of the District to contract for the services presented herein. The District will require a warranty as stated in section 1.6 of the Addendum "A". The final selection and award will be made by the Carbon Valley Parks and Recreation District Executive Director.

Proposal Content (Mandatory)

Failure to complete any question or request for information, in whole or in part, or any deliberate attempt by the vendor to mislead the District, may disqualify the vendor.

Cover Letter

Each proposal should have a cover letter on the letterhead of the company or organization submitting the proposal. The cover letter must briefly summarize the vendor's ability to provide the services specified in the RFP. The cover letter shall be signed by a representative who has the legal capacity to enter the organization into a formal contract with Carbon Valley Parks and Recreation District (CVPRD).

Table of Contents

Each proposal must include a table of contents with page numbers for each of the required components of the proposal.

Letter of Transmittal

Vendor shall include a transmittal letter attesting to the accuracy of the proposal signed by a representative authorized to execute binding legal documents on behalf of the vendor. The letter should present the vendor's understanding of the services requested in this RFP. The name of the person(s) authorized to represent the vendor in any negotiations and the name and title of the person(s) legally

authorized to sign any contract that may result should also be included. For each authorized representative, provide mailing addresses, phone and fax numbers and email addresses.

Vendor Background and Qualifications

- Provide a narrative on vendor background and qualifications that includes:
- The number of years the vendor has been in the commercial HVAC business.
- A description of the company's growth, staff size and ownership structure.
- Describe at least three similar in scope projects that the vendor has completed in the last two (2) years.
- Provide a brief statement of the company's background demonstrating longevity and financial stability.
- Describe how the company measures customer satisfaction and how issues with customer satisfaction are resolved.

References

Provide four (4) references from customers for which the vendor is currently or has provided services as required in this RFP, within the last three (3) years, specifically special districts, municipalities, or other governmental agencies if applicable. Otherwise compare with other counties and cities closely related to our size. Regional clients located in the Rocky Mountain Region are preferred. References should have a comparable building and mechanical needs. Include the contact names, phone numbers, email addresses and mailing addresses. References may be contacted to assist with the evaluation of experience, expertise, and the customer's satisfaction and should be willing to be available for a conference call.

Project Understanding and Approach

Each Proposer shall describe their qualifications and commitment to providing the required scope of services and a clear understanding of the work to be performed. Vendors should list and describe any significant issues and concerns that need to be addressed. Other potential issues or risks not included in the "significant" category should be presented, along with any innovative or unique solutions. Include various general and/or specific tasks the vendor views as important for prudent management and sequencing of the tasks required for a successful project.

Cost Proposal

Attach and provide a cost/quote for all equipment, services and labor which encompasses all work listed in the specifications prior to start and finish of project. The District is not liable for any costs incurred by

a proposer in responding to this request, attending interview, or for any other activity prior to award of the contract to the selected proposer.

Requirements

Provide a clear, concise narrative description of the proposal equipment, hardware, software, warranties and maintenance along with all specifications highlighting equipment functions.

District Requirements and Notifications

Mandatory Insurance Requirements

As a part of the contract requirements, the vendor shall obtain at its own cost and expense and keep in force and effect during the term of this contract, including all extensions, the minimum coverage limits specified below with a carrier satisfactory to the State. All vendors shall carry comprehensive general liability and all other coverages listed below:

Comprehensive General Liability

- $1,200,000.00 per person/$3,000,000 per occurrence.
- Product Liability
- $1,200,000.00 per person/$3,000,000 per occurrence.
- Automotive Liability Insurance covering all automotive units used in the work with limits of not less than 100,000 each person and $300,000 each accident as to bodily injury and $25,000 as to property damage to others.
- Forty-five (45) days written notice of cancellation or material change of any policies shall be required.
- Before any work is done hereunder, a certificate of insurance referencing the name and contract number stated herein, shall be filed with the State of Colorado. The certificate holder is as follows:

Carbon Valley Parks and Recreation District
701 5th Street
Frederick, CO 80530

Note: Carbon Valley Parks and Recreation District shall not be named as additional insured.

Public Inspection of Proposals

All documents submitted as part of the vendor's proposal will be deemed confidential during the evaluation process. Vendor proposals will not be available for review by anyone other than the CVPRD's

staff and its representatives. There shall be no disclosure of any vendor's information to a competing vendor prior to awarding the contract.

Carbon Valley Parks and Recreation District (CVPRD) is a public agency as defined by state law, and as such, it is subject to the Colorado Open Records Act (CORA) and Sunshine Law. Under the law, all CVPRD's records are public records (unless otherwise declared by law to be confidential) and are subject to inspection and copying by any person. Vendor(s) are advised that once a proposal is received by CVPRD and a decision on contract award is made, its contents will become public record, and nothing contained in the proposal will be deemed to be confidential except proprietary information.

Vendor(s) shall not include any information in their proposal that is proprietary in nature or that they would not want to be released to the public. Proposals must contain sufficient information to be evaluated and a contract written without reference to any proprietary information. If a vendor feels that they cannot submit their proposal without including proprietary information, they must adhere to the following procedure, or their proposal may be deemed unresponsive and will not be recommended for selection.

Laws to be Observed

The vendor is presumed to know and shall strictly comply with all Federal, State, or local laws and regulations in any manner affecting the conduct of the work. The vendor shall indemnify and hold harmless the Carbon Valley Parks and Recreation District, and its designees thereof against any claim or liability arising from or based upon the violation of any such laws, ordinances, regulations, orders, or decrees whether by itself, by its employees, or by its subcontractor(s).

Tax Exemption

The material covered by this proposal is exempt from all COLORADO STATE TAXES. Such taxes shall not be included in the prices quoted. Any material which is to be incorporated in the work or any equipment required for the work contemplated in the proposal may be consigned to the District. If the shipping papers show clearly that any such material is so consigned, the shipment will be exempt from the tax on the transportation of property. All transportation charges shall be paid by the vendor. Each vendor shall take its exemption into account in calculating its bid for its work.

Required Reporting

One of the primary goals in administering this contract is to keep accurate records regarding its actual value/usage. This information is essential to update the contents of the contract and to establish proper bonding levels if they are required. The integrity of future contracts revolves around our ability to convey accurate and realistic information to all interested vendors. A usage report shall be furnished on the 15th (or next business day after the 15th day) of each month by the successful vendor electronic format detailing the purchasing of all items on this contract. The reports shall be submitted electronically and sent as an attachment to finance@cvprd.com. Any exception to this mandatory requirement may result in cancellation of the award.

Method of Payment

For each part of this contract, the District will pay the vendor monthly, within thirty (30) days of receipt of the vendor's billing, the amount which is legitimately earned by the vendor, and supported by payroll data and an itemized accounting of reasonable reimbursable direct non-salary costs. A current progress report of the work shall accompany each billing.

RFP Timeline

Begin installation August 18, 2025

CVPRD anticipates the following timeline:

Distribution of RFP	December 5, 2024
Deadline for RFP	January 3, 2025
Proposals Due	**No Later Than**
[Board Recommendation]	January 15, 2025
Contract awarded by District	January 17, 2025

Additional Attachments Required

Proposal Costs

The District is not liable for any costs incurred by a proposer in responding to this request, attending an interview, or for any other activity prior to award of the contract to the selected proposer.

Right to Select or Reject

The District reserves the right, in its sole discretion, to select the proposal which it determines will best serve the needs of the District, or to reject any and all proposals submitted, and to request additional information on all proposals.

Requirements List (Exhibit 1-3)

Vendors are required to provide responses to all requirements.

- Exhibit 1, Reference Authorization and Release Form
- Exhibit 2, Reference Form

Additional Provisions

- Either party may terminate the audit contract at any time by giving not less than thirty (30) days prior written notice of such termination. If services are terminated the District will pay auditors for all work completed. Nothing herein shall be deemed a limitation upon the District's right to terminate for cause or otherwise to pursue such legal or equitable rights or remedies which may accrue to the District hereunder.
- The District will make every effort to administer the proposal process in accordance with the terms and dates discussed in this RFP. However, the District reserves the right to modify the proposal process and dates as it deems necessary.

Questions and Requests for Clarification

Questions and requests for clarification concerning this RFP should be made in writing no later than 4:00pm on December 27, 2024. Inquiries should be directed to:

Carbon Valley Parks and Recreation District
ATTN: Scott Hickman
701 5th Street
Frederick CO. 80530
shickman@cvrpd.com

Late Proposals

Proposals received after the specified date and time will not be accepted or considered. To guard against premature opening, sealed proposals shall be submitted, plainly marked with the proposal title, vendor name, and time and date of the proposal opening. Evaluation of the proposals is expected to begin shortly after the proposal's due date. To document compliance with the deadline, the proposal will be date and time stamped upon receipt.

CVPRD's Right to Reject Proposals

CVPRD reserves the right to reject any or all proposals in whole or in part, to make multiple awards, partial awards, award by types, item by item, or lump sum total, whichever is determined to be the most advantageous to CVPRD. Vendors submitting proposals may be afforded an opportunity for discussion. Vendors may be requested to provide the best and final offer during the negotiation process. Negotiations may be conducted with responsible vendors who submit proposals found to be reasonably

likely to be selected for award. The contents of any proposal shall not be disclosed to be available to competing vendors during the negotiation process.

CVPRD's Right to Cancel Solicitation

CVPRD reserves the right to cancel this solicitation at any time during the procurement process, for any reason or for no reason. CVPRD makes no commitments expressed or implied, that this process will result in a business transaction with any vendor. This RFP does not constitute an offer by CVPRD. Vendor's participation in this process may result in CVPRD selecting your organization to engage in further discussions and negotiations toward execution of a contract. The commencement of such negotiations does not, however, signify a commitment by CVPRD to execute a contract nor to continue negotiations. CVPRD may terminate negotiations at any time and for any reason, or for no reason.

Disqualification of Vendors

- Any one or more of the following causes may be considered as sufficient for the disqualification of a vendor and the rejection of its proposal or proposals:
- More than one proposal for the same contract from an individual, firm, or corporation under the same or different names.
- Evidence of collusion among vendors.
- Unsatisfactory performance record as evidenced by past experience with CVPRD.
- Any suspension or debarment of the parent company, subsidiary or individual involved with the vendor by federal, any state or any local governments within the last 10 years.
- If the unit prices are obviously unbalanced either in excess or below reasonable cost analysis values.
- If there are any unauthorized additions, interlineations, conditional or alternate bids or irregularities of any kind which may tend to make the proposal incomplete, indefinite, or ambiguous as to its meaning.

Evaluation of Proposal

Proposals will be examined for compliance with all requirements specified in this RFP and those that do not comply will be subject to disqualification without further consideration. In evaluating the proposals and selecting the successful vendor/business, the District will consider the vendor's/business's qualifications and experience, as well as cost. While pricing is important, it should be noted that the lowest cost proposal is not a guarantee of selection for services. Evaluation of the proposals will be considered specialized experience and technical competence, references, size, structure and location and ability to meet the District's requirements.

Final Selection

The vendor selection process will consist of a solicitation of proposals from all vendors with experience providing the documented services and requirements.

In responding to the RFP, vendors should indicate how their proposal will address and fulfill the stated requirements above, provide a high-level project schedule and timeline, and provide a competitive cost proposal.

HVAC RTU REPLACEMENT

Exhibit 1: Reference Authorization and Release Form

To:_____

By: _____, whose address is _____
(Proposing firm)

Proposing firm has submitted a sealed Proposal to the Carbon Valley Parks and Recreation District for HVAC Replacement RTU #4 and RTU #6, Project #HVAC 2025-1

Proposing firm hereby authorizes Carbon Valley Parks and Recreation District to perform such investigation of proposing firm as CVPRD deems necessary to establish the qualifications, responsibility, trustworthiness, and financial ability of the proposing form. By its signature hereon, the proposing firm authorizes CVPRD to obtain reference information concerning the proposing firm and releases the party providing such information named above and CVPRD from any and all liability to the proposing firm as a result of any reference information provided.

Proposing firm further authorizes CVPRD to discuss and release any and all information regarding the Proposing firm's performance on its forthcoming services related to this project or other past projects upon receiving a request for such information. Proposing firm releases CVPRD from any and all liability associated with such a release of information.

Proposing firm further waives any right to receive copies of reference information provided to CVPRD. A copy of a facsimile of this executed Reference Authorization and Release Form may be used with the same effectiveness as an original.

By: _____

Signature

Title: _____

Date: _____

HVAC RTU REPLACEMENT

Exhibit 2: Reference Form

Contact Person_____

Company Name_____

Address_____

_____

Telephone Number _____Email_____

Contact Person_____

Company Name_____

Address_____

_____

Telephone Number _____Email_____

Contact Person_____

Company Name_____

Address_____

_____

Telephone Number _____Email_____

Contact Person_____

Company Name_____

Address_____

_____

Telephone Number _____Email_____

CARBON VALLEY
PARKS & RECREATION DISTRICT

HVAC RTU REPLACEMENT

Addendum “A”

Trane Precedent Packaged Rooftop

Unit Overview - YSK150A4S0H**H2C0A1B10000000000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight	EER	IEER/SEER	Elevation
		Airflow	Total Static Pressure	Height	Width	Length				
DX Cooling / Gas Heat	12.5 Ton	5000. cfm	1.982 in H2O	4.24 ft	5.26 ft	8.30 ft	1441.0 lb	10.80 Number	14.50 Number	5400.00 ft

Unit Features

Unit Efficiency	Standard Efficiency
Refrigerant	R-454B Refrigerant
Hinged Service Access/Filters	Hinged Access Panels with 2-in MERV 8
Through the Base Provisions	Electric
Disconnect / Circuit Breaker	Non-Fused Disconnect Switch
Convenience Outlet	Powered 15A Convenience Outlet
Fresh Air Selection	Economizer, Comparative Enthalpy with BR

Unit Electrical

Voltage/phase/hertz	460/60/3
MCA	33.00 A
MOP	45.00 A
Condenser Fan FLA	2.20 A
Evaporator Fan FLA	5.50 A
Compressor 1 RLA	14.40 A
Compressor 2 RLA	7.00 A
Compressor Power	11.72 kW
System Power	14.96 kW

Controls

Unit Controls	Symbio 700
Communications Option	Advanced Controls and BACnet BAS
SupplyFan/Drive/MotorType	Single Zone VAV with Standard Motor

Cooling Section

		Capacity	
Entering Dry Bulb	80.00 F	**Gross Total**	127.58 MBh
Entering Wet Bulb	60.00 F	**Gross Latent**	4.89 MBh
Ambient Temp	95.00 F	**Gross Sensible**	122.69 MBh
Leaving Coil Dry Bulb	50.50 F	**Net Total**	118.35 MBh
Leaving Coil Wet Bulb	49.00 F	**Net Sensible**	113.47 MBh
Leaving Unit Dry Bulb	53.42 F	**Net Sensible Heat Ratio**	95.87 %
Leaving Unit Wet Bulb	50.18 F	**Fan Motor Heat**	4.93 MBh
Saturated Discharge Temperature	127.81 F	**Refrig Charge-Circuit 1**	9.8 lb
Saturated Suction Temperature	44.63 F		

Heating Section

Heating	High Gas Heat
Input Heating Capacity	196.00 MBh
Output Heating Capacity	158.76 MBh
Heating EAT	55.00 F
Heating LAT	90.05 F
Heating Temp Rise	35.05 F
Heating Stages	2

Fan Section

Indoor Fan Data	
Airflow Application	Downflow
Design ESP	1.500 in H2O
Component SP	0.482 in H2O
Heat SP	0.000 in H2O
Total SP	1.982 in H2O
Indoor Fan Drive Type	Variable Direct
Indoor Fan Quantity	1.00 Number
Indoor Fan Type	BC Plenum

Indoor Fan Performance	
Airflow	5000. cfm
Supply Motor Horsepower	4.600 hp
Total Supply Motor Operating Power	3.488 hp
Indoor RPM	1731 rpm
Outdoor Fan Data	
Outdoor Fan Drive Type	Direct
Outdoor Fan Quantity	1
Outdoor Fan Type	Propeller
Filters	
1st Filter Size and Qty	3 - 24 x 18 x 2
2nd Filter Size and Qty	3 - 18 x 18 x 2

Field Installed Accessories

Symbio Adv Controls and BACnet Conv Kit	None

Acoustics

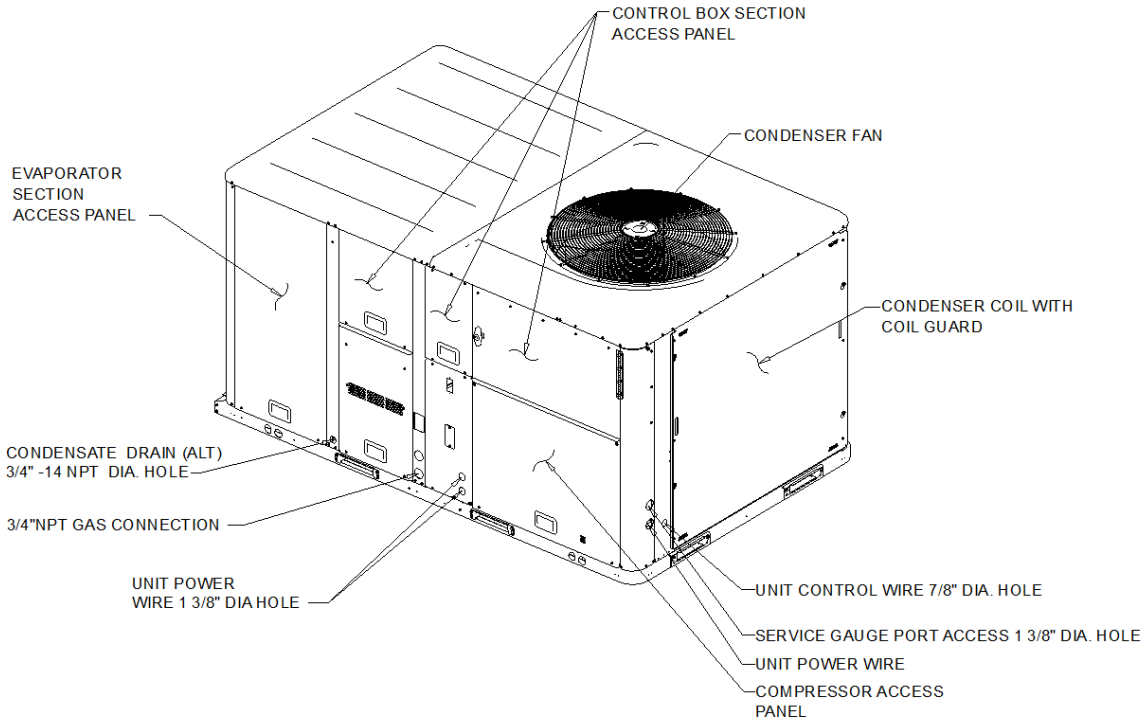
Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	86 dB	93 dB	81 dB	77 dB	72 dB	69 dB	70. dB	69 dB
Ducted Inlet	81 dB	82 dB	77 dB	68 dB	65 dB	62 dB	62 dB	61 dB
Outdoor Noise	88 dB	90. dB	90. dB	87 dB	84 dB	80. dB	75 dB	67 dB

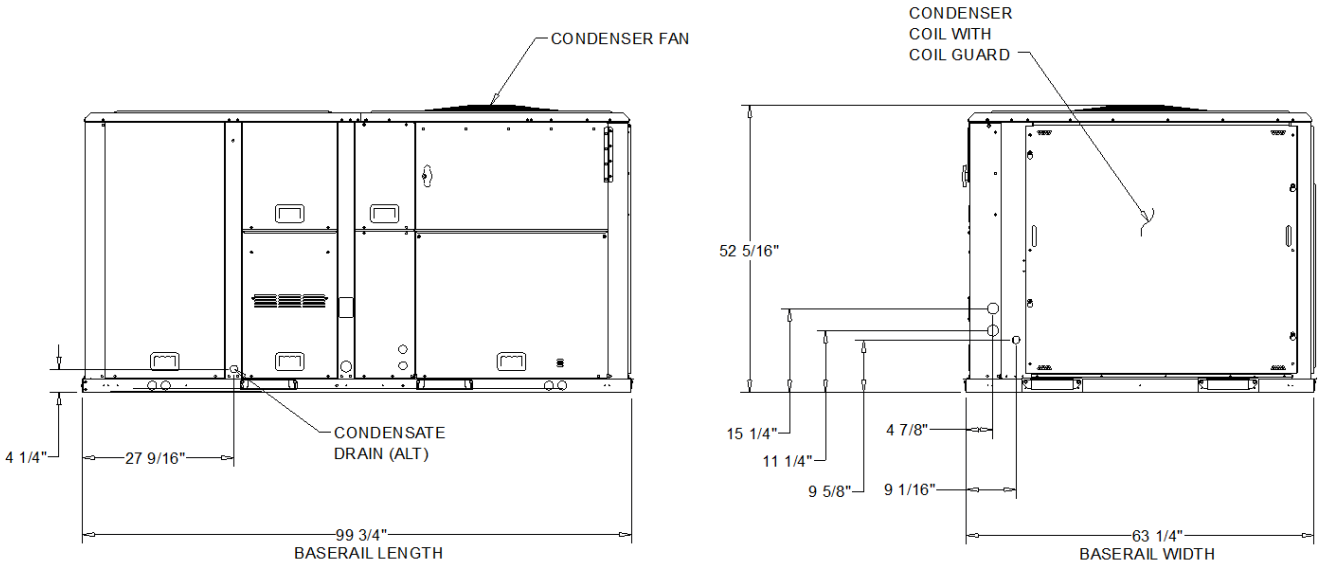
Note:Ducted Discharge/Ducted Inlet prediction data conform to AHRI 260

Warranty

Labor (first year)	1st Yr Labor Whole Unit

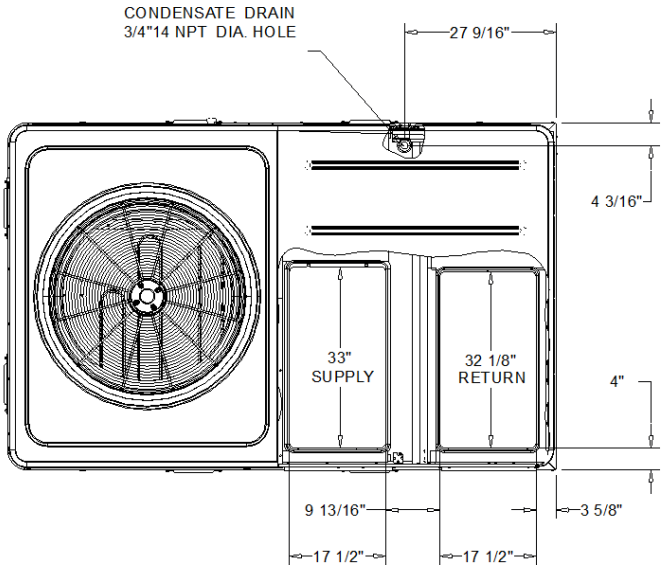
NOTES:
1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY WEIGHTS, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



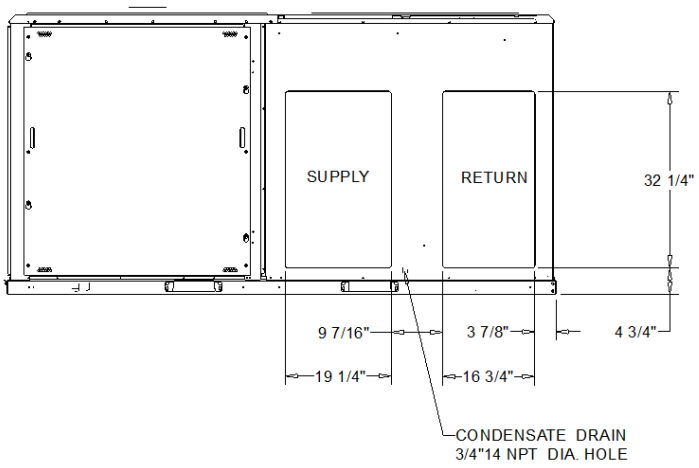


DX COOLING / GAS HEAT STANDARD EFFICIENCY

DIMENSION DRAWING



PLAN VIEW OF DOWNFLOW OPENINGS



HORIZONTAL AIR FLOW OPENING

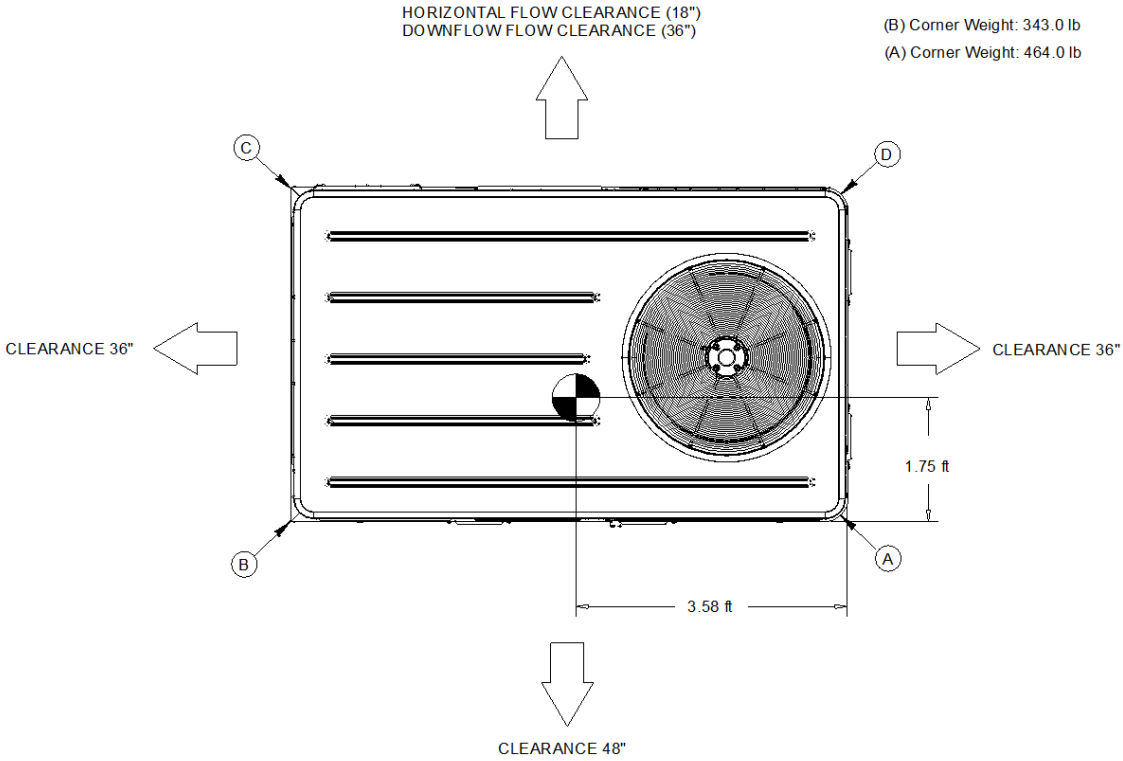
DX COOLING / GAS HEAT STANDARD EFFICIENCY

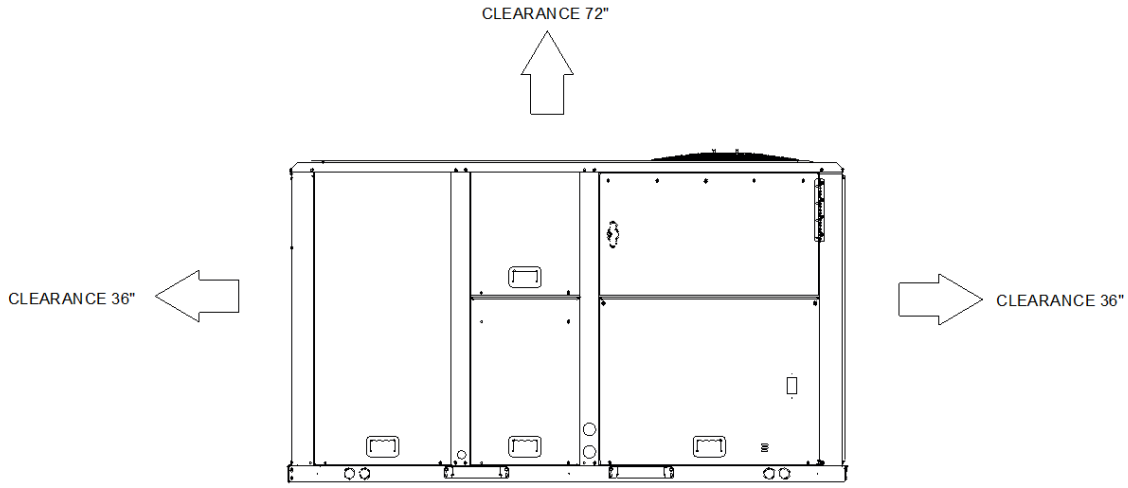
DIMENSION DRAWING

NOTES:
1. APPROX. INSTALLED WEIGHT INCLUDES ALL SELECTED OPTIONS AND ACCESSORIES.
2. CORNER WEIGHTS ARE FOR BASE UNIT ONLY AND DO NOT INCLUDE OPTIONS OR ACCESSORIES.
3. WEIGHT INCLUDES BOTH FACTORY AND FIELD INSTALLED ACCESSORY.

Approximate Installed Weight: 1,441.0 lb

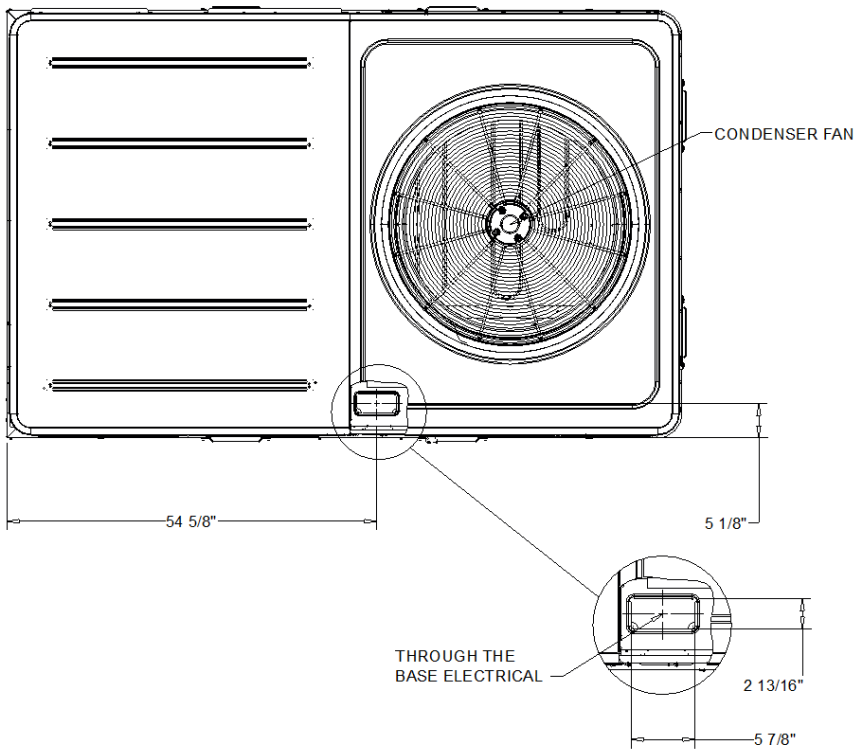
(B) Corner Weight: 343.0 lb	(C) Corner Weight: 175.0 lb
(A) Corner Weight: 464.0 lb	(D) Corner Weight: 236.0 lb

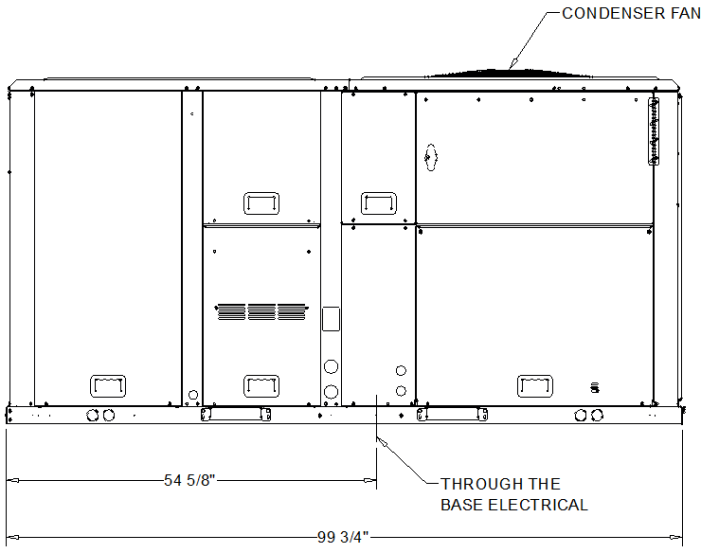




DX COOLING / GAS HEAT STANDARD EFFICIENCY

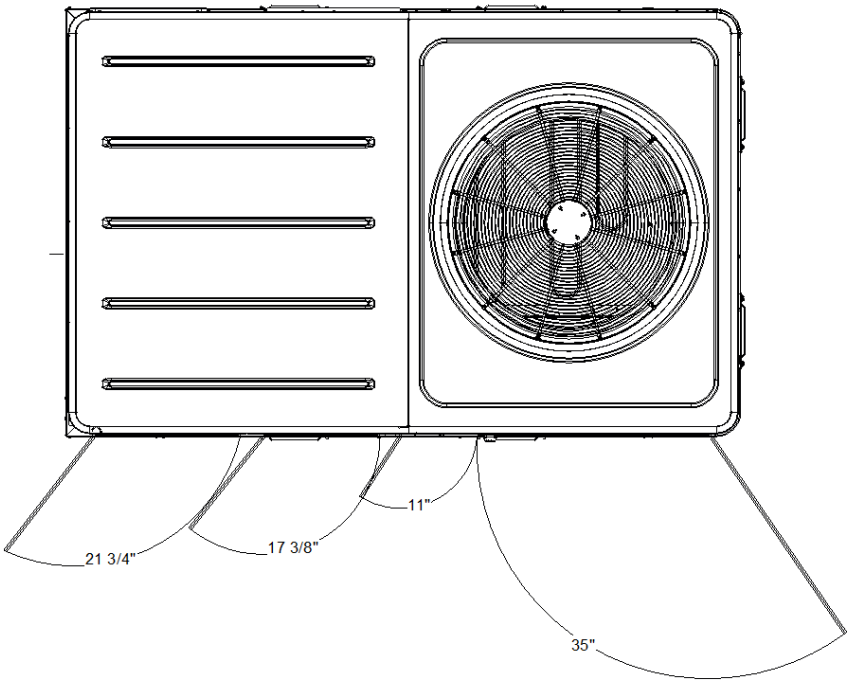
WEIGHTS AND CLEARANCES

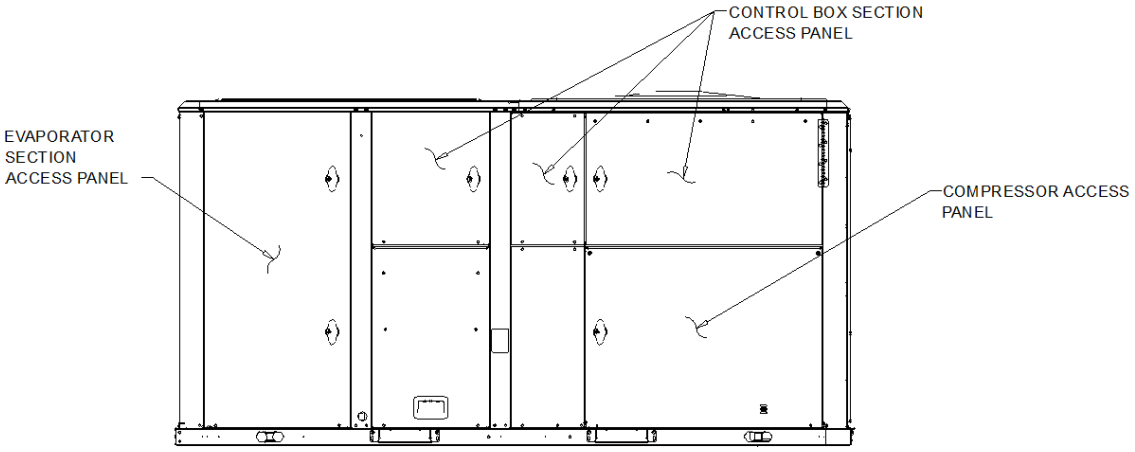




THROUGH-THE-BASE ELECTRICAL (OPTION)

DX COOLING / GAS HEAT STANDARD EFFICIENCY

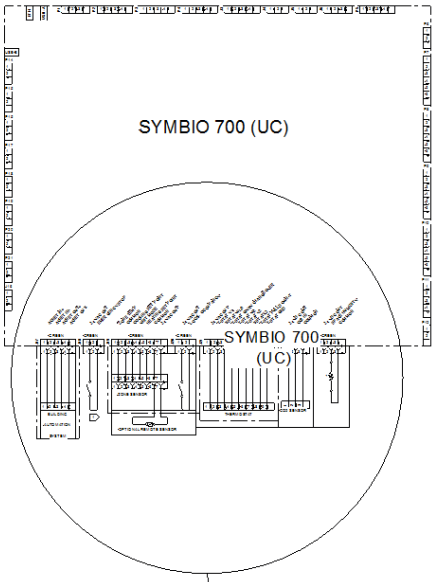


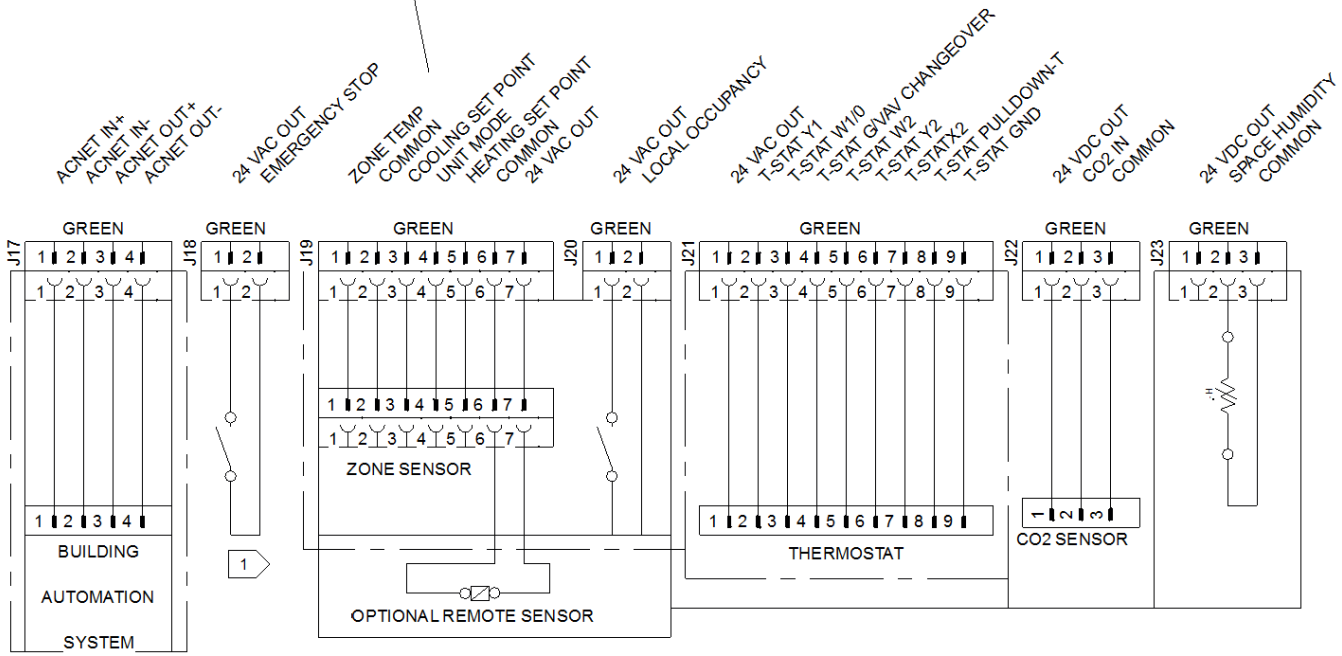


SWING DIAMETER FOR HINGED DOOR(S) (OPTION)

DX COOLING / GAS HEAT STANDARD EFFICIENCY

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





SYMBIO 700 (J17, j18, J19, J20, J21, J22, AND J23)

FIELD WIRING DRAWING

General
Packaged rooftop unit cooling capacities, heating capacities, and efficiencies are certified to the following standards:
- 3 to 5 ton units: AHRI Standard 210/240.
- 6 to 25 ton units: AHRI Standard 340/360.

- Gas Heating Units: ANSI Z21.47 and 10 CFR Part 431 for Commercial Warm Air.
- Convertible airflow.
- Symbio? controls operating range between 40°F and 125°F in cooling mode standard from the factory. Field-installed low ambient kit extends operating range down to 0°F.
- Factory assembled, internally wired, fully charged, and 100 percent run tested to verify cooling operation, fan and blower rotation, and control sequence.
- Colored and numbered wiring internal to the unit for simplified identification.
- cULus listed and classified in accordance for Central Cooling Air Conditioners.
- Unit shall be furnished with a leak detection system from the fact

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 air tight 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.

Hail Guards
- Provides condenser coil protection.

Powered or Unpowered Convenience Outlet
- Powered GFCI, 120V/15A, 2 plug, convenience outlet or unpowered GFCI, 120V/20A, 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 or circuit breaker, and therefore will not be affected
by the position of the disconnect or circuit breaker.
- Available to order when through-the-base electrical with disconnect switch or circuit breaker option is ordered.

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.
- All units have dual compressors.
-Three stages of cooling available on 6 to 17.5 tons units and four stages of cooling available on 20 and 25 tons units.

Filters
-Two inch pleated media filters shall be available on all models.

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.
-Stainless steel heat exchanger with 409 stainless steel tubes and 439 stainless steel burners shall be optional.
- 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).

Indoor Fan
- Direct drive plenum fan design - 6 to 25 tons units.
- Plenum fan design - backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor.
- Supply fan speed adjustments can be made using the Symbio 700 or Mobile App.
- Motors are thermally protected.
- Variable speed direct drive motors are high efficiency - 6 to 25 tons.

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.

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 water tight 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)
- Available with or without 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 ?off? cycle.
- Optional solid state or differential enthalpy control.
- Arrives in shipping position and shall be moved to the operating position by the installing contractor.

Trane Precedent Packaged Rooftop

Unit Overview - YSK048A4S0H**H1C0A1B10000000000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight	EER	IEER/SEER	Elevation
		Airflow	Total Static Pressure	Height	Width	Length				
DX Cooling / Gas Heat	4 Ton	1600. cfm	1.837 in H2O	3.91 ft	3.69 ft	5.82 ft	774.0 lb	12.00 Number		5400.00 ft

Unit Features

Unit Efficiency	Standard Efficiency
Refrigerant	R-454B Refrigerant
Hinged Service Access/Filters	Hinged Access Panels with 2-in MERV 8
Through the Base Provisions	Electric
Disconnect / Circuit Breaker	Non-Fused Disconnect Switch
Convenience Outlet	Powered 15A Convenience Outlet
Fresh Air Selection	Economizer, Comparative Enthalpy with BR

Unit Electrical

Voltage/phase/hertz	460/60/3
MCA	14.00 A
MOP	20.00 A
Condenser Fan FLA	0.70 A
Evaporator Fan FLA	4.20 A
Compressor 1 RLA	7.00 A
Compressor 2 RLA	0.00 A
Compressor Power	3.52 kW
System Power	4.94 kW

Controls

Unit Controls	Symbio 700
Communications Option	Advanced Controls and BACnet BAS
SupplyFan/Drive/MotorType	Multi-speed Oversized Motor

Cooling Section

		Capacity	
Entering Dry Bulb	80.00 F	**Gross Total**	43.06 MBh
Entering Wet Bulb	60.00 F	**Gross Latent**	2.62 MBh
Ambient Temp	95.00 F	**Gross Sensible**	40.45 MBh
Leaving Coil Dry Bulb	50.80 F	**Net Total**	40.13 MBh
Leaving Coil Wet Bulb	48.87 F	**Net Sensible**	37.51 MBh
Leaving Unit Dry Bulb	54.40 F	**Net Sensible Heat Ratio**	93.48 %
Leaving Unit Wet Bulb	50.31 F	**Fan Motor Heat**	1.86 MBh
Saturated Discharge Temperature	122.04 F	**Refrig Charge-Circuit 1**	3.3 lb
Saturated Suction Temperature	44.08 F		

Heating Section

Heating	High Gas Heat
Input Heating Capacity	101.92 MBh
Output Heating Capacity	82.56 MBh
Heating EAT	55.00 F
Heating LAT	112.36 F
Heating Temp Rise	57.36 F
Heating Stages	2

Fan Section

Indoor Fan Data		Indoor Fan Performance	
Airflow Application	Downflow	**Airflow**	1600. cfm
Design ESP	1.500 in H2O	**Supply Motor Horsepower**	1.260 hp
Component SP	0.337 in H2O	**Indoor RPM**	1350. rpm
Heat SP	0.000 in H2O	**Outdoor Fan Data**	
Total SP	1.837 in H2O	**Outdoor Fan Drive Type**	Direct
Indoor Fan Drive Type	Direct	**Outdoor Fan Quantity**	1
Indoor Fan Quantity	1.00 Number	**Outdoor Fan Type**	Propeller
Indoor Fan Type	BC Plenum	**Filters**	
		1st Filter Size and Qty	4 - 20 x 20 x 2

Field Installed Accessories

Symbio Adv Controls and BACnet Conv Kit	None

Acoustics

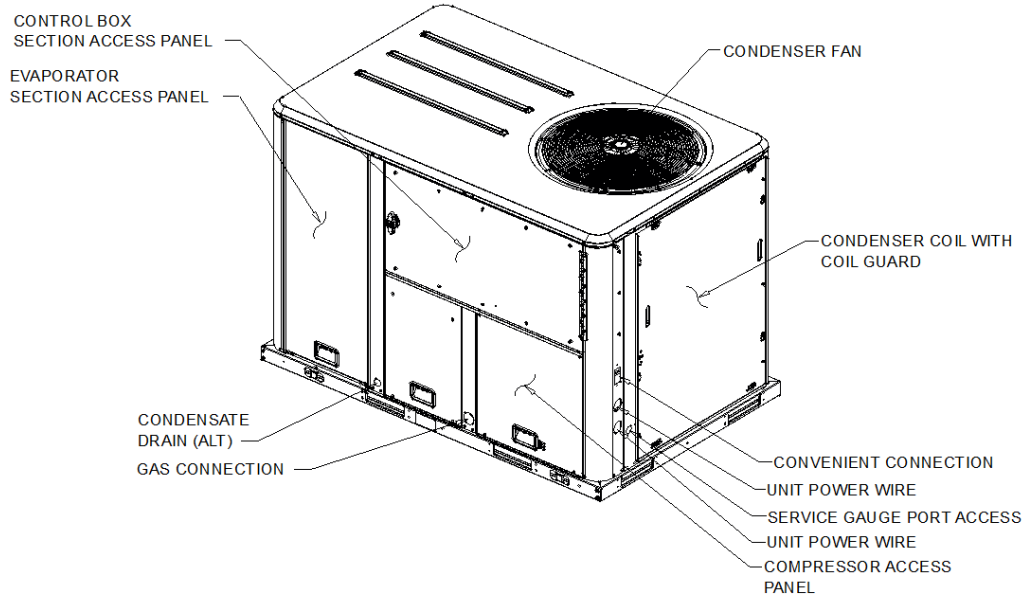
Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	92 dB	83 dB	72 dB	71 dB	65 dB	63 dB	64 dB	58 dB
Ducted Inlet	81 dB	77 dB	67 dB	61 dB	55 dB	55 dB	56 dB	51 dB
Outdoor Noise	82 dB	81 dB	80. dB	77 dB	73 dB	69 dB	66 dB	61 dB

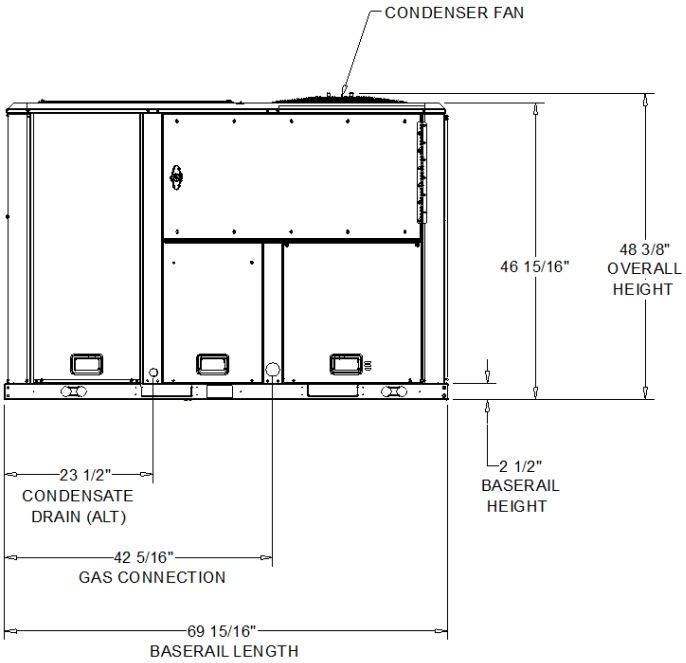
Note:Ducted Discharge/Ducted Inlet prediction data conform to -- AHRI 260

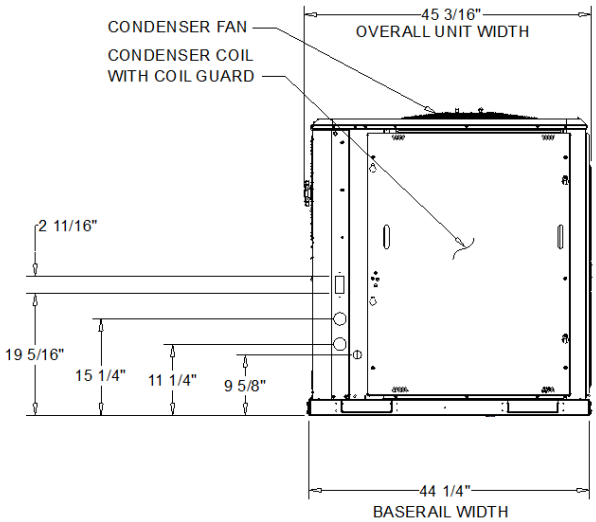
Warranty

Labor (first year)	1st Yr Labor Whole Unit

NOTES:
1. VERIFY WEIGHTS, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

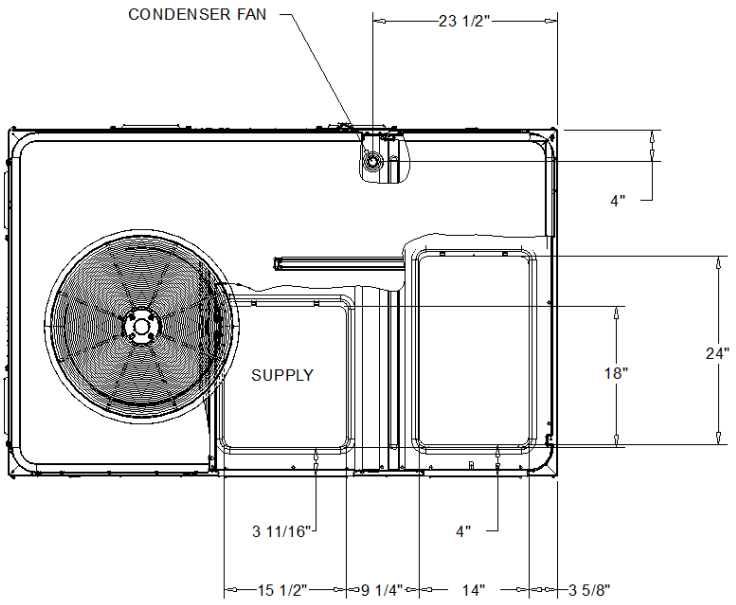




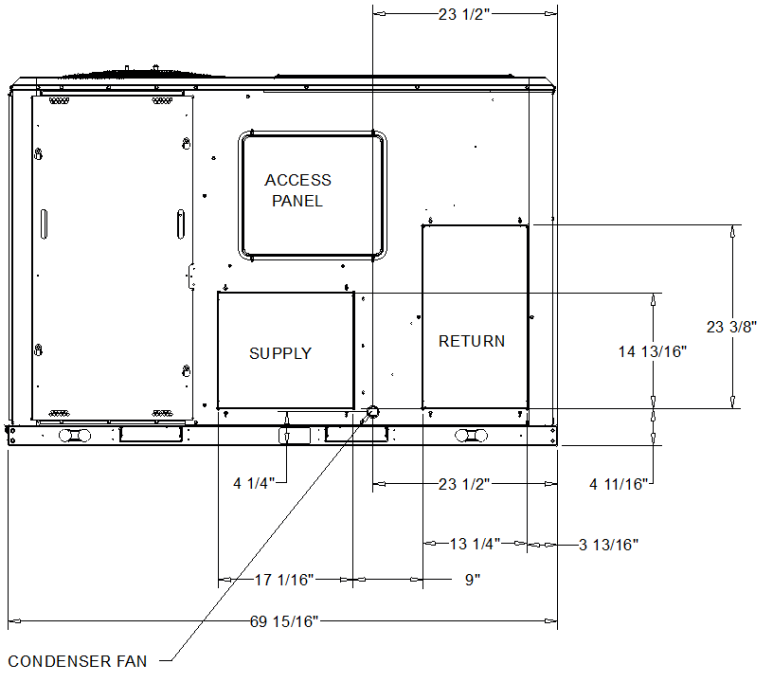


DX COOLING / GAS HEAT STANDARD EFFICIENCY

DIMENSION DRAWING



PLAN VIEW OF DOWNFLOW OPENINGS



HORIZONTAL AIR FLOW OPENING

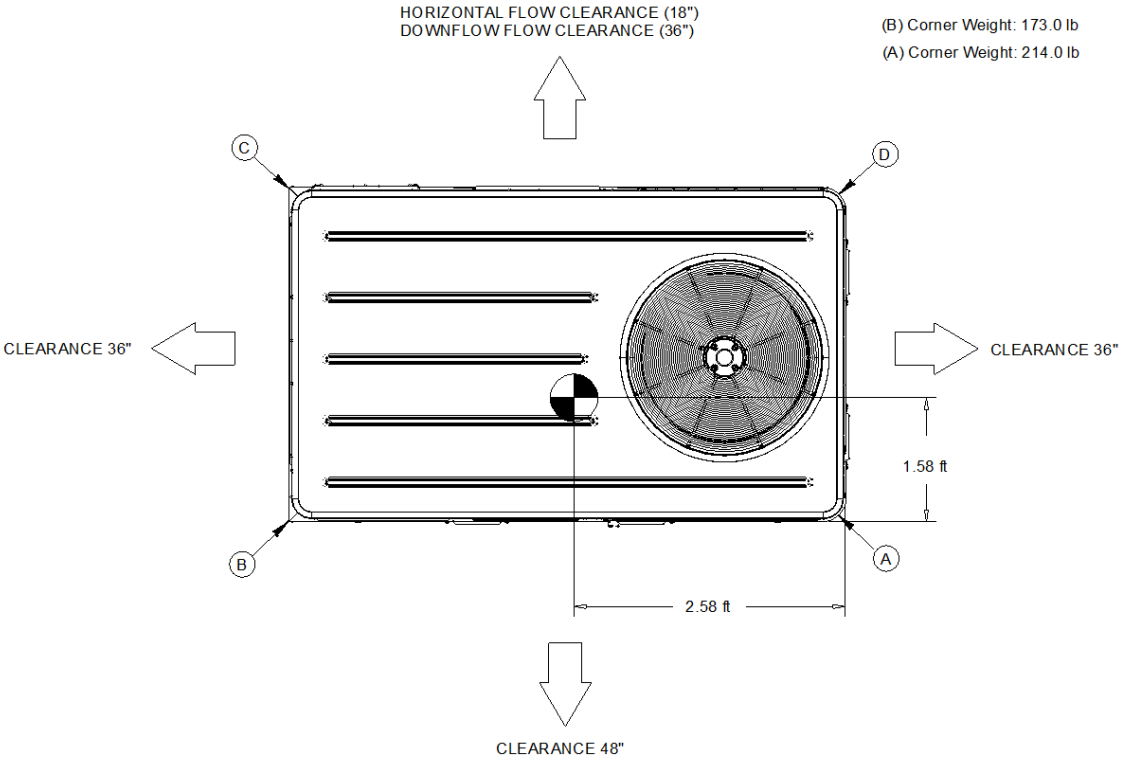
DX COOLING / GAS HEAT STANDARD EFFICIENCY

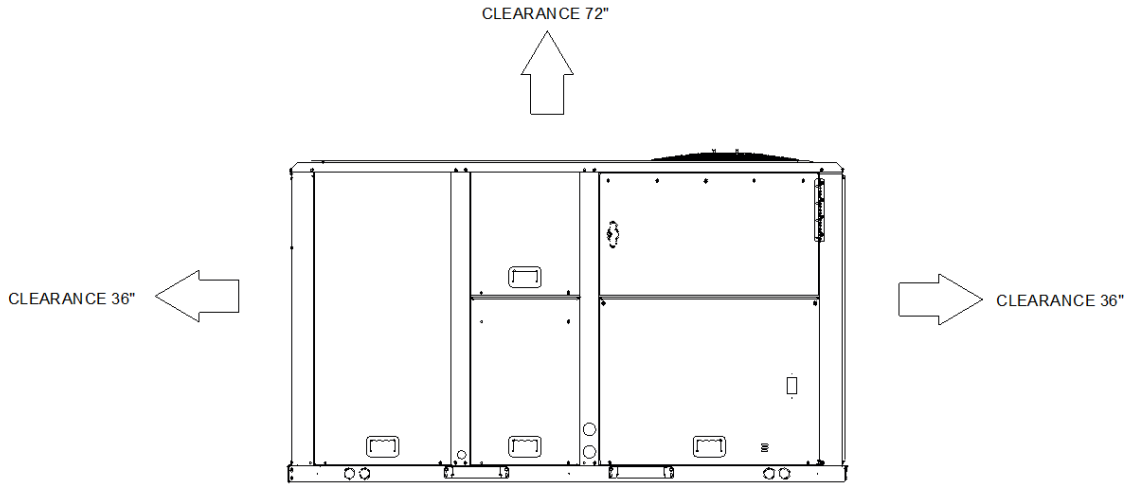
DIMENSION DRAWING

NOTES:
1. APPROX. INSTALLED WEIGHT INCLUDES ALL SELECTED OPTIONS AND ACCESSORIES.
2. CORNER WEIGHTS ARE FOR BASE UNIT ONLY AND DO NOT INCLUDE OPTIONS OR ACCESSORIES.
3. WEIGHT INCLUDES BOTH FACTORY AND FIELD INSTALLED ACCESSORY.

Approximate Installed Weight: 774.0 lb

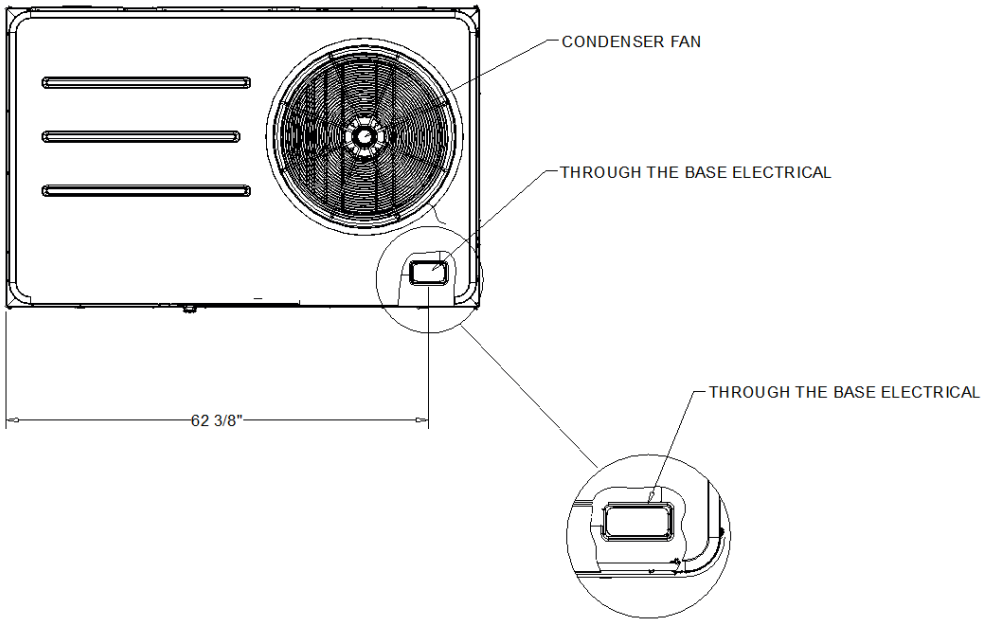
(B) Corner Weight: 173.0 lb	(C) Corner Weight: 126.0 lb
(A) Corner Weight: 214.0 lb	(D) Corner Weight: 167.0 lb

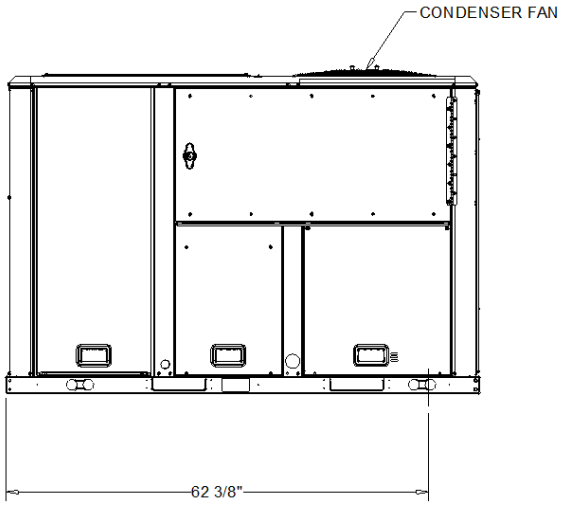




DX COOLING / GAS HEAT STANDARD EFFICIENCY

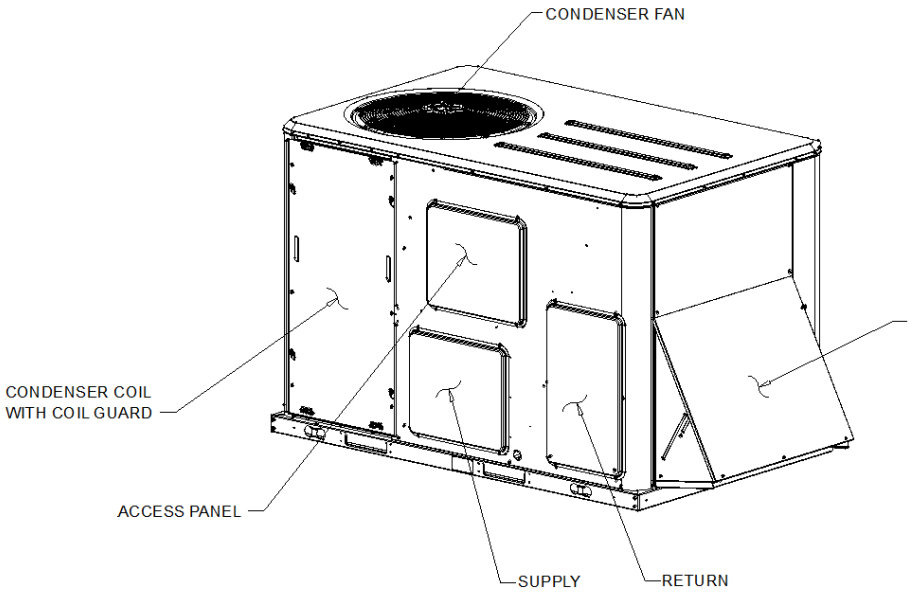
WEIGHTS AND CLEARANCES

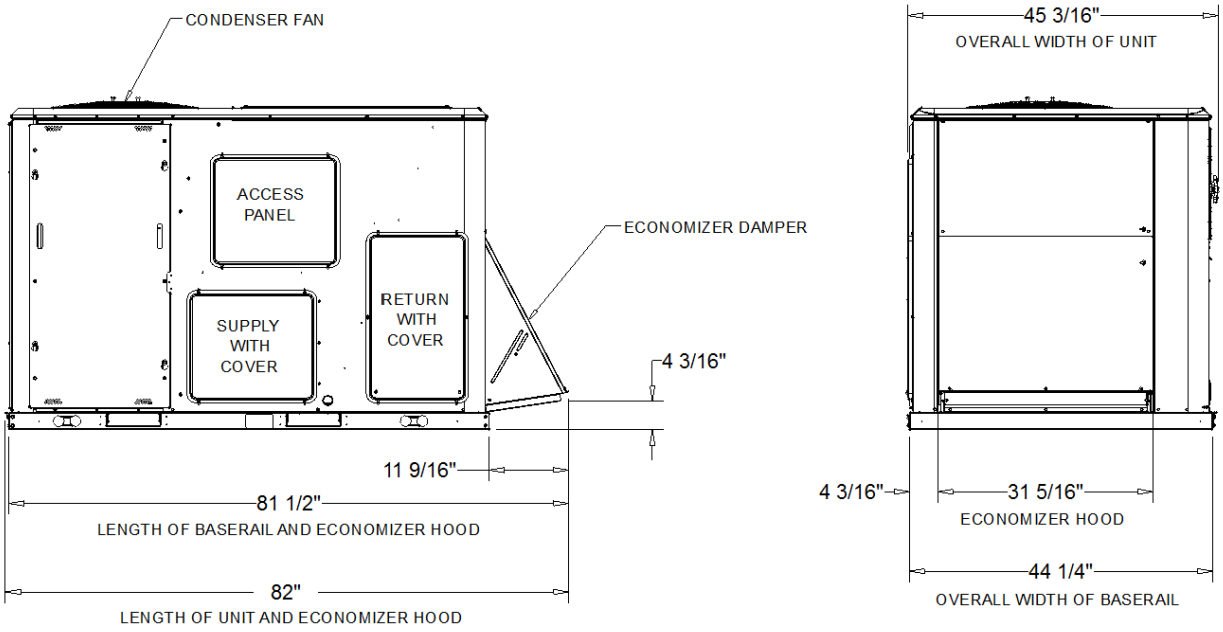




THROUGH-THE-BASE ELECTRICAL (OPTION)

DX COOLING / GAS HEAT STANDARD EFFICIENCY





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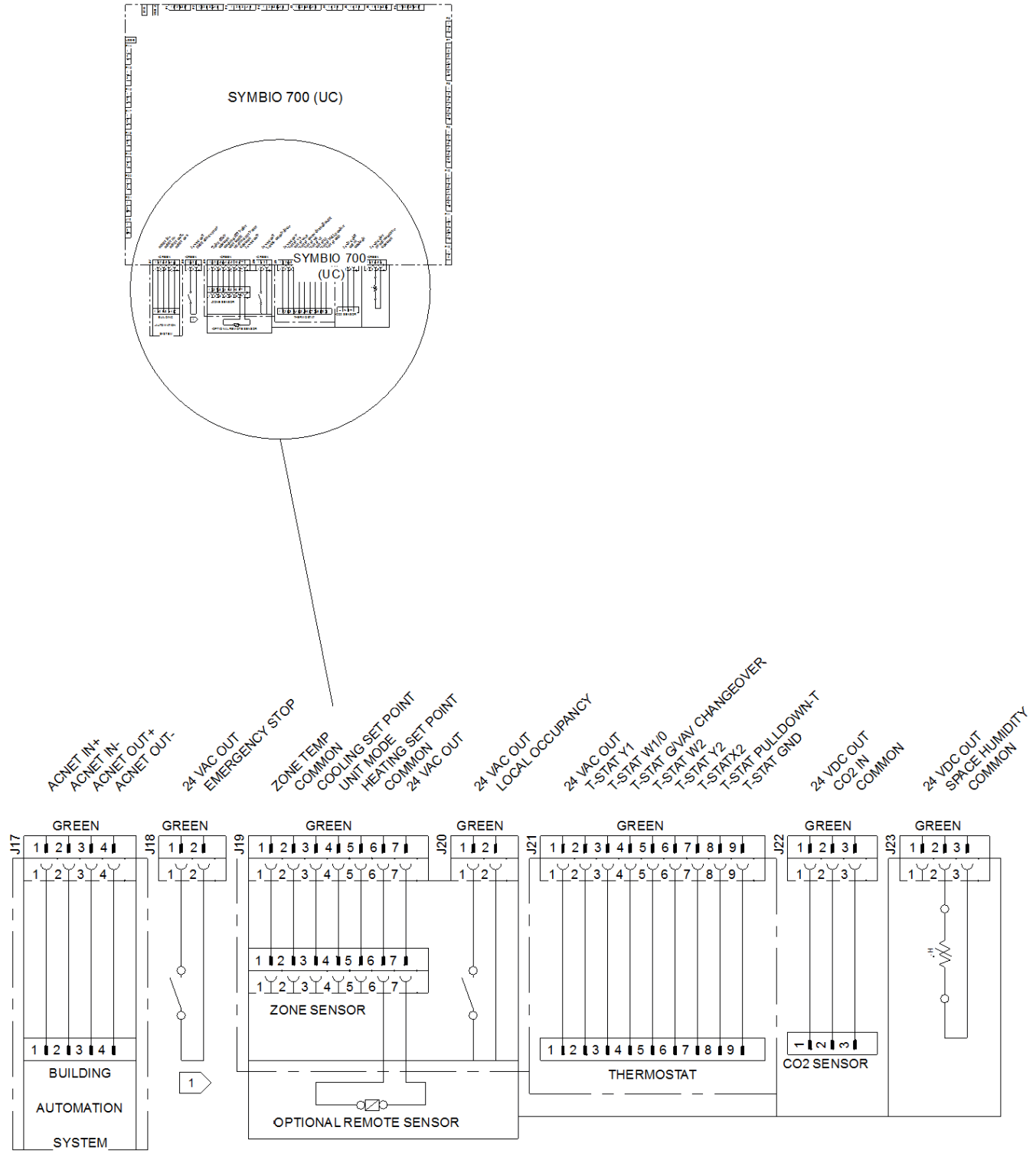

SYMBIO 700 (J17, j18, J19, J20, J21, J22, AND J23)

FIELD WIRING DRAWING

General
Packaged rooftop unit cooling capacities, heating capacities, and efficiencies are certified to the following standards:
- 3 to 5 ton units: AHRI Standard 210/240.
- 6 to 25 ton units: AHRI Standard 340/360.

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- Symbio? controls operating range between 40°F and 125°F in cooling mode standard from the factory. Field-installed low ambient kit extends operating range down to 0°F.
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