



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: 04-19-2024

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

<b>Order Number:</b>	CPO 0211 4001 GSD2400000015 1	<b>Procurement Folder:</b>	1385978
<b>Document Name:</b>	Building 1, West Wing HVAC and Demolition (Phase 6)	<b>Reason for Modification:</b>	Award of CRFQ GSD2400000018
<b>Document Description:</b>	Building 1, West Wing HVAC and Demolition (Phase 6)		
<b>Procurement Type:</b>	Central Purchase Order		
<b>Buyer Name:</b>	Melissa Pettrey		
<b>Telephone:</b>	(304) 558-0094		
<b>Email:</b>	melissa.k.pettrey@wv.gov		
<b>Shipping Method:</b>	Best Way	<b>Effective Start Date:</b>	
<b>Free on Board:</b>	FOB Dest, Freight Prepaid	<b>Effective End Date:</b>	

VENDOR		DEPARTMENT CONTACT	
<b>Vendor Customer Code:</b>	000000174873	<b>Requestor Name:</b>	David K Parsons
DOUGHERTY CO INC PO BOX 1828		<b>Requestor Phone:</b>	304-352-5486
CHARLESTON WV 25327-1828		<b>Requestor Email:</b>	david.k.parsons@wv.gov
US			
<b>Vendor Contact Phone:</b>	304-925-6664	<b>Extension:</b>	
<b>Discount Details:</b>			
	<b>Discount Allowed</b>	<b>Discount Percentage</b>	<b>Discount Days</b>
#1	No	0.0000	0
#2	Not Entered		
#3	Not Entered		
#4	Not Entered		

**24**  
 FILE LOCATION \_\_\_\_\_

INVOICE TO	SHIP TO
DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION 103 MICHIGAN AVENUE CHARLESTON WV 25305 US	DEPARTMENT OF ADMINISTRATION GENERAL SERVICES DIVISION BLDG 1 1900 KANAWHA BLVD E CHARLESTON WV 25305 US

4222462

<b>Total Order Amount:</b>	\$324,930.00
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Purchasing Division's File Copy

MKP 04/19/2024

<b>PURCHASING DIVISION AUTHORIZATION</b> DATE: <i>Tina H</i> 4/21/2024 ELECTRONIC SIGNATURE ON FILE	<b>ATTORNEY GENERAL APPROVAL AS TO FORM</b> DATE: <i>John S. Gray</i> ELECTRONIC SIGNATURE ON FILE	<b>ENCUMBRANCE CERTIFICATION</b> DATE: <i>John S. Gray</i> 4-25-24 ELECTRONIC SIGNATURE ON FILE
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4/25/2024

**Extended Description:**

One-Time Purchase (CPO)  
CONSTRUCTION

The Vendor, Dougherty Company, Inc., of Charleston, WV agrees to enter into this one-time purchase contract with the General Services Division to provide and install a new Air handler unit (TRANE PCCCAH basis of design) or equal in the west wing of the Main Capitol Building, per the bid requirements, specifications, and terms and conditions, Addendum No.1 dated 03/27/2024 and the Vendor's submitted and accepted bid dated 04/02/2024 incorporated herein by reference and made a part hereof.

Line	Commodity Code	Quantity	Unit	Unit Price	Total Price
1	72151206	0.00000		0.000000	324930.00
Service From	Service To	Manufacturer	Model No		

**Commodity Line Description:** Building 1, West Wing HVAC and Demolition (Phase 6)

**Extended Description:**

Per attached Project Plans, see Exhibit A Pricing Page, Base Bid

## 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 Eighty (180) 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.

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 foregoing, 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: \$100,000.00 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.

**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:

          \$1,000.00           for each day past the date of final completion .

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](http://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](mailto: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 heath, 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](http://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](http://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](http://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 \_\_\_\_\_, 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.



**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) Brian W. Smith, President

(Address) 600 - 50th Street, SE, Charleston, WV 25304

(Phone Number) / (Fax Number) (304)925-6664 / (304)925-4280

(email address) briansmith@doughertyco.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.*

Dougherty Company, Inc.  
(Company)

  
(Signature of Authorized Representative)

Brian W. Smith, President April 2, 2024

(Printed Name and Title of Authorized Representative) (Date)

(304)925-6664 / (304)925-4280

(Phone Number) (Fax Number)

briansmith@doughertyco.com

(Email Address)

REQUEST FOR QUOTATION  
Building 1 West Wing HVAC and Demolition (Phase 6)

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**GENERAL CONSTRUCTION SPECIFICATIONS (No AIA Documents)**

1. **PURPOSE AND SCOPE:** The West Virginia Purchasing Division is soliciting bids on behalf of General Services Division (“GSD,” “Owner,” or “Agency”) to establish a contract for the following:

Provide and install a new Air handler unit (TRANE PCCCAH basis of design) or equal. Specification sheets attached as serving the Basement west wing WB-1 Suite, unit is located in WB-17 of the West Wing of the Main Capitol Building, including associated controls work, as indicated in the Project Plan unit specification.

Provide for electrical revisions, to include new associated wiring and conduit, as indicated in the Project Plans to the indicated panel, must provide breakers. New Control TRANE SC unit and updated data points and graphics upgraded within the existing TRANE TRACER Ensemble BMS operating platform. To include updated software license

Demolition of existing units within Suites WB-1 and W-500 of the West Wing. Note that W-500 is a penthouse suite not accessible by elevator.

Provide for regular removal of construction debris, best accomplished by truck on west dock.

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.

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 providing demolition and replacement of fan coil units, HVAC controls, electrical upgrades, fire protection, interior renovations, and other services as outlined on the attachments.

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 **“Project Plans”** means documents developed by the Agency, which are attached hereto as Exhibits, that provide detailed instructions on how the Construction Services are to be performed.

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**2.5 “Vendor”** is as defined in the General Conditions and is interchangeable with “Contractor” or “Subcontractor.”

- 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 three (3) projects 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. Vendors 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.
  - 5.1.Pricing Page:** Vendor must complete the Pricing Page by providing an all-inclusive, lump sum bid to provide all Construction Services as specified herein.
- 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. Alternatives must have proper documentation, and any alternatives (along with proper documentation) must be included with the bid. Proper documentation is: Specification sheets, brochures, and any other documents to prove the Alternative is “Equal”.
- 7. PERFORMANCE:** Vendor shall perform the Construction Services in accordance with this document and the Project Plans. Successful Vendor shall provide a full construction schedule to the Agency within Seventy-Two (72) hours of award of the Contract. Schedule should indicate at least the following: materials lead times, onsite construction start date, any construction milestones, and construction completion date. The project schedule shall indicate areas to be worked.



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Where coordination or disruption of adjacent workspaces or occupants may be required, provide at least one week's advance notice prior to conducting work in those areas. Vendor shall adhere to the provided schedule and coordinate through the Agency Project Manager.

- 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.
- No Additional Project Plan Documents:** There are no additional Project Plans other than those attached hereto as Exhibit or any subsequent addenda modifying Exhibit.
- Additional Project Plan Documents:** There are additional Project Plan documents other than those attached. Copies of the additional Project Plan documents not attached, can be obtained by contacting the entity identified below.

**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 7:00am to 5:00pm, Monday through Friday 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.

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**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 the 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.

**10.4.3. Training:** Vendor must provide Agency with on-site training on use of new equipment prior to Final Acceptance.

## 11. PAYMENT and INVOICING

**11.1.** Agency shall pay a lump sum fee, as shown on the Pricing Page, 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.

**11.2. Progress Billing:** The Vendor will be paid in the form of periodic progress payments for work completed (equivalent to AIA Form G702/703; retainage rate will be 10%) Payment requests along with documentation supporting the request will be submitted to and reviewed by the Owner. If approved, the Owner will process payment. The Owner reserves the right to withhold liquidated damages from progress payments. Progress payments will be made no more frequently than monthly.

Approval and payment of progress payments will be based on Contractor's submission of a payment allocation schedule which allocates the entire contract sum to payment milestones. Owner will review the payment allocation and may mandate changes that they believe are necessary.

**11.3. Liquidated Damages:** Vendor shall pay liquidated damages in the amount of \$1,000.00 per calendar day for every calendar day beyond the completion date established by the Notice to Proceed in which the Vendor fails to achieve completion of the Construction Services.

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

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

**11.4.2.** Invoices shall be mailed to the following address:  
General Services Division  
103 Michigan Avenue  
Charleston, WV 25311

**11.4.3.** Or, emailed to [GSDInvoices@wv.gov](mailto:GSDInvoices@wv.gov)

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

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

**12.2.** Vendor will be responsible for controlling cards and keys and will pay any replacement fees if the cards or keys become lost or stolen.

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

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

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

**12.6.** Vendor shall be responsible for all costs associated with Background Checks.

**12.7.** Vendor's personnel shall limit activities only to those areas of the Building required to perform the Construction Services.

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CRFQ GSD240000018

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**13. MISCELLANEOUS:**

**13.1. 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:** Brian W. Smith

**Telephone Number:** (304)925-6664

**Fax Number:** (304)925-4280

**Email Address:** briansmith@doughertyco.com

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Building 1 West Wing HVAC and Demolition (Phase 6)  
CRFQ GSD2400000018

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**EXHIBIT A – Pricing Page**

**Base Bid (Commodity Line 1 in wvOasis):** All inclusive, lump-sum bid to provide for demolition and replacement of Air handler unit, HVAC controls, electrical upgrades and connections, interior demolition work and debris removal, and other services as outlined on the attachments, **including all associated work as specified herein:**

Lump Sum = \$ 324,930

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**EXHIBIT B – PROJECT PLANS**

**1. GENERAL REQUIREMENTS/SPECIFICATIONS**

1.1. The Vendor shall perform the following work, all per these specifications and the notes and schedules on the Exhibits:

**1.1.1. BUILDING HVAC SYSTEM – GENERAL DESCRIPTION**

1.1.1.1. HVAC unit must meet or exceed all specifications listed in Exhibit C as this is the Basis for Design.

**1.1.2. BUILDING AUTOMATION SYSTEM - GENERAL DESCRIPTION**

1.1.2.1. Vendor shall provide an extension of the existing Building Automation System (BAS) to control all mechanical equipment associated with this project. All new building controllers, and equipment/plant controllers, shall be tied into and compatible with the existing Trane Tracer Ensemble.

1.1.2.2. New controls shall be tied into Owner's existing Trane Ensemble System for a seamless user interface. Hotlinks/targets to other applications and/or separate web pages will be NOT accepted as a "seamless" interface to the Ensemble System.

1.1.2.3. Provide long term data logging and archiving of data for a minimum of (3) three years.

1.1.2.4. All data, alarms, and graphics shall be available for user interface from both local workstation(s) as well as mobile devices through either a mobile browser and/or mobile app.

1.1.2.5. Vendor shall provide any necessary controls hardware and/or software upgrades to the existing Ensemble System to meet the spec requirements of this project.

1.1.3. The BAS shall be as indicated on the drawings and described in these specifications. The system must be fully integrated and coordinated with mechanical equipment DDC controllers furnished and installed in the equipment manufacturer's factory as specified in those sections. The intent of the BAS is to tie all mechanical equipment into one system for global monitoring, control, and alarming associated with the building.

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It is the BAS manufacturer's responsibility to provide all the design, engineering, and field coordination required to ensure all equipment sequence of operations are met as specified and the designated BAS operators have the capability of managing the building mechanical system to ensure occupant comfort while maintaining energy efficiency.

**1.1.4.** The BAS shall meet open standard protocol communication standards (As defined in System Communications and Field Bus Communications of COMMUNICATIONS) to ensure the system maintains "interoperability" to avoid proprietary arrangements that will make it difficult for the Owner to consider other BAS manufacturers in future projects.

**1.1.5.** Direct Digital Control (DDC) technology shall be used to provide the functions necessary for control of mechanical systems and terminal devices on this project.

**1.1.6.** The BAS shall accommodate simultaneous multiple user operation. Access to the control system data should be limited only by the security permissions of the operator role. Multiple users shall have access to all valid system data. An operator shall be able to log onto any workstation on the control system and have access to all appropriate data.

**1.1.7. BAS - APPROVED CONTROL SYSTEM MANUFACTURERS**

**1.1.7.1. Approved BAS Manufacturers**

**1.1.7.1.1.** Trane Tracer® – Basis of Design (See Exhibit C for Basis of Design)( or Equal)

**1.1.8. BAS - SYSTEM COMMUNICATION**

**1.1.8.1. System Communications**

**1.1.8.1.1.** Each workstation, building controller, and equipment controller communication interface shall utilize the BACnet protocol with an Ethernet (IEEE 802.3, 802.11), RS485 (EIA-485), or Zigbee (802.15.4) physical interface and an appropriate data link technology as defined in ANSI®/ASHRAE® Standard 135-2012. (e.g. BACnet over IP, BACnet over IPv6, BACnet over MS/TP, BACnet Zigbee).

REQUEST FOR QUOTATION  
Building 1 West Wing HVAC and Demolition (Phase 6)

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**1.1.8.1.1.1.** Each workstation, building controller, and equipment controller communication interface shall utilize the BACnet protocol with an Ethernet (IEEE 802.3, 802.11), RS485 (EIA-485), or Zigbee (802.15.4) physical interface and an appropriate data link technology as defined in ANSI®/ASHRAE® Standard 135-2012. (e.g. BACnet over IP, BACnet over IPv6, BACnet over MS/TP, BACnet Zigbee).

**1.1.8.1.1.1.1.** All system controllers shall be BTL listed as a BACnet Building Controller (B-BC) as defined in ANSI®/ASHRAE® Standard 135-2012. All documented status and control points, schedule, alarm, and data-log services or objects shall be available as standard object types as defined in ANSI®/ASHRAE® Standard 135-2012.

**1.1.8.1.2.** Each System Controller shall communicate with a network of Custom Application and Application Specific Controllers utilizing one or more of the interfaces documented within Field Bus Communications below.

**1.1.8.2.** Field Bus Communications

**1.1.8.2.1.** BACnet

**1.1.8.2.1.1.** All equipment and plant controllers shall be BTL listed as a BACnet Application Specific Controller (B-ASC) or a BACnet Advanced Application Controller (B-AAC) as defined in ANSI®/ASHRAE® Standard 135-2012.

**1.1.8.2.1.2.** All communication shall conform to ANSI®/ASHRAE® Standard 135-2012.



**REQUEST FOR QUOTATION**  
**Building 1 West Wing HVAC and Demolition (Phase 6)**

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**1.1.8.2.1.3.** System Controller shall function as a BACnet router to each unit controller providing a globally unique BACnet Device ID for all BACnet controllers within the system.

**1.1.8.2.2.** BACnet over Zigbee

**1.1.8.2.2.1.** Communication between System Controller and equipment/plant controllers shall utilize BACnet over Zigbee as defined in ANSI®/ASHRAE® Standard 135-2012.

**1.1.8.2.2.2.** Each equipment controller wireless communication interface shall self-heal to maintain operation in the event of network communication failure.

**1.1.8.2.2.3.** Each zone sensor wireless communication interface shall be capable of many-to-one sensors per controller to support averaging, monitoring, and multiple zone applications. Sensing options shall include temperature, relative humidity, CO2, and occupancy.

**1.1.8.2.3.** BACnet over MS/TP

**1.1.8.2.3.1.** Communication between System Controller and equipment/plant controllers shall utilize BACnet over MS/TP as defined in ANSI®/ASHRAE® Standard 1352012.

**1.1.8.2.3.2.** See Exhibit D, for System Point Description.

**1.2.** See Exhibit E, Drawing and Pictures for details. All Drawings and Pictures must be field verified.

**1.3.** The Vendor shall furnish all materials, labor, and equipment necessary to complete all work as indicated by these specifications. The intent is that the completed work consists of new components which meet or exceed the listed specifications, subject to approval and acceptance by the Agency Project Manager. Contractor shall furnish any incidental work, materials, labor and equipment that are necessary to complete the work, even if such incidental work is not explicitly included in the contract documents.

REQUEST FOR QUOTATION  
Building 1 West Wing HVAC and Demolition (Phase 6)

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- 1.4. Any equipment or material contracted for prior to receipt of the signed purchase order and written Notice to Proceed letter shall be at the Bidder's risk.
  - 1.5. Ensure that all work performed under this contract only be performed by mechanics who have first provided documentation to the Owner of certification and licensure applicable to the trade performed.
  - 1.6. Any reference to brand/make/model in the attached Exhibits is not intended to limit competition and should be followed by the words "or equal." All provided and installed materials must meet the minimum specifications as described in the Exhibits. Substitutions to what is named in the Exhibits must be approved by submittals to the Owner, approved prior to any installation. Exceptions to the substitution permission are the lay-in ceiling tile (must match Owner existing stock for replacement purposes) and the requirement to tie-in to the Owner's existing BAS.
  - 1.7. Vendor must test all installed equipment/systems for proper operation prior to Final Acceptance of the Work.
2. **PERFORMANCE:** Vendor shall perform in accordance with the release orders that may be issued against this Contract.
- 2.1. 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.
  - 2.2. The Vendor shall provide the Agency Project Manager with an overall project schedule within **seventy-two (72) hours** of the Award of the Contract. The proposed project schedule shall indicate areas to be worked on. Where coordination or disruption of adjacent workspaces or occupants may be required, provide at least one week's advance notice prior to conducting work in those areas. Vendor shall adhere to the schedule provided and coordinate through the Agency Project Manager.
  - 2.3. Work shall be conducted as a single project. The work schedule shall be reviewed and approved by the Agency Project Manager prior to commencement of the work. The Vendor shall coordinate the schedule around the Agency's work requirements.
3. **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.

REQUEST FOR QUOTATION  
Building 1 West Wing HVAC and Demolition (Phase 6)

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**4. PROJECT SPECIFIC CONDITIONS OF THE WORK**

**4.1. Limits of Work**

Work areas will be limited to those spaces required for access to the jobsite. The Vendor shall be required to leave the work area clean upon completion of work daily. Vendor shall make arrangements for the collection and disposal of Vendor's waste and construction related debris. Debris shall be removed on a daily basis.

**4.2. Work Restrictions**

Access to the building shall be coordinated with the Owner. The Vendor shall not leave open doors unattended and shall close doors when not in use. This is a non-smoking building. Smoking is not permitted within the building or near entrances, operable windows, or outdoor air intakes.

**4.3. Parking**

Some parking is available on the project site. Parking in non-designated areas is not permitted. Parking is the responsibility of the Vendor. 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. Vendor must coordinate with the Agency on how best to minimize disruption of employee parking during the execution of the work.

**4.4. Codes**

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.

**4.5. Safety**

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

Notify Owner if suspected hazardous materials are encountered. Any areas requiring abatement will be provided by the GSD under a separate contract.

Vendor to provide barricades around open excavations to protect the public.

REQUEST FOR QUOTATION  
Building 1 West Wing HVAC and Demolition (Phase 6)

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**4.6. Workmanship**

Vendor 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. Vendor shall verify all dimensions. Agency reserves the right to have work not conforming to these standards redone, at the expense of the Vendor.

**4.7. General Services Division Jobsite Safety Handbook**

Prior to beginning any work covered by the Contract, Vendor shall have read, reviewed and acknowledged in writing the attached Jobsite Safety Handbook (Exhibit F)

**4.8. Warranty**

A minimum one (1) year warranty on labor is required, and Vendor must provide one (1) year or manufacturer's warranty on materials, whichever is longer. Vendor will be required to provide Agency with all warranty documentation prior to Final Acceptance.

# Exhibit C



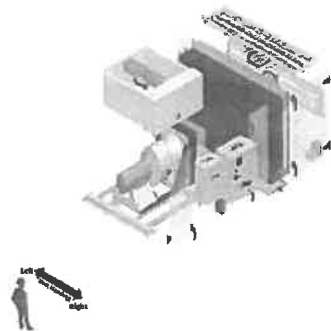
Job Name: WV bid 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1

## Trane Performance Climate Changer Air Handler

Unit Overview - AHU-WB-1						
Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Indoor unit	CSAA025	86.6 in	80.0 in	120.0 in	3000 lb	2860 lb
Quantity of Shipping Sections		Largest Ship Split			Heaviest Ship Split	Elevation
2 piece(s)		Height	Width	Length		
		65.0 in	80.0 in	63.5 in	1697 lb	0.00 ft
<b>Airflow</b>	12000 cfm	<b>Supply Fan</b>		<b>Total Static Pressure</b>	5.232 in H2O	

Construction Features	
Panel	2in. foam injected R-13 with thermal break
Panel Material	All unit inner panels - galvanized
Integral Base Frame	6in. integral base frame
Short Circuit Current Rating	5 kA
Agency Approval	UL listed unit



Unit Electrical					
Circuit	Voltage/Phase/Frequency	FLA	MCA	Max Fuse Size	
Circuit number 1 Supply fan + controls-LL	460/3/60	21.65 A	26.90	45.00	
Circuit number 2 Electric heat 1	460/3/60	74.27 A	74.27	80.00	

Unit Controls		
Factory Controls Package	Variable volume	
Controller Type	Symbio	
Controller mounting	Unit mounted	
Controller location	Right	
Factory programmed	Yes	

Warranty	
Warranty section	Std. warranty only

Air mixing section - Position: 1							
Openings							
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Hood
Back	Return	High velocity parallel damper	12000 cfm	1914 ft/min	6.27 sq ft	0.624 in H2O	N/A
Top	Outside	High velocity parallel damper	12000 cfm	1914 ft/min	6.27 sq ft	0.624 in H2O	N/A
Filter							
Type	Frame	MERV Rating	Quantity	Size			
Pleated media - MERV 8	2"	MERV 8	3.00	12in.x24in.			
			2.00	16in.x20in.			
			6.00	20in.x20in.			
Pressure Drop	Condition	Face Velocity	Airflow	Area			
0.627	Mid-life	443 ft/min	12000 cfm	27.11 sq ft			
Section Options							
Door Location		Right					



Cooling coil section - Position: 2	
Coil Construction	Coil Performance
<b>Model</b> : Chilled water - 1/2" Unit Optimized, General (UW)	<b>Capacity</b>
<b>Rows</b> : 6	<b>Total</b> : 551.25 MBh
<b>Tube Diameter</b> : 1/2in. tube diameter (12.7 mm)	<b>Sensible</b> : 370.38 MBh
<b>Coil Connection</b> : Standard	<b>Air</b>
<b>Tube Mat/Wall Thickness</b> : .016" (0.406 mm) copper tubes	<b>Flow</b> : 12000 cfm
<b>Fin Spacing</b> : 122 Per Foot	<b>Entering Dry Bulb</b> : 80.00 F
<b>Fin Material</b> : Aluminum fins	<b>Entering Wet Bulb</b> : 67.00 F
<b>Fin Type</b> : Delta flo H (Hi efficient)	<b>Leaving Dry Bulb</b> : 52.00 F
<b>Face Area</b> : 24.97 sq ft	<b>Leaving Wet Bulb</b> : 51.75 F
<b>Coil (top/single) H x L</b> : 52 in. (1321 mm) X 68" (1753 mm) finned length	<b>Pressure Drop</b> : 0.726 in H2O
<b>Casing</b> : Galvanized	<b>Face Velocity</b> : 481 ft/min
<b>Turbulators</b> : Not included	<b>Fluid</b>
<b>Rigging Weight</b> : 389.8 lb	<b>Flow</b> : 91.52 gpm
<b>Installed Weight</b> : 509.5 lb	<b>Entering</b> : 42.00 F
<b>Coil Section Options</b>	<b>Leaving</b> : 54.00 F
<b>Extended Drain and Vent</b> : Holes only	<b>Pressure Drop</b> : 9.53 ft fluid
<b>Drain Pan</b> : Galvanized	<b>Tube Velocity</b> : 3.83 ft/s
<b>Drain Pan Size</b> : Medium	<b>Reynolds Number</b> : 10836.52
<b>Drain Connection</b> : Right	<b>Type</b> : Water
<b>Minimum Trap Height (L)</b> : 8.108 in	<b>Concentration</b> : 100.00 %
<b>H Trap Dimension</b> : 4.739 in	<b>Fouling Factor</b> : 0.00000 hr-sq ft-deg F/Btu
<b>J Trap Dimension</b> : 2.359 in	<b>Volume</b> : 16.71 gal
<b>Door Location</b> : Right	<b>AHRI 410 Classification</b>
	<b>AHRI 410 Classification</b> : AHRI ACHC Certified
	<b>Data Generation Date</b> : 10/27/2023
	<b>Trans Select Assist update number</b> : 2760

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at [www.ahridirectory.org](http://www.ahridirectory.org).





**Supply fan section - Position: 3**

Fan Data		Motor Data	
Wheel Diameter/Type/Class	27in. dd plenum, 80% width, H press	Power / Fan	15 hp
Fan Quantity	1	Voltage	460/3
Discharge Location	Top front	Speed	1800
Motor Location	Right side drive	Class	NEMA premium compliant ODP
Blades	Improved sound (lowest overall, less spike)	Efficiency	93.14 %
Drive Service Factor	Direct drive	Part Load Efficiency	91.17 %
Fan K-factor	3998.00	Fan electrical power (FEP)	12.12 kW
<b>Fan Performance</b>		FEI	1.28
Airflow	12000 cfm	AHRI VFD HP	15.000 hp
Total Static Pressure	5.232 in H2O	Wire to air static efficiency	60.80 %
Total Brake Power	14.582 hp	<small>Note: VFD driven motor fan electrical power calculated in accordance with AHRI 430.</small>	
Operating Speed	1855 rpm	<small>Note: Certified airflow performance per AHRI 430</small>	
AMCA FEG	FEG85	<b>Fan Section Options</b>	
Bare fan peak total efficiency	75.50 %	Fan Wheel Balance	Inverter balance with shaft grounding
Unit Static Efficiency	67.87 %	Door Location	Right
<b>Motor Interface Options</b>		Door Guard	Yes
Selection Type	VFD		
Voltage	460/3		
Mounting Location	External mounting		
VFD Frequency	63.00 Hz		

**Fan Discharge Options**

Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Exhaust Hood	Damper Torque Requirement
Top Face Feature	Sizeable rectangular opening	12000 cfm	2147 ft/min	5.59 sq ft	0.576 in H2O	N/A	N/A

Note: Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third party verified. Certified units may be found in the AHRI Directory at [www.ahridirectory.org](http://www.ahridirectory.org).



**Pressure Drop in (In w.g.)**

<b>Supply fan</b>	
Air mixing section	1.25
Coil section	0.73
Fan section	0.58
Coil section	0.14
<b>Internal Static Pressure</b>	<b>2.69</b>
<b>External Static Pressure</b>	<b>2.50</b>
<b>Total Static Pressure</b>	<b>5.23</b>

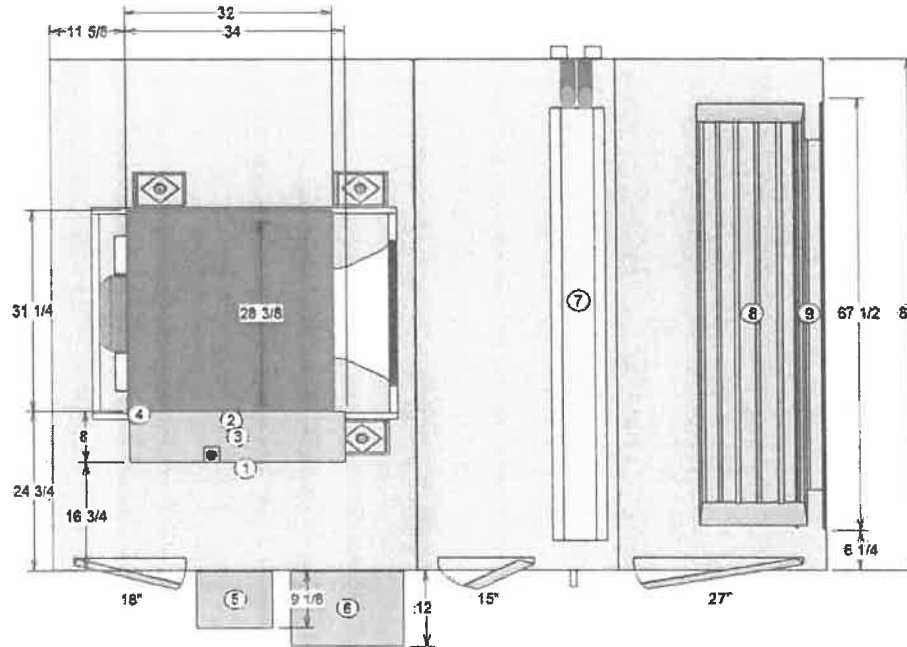
**Heating coil section - Position: 4**

Coil Construction		Coil Performance	
Model	Electric heat	<b>Capacity</b>	
Face Area	6.47 sq ft	Heating Output	59 kW
Voltage	460/60/3	<b>Air</b>	
Electric Heat Control	Proportional (0-10 V)	Flow	12000 cfm
		Entering Dry Bulb	55.00 F
		Leaving Dry Bulb	70.54 F
		Pressure Drop	0.139 in H2O
		Face Velocity	1854 ft/min



Job Name: WV bld 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



- 1 Plenum fan - 27in. dd, plenum, 80% width. H press Supply fan 15 hp 480/3
- 2 count=68
- 3 count=69
- 4 Opening top 28.375 x 28.375
- 5 External unit controller RH
- 6 External VFD RH
- 7 Cooling coil - 6 Rows Coil type 1/2" Unit Optimized, Genstal (UW)
- 8 Damper top-parallel blade 67.5 x 17
- 9 Damper back-parallel blade 17 x 67.5

Doors:  
18 width x 55 height  
15 width x 55 height  
27 width x 55 height

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

Unit size: 25	Job Name: WV bld 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. Integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb



TRANE

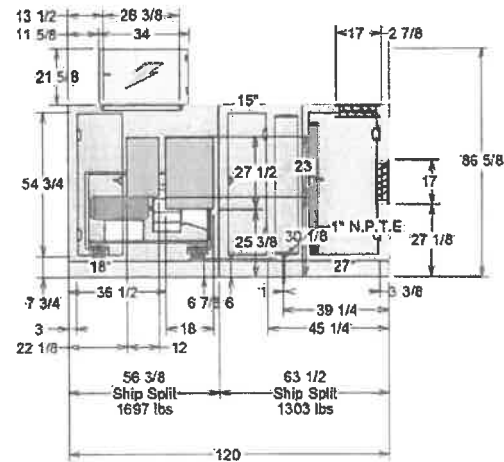
Performance Climate Changer  
Air Handlers





Job Name: WV bid 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



- 1 Plenum fan - 27in. dd plenum, 80% width, H press Supply fan 15 hp 460/3
- 2 count=68
- 3 count=69
- 4 Opening top: 28.375 x 28.375
- 5 External unit controller RH
- 6 External VFD RH
- 7 Cooling coil - 6 Rows Coil type 1/2" Unit Optimized. General (LW)
- 8 Damper top-parallel blade 57.5 x 17
- 9 Damper back-parallel blade 17 x 67.5
- 10 1" N.P.T.E

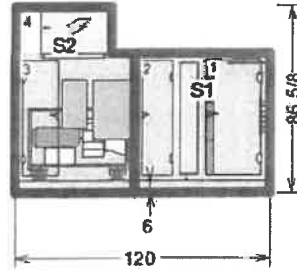
Doors  
18 width x 55 height  
15 width x 55 height  
27 width x 55 height

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

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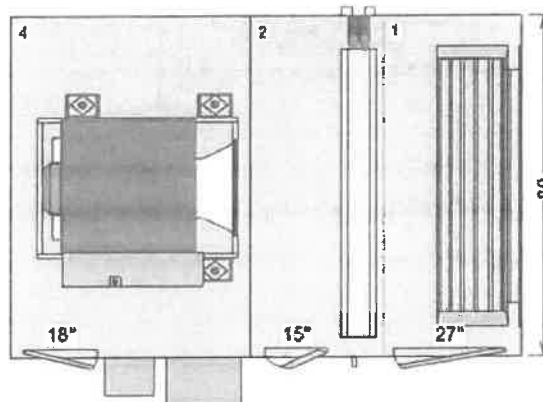
Unit size: 25	Job Name: WV bid 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb





For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length sh

Pos #	Module	Length	Weight
1	Air mixing section	32 1/4	515.83
2	Coil section	31 1/4	786.83
3	Fan section	56 3/8	1618.23
4	Coil section	45 3/8	79.00
			Installed Unit Weight 2999.89 lbs:



Basic Overall Plan View: Top - Measurements in inches

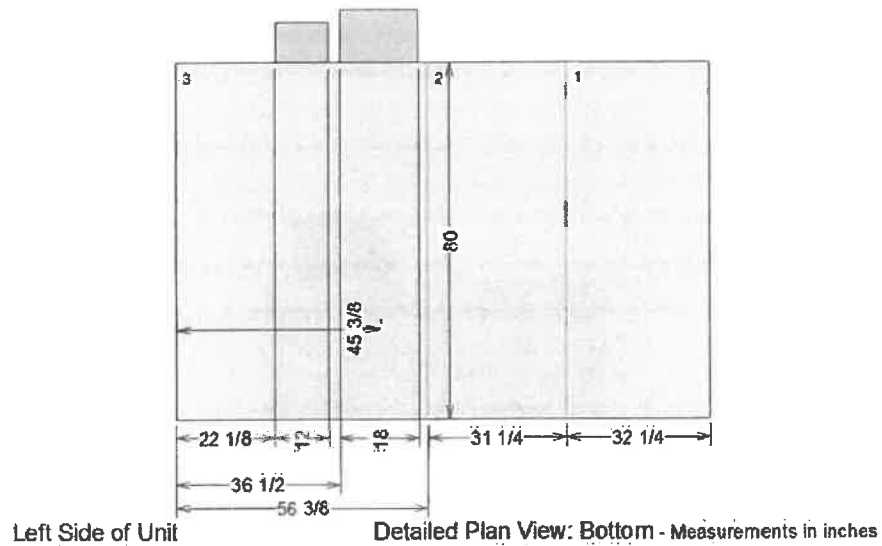
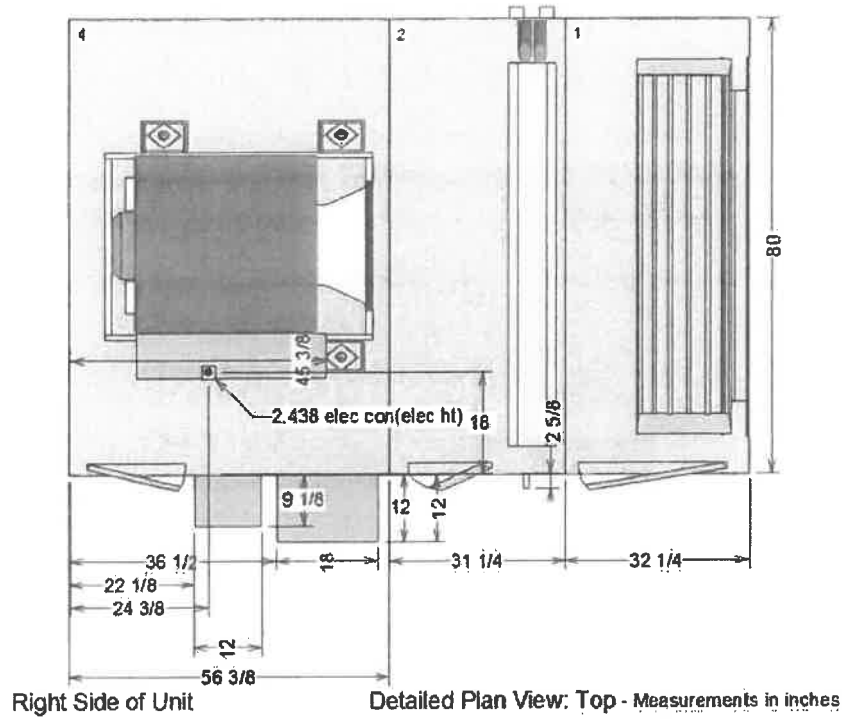
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Unit size: 25	Job Name: WV bid 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. Integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb



**TRANE**

Performance Climate Change  
Air Handlers



**\*\*Placement of electrical conduit may vary by a tolerance of 8" in any direction.**

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

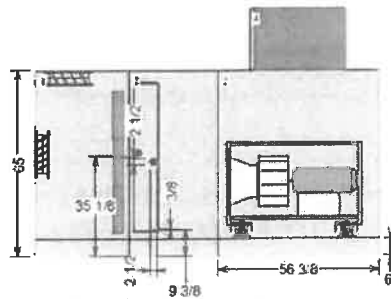
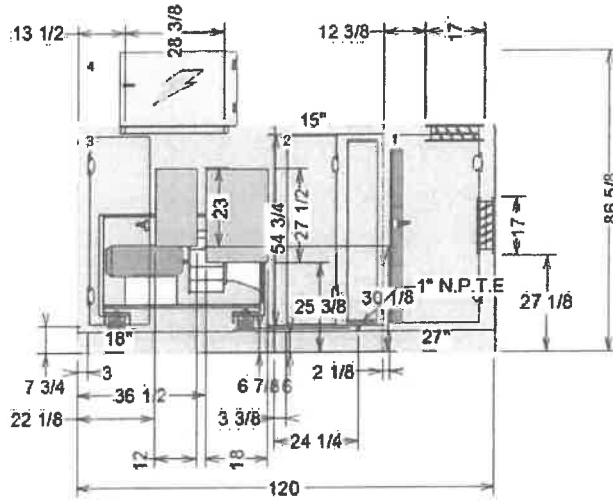
Unit size: 25	Job Name: WV bid 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. Integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb





Job Name: WV bid 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



Detailed Elevation View: Left - Measurements in Inches

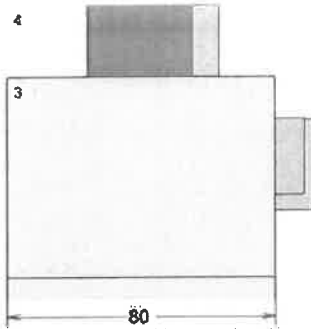
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Unit size: 25	Job Name: WV bid 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. Integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb

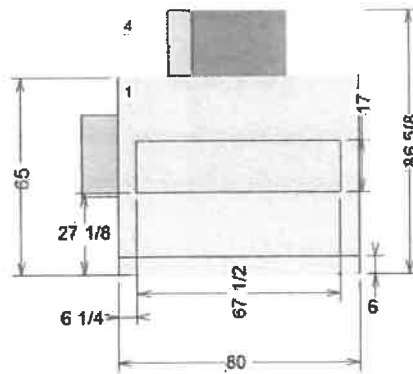


**TRANE**

Performance Climate Changer  
Air Handlers



Detailed Elevation View: Front - Measurements in inches



Detailed Elevation View: Back - Measurements in inches

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

Unit size: 25	Job Name: WV bid 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb



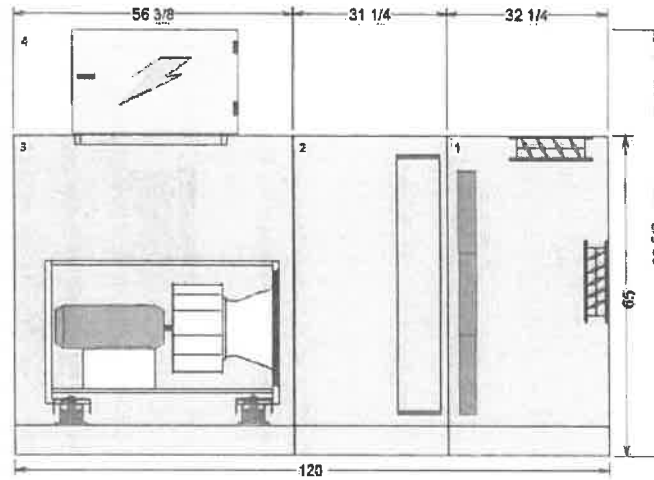
**TRANE**

Performance Climate Changer  
Air Handlers



Job Name: WV bld 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



NPTI : National Pipe Thread Internal Connection  
NPTE : National Pipe Thread External Connection

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

Unit size: 25	Job Name: WV bld 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb



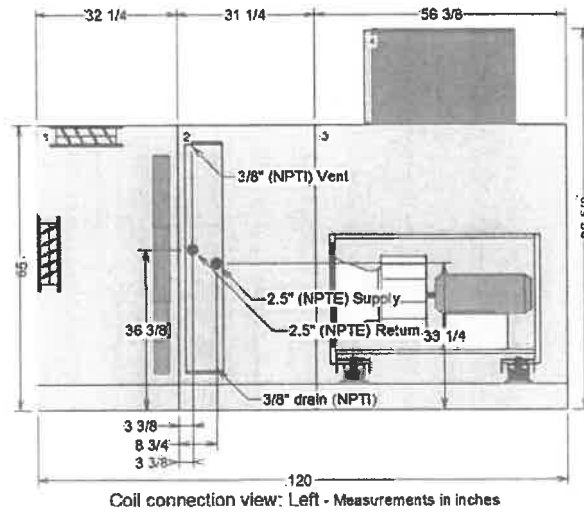
**TRANE**

Performance Climate Change  
Air Handlers



Job Name: WV bid 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



**NPTI : National Pipe Thread Internal Connection**  
**NPTE : National Pipe Thread External Connection**

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

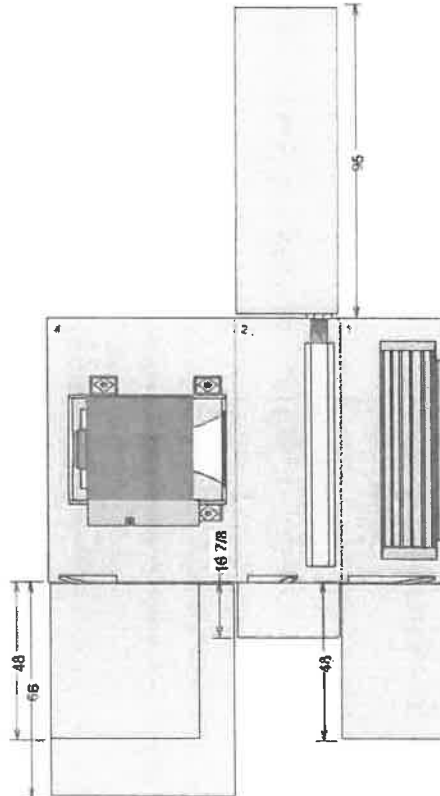
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CSAA  
Quantity: 1  
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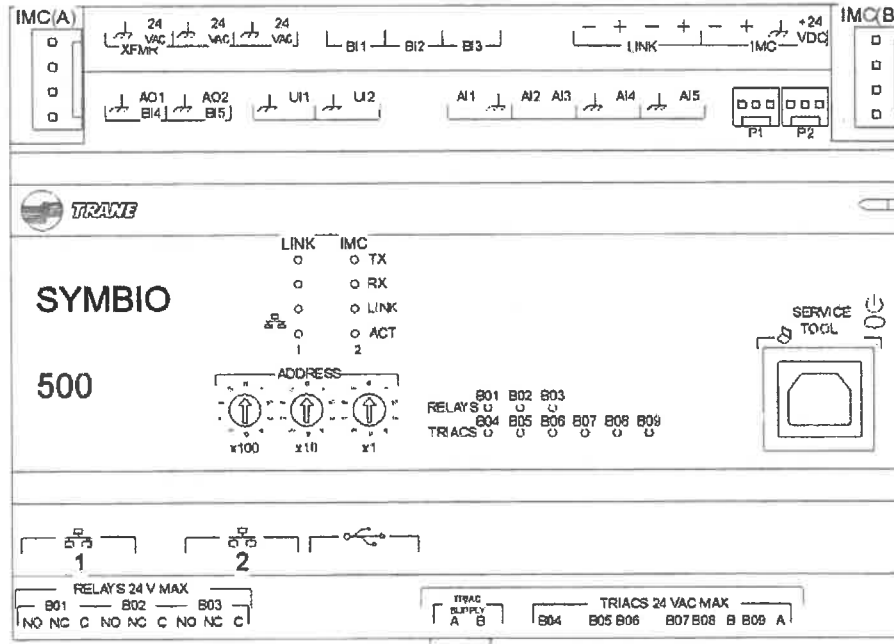
Basic Service Clearance - Plan - Measurements in inches

**OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE**

Unit size: 25	Job Name: WV bld 1 AHU Replacements	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	12000 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office:	Tags: AHU-WB-1
Paint:		2860.2 lb / 2999.9 lb







NOTES:

1. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINES ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINES INDICATE CONTROL OPTION. PHANTOM LINES ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS. SOLID LINES INDICATE WIRING BY TRANE.
2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE, AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
3. CONNECTIONS ARE INTENDED FOR CLASS 2 ONLY
4. I/O POINTS ON CONTROLLER ARE RESERVED FOR FIELD INSTALLED AND SHIP WITH DEVICES

49514696

**CAUTION**

USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT

**ATTENTION**

N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS  
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

**PRECAUCIÓN**

¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES  
SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

**WARNING**

**HAZARDOUS VOLTAGE!**  
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE  
FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY

**AVERTISSEMENT**

**TENSION DANGEREUSE!**  
COUPER TOUTES LES TENSIONS ET OUVRIER LES SECTIONNEURS À DISTANCE, PUIS SUIVRE LES PROCEDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUTS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITES COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS  
NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAINER DES BLESSURES GRAVES POUVAINT ÊTRE MORTELLES

**ADVERTENCIA**

**VOLTAJE PELIGROSO!**  
DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUIDO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO PARA LAS UNIDADES CON EJE DE DIRECCIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.  
EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.



TRANE

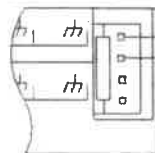
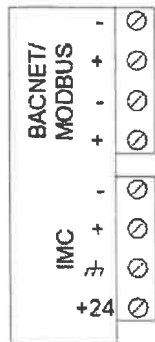
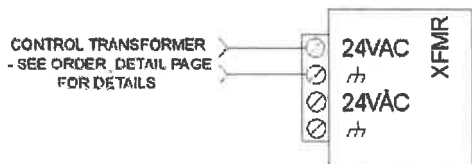
Job Name: VAV Unit 1 AHU Replacements

CSAA  
Circuitry 1  
Tags: AHU-WB-1

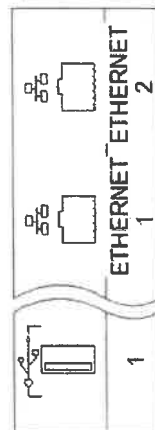


Job Name: VAV Mid 1 AHU Replacements

CS44  
Quantity: 1  
Tag: ATRU-VB-1



IMC BUS - SEE ORDER\_LEGEND PAGE FOR OPTION MODULE POINT DETAIL



NOTES:

1. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINES ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINES INDICATE CONTROL OPTION. PHANTOM LINES ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS. SOLID LINES INDICATE WIRING BY TRANE.
2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE, AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
3. CONNECTIONS ARE INTENDED FOR CLASS 2 ONLY.
4. I/O POINTS ON CONTROLLER ARE RESERVED FOR FIELD INSTALLED AND SHIP WITH DEVICES.

49514696

**CAUTION**

USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**ATTENTION**

UTILISER QUE DES CONDUCTEURS EN CUIVRE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

**PRECAUCIÓN**

UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.  
SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

**WARNING**

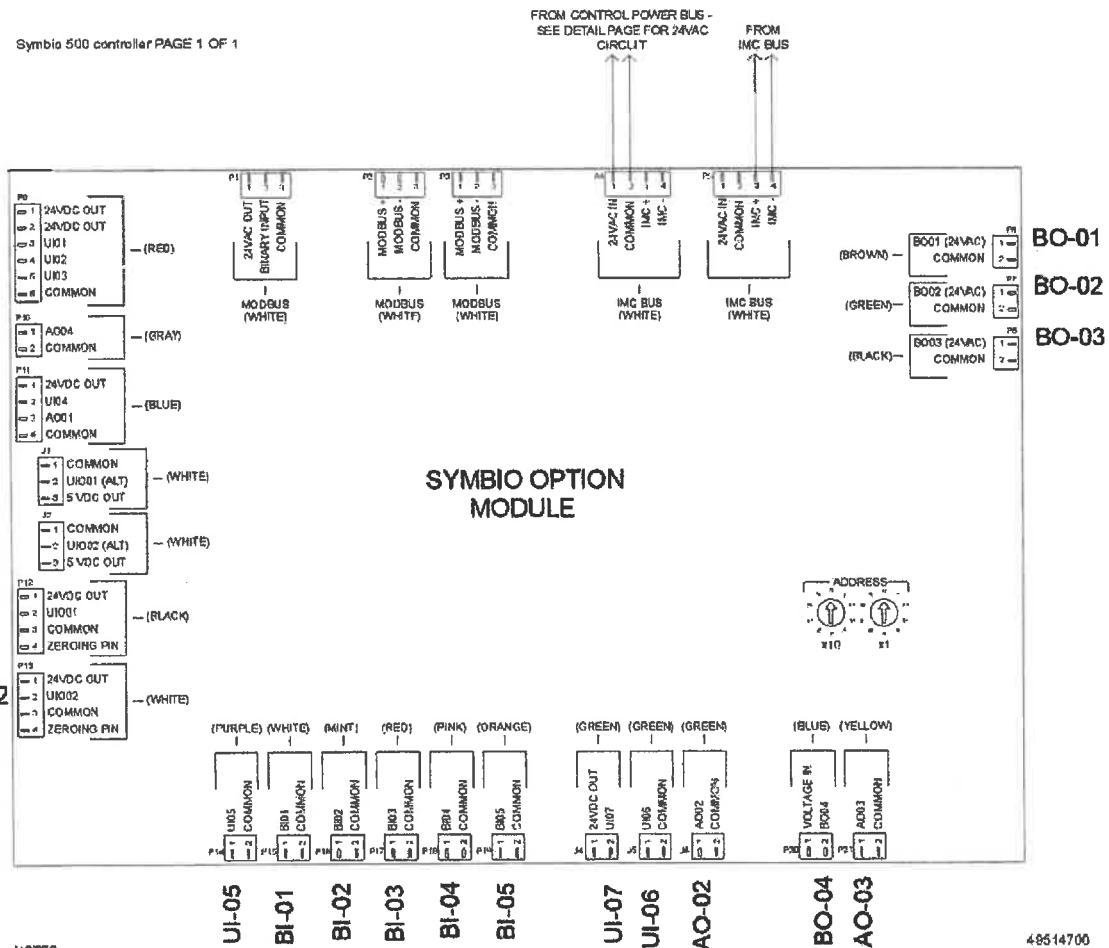
HAZARDOUS VOLTAGE!  
DISCONNECT ALL ELECTRIC POWER!  
IF ALL POINTS ARE NOT DISCONNECTED, FOLLOW THE LOCK OUT AND TAG OUT PROCEDURE BEFORE SERVICING. VERIFY THAT ALL ENERGY CAPACITORS HAVE BEEN DISCHARGED BEFORE VOLTAGE. UNITS WITH CAPACITOR SYSTEMS DRIVE. REFER TO MANUAL INSTRUCTIONS FOR CAPACITOR DISCHARGING.  
FAILURE TO DO SO THE ABOVE WARNING IS PROMPTLY COULD BE RESULT OF AN INJURY OR DEATH.

**AVERTISSEMENT**

TENSION DANGEREUSE!  
COUPER TOUTES LES TENSIONS ET OUVRIRES SECTION INCLUS A DISTANCE. PLUS SUIVRE LES PROCÉDURES DE VERIFICATION ET DES ÉVOLUTIONS AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUT LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAINEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ÉQUIPEMENT POUR DÉCHARGER LES CONDENSATEURS.  
NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAINER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.

**ADVERTENCIA**

VOLTAJE PELIGROSO!  
DESCONECTE TODA LA ENERGÍA QUE ALIMENTA LAS UNIDADES INCLUIDAS EN ESTA OBRERA. SIGA LAS PASOS DE VERIFICACIÓN Y DE CERRAMIENTO ANTES DE EMPEZAR CUALQUIER INTERVENCIÓN. VERIFIQUE QUE TODOS LOS CONDENSADORES DE LOS MOTORES SEAN DESCARGADOS. EN EL CASO DE UNIDADES CON MOTOR DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DE LOS CONDENSADORES.  
EL NO REALIZARLO ADECUADAMENTE PUEDE OCASIONAR LESIONES O SERIAS LESIONES PERSONALES.



**NOTES:**

- DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINES ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. PHANTOM LINES INDICATE CONTROL OPTION. PHANTOM LINES ENCLOSURES INDICATE ALTERNATE CIRCUITRY OR AVAILABLE SALES OPTIONS. SOLID LINES INDICATE WIRING BY YASKAWA.
- ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, STATE, AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
- CONNECTIONS ARE INTENDED FOR CLASS 2 ONLY.
- MORE THAN ONE SYMBIO OPTION MAY BE USED. REFER TO LEGEND PAGE FOR OPTION MODULE ADDRESSES AND DEVICE POINT DESIGNATIONS.

485-14700

**⚠ WARNING**  
HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCKOUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED TO STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTION SET FOR CAPACITOR DISCHARGE FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

**⚠ AVERTISSEMENT**  
TENSION DANGEREUSE!

COUPER TOUTES LES TENSIONS ET OUVRIER LES DISJONCTEURS A DISTANCE. SUITE SUIVRE LES PROCEDURES DE VERIFICATION ET DE SECURITE. LES CAPACITATEURS DU MOTEUR NE SONT PAS DECHARGES A TENSION STOCKEE. LES UNITES A VITESSE VARIABLE, SE REFERER A L'INSTRUCTION D'UTILISATION POUR RECHARGER LES CONDENSATEURS. NE PAS RESPECTER CES MESURES DE SECURITE PEUT CAUSER LA MORT OU DES BLESSURES GRAVES.

**⚠ ADVERTENCIA**  
VOLTAJE PELIGROSO!

DESCONECTE TODAS LAS FUENTES ELECTRICAS, INCLUIDO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CERRRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO PARA LAS UNIDADES CON V.C.V. DIRECCION DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. EL NO REALIZAR LO ANTERIORMENTE MENCIONADO, PODRIA OCASIONAR LA MUERTE O SERIOUS LESIONES PERSONALES.

**CAUTION**  
USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT

**ATTENTION**  
UTILISER SEULE DES CONDUCTEURS EN CUIVRE!

LES BORDES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS

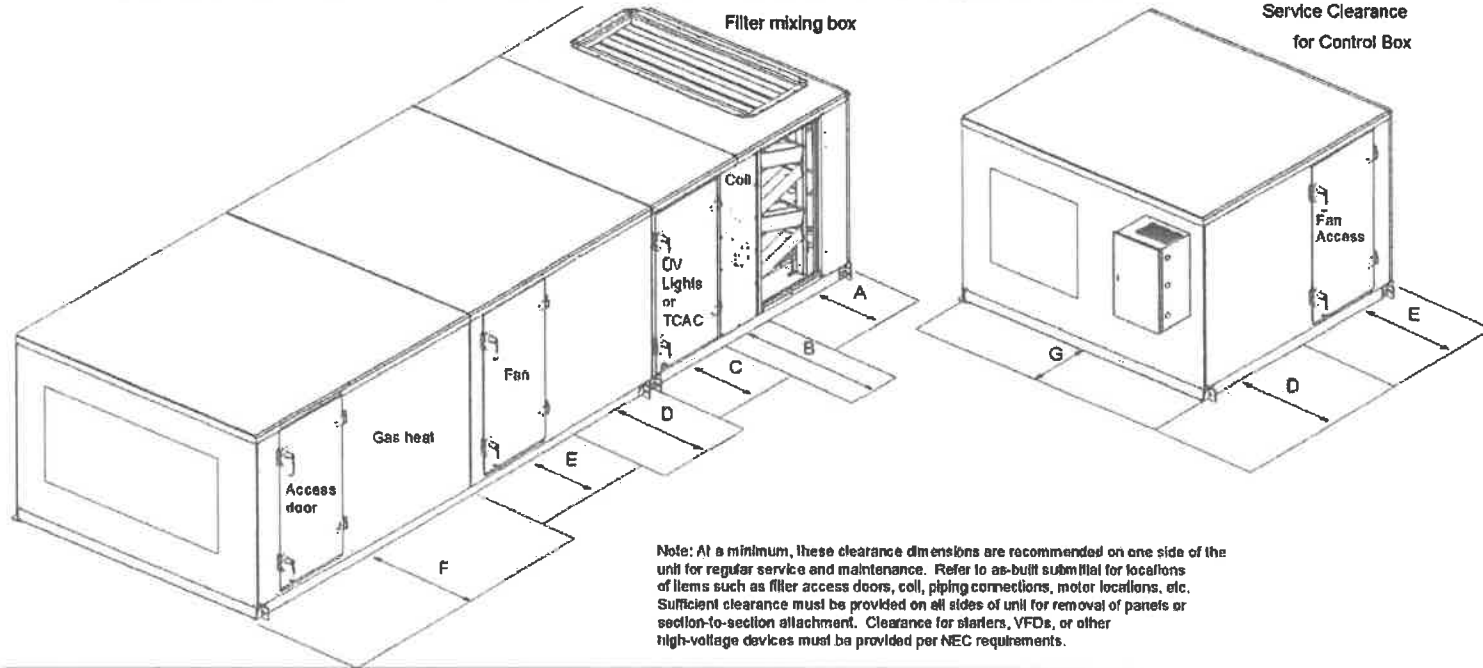
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'EQUIPEMENT

**PRECAUCIÓN**  
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SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO

# EXAMPLE UNIT - NOT CONFIGURED AS SELECTED.



Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides of unit for removal of panels or section-to-section attachment. Clearance for starters, VFDs, or other high-voltage devices must be provided per NEC requirements.

Component	3	4	6	8	10	12	14	17	21	25	30	35	40	50	57	66	80	100	120
A (filter)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
B (coil, humidifier)	48	59	59	66	77	82	87	87	95	95	109	115	128	141	141	156	156	170	197
B (staggered coil)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	67	76	80	88	96	96	105	105	113	129
C (UV Lights)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
C (TCAC)	43	59	59	63	75	81	83	83	58	58	83	75	83	83	83	83	83	75	83
D (External Starter, VFD, LV box or Overload box)	61	61	61	61	61	61	61	61	64	64	64	64	64	64	64	64	64	64	64
D (Internal Starter or VFD)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
E (fan)	48	48	48	48	51	54	58	61	60	66	66	66	70	77	77	93	93	101	101
F (Gas Heat Ext Vestible)	N/A	N/A	89	90	108	100	100	105	115	115	118	136	140	156	156	170	179	180	N/A
F (Gas Heat Int Vestible)	N/A	N/A	56	63	74	79	84	84	92	92	106	112	125	138	138	153	153	167	194

Component	All Sizes
G (Side mount LV box)	36
G (Front mount LV box)	13

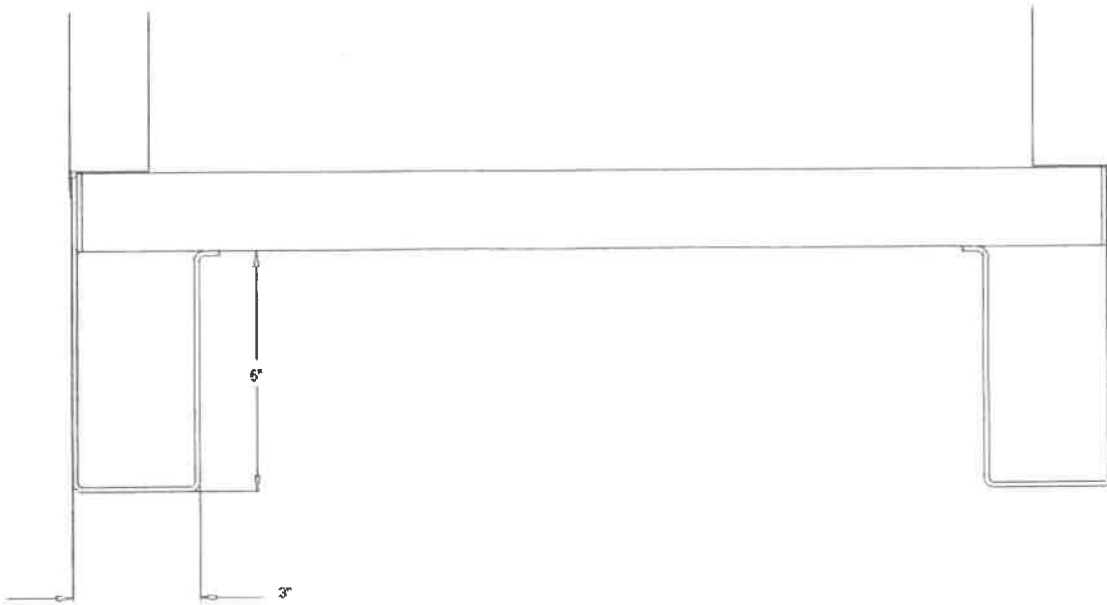


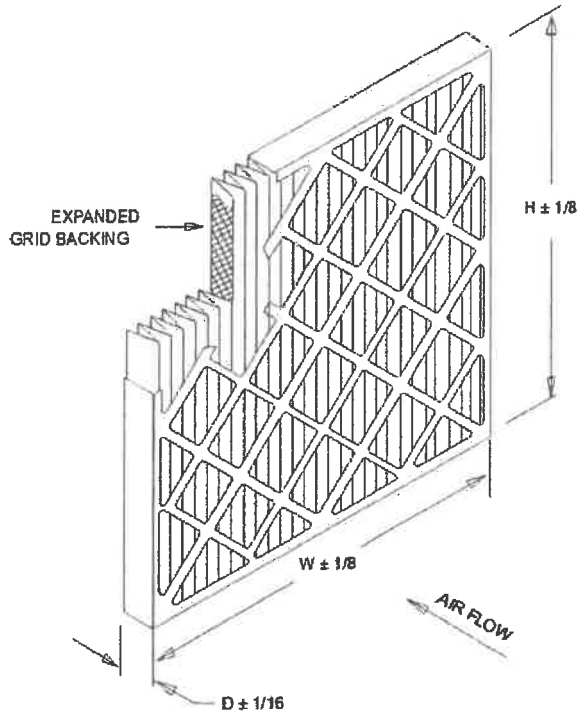
Job Name: WV BH 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU-WB-1



# Base Detail





**STANDARD CONSTRUCTION**

1. 100 % Synthetic White Un-Dyed Media
2. 10.0 Pleats Per Foot
3. Expanded Metal Pleat Supports
4. Moisture Resistant Beverage Board Frame
5. Double Wall Frame

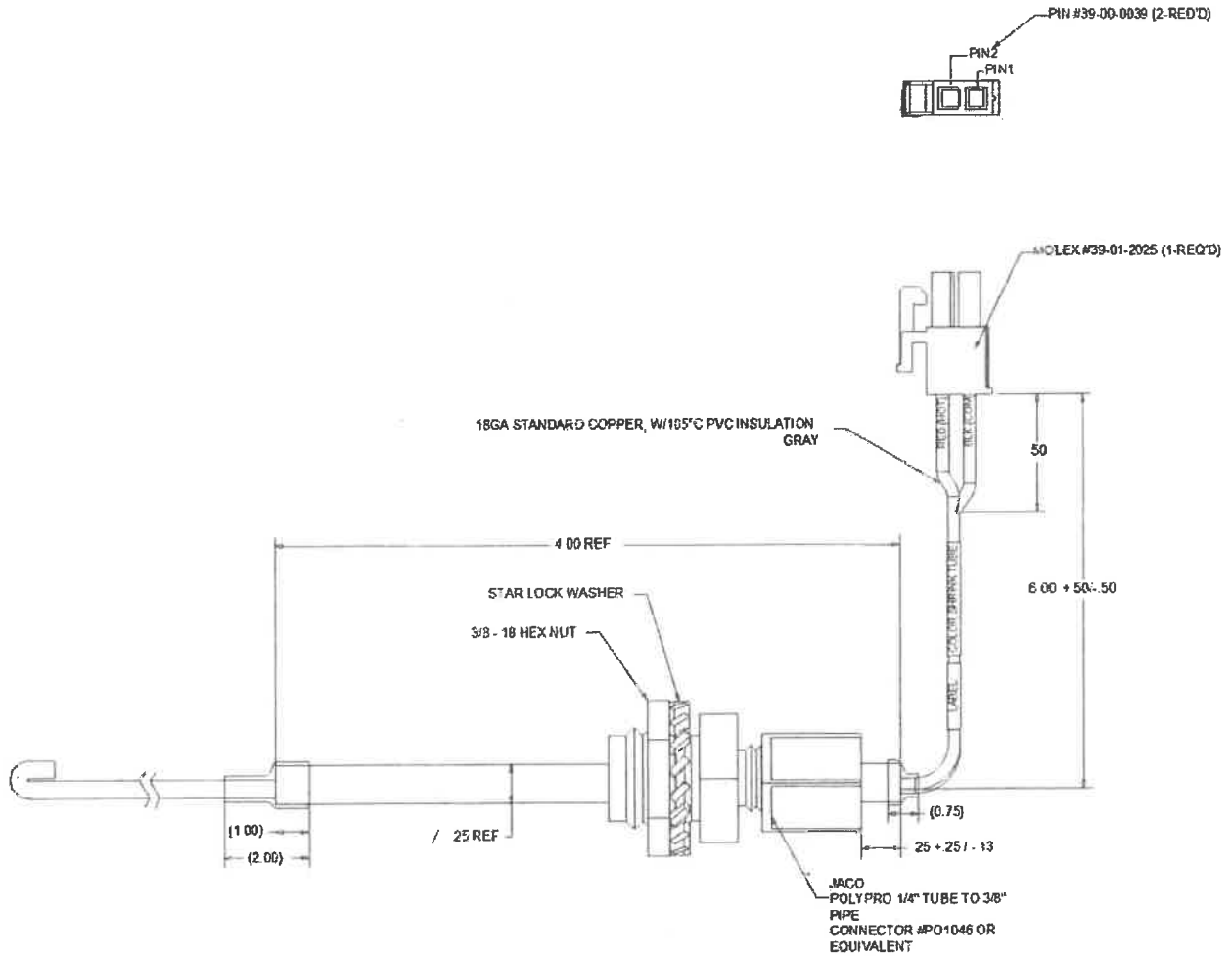
**NOTES**

1. MERV 8-A Per ASHRAE 52.2-2007 Appendix J.
2. Final Resistance: 1/0" W.G.
3. Rated Velocity: 500 FPM
4. Class 2 Filter Per U.L. Standard 900
5. Maximum Operating Temperature 225 DEG. F

MODEL NUMBER	NOMINAL SIZE IN. W X H X D	ACTUAL SIZE IN. W X H X D	RATED AIR FLOW CFM	INITIAL RESISTANCE IN. W.G.	MEDIA AREA SQ. FT.
MX40-STD2-217	10 X 20 X 2	9-1/2 X 19-1/2 X 1-3/4	700	0.29	4.7
MX40-STD2-220	12 X 20 X 2	11-1/2 X 19-1/2 X 1-3/4	840	0.29	5.5
MX40-STD2-210	12 X 24 X 2	11-3/8 X 23-3/8 X 1-3/4	1000	0.29	6.2
MX40-STD2-239	14 X 20 X 2	13-1/2 X 19-1/2 X 1-3/4	980	0.29	5.7
MX40-STD2-241	14 X 25 X 2	13-1/2 X 24-1/2 X 1-3/4	1220	0.29	7.1
MX40-STD2-245	15 X 20 X 2	14-1/2 X 19-1/2 X 1-3/4	1050	0.29	6.2
MX40-STD2-201	16 X 20 X 2	15-1/2 X 19-1/2 X 1-3/4	1120	0.29	6.7
MX40-STD2-216	16 X 24 X 2	15-3/8 X 23-3/8 X 1-3/4	1340	0.29	8.0
MX40-STD2-202	16 X 24 X 2	15-1/2 X 24-1/2 X 1-3/4	1400	0.29	8.0
MX40-STD2-280	15 X 20 X 2	17-1/2 X 19-1/2 X 1-3/4	1250	0.29	7.8
MX40-STD2-212	18 X 24 X 2	17-3/8 X 23-3/8 X 1-3/4	1500	0.29	9.3
MX40-STD2-285	18 X 25 X 2	17-1/2 X 24-1/2 X 1-3/4	1570	0.29	9.7
MX40-STD2-203	20 X 20 X 2	19-1/2 X 18-1/2 X 1-3/4	1400	0.29	8.3
MX40-STD2-211	20 X 24 X 2	19-3/8 X 23-3/8 X 1-3/4	1670	0.29	9.9
MX40-STD2-204	20 X 25 X 2	19-1/2 X 24-1/2 X 1-3/4	1750	0.29	10.3
MX40-STD2-205	24 X 24 X 2	23-3/8 X 23-3/8 X 1-3/4	2000	0.29	11.7
MX40-STD2-225	25 X 25 X 2	24-1/2 X 24-1/2 X 1-3/4	2170	0.29	13.6

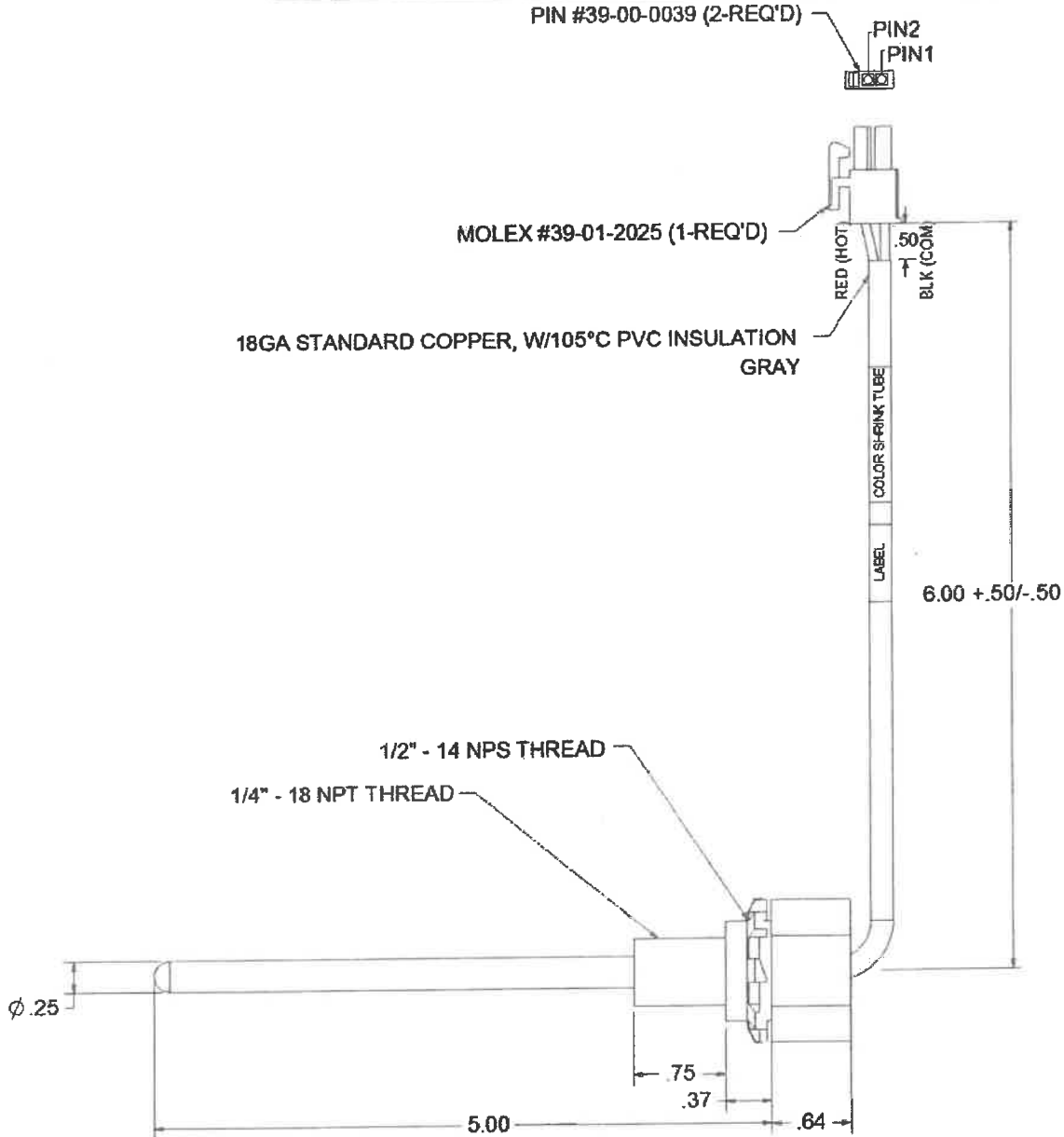
# Averaging Temperature Sensor

SENSOR ELEMENT	SENSOR RATING	TCR	SHRINK TUBE COLOR
THERMISTOR	10,000 Ω TYPE II	3892°K NOMINAL	YELLOW



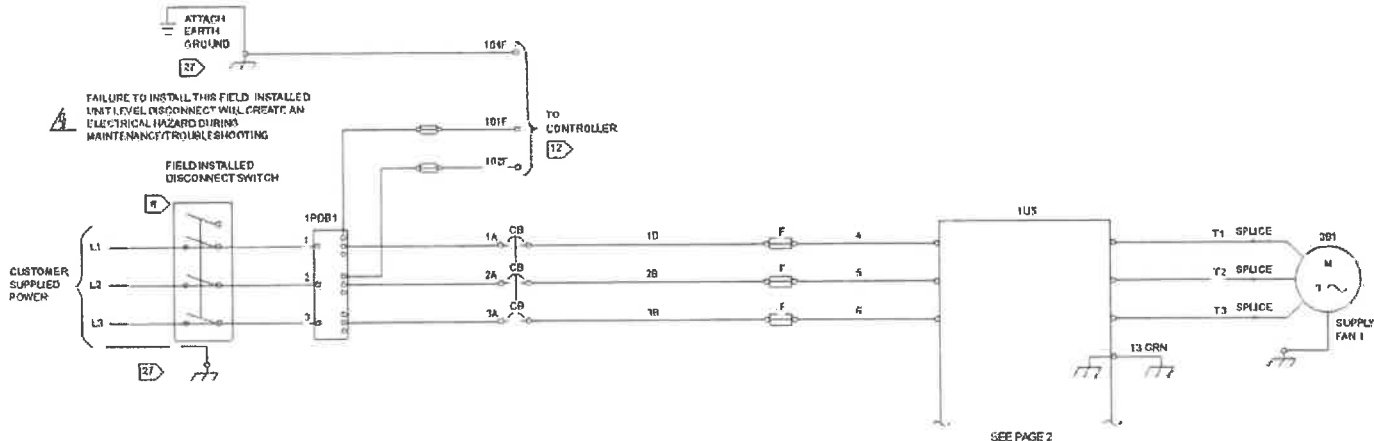
## Discharge Temperature Sensor

EXT	SENSOR RATING	SHRINK TUBE COLOR	SENSOR
01	10,000 Ω TYPE II	YELLOW	THERMISTOR





SUPPLY FAN 1 SCHEMATIC PAGE 1 OF 2



NOTES

- DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. PHANTOM LINES INDICATE CONTROL OPTION. REF. CONTROL PANEL SCHEMATIC FOR SPECIFIC DETAIL.
  - ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
  - THE MINIMUM CIRCUIT AMPACITY, THE MAXIMUM FUSE SIZE, AND DISCONNECT SIZE ARE CALCULATED BASED ON THE INVERTER INPUT LINE CURRENTS PER ARTICLE #310-2 OF THE NATIONAL ELECTRICAL CODE.
- 4 PROGRAM TERMINAL 18 AS RUN.  
 5 PROGRAM TERMINAL 27 INV. COASTING STOP.  
 6 CLOSES TO RUN AUTO MODE OR BYPASS AUTO F OR OPTION VFD OR STARTER.

- 7 RELAY(S)-INDUCTIVE LOAD: 16 HP @ 240VAC, RESISTIVE LOAD: 5A @ 240VAC. SEE SCHEMATIC DIAGRAM FOR CABLE CONNECTION AND ACTUAL QUANTITY OF TRANSFORMER RELAYS.
- 8 CUSTOMER SUPPLIED LOCKABLE DISCONNECTING MEANS, SUCH AS A DISCONNECT SWITCH OR CIRCUIT BREAKER, INSTALLED LOCAL TO UNIT, SIZE AND PLACEMENT OF DEVICE SHALL BE DONE IN ACCORDANCE WITH APPLICABLE NATIONAL AND LOCAL ELECTRICAL CODES.
- D REMOVE JUMPER AND INSTALL FIELD SAFETY INTERLOCK.
- 12 IF UNIT HAS SHIPPING SPLITS WIRING WILL TERMINATE TO MODULE AT EACH SHIPPING SPLIT.
- 27 ATTACH GROUND OR EQUIPMENT GROUND.

CONTROLLER FUSE (CLASS CC)		
FUSE	VOLTAGE	PN
1F6	200/230	KLDR-15
1F7	400/5	

FUSE	VOLTAGE	VFD FUSES		
		PANEL HP (MAX)	PN	CLASS
1F40 1F41 1F42	200/230	0-5.2	LP-CC-15	CC
		5	LP-CC-15	CC
		5	LP-CC-25	CC
		7.5-10	JLN-50	T
		11	JLN-80	T
		20-25	JLN-100	T
		30-40	JLN-150	T
		50	JLN-200	T
		0-5.2	LP-CC-15	CC
		3.5	LP-CC-15	CC
400	400	7.5-10	LP-CC-25	CC
		15-20	JLS-50	T
		25-30	JLS-80	T
		40	JLS-100	T
		50-60	JLS-125	T
		75-100	JLS-200	T
575	575	3-15	LP-CC-10	CC
		15-30	LP-CC-20	CC
		25-40	JLS-50	T
		50-75	JLS-125	T
		100-125	JLS-200	T

DEVICE PREFIX LOCATION CODE	
AREA	LOCATION
1	HIGH VOLTAGE PANEL
2	LOW VOLTAGE PANEL (UNIT SCHEMATIC)
3	AIR HANDLER SECTION

LEGEND	
DEVICE DESIGNATION	DESCRIPTION
1CB11	CIRCUIT BREAKER
1F6/1F7	PRIMARY CONTROLLER FUSE
1F40 TO 1F42	VFD FUSES
1K1	START/STOP RELAY
1PDB1	POWER DISTRIBUTION BLOCK
1T813	TERMINAL STRIP CONTROL CIRCUIT
1U5	VFD CONTROLLER
3B1	MOTOR 1

**CAUTION**  
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FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**ATTENTION**  
N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT EN dommager l'équipement.

**PRECAUCIÓN**  
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SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

**WARNING**  
HAZARDOUS VOLTAGE!  
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK-OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE.  
FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

**AVERTISSEMENT**  
TENSION DANGEREUSE!  
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS À DISTANCE, PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUTS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS DES UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS.  
NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.

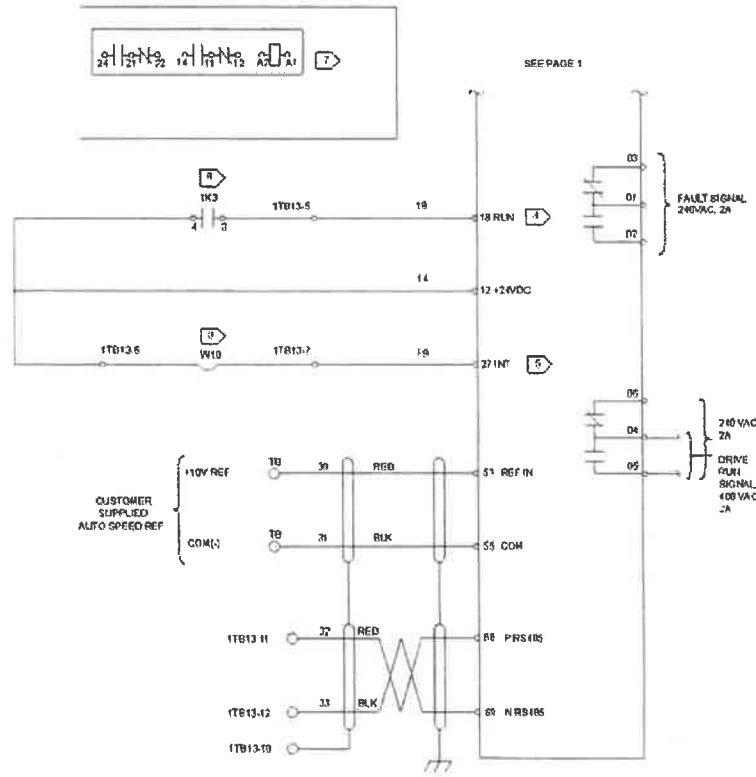
**ADVERTENCIA**  
¡VOLTAJE PELIGROSO!  
DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUIDO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.  
EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.



Job Name: VAV Unit 1 AHU Replacements

CSAA  
Quantity: 1  
Tags: AHU/Unit-1

SUPPLY FAN 1 SCHEMATIC PAGE 2 OF 2



NOTED

- 1 DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. PHANTOM LINES INDICATE CONTROL OPTION. REF. CONTROL PANEL SCHEMATIC FOR SPECIFIC DETAIL.
- 2 ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATINGS NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
- 3 THE MINIMUM CIRCUIT AMPACITY, THE MAXIMUM FUSE SIZE, AND DISCONNECT SIZE ARE CALCULATED BASED ON THE INVERTER INPUT LINE CURRENTS PER ARTICLE 430.2 OF THE NATIONAL ELECTRICAL CODE.
- 4 PROGRAM TERMINAL TRAS RUN
- 5 PROGRAM TERMINAL 27 INV. COASTING STOP
- 6 CLOSERS TO RUN AUTO MODE OR BYPASS AUTO FOR OPTION VFD OR STARTER
- 7 RELAY(S) INDUCTIVE LOAD. USE MP @ 24VDC RESISTIVE LOAD. 5A @ 24VAC. SEE SCHEMATIC DIAGRAM FOR COIL CONNECTIONS AND ACTUAL QUANTITY OF TRANSFORMER RELAYS.
- 8 CUSTOMER SUPPLIED LOCKABLE DISCONNECTING MEANS, SUCH AS A DISCONNECT SWITCH OR CIRCUIT BREAKER, INSTALLED TO UNIT MUST BE PLACED IN POSITION OF OFFICE SHALL BE DONE IN ACCORDANCE WITH APPLICABLE NATIONAL AND LOCAL ELECTRICAL CODES.
- 9 REMOVE JUMPER AND INSTALL FIELDSAFETY INTERLOCK
- 10 IF UNIT HAS REMAINING FIELD WIRING WILL TERMINATE TO MODULE AT EACH SHIPMENT POINT
- 11 ATTACH GROUND OR EQUIPMENT GROUND

49514555

**WARNING**  
HAZARDOUS VOLTAGE!  
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE. FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

**AVERTISSEMENT**  
TENSION DANGEREUSE!  
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS A DISTANCE. PLUS SUIVRE LES PROCEDURES DE VERROUILLAGE ET DES ETIQUETTES AVANT TOUTE INTERVENTION. VERIFIER QUE TOUTS LES CONDENSATEURS DES MOTEURS SONT DECHARGES. DANS LE CAS D'UNITE COMPORTANT DES ENTRAÎNEMENTS A VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DECHARGER LES CONDENSATEURS. NE PAS RESPECTER CES MESURES DE PRECAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ETRE MORTELLES.

**ADVERTENCIA**  
MOLTAJE PELIGROSO!  
DESCONECTE TODA LA ENERGIA ELÉCTRICA, INCLUIDO LAS DESCONECCIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE BLOQUEO Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CONJUNTO DE DIRECCION DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. EL NO RESPECTAR LAS ANTI-CONTAMINANTE, INDICACIONES, PUEDE CASI SIEMPRE LA MUERTE O SERIAS LESIONES PERSONALES.

**CAUTION**  
USE COPPER CONDUCTORS ONLY!  
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

**ATTENTION**  
N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!  
LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

**PRECAUCIÓN**  
¡UTILÍZSE ÚNICAMENTE CONDUCTORES DE COBRE!  
LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.  
SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

VFD FUSES				
FUSE	VOLTAGE	PANEL MP (MAX)	PIN	CLASS
1F40 1F41 1F42	200/230V	RS-2	1P-CC-10	CC
		3	1P-CC-15	CC
		5	1P-CC-25	CC
		7.5-10	JUN-50	T
		15	JUN-80	T
	20-25	JUN-100	T	
	30-40	JUN-150	T	
	50	JUN-200	T	
	400V	0.5-2	1P-CC-10	CC
		3	1P-CC-15	CC
7.5-10		1P-CC-25	CC	
15-20		JUN-50	T	
25-30		JUN-80	T	
575V	40	JUN-100	T	
	50-60	JUN-125	T	
	75-100	JUN-200	T	
	3-10	1P-CC-20	CC	
	15-10	1P-CC-30	CC	
25-40	JUN-80	T		
50-75	JUN-125	T		
100-125	JUN-200	T		

CONTROLLER FUSE (CLASS CC)		
FUSE	VOLTAGE	PIN
1F0	200/230	
1F1	480/575	KLD1-15

DEVICE PART #X LOCATION CODE	
AREA	LOCATION
1	HIGH VOLTAGE PANEL
2	LOW VOLTAGE PANEL (UPPER SECTION)
3	LOWER PANEL SECTION

LEGEND	
DEVICE DESIGNATION	DESCRIPTION
ICB11	CIRCUIT BREAKER
1F0/1F1	PRIMARY CONTROLLER FUSE
1F10 TO 1F12	VFD FUSES
IK3	START/STOP RELAY
1P0B1	POWER DISTRIBUTION BLOCK
1TB13	TERMINAL STRIP CONTROL CIRCUIT
1US	VFD CONTROLLER
3B1	MOTOR 1



Job Name: VV-DIG-AHU Replacements

CSAA  
Quantity: 1  
Tag: AHU-LWB-1



Job Name: WV Bid 1 AHU Replacements

CSAA  
Quantity: 1  
Tag: AHUWB-1

SUPPLY FAN

- NOTE(S):  
 1. DASHED LINES INDICATE WIRING INSTALLED BY TRANE.  
 2. DOOR INTERLOCK CIRCUIT AND POWER DISTRIBUTION BLOCK REQUIRED FOR LEVEL 2 CONFIGURATION ONLY.

**WARNING**  
 HAZARDOUS VOLTAGE!  
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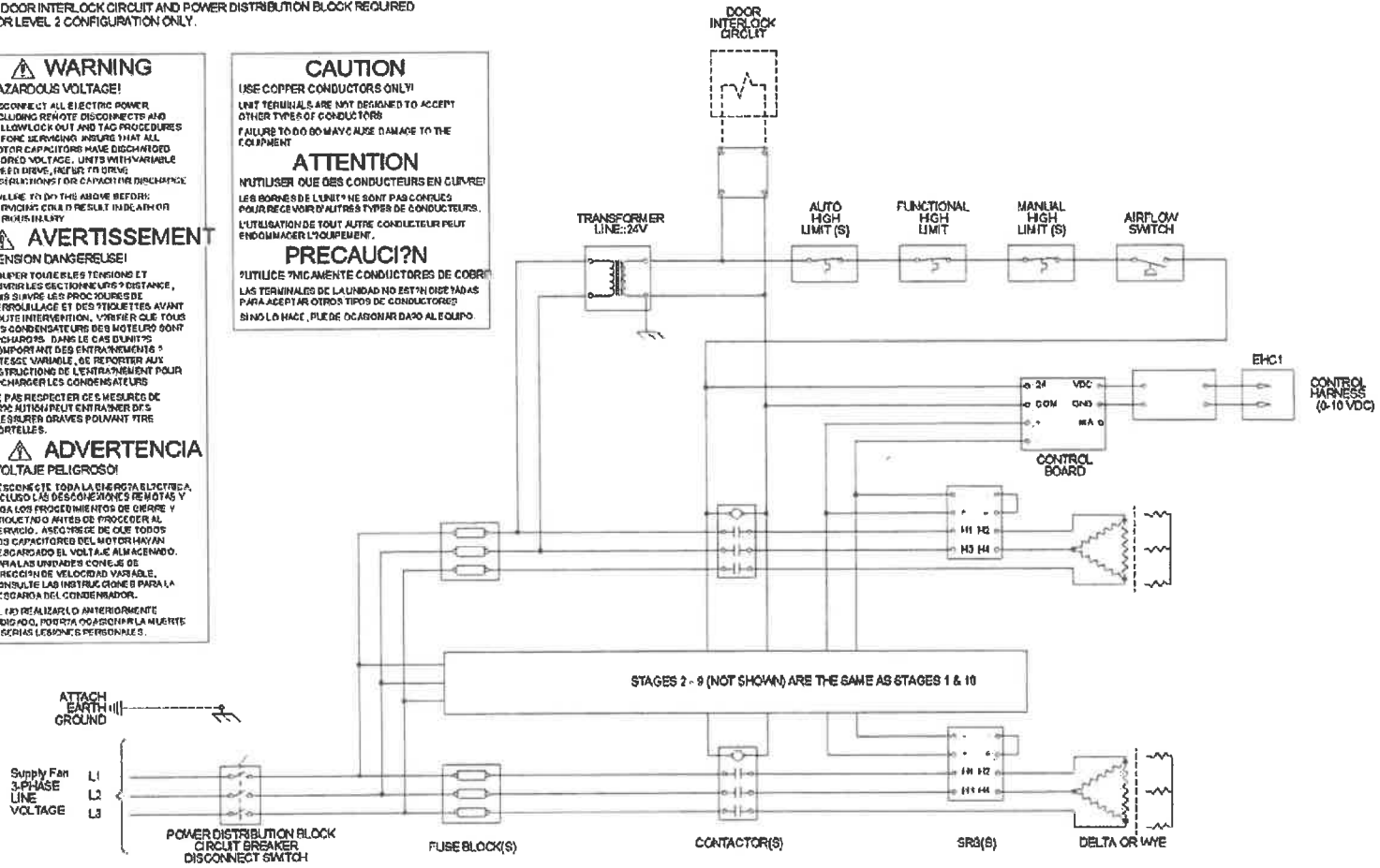
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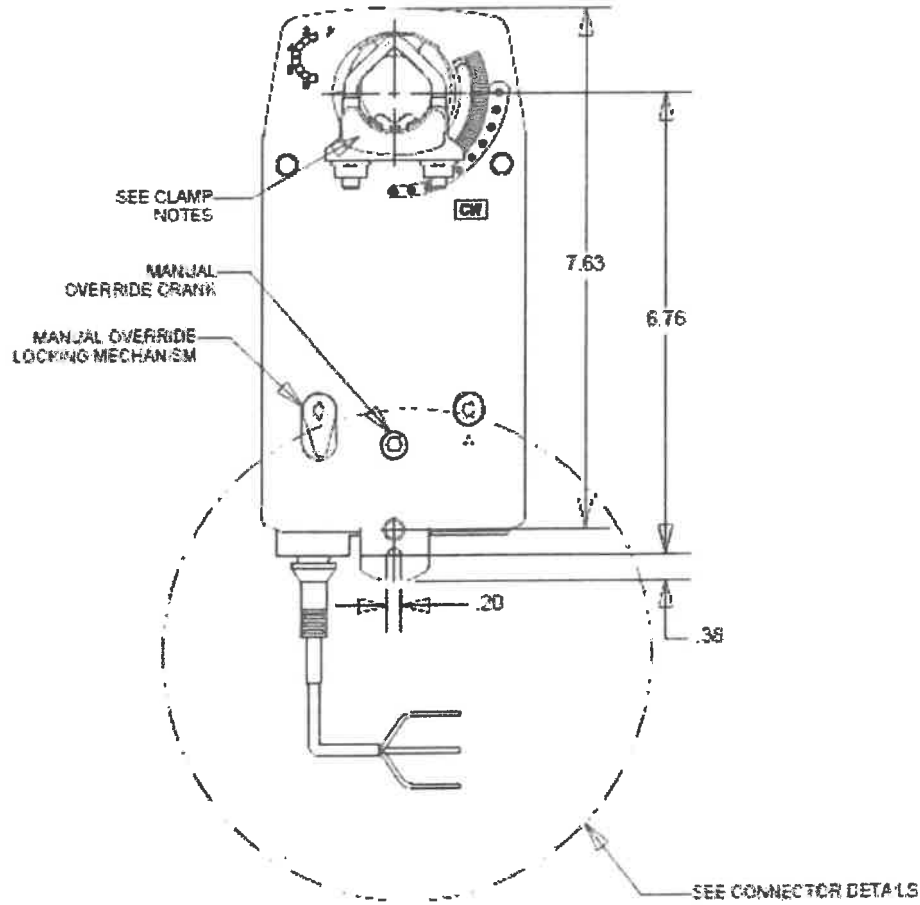
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**Actuator**



**EXT 04**

COLOR	PIN#	AWG	TYPE	A	B	C
BLACK	1	18	COM	BLK		
	2	18	HOT	RED		
WHITE	1	18	COM		PNK	
	2	18	IN		WHT	
WHITE	1	18	COM			GRY
	2	18	OUT			ORG

**CONNECTOR 'A'**  
MOLEX#: 50-36-1678  
PIN#: 39-00-0041

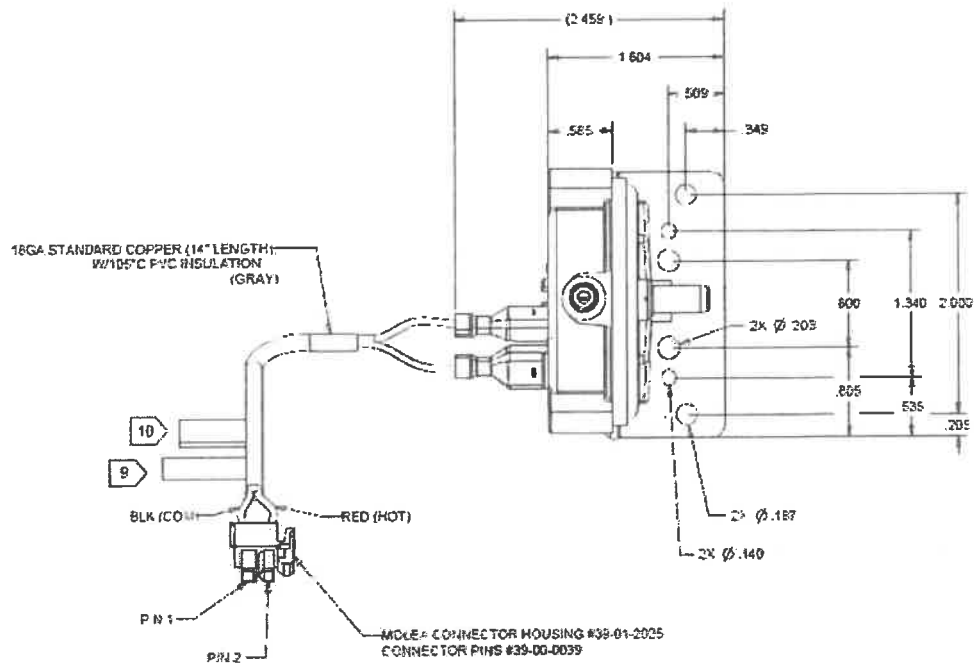
**CONNECTOR 'B'**  
MOLEX#: 39-01-2025  
PIN#: 39-00-0039

**CONNECTOR 'C'**  
MOLEX#: 39-01-3029  
PIN#: 39-00-0041

## EA Pressure Differential Switch

### Specifications:

1. Body: Glass Filler Polyester.
2. Diaphragm: Post-Cured Silicon Rubber.
3. Terminals: 0.032" X 0.250" Copper Alloy.
4. Contacts: Silver Alloy, Beryllium Copper.
5. Actuator: Stainless Steel.
6. Springs: Stainless Steel, Phosphor Bronze.
7. Operating Temperature: -40°C to 85°C (-40°F to 185°F).
8. Mounting: Mount With The Diaphragm Perpendicular to Level



### Thermal Sensor

Resistance Temperature Characteristics			
Temperature	Resistance		Temp Coeff
	Min.	Max.	
-40°C	320.9K	369.0K	-6.61% / °C
-25°C	125.6K	142.3K	-6.04% / °C
0°C	31.17K	34.6K	-5.16% / °C
25°C	9.56K	10.44K	-4.40% / °C
65°C	2.012K	2.158K	-3.5% / °C

**Specifications:**

Probe to be permanently identified with the Trane part number, vendor part number and date code or lot code.

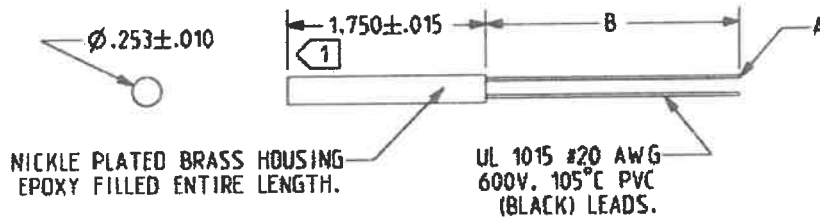


FIGURE 1



Valve Size (in)	2-way/3-way Dimensions in inches [mm]			
	A	B	C	D
1/2	2.38 [60]	1.39 [35]	1.72 [44]	1.63 [41]
3/4 (2-way)	2.72 [69]	1.72 [44]	1.63 [41]	
3/4 (3-way)	2.38 [60]	1.72 [44]	1.63 [41]	1.47 [37]
1 (2-way)	3.09 [78]	1.81 [46]	1.63 [41]	
1 (3-way)	2.63 [67]	1.81 [46]	1.63 [41]	1.59 [40]
1-1/4	3.96 [101]	2.21 [56]	1.63 [41]	2.14 [54]
1-1/2 (2-way)	3.88 [99]	1.99 [51]	1.63 [41]	
1-1/2 (3-way)	4.39 [112]	2.45 [62]	1.63 [41]	2.40 [61]
2	4.90 [124]	2.68 [68]	1.63 [41]	2.75 [70]

**Application**

The 2-way and 3-way Ball valves control water from 0° to 212°F [-18°C to 100°C]. They are used for 2-position or modulating control (with characterizing disc). The valve should be mounted in a weather-protected area in a location that is within the ambient limits of the actuator. Allow sufficient room for actuator, other accessories and for service. Valve may be mounted in any position, except stem below horizontal. The flow direction is indicated on the valve body. Do not reverse flow direction. Weatherproof housings are available for these valves, but they are not included and must be field-purchased.

**Actuators**

A number of combinations are possible. Spring return actuators are available direct coupled to the valve. Actuators are thermally isolated from the valve body for protection from heat and condensation.

**WARNING**

These valves are not for combustible gas applications as leaks and explosions could result. These actuators are not rated for outdoor use. Ensure that actuators are installed in a weather-protected area that is within the ambient range of 0F-212F. Sound engineering practices need to be applied, especially in low temperature applications with respect to condensation and ice buildup.

**Specifications**

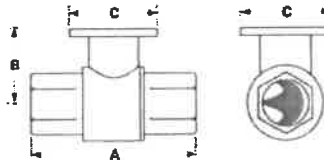
Service	chilled or hot water, 60% glycol
Flow characteristic	A port equal percentage B port modified linear for constant AB flow Not compatible with steam
Action	Max 95° rotation
Sizes	1/2" to 2"
Type of end fitting	female, NPT
Materials:	
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel (on B... versions) brass (on B...B versions)
Seats	fiberglass reinforced teflon® PTFE
Characterizing disc	TEFZEL®

Packing	2 EPDM O-rings, lubricated
Pressure rating	600 psi (1/2" to 1-1/4") 400 psi (1-1/2" to 2")
Ambient temp. range	-22°F to 122°F (-30°C to 50°C)
Media temp. range	0°F to 212°F [-18°C to 100°C]
Close off pressure	200 psi
Maximum differential	Characterized A port: modulating: 30 psi pressure (ΔP) for quiet service, 50 psi maximum
Leakage	A port: 0% B port: 0.5% - 2% of full rated CV  AB port: 0%
Cv rating	A port: see product chart for values B port: 70% of A port flow

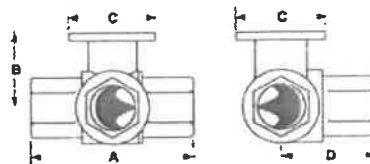
Tefzel® is a registered trademark of DuPont

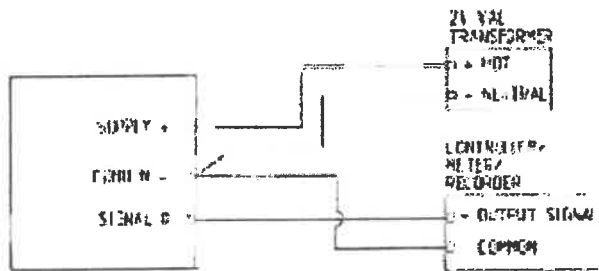
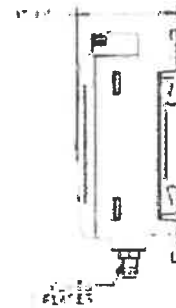
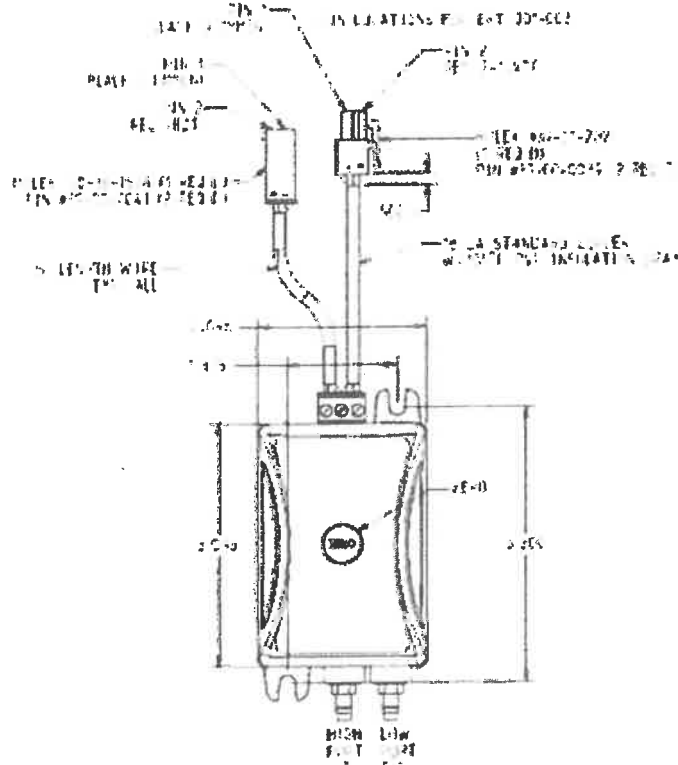
**Dimensions**

**2-way**



**3-way**





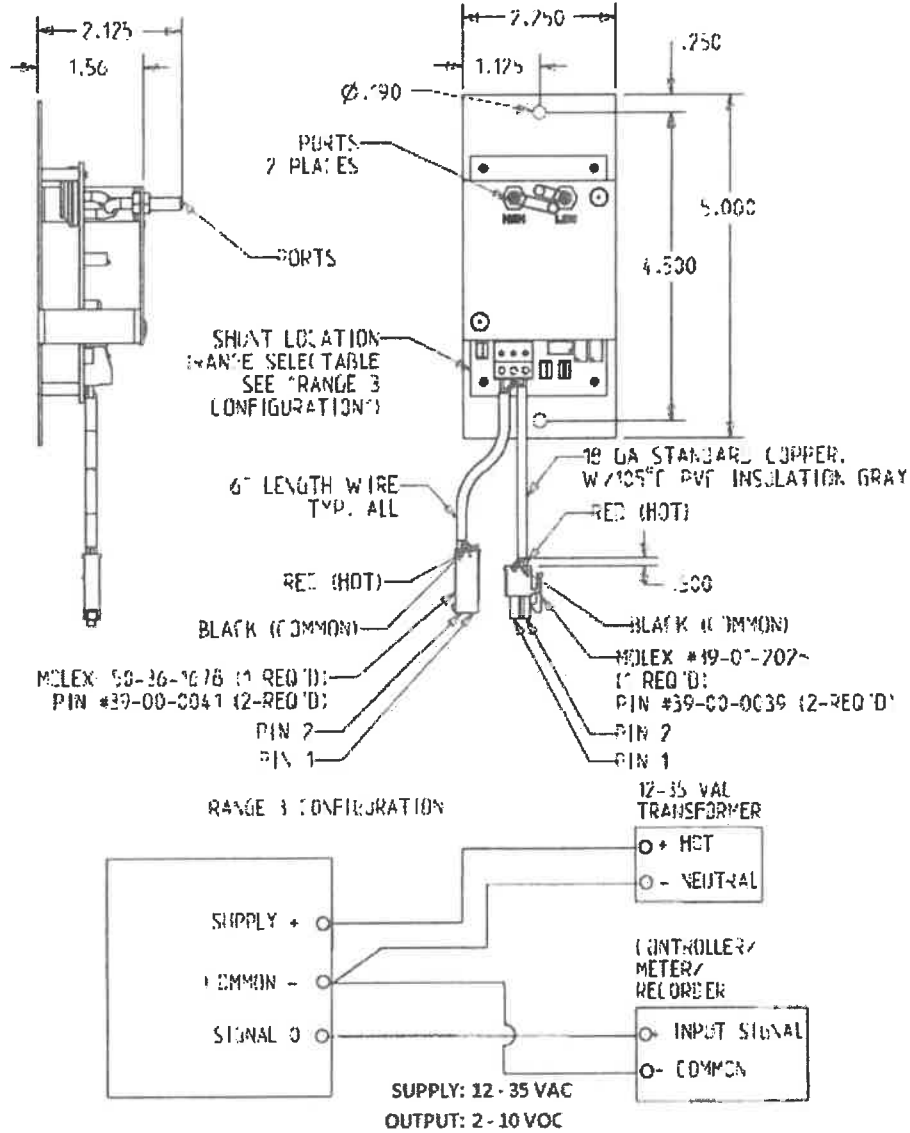
**NOTE:**

1. PRESSURE CONNECTIONS: 3/16" OD BARBED FITTING FOR 1/4" TUBING
2. OPERATING TEMPERATURE: 0 - 85 C
3. COMPENSATED TEMPERATURE: 0 - 50 C
4. LOAD IMPEDANCE: 500 OHMS
5. TERMINATION: SCREW TERMINAL BLOCK
6. ACCURACY: 0.25%
7. INPUT VOLTAGE: 24VAC (NOMINAL)





**Flow Meter**



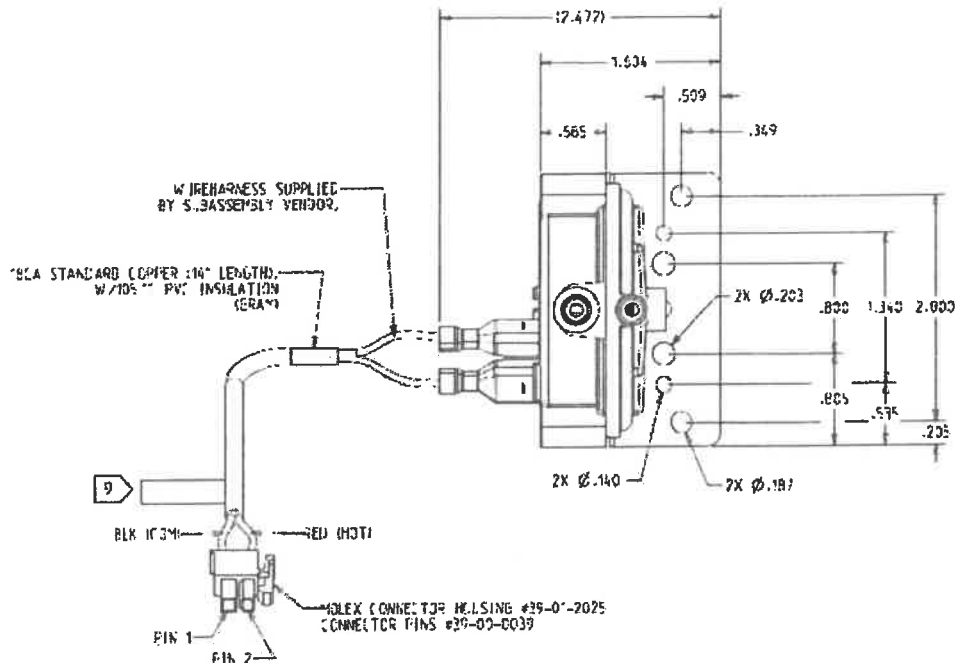
**NOTE:**

1. OVERPRESSURE: 10 PSID
2. PRESSURE CONNECTIONS 3/16 OD BARBED FITTING FOR 1/4 TUBING
3. OPERATING TEMP RANGE: 0 - 175 F
4. LOAD IMPEDANCE: 1 K OHMS MIN (VDC OUTPUT UNITS)
5. 3 WIRE OUTPUT
6. TERMINATION: UNPLUGGABLE SCREW TERMINAL BLOCK
7. PART TO BE LABELED WITH TRANE P/N
8. PART TO BE LABELED WITH 2D BARCODE PER ES.
9. COATING TO BE APPLIED TO CIRCUIT BOARD AS PER S65380048

## Airflow Switch

### SPECIFICATIONS:

1. BODY: GLASS-FILLER POLYESTER, GRADE SEO.
2. DIAPHRAGM: POST-CURED SILICON RUBBER.
3. TERMINALS: 0.032" X 0.250" COPPER ALLOY.
4. CONTACTS: SILVER ALLOY. BERYLLIUM COPPER.
5. ACTUATOR: STAINLESS STEEL.
6. SPRINGS: STAINLESS STEEL. PHOSPHOR BRONZE.
7. OPERATING TEMPERATURE: -40C TO 85 C (-40F TO 185F).
8. MOUNTING: MOUNT WITH THE DIAPHRAGM PERPENDICULAR TO LEVEL.





## GENERAL

Per ASHRAE 62.1 recommendation, indoor air handling units will be wrapped to protect unit from in-transit rain and debris.

Installing contractor is responsible for long term storage in accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07\*-EN).

Unit shall be UL and C-UL Listed.

Supply fans within the scope of AHRI Standard 430 are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at [www.ahrirectory.org](http://www.ahrirectory.org)".

Unit sound performance data shall be reported as sound power. Trane, in providing this program and data, does not certify or warrant NC levels. These levels are affected by factors specific to each application and/or installation and therefore unable to be predicted or certified by Trane. Refer to product data for specific fan footnote references.

Refer to product data for AHRI certification status. Propylene glycol and calcium chloride, or mixtures thereof, are outside the scope of AHRI Standard 410 and, therefore, do not require AHRI rating or certification. For coils within the scope of AHRI Standard 410 cooling coil performance is certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at [www.ahrirectory.org](http://www.ahrirectory.org). Heating performance for heat pump or condenser mode is not certified.

Manufacturer provided VFDs shall be certified to AHRI Standard 1210 "Performance Rating of Variable Frequency Drives" to ensure documented and reliable VFD efficiency.

### Unit Construction

All unit panels shall be 2" solid, double-wall construction to facilitate cleaning of unit interior. Unit panels shall be provided with a mid-span, no-through-metal, internal thermal break. Casing thermal performance shall be such that under 55°F supply air temperature and design conditions on the exterior of the unit of 81°F dry bulb and 73°F wet bulb, condensation shall not form on the casing exterior. Casing construction will comply with NFPA 90A.

All exterior and interior indoor AHU panels will be made of galvanized steel.

### Unit Paint

Unit to ship unpainted from factory. If required, unit to be painted by 3rd party finisher, or by painting contractor at job site.

### Casing Deflection

The casing shall not exceed 0.0042 inch deflection per inch of panel span at 1.00 times design static pressure. Maximum design static shall not exceed +8 inches w.g. in all positive pressure sections and -8 inches w.g. in all negative pressure sections.

### Floor Construction

The unit floor shall be of sufficient strength to support a 300.0 lb load during maintenance activities and shall deflect no more than 0.0042 inch per inch of panel span.

**Unit Base**

Manufacturer to provide a full perimeter integral base frame for either ceiling suspension of units or to support and raise all sections of the unit for proper trapping. Indoor unit base frame will either be bolted construction or welded construction. All outdoor unit base frames shall be welded construction. For indoor units, refer to schedule for base height and construction type. Contractor will be responsible for providing a housekeeping pad when unit base frame is not of sufficient height to properly trap unit. Unit base frames not constructed of galvanized steel shall be chemically cleaned and coated with both a rust-inhibiting primer and finished coat of rust-inhibiting enamel. Unit base height to be included in total height required for proper trap height.

**Insulation**

Panel insulation shall provide a minimum thermal resistance (R) value of 13 ft<sup>2</sup>-h-°F/Btu throughout the entire unit. Insulation shall completely fill the panel cavities in all directions so that no voids exist and settling of insulation is prevented.

**Drain Pan**

In sections provided with a drain pan, the drain pan shall be designed in accordance with ASHRAE 62.1. To address indoor air quality (IAQ) the drain pan shall be sloped in two planes promoting positive drainage to eliminate stagnant water conditions. Drain pan shall be insulated, and of double wall construction. The outlet shall be the lowest point on the pan, and shall be of sufficient diameter to preclude drain pan overflow under normally expected operating conditions. All drain pans connections shall have a threaded connection, extending a minimum of 2-1/2" beyond the unit base, and shall be made from the same material as the drain pan. Drain pan located under a cooling coil shall be of sufficient size to collect all condensate produced from the coil. Refer to Product Data for specific information on which sections are supplied with a drain pan, the drain pan material and connection location.

**Access Door Construction**

Access doors shall be 2" double wall construction. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels respectively. All doors shall be provided with a thermal break construction of door panel and door frame. Gasketing shall be provided around the full perimeter of the doors to prevent air leakage. Surface mounted handles shall be provided to allow quick access to the interior of the functional section and to prevent through cabinet penetrations that could likely weaken the casing leakage and thermal performance. Handle hardware shall be designed to prevent unintended closure. Outswing doors shall have easily removable hinges and handles that can be relocated to change the door swing if needed. Door hinges shall be made of galvanized steel.

All doors shall be a minimum of 60" high when sufficient height is available or the maximum height allowed by the unit height.

Door handles shall be provided for each latching point of the door necessary to maintain the specified air leakage integrity of the unit. An optional shatterproof window shall be provided in access doors where indicated on the plans. Window shall either be single pane, or thermal dual pane, as defined on schedule. Window shall be capable of withstanding unit operating pressures and shall be safe for viewing UV-C lamps.

*Refer to Product Data for specific information on which sections are supplied with an access door, the door location, a single handle and a window.*



### **Lifting Instructions**

The air handling units must be rigged, lifted, and installed in strict accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07G-EN). The units are also to be installed in strict accordance with the specifications. Units may be shipped fully assembled or disassembled to the minimum functional section size in accordance with shipping and job site requirements.

Indoor units shall be shipped on an integral base frame (variable from the standard 2.5" to 8" height) for the purpose of mounting units to a housekeeping pad and providing additional height to properly trap condensate from the unit. The integral base frame may be used for ceiling suspension, external isolation, or as a housekeeping pad. Indoor sizes 3 to 30 will also be shipped with a shipping skid designed for forklift transport. Refer to the unit As-Built or Product Data section of the submittal for the base frame height of each unit.

All units will be shipped with an integral base frame designed with the necessary number of lift points for safe installation. All lifting lugs are to be utilized during lift. The lift points will be designed to accept standard rigging devices and be removable after installation.

### **MIXING SECTION**

A mixing section shall be provided to support the damper assembly for outdoor, return, and/or exhaust air.

### **Dampers**

Dampers shall modulate the volume of outdoor, return, or exhaust air. The dampers shall be of double-skin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. The dampers shall be rated for a maximum leakage rate of 3 cfm/ft<sup>2</sup> at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D. Dampers may be arranged in a parallel or opposed-blade configuration.

### **Title 24**

The following specifications apply only to units with outside air and return air dampers, with actuators. The 5 year warranty applies only to these items.

This unit contains Economizer that meets or exceeds all mandatory requirements prescribed by Title 24, including but not limited to:

- 5 yr parts only warranty
- Successfully tested to 60,000 Actuations
- Less than 10 cfm/sq.ft. of damper leakage at 1" WG per AMCA 500L

### **Filters**

Mixing sections shall be provided with a filter rack as indicated in the Product Data and As-Built sections of the submittal.

2-inch pleated media filters made with 100% synthetic fibers that are continuously laminated to a supported steel-wire grid with water repellent adhesive shall be provided. Filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filters shall have a MERV 8 rating when tested in accordance with the ANSI/ASHRAE Standard 52.2.

### **Averaging Temperature Sensor**

An averaging temperature sensor shall be serpentine across the module. All capillaries bends shall be radiused and fastened with capillary clips to prevent crimping and minimize wear.

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

### **Mixing Section Damper Actuators**

Spring return actuators shall be mounted with the outside air damper normally closed and the return air damper normally open. Actuator feedback will be wired to the unit controls system.

### **Dirty Filter Switch**

A differential pressure switch piped to both sides of the filter shall indicate filter status.

**COIL SECTION WITH FACTORY INSTALLED COIL**

The coil section shall be provided complete with coil and coil holding frame. The coils shall be installed such that headers and return bends are enclosed by unit casings. If two or more cooling coils are stacked in the unit, an intermediate drain pan shall be installed between each coil and be of the same material as the primary drain pan. Like the primary drain pan, the intermediate drain pan shall be designed being of sufficient size to collect all condensation produced from the coil and sloped to promote positive drainage to eliminate stagnant water conditions. The intermediate pan shall begin at the leading face of the water-producing device and be of sufficient length extending downstream to prevent condensate from passing through the air stream of the lower coil. Intermediate drain pan shall include downspouts to direct condensate to the primary drain pan. The outlet shall be located at the lowest point of the pan and shall be sufficient diameter to preclude drain pan overflow under any normally expected operating condition.

**Coil with Inspection**

The coil section complete with a double-wall, shall include a removable door downstream of the coil for inspection, cleaning, and maintenance. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels, respectively. All doors shall be provided with a thermal break construction of door panel and door frame.

Casing penetrations supplied for hydronic drain and vents. Piping contractor shall provide extended piping.

**Water Coils (UP, WP, UW, UU, UA, 3W, 3U, W, 5W, 5A, WD, 5D, D1, D2, P, or TT)**

The coils shall have aluminum fins and seamless copper tubes. Copper fins may be applied to coils with 5/8-inch tubes. Fins shall have collars drawn, belled, and firmly bonded to tubes by mechanical expansion of the tubes. The coil casing may be galvanized or stainless steel. Refer to the Product Data section of the submittal for the coil casing material.

The coils shall be proof-tested to 300 psig and leak-tested under water to 200 psig. Refer to the Product Data section of the submittals for AHRI certification status.

Coil connections are constructed of cast iron with female connections, steel block with female connections or steel pipe with male connections. Type P or TT coil connections do not extend out of unit casing. All other water coil types have connections that extend out beyond unit casing. Headers on downstream coil bank of staggered coil sections do not extend beyond the unit casing and must be completed by the on-site piping contractor.

Tubes are 1/2" [13 mm] OD 0.016" [0.406 mm] thick copper.

**Control Valve**

Control valves shall be provided by the air-handling unit (AHU) manufacturer and field-piped by the piping contractor. Power and signal wiring shall be extended to a factory-installed external junction box to facilitate wiring and to maintain air leakage integrity of the casing. Weatherproof housings are available for these valves. They are not included and must be field-purchased. These valves are not for combustible gas applications as leaks and explosions could result. Sound engineering practices need to be applied, especially in low temperature applications with respect to condensation and ice buildup. Ensure that actuators are installed in a weather-protected area that is within the ambient range of -22F to 122F. *Refer to the Control Valve Schedule in the Accessory section of the submittal.*

**Averaging Temperature Sensor**

An averaging temperature sensor shall be serpentine across the module. All capillaries bends shall be radiused and fastened with capillary clips to prevent crimping and minimize wear.

**Electric Heat:**

A UL-recognized electric heater shall be factory-installed in the air handler. The electric heat is an open-wire resistance heater and installed in the supply fan duct position with option to add unit casing around heater. Safeties shall include three-pole, disconnecting-type contactors, automatic-reset functional limits, automatic-reset high-temperature limits, and manual-reset high-temperature limits. The contactors for energizing the electric heater shall be magnetic contactors. Electric heaters above 48 amps shall be fused into circuits not to exceed 48 amps as required by UL and NEC.

**SSR-Full Modulating Control (0-10 VDC)**



The electric heater shall be factory-wired to accommodate SSR-Full Modulating control if the Heater is 96 amps or lower. The SSR control can receive a 0-10 VDC signal from a standalone thermostat or building automation system providing full modulating control of the heater.

If the Heater is above 96 amps, then SSR-Vernier control is used. The SSR control can receive a 0-10 VDC signal from a standalone thermostat or building automation system providing full modulating control of the first increment of heat. The staged increments are turned on and off by a step controller. As each stage is required to fulfill the demand for heat, the SSR increment is used as fully modulating between stages.

#### **Electric Heat Accessories**

The electric heater will come with factory installed airflow switch, line fusing, and disconnect switch (when heater is below 100 amps and no unit casing).

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

#### **DIRECT-DRIVE PLENUM FAN SECTION**

The fan type shall be provided as required for stable operation and optimum energy efficiency. The fan shall be a single-width, single-inlet, multiblade-type direct-drive plenum fan. Motor bearing life of the direct-drive plenum fan shall be not less than L-10 250,000 hrs. *Refer to the Product Data section for fan quantity and number of blades selected within each unit.* Central Station Air Handling Unit Supply Fans are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at [www.ahridirectory.org](http://www.ahridirectory.org)" Central Station Air Handling Unit Supply Fans shall be tested and rated in-accordance with AHRI Standard 260 for sound performance.

Fans that are selected with inverter balancing shall first be dynamically balanced at design RPM. The fans then will be checked in the factory from 25% to 100% of design RPM to insure they are operating within vibration tolerance specifications, and that there are no resonant frequency issues throughout this operating range. Inverter balancing that requires lockout frequencies inputted into a variable frequency drive to in order to bypass resonant frequencies shall not be acceptable. If supplied in this manner by the unit manufacturer, the contractor will be responsible for rebalancing in the field after unit installation. Fans selected with inverter balancing shall have a maintenance free grounding assembly installed on the fan motor to discharge both static and induced shaft currents to ground.

On units supplied with plenum or motorized impeller fans, door guard(s) shall be supplied on the access door(s) to the fan and those downstream access door(s) where unintended access to the plenum or motorized impeller fan could occur. Door guard is intended to deter unauthorized entry and incidental contact with rotating components. *Refer to the Product Data section for fans with access door guard(s).*

#### **Motor Frame**

The motor shall be mounted integral to the isolated fan assembly and furnished by the unit manufacturer. The motor is mounted inside the unit casing on an adjustable base to permit adjustment of drive belt tension (not applicable for direct drive plenum fans). The motor shall meet or exceed all NEMA Standards Publication MG 1 requirements and comply with NEMA Premium efficiency levels when applicable except for fractional horsepower motors which are not covered by the NEMA classification. The motor shall be T-frame, squirrel cage with size, type, and electrical characteristics as shown on the equipment schedule. *Refer to the Product Data section for selected fan motors within each unit.*

#### **Two-Inch Spring Isolators**

Direct-drive fan and motor assemblies shall be internally isolated from the unit casing with 2-inch (50.8 mm) deflection spring isolators. The isolation system shall be designed to resist loads produced by external forces, such as earthquakes, and conform to the current IBC seismic requirements.



### **Fan Discharge Temperature Sensor**

A button or probe temperature sensor shall be mounted in the fan discharge.

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

VFD shall be mounted externally in a NEMA Type 1 enclosure on the supply fan section. An external disconnect shall be mounted through-the-door to the VFD to disconnect full power from VFD.

### **Airflow Switch**

A differential pressure switch piped to the discharge and suction sides of the fan shall indicate fan status.

### **Single Transmitter**

The fan shall have an airflow measurement system to measure fan airflow directly or to measure differential pressure that can be used to calculate fan airflow. The system shall predict airflow within +/-5 percent total accuracy (device & transmitter) when operating within the stable operating region of the fan curve. On units supplied with multiple direct drive fans, one fan is tubed and one transmitter is supplied for the total array. The submitted fan airflow performance and noise levels shall not be affected by the installation of the device. Any device that provides an obstruction to the fan inlet will not be accepted. Refer to the Product Data section for fans with flow meters.

### **Combination VFD / Disconnect**

A combination Variable Frequency Drive (VFD) / disconnect shall be provided when variable air volume control is required for fan operation. Whether for single fan, dual fan, or fan array applications, a single VFD shall be provide to ensure proper operation and to optimize operating life. Each VFD / disconnect shall be properly sized, factory mounted in a full metal enclosure, wired to the fan motor(s), and commissioned to facilitate temporary heating, cooling, ventilation, and/or timely completion of the project. VFD / disconnects shall include a circuit breaker disconnect with a through-the-door interlocking handle and shall be lockable. The VFD package shall also include:

- a) Electronic manual speed control
- b) Hand-Off-Auto (H-O-A) selector switch
- c) Inlet fuses to provide maximum protection against inlet short circuit
- d) Current limited stall prevention
- e) Auto restart after momentary power loss
- f) Speed search for starting into rotating motor
- g) Anti-windmill w/DC injection before start
- h) Phase-to-phase short circuit protection
- i) Ground fault protection
- j) Manual motor protection MMP

Units with factory-mounted controls shall include power wiring from the VFD panel to the control system transformers, binary output on/off wiring, analog output-speed-signal wiring, and all interfacing wiring between the VFD and the direct digital controller.

The VFD shall be UL508C listed and CSA certified and conform to applicable NEMA, ICS, NFPA, & IEC standards.

### **Variable Volume Control System**

Factory-mounted direct-digital control (DDC) systems shall be engineered, mounted, wired, and tested by the air handler manufacturer to reduce installed costs, improve reliability, and save time at unit startup. Each control system shall be fully functional in a stand-alone mode or may be tied to a building automation system with a single pair of twisted wires. All factory-mounted controls shall be covered by the air handler manufacturer's standard warranty.





### **Field Programmable Symbio**

A dedicated programmable Symbio Controller with the appropriate point capabilities shall be unit mounted on the air handling unit. Point expansion is accomplished using expansion modules with the capacity to add points in 4 to 18 point increments. The controller will utilize the latest graphical programming methods that are easy to learn, powerful, self-documenting. Graphical programming will help minimize programming costs, aid in program troubleshooting, and save time at unit startup. Programmable controllers optimize unit control flexibility. 120V power wiring to the control system transformer, which provides 24VDC to the Symbio controller and 24VAC to the end devices, shall be customer supplied. The Symbio controller communicates using the BACnet protocol. The Symbio controller has USB Host Port, USB Service Tool Port, two 100M Ethernet Ports, and uSD Card Socket for expandable flash memory. Other advanced features include automated controller back-up, and optional features such as secure remote connectivity, wireless building communications, mobile device connectivity, and custom programming with expandable I/O.

### **Unit Mounted Control System**

All factory installed end devices shall be wired and terminated to expansion modules throughout the unit. The expansion modules will communicate to the DDC controller with a communication bus.

### **Standard Factory Programming**

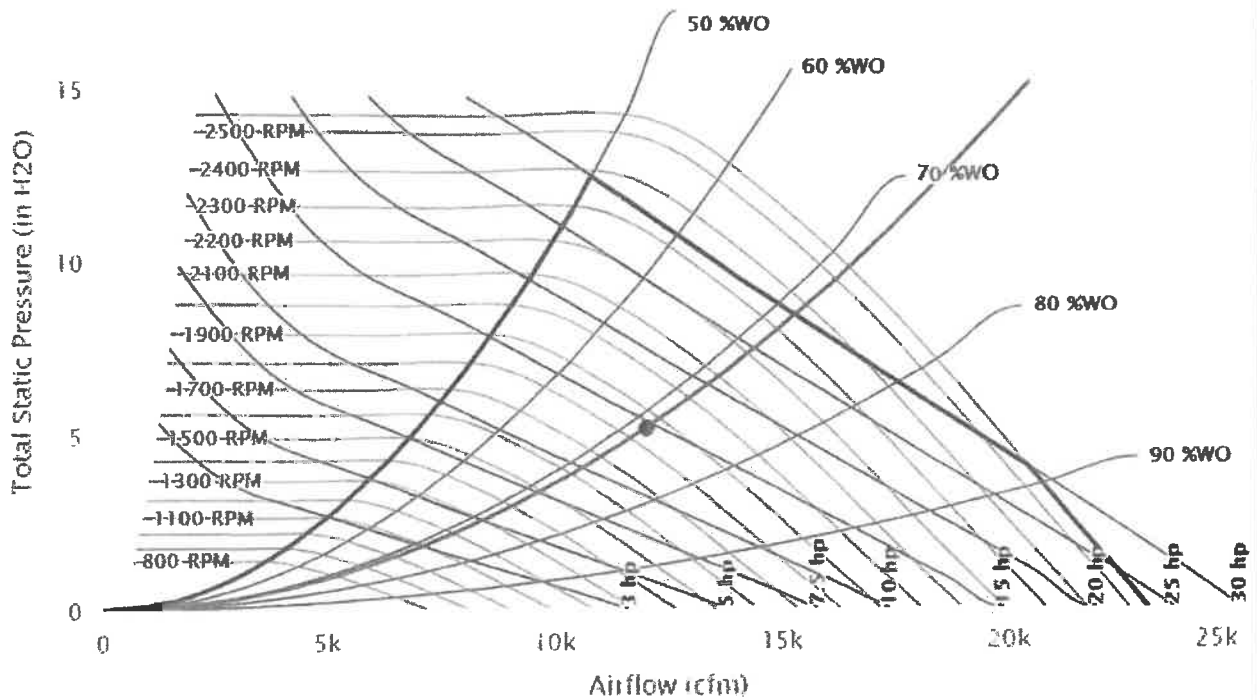
Standard Factory Programming installed to unit per specific unit selections.

### Fan Details

<b>Unit Size</b>	27UR	<b>Operating Brake Power</b>	14.582 hp
<b>Motor Frequency</b>	63.00 Hz	<b>Altitude</b>	0.00 ft
<b>Operating Airflow</b>	12,000 cfm	<b>Design Temp.</b>	70.00 F
<b>Operating Static Pressure</b>	5.232 in H2O	<b>Efficiency</b>	67.87 %
<b>Operating RPM</b>	1,855 rpm		

### AHU-WB-1 - Supply - Single Fan

Size 25 DDP 27 inch AF H Press 80% Width 12 blades



# WIRING DETAIL 1

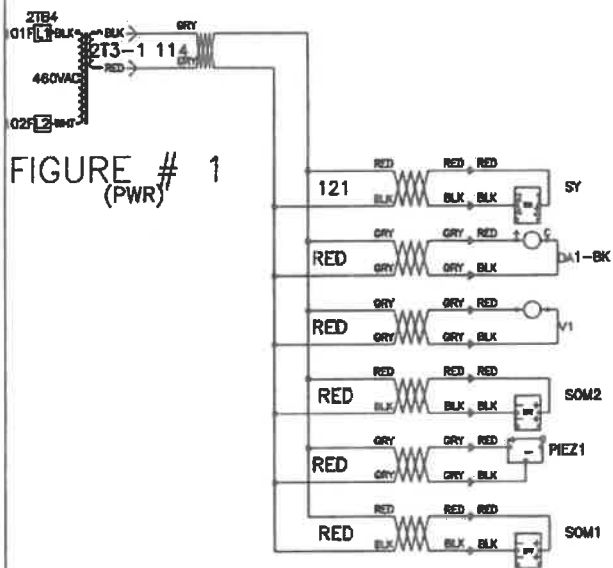
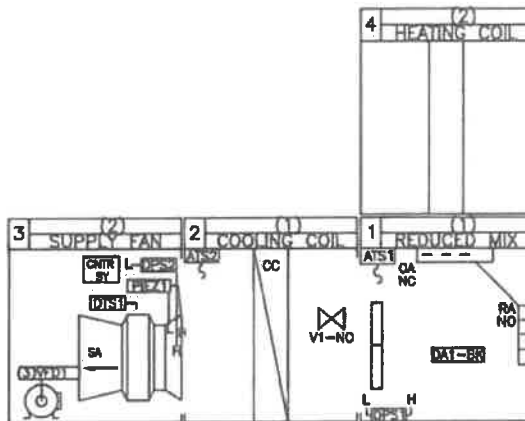


FIGURE # 1  
(PWR)

OWNER: SERVICE ACCOUNT	Trane	CSIA-SCHMATIC UNIT SIZE: 25 UNIT TAG: AHU-WB-1
DATE: 10/27/2023		
SOFTWARE VERSION: 1.0.0		
DESIGNED BY: [blank]		

# LEGEND DETAIL 1

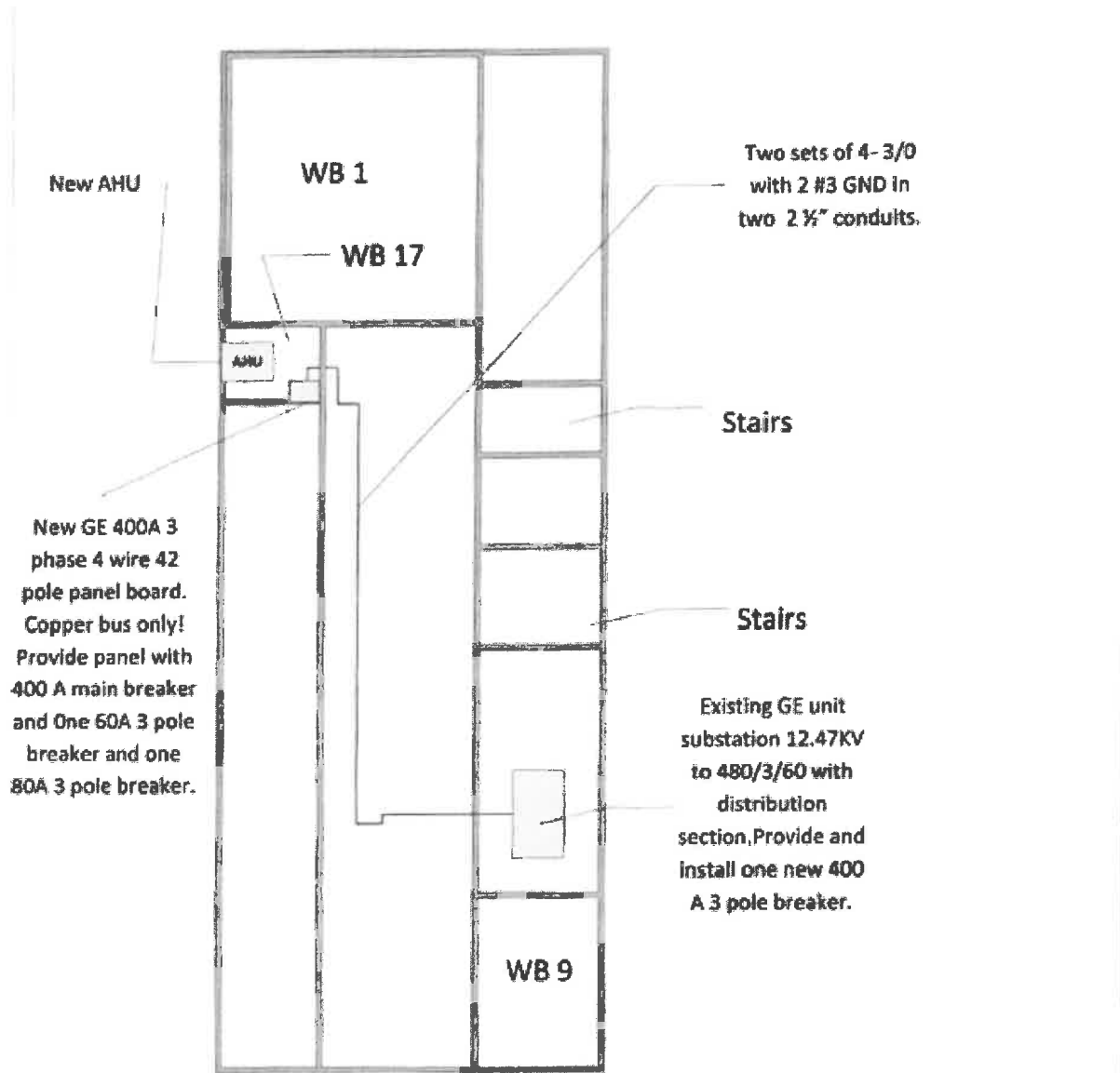
POS#	BUILD GROUP	DESCRIPTION	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
0		150VA TRANSFORMER	2T3				
0		Duct Static Pressure Local	2U3				
0		Symbio500 Controller	SY	121		2T3-126	
	1	Option Module #1 [Address 7,5]	SOM1	RED		2T3-113	
1		Averaging Temperature Sensor (10K Type 2)	ATS1		UI1		
1		Dirty Filter Switch	DPS1		BI1		
1		Back Damper Actuator	DA1-BK	RED	AO1	2T3-110	
1		Feedback Damper Actuator	DA1-BK		UI2		
2		VLV 2 NPT 46cv 2W wtr NO (S/D)	V1	RED	AO3	2T3-110	
2		Averaging Temperature Sensor (10K Type 2)	ATS2		UI3		
	2	Option Module #2 [Address 7,6]	SOM2	RED		2T3-113	
3		Supply Fan S/S	1K3		BO1		
3		Supply Fan Speed	VFD1		AO1		
3		Flow meter	PIEZ1	RED	UI1	2T3-12	
3		Discharge Air Sensor (10K Type 2)	DTS1		UI2		
3		Supply Fan Air Flow Switch	DPS2		BI1		
4		Heating Output	EH1		AO3		

SERVICE ACCOUNT	Trans	CSIA-SCHEMATIC UNIT SIZE: 25 UNIT TAG: AHU-WB-1
DATE 10/27/2023		
ISSUE NO 1,000		
ISSUE NO		

**Exhibit D**

TYPICAL VERTICAL FAN COIL UNIT	POINT TYPE								
	SYSTEM POINT DESCRIPTION	GRAPHIC	HARDWARE INPUT	HARDWARE OUTPUT	SOFTWARE POINT	HARDWIRE INTERLOCK	WIRELESS	NETWORK	DEFAULT VALUE
<b>VERTICAL FAN COIL UNIT - SYSTEM POINTS LIST</b>									
DISCHARGE AIR TEMPERATURE LOCAL	X	AI							
SPACE HUMIDITY	X	AI					X		
SPACE TEMPERATURE LOCAL TEMPERATURE	X	AI					X		
CONDENSATE OVERFLOW DETECTION LOCAL	X	BI							
REHEAT OUTPUT 1	X		BO						
SUPPLY FAN OUTPUT 1	X		BO						
SUPPLY FAN OUTPUT 2	X		BO						
SUPPLY FAN OUTPUT 3	X		BO						
COOLING VALVE	X		FLTG						
<b>GENERAL NOTES</b>									

## Exhibit E



New AHU

New GE 400A 3 phase 4 wire 42 pole panel board. Copper bus only! Provide panel with 400 A main breaker and One 60A 3 pole breaker and one 80A 3 pole breaker.

Two sets of 4- 3/0 with 2 #3 GND in two 2 1/2" conduits.

Stairs

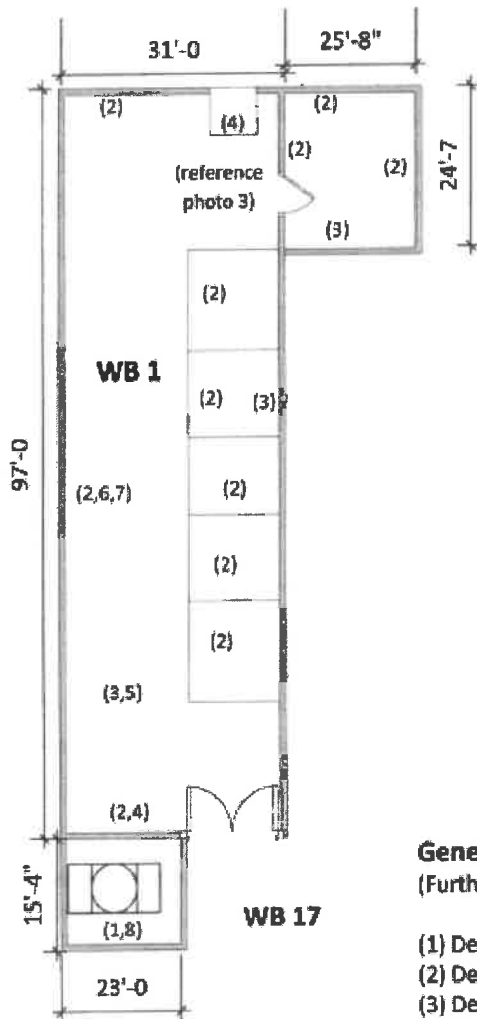
Stairs

Existing GE unit substation 12.47KV to 480/3/60 with distribution section, Provide and install one new 400 A 3 pole breaker.

**General Notes Electrical:**

1. Disconnect existing electrical feeders from unit to be demolished. Remove feeders and conduits to existing distribution panel. Remove existing control wiring
2. Provide one 60A feeder for new AH unit as follows: 4-#6 with one #10 GDN in a 1" conduit.
3. Provide one \*80A feeder for new AH unit's heater as follows: 4-#4 with one #8 GND in one 1 1/2" conduit.

<b>GSD Energy Department</b>	Building 1 West Wing W500			
	WB-1 Power Plan			
DATE	TSCM NO.	DWG NO.	REV.	
SCALE	NTS	3	SHEET	6 OF 6

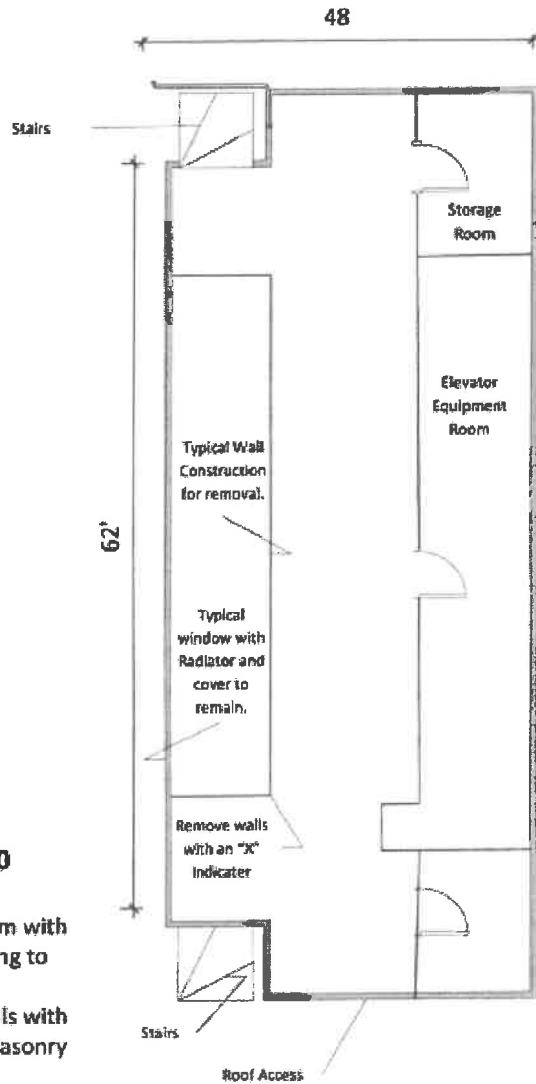


**General Notes:**

(Further Details attachment 1)

- (1) Demo air handler and various connections.
- (2) Demo existing walls.
- (3) Demo this side of wall cut suspended ceiling bars to rest on wall to support adjacent room ceiling.
- (4) Demo obsolete panels demo wiring and conduit to point of service panel. Demo wall outlets and blank off.
- (5) Salvage light fixtures.
- (6) Demo door and obsolete panels. Remove existing wiring.
- (7) Provide covers and remove unused wiring circuits.
- (8) Demo existing equipment pad.

GSD Energy Department	West wing WB-1 – Floor Plan			
	Demo and AH Replacement Phase 6			
	SHEET	FISCAL NO	DWC NO	REV
	SCALE	1 : 1	3	SHEET 2 OF 2



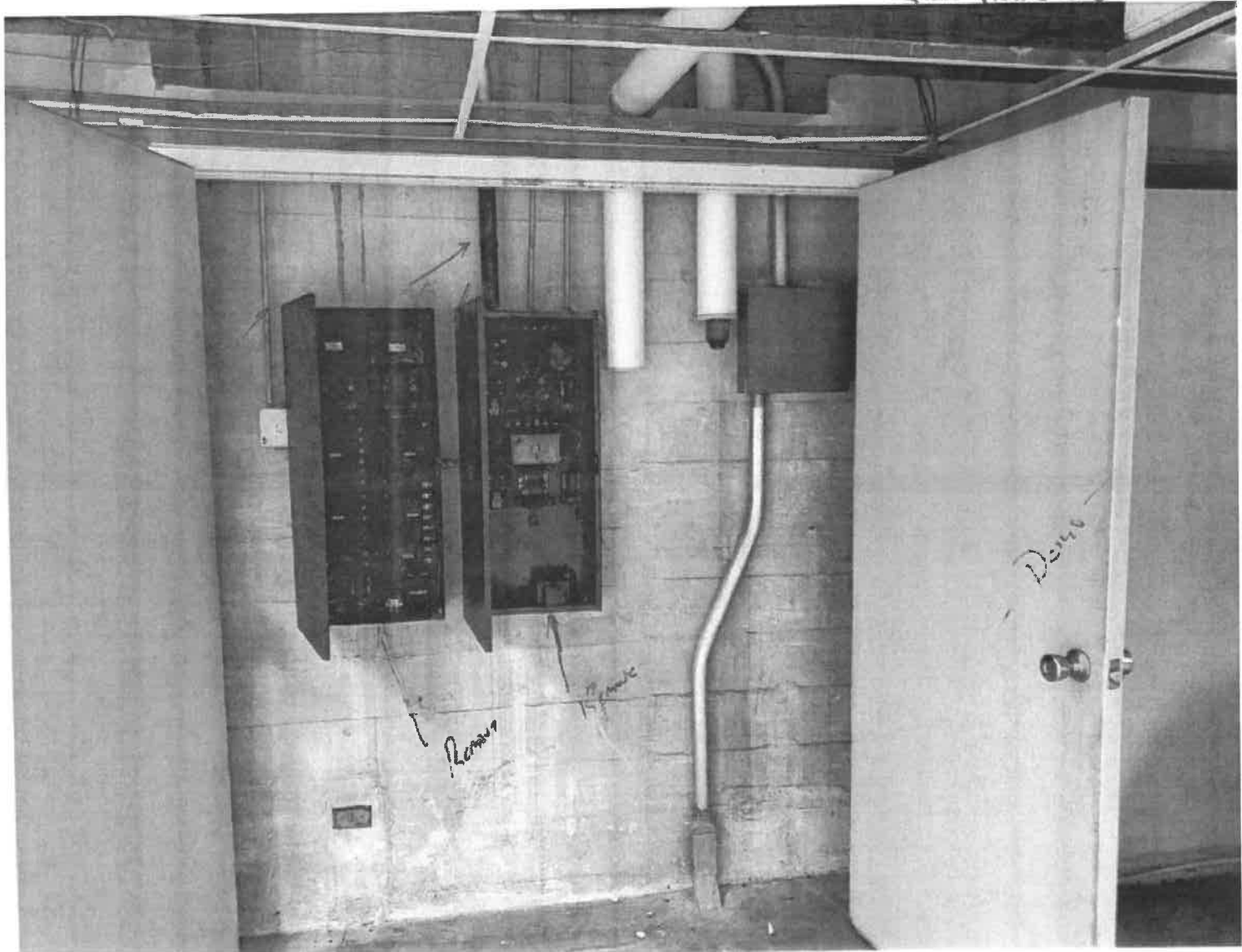
**Building 1 West Wing, W500**

- (1) Remove 2x2 ceiling grid system with lighting. Remove fixture and wiring to service panel.
- (2) Remove drywall, built out walls with wood or steel studs to original masonry construction.
- (3) Remove and dispose of any remaining furnishings, furniture or debris unless otherwise instructed.
- (4) Retain wood casement doors and trim for the owner as indicated on demolition drawing.
- (5) Walls to be removed are marked by a red colored "X".
- (6) Remove floor covering and tile to concrete surface, smooth and clean.

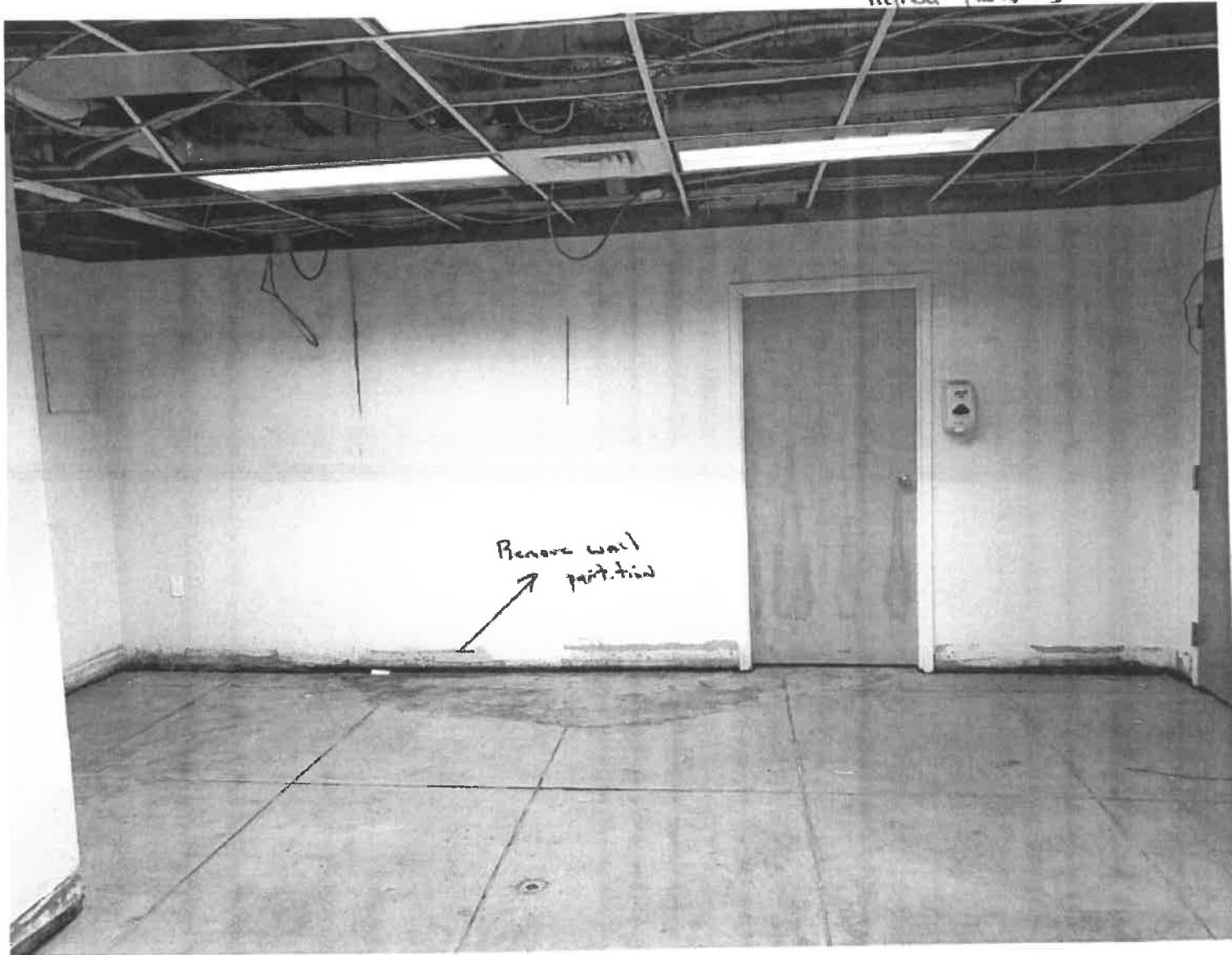
GSD Energy Department	Building 1 West Wing W500			
	West Wing W500 Demolition Plan			
REV	P/CM NO	DWG NO		
SCALE	NTS	3	SHEET	5 OF 5



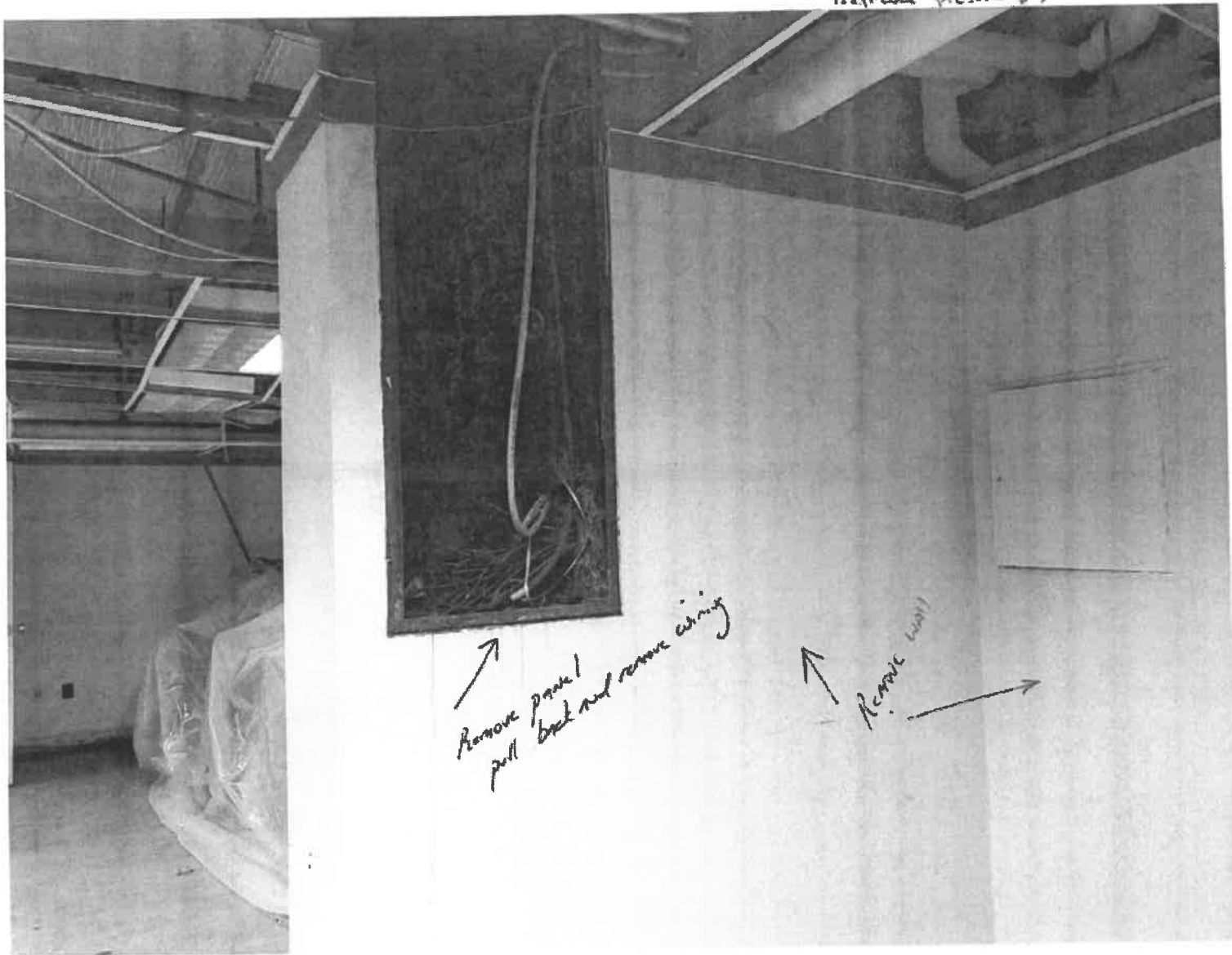
Reference picture # 6



Remove photo #3



Reference picture # 5



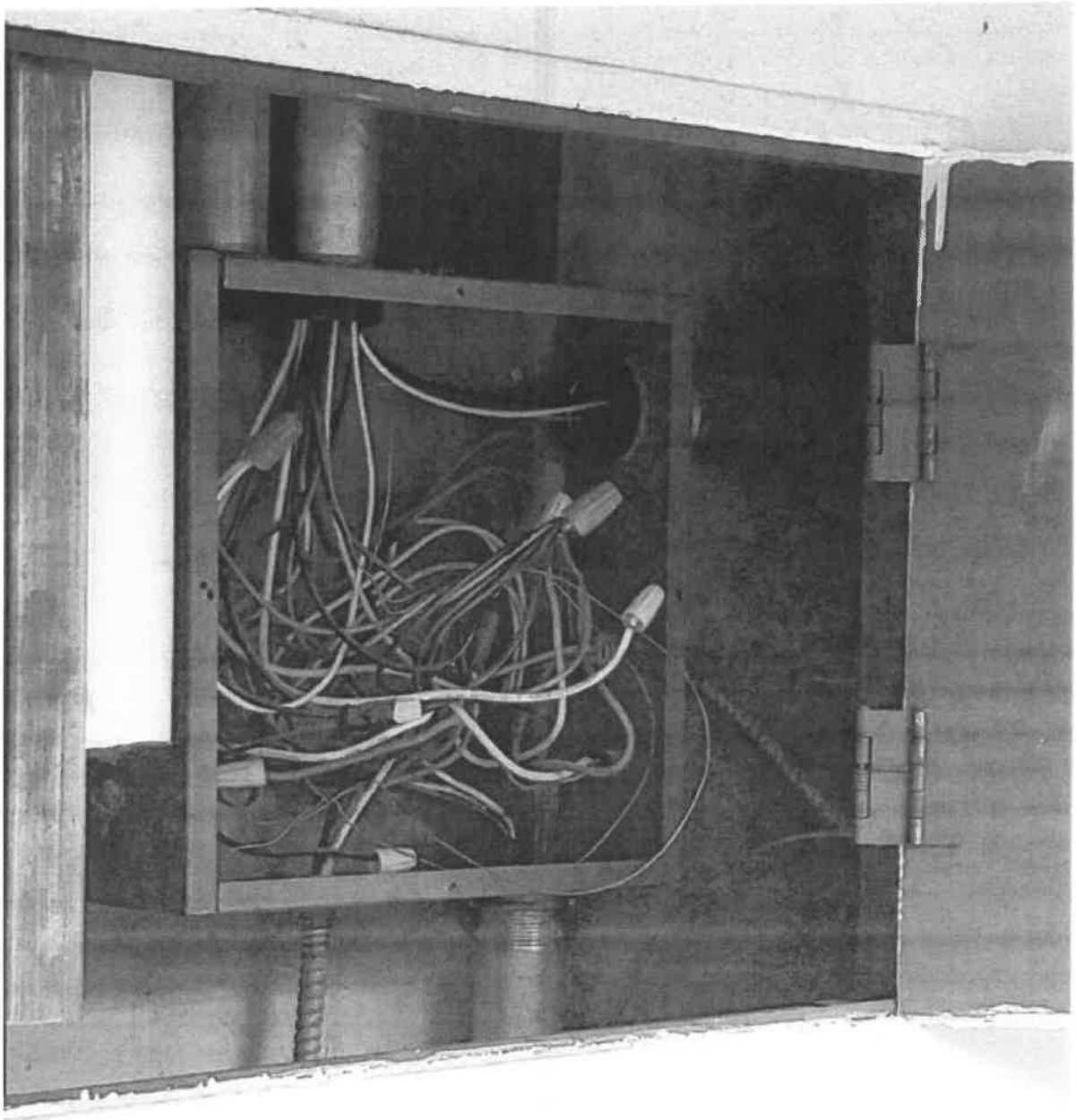
Remove panel  
pull back and remove wiring

Remove (wall)



Reference photo #2





Reference picture #7



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

**State of West Virginia  
 Centralized Request for Quote  
 Construction**

<b>Proc Folder:</b> 1385978			<b>Reason for Modification:</b> Addendum No. 1
<b>Doc Description:</b> Building 1, West Wing HVAC and Demolition (Phase 6)			
<b>Proc Type:</b> Central Purchase Order			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2024-03-27	2024-04-02 13:30	CRFQ 0211 GSD2400000018	2

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:**

**Vendor Name :**

**Address :**

**Street :**

**City :**

**State :** **Country :** **Zip :**

**Principal Contact :**

**Vendor Contact Phone:** **Extension:**

**FOR INFORMATION CONTACT THE BUYER**

Melissa Pettrey  
 (304) 558-0094  
 melissa.k.pettrey@wv.gov

<b>Vendor Signature X</b>	<b>FEIN#</b>	<b>DATE</b>
---------------------------	--------------	-------------

All offers subject to all terms and conditions contained in this solicitation

## SOLICITATION NUMBER: CRFQ GSD2400000018

### Addendum Number: 1

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The purpose of this addendum is to modify the solicitation identified as (“Solicitation”) to reflect the change(s) identified and described below.

#### Applicable Addendum Category:

- Modify bid opening date and time
- Modify specifications of product or service being sought
- Attachment of vendor questions and responses
- Attachment of pre-bid sign-in sheet
- Correction of error
- Other

#### Description of Modification to Solicitation:

Addendum is issued to publish and distribute the following information to the Vendor community.

1. To publish responses to Vendor Technical Questions, per Attachment A. This includes extended the fixed period from 180 days to 270 days.
2. To publish the pre-bid sign-in sheet, per Attachment A.

No other changes.

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

#### Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.



# ATTACHMENT A

**Building 1 West Wing HVAC and Demolition (Phase 6)**  
**Technical Questions and Responses**

**Q 1.** The bid documents indicate a 180 day construction period from notice to proceed. This project has HVAC Equipment with a long lead time for delivery. Will the notice to proceed be issued after the delivery of equipment? Or at the time of project award? Please advise.

**A 1.** During the pre-construction meeting, discussion will be held on the estimated delivery time frame of equipment for this project. Construction period will be extended to 270 days.

# Pre-Bid Sign-In Sheet

Solicitation Number: CRFQ GSD2400000018

Date of Pre-Bid Meeting: March 19, 2024 @ 10AM

Location of Prebid Meeting: Building 1 (Capitol) Basement (Cafeteria)

**Please Note:**

Vendors must sign-in on this sheet to verify attendance at the Pre-Bid meeting.  
 Failure to legibly sign in may be grounds for declaring a vendor ineligible to bid.  
 For further verification, please also provide a business card if possible.

Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	Fax #:	Email:
D50 Mechanical	Mike Longhin	515 Third Ave So. Charleston WV 25303	304-744-8479	304-744-8491	m1aughlin@dsomech.com
DIXON Electrical	Kevin Foore	Norwood Rd Huntington, WV 25705	304-593-2875	304-523-2713	kevinfoore@dixonelectrical.com
TRI-STATE RFG/SYSTEMS	BLANDIN MULLINAW	P.O. 1231 CHAS, WV 25324	304-755-8135	304-755-5275	bmeccr.maw@tri-stateservice-wv
Casto Tech	Nate Lancaster	540 Leon Sullivan Way Charleston, WV 25301	304-610-9502	—	NLancaster@Castotech.com
CASTO TECH	BEN LANCASTER	540 Leon Sullivan Way Charleston WV 25301	304-801-0321	—	Blancaster@Castotech.com
Trane Technologies	Billy Mullins	515 C Street S. Charleston 25309	304-859-2125	—	billy.mullins@trane.com

**\*One Vendor Per Representative** - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

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 For further verification, please also provide a business card if possible.

Firm Represented:*	Rep Name (Printed):	Firm Address:	Telephone #:	Fax #:	Email:
Rougherty	Eric Smith	600 50th St Charleston WV 25704	304-925- 6664	304-925- 4280	eric.smith@dougherty co.com EM

**\*One Vendor Per Representative** - No one individual is permitted to represent more than one vendor at the pre-bid meeting. Any individual that does attempt to represent two or more vendors will be required to select one vendor to which the individual's attendance will be attributed. The vendors not selected will be deemed to have not attended the pre-bid meeting unless another individual attended on their behalf.

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ GSD240000018**

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 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 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.

Dougherty Company, Inc.

Company

  
Authorized Signature

4/02/2024

Date

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