



Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia Purchase Order

Order Date: 08-06-2025

CORRECT ORDER NUMBER MUST APPEAR
ON ALL PACKAGES, INVOICES, AND
SHIPPING PAPERS. QUESTIONS
CONCERNING THIS ORDER SHOULD BE
DIRECTED TO THE DEPARTMENT
CONTACT.

Order Number:	CPO 0603 0603 ADJ2600000002 1	Change Order No:	Procurement Folder:	1713334
Document Name:	HVAC - Williamstown WVANG	Reason for Modification:		
Document Description:	Construction: HVAC - Williamstown WVANG			
Procurement Type:	Central Purchase Order			
Buyer Name:	David H Pauline			
Telephone:	304-558-0067			
Email:	david.h.pauline@wv.gov			
Shipping Method:	Best Way	Effective Start Date:		
Free on Board:	FOB Dest, Freight Prepaid	Effective End Date:		

VENDOR	DEPARTMENT CONTACT																				
Vendor Customer Code: VS0000039796 TRUETECH MECHANICAL LLC PO BOX 3 MOUNT NEBO WV 26679 US Vendor Contact Phone: 3046519413 Extension: Discount Details: <table><thead><tr><th></th><th>Discount Allowed</th><th>Discount Percentage</th><th>Discount Days</th></tr></thead><tbody><tr><td>#1</td><td>No</td><td>0.0000</td><td>0</td></tr><tr><td>#2</td><td>Not Entered</td><td></td><td></td></tr><tr><td>#3</td><td>Not Entered</td><td></td><td></td></tr><tr><td>#4</td><td>Not Entered</td><td></td><td></td></tr></tbody></table>		Discount Allowed	Discount Percentage	Discount Days	#1	No	0.0000	0	#2	Not Entered			#3	Not Entered			#4	Not Entered			Requestor Name: Ronald L Snyder Requestor Phone: (304) 464-3400 Requestor Email: ronald.l.snyder30.nfg@army.mil 2026 FILE LOCATION _____
	Discount Allowed	Discount Percentage	Discount Days																		
#1	No	0.0000	0																		
#2	Not Entered																				
#3	Not Entered																				
#4	Not Entered																				

INVOICE TO	SHIP TO
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US	CAMP DAWSON VISITOR CENTER ADJUTANT GENERALS OFFICE 1001 ARMY RD (304)791-4141 KINGWOOD WV 26537 US

CR 8-12-25

Total Order Amount: \$1,145,000.00

Purchasing Division's File Copy

PURCHASING DIVISION AUTHORIZATION DATE: 8/12/25 ELECTRONIC SIGNATURE ON FILE	ATTORNEY GENERAL APPROVAL AS TO FORM DATE: 8/13/25 ELECTRONIC SIGNATURE ON FILE	ENCUMBRANCE CERTIFICATION DATE: 8-13-25 ELECTRONIC SIGNATURE ON FILE
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Extended Description:

Construction Contract
(HVAC - Williamstown WVANG)

The Vendor, Truetech Mechanical, LLC, agrees to enter into this one-time construction contract with the Agency, WV Army National Guard, Construction & Facilities Management Office, to establish a contract to provide all labor, materials, tools, & equipment to replace (12) RTUs, (3) HVU's, (1) MAU and Complete Building Automation Replacement, located at Williamstown AFRC, Williamstown, WV, per the bid requirements, terms, conditions, specifications, Addendum No. 1 issued 07/01/2025, Addendum No. 2 issued 07/10/2025, and the vendor's bid dated 07/17/2025 all incorporated herein by reference and made apart of hereof, per the attached documents.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
1	72151207	1.00000	LS	1145000.000000	1145000.00
Service From	Service To	Manufacturer		Model No	

Commodity Line Description: (12) RTUs, (3) HVU's, (1) MAU Complete Building Autoi

Extended Description:

(12) RTUs, (3) HVU's, (1) MAU and Complete Building Automation Replacement

GENERAL TERMS AND CONDITIONS:

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.

2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.

2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.

2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.

2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.

2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.

2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.

2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.

2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

☒ **Term Contract**

Initial Contract Term: The Initial Contract Term will be for a period of _____. The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of months available in all renewal years combined. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

☐ **Alternate Renewal Term** – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

☒ **Fixed Period Contract:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed within One Hundred and Twenty (120) calendar days.

☐ **Fixed Period Contract with Renewals:** This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:

☐ the contract will continue for _____ years;

☐ the contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).

☐ **One-Time Purchase:** The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.

☒ **Construction/Project Oversight:** This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as _____), and continues until the project for which the vendor is providing oversight is complete.

☐ **Other:** Contract Term specified in _____

4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

☐ **Open End Contract:** Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

☐ **Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

☒ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

☐ **One-Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.

☒ **Construction:** This Contract is for construction activity more fully defined in the specifications.

6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:

☒ **LICENSE(S) / CERTIFICATIONS / PERMITS:** In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.

☒ West Virginia Contractor's License

☐☐☐

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

Vendor must maintain:

☒ **Commercial General Liability Insurance** in at least an amount of: \$1,000,000.00 per occurrence.

☒ **Automobile Liability Insurance** in at least an amount of: \$1,000,000.00 per occurrence.

☐ **Professional/Malpractice/Errors and Omission Insurance** in at least an amount of: _____ per occurrence. Notwithstanding the forgoing, Vendor's are not required to list the State as an additional insured for this type of policy.

☐ **Commercial Crime and Third Party Fidelity Insurance** in an amount of: _____ per occurrence.

☐ **Cyber Liability Insurance** in an amount of: _____ per occurrence.

☐ **Builders Risk Insurance** in an amount equal to 100% of the amount of the Contract.

☐ **Pollution Insurance** in an amount of: _____ per occurrence.

☐ **Aircraft Liability** in an amount of: _____ per occurrence.

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9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

☐ _____ for _____.

☒ Liquidated Damages Contained in the Specifications.

☐ Liquidated Damages Are Not Included in this Contract.

12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.

15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)

16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.

19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.

20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.

21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.

22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in www.state.wv.us/admin/purchase/privacy.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.

38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:

☒ Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

☐ Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at purchasing.division@wv.gov.

40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.
- c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.

45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.

46. ISRAEL BOYCOTT: Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. CONTRACTOR'S LICENSE: Until June 15, 2021, West Virginia Code § 21-11-2, and after that date, § 30-42-2, requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Contractor Licensing Board.

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a contract award document.

2. BONDS: The following bonds must be submitted:

- ☒ **BID BOND:** Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. **THE BID BOND MUST BE SUBMITTED WITH THE BID OR VENDOR'S BID WILL BE DISQUALIFIED.**
- ☒ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of 100% of the contract. The performance bond must be received by the Purchasing Division prior to Contract award. (Attorney General requires use of the State approved bond forms found at: www.state.wv.us/admin/purchase/forms2.html)
- ☒ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Purchasing Division prior to Contract award. (Attorney General requires use of the State approved bond forms found at: www.state.wv.us/admin/purchase/forms2.html)
- ☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system if the work impacts an existing roof. The amount of the bond must be equal to the price associated with the percentage of the project impacting the roof. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award. (Attorney General requires use of the State approved bond forms found at: www.state.wv.us/admin/purchase/forms2.html)

At a minimum, all construction projects require a bid bond, performance bond, and labor/material payment bond. Failure on the part of the state of West Virginia to checkmark the required bonds above does not relieve the vendor from the legal requirement of providing these bonds.

In lieu of the Bid Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of the bid bond must be of the same amount required of the Bid Bond and delivered with the bid.

3. DRUG-FREE WORKPLACE AFFIDAVIT: W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit an affidavit that the Vendor has a written plan for a drug-free workplace policy. If the affidavit is not submitted with the bid submission, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the affidavit within one business day of the request. Failure to submit the affidavit within one business day of receiving the request shall result in disqualification of the bid. To comply with this law, Vendor should complete the enclosed drug-free workplace affidavit and submit the same with its bid. Failure to submit the signed and notarized drugfree workplace affidavit or a similar affidavit that fully complies with the requirements of the applicable code, within one business day of being requested to do so shall result in disqualification of Vendor's bid. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

3.1. DRUG-FREE WORKPLACE POLICY: Pursuant to W. Va. Code § 21-1D-4, Vendor and its subcontractors must implement and maintain a written drug-free workplace policy that complies with said article. The awarding public authority shall cancel this contract if: (1) Vendor fails to implement and maintain a written drug-free workplace policy described in the preceding paragraph, (2) Vendor fails to provide information regarding implementation of its drug-free workplace policy at the request of the public authority; or (3) Vendor provides to the public authority false information regarding the contractor's drug-free workplace policy.

Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

4. DRUG FREE WORKPLACE REPORT: Pursuant to W. Va. Code § 21-1D-7b, no less than once per year, or upon completion of the project, every contractor shall provide a certified report to the public authority which let the contract. For contracts over \$25,000, the public authority shall be the West Virginia Purchasing Division. For contracts of \$25,000 or less, the public authority shall be the agency issuing the contract. The report shall include:

- (1) Information to show that the education and training service to the requirements of West Virginia Code § 21-1D-5 was provided;
- (2) The name of the laboratory certified by the United States Department of Health and Human Services or its successor that performs the drug tests;
- (3) The average number of employees in connection with the construction on the public improvement;
- (4) Drug test results for the following categories including the number of positive tests and the number of negative tests: (A) Pre-employment and new hires; (B) Reasonable suspicion; (C) Post-accident; and (D) Random.

Vendor should utilize the attached Certified Drug Free Workplace Report Coversheet when submitting the report required hereunder. Pursuant to W. Va. Code 21-1D-2(b) and (k), this provision does not apply to public improvement contracts the value of which is \$100,000 or less or temporary or emergency repairs.

5. AIA DOCUMENTS: All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached AIA documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.

6. PROHIBITION AGAINST GENERAL CONDITIONS: Notwithstanding anything contained in the AIA Documents or the Supplementary Conditions, the State of West Virginia will not pay for general conditions, or winter conditions, or any other condition representing a delay in the contracts. The Vendor is expected to mitigate delay costs to the greatest extent possible and any costs associated with Delays must be specifically and concretely identified. The state will not consider an average daily rate multiplied by the number of days extended to be an acceptable charge.

7. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

8. LOCAL LABOR MARKET HIRING REQUIREMENT: Pursuant to West Virginia Code §21-1C-1 et seq., Employers shall hire at least seventy-five percent of employees for public improvement construction projects from the local labor market, to be rounded off, with at least two employees from outside the local labor market permissible for each employer per project.

Any employer unable to employ the minimum number of employees from the local labor market shall inform the nearest office of Workforce West Virginia of the number of qualified employees needed and provide a job description of the positions to be filled.

If, within three business days following the placing of a job order, Workforce West Virginia is unable to refer any qualified job applicants to the employer or refers less qualified job applicants than the number requested, then Workforce West Virginia shall issue a waiver to the employer stating the unavailability of applicant and shall permit the employer to fill any positions covered by the waiver from outside the local labor market. The waiver shall be in writing and shall be issued within the prescribed three days. A waiver certificate shall be sent to both the employer for its permanent project records and to the public authority.

Any employer who violates this requirement is subject to a civil penalty of \$250 per each employee less than the required threshold of seventy-five percent per day of violation after receipt of a notice of violation.

Any employer that continues to violate any provision of this article more than fourteen calendar days after receipt of a notice of violation is subject to a civil penalty of \$500 per each employee less than the required threshold of seventy-five percent per day of violation.

The following terms used in this section have the meaning shown below.

(1) The term “construction project” means any construction, reconstruction, improvement, enlargement, painting, decorating or repair of any public improvement let to contract in an amount equal to or greater than \$500,000. The term “construction project” does not include temporary or emergency repairs;

(2) The term “employee” means any person hired or permitted to perform hourly work for wages by a person, firm or corporation in the construction industry; The term “employee” does not include:(i) Bona fide employees of a public authority or individuals engaged in making temporary or emergency repairs;(ii) Bona fide independent contractors; or(iii) Salaried supervisory personnel necessary to assure efficient execution of the employee's work;

(3) The term “employer” means any person, firm or corporation employing one or more employees on any public improvement and includes all contractors and subcontractors;

(4) The term “local labor market” means every county in West Virginia and any county outside of West Virginia if any portion of that county is within fifty miles of the border of West Virginia;

(5) The term “public improvement” includes the construction of all buildings, roads, highways, bridges, streets, alleys, sewers, ditches, sewage disposal plants, waterworks, airports and all other structures that may be let to contract by a public authority, excluding improvements funded, in whole or in part, by federal funds.

9. DAVIS-BACON AND RELATED ACT WAGE RATES:

☒ The work performed under this contract is federally funded in whole, or in part. Pursuant to 2 CFR 200.317, Vendors are required to pay applicable Davis-Bacon wage rates.

☐ The work performed under this contract is not subject to Davis-Bacon wage rates.

10. SUBCONTRACTOR LIST SUBMISSION: In accordance with W. Va. Code § 5-22-1, the apparent low bidder on a contract valued at more than \$250,000.00 for the construction, alteration, decoration, painting or improvement of a new or existing building or structure shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. (This section does not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects.) The subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review.

If the apparent low bidder fails to submit the subcontractor list, the Purchasing Division shall promptly request by telephone and electronic mail that the low bidder and second low bidder provide the subcontractor list within one business day of the request. Failure to submit the subcontractor list within one business day of receiving the request shall result in disqualification of the bid.

If no subcontractors who will perform more than \$25,000.00 of work are to be used to complete the project, the apparent low bidder must make this clear on the subcontractor list, in the bid itself, or in response to the Purchasing Division's request for the subcontractor list.

a. Required Information. The subcontractor list must contain the following information:

i. Bidder's name

ii. Name of each subcontractor performing more than \$25,000 of work on the project.

iii. The license number of each subcontractor, as required by W. Va. Code § 21-11-1 et. seq.

iv. If applicable, a notation that no subcontractor will be used to perform more than \$25,000.00 of work. (This item iv. is not required if the vendor makes this clear in the bid itself or in documentation following the request for the subcontractor list.)

b. Subcontractor List Submission Form: The subcontractor list may be submitted in any form, including the attached form, as long as the required information noted above is included. If any information is missing from the bidder's subcontractor list submission, it may be obtained from other documents such as bids, emails, letters, etc. that accompany the subcontractor list submission.

c. Substitution of Subcontractor. Written approval must be obtained from the State Spending Unit before any subcontractor substitution is permitted. Substitutions are not permitted unless:

i. The subcontractor listed in the original bid has filed for bankruptcy;

ii. The subcontractor in the original bid has been debarred or suspended; or

iii. The contractor certifies in writing that the subcontractor listed in the original bid fails, is unable, or refuses to perform his subcontract.

Subcontractor List Submission (Construction Contracts Only)

Bidder's Name: Truetech Mechanical

☐ Check this box if no subcontractors will perform more than \$25,000.00 of work to complete the project.

Subcontractor Name	License Number if Required by W. Va. Code § 21-11-1 et. seq.
Rigley Digital Systems	WR 031 362

Attach additional pages if necessary

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Printed Name and Title) Chad Tiller Member/Manager

(Address) P.O. Box 3 Mt. Neo WV 26679

(Phone Number) / (Fax Number) 304 651 9413

(email address) ctiller@truetechwv.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

Truetech Mechanical
(Company)

Chad Tiller
(Signature of Authorized Representative)

Chad Tiller Member/Manager 7/17/25
(Printed Name and Title of Authorized Representative) (Date)

304 651 9413
(Phone Number) (Fax Number)

ctiller@truetechwv.com
(Email Address)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CRFO ADJ2500000042

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Tructech Mechanical
Company


Authorized Signature

7/17/25
Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

GENERAL CONSTRUCTION SPECIFICATIONS (No AIA Documents)

- 1. PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of WV Army National Guard, Construction & Facilities Management Office to establish a contract for the following:

PROVIDE ALL LABOR, MATERIAL, TOOLS, SUPPLIES, AND EQUIPMENT TO DEMOLISH AND DO A HVAC REPLACEMENT AT THE AT WILLIAMSTOWN AFRC IN WILLIAMSTOWN, WV. Contractor shall coordinate work through the Agency Project Manager.

The Vendor shall furnish all materials, labor, and equipment necessary to complete all Construction Services. The Vendor shall furnish any incidental work, materials, labor, and equipment that are necessary to complete the Construction Services, even if such incidental work is not explicitly included in the Project Plans.

Where brand names are shown, these names are intended to describe a quality of product, and in no way are intended to limit products of equal quality. Therefore, products of other manufacturers may be employed for this work provided they are of equivalent materials and construction and are equally adaptable to the conditions as approved by the agency.

- 2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions and in the Project Plans as defined below.

2.1 “Construction Services” means turn-key installation, including all labor, materials, tools, supplies and equipment, to replace the HVAC at the Williamstown AFRC as more fully described in the Project Plans.

2.2 “Pricing Page” means the pages contained in wvOASIS, attached hereto as Exhibit A, or included in the Project Plans upon which Vendor should list its proposed price for the Construction Services.

2.3 “Solicitation” means the official notice of an opportunity to supply the State with Construction Services that is published by the Purchasing Division.

2.4 “RTU” means roof top unit.

2.5 “DDC” means direct digital control.

2.6 “HVU” means heating ventilation unit.

2.7 “MAU” means make-up air unit.

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

2.8 “Project Plans” means documents developed by an architect, an engineer, the Agency, or another design professional, which are attached hereto as Exhibit B, that provide detailed instructions on how the Construction Services are to be performed. In the event that Project Plans contain drawings or other documents too large to attach in Exhibit B, Vendors can obtain copies in accordance with Section 9 of these Specifications.

- 3. ORDER OF PRECEDENCE:** This General Construction Specifications document will have priority over, and supersede, anything contained in the Project Plans.
- 4. QUALIFICATIONS:** Vendor, or Vendor’s staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:
 - 4.1. Experience:** Vendor, or Vendor’s supervisory staff assigned to this project, must have successfully completed at least five (5) projects and have at least five (5) years of experience in installing the specified roofing system and that involved work similar to that described in these specifications or the Project Plans. Compliance with this experience requirement will be determined prior to contract award by the State through references provided by the Vendor upon request, through knowledge or documentation of the Vendor’s past projects, through confirmation of experience requirements from the architect assisting the State in this project, or some other method that the State determines to be acceptable. Vendor must provide any documentation requested by the State to assist in confirmation of compliance with this provision. References, documentation, or other information to confirm compliance with this experience requirement may be requested after bid opening and prior to contract award.
- 5. CONTRACT AWARD:** The Contract is intended to provide Agency with a purchase price for the Construction Services. The Contract will be awarded to the lowest qualified responsible bidder meeting the required specifications. If the Pricing Pages contain alternates/add-ons, the Contract will be awarded based on the grand total of the base bid and any alternates/add-ons selected.
- 6. SELECTION OF ALTERNATES:** Pursuant to W. Va. Code § 5-22-1(f), any solicitation of bids shall include no more than five alternates. Alternates, if accepted, shall be accepted in the order in which they are listed on the bid form. Any unaccepted alternate contained within a bid shall expire 90 days after the date of the opening of bids for review. Determination of the lowest qualified responsible bidder shall be based on the sum of the base bid and any alternates accepted.

Due to design, any contractor wishing to submit equivalents, must do so during the question period for evaluation.

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WILLIAMSTOWN AFRC - HVAC REPLACEMENT

7. **PERFORMANCE:** Vendor shall perform the Construction Services in accordance with this document and the Project Plans.
8. **SUBSTITUTIONS:** Any substitution requests must be submitted in accordance with the official question and answer period described in the INSTRUCTIONS TO VENDORS SUBMITTING BIDS, Paragraph 4. Vendor Question Deadline. Vendors submitting substitution requests should submit product brochures and product specifications during the official question and answer period.
9. **PROJECT PLANS:** The checked box will apply to Project Plans for this solicitation.
- x **No Additional Project Plan Documents:** There are no additional Project Plans other than those attached hereto as Exhibit B or any subsequent addenda modifying Exhibit B.

10. CONDITIONS OF THE WORK

- 10.1. **Permits:** The Vendor shall procure all necessary permits and licenses to comply with all applicable Federal, State, or Local laws, regulations and ordinances of any regulating body.
- 10.2. **Existing Conditions:** If discrepancies are discovered between the existing conditions and those noted in the specifications, Vendor must immediately notify the Agency's representative. Vendor must also immediately notify the Agency if suspected hazardous materials are encountered.
- 10.3. **Standard Work Hours:** The standard hours of work for this Contract will be Monday through Friday from 7:30am to 4:00pm, excluding holidays recognized by the State of West Virginia. Any work outside of the standard hours of work must be approved in advance at the Agency's sole discretion. Authorization of work outside of the standard hours of work will not entitle Vendor to additional compensation.
- 10.4. **Project Closeout:** Project Closeout shall include the following:
- 10.4.1. **Final Cleanup:** Vendor shall perform the final cleanup activities listed below, along with any other final cleanup activities normally associated with the work performed under this Contract, prior to final inspection:
- 10.4.1.1. Contractor is responsible for removing all construction debris daily.
- 10.4.1.2. Contractor is responsible for removing and disposing of any demolished material, off site and at the contractor's expense.

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WILLIAMSTOWN AFRC - HVAC REPLACEMENT

10.4.2. Final Inspection: Vendor shall participate in a final inspection with the Agency's project manager. The purpose of the final inspection will be to identify deficiencies that need to be remedied prior to Agency's final acceptance of the work. Vendor shall at all times be obligated to perform in accordance with the Contract and must take all actions necessary to ensure that work complies with requirements of Contract prior to final acceptance. Final acceptance does not waive or release Vendor from its obligation to ensure that work complies with the Contract requirements. Vendor shall submit any warranty documents to the Agency project manager at final inspection.

10.5. Payment:

10.5.1. Agency shall pay flat fee as shown on the Bid Form, for all Contract Services performed and accepted under this Contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

10.5.2. Invoices shall be submitted for payment (in arrears) and must include the following information:

10.5.2.1. Invoice must include, at a minimum, invoice date, FEIN number, complete address of vendor and Contract number.

10.5.2.2. Invoices shall be mailed to the following address:

WV Army National Guard Construction & Facilities
Management Office
1707 Coonskin Drive
Attn: Accounts Payable
Charleston, WV 25311

11. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

11.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

11.2. Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

11.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

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WILLIAMSTOWN AFRC - HVAC REPLACEMENT

11.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.

11.5. Vendor shall inform all staff of Agency's security protocol and procedures.

12. MISCELLANEOUS:

12.1. Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Chad Miller

Telephone Number: 304 651 9413

Fax Number: _____

Email Address: cmiller@truetechwv.com

a. Liquidated Damages: Contractor shall pay liquidated damages in the amount of \$1,500.00 per day of delay, plus a one-time fixed cost of \$1,250.00 for Staff Judge Advocate review for work not completed after contract completion date. This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

EXHIBIT A – Pricing Page

ALL LABOR, MATERIALS, EQUIPMENT, AND SUPPLIES NECESSARY TO PROVIDE A HVAC REPLACEMENT AT THE WILLIAMSTOWN AFRC IN WILLIAMSTOWN, WV WILLIAMSTOWN AFRC 285 AVIATION DRIVE, WILLIAMSTOWN, WV 26187

BID FORM

The undersigned, hereafter called the Bidder, being familiar with and understanding the bidding documents; and being familiar with the site and all local conditions affecting the Project, hereby proposes to furnish labor, material, equipment, supplies, and transportation to perform the work as described in the bidding documents

BIDDERS COMPANY NAME: Truetech Mechanical

VENDOR ADDRESS: P.O. Box 3

Mt. Neo WV 26679

TELEPHONE: 304 657 9413

FAX NUMBER: _____

E-MAIL ADDRESS: chiller@truetechwv.com

CONTRACT TOTAL COST: BASE BID-CONTRACT ITEM NO.1- Provide labor & materials to provide HVAC Replacement at the Williamstown AFRC, per the attached specifications.

One Million One Hundred and Forty Five Thousand Dollars
(\$ 1,145,000.00) *** (Contract bid to be written in words and numbers.)

SIGNATURE: Chad Miller DATE: 7/17/25

NAME: Chad Miller
(Please Print)

TITLE: Member/Manager

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

EXHIBIT B – PROJECT PLANS

13. GENERAL REQUIREMENTS:

13.1 Mandatory Contract Item Requirements: Contract Item must meet or exceed the mandatory requirements listed below.

13.1.1 All work to be performed according to specifications provided in the following attachments.

13.1.1.1 Exhibit A Pricing Page

13.1.1.2 Exhibit C Scope of Work-Williamstown AFRC HVAC Replacement

13.1.1.3 Exhibit D RQ Series Rooftop Units

13.1.1.4 Exhibit E RN Series Rooftop Units

13.1.1.5 Exhibit F RN/RQ Series HV Units

13.1.1.6 Exhibit G Packaged, Direct Gas-Fired, Outdoor, Heating Only Makeup Air Units

14. PERFORMANCE: Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency.

15. TRAVEL: Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be included in the Vendor's bid, but such costs will not be paid by the Agency separately.

16. PROJECT SPECIFIC CONDITIONS OF THE WORK

16.1 Limits of Work

16.1.1 Work areas will be limited to those spaces required for access to the jobsites.

16.1.2 Some interior space may be utilized for temporary (overnight) storage of equipment and tools. Coordinate storage needs with the Agency Project Manager. Vendor shall take full responsibility for the storage of any supplies or equipment on the jobsite, whether inside or outside. Agency cannot guarantee availability of its employees during off-hours (evenings, holidays, weekends, etc.) to provide access to any supplies and equipment stored inside.

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

16.1.3 Agency facilities shall remain in use during this contract. Contractor shall work with the Trades Specialist to coordinate the temporary access to work areas and otherwise provide for the Contractor needs to complete work. Contractor shall minimize disruption to building work areas and loading dock access.

Contractor shall be permitted reasonable use of building utilities including power, water and sanitary sewage disposal as required for conducting the work.

Contractor shall coordinate the location of service connections or use of receptacles with the Trades Specialist to avoid overloading existing circuits.

16.2 Contractor Visitor Badges

Contractor shall provide a list of all personnel working on this project within the facility. This list shall include a copy of a valid driver's license or other legal identification and include date of birth and cell phone number. Workers shall carry valid Contractor Photo ID Badges to be worn when working in the facility. Under no circumstances shall a worker be assigned to this project without the validation first being submitted to the WV Army National Guard and approval given.

16.3 Work Restrictions

Access to the buildings shall be coordinated with the Owner. Contractor shall not leave open doors unattended and shall close doors when not in use.

These are non-smoking buildings. Smoking is not permitted within the buildings or near entrances, operable windows or outdoor air intakes.

Vendor MAY NOT block access to any fire hydrant located at jobsite.

Vendor MAY NOT block access to parking lot entrances and exits without prior approval of the Agency.

16.4 Parking

Some parking is available on the project sites. Parking in non-designated areas is not permitted. Parking is the responsibility of the contractor. With prior approval, contractor's vehicles may be brought on-site for loading & unloading or to provide equipment necessary for conducting the work.

Use of loading dock areas or sidewalk areas for parking is strictly prohibited.

16.5 Codes

REQUEST FOR QUOTATION – CRFQ ADJ25*42
WILLIAMSTOWN AFRC - HVAC REPLACEMENT

All work is to be performed in compliance with applicable Federal and State codes including but not limited to the International Building Code, International Mechanical Code, Life Safety Code, NEC, OSHA, UL, ANSI, ASME and related standards.

16.6 Safety

All applicable local safety and OSHA rules and guidelines shall be met by the Contractor. Work shall be subject to verification and inspection by WV Army National Guard Safety representatives. Such verification shall not relieve the Contractor from meeting all applicable safety regulations and inspection by other agencies.

16.7 Hot Work Permit

Contractor shall obtain Owner's permission prior to performing any work that requires an open flame, creates sparks, use's equipment that creates combustible temperatures, or performs any work that could result in a fire hazard. Owner will review work area and issue a 'Hot Work Permit' prior to Contractor commencing work. Note that the Contractor must take proper precautions and may be required to provide a Fire Watch as a condition of the permit.

16.8 Workmanship

Contractor shall complete all work in a neat and workmanlike manner. All work shall be done using new materials in a manner that meets commercial quality standards. Work shall be neat, true, plumb and square, as applicable. Contractor shall verify all dimensions.

Exhibit C- Scope of Work

WEST VIRGINIA ARMY NATIONAL GUARD

Williamstown AFRC HVAC Replacement

Williamstown, West Virginia

Division 1 - General Requirements

00200 Instructions to Bidders

- Any and all contractual documents, information and procedures distributed by, or by any other means conveyed, by WV State Purchasing or the office of; supersedes the language in this document.

01100 Summary

(12) RTUs, (3) HVU's, (1) MAU and Complete Building Automation Replacement.

GENERAL:

SITE INSPECTION: A mandatory pre-bid meeting and walk-through shall be held. Contractors shall come prepared to fully analyze existing site conditions as required to prepare an accurate bid.

DEMOLITION REQUIREMENT: RTU's shall be disconnected from the electrical service, control connections, natural gas service, and any applicable ductwork and shall be removed from the roof and removed from the premises. All equipment, materials and refrigerant shall be disposed of in a manner consistent with all laws and ordinances governing such matters in this jurisdiction. Openings to the building shall be secured from weather penetration until such time as new units can be installed. The Drill Hall RTU shall have the existing external ductwork removed. RTU-13 existing curb extension and ductwork inside of the extension shall be removed back to the original roof curb in preparation for the new curb adapter.

INSTALLATION OF NEW UNITS:

1. **CURB ADAPTER** – Provide new curb adapter that shall sit atop existing unit's curb. Contractor shall coordinate required curb adapter based on consultation with equipment manufacturer. It is the contractor's responsibility to ensure compatibility of the curb adapters and to make any necessary modifications to curbs and ductwork required for a fully functional system.
2. **ELECTRICAL SERVICE** – New RTU's shall utilize single circuit power connections from existing equipment. If the existing circuits aren't sized correctly, it shall be the contractor's responsibility to correct using the new unit manufactures electrical data. Units shall have a disconnect and be fused in accordance with the manufacturer's specifications. Existing units have "through the curb" electrical service. Contractor shall move conduit as necessary to supply new units. It is the contractor's responsibility to provide all wiring, conduit, breakers, disconnects, fittings, etc. for necessary electrical service meeting the current edition of the National Electrical Code.
3. **NATURAL GAS SERVICE** – It is the contractor's responsibility to move the gas line as necessary to connect back to the new RTU's. The use of a pressure regulator shall be required as needed in order to

Exhibit C- Scope of Work

provide natural gas pressure in the range acceptable to the RTU manufacturer. Any and all new piping shall be included in this bid.

4. **Drill Hall RTU New Duct-** New external ductwork for the Drill Hall RTU shall be replaced with the same size duct. Duct shall be externally insulated and wrapped with aluminum weather tight. New duct supports are required. Existing access platform over top of ductwork shall remain and be reused.

5. **DIRECT DIGITAL CONTROLS-** Contractor shall provide new DDC for all new RTUS and all other existing HVAC equipment on site rather listed here or not. BACnet to existing partially upgraded ASI controls (or other communication protocols) SHALL NOT be acceptable. Contractor to furnish and install new digital controllers while preserving all unit safety circuits. Reuse of controllers, actuators, or zone temperature sensors shall not be permitted. Existing control transformers and low voltage control wiring can be used if in satisfactory condition. Contractor to replace any failed or inappropriately sized control transformers at no additional cost to the owner. Contractor shall coordinate with owner as to the desired sequences of operation and shall submit these sequences to the owner for approval.

All new controllers installed for this project shall be networked together seamlessly with the existing partially upgraded ASI Controls communications bus (2 wire RS485 daisy-chain). The graphical interface shall be web based. "Web-based" means that the owner interface to the building automation system shall be through standard web browser software including Internet Explorer, Google Chrome, and or Mozilla Firefox. No proprietary software interfaces shall be permitted. Contractor shall also provide the owner with a licensed copy of any manufacturer's proprietary programming software; all necessary cables and interface hardware as required to interface the system and make fundamental programming changes from owner's laptop computer. User training of any software provided shall also be included. Contractor will provide complete building graphics package displaying all relevant DDC equipment information on site.

6. **AIR BALANCE SERVICE** – Contractor to employ the services of an independent, certified air balance company. Airflow for new RTU's shall be set in coordination with the control's contractor. Air balance contractor shall submit a written report of all settings, and any deficiencies found.

7. **CRANE SERVICE** – Contractor is responsible for all crane services required for the project. Contractor shall coordinate the dates and times of onsite crane usage so that owner's operations can be accordingly adjusted.

8. **PROJECT CLOSEOUT REQUIREMENTS:** Provide eight (8) hours on-site with owner's designated staff for training on operation and maintenance requirements of the system. Provide letter stating that the warranty period will extend for a period of 1 year beginning at substantial completion date. Warranty letter shall disclose the warranty start and end dates and provide contact information of the installing contractor, the equipment supplier's warranty and technical support departments, and the controls contractor.

9. **NEW RTU, HVU, and MAU REQUIREMENTS:** Basis of design is Aeon Model RQ, RN, and Modine/Airedale or equal. See attached specifications.

Exhibit C- Scope of Work

Due to design, any contractor wishing to submit equivalents, must do so during the question period for evaluation.

RTU manufacturer shall provide terminal strip connections for the following field-controlled functions:

- (a) supply fan enable, (b) supply fan modulation (0-10vdc), (c) DX cooling stage 1, (d) DX cooling stage 2, (e) gas heating stage 1, (f) gas heating stage 2, (g) economizer damper control (0-10vdc), (h) digital scroll compressor modulation (1-5vdc) (i) relief fan enable, (j) relief fan modulation (0-10vdc).

01300 Administrative Requirements

PROJECT COORDINATION

- Coordinate construction activities included in Contract Documents to assure efficient and orderly installation of each part of the Work.
- Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
- Where necessary prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings. Prepare similar memoranda for Owner and separate Contractors where coordination of their Work is required.

ADMINISTRATIVE PROCEDURES

- Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to:
 - Preparing of schedules.
 - Delivering and processing submittals.
 - Progress meetings.
 - Project Close-out activities.

CONSERVATION

- Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

PROGRESS MEETINGS

- Contractor will conduct progress meetings at site agreed upon by the Owner/Owner's Representative at regularly scheduled intervals, generally bi-weekly.
- Progress meeting minutes are to be provided by the contractor within 3 business day of conclusion of the meeting. The meeting minutes shall be approved at the next meeting.
- The progress agenda shall include:
 - Review and correct or approve minutes of previous progress meeting.
 - Review and discuss old business
 - Review and discuss new business
 - Review and discuss contractor's issues and concerns
 - Review and discuss owner's issues and concerns

Exhibit C- Scope of Work

- Review and discuss progress since last meeting.
 - Review where each activity is in relation to Contractor's Construction Schedule, whether on time or ahead or behind schedule, will be determined.
 - Contractor to present a new updated schedule at each progress meeting; to include a two week look ahead.
-
- Contractor shall provide meeting minutes of each progress meeting within three days after each progress meeting date. Contractor will distribute copies of minutes of meeting to the Owner.

GENERAL RESPONSIBILITIES

- The successful contractor is responsible for providing all parts, labor, equipment, and materials required to provide a finished fully functional product as described in the objectives.
- The contractor is responsible for the cost, and obtaining of all required permits.
- The contractor is responsible to ensure all work is in compliance with all Federal, State, Local Municipalities, State Fire Marshall and ATRP requirements.
- Contractor is responsible for all permits; the contractor shall obtain all required permits prior to initiation of any work. The contractor shall be responsible for the associated costs or permitting.
- Contractor is responsible for field verifying all distances and quantities of materials and components necessary for completion.
- The contractor is responsible for cleaning up the work site and repairing the site to original conditions once work is completed.
- Contractor responsible for keeping the work site clean daily, free from excess debris and safety hazards.
- Contractor responsible for providing waste disposal for the project; contractor is responsible for removing all construction waste debris off site at the contractor's expense.
- All materials shall be submitted and approved by the WVARNG prior to installation.
- The West Virginia Army National Guard reserves the right to claim removed equipment from the project. A list of equipment to be retained will be provided to the contractor prior to beginning work. Contractor to make every effort to remove these items without damage.
- The contractor will provide a schedule of values broken down per line item with material and labor.
- Owner has 7 business days to review and respond to Requests For Information (RFI)s.
- Owner has 14 business days to review and respond to contract submittals.
- Owner has 14 business days to review and respond to review drawings.

SITE ACCESS REQUIREMENTS

- Access and general protection/security policy and procedures. This standard language is for contractor employees with an area of performance within Army controlled installation, facility, or area. Contractor and all associated sub-contractors employees shall provide all information required for background checks to meet installation access requirements.
-
- Contractor is responsible for coordinating with the Owner/Owner's Representative, for access and deliveries. The Owner requires two (2) business days' notice to approve access to the facility.

Exhibit C- Scope of Work

01400 Quality Requirements

- The successful contractor will be required to provide a one year warranty on all parts, labor and materials on the entire project.

01500 Temporary Facilities and Controls

- The successful contractor will be required to provide their own temporary facilities. The West Virginia Army National Guard will provide an area for the contractor to have a lay down area, and a place for a job trailer.
- The West Virginia Army National Guard will make every effort to provide electric and water for the contractor's lay down and job trailer site; however it is not guaranteed.

01700 Execution Requirements

- Within 30 days of the government Final Acceptance of the project; the contractor shall be responsible to provide any and all field notes, as-built drawings, or any other associated records to the Owner.

Division 2 - Site Construction

02073 PARTIAL DEMOLITION FOR REMODELING

GENERAL DEMOLITION

- Review, confirm and coordinate all demolition work and full extent of Owner's requirements prior to starting demolition work.
- Deliver salvageable materials requested by Owner.
- Perform all demolition in a manner acceptable to the Owner and regulatory agencies.
- Protect and maintain conduits, drains, sewers, pipes, and wires that are to remain on the property.
- Protect existing construction indicated to remain.
- Where existing construction is damaged by demolition operations, make repairs equal to or better than condition prior to start of demolition work.

CLEANING

- Promptly remove materials, rubbish, and debris from building and from property.

SALVAGEABLE MATERIALS

- Review with Owner at Preconstruction meeting about salvaged materials the Owner wishes to retain from building renovation project.
- Remove with care materials to be retained by Owner and store on site where directed for pickup by owner.

HANDLING

- Deliver materials and other components so they will not be damaged or deformed
- Exercise care in unloading, storing, and erecting materials to prevent bending, warping, twisting, and surface damage.
- Stack materials on platforms/pallets, covered with suitable weathertight ventilated covering.

Exhibit C- Scope of Work

WARRANTY

- Furnish manufacturer's written warranty covering materials installed. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PRODUCTS

- Will be in accordance with attached specifications

INSTALLATION

- General: Comply with manufacturers' instructions and recommendations for installation, as applicable to project.

Guide Specifications - RQ Series Rooftop Units

Section xxxxx - Packaged Rooftop Units / Outdoor Air Handling Units

Part 1 - General

1.01 Related Documents

1.02 General Description

- A. This section includes the design, controls and installation requirements for packaged rooftop units/heat pumps/outdoor air handling units.

1.03 Quality Assurance

- A. Packaged air-cooled condenser units shall be certified in accordance with ANSI/AHRI Standard 210/240 performance rating of commercial and industrial unitary air-conditioning and heat pump equipment.
- B. Unit shall be certified in accordance with UL Standard 60335-2-40 and CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.
- C. Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.
- D. Unit shall be certified in accordance with ANSI Z21.47b/CSA 2.3b and ANSI Z83.8/CSA 2.6, Safety Standard Gas-Fired Furnaces.
- E. Unit Energy Efficiency Ratio (EER) shall be equal to or greater that prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.
- F. Unit Seasonal Energy Efficiency Ratio (SEER) shall be equal to or greater that prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.
- G. Unit shall be safety certified by ETL and ETL US listed. Unit nameplate shall include the ETL/ETL Canada label.

1.04 Submittals

- A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics and connection requirements. Installation, Operation and Maintenance manual with startup requirements shall be provided.
- B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, construction details, clearances and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed wiring.

1.05 Delivery, Storage, and Handling

- A. Unit shall be shipped with doors bolted shut and outside air hood closed to prevent damage during transport and thereafter while in storage awaiting installation.
- B. Follow Installation, Operation and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.
- C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation and Maintenance manual.

1.06 Warranty

- A. Manufacturer shall provide a limited “parts only” warranty for a period of 24 months from the date of original equipment shipment from the factory. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided manufacturer’s written instructions for installation, operation and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and air filters.

Part 2 - Products

2.01 Manufacturer

- A. **Products shall be provided by the following manufacturers:**
 - 1. AAON
 - 2. Substitute equipment may be considered for approval that includes at a minimum:
 - a. R-454B Refrigerant
 - b. Direct drive supply fans
 - c. Double wall cabinet construction
 - d. Insulation with a minimum R-value of 13
 - e. Cabinet wall construction shall incorporate a thermal-break (no-thru metal construction).
 - f. Stainless steel drain pans
 - g. Hinged access doors with lockable handles
 - h. Variable capacity compressor with 10-100% capacity control (RTU-12 only)
 - i. Two-stage compressor with capacities of 100% and 67% (RTU-9 only)
 - j. All other provisions of the specifications must be satisfactorily addressed

2.02 Rooftop Units

- A. **General Description**
 - 1. Packaged rooftop unit shall include compressor, evaporator coil, filters, supply fan, dampers, gas heater, exhaust fan, and unit controls.

2. Unit shall be factory assembled and tested including leak testing of the DX coils, pressure testing of the refrigeration circuit, and run testing of the completed unit. Run test report shall be supplied with the unit in the service compartment's literature pocket.
3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
4. Unit components shall be labeled, including refrigeration system components and electrical and controls components.
5. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.
6. Installation, Operation and Maintenance manual shall be supplied within the unit.
7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.
8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.
2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D-1929 for a minimum flash ignition temperature of 610°F.
3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel, and prevents exterior condensation on the panel.
4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 210/240. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.
5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.

6. Access to filters, dampers, cooling coil, heater, compressor, and electrical and controls components shall be through hinged access doors with quarter turn, lockable handles. Full length stainless steel piano hinges shall be included on the doors.
7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.
8. Units shall include double sloped 304 stainless steel drain pans.
9. Unit shall be provided with through the base vertical discharge and return air openings. All openings through the unit shall have upturned flanges of at least 1/2 inch around the opening.
10. Unit shall include lifting lugs on the top of the unit.

C. Electrical

1. Unit shall have a 10kAIC SCCR.
2. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.
3. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.
4. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

D. Supply Fans

1. Unit shall include direct drive, unhooded, backward curved, plenum supply fans.
2. Blowers and motors shall be dynamically balanced.
3. Motor shall be a high efficiency electrically commutated motor.

E. Exhaust Fans

1. Exhaust dampers shall be sized for 100% relief.
2. Fans and motors shall be dynamically balanced.
3. Access to exhaust fans shall be through double wall, hinged access doors with quarter turn lockable handles.
4. Unit shall include belt driven, unhooded, backward curved, plenum exhaust fans.
5. Unit shall include belt driven forward curved exhaust fans.
6. Unit shall include direct drive, axial flow exhaust fans.
7. Motor shall be a high efficiency electrically commutated motor.

F. Cooling Coils

1. **Evaporator Coils**

- a. Coils shall be designed for use with R-454B refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and aluminum end casings. Fin design shall be sine wave rippled.
- b. Coil shall be standard capacity
- c. Coils shall be helium hydrogen or helium leak tested.
- d. Coils shall be furnished with factory installed thermostatic expansion valves.

G. Refrigeration System

- 1. Compressors shall be scroll type with thermal overload protection and carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory.
- 2. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged compressor access doors shall be fabricated of double wall, rigid polyurethane foam injected panels to prevent the transmission of noise outside the cabinet.
- 3. Compressors shall be isolated from the base pan with the compressor manufacturer's recommended rubber vibration isolators, to reduce any transmission of noise from the compressors into the building area.
- 4. Each refrigeration circuit shall be equipped with thermostatic expansion valve type refrigerant flow control.
- 5. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service fittings on both the high pressure and low pressure sides and a factory installed liquid line filter driers.
- 6. Unit shall include a variable capacity scroll compressor on the lead (all) refrigeration circuit(s) which shall be capable of modulation from 10-100% of its capacity.
- 7. Unit shall include a two-stage compressor which shall modulate between two capacity settings, 67% and 100%. (RTU-9 only)
- 8. Refrigeration circuit shall be equipped with a liquid line sight glass.
- 9. The factory installed controls shall include a 3 minute off delay timer to prevent compressor short cycling and an adjustable compressor lockout.
- 10. Unit shall be provided with an adjustable compressor lockout.

H. Condensers

1. **Air-Cooled Condenser**

- a. Condenser fans shall be a vertical discharge, axial flow, direct drive fans.

- b. Coils shall be designed for use with R-454B refrigerant. Coils shall be multi-pass and fabricated from aluminum microchannel tubes.
- c. Condenser fans shall be high efficiency electrically commutated motor driven with factory installed head pressure control module. Condenser airflow shall continuously modulate based on head pressure and cooling operation shall be allowed down to 35°F with adjustable compressor lockout.

I. Gas Heating

- 1. Stainless steel heat exchanger furnace shall carry a 25 year non-prorated warranty, from the date of original equipment shipment from the factory.
- 2. Furnace shall include a gas ignition system consisting of an electronic igniter to a pilot system, which will be continuous when the heater is operating, but will shut off the pilot when heating is not required.
- 3. Unit shall include a single gas connection and have gas supply piping entrances in the unit base for through-the-curb gas piping and in the outside cabinet wall for across the roof gas piping.
- 4. High Turndown Modulating Natural Gas Furnace shall be equipped with modulating gas valves, adjustable speed combustion blowers, stainless steel tubular heat exchangers, and electronic controller. Combustion blowers and gas valves shall be capable of modulation. Electronic controller includes a factory wired, field installed supply air temperature sensor. Sensor shall be field installed in the supply air ductwork. Supply air temperature setpoint shall be adjustable on the electronic controller within the controls compartment. Gas heater shall be capable of capacity turndown ratio as shown on the unit rating sheet. Heat trace shall be include on the condensate drain

J. Filters

- 1. Unit shall include 2 inch thick, pleated panel filters with an ASHRAE MERV rating of 8, upstream of the cooling coil.
- 2. Unit shall include a clogged filter switch.

K. Outside Air/Economizer

- 1. Unit shall include 0-100% economizer consisting of a motor operated outside air damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 15 CFM of leakage per sq. ft. of damper area when subjected to 2 inches w.g. air pressure differential across the damper. Unit shall include outside air opening bird screen, outside air hood with rain lip and barometric relief dampers.
- 2. Damper assembly shall be controlled by spring return enthalpy activated fully modulating actuator with dual minimum positions.
- 3. Damper assembly shall be controlled by spring return DDC actuator.

L. Controls

1. Factory Installed DDC Controls by Others

- a. Controls shall be furnished by others and field installed.
- b. Unit shall be provided with a low voltage control terminal strip for field installation of ATC provided controls.
- c. Isolation relays shall be factory installed.

2.03 Curbs

- A. A custom curb adaptor shall be provided to transition from the existing curb to the new unit. Curb shall allow an installation that does not require modification to the roof or require any additional roofing modifications or penetrations. Curb shall be fully welded and provide a transition from the new unit to the existing duct work. If this cannot be achieved then the installing contractor shall modify the existing duct to adapt to the new unit.

Part 3 - Execution

3.01 Installation, Operation and Maintenance

- A. Installation, Operation and Maintenance manual shall be supplied with the unit.
- B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation and Maintenance manual instructions.
- C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

Guide Specifications - RN Series Rooftop Units

Section xxxxx - Packaged Rooftop Units / Outdoor Air Handling Units

Part 1 - General

1.01 Related Documents

1.02 General Description

- A. This section includes the design, controls and installation requirements for packaged rooftop units / outdoor air handling units.

1.03 Quality Assurance

- A. Packaged air-cooled condenser units shall be certified in accordance with ANSI/AHRI Standard 210/240 performance rating of commercial and industrial unitary air-conditioning and heat pump equipment.
- B. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.
- C. Unit shall be certified in accordance with UL Standard 60335-2-40 and CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.
- D. Unit and refrigeration system shall comply with ASHRAE 15, Safety Standard for Mechanical Refrigeration.
- E. Unit Seasonal Energy Efficiency Ratio (SEER) shall be equal to or greater than that prescribed by ASHRAE 90.1, Energy Efficient Design of New Buildings except Low-Rise Residential Buildings.
- F. Unit shall be safety certified by ETL and ETL US listed. Unit nameplate shall include the ETL/ETL Canada label.

1.04 Submittals

- A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics and connection requirements. Installation, Operation, and Maintenance manual with startup requirements shall be provided.
- B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, construction details, clearances and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed wiring.

1.05 Delivery, Storage, and Handling

- A. Unit shall be shipped with doors screwed shut and outside air hood closed to prevent damage during transport and thereafter while in storage awaiting installation.
- B. Follow Installation, Operation, and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.
- C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation, and Maintenance manual.

1.06 Warranty

- A. Manufacturer shall provide a limited “parts only” warranty for a period of 12 months from the date of equipment startup or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover material and workmanship that prove defective, within the specified warranty period, provided manufacturer’s written instructions for Installation, Operation, and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and filters.

Part 2 - Products

2.01 Manufacturer

- A. **Products shall be provided by the following manufacturers:**
 - 1. AAON
 - 2. Substitute equipment may be considered for approval that includes at a minimum:
 - a. R-454B refrigerant
 - b. Variable capacity compressor with 10-100% capacity control
 - c. Direct drive supply fans
 - d. Double wall cabinet construction
 - e. Insulation with a minimum R-value of 13
 - f. Cabinet wall construction shall incorporate a thermal-break (no-thru metal construction).
 - g. Stainless steel drain pans

2.02 Rooftop Units

- A. **General Description**
 - 1. Packaged rooftop unit shall include compressors, evaporator coils, filters, supply fans, dampers, gas heaters, exhaust fans, and unit controls.
 - 2. Unit shall be factory assembled and tested including leak testing of the DX coils, and run testing of the completed unit. Run test report shall be supplied with the unit in the service compartment’s literature pocket.

3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
4. Unit components shall be labeled, including electrical and controls components.
5. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.
6. Installation, Operation, and Maintenance manual shall be supplied within the unit.
7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.
8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.
2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F.
3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel, and prevents exterior condensation on the panel.
4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 210/240. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.
5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.
6. Access to filters, dampers, cooling coils, heaters, and electrical and controls components shall be through hinged access doors with quarter turn, zinc cast, lockable handles. Full length stainless steel piano hinges shall be included on the doors.

7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.
8. Units with cooling coils shall include double sloped 304 stainless steel drain pans.
9. Unit shall be provided with base discharge and return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.
10. Unit shall include lifting lugs on the top of the unit.

C. Electrical

1. Unit shall have a 5kAIC SCCR.
2. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.
3. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.
4. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

D. Supply Fans

1. Unit shall include direct drive, unhooded, backward curved, plenum supply fans.
2. Blowers and motors shall be dynamically balance and mounted on rubber isolators.

E. Exhaust Fans

1. Exhaust dampers shall be sized for 100% relief.
2. Fans and motors shall be dynamically balanced.
3. Unit shall include barometric relief dampers.
4. Access to exhaust fans shall be through double wall, hinged access doors with quarter turn lockable handles.

F. Cooling Coils

1. Evaporator Coils
 - a. Coils shall be designed for use with R-454B refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and galvanized steel end casings. Fin design shall be sine wave rippled.
 - b. Coil shall be standard capacity.
 - c. Coils shall be hydrogen or helium leak tested.
 - d. Coils shall be furnished with factory installed expansion valves.

1. Unit shall be factory charged with R-454B refrigerant.
2. Refrigeration circuit shall be equipped with a liquid line sight glass.
 - a. Coils shall be designed for use with R-454B refrigerant. Coils shall be multi-pass and fabricated from aluminum microchannel tubes.

G. Refrigeration System

1. Compressors shall be scroll type with thermal overload protection and carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory.
2. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged compressor access doors shall be fabricated of double wall, rigid polyurethane foam injected panels to prevent the transmission of noise outside the cabinet.
3. Compressors shall be isolated from the base pan with the compressor manufacturer's recommended rubber vibration isolators, to reduce any transmission of noise from the compressors into the building area.
4. Each refrigeration circuit shall be equipped with thermostatic expansion valve type refrigerant flow control.
5. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service fittings on both the high pressure and low pressure sides and a factory installed liquid line filter driers.
6. Unit shall include a variable capacity scroll compressor on the lead refrigeration circuit which shall be capable of modulation from 10-100% of its capacity.
7. All lag refrigeration circuits shall have a staged compressor
8. Refrigeration circuit shall be equipped with a liquid line sight glass.

H. Gas Heating

1. Stainless steel heat exchanger furnace shall carry a 25 year non-prorated warranty, from the date of original equipment shipment from the factory.
2. Gas furnace shall consist of stainless steel heat exchangers with multiple concavities, an induced draft blower and an electronic pressure switch to lockout the gas valve until the combustion chamber is purged and combustion airflow is established.
3. Furnace shall include a gas ignition system consisting of an electronic igniter to a pilot system, which will be continuous when the heater is operating, but will shut off the pilot when heating is not required.
4. Unit shall include a single gas connection and have gas supply piping entrances in the unit base for through-the-curb gas piping and in the outside cabinet wall for across the roof gas piping.

5. High Turndown Modulating Natural Gas Furnace shall be equipped with modulating gas valves, adjustable speed combustion blowers, stainless steel tubular heat exchangers, and electronic controller. Combustion blowers and gas valves shall be capable of modulation. Electronic controller includes a factory wired, field installed supply air temperature sensor. Sensor shall be field installed in the supply air ductwork. Supply air temperature setpoint shall be adjustable on the electronic controller within the controls compartment. Gas heater shall be capable of capacity turndown ratio as shown on the unit rating sheet. Heat trace shall be include on the condensate drain

I. Filters

1. Unit shall include 2 inch thick, pleated panel filters with an ASHRAE MERV rating of 8, upstream of the cooling coil.
2. Unit shall include a clogged filter switch.

J. Outside Air/Economizer

1. Unit shall include 0-100% economizer consisting of a motor operated outside air damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Damper assembly shall be controlled by spring return DDC actuator. Unit shall include outside air opening bird screen and outside air hood. Unit, except for horizontal series, shall also include barometric relief dampers.

K. Controls

L. Accessories

1. Unit shall be provided with a safety shutdown terminal block for field installation of a smoke detector which shuts off the unit's control circuit.
2. Unit shall be provided with a low voltage control terminal strip for field installation of ATC provided controls.

2.03 Curbs

- A. A custom curb adaptor shall be provided to transition from the existing curb to the new unit. Curb shall allow an installation that does not require modification to the roof or require any additional roofing modifications or penetrations. Curb shall be fully welded and provide a transition from the new unit to the existing duct work. If this cannot be achieved then the installing contractor shall modify the existing duct to adapt to the new unit.

Part 3 - Execution

3.01 Installation, Operation, and Maintenance

- A. Installation, Operation, and Maintenance manual shall be supplied with the unit.
- B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation, and Maintenance manual instructions.
- C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

Guide Specifications – RN/RQ Series HV Units

Section xxxxx - Packaged Rooftop Units / Outdoor Air Handling Units

Part 1 - General

1.01 Related Documents

1.02 General Description

- A. This section includes the design, controls and installation requirements for packaged rooftop units / outdoor air handling units.

1.03 Quality Assurance

- A. Unit shall be certified in accordance with UL Standard 1995/CSA C22.2 No. 236, Safety Standard for Heating and Cooling Equipment.
- B. Unit shall be safety certified by ETL and ETL US listed. Unit nameplate shall include the ETL/ETL Canada label.

1.04 Submittals

- A. Product Data: Literature shall be provided that indicates dimensions, operating and shipping weights, capacities, ratings, fan performance, filter information, factory supplied accessories, electrical characteristics and connection requirements. Installation, Operation, and Maintenance manual with startup requirements shall be provided.
- B. Shop Drawings: Unit drawings shall be provided that indicate assembly, unit dimensions, construction details, clearances and connection details. Computer generated fan curves for each fan shall be submitted with specific design operation point noted. Wiring diagram shall be provided with details for both power and control systems and differentiate between factory installed and field installed wiring.

1.05 Delivery, Storage, and Handling

- A. Unit shall be shipped with doors screwed shut and outside air hood closed to prevent damage during transport and thereafter while in storage awaiting installation.
- B. Follow Installation, Operation, and Maintenance manual instructions for rigging, moving, and unloading the unit at its final location.
- C. Unit shall be stored in a clean, dry place protected from construction traffic in accordance with the Installation, Operation, and Maintenance manual.

1.06 Warranty

- A. Manufacturer shall provide a limited “parts only” warranty for a period of 12 months from the date of equipment startup or 18 months from the date of original equipment shipment from the factory, whichever is less. Warranty shall cover material and workmanship that prove defective, within the specified warranty

period, provided manufacturer's written instructions for Installation, Operation, and maintenance have been followed. Warranty excludes parts associated with routine maintenance, such as belts and filters.

Part 2 - Products

2.01 Manufacturer

A. Products shall be provided by the following manufacturers:

1. AAON
2. Substitute equipment may be considered for approval that includes at a minimum:
 - a. Direct drive supply fans
 - b. Double wall cabinet construction
 - c. Insulation with a minimum R-value of 13
 - d. Cabinet wall construction shall incorporate a thermal-break (no-thru metal construction).

2.02 Rooftop Units

A. General Description

1. Outdoor air handling unit shall include filters, supply fans, dampers, gas heaters, and unit controls.
2. Unit shall be factory assembled and tested including and run testing of the completed unit. Run test report shall be supplied with the unit in the service compartment's literature pocket.
3. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
4. Unit components shall be labeled, including electrical and controls components.
5. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.
6. Installation, Operation, and Maintenance manual shall be supplied within the unit.
7. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.
8. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.

2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F.
3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel, and prevents exterior condensation on the panel.
4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 340/360. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.
5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.
6. Access to filters, dampers, heaters, and electrical and controls components shall be through hinged access doors with quarter turn, zinc cast, lockable handles. Full length stainless steel piano hinges shall be included on the doors.
7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.
8. Unit shall be provided with base discharge and return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.
9. Unit shall include lifting lugs on the top of the unit.

C. Electrical

1. Unit shall have a 5kAIC SCCR.
2. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.
3. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.
4. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

D. Supply Fans

1. Unit shall include direct drive, unhooded, backward curved, plenum supply fans.
2. Blowers and motors shall be dynamically balance and mounted on rubber isolators.
3. Unit shall include barometric relief dampers.

E. Gas Heating

1. Stainless steel heat exchanger furnace shall carry a 25 year non-prorated warranty, from the date of original equipment shipment from the factory.
2. Gas furnace shall consist of stainless steel heat exchangers with multiple concavities, an induced draft blower and an electronic pressure switch to lockout the gas valve until the combustion chamber is purged and combustion airflow is established.
3. Furnace shall include a gas ignition system consisting of an electronic igniter to a pilot system, which will be continuous when the heater is operating, but will shut off the pilot when heating is not required.
4. Unit shall include a single gas connection and have gas supply piping entrances in the unit base for through-the-curb gas piping and in the outside cabinet wall for across the roof gas piping.
5. High Turndown Modulating Natural Gas Furnace shall be equipped with modulating gas valves, adjustable speed combustion blowers, stainless steel tubular heat exchangers, and electronic controller. Combustion blowers and gas valves shall be capable of modulation. Electronic controller includes a factory wired, field installed supply air temperature sensor. Sensor shall be field installed in the supply air ductwork. Supply air temperature setpoint shall be adjustable on the electronic controller within the controls compartment. Gas heater shall be capable of capacity turndown ratio as shown on the unit rating sheet. Heat trace shall be include on the condensate drain

F. Filters

1. Unit shall include 2 inch thick, pleated panel filters with an ASHRAE MERV rating of 8, upstream of the cooling coil.
1. Unit shall include a clogged filter switch.

G. Outside Air/Economizer

1. Unit shall include 0-100% economizer consisting of a motor operated outside air damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Damper assembly shall be controlled by spring

returnDDCactuator. Unit shall include outside air opening bird screen and outside air hood. Unit, except for horizontal series, shall also include barometric relief dampers.

H. Controls

I. Accessories

1. Unit shall be provided with a safety shutdown terminal block for field installation of a smoke detector which shuts off the unit's control circuit.

2.03 Curbs

- A. A custom curb adaptor shall be provided to transition from the existing curb to the new unit. Curb shall allow an installation that does not require modification to the roof or require any additional roofing modifications or penetrations. Curb shall be fully welded and provide a transition from the new unit to the existing duct work. If this cannot be achieved then the installing contractor shall modify the existing duct to adapt to the new unit.

Part 3 - Execution

3.01 Installation, Operation, and Maintenance

- A. Installation, Operation, and Maintenance manual shall be supplied with the unit.
- B. Installing contractor shall install unit, including field installed components, in accordance with Installation, Operation, and Maintenance manual instructions.
- C. Start up and maintenance requirements shall be complied with to ensure safe and correct operation of the unit.

SECTION 23 74 23.13
PACKAGED, DIRECT GAS-FIRED, OUTDOOR,
HEATING ONLY MAKEUP AIR UNITS

SPECIFICATIONS
GENERAL

1.1 SUMMARY

- A. This Section includes self-contained packaged heaters that shall include the casing, modulating burner, DWDI Forward Curve fan, fan motor and drives, and temperature controls. Units may or may not include cooling as outlined in the section "COOLING". Each unit shall be constructed in a horizontal configuration and shall incorporate additional product requirements as listed in the "PRODUCTS" section of this specification. If unit is intended for installation on a concrete slab, verify design requirements and construction responsibility for the slab.

1.2 SUBMITTALS

- A. All information in this document, is provided without representation or warranty of any kind as to the user or any other party, including, without limitation, ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR NON-INFRINGEMENT. To the greatest extent permitted by applicable law, the Agency assumes no liability, and the user assumes all liability and risk, for the use or results from the use of this document or the information contained herein, whether as modified by the user or not. This document must be carefully reviewed by the Engineer to ensure it meets the requirements of the project and local building code(s).

1.3 QUALITY ASSURANCE

- A. The unit(s) shall include US and Canadian ETL design certification to the latest revisions of ANSI Z83.4/CSA 3.7 standard for "Non-Recirculating Direct Gas-Fired Industrial Air Heaters" for safe operation, construction, and performance.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Furnish and install a Direct Gas-Fired 100% Outside Air Non-Recirculating Heater. Unit nameplate shall include the ETL/ETL Canada listed mark and shall comply with the requirements listed in Section X - "Quality Assurance". Unit shall be fully assembled, wired, and tested prior to shipment. If unit is intended for installation on a concrete slab, verify design requirements and construction responsibility for the slab.

2.2 MANUFACTURERS

- A. The basis-of-design product for the Direct Gas-Fired 100% Outside Air Non-Recirculating Heater is the Airedale by Modine brand DCV/DVV Model Series or equal.

2.3 MECHANICAL CONFIGURATION

- A. Casing Orientation: The unit shall have a horizontally oriented casing with horizontal outside air inlet and Top supply air discharge. Gas and electrical controls access, as viewed when looking into the inlet of the unit, shall be on the Left side. Blower/motor compartment access will be on the opposite side.
- B. Mounting Base: The unit base construction shall allow for roof curb, slab, or suspended mounting. Refer to Section X - "Mounting Accessories" section for additional details.
- C. Rigging Provisions: Unit shall include 1" diameter lifting holes on the base of the unit for rigging.

2.4 CABINET

- A. Installation Location: The casing shall be designed for outdoor installation with a fully weatherproof cabinet. The unit casing roof shall be designed with a rain drip edge to prevent water entry.
- B. Casing Construction: Unit casing shall be minimum 18 gauge G90 galvanized steel sheet attached to a 1"x1" grade 6063 aluminum extruded tubular structural framework. All interior and exterior surfaces will be cleaned of all oil and grease.
- C. Exterior Casing Finish: Exterior of cabinet shall be painted with PPG Siloxane Epoxy paint with a finish capable of withstanding a minimum 2500 hour salt spray and fog atmosphere exposure in accordance with ASTM B117 test procedure.
- D. Insulation: All interior surfaces shall be lined with 1" thick, 1-1/2 pound density foil-face fiberglass insulation. The insulation shall comply with UL standard 181 for erosion and NFPA 90A for fire resistance and will be held in place with adhesive.
- E. Interior Liners: Insulation shall be encased within standard 20 gauge galvanized steel liners to provide double wall construction that complies with ASHRAE 62.1 to prevent mold growth, allow easy cleaning, and protection of the insulation from the airstream.
- F. Unit shall be designed to reduce air leakage and infiltration through the casing. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage.
- G. Service and Maintenance Access: Access to items needing periodic inspection or maintenance shall be through access doors.
- H. Access Door Construction (Access Side): Access doors shall be hinged type with rustproof handles and hardware. The doors will include quarter-turn latches for tooled access. Foil face insulation will be adhered to the interior of the door panels. The door frame perimeters shall be fully gasketed.
- I. Access Door Construction (Non-Access Side): Access doors shall be hinged type with rustproof handles and hardware. The doors will include quarter-turn latches for tooled

access. Foil face insulation will be adhered to the interior of the door panels. The door frame perimeters shall be fully gasketed.

2.5 FANS AND MOTORS

- A. Supply Air Fan: The fan shall be a Double-Width, Double-Inlet (DWDI) forward curved centrifugal fan to cover the specified airflow and total static pressure drop. The total static pressure is to include both the external ductwork static and static pressure drop for factory/field installed options/accessories. The fan shaft shall be a turned, ground and polished solid shaft. A protective coating shall be applied to the shaft to minimize oxidation.
- B. Supply Fan Drive: The fan is to be belt driven by an adjustable V-belt drive with a minimum rating of 130% of the motor nameplate brake horsepower when the adjustable pulley is at the minimum RPM.
- C. Supply Fan Bearings: The bearings shall be greaseable, heavy duty pillow block ball bearings. Bearings shall be designed for a minimum L10 life of 100,000.
- D. Extended Grease Lines: The unit shall include extended blower bearing grease lines with externally mounted grease fittings on the exterior of the unit casing.
- E. Supply Fan Motor: The motor type shall be single-speed, totally enclosed, fan cooled (TEFC). The motor shall have a 1.15 service factor, suitable for continuous service at 120° F ambient temperature, and shall be wired for the specified voltage. The motor typical speed shall be 1750 rpm.
- F. Motor Efficiency: Motor shall be premium efficiency to meet the Energy Independence and Security Act requirements.
- G. Inverter Duty: Motor shall be inverter duty rated.
- H. The motor wiring shall be in metal conduit.
- I. Adjustable Drive Sheave: The unit shall be provided with an adjustable motor sheave and fixed blower sheave to allow for minor adjustment of the blower RPM at the jobsite.
- J. Vibration Isolators: Motor and fan vibration isolation shall consist of double deflection rubber-in-shear isolators. The isolators will be installed by the manufacturer for fan and motor isolation from the unit housing. The isolator design shall be deflection specific for the fan and motor load. Includes a flexible gasket connection between the fan housing discharge and the unit supply air opening.
- K. Motor Controller: The unit shall be provided with a factory installed and wired variable frequency drive for blower motor control.
- L. Fans, drives, and motors shall be dynamically balanced.
- M. Supply air fan controls shall be as outlined in the "CONTROLS" section.

2.6 HEATING SYSTEM

- A. Gas Type/Rating: The unit shall be designed for use with Natural gas and shall be sized for the rated BTU (MBH) capacity specified.
- B. Gas Manifold: The gas manifold will be constructed in conformance to ANSI Standards.
- C. The standard gas controls and manifold assembly shall include, at a minimum, a main gas hand shut-off valve, auxiliary hand shut-off valve, pilot gas hand shut-off valve, main gas regulator, pilot gas regulator, main gas solenoid valve, redundant main gas solenoid valve, pilot gas solenoid valve, modulating gas valve, and three gas pressure test ports.
- D. Burner: Unit shall be provided with a direct-fired type gas burner, MAXON Series NP-LE AIRFLO®, specifically designed to burn natural or propane gas below the maximum non-contaminating levels required by OSHA. Burner shall have non-clogging, stainless steel baffles attached to a cast aluminum gas supply section with no moving parts. The burner shall be capable of a 30-to-1 turndown ratio and be designed for 100% thermal efficiency for the life of the equipment. The outdoor air velocity across the burner shall be constant and at an air velocity required for ANSI certification. The burner air velocity shall be constant at all times throughout the operation of the heater. No air from the indoor space shall be allowed to recirculate across the burner at any time. Service of and access to the burner igniter and flame rod shall be accomplished through an access door or panel.
- E. Burner Profile Adjustment System: The unit shall include shall consist of a means to monitor and adjust the pressure differential across the burner profile while the fan is running.
- F. Ignition and Flame Safeguard Controls: The unit shall be supplied with direct spark ignition with 100% lockout on flame failure with a manual reset. These controls shall include, at a minimum, a flame safeguard ignition control, spark pilot ignition generator, manual reset high temperature limit control, primary and secondary electrical circuit fuses, low air flow proving switch, high air flow cutoff switch and a safety pre-purge timed delay relay.
- G. Flame Sensor: The flame supervision method shall be flame rod.
- H. High and Low Gas Pressure Switches: The unit shall include a high gas-pressure switch located on the burner end of the gas manifold and shall turn the burner off when the gas pressure is too high. The switch is factory set at 1.5" W.C. above the high fire gas pressure. The unit shall also include a low gas-pressure switch located on the inlet end of the manifold. The low gas switch shall turn the burner off when the gas pressure is too low. The switch is factory set at 3.0" W.C.
- I. Temperature controls shall be as outlined in the "CONTROLS" section.

2.7 ELECTRICAL

- A. Control Panel: The unit shall have an electrical control panel where all high and low voltage connections are made. The unit shall be completely factory wired to provide for single point wiring for the main power supply to the unit. The control panel shall include all necessary control devices, control transformers, control circuit fuses, and shall include color coded wires and a numbered terminal strip for all wiring connections. All components located in the panel shall be clearly marked for easy identification.

- B. Power and Control Wire Harnesses: The unit shall include two wire harnesses, each 10' long, in flexible metal conduits. The harnesses shall be pre-wired and attached at the unit by the manufacturer and clearly tagged for ease of field wiring. Primary power/motor voltage wires and color coded control voltage wires shall be in separate conduits.
- C. Wiring Diagram: The unit shall have a job specific wiring diagram affixed to the interior of the control compartment access door.
- D. Factory Installed Non-Fused Disconnect Switch: Unit shall be provided with a factory installed and wired non-fused disconnect switch.

2.8 CONTROLS

- A. Temperature Controls: The temperature controls subsystem shall be as follows:
 - B. The unit shall be provided with a Maxitrol Electronic Modulation SC10 Signal Conditioner to provide DCC compatible controls. This system shall include a signal conditioner that utilizes an external 0-10Vdc control signal (by others) to control the discharge air temperature. The control signal to the electronic modulating gas valve is controlled by a discharged air sensor (by others) that is compatible with the building management system. An increase or decrease in input signal modulates the main burner gas flow to maintain the desired discharged air temperature.
 - C. Remote Control Panel: The unit shall be supplied with a remote control panel compatible with the temperature controls and unit configuration. The panel shall include as standard Fan On, Burner On, and Burner Lockout LED's. Also included is a Summer/Off/Winter switch. The remote panel shall include the following additional features:
 - D. Damper Controls: The damper controls subsystem shall be controlled by the microprocessor controller as follows:
 - 1. The damper control shall be 2-position where the damper positions are either 100% closed or 100% open to the outside air.
 - E. Supply Fan Controls: The supply fan subsystem shall be controlled as follows:
 - 1. The supply fan shall be single speed with variable frequency drive. The unit will operate at a single airflow volume which can be adjusted manually. Range of adjustment is 35 to 100%.
 - F. Other Optional Controls: The unit shall be provided with the following additional controls:

2.9 FILTERS

- A. Side Access Filter Section: The unit shall include a factory installed side access filter section (SAFS) at the inlet of the unit. The SAFS casing shall be minimum 18 gauge G90 galvanized steel sheet attached to a 1"x1" grade 6063 aluminum extruded tubular structural framework. All interior and exterior surfaces will be cleaned of all oil and grease.

- B. Exterior Casing Finish: Exterior of cabinet shall be painted with PPG Siloxane Epoxy paint with a finish capable of withstanding a minimum 2500 hour salt spray and fog atmosphere exposure in accordance with ASTM B117 test procedure.
- C. Insulation: All interior surfaces shall be lined with 1" thick, 1-1/2 pound density foil-face fiberglass insulation. The insulation shall comply with UL standard 181 for erosion and NFPA 90A for fire resistance and will be held in place with adhesive.
- D. Interior Liners: Insulation shall be encased within standard 20 gauge galvanized steel liners to provide double wall construction that complies with ASHRAE 62.1 to prevent mold growth, allow easy cleaning, and protection of the insulation from the airstream.
- E. Access Door Construction: Access door shall be hinged type with rustproof handle and hardware. The door will include a quarter-turn latch for tooled access. Foil face insulation will be adhered to the interior of the door panel. The door frame perimeter shall be fully gasketed.
- F. Filters: The SAFS shall include a factory installed 2" pleated throwaway filters. The filters shall have a rating of MERV 8 when evaluated per ASHRAE Standard 52.2-2012.

2.10 DAMPERS

- A. Damper Location: The unit shall include inlet dampers.
- B. Dampers: Dampers shall be parallel blade, galvanized steel construction.
- C. Actuator: Damper actuator shall be 24V, direct drive, spring return to close when unoccupied. Actuator shall be factory installed and wired to the main unit.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to start of installation, examine area and conditions to verify correct location for compliance with installation tolerances and other conditions affecting unit performance. See unit Installation & Service Manual.
- B. Examine roughing-in of plumbing, electrical and HVAC services to verify actual location and compliance with unit requirements. See unit Installation & Service Manual.
- C. Proceed with installation only after all unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Installation shall be accomplished in accordance with these written specifications, project drawings, manufacturer's installation instructions as documented in manufacturer's Installation & Service Manual, Best Practices and all applicable building codes.

3.3 CONNECTIONS

- A. In all cases, industry Best Practices shall be incorporated. Connections are to be made subject to the installation requirements shown above.
- B. Piping installation requirements are specified in Division 22 (Plumbing). Drawings indicate general arrangement of piping, fittings and specialties.
- C. Duct installation and connection requirements are specified in Division 23 (Heating Ventilating and Air Conditioning).
- D. Electrical installation requirements are specified in Division 26 (Electrical).

3.4 FIELD QUALITY CONTROL

- A. Refer to section 01 40 00 "Quality Requirements" for additional requirements.

3.5 SYSTEM STARTUP

- A. Start-up units in accordance with manufacturer instructions. Test controls and demonstrate compliance with requirements. Replace damaged or malfunctioning controls and equipment.
- B. Contractor is to leave a copy of the completed start-up report with the owner.

3.6 WARRANTY

- A. Standard Unit Warranty:
 - 1. Sheet Metal: One (1) year from date of first beneficial use by buyer or any other user, within one (1) year from date of resale by buyer in any unchanged condition, or within eighteen (18) months from date of shipment from seller, whichever occurs first.
 - 2. Components excluding Heat Exchangers, Coils, Condensers, Burners, Sheet Metal: Two (2) years from date of first beneficial use by buyer or any other user, within two (2) years from date of resale by buyer in any unchanged condition, or within thirty (30) months from date of shipment from seller, whichever occurs first.