# INVITATION TO BID Informal Bid HVAC REPLACEMENT – Greenville Convention Center CITY OF GREENVILLE NORTH CAROLINA



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# PRE-BID MEETING: TUESDAY, DECEMBER 10, 2019 @ 2:00 PM GREENVILLE CONVENTION CENTER 303 SW GREENVILLE BLVD., GREENVILLE, NC

**BIDS DUE:** 

TUESDAY, JANUARY 7, 2020 @ 2:00 PM PUBLIC WORKS 1500 BEATTY STREET, GREENVILLE, NC 27834

# **CONTACT PERSONS:**

# QUESTIONS REGARDING THE BID PACKAGE:

Ms. Denisha Harris Purchasing Manager Telephone: (252) 329-4862 Email: dharris@greenvillenc.gov

# QUESTIONS REGARDING THE SPECIFICATIONS:

Mr. Ross Peterson Building and Grounds Supervisor Telephone: (252) 329-4921 Email: <u>rpeterson@greenvillenc.gov</u>

# CITY OF GREENVILLE ADVERTISEMENT FOR PROPOSALS "HVAC Replacement – Greenville Convention Center"

The City of Greenville, NC is requesting proposals for the "HVAC Replacement – Greenville Convention Center" located at the Greenville Convention Center, 303 SW Greenville Blvd.. The scope of work shall include but is not limited to the removal of the existing rooftop units, installation of new rooftop units, all electrical and other associated items.

This is a turn-key project.

A mandatory pre-bid meeting and site visit will be held at the Greenville Convention Center located at 303 SW Greenville Blvd., Greenville, NC on Tuesday, December 10, 2019 @ 2:00 PM.

A site visit is mandatory that will be available following the pre-bid meeting and the alternate date for those that attend mandatory pre-bid will be Thursday, December 12, 2019 @ 2:00 PM, by emailing Ross Peterson at <u>rpeterson@greenvillenc.gov</u>.

Sealed proposals will be received by the City of Greenville until Tuesday, January 7, 2020 by 2:00 PM at the Public Works Reception Desk located at 1500 Beatty Street, Greenville, NC 27834.

Mailed bids must be delivered to 1500 Beatty Street, Greenville, NC 27834 on or before Tuesday January 7, 2020 @ 2:00 PM and addressed to Mr. Ross Peterson, Building and Grounds Supervisor, with the words <u>Bid</u> <u>Enclosed</u>, <u>HVAC Replacement – Greenville Convention Center</u> on the outside of the mail carrier envelope. Bids received after the deadline will not be opened.

All bids will be marked with the date and time they are received by reception staff. Bids will <u>NOT</u> be opened and read aloud. Bids will be open and reviewed by city staff. A bid tabulation will be available upon request once the contract is awarded to the successful bidder.

The City of Greenville reserves the right to reject any or all bids, waive any informality and award contracts that appear to be in its best interest. The right is reserved to hold any or all proposals for a period of sixty (60) days from the bid opening thereof.

From the date of this advertisement until the date of opening the proposals, the plans and specifications of the proposed work and/or a complete description of the apparatus, supplies, materials or equipment are and will continue to be on file in the office of the City of Greenville Purchasing Manager, 201 W. 5<sup>th</sup> Street, Greenville, NC 27834, during regular business hours, and available to prospective bidders. Inquiries should be directed to the Purchasing Manager at the above address --- Telephone (252) 329-4862. Minority/Women owned business are encouraged to submit proposals.

# **INSTRUCTIONS TO BIDDERS**

# Proposal to Provide HVAC Replacement – Greenville Convention Center 303 SW Greenville Blvd., Greenville, NC 27834

- 1. Contractor is to provide verification to the City that the company's employees are covered under worker's compensation insurance coverage.
- 2. It is expressly understood by the contractor offering a proposal after a written notice of award by the City, a purchase order will be required to be executed and will serve together with this proposal, these instructions, and any detailed specifications as the entire form of contract between the parties.
- 3. Each Contractor submitting a proposal is affirming that no official or employee of the City is directly or indirectly interested in this proposal for any reason of personal gain.
- 4. Sales taxes may be listed on the proposal, but as a separate item. No charge will be allowed for Federal Excise and Transportation Tax from which the City is exempt.
- 5. Questions regarding any procedure for submission of a proposal for the HVAC Replacement shall be directed by email to Ross Peterson, Building and Grounds Supervisor, @ <u>rpeterson@greenvillenc.gov</u>. Questions shall be submitted by 5:00 PM, Tuesday, December 17, 2019. Answers will be provided in an addendum and email to those that signed in at the pre-bid by 5:00 PM, Friday, December 20, 2019. If an addendum is provided it must be indicated by initialing on bid form. Addendums will be available on city web page.
- 6. If the Contractor is unable to provide a proposal for any reason, please send an email with an explanation to <u>rpeterson@greenvillenc.gov</u>.
- 7. By submitting a proposal for HVAC REPLACEMENT Greenville Convention Center, the Contractor attests that it is in compliance with all items listed in the bid/proposal instructions. Furthermore, the Contractor attests that the City of Greenville accepts no responsibility for any injuries to the firm's employees, while on City property performing their duties.
- 8. Contractor must comply with all OSHA requirements associated with the work within this contract.
- 9. It is expected that work would begin sometime in March/April. However, such starting date is subject to change based on time needed to finalize contract documents.
- **10.** No work will be performed at any time without proper supervision. Names and experience of supervisors shall be provided.
- 11. Parking and staging areas for equipment and materials can be arranged on site during the preconstruction meeting conducted prior to the work starting.
- 12. Work on this project will have to be performed so as to not disrupt operations of the buildings and grounds. Any work that the contractor feels that will be disruptive should be planned to be done after hours. This includes any closing of any streets around the buildings.
- 13. All work must be performed Monday Saturday from 7:00 AM to 7:00 PM. Other hours will have to be approved in advance.
- 14. The Contractor shall accompany a designated representative(s) of the City on inspections of work at any time during the contract period. The City reserves the right to make determinations as to whether service is performed satisfactorily. Deficiencies in work performance must be corrected immediately.

# **SPECIFICATIONS**

# 1.0 SCOPE:

The scope of work shall include, but is not limited to:

- 1.1 The Contractor shall provide all labor, equipment, crane, materials and insurance necessary to remove and replace the rooftop HVAC units [(7 units), six 27.5 ton packaged and one 6 ton package] and all necessary work to complete installation per the attached equipment specifications and drawings document, labeled as Exhibit "B".
- **1.2** New rooftop units shall be manufactured by Trane. No other manufacture will be accepted.
- **1.3** Include extended warranty of 10 years for compressor and heat exchanger parts as well as a 5 year parts, refrigerant and labor warranty.
- **1.4** Start up and commissioning shall be performed by Trane authorized representative.
- 1.5 The new 27.5 ton units will be placed on the existing curb with a new gasket provided by contractor. Visual inspection by the city and contractor of duct shall be performed prior to setting units in place. If any work is deemed necessary by the City than a change order will be created.
- 1.6 The new 6 ton unit will require an adapter to the existing curb with a new gasket provided by contractor. Visual inspection by the city and contractor of duct shall be performed prior to setting units in place. If any work is deemed necessary by the City than a change order will be created.
- **1.5** Install all new electrical service disconnects with watertight conduit from service disconnect to units.
- 1.6 All electrical and duct connections shall be included.
- **1.7** Installation of all programmable zone sensors.
- **1.8** All low voltage wiring shall be disconnected and reconnected by contractor.
- **1.9 Obtain all permits from the City of Greenville at no cost.**
- 1.10 All areas of work shall be scheduled at least one (1) week in advance and be scheduled through the Building & Grounds Supervisor.
- 1.11 Cleanup and removal of all replacement units and debris at work site.

# 2.0 PAYMENT AND BID:

- 2.1 Bidders will comply with all local, state, and federal laws and ordinances governing said work including the Occupational Safety and Health Act of 1970.
- 2.2 By submitting a proposal, the firm is attesting that they are an Equal Opportunity Employer.

2.3 The City of Greenville has adopted an Affirmative Action Program. Firms submitting a proposal are attesting that they also have taken affirmative action to ensure equality of opportunity in all aspects of employment.

# 2.3 Minority and/or Women Business Enterprise (MWBE) Program

It is the policy of the City of Greenville to provide minorities and women equal opportunity for participating in all aspects of the City's contracting and procurement programs, including but not limited to, construction projects, supplies and materials purchases, and professional and personal service contracts. In accordance with this policy, the City has adopted a Minority and Women Business Enterprise (M/WBE) Plan and subsequent program, outlining verifiable goals.

The City has established a 10% Minority Business Enterprise (MBE) and 6% Women Business Enterprise (WBE) goal for the participation of MWBE firms in supplying goods and services for the completion of this project. All firms submitting bids agree to utilize minority and women-owned firms whenever possible.

Refer to Exhibit "C" for all Minority and/or Woman Business Enterprise (MWBE) requirements.

Questions regarding the City's M/WBE Program should be directed to Ferdinand Rouse in the M/WBE Office at (252) 329-4462.

- 2.5 The City of Greenville reserves the right to reject any and all bids, to waive any informalities and to accept the bid if seems most advantages to the City. Any bid submitted will be binding for sixty (60) days after the date of the bid opening.
- 2.6 Equal Employment Opportunity Clause

The City has adopted an Equal Employment Opportunity Clause, which is incorporated into all specifications, purchase orders, and contracts, whereby a vendor agrees not to discriminate against any employee or applicant for employment on the basis of race, color, religion, sex, national origin or ancestry. A copy of this clause may be obtained at the City Clerk's Office, City Hall, Greenville, NC. By submitting qualifications and/or proposals, the firm is attesting that they are an Equal Opportunity Employer. Federal law (Rehabilitation Act and ADA) prohibits handicapped discrimination by all governmental units. By submitting a proposal, the vendor is attesting to its policy of nondiscrimination regarding the handicapped.

2.7 Iran Divestment Act Certification:

The CONTRACTOR hereby certifies that, it is not on the Iran Final Divestment List created by the North Carolina State Treasurer pursuant to N.C.G.S. 147-86.58. The CONTRACTOR shall not utilize in the performance of the Agreement any subcontractor that is identified on the Iran Final Divestment List.

2.8 E-Verify Compliance:

The CONTRACTOR shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statues. Further if the CONTRACTOR utilizes a subcontractor, the CONTRACTOR shall require the subcontractor to comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statues. The CONTRACTOR represents that the CONTRACTOR and its subcontractors are in compliance with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes.

- 2.9 If necessary, the contractor must complete a new vendor application and associated documents as required upon acceptance of this contract.
- 2.10 The contractor will develop a lump sum bid; that will include, but is not limited to all work, equipment, parts, and labor specified herein.

# 3.0 WORKERS COMPENSATION AND INSURANCE:

- 3.1 The contractor must maintain during the life of this contract, Worker's Compensation Insurance for all employees working at the project site under this contract, or as otherwise required by North Carolina General Statutes.
- 3.2 The Contractor shall have in place for the life of this contract public liability and property damage insurance and shall protect the City of Greenville from claims for damage or personal injury, which may arise from operations under this contract. The amounts of such insurance shall not be less than \$500,000 for injuries subject to the same limit per person and \$1,000,000 for property damage or otherwise needed to protect the interests of the owner. The Contractor awarded this contract is to provide a Certificate of Insurance showing the City of Greenville named as an additionally insured on all coverage. All insurance must be maintained during the duration of the contract.

# **3.3 OTHER INSURANCE:**

The contractor shall furnish such additional insurance as may be required by the General Statues of North Carolina, including motor vehicle insurance in amounts not less than statutory limits.

# 4.0 CANCELLATION:

- 4.1 Each certificate of insurance shall bear the provision that the policy cannot be altered or canceled in less than ten (10) days after mailing written notice to the assured of such alteration or cancellation, sent registered mail.
- 4.2 The contractor shall furnish the owner with satisfactory proof of insurance required before written approval of such insurance is granted by the owner. Executed contract documents, insurance certifications, invoices and other information requested, are to be sent to:

Ross Peterson, Building and Grounds Supervisor City of Greenville 1500 Beatty Street Greenville, N.C. 27834 Email: <u>rpeterson@greenvillenc.gov</u>

# 5.0 DAMAGE TO CONTRACTORS PROPERTY:

- 5.1 The City of Greenville shall be under no obligation to replace or in any way compensate the contractor for fire, theft, vandalism or any other casualty, injury or damage to equipment or property belonging to the contractor while on City property.
- 5.2 The successful bidder agrees to indemnify or hold harmless the City of Greenville from and against any liability, loss, cost, damage suit, claim, or expense arising occurrence on the part of the successful bidder to include its officers, servants, agents or employees arising from its

activities, operations, and performance of services while on City property and further agrees to release and discharge the City of Greenville and its Agents from all claims or liabilities arising from or caused by the successful bidder in fulfilling its obligations under this Agreement.

5.3 It is understood and agreed by the parties that the City of Greenville will assume no liability for damages, injury, or other loss to the successful bidder, its employees or property, tools or equipment, or to other persons or properties located on City facilities resulting from the successful bidder's activities and operations while performing those service enumerated herein. The successful bidder shall assume full and complete liability for any and all damages on City or private properties caused by or resulting from its activities, operations, and that of its employees, agents and officers.

# 6.0 ADDENDUM

- 6.1 Addendum: Any changes to the specifications will be issued as a written addendum. No oral statements, explanations, or commitments by whosoever shall be of any effect.
- 6.2 Amendment: The contract may be amended from time to time through written agreement by both parties.

# 7.0 REFERENCE INFORMATION

All bidders must provide a list of three (3) client references of similar work. The reference information must include the company's name, a contact person's name with his or her title and their telephone number. Contractor must provide the information below with their bid sheet. Contractor must be experienced in projects of similar construction.

1.	Company name:		
	Contact person:		
	Title:	Phone No	
2.	Company name:		
	Contact person:		
	Title:	Phone No	
3.	Company name:		
	Contact person:		
	Title:	Phone No	

# 8.0 CONTRACTOR INFORMATION

Contractor must provide the information below with the bid sheet.

# CITY OF GREENVILLE NORTH CAROLINA PROSPECTIVE CONTRACTOR DATA FORM

Company Name:		
Address:		
Phone Number:		
Email:	Business Fax Number:	
Tax ID#		
NC General Contractors License#_		
Corporation or Partnership:		
Number of Years in Business:		

# CITY OF GREENVILLE PUBLIC WORKS DEPARTMENT REQUEST FOR BIDS

In compliance with the request for bids by the City of Greenville and subject to all conditions and specifications thereof, the undersigned offers and agrees to furnish all equipment, labor and work site clean-up as provided in the above mentioned specifications.

**Description** 

HVAC Replacement – Greenville Convention Center:

Lump Sum Bid Total

\$\_\_\_\_\_

Bid reviewed, prepared and submitted by-

Company Name: \_\_\_\_\_

Signed: \_\_\_\_\_\_

Print Name:\_\_\_\_\_

Date: \_\_\_\_\_

Addenda Received:\_\_\_\_\_



Submittal

**Prepared For:** Ross Peterson Building and Grounds Supervisor City of Greenville

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

# **Product Summary**

# Qty Product

- 1 Packaged Rooftop, Cooling / Heating Units
- 1 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

#### David McDaniel

Trane 401 Kitty Hawk Drive Morrisville, NC 27560-8271 Phone: (919) 781-0458 Cell: (919) 632-0080 Fax: (919) 781-9195 The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Product performance and submittal data is valid for a period of 6 months from the date of submittal generation. If six months or more has elapsed between submittal generation and equipment release, the product performance and submittal data will need to be verified. It is the customer's responsibility to obtain such verification.

# **Table Of Contents**

ackaged Rooftop, Cooling / Heating Units (Item A1) Tag Data	с
Product Data	
Performance Data	
Mechanical Specifications	
Unit Dimensions	
Fan Curve	
Weight, Clearance & Rigging Diagram	
Accessory	
Field Wiring	21
0 Ton R-410A PKGD Unitary Gas/Electric Rooftop (Item B1)	
Tag Data	
Product Data	
Performance Data	
Mechanical Specifications	
Unit Dimensions	
Weight, Clearance & Rigging Diagram	
Accessory	
Field Wiring	
eld Installed Options - Part/Order Number Summary	
Packaged Rooftop, Cooling / Heating Units	
3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop	

# Tag Data - Packaged Rooftop, Cooling / Heating Units (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	27.5 Ton	1	27.5 Ton Packaged Commercial	YCD330BEL-4B1BH1A0HH00100-*500-
			Rooftop	0000X

# Product Data - Packaged Rooftop, Cooling / Heating Units

Item: A1 Qty: 1 Tag(s): 27.5 Ton DX Cooling, natural gas heat Downflow supply and upflow return 27.5 ton 60 Hertz 208 Volt 60 Hertz 3 Phase Low gas heat capacity 2" MERV 8 High efficiency, throwaway filters 7.5 hp supply motor 600/500 (60/50 hz) Supply fan drive 0-100% Economizer, differential enthalpy control with low leak OA damper 100 % Power exhaust w/ fresh air tracking Constant volume (CV) - Zone temperature control Service valves Hinged service access doors Louvered condenser coil hail guards 5k SCCR Pre-painted steel drain pan w/ condensate overflow switch Standard efficiency unit TD5 Touchscreen display, human interface Programmable zone sensor (Fld) Remote room sensor (Fld) 5 year all parts and refrigerant warranty 10 year compressor and heat exchanger warranty 5 year labor warranty

Units will fit existing YCD330A curb, no adapter required •

Tags	27.5 Ton
Supply airflow (cfm)	11000
Cooling entering DB (F)	80.00
Cooling entering WB (F)	67.00
Ambient DB (F)	95.00
Cooling leaving unit DB (F)	61.41
Cooling leaving unit WB (F)	58.43
Cooling leaving coil DB (F)	59.67
Cooling leaving coil WB (F)	57.77
Gross total capacity (MBh)	319.10
Gross sensible capacity (MBh)	243.77
Gross latent capacity (MBh)	75.33
Net total capacity (MBh)	302.25
Net sensible capacity (MBh)	226.92
Net sensible heat ratio (%)	75.08
Input htg capacity (MBh)	350.00
Output htg capacity (MBh)	280.00
Heating EAT (F)	70.00
Heating LAT (F)	93.90
Heating delta T (F)	23.90
ESP (in H2O)	0.750
Total static pressure (in H2O)	1.460
Actual Supply Motor BHP (hp)	5.528
Supply Motor Power (kW) (rpm)	590
Indoor motor power (kW)	4.94
Outdoor motor power (kW)	3.16
Compressor power (kW)	23.32
System power (kW)	31.42
EER @ AHRI (EER)	10.3
IEER @ AHRI (EER)	12.1
Minimum circuit ampacity (A)	158.53
Maximum overcurrent protection (A)	200.00
Minimum disconnect switch size (A)	167.00
Compressor 1 RLA (A)	44.00
Compressor 2 RLA (A)	50.50
Compressor 3 RLA (A)	0.00
Supply fan FLA (A)	22.20
Condenser fan FLA (A)	7.00
Condenser fan count (Each)	3.00
Exhaust fan FLA (A)	4.10
Exhaust fan count (Each)	2.00
Unit est operating weight (lb)	4643.0
Fan motor heat (MBh)	16.85
HFCF-410A refrigerant charge - circuit 1 (lb)	24.6

# Mechanical Specifications - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton

# General R-410A

The units shall be downflow, horizontal, or mixed airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for all units. Cooling performance shall be rated in accordance with AHRI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A refrigerant and 100% run tested to check cooling operation, fan and blower rotation and control sequence before leaving the factory. Wiring internal to the unit shall be numbered for simplified identification. Units shall be cULus listed.

# **Compressors R410A**

The 3-D Scroll shall provide a completely enclosed compressor chamber with optimized scroll profiles which leads to increased efficiency. The 3-D Scroll shall include a direct-drive, 3600 rpm, suction gas cooled hermetic motor. The compressor shall include a centrifugal oil pump, scroll tips seals, internal heat shield that lowers the heat transfer from discharge and suction gas, oil level sight glass and oil charge valve. Some compressor models shall also provide a dip tube that allows for oil draining, in addition to a low leakage internal discharge check valve to help prevent refrigerant migration. Each compressor shall have a crankcase heater installed, properly sized to minimize the amount of liquid refrigerant present in the oil sump during off cycles.

# Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Cabinet surface shall be tested 672 hours in salt spray in compliance with ASTM B117. All components shall be mounted in a weather resistant steel cabinet with a painted exterior. Where top cover seams exist, they shall be double hemmed and gasket sealed to prevent water leakage. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have handles and shall be removable while providing a water and air tight seal. Control box access shall be hinged. The indoor air section shall be completely insulated with fire resistant, permanent, odorless, foil faced glass fiber material. The base of the unit shall have provisions for crane lifting.

# **Hinged Service Access**

Filter access panel and supply fan access panel shall be hinged for ease of unit service.

# Phase and Voltage Monitor

Standard on all Voyager Commercial units. Shall protects 3-phase equipment from phase loss, phase reversal, and low voltage. Any fault condition shall send the unit into an auto stop condition. cULus approved.

# Service Valves

Service valves shall be provided factory installed and include suction and discharge 3-way shutoff valves.

# **Refrigerant Circuits**

Each refrigerant circuit shall have independent thermostatic expansion devices, service pressure ports and refrigerant line filter driers factory-installed as standard. An area shall be provided for replacement suction line driers.

# **Outdoor Fans**

The outdoor fan shall be direct-drive statically and dynamically balanced, draw through in the vertical discharge position. The fan motors shall be permanently lubricated and have built-in thermal overload protection.

# **Evaporator and Condenser Coils - R410A**

Condenser coils shall have all Aluminum Microchannel coils. Evaporator coils shall be internally finned Copper tubes mechanically bonded to high performance Aluminum plate fins. All coils shall be leak tested at the factory to ensure pressure integrity. The evaporator coil is pressure tested to 450 psig and the condenser coil at 650 psig. All dual circuit evaporator coils shall be of intermingled configuration. Sloped condensate drain pans are standard.

# **Condensate Overflow Switch**

This option shall shut the unit down in the event that a clogged condensate drain line prevents proper condensate removal from the unit.

# Louvered Hail Guard

Louvered, hail protection quality coil guards are available for condenser coil protection.

# High/Low 2 Stage Gas Heat

The heating section shall have a drum and tube heat exchanger(s) design with primary and secondary surfaces of

corrosion resistant aluminized steel or optional stainless steel. A forced combustion blower shall supply premixed fuel to a single burner ignited by a pilotless hot surface ignition system. In order to provide reliable operation, a regulated gas valve shall be used that requires blower operation to initiate gas flow. On an initial call for heat, the combustion blower shall purge the heat exchanger(s) 45 seconds before ignition. After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat. Two stage gas heat units shall be suitable for use with natural gas or propane (field installed kit). Gas heat units comply with California requirements for low NOx emissions.

# Indoor Fan, 60 Hz Supply Motor

Unit will have belt driven, forward curve, centrifugal fans with fixed motor sheaves. The supply fan motors will be circuit breaker protected. All 60 Hz supply fan motors meet the Energy Independence and Security Act of 2009 (EISA).

#### **Constant Volume Control Option**

The unit shall be provided with all the necessary controls to operate rooftop from a zone sensor, including microprocessor unit control.

# 100% Fresh Air Tracking Power Exhaust

100% Outside Air Tracking Power Exhaust Modulating power exhaust shall be available on all units and shall be factory installed. It shall assist with maintaining building pressurization by exhausting a proportional amount of the entering outside air.

# 2" High Efficiency Filters - MERV 8

2" High Efficiency MERV 8 filters will be standard.

#### Economizer with Ultra Low Leak Dampers and Differential Control

An economizer will be factory installed. The assembly includes: 0-100 percent fully modulating low leak dampers, minimum position setting, preset linkage, wiring harness and differential control.

#### Controls

Unit shall be completely factory wired with necessary controls and terminal block for power wiring. Units shall provide an external location for mounting fused disconnect device. ReliaTel controls shall be provided for all 24 volt control functions. The resident control algorithms shall make all heating, cooling and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point and provides better building comfort. ReliaTel controls shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection.

#### Human Interface

The Human Interface shall have a 5 inch color touchscreen display that conforms to FCC Part 15 Class B with an Ingress Protection Rating of IP24. The display text shall be readable by a person with 20/20 vision at a distance of 3 feet and 60 degree angle at lighting levels ranging from 100 lux - 25,000 lux. Also, the display shall operate at temperatures of -40 Celsius to 70 Celsius. Firmware and unit configurations shall be able to be restored via a USB storage device.

# Unit Interrupt Rating (Standard Short Circuit Current Rating-SCCR)

A 5,000 Amp rating shall be applied to the unit enclosure using a non-fused circuit breaker for disconnect switch purposes. Fan motors, compressors, and electric heat circuits shall be provided with protective devices that will provide the unit rated level of fault protection. The unit shall be marked with approved cULus markings and will adhere to cULus regulations

# Programmable Zone Temperature Sensor Configured as a Constant Volume Unit

The electronic programmable sensor is Auto or Manual changeover with seven day programming. Auto or Manual selection of Fan Auto, Fan On. Programmable sensor has System Off, Auto, Heat, Cool, and Service /LCD indicators as standard. Night setback sensor has up to four programs per day which can be individually configured to occupied or unoccupied

#### **Zone Sensors**

Shall be provided to interface with the ReliaTel unit controls and shall be available in either manual, automatic programmable with night setback, with system malfunction lights or remote sensor options.

#### **Remote Zone Temperature Sensor**

can be used for remote zone temperature sensing capabilities when zone sensors are used as remote panels or as a

morning warm-up sensor for use with VAV units or as a zone sensor with Tracer Integrated Comfort system

# **Certified AHRI Performance**

Packaged Rooftop units cooling, heating capacities and efficiencies are rated within the scope of the Air-Conditioning, Heating & Refrigeration Institute (AHRI) Certification Program and display the AHRI Certified® mark as a visual confirmation of conformance to the certification sections of AHRI Standard 340-360 (I-P) and ANSIZ21.47 and 10 CFR Part 431 pertaining to Commercial Warm Air Furnaces. The applications in this catalog specifically excluded from the AHRI certification program are:

-Ventilation modes -Heat Recovery

# Unit Dimensions - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton

NOTES: 90 3/8" 1. SEE ROOFCURB DRAWING FOR DETAILS ON FIELD DUCT FITUP AND CONNECTIONS 2. SEE DETAIL HOOD DRAWING FOR HORIZONTAL / DOWNFLOW UNITS FOR ADDITIONAL DIMENSION AND LOCATION. 180 5/16" 3. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS. SEE NOTE 2 3 1/4" C Ĺ C Ĉ 70 7/16" Ô 42" 5 3/8" 83 13/16" 1 1/4" FEMALE 7 9/16" PVC PIPE 40 3/16" . 179 3/4" GAS INLET -6 7/8 90 1/16" CUSTOMER CONNECTION POINT 7 1/16"--> - 23 1/2" ----51 1/2" -4 7 1/8" SEE NOTE 2 RETURN SUPPLY 70 15/16" 75 13/16"

PLAN VIEW

#### DOWNFLOW SUPPLY AND UPFLOW CONFIGURATION

DIMENSIONAL DRAWING

#### ELECTRICAL / GENERAL DATA

Model (Tonnage)	YCD330 (27.5)		
Operating voltage range: Primary voltage: Hertz: Phase: EER / IEER:	187 - 229 208 60 3 10.3 EER/12.1 EER		
HEATING - PERFORMAN	CE	COMPRESSOR	
Heat: Heating Input (Btu/h): First Stage (Btu/h): Heating Output (Btu/h): First Stage (Btu/h): No Burners:	Low 350,000 250,000 283,500 202,500 1	Number Tons Compressor Rated Load Amps Locked Rotor Amps	1/1 12.0/13.0 44.0/50.5 304.0/315.0
No. Stages / Turn Down Rate:	2	ELECTRIC HEATER	
Gas Supply Pressure (in w.c.) Natural or LP: Gas Connection Pipe Size:	2.5/14.0 3/4"	Electric Heater kw Electric Heater Full Load Amps	N/A N/A
INDOOR MOTOR SUPPLY	/ FAN	OUTDOOR MOTOR	
Horsepower Motor speed (rpm) Indoor motor full load amps	7.5 1,760 21.5	Number Horsepower Phase Outdoor motor full load amps	3 1.1 1 7.0
EXHAUST MOTOR		FILTERS <sup>(7)</sup>	
Number Horsepower Phase Exhaust motor full load amps	2 1.0 3 4.1	Type Furnished Number Recommended size	Throwaway Yes 16 16"x20"x2"
REFRIGERANT TYPE	(6)		
Type Factory Charge (Circuit #1) Factory Charge (Circuit #2)	R-410A 24.6 lb Not Available		
Cooling MCA = (1.25 x Load 1	) + Load 2 + Load 4		
Cooling MOP = (2.25 x Load 1	) + Load 2 + Load 4		

Notes:
1. LOAD 1= Current of the largest motor (Compressor or Fan Motor); LOAD 2=Sum of the currents of all remaining motors LOAD 3= FLA(Full Load Amps) of the electric heater; LOAD 4= Any other load rated at 1 amp or more.
2. For Electric Heat MCA, MOP, RDE values, calculate for both cooling and heating modes.
3. If selected Max Over Cur is less than the Min Cir Amp, then select the lowest maximum fuse size which is equal to or larger than the Min Cir Amp, provided the selected fuse size does not exceed 800 amps.
4. The use of Liquid Propane (LP) requires unit modification. Contact a Trane salesman for information.
5. Compressor KW at AHRI rating conditions of 80/67 -95

Compressor KW at AHRI rating conditions of 80/67-95
 Refrigerant charge is an approx. value. For a more precise value, see unit nameplate and service instructions.

7. Filter dimension are actual. Norminal filter size 16"x20"

Fan Curve - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton



V33

Weight, Clearance & Rigging Diagram - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton



E	STIMATE	ED OPER	ATING W	/EIGHT		]					
OPEF	RATION W	EIGHT:	4643.0	lb							
	CE	NTER OF	GRAVIT	Υ				OPTIONAL COMPONEN	NTS		
х	41"		Y	76"		POWER EXHAUST	165.0 lb	BARO. RELIEF	'N/A	SERVICE VALVES	'18.0 lb
	CORNER		IG PERC	ENTS	_	ECONOMIZER	'260.0 lb	THRU-BASE ELECTRICAL	'N/A	DISC. SWITCH	'N/A
А	В	С	D	E	F	MANUAL DAMPERS	'N/A	GFI WITH DISCON. SWITCH	'N/A	VFD	'N/A
21%	17%	18%	18%	15%	12%	ULTRA LOW LEAK EXH.	'N/A	ULTRA LOW LEAK ECON	'N/A		
						COIL HAIL GUARD	105.0 lb	MOD. HOT GAS REHEAT	N/A		

WEIGHT NOTES:

1. THE WEIGHT SHOWN REPRESENTS THE TYPICAL UNIT OPERATING WEIGHT FOR THE CONFIGURATION SELECTED. ESTIMATED AT

+/- 10 % OF THE NAMEPLATE WEIGHT. 2. THE ACTUAL WEIGHT IS STAMPED ON THE UNIT NAMEPLATE.

Accessory - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton



FRESH AIR AND POWER EXHAUST HOODS FOR DOWNFLOW RETURN



BAYSENS077 REMOTE ROOM SENSOR Accessory - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton



BAYSENS119 PROGRAMMABLE ZONE SENSOR Field Wiring - Packaged Rooftop, Cooling / Heating Units Item: A1 Qty: 1 Tag(s): 27.5 Ton



ZONE SENSOR WIRE TABLE

_	WIRE SIZE	MAXIMUM WIRE LENGTH in	
	22 GAUGE	1800"	
	20 GAUGE	3000"	
	18 GAUGE	4500"	
	16 GAUGE	7200"	
	14 GAUGE	11700"	

NOTE:

1. All wiring and devices shown dashed to be supplied and installed by the customer in accordance with national and local electrical codes.

2. Low voltage control wiring must not be run in conduit with power wiring.

3. Cut wire jumper adjacent to the terminal 1 on zone sensor.

# Tag Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
B1	RTU-J	1	6 Ton R-410A PKGD Unitary	YSC072H3RLA
			Gas/Electric	G0A1C2B0000A000000000000000

# Product Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

# Item: B1 Qty: 1 Tag(s): RTU-J

DX cooling, gas heat Standard efficiency Convertible configuration 6 Ton Single compressor 208-230/60/3 Microprocessor controls Low gas heat Economizer Comparative Enthalpy 0-100% Hinged panels/standard filters Standard condenser coil w/hail guard Through the base gas & electrical Circuit breaker Powered convenience outlet Condensate Drain Pan Overflow Switch Curb adapter Voyager baycurb022b (Fld) Power exhaust (Fld) 5 year all parts and refrigerant warranty (parts only - no labor) 10 year compressor and heat exchanger warranty (parts only – no labor)

# Performance Data - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

Tags	RTU-J
Exhaust Fan Type	FC
	Centrifugal
Exhaust Drive Type	Direct
Heating Type	Gas Heat
Heating Stages	1

# Mechanical Specifications - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J

# General

The units shall be convertible airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for units with microprocessor controls. Operating range for units with electromechanical controls shall be between 115°F and 40°F. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be 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. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

# Casing

Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing two fasteners while providing a water and air tight seal. All exposed vertical panels and top covers in the indoor air section shall be insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/8", foil-faced, closed-cell insulation. All insulation edges shall be either captured or sealed. The unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8" high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting, with forklift capabilities on three sides of the unit.

# Unit Top

The top cover shall be one piece construction or, where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and enhances water removal from unit top.

# Compressors

All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.

Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available on 7½-10 ton models and allow for efficient cooling utilizing 3-stages of compressor operation for all high efficiency models.

# Indoor Fan

The following units shall be equipped with a direct drive plenum fan design (T/YSC120F,T/YHC074F, T/YHC092F,T/YHC102F, 120F). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

3 to 5 ton units (high efficiency 3-phase with optional motor) are belt driven, FC centrifugal fans with adjustable motor sheaves. 3 to 5 ton units (standard and high efficiency 3-phase) have multispeed, direct drive motors. All 6 to 8½ ton units (standard efficiency) shall have belt drive motors with an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All motors shall be thermally protected. All 10 tons, 6 ton (074), 7½ to 8½ (high efficiency) units have variable speed direct drive motors. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

# **Outdoor Fans**

The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

# **Evaporator and Condenser Coils**

Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Evaporator coils are standard for all 3 to 10 ton standard efficiency models. Microchannel condenser coils are standard for all 3 to 10 ton standard efficiency models and 4, 5, 6, 7.5, 8.5 ton high efficiency models. The microchannel type condenser coil is not offered on the 4 and 5 ton dehumidification model. Due to flat streamlined tubes with small ports, and metallurgical tube-to-fin bond, microchannel coil has better heat transfer performance. Microchannel condenser coil can reduce system refrigerant charge by up to 50% because of smaller internal volume, which leads to better compressor reliability. Compact all-aluminum microchannel coils also help to reduce the unit weight. These all aluminum coils are recyclable. Galvanic corrosion is also minimized due to all aluminum construction. Strong aluminum brazed structure provides better fin protection. In addition, flat streamlined tubes also make microchannel coils more dust resistant and easier to clean. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig. The condenser coil shall have a patent pending 1+1+1 hybrid coil designed with slight gaps for ease of cleaning. A plastic, dual-sloped, removable and reversible condensate drain pan with through-the-base condensate drain is standard.

# **Condensate Overflow Switch**

This option shall shut the unit down in the event that a clogged condensate drain line prevents proper condensate removal from the unit.

# **Tool-less Hail Guards**

Tool-less, hail protection quality coil guards are available for condenser coil protection.

# Controls

Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. A choice of microprocessor or electromechanical controls shall be available. Microprocessor controls provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection. 24-volt electromechanical control circuit shall include control transformer and contactor

# **High Pressure Control**

All units include High Pressure Cutout as standard.

# Phase monitor

Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitor is equipped with an LED that provides an ON or FAULT indicator. There are no field adjustments. The module will automatically reset from a fault condition.

# **Refrigerant Circuits**

Each refrigerant circuit offer thermal expansion valve as standard. Service pressure ports, and refrigerant line filter driers are factory-installed as standard. An area shall be provided for replacement suction line driers.

# **Gas Heating Section**

The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The 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, the 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) and also comply with the California requirement for low NOx emissions (Gas/Electric Only).

# **Hinged Access Doors**

Sheet metal hinges are available on the Filter/Evaporator, Supply Fan/Heat, and the Compressor/Control Access Doors.

# Powered or Unpowered Convenience Outlet

This is a GFCI, 120v/15amp, 2 plug, convenience outlet, either powered or unpowered. When the convenience outlet is powered, a service receptacle disconnect will be available. The 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. This option can only be ordered when the Through the Base Electrical with either the Disconnect Switch or Circuit Breaker option is ordered.

# Economizer

This accessory shall be available with or without barometric relief. The assembly includes 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. The barometric relief shall provide a pressure operated damper that shall be gravity closing and shall prohibit entrance of outside air during the equipment off cycle. Optional solid state or differential enthalpy control shall be available for either factory or field installation. The economizer arrives in the shipping position and shall be moved to the operating position by the installing contractor.

# Through the Base Gas Piping

The unit shall include a standard through the base gas provision. This option shall have all piping necessary including, black steel, manual gas shut-off valve, elbows, and union. The manual shutoff valve shall include a 1/8" NPT pressure tap. This assembly will require minor field labor to install.

# **Through the Base Electrical Access**

An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field-installed disconnect switch.

# Through the Base Electrical with Circuit Breaker

This option is a thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections. The circuit breaker will be installed in a water tight enclosure in the unit with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide overcurrent protection, be sized per NEC and UL guidelines, and be agency recognized by UL/CSA.

# Accessory - Powered Exhaust

The powered exhaust shall provide exhaust of return air, when using an economizer, to maintain better building pressurization.

# Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J



DIMENSION DRAWING

# Unit Dimensions - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J

# ELECTRICAL / GENERAL DATA

GENERAL <sup>(2)(4)(6)</sup> Model: Unit Operating Voltage: Unit Primary Voltage: Unit Secondary Voltage Unit Hertz: Unit Phase: EER Standard Motor MCA: MCB:	YSC072H 187-253 208 230 60 3 11.2 35.0 50.0 50.0	Oversized Motor MCA: N/A MFS: N/A MCB: N/A Field Installed Oversized Mot MCA: N/A MFS: N/A MCB: N/A	HEATING PERFO HEATING - GENER Heating Model: Heating Input (BTU Heating Output (BT No. Burners: No. Stages Tor Gas Inlet Pressure Natural Gas (Min/M LP (Min/Max) Gas Pipe Connection	Low Low 2 4 1/2"/14" 11"/14"
INDOOR MOTOR Standard Motor Number: 1 Horsepower: 1.0 Motor Speed (RPM): - Phase 3 Full Load Amps: 3.4 Locked Rotor Amps: -		Oversized Motor Number: Horsepower: Motor Speed (RPM): Phase Full Load Amps: Locked Rotor Amps:	N/A N/A	Field Installed Oversized Motor Number: Horsepower: Motor Speed (RPM): Phase Full Load Amps: Locked Rotor Amps:
COMPRESSOR Circ Number: Horsepower: Phase: Rated Load Amps: Locked Rotor Amps:	uit 1/2		OUTDOOR MOT Number: Horsepower: Motor Speed (RPM, Phase: Full Load Amps: Locked Rotor Amps	1 0.70 ): 1100 1 3.3
POWER EXHAUST ACCI (Field Installed Power Exhau Phase: 1 Horsepower: 0.87 Motor Speed (RPM): 1076 Full Load Amps: 5.7 Locked Rotor Amps: 13.6	st)	FILTERS Type: Furnished: Number Recommended	Throwaway Yes 4 16"x25"x2"	REFRIGERANT <sup>(2)</sup> Type Factory Charge Circuit #1 5.5 lb Circuit #2 N/A

NOTES:

Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
 Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
 Value does not include Power Exhaust Accessory.

4. Value includes oversized motor.

5. Value does not include Power Exhaust Accessory. 6. EER is rated at AHRI conditions and in accordance with DOE test procedures.

# Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J



PACKAGED GAS / ELECTRICAL CORNER WEIGHT

ACCESSORY	WEIGHTS	
ECONOMIZER	36.0 lb	
MOTORIZED OUTSIDE A		
MANUAL OUTSIDE AIR D		
BAROMETRIC RELIEF		
OVERSIZED MOTOR		
BELT DRIVE MOTOR		
POWER EXHAUST		80.0 lb
THROUGHT THE BASE E	18.0 lb	
UNIT MOUNTED CIRCUI	5.0 lb	
UNIT MOUNTED DISCOM		
POWERED CONVENIEN	38.0 lb	
HINGED DOORS (FIOPS	12.0 lb	
HAIL GUARD	20.0 lb	
SMOKE DETECTOR, SU		
NOVAR CONTROL		
STAINLESS STEEL HEAT		
REHEAT		
ROOF CURB		
BASIC UNIT WEIGHTS	CENTER OF GRAVITIY	
SHIPPING NET	A 222.0 lb C 121.0 lb	(E) LENGHT (F) WIDTH
805.0 lb 710.0 lb	B 217.0 lb D 150.0 lb	41" 22"

#### INSTALLED ACCESSORIES NET WEIGHT DATA

#### NOTE:

All weights are approximate. 1.

Weights for options that are not list refer to Installation guide. 2.

3.

The actual weight are listed on the unit nameplate. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation 4. of unit.

5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. . 6.

Verify weight, connection, and all dimension with installer documents before installation.

Corner weights are given for information only.

Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field



RIGGING AND CENTER OF GRAVITY

# Weight, Clearance & Rigging Diagram - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J

CLEARANCE 36"

CLEARANCE 48" SUPPLY RETURN 56 DOWNFLOW CLEARANCE 36" HORIZONTAL CLEARANCE 18" CLEARANCE 36" PACKAGED GAS/ELECTRIC CLEARANCE \_ \_ -ROOF OPENING UNIT OUTLINE-53 1/4" 46' 46" 88 5/8"

CLEARANCE FROM TOP OF UNIT 72"

PACKAGED GAS / ELECTRIC

DOWNFLOW TYPICAL ROOF OPENING

Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J



SWING DIAMETER - HINGED DOOR(S) OPTION

Accessory - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J





ACCESSORY

Field Wiring - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop Item: B1 Qty: 1 Tag(s): RTU-J



ZONE SENSOR WIRE TABLE

WIRE SIZE	MAXIMUM WIRE LENGTH	
22 GAUGE	1800"	
20 GAUGE	3000"	
18 GAUGE	4500"	
16 GAUGE	7200"	
14 GAUGE	11700"	

NOTE:

1. All wiring and devices shown dashed to be supplied and installed by the customer in accordance with national and local electrical codes.

2. Low voltage control wiring must not be run in conduit with power wiring.

**Field Installed Options - Part/Order Number Summary** This is a report to help you locate field installed options that arrive at the jobsite. This report provides part or

# Field Installed Options - Part/Order Number Summary

order numbers for each field installed option, and references it to a specific product tag. It is NOT intended as a bill of material for the job.

# Product Family - Packaged Rooftop, Cooling / Heating Units

Item	Tag(s)	Qty	Description	Model Number
A1	27.5 Ton	1	27.5 Ton Packaged Commercial Rooftop	YCD330BEL- 4B1BH1A0 HH00100-*500- 0000X

Field Installed Option Description	Part/Ordering Number
Remote room sensor	BAYSENS077A
Programmable zone sensor	BAYSENS119A

# Product Family - 3-10 Ton R-410A PKGD Unitary Gas/Electric Rooftop

ltem	Tag(s)	Qty	Description	Model Number
B1	RTU-J	1	6 Ton R-410A PKGD Unitary Gas/Electric	YSC072H3RLA G0A1C2B0000A00 0000000000000

Field Installed Option Description	Part/Ordering Number
Curb adapter Voyager baycurb022b	BAYQACB011A
Power exhaust	BAYPWRX026A
City of Greenville/Greenville Utilities Commission Minority and Women Business Enterprise (MWBE) Program

> City of Greenville Construction Guidelines and Affidavits \$100,000 and above

These instructions shall be included with each bid solicitation.

# **City of Greenville/Greenville Utilities Commission Minority and Women Business Enterprise Program**

### \$100,000 and Construction Guidelines for MWBE Participants

#### **Policy Statement**

It is the policy of the City of Greenville and Greenville Utilities Commission to provide minorities and women equal opportunity for participating in all aspects of the City's and Utilities' contracting and procurement programs, including but not limited to, construction projects, supplies and materials purchases, and professional and personal service contracts.

#### **Goals and Good Faith Efforts**

Bidders responding to this solicitation shall comply with the MWBE program by making Good Faith Efforts to achieve the following aspiration goals for participation.

	CITY	
	MBE	WBE
Construction This goal includes	10%	6%
Construction Manager at Risk.		

Bidders shall submit MWBE information with their bids on the forms provided. This information will be subject to verification by the City prior to contract award. <u>As of July 1, 2009, contractors, subcontractors, suppliers, service providers, or MWBE members of joint ventures intended to satisfy City MWBE goals shall be certified by the NC Office of Historically Underutilized Businesses (NC HUB) only.</u> Firms qualifying as "WBE" for City's goals must be designated as a "women-owned business" by the HUB Office. Firms qualifying as "MBE" for the City's goals must be certified in one of the other categories (i.e.: Black, Hispanic, Asian American, American Indian, Disabled, or Socially and Economically Disadvantaged). Those firms who are certified as both a "WBE" and "MBE" may only satisfy the "MBE" requirement. <u>Each goal must be met</u> separately. Exceeding one goal does not satisfy requirements for the other. A complete database of NC HUB certified firms may be found at <a href="http://www.doa.nc.gov/hub/">http://www.doa.nc.gov/hub/</a>. An internal database of firms who have expressed interest to do business with the City and GUC is available at <a href="http://www.greenvillenc.gov">www.greenvillenc.gov</a>. However, the HUB status of these firms <u>must</u> be verified by the HUB database. The City shall accept NCDOT certified firms on federally funded projects only. <u>Please note: A contractor may utilize any firm desired</u>. However, for participation purposes, all MWBE vendors who wish to do business *as a minority or female* must be certified by NC HUB.

The Bidder shall make good faith efforts to encourage participation of MWBEs prior to submission of bids in order to be considered as a responsive bidder. Bidders are cautioned that even though their submittal indicates they will meet the MWBE goal, they should document their good faith efforts and be prepared to submit this information, if requested.

The MWBE's listed by the Contractor on the **Identification of Minority/Women Business Participation** which are determined by the City to be certified shall perform the work and supply the materials for which they are listed unless the Contractors receive <u>prior authorization</u> from the City to perform the work with other forces or to obtain materials from other sources. If a contractor is proposing to perform all elements of the work with his own forces, he must be prepared to document evidence satisfactory to the owner of similar government contracts where he has self-performed.

The Contractor shall enter into and supply copies of fully executed subcontracts with each MWBE or supply signed Letter(s) of Intent to the Project Manager after award of contract and prior to Notice to Proceed. Any amendments to subcontracts shall be submitted to the Project Manager prior to execution.

#### Instructions

The Bidder shall provide with the bid the following documentation:

- Identification of Minority/Women Business Participation
  (if participation is zero, please mark zero—Blank forms will be considered nonresponsive)
- □ Affidavit A (if subcontracting)

OR

- Identification of Minority/Women Business Participation
  (if participation is zero, please mark zero—Blank forms will be considered nonresponsive)
- Affidavit B (if self-performing; must attest that bidder does not customarily subcontract work on this type of project—includes supplies and materials)

Within 72 hours or 3 business days after notification of being the <u>apparent low bidder</u> who is subcontracting anything must provide the following information:

Affidavit C (if aspirational goals are met or are exceeded)

OR

Affidavit D (if aspirational goals are <u>not</u> met)

After award of contract and prior to issuance of notice to proceed:

Letter(s) of Intent or Executed Contracts

# \*\*With each pay request, the prime contractors will submit the Proof of Payment Certification, listing payments made to <u>MWBE</u> subcontractors.

\*\*\*If a change is needed in MWBE Participation, submit a Request to Change MWBE Participation Form. Good Faith Efforts to substitute with another MWBE contractor must be demonstrated.

**Minimum Compliance Requirements:** 

All written statements, affidavits, or intentions made by the Bidder shall become a part of the agreement between the Contractor and the City for performance of contracts. Failure to comply with any of these statements, affidavits or intentions or with the minority business guidelines shall constitute a breach of the contract. A finding by the City that any information submitted (either prior to award of the contract or during the performance of the contract) is inaccurate, false, or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the City whether to terminate the contract for breach or not. In determining whether a contractor has made Good Faith Efforts, the CITY will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts.

# Identification of Minority/Women Business Participation

I,

(Name of Bidder)

do hereby certify that on this project, we will use the following minority/women business enterprises as construction subcontractors, vendors, suppliers or providers of professional services.

Firm Name, Address and Phone #	Work type	*MWBE Category

\*MWBE categories: Black, African American (**B**), Hispanic, Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

If you will not be utilizing MWBE contractors, please certify by entering zero "0"

The total value of MBE business contracting will be (\$) \_\_\_\_\_.

The total value of WBE business contracting will be (\$)\_\_\_\_\_.

City of Greenville AFFIDAVIT A – Listing of Good Faith Efforts

County of \_\_\_\_\_

	(Name of Bidder)
Aff	idavit of
	I have made a good faith effort to comply under the following areas checked:
	lders must earn at least 50 points from the good faith efforts listed for their bid to be considered ponsive. (1 NC Administrative Code 30 I.0101)
	1 - (10  pts) Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
	2 (10 pts) Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
	3 – (15 pts) Broken down or combined elements of work into economically feasible units to facilitate minority participation.
	4 – (10 pts) Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
	5 - (10  pts) Attended prebid meetings scheduled by the public owner.
	6 - (20  pts) Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
	7 – (15 pts) Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
	8 - (25  pts) Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
	9 - (20  pts) Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
	10 - (20 pts) Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.
The	e undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the
Ide	ntification of Minority/Women Business Participation schedule conditional upon scope of contract to be
exe	ecuted with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to
abi	de by this statutory provision will constitute a breach of the contract.
The	e undersigned hereby certifies that he or she has read the terms of the minority/women business commitment
and	l is authorized to bind the bidder to the commitment herein set forth.

Date:	Name of Authorized Officer:		
	Signature:		
	Title:		
SEAL	State of, County of		
	Subscribed and sworn to before me this	day of	_20
	Notary Public	_	
	My commission expires		

# City of Greenville --AFFIDAVIT B-- Intent to Perform

# Contract with <u>Own</u> Workforce.

County of
Affidavit of
(Name of Bidder) Thereby certify that it is our intent to perform 100% of the work required for the
contract.
(Name of Project)
In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform <u>all elements of the work</u> on this project with his/her own current work forces; and
The Bidder agrees to provide any additional information or documentation requested by the owner in support of he above statement.
The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to he commitments herein contained.
Date:Name of Authorized Officer:
Signature:
SEAL Title:
State of, County of Subscribed and sworn to before me thisday of20 Notary Public My commission expires
My commission expires

## City of Greenville - AFFIDAVIT C - Portion of the Work to be **Performed by MWBE Firms**

#### County of

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by MWBE businesses as defined in GS143-128.2(g) and the COG/CITY MWBE Plan sec. III is equal to or greater than 16% of the bidders total contract price, then the bidder must complete this affidavit. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within 72 hours after notification of being low bidder.

Affidavit of \_\_\_\_\_ I do hereby certify that on the (Name of Bidder)

(Project Name)

Project ID#\_\_\_\_\_ Amount of Bid \$\_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises and a minimum of \_\_\_\_% of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*MWBE Category	Work description	Dollar Value

\*Minority categories: Black, African American (B), Hispanic or Latino (L), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (S) Disabled (D)

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with MWBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth. Date: Name of Authorized Officer:

	Signature:
( SEAL )	Title:
	State of, County of
	Subscribed and sworn to before me thisday of20
	Notary Public
	My commission expires

# City of Greenville AFFIDAVIT D – Good Faith Efforts

#### County of \_\_\_\_

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 16% participation by minority/women business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

\_I do hereby certify that on the

Affidavit of \_\_\_\_\_

(Name of Bidder)

(Project Name)

Project ID#\_\_\_\_\_Amount of Bid \$\_\_\_\_\_

I will expend a minimum of \_\_\_\_\_% of the total dollar amount of the contract with minority business enterprises and a minimum of % of the total dollar amount of the contract with women business enterprises. Minority/women businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*MWBE Category	Work description	Dollar Value

\*Minority categories: Black, African American (B), Hispanic or Latino (L), Asian American (A) American Indian (I), Female (F) Socially and Economically Disadvantaged (S) Disabled (D)

**Examples** of documentation required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- B. Copies of quotes or responses received from each firm responding to the solicitation.
- C. A telephone log of follow-up calls to each firm sent a solicitation.
- D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.

E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.

F. Copy of pre-bid roster.

- G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- H. Letter detailing reasons for rejection of minority business due to lack of qualification.
- I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with MWBE Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:	Name of Authorized Officer:	
	Signature:	
	Title:	
	State of, County of	
SEAL	Subscribed and sworn to before me thisday of	20
	Notary Public	
	My commission expires	

# LETTER OF INTENT MWBE Subcontractor Performance

# Please submit this form <u>or</u> executed subcontracts with MWBE firms after award of contract and prior to issuance of notice to proceed.

PROJECT:

(Project Name)

ТО: \_\_\_\_\_

(Name of Prime Bidder/Architect)

The undersigned intends to perform work in connection with the above project as a:

\_Minority Business Enterprise

\_\_\_\_\_Women Business Enterprise

The MWBE status of the undersigned is certified the NC Office of Historically Underutilized Businesses (required). \_\_\_\_ Yes \_\_\_\_ No

The undersigned is prepared to perform the following described work or provide materials or services in connection with the above project at the following dollar amount:

Work/Materials/Service Provided	Dollar Amount of Contract	Projected Start Date	Projected End Date

(Date)

(Address)

(Name & Phone No. of MWBE Firm)

(Name & Title of Authorized Representative of MWBE)

(Signature of Authorized Representative of MWBE)

**REQUEST TO CHANGE MWBE PARTICIPATION** (Submit changes only if notified as apparent lowest bidder, continuing through project completion)

Project:		
Bidder or Prime Contractor:		
Name & Title of Authorized Representative:		-
Address:	Phone #:	
	Email Address:	-
Total Contract Amount (including approved cha	nge orders or amendments): \$	
Name of subcontractor:		
Good or service provided:		
Proposed Action:		
Replace subcontractor Perform work with own forces		
For the above actions, you must provide one of the f	ollowing reasons (Please check applicable re	ason):
The listed MBE/WBE, after having had a reason written contract.	nable opportunity to do so, fails or refuses to	execute a
The listed MBE/WBE is bankrupt or insolvent.		
The listed MBE/WBE fails or refuses to perform	his/her subcontract or furnish the listed mate	erials.
The work performed by the listed subcontractor in accordance with the plans and specifications; or the progress of the work.		
If <u>replacing</u> subcontractor:		
Name of replacement subcontractor:		
The MWBE status of the contractor is certified by th (required)YesNo	ne NC Office of Historically Underutilized Bu	ısinesses
Dollar amount of original contract \$		
Dollar amount of amended contract \$		

Other Proposed Action:	
Increase total dollar amount of work Decrease total dollar amount of work	Add additional subcontractor Other
Please describe reason for requested action:	
If <u>adding*</u> additional subcontractor:	
The MWBE status of the contractor is certified by t (required)YesNo	the NC Office of Historically Underutilized Businesses
*Please attach Letter of Intent or executed contract	t document
Dollar amount of original contract \$	
Dollar amount of amended contract \$	
	Interoffice Use Only:

interonice ose only.
ApprovalYN
Date
Signature

### **Proof of Payment Certification**

MWBE Contractors, Suppliers, Service Providers

Project Name: \_\_\_\_\_

Prime Contractor:

Current Contract Amount (including change orders): \$\_\_\_\_\_

Requested Payment Amount for this Period: \$\_\_\_\_\_

Is this the final payment? \_\_\_Yes \_\_\_No

Firm Name	MWBE Category*	Total Amount Paid from this Pay Request	Total Contract Amount (including changes)	Total Amount Remaining

\*Minority categories: Black, African American (**B**), Hispanic or Latino (**L**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**S**) Disabled (**D**)

Date:\_\_\_\_\_

Certified By:\_\_\_\_\_

Name

Title

Signature

Pay Application No. \_\_\_\_\_

Purchase Order No. \_\_\_\_\_

#### STATE OF NORTH CAROLINA

#### **EXHIBIT D**

#### AFFIDAVIT

\*\*\*\*\*

I, \_\_\_\_\_\_(the individual attesting below), being duly authorized by and on behalf of

sworn hereby swears or affirms as follows:

1. Employer understands that <u>E-Verify</u> is the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law in accordance with NCGS §64-25(5).

2. Employer understands that <u>Employers Must Use E-Verify</u>. Each employer, after hiring an employee to work in the United States, shall verify the work authorization of the employee through E-Verify in accordance with NCGS§64-26(a).

3. <u>Employer</u> is a person, business entity, or other organization that transacts business in this State and that employs 25 or more employees in this State. (mark Yes or No)

a. YES \_\_\_\_\_, or

b. NO \_\_\_\_\_

4. Employer's subcontractors comply with E-Verify, and if Employer is the winning bidder on this project Employer will ensure compliance with E-Verify by any subcontractors subsequently hired by Employer.

(Affix Official/Notarial Seal)

This \_\_\_\_\_ day of \_\_\_\_\_\_, 20\_\_\_\_\_,