TOWN OF YORKTOWN

BID AND SPECIFICATIONS

FOR THE

JUSTICE COURT HVAC INSTALATION

BID#26-3

Ed Lachterman
Town Supervisor

Daniel A. Ciarcia
Town Engineer

Dated: June 2026

TOWN OF YORKTOWN
SERVICES AND PUBLIC WORKS CONTRACTS BID

JUSTICE COURT HVAC INSTALLATION

INSTRUCTIONS TO BIDDERS

NOTICE IS HERE GIVEN that sealed bids will be received by the Town Clerk, Town of Yorktown, Yorktown, NY until **10:00 A.M. on Thursday, July 6, 2026** at Town Hall, 363 Underhill Avenue, Yorktown Heights, N.Y. 10598 for the **Justice Court HVAC Installation, Bid #26-3** Copies of the Bid Documents will be available in the office of the Town of Yorktown Town Clerk located at 363 Underhill Avenue, Yorktown Heights, NY 10598. A completed Bid Proposal Form must be returned to the Town Clerk, 363 Underhill Avenue, Yorktown Heights, NY 10598, marked: **"Bid: Justice Court HVAC Installation."**

The Bid Documents consists of the following documents:

1. **Instructions to Bidders**
2. **Part One** Bid Proposal Form
3. **Part Two** General Terms and Conditions of Bid
4. **Part Three** Specifications
5. **Part Four** Addenda, if any
6. **Non-Collusive Bidding Certificate**

Wherever in the Bid Documents any section or paragraph is stamped "VOID", only the section(s) or paragraph(s) so stamped are void. All other sections(s) and paragraph(s) remain in full force and effect.

A submitted bid will consist of

1. one original completed **Bid Proposal Form**, signed on behalf of Bidder with information for all blanks supplied, and a detailed listing of any exceptions taken by Bidder; and

2. a signed and notarized Non-Collusive Bidding Certificate.

Diana L. Quast
Master Municipal Clerk
Town of Yorktown

TOWN OF YORKTOWN
SERVICES AND PUBLIC WORKS CONTRACTS BID

PART ONE

BID PROPOSAL FORM

The Town of Yorktown seeks bids from qualified parties:

JUSTICE COURT HVAC INSTALLATION, BID #26-3

BIDDER'S OFFICIAL CORPORATE NAME (required, if bidder is a corporation):

_____

BIDDER'S D/B/A NAME (if any) _____

Specifics of Bid Proposal Form are to be
customized to Bid Specifications
by Department Head
preparing the bid

Dollar Amount: $ _____

Amount in words: _____

The price(s) set forth above shall remain valid for one (1) year from the date of bid award.

Prices in the bid must cover all of bidder's costs. There shall be no additional charges to the Town for delivery, training, set-up, etc.

Name of person authorized to submit bid for bidder:

_____

Signed: _____

[Signature of authorized person, if not a corporate officer attach corporate resolution authorizing submission of bid.]

TITLE of authorized person: _____

BIDDER'S CORPORATE NAME:

_____

BIDDER CONTACT INFORMATION:

PRINT NAME: _____

TITLE: _____

Address: _____State: _____ Zip: _____

Phone: _____

Fax: _____

Email: _____@_____

- END OF BID PROPOSAL FORM –

TOWN OF YORKTOWN
SERVICES AND PUBLIC WORKS CONTRACTS BID

PART TWO

General Terms and Conditions of Bid

Section 1. Bid Proposal Form

1.1 The bidder shall complete the Bid Proposal Form by filling in the unit price and the total price in the appropriate designated spaces. Unit price and total price of each item bid shall be written legibly in ink, or typed. All bids shall be signed in ink. Any erasures or alterations shall be initialed in ink by the signer. The completed Bid Proposal Form shall be submitted, along with any documentation in support of the bid proposal if required by the Bid Documents, in a sealed envelope addressed as required in the Invitation to Bidders on or before the time and at the place so designated. Any Bid Proposal Form which has been materially altered in any way may render the bid nonresponsive and the bid rejected.

1.2 In the event of a discrepancy between the unit price and the total price of the Bid Proposal Form, the unit price will prevail. In the event of a discrepancy between the written bid amount and the numerical bid amount, the written amount will take precedence and be controlling as to the amount of the Bid. All items not bid shall be indicated as "not bid" in the total price space. When bids are requested on a lump sum basis, bidder must bid on each item in the lump sum group. Any bidder desiring to bid "no charge" on an item in a group must so indicate.

1.3 Failure to comply with the provisions of this section may be grounds for rejection of the bid proposal.

1.4 Correction or withdrawal of a bid because of an inadvertent, non-judgmental mistake in the Bid Proposal Form requires careful consideration to protect the integrity of the competitive bidding process, and to ensure fairness. If the mistake is attributable to an error in judgment, the Bid Proposal Form may not be corrected. Bid correction or withdrawal by reason of the non-judgmental mistake is permissible at the sole discretion of the Town Clerk, but only to the extent that it is not contrary to the interests of the Town or the fair treatment of other bidders.

1.5 By signing the Bid Proposal Form, the bidder certifies that:

i. the person whose signature appears below is legally empowered to bind the bidder;

ii. the bidder has read the complete Bid Documents and understands and agrees to all terms and conditions set forth in the Bid Documents;

iii. if accepted by the Town, the bid is guaranteed as written and will be implemented as stated;

iv. By submission of the bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of

subdivision 3 of section 165-a of the New York State Finance Law.[1]

1.6 The bidder understands and agrees that quantities shown on the Bid Proposal Form opposite items of the work for which unit prices have been requested are approximate estimated quantities, and that during the progress of the work the Town may find it advisable and shall have the right to omit portions of the work, and to increase or decrease the shown approximate estimated quantities, or the scope of the whole work; and that the Town reserves the right to add to or take from the total amount of the work up to a limit of thirty (30%) percent of the total amount of the contract based upon the executed contract price for all the specified work.

1.7 The bidder shall make no claim for anticipated profits or loss of profits, because of any difference between the quantities of the various classes of work actually done, or of the materials actually furnished, and the original specified scope of work and the shown approximate estimated quantities.

1.8 All prices bid include a sum sufficient for the preparation and submission of approved final "As-builts", record drawings, guarantees, warranties, and operations and maintenance manuals.

1.9 All plans and other like records compiled by the contractor in completing the work under this contract shall become the property of the Town. The Contractor may retain copies of each such plan or record for its own use.

1.10 The contractor shall secure and pay for all necessary permits for the proper executing and completion of work.

1.11 The Town is exempt from all federal, state and local taxes.

Section 2. Pre-Bid Site Inspection

2.1 The bidder shall satisfy itself by personal examination of the location of the proposed work and surroundings thereof, and by such other means as it may prefer, as to the scope of the work and the accuracy of the approximate estimated quantities; and shall not at any time after submission of the bid dispute such approximate estimated quantities or assert that there was any misrepresentation by the Town or any misunderstanding by the bidder in regard to the quantity or kind of materials to be furnished, or work to be done. Failure to do so will not relieve a successful bidder contractor ("contractor") of the obligation to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in its bid.

2.2 Unless otherwise stated, the bidder is free and encouraged to examine the work site during normal work hours preceding the submission of the bid. For those bidders requesting further clarification of the conditions, an appointment with the Town's representative, can be requested, by contacting the, Town Clerk.

[1] List found at http://ogs.ny.gov/about/regs/docs/ListofEntities.pdf.

2.3 At the time of the opening of bids each bidder will be presumed to have inspected the sites and to have read and to be thoroughly familiar with the Bid Documents.

Section 3. Quality and Samples

3.1 All equipment, material and supplies bid upon must conform to the description and specifications set forth in the in the Bid Documents, or their reasonable equivalent.

3.2 References in the Bid Documents to type, style, brand or trade name, and catalog are intended to be descriptive only and not restrictive.

Section 4. Request for information or interpretation and/or clarification of the Bid Documents

4.1 The bidder shall have seven (7) business days prior to the bid opening date to notify the Town Clerk in writing of any errors or defects in the Bid Documents which would prevent the bidder from providing a responsive bid.

4.2 No interpretation of the Bid Documents will be made to any bidder orally by any representative of the Town.

4.3 Any request for information or interpretation and/or clarification of the Bid Documents must be addressed in writing to Diana Quast, Yorktown Town Clerk, 363 Underhill Avenue, Yorktown Height, NY 10598, and be submitted not later than five (5) business days prior to the date fixed for the opening of bids.

4.4 Any written response to a request for information or interpretation and/or clarification of the Bid Documents shall be issued by Town Clerk and will be incorporated into and made part of the Bid Documents and will be made available in the same manner and method as the Bid Documents. The Town Clerk's decision shall be final and binding on all parties. The failure of any bidder to receive such Addenda will not relieve the contractor of any obligation to comply with the terms and conditions of the Addenda.

4.5 The Bid Documents, including the drawings, Bid Documents, have been prepared with care and are intended to show as clearly as is practicable the work required to be done. The bidder must realize however, that construction details cannot always be accurately anticipated and that in executing the work, field conditions may require reasonable modifications in the details of the plans and quantities of work involved. Work under all items in the contract must be carried out to meet these field conditions to the satisfaction of the Town and in accordance with the Bid Documents. The bidder shall not take advantage of any apparent errors or omission in the Bid Documents. In the event the contractor discovers an error or omission in the Bid Documents, it shall immediately notify the Town. The Town will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Bid Documents.

4.6 A bidder's failure to request a clarification, interpretation, etc. of any portion of the Bid Documents or to point out any inconsistency therein will preclude such bidder from thereafter claiming any ambiguity, inconsistency, or error which should have been discovered by a reasonably prudent bidder and from asserting any claim for damages arising directly or indirectly therefrom.

Section 5. Non-Collusion

5.1 The bidder shall certify that it has complied with all of the requirements stated in the non-collusive bidding certificate by signing the form included in the Bid Documents. Failure by the bidder to complete and sign the non-collusive bidding certificate will constitute grounds for rejection of the bid.

Section 6. Late Bids

6.1 All bids received after the deadline date and time stated in the Instructions to Bidders will not be considered and will be returned to the bidder unopened. The bidder assumes the risk of any delay in the mail and the handling of the mail by the employees of the Town. Whether sent by mail or by means of personal delivery, the bidder assumes all responsibility for having the bid delivered on time and to the place specified above.

Section 7. Bid Opening

7.1 Sealed bids will be publicly opened on the date and time specified in the Instructions to Bidders. Bids may be read aloud to those persons present when practicable. Any bidder may request to review any submitted Bid Proposal Forms by arranging a mutually convenient time with the Town Clerk.

7.2 The prices stated in the Bid Proposal Form are irrevocable until the Notice of Award is issued, unless the bid is withdrawn only after the expiration of sixty (60) days from the bid opening and only in writing received by the Town Clerk and in advance of the issuance of the Notice of Award.

Section 8. Acceptance or Rejection

8.1 A responsive bid is one that complies with all material terms and conditions of the Bid Documents.

8.2 If the lowest price bid or proposal is found non-responsive, a determination setting in detail and with specificity the reasons for such finding shall be issued by the Town Clerk. A copy of such determination shall be mailed to the non-responsive bidder no later than two (2) business days after the determination is made.

8.3 The Town reserves the sole right to waive any informality that is a matter of form rather than substance without prejudice to other bidders and what is in the best interests of the Town. The Town's decision shall be final and binding.

8.4 Any corporation not incorporated under the Laws of New York State, must furnisha copy of its certificate of authority, from the New York State Secretary of State, to do business in the State of New York, in accordance with Article 13 of the New York State Business Corporation Law.

8.5 The Town will consider the qualifications of all bidders and may conduct such investigation as it deems necessary to assist in the evaluation of any bid. The Town reserves the right to reject any bid if the evidence submitted by, or the investigation of such bidder fails to satisfy the Town, in the Town's sole discretion, that it is properly qualified to carry out the obligations of the contract and to complete the contemplated work. In evaluating a bidder's responsibility, the Town may consider the following factors:

i. financial resources;

ii. technical qualifications;

iii. experience;

iv. organization, material, equipment, facilities, and personnel resources and expertise (or the ability to obtain them) necessary to carry out the work and to comply with required delivery or performance schedules, taking into consideration other business commitments;

v. a satisfactory record of performance;

vi. a satisfactory record of business integrity;

vii. where the contract includes provisions for reimbursement of contractor costs, the existence of accounting and auditing procedures adequate to control property funds, or other assets, accurately delineate costs, and attribute them to their causes; and

viii. compliance with requirements for the utilization of small, minority-owned, and women-owned businesses as subcontractors.

8.6 The Town reserves the right to require additional information as it deems appropriate concerning the history of any bidder's performance of prior contracts. The final determination of whether the bidder possesses the requisite experience rests in the sole discretion of the Town. Failure of a bidder to provide relevant information specifically requested by the Town may be grounds for a determination of non-responsive and/or non-responsible.

Section 9. Appeal of Determination of Non-Responsiveness or Non-Responsible

9.1 Any determination that a bid is non-responsive or a bidder is non-responsible may be appealed as set forth herein.

9.2 Time Limit; A bidder shall have five (5) business days from receipt of the determination of non-responsiveness or non-responsible to file an appeal with the Town Clerk. Receipt of notice by the bidder shall be deemed to be no later than five (5) business days from the date of mailing or upon delivery, if delivered. Filing of the appeal shall be accomplished by actual delivery of the appeal document to the Town Clerk. The bidder shall also send a copy of its appeal, for informational purposes, to the Town Attorney.

9.3 Form and Content: The appeal shall be in writing and shall briefly state all the facts or other basis upon which the bidder contests the finding of non-responsiveness or non-responsible. Supporting documentation, if any, shall be included.

9.4 Stay of Award of Contract Pending. Award of the contract shall be stayed pending the determination of the Town Clerk unless the Town Clerk makes a determination that proceeding with the award without delay is necessary to protect substantial Town's interests. Where such a determination is made, the bidder shall be advised of this action in the determination of non-responsiveness or, if the stay is removed at any time after the bidder has been notified of determination of non-responsiveness or non-responsible, notification shall be provided to the bidder no later than two (2) business days after such determination is made. The Town Clerk shall consider the appeal, and may, in his or her sole discretion, meet with the bidder to discuss the merits of the appeal. The Town Clerk shall make a prompt determination with respect to the merits of the appeal, a copy of which shall be sent to the bidder. The Town Clerk s determination shall be final.

Section 10. Award

10.1 Town reserves the right to make an award within sixty (60) days after the date of the bid opening, during which period bids may not be withdrawn.

10.2 The Award will be made to the responsible and responsive bidder submitting the lowest bid that fully complies with all the specifications stated in the Bid documents.

10.3 Town reserves the right to reject all bids and to purchase any or all items on contracts awarded by agencies or departments of the State of New York or of the Town, if such items can be obtained on substantially the same terms, conditions, specifications, and at a lower price.

Section 11. Notice of Award

11.1 If the bid is awarded by Town, a written Notice of Award will be issued by the Town Clerk to the contractor. Such Notice of Award will constitute a binding enforceable contract between the contractor and the Town of Yorktown. These General Terms and Conditions shall be incorporated into the contract as material terms.

11.2 The Town may issue a Notice of Award based on either Lowest Responsible Bid or Best Value, in accordance with the 2012 amendments to General Municipal Law § 103, as implemented by Yorktown Town Code Chapter 78 entitled *Procurement for Goods and Services.*

11.3 Upon receipt of the Notice of Award the contractor will be required to submit to the Town Clerk a completed W-9 form in addition to any other information or documents required by the Town. Failure to supply a completed W-9 form or such other information or documents required by the Town will invalidate the bid.

Section 12. Performance And Payment Bond

12.1 If a Performance and Payment bond is required in accordance with the Instruction to Bidders, the "Bid Bond and Consent of Surety" Form must be executed by the contractor's Surety Company and submitted to the Town.

Section 13. Assignment Prohibited

13.1 The contractor shall not assign, transfer, convey or otherwise dispose of the contract or any part of it or any monies due and payable under the contract, without prior written approval of the Town. If such approvals are granted by the Town, they shall in no way relieve the contractor or from any obligations under the terms of the contract.

Section 14. Special Requirements

14.1 Special requirements for any bid may supersede and/or be added to any provision contained in these General Terms and Conditions.

Section 15. Purchase of Additional Quantities of Bid Items

15.1 The Town may purchase additional quantities of the bid items at any time during the contract period, for the same price and under the same terms and conditions as set in the Bid Proposal Form.

Section 16. Contractor's Subcontracts And Material Lists

16.1 Within fifteen (15) days after execution of the Contract, the contractor shall submit to the Town for approval a list of the subcontractors, materialmen and materials that the contractor plans to use in the performance of the work and statements of the work they are to perform. The format and content of the list shall be in accordance with directives from the Town. No part of the work may be sublet until after the contractor has received the Town's approval. The contractor shall be fully responsible for all acts and omissions of its subcontractors and persons directly or indirectly employed by them, and the Town's approval to sublet parts of the work will in no way relieve the contractor of any of its obligations under the Contract. All dealings of the Town with the subcontractors shall be through the contractor..

16.2 The contractor shall insert appropriate clauses in all subcontracts to bind the subcontractors to the contractor by all applicable provisions of the contract documents executed between the contractor and the Town, but this shall not be construed as creating any contractual relationships between subcontractors and the Town. Prior to approval of the subcontractors, the Town has the right to review and recommend changes in the subcontracts. The Town reserves the right to reject any subcontractor proposed by the contractor if in the reasonable opinion of the Town such subcontractor lacks the experience or capability to perform its subcontract work or is otherwise non-responsible.

16.3 The contractor shall insert appropriate clauses in each subcontract that require that if the contractor is terminated by the Town either for default or convenience that at the sole option of the Town the subcontract shall automatically attorn to the Town and the subcontractor shall continue without delay or interruption to fully perform all of the obligations required by its subcontract.

Section 17. Representative Always Present

17.1 The contractor in case of its absence from the work shall have a competent representative or foreman present, who shall obey without delay, all instructions of the Town in the prosecution and completion of the work in conformity with the contract, and shall have full authority to supply labor and material immediately.

17.2 The contractor, or its superintendent, shall attend job meetings with the Town for the purpose of discussing expedition, execution and coordination of the work. Job meetings will be scheduled periodically (the first to be prior to commencement of construction) at a time and place designated by the Town.

17.3 The contractor shall not commence any work prior to the first (pre-construction) meeting between the contractor, Town, and other concerned governmental and utility company representatives.

Section18. Performance

18.1 All work performed and all materials furnished shall be in reasonably close conformity with the lines, grades, cross sections, dimensions and materials requirements, including tolerances, shown in the Bid Documents.

18.2 Plan dimensions and contract specification values are to be considered as the target value to be strived for and complied with as the design value from which any deviations are allowed. It is the intent of the specifications that the materials and workmanship shall be uniform in character and shall conform as nearly as realistically possible to the prescribed target value or to the middle portion of the tolerance range. The purpose of the tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons. When a maximum or minimum value is specified, the production and processing of the material and the performance of the work shall be so controlled that material or work shall not be preponderantly of borderline quality or dimension.

18.3 Figured dimensions on the plans shall be given preference over scaled dimensions, but shall be checked by the contractor before starting construction.
Information and data on the contract documents shall take precedence in the following order (1) Drawing; Details, Sections, Plans, Notes, General Notes, (2) Technical Specifications, (3) General Specifications. Any errors, omissions or discrepancies shall be brought to the attention of the Town whose decision thereon shall be final.

18.4 In the event that the Town determines that the materials or the finished product in which the materials used are not within reasonably close conformity with the Bid Documents but that reasonably acceptable work had been produced, the Town shall then make a determination if the work shall be accepted and remain in place. In this event, the Town will document the basis of acceptance by contract modification, subject to the approval of the Town Board, which will provide for an appropriate adjustment in the contract price for such work or materials as deems necessary.

18.5 In the event that the Town determines that the materials or the finished product in which the materials used are not within reasonably close conformity with the Bid Documents and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the contractor.

18.6 All traffic control devices (signs, signals, markings, and devices placed by the authority of a public body or official having jurisdiction for the purpose of regulating, warning or guiding traffic) shall be in conformity with the latest edition of the New York State Manual of Uniform Traffic Control Devices or other such standard as directed by the Town.

18.7 Time being of the essence, the contractor shall take notice that the timely completion of the work called for under the contract is of the greatest importance. The contractor shall commence its work within ten (10) days after "Notice of Award" has been given it by the Town (unless a definite starting date is otherwise stated). Prior to commencing its work, the contractor shall notify the Town, at least forty-eight (48) hours prior to the planned date of its "start".

Section 19. Insurance Requirements

19.1 The contractor, upon award of the contract, shall provide at its own cost and expense the following insurance to the Town from insurance companies licensed in the State of New York, carrying a Best's financial rating of "A" or better, which insurance shall be evidenced by certificates and/or policies as determined by the Town.

19.2 Each certificate or policy shall require that, thirty (30) days prior to cancellation or material change in the policies, notice thereof shall be given to the Town Clerk by registered mail, return receipt requested, for all of the following stated insurance policies. All such notices shall name the contractor and identify the contract number or description.

19.3 All policies and certificates of insurance shall be approved by the Town prior to the inception of any work.

i. Workmen's Compensation: The contractor shall evidence compliance with Workers' Compensation Law, or as otherwise directed by the Town.

ii. Commercial General Liability Insurance with minimum limits of liability per occurrence of $1,000,000 with the Town named as an additional insured.

iii. Automobile Liability Insurance with minimum limits of liability per occurrence of $1,000,000 with the Town named as an additional insured.

iv. Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional insurance is required for a specific contract, that requirement will be described in the Special Requirements of the contract specifications.

v. If any of the insurance requirements are not complied with at their renewal dates, payments to the contractor will be withheld until those requirements have been met, or at the option of the Town, the Town may pay the Renewal Premium and withhold such payments from any monies due the contractor.

vi. If at any time any of the foregoing policies shall be or become unsatisfactory to the Town, as to form or substance, or if a company issuing any such policy shall be or become unsatisfactory to the Town, the contractor shall upon notice to that effect from the Town, promptly obtain a new policy, submit the same to the Town for approval and submit a certificate thereof as herein above provided. Upon failure of the contractor to furnish, deliver and maintain such insurance as above provided, the contract, at the election of the Town, may be forthwith declared suspended, discontinued or terminated. Failure of the contractor to secure and/or maintain or the taking out and/or maintenance of any required insurance, shall not relieve the contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with or otherwise limit the obligations of the contractor concerning indemnification.

vii. In the event that claims in excess of the insured amounts provided herein, are filed by reason of any operations under the contract, the amount of excess of such claims or any portion thereof, may be withheld from payment due or to become due the contractor until such time as the contractor shall furnish such additional security covering such claims as may be determined by the Town.

Section 20. Indemnification

20.1 The contractor hereby agrees to indemnify and save harmless the Town, its officers, employees, elected officials, and agents from and against all liability, loss or damage the Town may suffer, arising directly or indirectly out of the contract between the contractor and the Town. The Contractor further agrees to provide defense for and defend any claims or causes of action of any kind or character directly or indirectly arising out of this Agreement at its sole expense and agrees to bear all other costs and expenses relating thereto. The foregoing provisions shall not be construed to cause the contractor to indemnify the Town, its officers, elected officials, agents or employees from its or their sole negligence.

20.2 Neither the acceptance of the completed work nor payment therefore shall release the Contractor from its obligation under this section.

Section 21. Delivery Point

21.1 Shipping of any products shall be FOB Destination. Delivery shall be at the location set forth in the Specifications except on national, state or local holidays when Town buildings are closed. Bidder shall be responsible to verify that the appropriate Town building for delivery is open prior to delivering items. All bid items shall be unloaded and placed within the particular Town building, at points of delivery, and in quantities, as directed by the Town. Any costs incurred by the Town or bidder due to the failure of bidder to comply with this requirement will be the responsibility of bidder. Bidder should be prepared to furnish proof of delivery, if requested by Town. Deliveries shall be made in accordance with the specifications, and shall be made Monday through Friday from 8 a.m. to 2 p.m. unless otherwise stated in the Specific Specifications.

21.2 If bidder is shipping bid items to Town using a third-party carrier (US Postal Service, UPS, FedEx), there shall be no additional shipping charge to the Town.

21.3 Delivery will not be complete until the good are inspected and accepted by the Town.

Section 22. Date of Delivery

22.1 Delivery of all materials included under this bid shall be made not later than the date specified in the Bid Documents or Project Schedule. If contractor cannot meet the delivery date specified in Bid Documents or Project Schedule, contractor shall state on the bid form the proposed date of delivery and such date will considered when determining responsiveness in awarding the bid.

Section 23. Damages

23.1 The contractor shall be fully responsible for shipping and delivery of materials specified in the Bid Documents or Project Schedule in an undamaged condition. Town will not consider the carrier responsible for damaged or delayed deliveries. Any bid item damaged or broken when delivered to Town shall be replaced immediately by contractor at no cost to the Town.

Section 24. Warranty/Guarantee

24.1 It is the intent of the Bid Documents to require first-class work and materials and any work not fully covered herein Bid Documents shall be interpreted to require first-class work and materials, and such interpretations shall be binding upon the Contractor. The contractor shall be fully responsible for performance of work in a satisfactory manner with satisfactory results in the discretion of the Town quality materials.

24.2 Contractor is deemed to warrant and guarantee all work performed under this agreement.

24.3 Unless otherwise stated in other parts of the specifications, all work performed or goods supplied under the contract shall be guaranteed by the contractor against all defects resulting from the use of inferior materials, equipment or workmanship, for a period of one (1) year from the date of final completion and acceptance of the work, which shall be defined as the date of the Town's approval of the final Certificate for Payment or from the date the Town takes possession and makes full use of the constructed facility.

24.4 Any goods furnished must be standard, new, latest model of the regular stock product, as required by the specifications, with parts regularly used for the type of equipment offered.

24.5 No attachment or part will be substituted or applied contrary to manufacturer's recommended and standard practice. All regularly manufactured stock electrical items must bear the label of the Underwriters Laboratories, Inc. Any equipment, part or constructed item which is or becomes defective during the guarantee period shall be replaced or redone by the contractor, including all labor at no additional charge to the Town. All replacements shall carry the same guarantee as the original equipment. The contractor shall make any such replacement promptly upon receiving written notice from Town.

Section 25. Breach of Contract/Termination

25.1 If contractor fails to deliver as ordered, or within the time specified, or within reasonable time as interpreted by Town, or fails to make replacement of rejected or defective goods, whether so requested immediately or as directed by Town, that shall constitute a breach of the contract, and Town may arrange to have the work performed from other sources to take the place of the work product found defective or not delivered. Without limiting the foregoing, Town reserves the right to terminate the contract upon breach upon within ten (10) days written notice provided to the contractor.

Section 26. Prevailing Wage Rates And Supplements

26.1 Wages to be Paid and Supplements to be Provided

- **i.** The contractor shall, at its own cost and expense, comply with all provisions of the Labor Law (i.e. prevailing rate of wages and supplements), Lien Law, Workmen's Compensation Law and all other laws and ordinances affecting the contract or order, either Federal, State or local.

26.2 Records to be kept on Site

The contractor, subcontractors at any tier shall certify their payrolls and keep them on site and available, in addition to the following informative records:

- **i.** Record of hours worked by each workman, laborer and mechanic on each day;
- **ii.** Record of days worked each week by each workman, laborer and mechanic;
- **iii.** Schedule of occupation or occupations at which each workman, laborer and mechanic on the project is employed during each work day and week;
- **iv.** Schedule of hourly wage rates paid to each workman, laborer and mechanic for each occupation.
- **v.** A statement or declaration signed by each workman, laborer and mechanic attesting that they have been provided with a written notice, informing them of the prevailing wage rates and supplements requirement for the contract.

Section 27. Estimates and Payments

27.1 As the work progresses but not more often than once a month and then on such days as the Town shall direct, the contractor will submit a requisition in writing of the amount and value of the work performed and the materials and equipment provided to the date of the requisition, less any amount previously paid to the contractor.

27.2 From each requisition, the Town will retain five percent (5%) plus one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments against the contractor that have not been suitably discharged. The Town will thereupon cause the balance of the requisition therein to be paid to the contractor.

27.3 As a condition to the making of any progress payment as set forth in this paragraph, the Town, in its sole discretion may require the contractor to submit such document as may be reasonably required to establish that the contractor and its subcontractors have timely and properly paid their respective subcontractors and materialmen at any tier.

27.4 When the work or major portion thereof, as contemplated by the terms of the contract are substantially completed in the judgment of the Town, the contractor shall submit a requisition for the remainder of the contract balance. An amount equal to two (2) times the value of the remaining items to be completed plus one hundred fifty percent (150%) of the amount that the Town deems necessary to satisfy to satisfy any claims, liens or judgments against the contractor which have not been suitably discharged shall be deducted from the requisition. As the remaining items of work are satisfactorily completed or corrected, the Town will, upon receipt of a requisition, pay for these items less one hundred fifty percent (150%) of the amount necessary to satisfy any claims, liens or judgments.

27.5 All estimates will be made for actual quantities for work performed and materials and equipment incorporated in the work as determined by the measurements of the Town, and this determination shall be accepted as final, conclusive and binding upon the contractor. All estimates will be subject to correction in any succeeding estimate.

27.6 Payment will be made only upon the written request of the contractor. Payment requests shall be processed by the Town no more than one (1) time per month. Payment will be made for materials pertinent to the project which have been delivered to the site or off-site by the contractor suitably stored and secured in first-class condition as required by the Town. The contractor must submit certified copies of the manufacturer's or vendor's invoices or statements establishing the true purchase value of the material or equipment; freight bills, release of liens and certificate of insurance covering all equipment and materials.

27.7 The Contractor shall be responsible for safeguarding stored equipment and materials against loss or damage of any nature whatsoever, shall retain title until incorporated into the work and acceptance by the Town and in case of loss or damage, the contractor shall replace such lost or damaged equipment and materials at no cost to the Town. After receipt of payment, the contractor shall not remove from the site equipment and materials for which such payment was made without written authorization from the Town.

27.8 Within thirty (30) days after receiving written notice from the Contractor of substantial completion of the work under this Agreement, the Town will cause an inspection to be made of the work done under the contract. If, upon such inspection, the Town determines that the work is substantially complete, a Substantial Completion Payment to the contractor for the work done under the contract, less any and all deductions authorized to be made by the Town under the contract or by law, will be issued.

27.9 As a condition precedent to receiving payment therefore, the Contractor must have received Town approval of all Shop Drawing submittals, the Operation and Maintenance Manuals, and As-Built Drawing(s).

27.10 Together with its application for substantial completion payment the Contractor shall also deliver to the Town a verified statement certifying that all claims or liabilities arising from the completed work, including all charges for Extra Work, Change Orders, additional time, damages or credits (collectively referred to as "claims") have been presented to the Town. All such claims shall be described in sufficient detail so as to be easily identified. The contractor's failure to submit the verified statement shall constitute a full and final waiver of all claims against the Town from the beginning of the project through the date of substantial completion as established by the Town. The presentation of the verified statement to the Town shall not constitute an acknowledgement by the Town that any such claim is valid. The Town expressly reserves its right to assert that any such claim(s) is waived or precluded by reason of other provisions of the contract documents. Only claims particularly identified on the contractor's verified statement shall be preserved; all other claims whatever nature shall be deemed waived and released. It shall also submit proof of title of the materials and equipment covered by the contract. The contractor shall also, prior to the issuance of said Substantial Completion Payment, supply to the Town affidavits and certificates for labor, material and equipment (where applicable).

27.11 Within ten (10) days after receiving written notice from the contractor of completion of all the work, the Town will make a final inspection. If upon inspection the Town determines that no further work is needed, the Town will request that the Town approve the completion of the project and authorize payment of the Final Estimate.

Section 28. Payments To Subcontractors And Materialmen By Contractor

28.1 Within fifteen (15) calendar days of the receipt of any payment from the Town, the contractor shall pay each of its subcontractors and materialmen the proceeds from the payment representing the value of the work performed and/or materials furnished by the subcontractor and/or materialmen as reflected in the payment from the Town less an amount necessary to satisfy any claims, liens or judgment against the subcontractor or materialman which have not been suitably discharged and less any retained amount as hereafter described.

28.2 Nothing provided herein shall create any obligation on the part of the Town to pay or to see the payment of any moneys to any subcontractor or materialman from any contractor nor shall anything provided herein serve to create any relationship in contract or otherwise, implied or expressed between the subcontractor or materialman and the Town. Notwithstanding anything to the foregoing, the Town may tender payments to the Contractor in the form of joint or dual payee checks.

Section 29. Change in the Contract Price

29.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to the contractor for performing the work pursuant to the contract. All duties, responsibilities and obligations assigned to or undertaken by the contractor shall be at its expense without change in the Contract Price.

29.2 The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to Town within fifteen (15) days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within twenty (20) days of such occurrence unless the Town allows an additional period of time to ascertain accurate cost data. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order. All change orders are subject to the determination and approval of the Town Board.

Section 30. Proper Method of Work And Proper Materials

30.1 The Town shall have the power in general to direct the order and sequence of the work, which will be such as to permit the entire work under the contract to be begun and to proceed as rapidly as possible, and such as to bring the several parts of the work to a successful completion at about the same time.

30.2 If at any time before the commencement or during the progress of the work the materials and appliances used or to be used appear to the Town as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the contractor to increase its efficiency or to improve their character, and the contractor shall promptly conform to such order; but the failure of the Town to demand any increase of such efficiency or improvement shall not release the Contractor from its obligation to secure the quality of work or the rate of progress specified.\

30.3 The Contractor will establish the lines, grades and measurements necessary in his opinion to properly locate the work, by setting suitably marked offset or reference stakes. These stakes are referenced to the control points, coordinates and similar data that may be shown on the contract drawings, but the Town reserves the right to modify that information.

30.4 The Contractor shall carefully and properly preserve all stakes, pins and markers required at no additional costs to the Town. All existing property lines and survey monuments which may, of necessity have to be disturbed during the construction work, will be property tied to fixed points and reset by the Contractor at no cost to the Town.

Section 31. Utilities and Service Lines

31.1 The Contractor is hereby warned that a reasonable opportunity is to be given the municipalities and public service corporations to alter and install pipes, conduits or other structures prior to placing to pavement. No guarantee is given that public utility structures and service lines herein shown are correctly located. Locations given are from the best available information.

Section 32. Protection, Existing Structures

32.1 The Contractor, at his expense, shall protect adjacent and other property or premises from damage of any kind during the progress of the work and shall erect and maintain guards around his work in such a way as to afford protection to the public. The Contractor shall be held responsible for improper, illegal, or negligent conduct of himself, his subcontractors, employees and agents in and about said work or in the execution of the work covered by this Contract.

32.2 The Contractor shall, at his expense, sustain in their places and permanently protect from direct or indirect injury any and all pipelines, subways, pavements, sidewalks, curbs, railways, buildings, trees, poles, wells, and other property in the vicinity of his work, whether over-or underground, or which appear within the trench or excavations, and he shall assume all costs and expenses for direct or indirect damage which may be occasioned by injury to any of them.

32.3 The Contractor's liability shall also include the damage or injury sustained by any structure whatsoever due to settlement of trenches or excavations or to settlement or lateral movement of the sides of such trenches or excavations, whether such movement occurs during or after excavation or backfilling of such trenches or excavations. His liability to so support and protect all such structures from damage or injury shall continue without limitation, throughout the Contract period and during the period of guarantee.

32.4 The Contractor shall at all times have on the ground suitable and sufficient material and shall use the same as may be necessary or required for sustaining and supporting any and all such structures which are uncovered, undermined, weakened, endangered, threatened, or otherwise materially affected.

32.5 In case injury occurs to any portion of a pipeline or structure, or to the material surrounding or supporting the same, through blasting or similar operations, the Contractor shall immediately notify the Engineer, and, at his expense, shall remove such injured work and shall rebuild the pipeline or structure and shall replace the material surrounding the supporting the same, or shall furnish such material and perform such work of repairs or replacement as the Town may order. Any damage whatsoever shall be promptly, completely and satisfactorily repaired by the Contractor at his expense.

Section 33. Acceleration of the Work

33.1 The Town may, at its sole discretion and as circumstances reasonably require, require the contractor to accelerate the schedule of performance by providing overtime, extended day, extra crews, Saturday, Sunday and/or holiday work and/or by having all or any subcontractors designated by the Town provide overtime, extended day, extra crews, Saturday, Sunday or holiday work by the contractor's or his subcontractor's own forces.

33.2 The Town, pursuant to a validly issued written change order, may reimburse the contractor for the direct cost to the contractor of the premium time for the labor utilized by the contractor in such overtime, extended day, extra crews, Saturday, Sunday or holiday work(but not for the straight time costs of such labor) together with any social security and state or federal unemployment insurance taxes in connection with such premium time. However, no overhead, supervision costs, commissions, profit or other costs and expenses of any nature whatsoever, including impact costs or costs associated with lost efficiency or productivity, shall be payable in connection therewith.

33.3 Anything to the foregoing notwithstanding, in the event that the contractor has fallen behind schedule or in the Town's judgment appears likely to fall behind schedule, Town shall have the absolute right to direct the contractor to accelerate the performance of its work, including that of its subcontractors, and the full costs for such acceleration shall be borne solely by the contractor.

Section 34. Stopping Work

34.1 Town May Suspend Work:

i. The Town may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the contractor which shall fix the date on which work shall be resumed. The contractor shall resume the Work on the date so fixed. Subject to the approval of the Town Board, the contractor may be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension.

34.2 The Town May Terminate:

A. Upon the occurrence of any one or more of the following events:

1. If the contractor is adjudged bankrupt or insolvent,

2. If the contractor makes a general assignment for the benefit of creditors,

3. If a trustee or receiver is appointed for the contractor or for any of the contractor 's property,

4. If the contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws,

5. If the contractor repeatedly fails to supply sufficient skilled workers or suitable materials or equipment,

6. If the contractor repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment,

7. If the contractor disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction,

8. If the contractor disregards the authority of the Town, or

9. If the contractor otherwise violates in any substantial way any provisions of the Bid Documents or the Contract. The Town may after giving the contractor and its Surety seven (7) days written notice, terminate the services of the contractor, exclude the contractor from the site, incorporate in the Work all materials and equipment stored at the site or for which Town has paid the contractor but which are stored elsewhere, and finish the Work as Town may deem expedient. In such case the contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the work, including compensation for additional professional services, such excess shall be paid to the contractor. If such costs exceed such unpaid balance, the contractor shall pay the difference to the Town.

B. Where the contractor's services have been so terminated by the Town, the termination shall not affect any rights of Town against the contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the contractor by Town will not release the contractor from liability.

C. Upon seven (7) days written notice to the contractor, Town may, without cause and without prejudice to any other right or remedy, elect to abandon the work and terminate the Agreement. In such case, the contractor shall be paid (without duplication of any items):

1. For completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date or termination, including fair and reasonable sum of overhead and profit on such work;

2. For expenses sustained prior to effective date of termination in performing services and furnishing labor, materials or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. For amounts paid in settlement of terminated contracts with Subcontractors, manufacturers, fabricators, suppliers or distributors and others; and

4. For reasonable expenses directly attributable to termination. contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or any consequential damages arising out of such termination.

Section 35. Change in the Contract Time

35.1 The contractor agrees that it will make no claim against the Town or any of its representatives for damages for delay, interference or disruption in the performance of its Contract occasioned by any act or omission to act by the Town or any of its representatives, or occasioned by any act or omission of any other contractor and further agrees that any such claim shall be fully compensated for by an extension of time to complete the performance of the work as provided herein.

35.2 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to Town within fifteen (15) days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within twenty (20) days of such occurrence unless the Town allows an additional period of time to ascertain more accurate data. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

35.3 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the contractor. Such delays shall include, but not be limited to, acts or neglect by Town, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God. No extension of the Contract Time will be granted where the delay is attributable to a subcontractor, manufacturer, fabricator, supplier or distributor or any other party performing services or furnishing material or equipment on behalf of the contractor unless such party's delay is attributable to one of the above enumerated causes.

35.4 The time limits concerning Substantial Completion and final completion as stated in the Contract Documents are of the essence. The provisions of this section shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party, provided, however that the contractor shall not be entitled to damages for any delay occurring as a consequence of a delay if the performance of said additional work was noted in the Contract Documents and the delay (by others) was not directly caused by the fault of the Town.

Section 36 Disputed Work - Notice of Claims For Damages

36.1 If the contractor is of the opinion that any work required, necessitated, or ordered violates or conflicts with or is not required by the terms and provisions of the contract, he must promptly, within five (5) calendar days after being directed to perform such work, notify the Town, in writing, of its contentions with respect thereto and request a final determination thereon. If the Town determines that the work in question is contract and not extra work, or that the order complained of is proper, he will direct the Contractor in writing to proceed and the Contractor shall promptly comply. In order, however, to preserve its right to claim compensation for such work or damages resulting from such compliance, the Contractor must, within seven (7) calendar days after receiving notice of the Town's determination and direction, notify the Town, in writing that the work is being performed or that the determination and direction is being complied with, under protest. Failure of the Contractor to so notify shall be deemed as a waiver of claim for extra compensation or damages therefore.

36.2 The contractor is bound by the provisions of all applicable laws, including but not limited to the General Municipal Law and the Town Law, as related to the presentation of claims.

36.3 While the contractor is performing disputed work or complying with a determination or order under protest in accordance with this Article, in each such case the contractor shall furnish the Town daily with three copies of written statements signed by the Contractor's representatives at the site showing:

i. the name of each workman employed on such work or engaged in complying with such determination or order, the number of hours employed thereon, and the character of the work each is doing; and

ii. the nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such work or compliance with such order, and from whom purchased or rented.

36.4 The contractor shall carry on the work and maintain the progress schedule during all disputes or disagreements with the Town. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the contractor and Town may otherwise agree in writing.

36.5 Before final acceptance of the work by the Town, all matters of dispute must be adjusted to the mutual satisfaction of the parties thereto. Determinations and decisions in case any question shall arise, shall constitute a condition precedent to the right of the Contractor to receive the money therefore, until the matter in question has been adjusted.

Section 37. Contractor Response Time

37.1 Contractor is required to have a facility within a 25-mile radius or 30-minute travel time of the Town of Yorktown.to be able to quickly respond to problems with the installed equipment.

PART THREE

GENERAL SPECIFICATIONS

The scope of the project consists of all work required to install split air conditioning / heat pump units throughout the Yorktown Court House. Electric connections to the equipment will be handled by a separate contractor. The contractor shall be responsible for installation of pitch pockets through the roof membrane. The contractor shall carefully mount the units to prevent damage to the roof membrane.

The equipment shall be Mitsubishi Hyper Heat system or equivalent. The sizing of the proposed equipment is provided in the table below:

Zone	Type	Rating – Indoor (BTU/h)	Compressor (BTU/h)
1	Wall Mount	18,000 SZ-FX18NL	18,000 MUZ-FX18NLHZ
2	Ceiling Cassette	18,000 SLZ-AF09NA	36,000 MXZ-SM36NLHZ
3	Ceiling Cassette	18,000 SLZ-AF09NA	
4	Ceiling Cassette	15,000 SLZ-AF15NA	48,000 MXZ-SM48NLHZ
5	Ceiling Cassette	15,000 SLZ-AF15NA	
6	Ceiling Cassette	9,000 SLZ-AF09NA	
7	Ceiling Cassette	9,000 SLZ-AF09NA	
8	Ceiling Cassette	9,000 SLZ-AF09NA	48,000 MXZ-SM48NLHZ
9	Ceiling Cassette	15,000 SLZ-AF15NA	
10	Ceiling Cassette	15,000 SLZ-AF15NA	

The proposed equipment shall meet the specifications that follow. Shop drawings will be provided to the Engineer for review and approval.

Surface mounting of refrigerant and condensate lines should be avoided where possible. All exterior wall and roof penetrations must be approved by the Engineer.

SECTION 238129 – MULTIZONE, HEAT-PUMP HVAC SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes complete Multizone, Heat-Pump HVAC system(s) which may include, but not limited to, the following components:

1. Outdoor, air-source heat-pump units.
2. Indoor, exposed, wall-mounted units.
3. Indoor, recessed, ceiling-mounted units with 33x33” grilles.
4. Indoor, recessed, ceiling-mounted units with 24x24” grilles.
5. Indoor, recessed, one-way ceiling-mounted units.
6. Indoor, concealed, ceiling-mounted units for ducting.
7. Indoor, concealed, multi-position units for ducting.
8. Indoor, suspended, ceiling-mounted units.
9. Indoor, energy recovery ventilator.
10. HVAC system controls.
11. HVAC system refrigerant and oil.
12. HVAC system condensate drain piping.
13. HVAC system refrigerant piping.
14. HVAC system control cable.

1.2 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Nationally recognized manufacturer of HVAC systems and products.
2. Shipped HVAC systems with similar requirements to local market for a continuous period of **five** years within time of bid.
3. HVAC systems and products that have been successfully tested and in use on at least **three** completed projects.
4. Having complete published online catalog literature, installation, and operation and maintenance manuals for all products intended for use. Resources must be publicly available without login or sign-in as registered account.
5. Having full-time in-house employees for the following:

    a. Product research and development.
    b. Product and application engineering.
    c. Product manufacturing, testing, and quality control.
    d. Technical support for system installation training, startup, commissioning, and troubleshooting of installations.
    e. Owner training.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by HVAC system manufacturer.

1. Each employee shall be certified to have successfully completed manufacturer training for proper installation of systems, including, but not limited to, equipment, piping,

controls, and accessories indicated and furnished for installation.
2. Installer certificate shall be valid and current for duration of Project.
3. Retain copies of Installer certificates on-site and make available on request.

C. ISO Compliance: System equipment and components furnished by HVAC system manufacturer shall be manufactured in an ISO 9001 and ISO 14001 facility.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in a clean and dry place. Protect products from weather, dirt, dust, water, construction debris, and physical damage.

1. Retain factory-applied coverings on equipment to protect finishes during construction and remove just prior to operating unit.

B. Cover unit openings before installation to prevent dirt and dust from entering inside of units. If required to remover coverings during unit installation, reapply coverings over openings after unit installation and remove just prior to operating unit.

C. Comply with manufacturer's written rigging and installation instructions for unloading and moving to final installed location.

1.4 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace equipment and components that fail(s) in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures.
b. Faulty operation.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period:

a. For Compressor, **Seven** years from date of Substantial Completion.
b. For Parts, **Five** years from date of Substantial Completion.

B. Installer’s Labor Warranty: Installer agrees to repair or replace equipment and components that fail(s) in materials or workmanship within specified warranty period.

1. Warranty Period **2** years from date of substantial completion.

PART 2 - PRODUCTS

2.1 MULTIZONE, HEAT-PUMP HVAC SYSTEMS

A. Manufacturers: Basis of design product series is SMART MULTI. Subject to compliance with requirements, provide products by one of the following brands only:

1. Mitsubishi Electric & Electronics USA, Inc.
2. Trane, Inc.
3. Toshiba Carrier Co., Ltd.

2.2 SYSTEM DESCRIPTION

A. Multi-zone HVAC system(s) with variable capacity in response to varying cooling and heating loads. System shall consist of multiple VRF-style indoor units, outdoor unit, piping, controls, and electrical power to make complete operating system(s) complying with requirements indicated.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. AHRI Compliance: System and equipment performance certified according to AHRI 1230-2023.

D. UL Compliance: Comply with UL 60335-2-40.

2.3 OUTDOOR, AIR-SOURCE HEAT-PUMP UNITS

A. Description: Factory-assembled and tested complete unit module designed for use in systems with either all heating or all cooling demands, but not for use in systems with simultaneous heating and cooling.

B. Cabinet:

1. Galvanized steel and coated with a corrosion-resistant finish.

    a. Coating with documented salt spray test performance of 2000 hours according to ASTM B117 surface scratch test (SST) procedure.

2. Internal Access: Removable panels or hinged doors of adequate size for field access to internal components for inspection, cleaning, service, and replacement.

C. Compressor and Motor Assembly:

1. One or more positive-displacement, direct-drive and hermetically sealed rotary or scroll compressor(s) with inverter drive. Non-inverter compressors—where LRA applies—are not allowed.
2. Cold-Climate Compressor: Hot-gas injection to allow increased compression ratio for extended periods without damage or excessive wear.
3. Protection: Integral protection against the following-

    a. Refrigerant overcharge and undercharge
    b. High and low refrigerant pressure.
    c. High refrigerant and oil temperature.
    d. Thermal and overload.
    e. Voltage fluctuations.
    f. Phase failure and phase reversal.
    g. Short cycling.

4. Speed Control: Variable to maintain refrigerant evaporating and condensing

temperatures while varying refrigerant flow to satisfy cooling and heating loads.
5. Vibration Control: Integral isolation to dampen vibration transmission.
6. Crankcase heaters with integral control to maintain safe operating temperature.
7. Fusible plug.

D. Heat-Exchanger Assembly: Documented salt spray test performance of 2000 hours according to ASTM B117 surface test (SST) procedure.

1. Plate Fin Coils:

a. Casing: Aluminum, galvanized, or stainless steel.
b. Fins: Aluminum or copper, mechanically bonded to tubes, with arrangement required by performance.
c. Tubes: Copper, of diameter and thickness required by performance.

E. Heat-Exchanger Defrost Strategy: Reverse-cycle method to maximize comfort during extreme ambient temperatures.

F. Heat-Exchanger Fan and Motor Assembly:

1. Fan(s): Propeller type.

a. Horizontal discharge
b. Direct-drive arrangement.
c. Fabricated from non-ferrous components.
d. Statically and dynamically balanced.

2. Fan Guards: Removable safety guards complying with OSHA regulations. If using metal materials, coat with corrosion-resistant coating to match performance indicated for heat exchanger.
3. Motor(s): Brushless DC or electronically commutated with permanently lubricated bearings and rated for outdoor duty.
4. Motor Protection: Integral protection against thermal, overload, and voltage fluctuations.

G. Standard Operating Range:

1. COOL Mode: 23°F to 115°F DB.
2. HEAT Mode:

a. Standard heat pump as indicated on Drawings:

1) -4°F to 59°F WB

b. Hyper Heating or Cold Climate heat pump as indicated on Drawings:

1) -13°F to 59°F WB

H. Unit Controls:

1. Factory-Installed Sensors:

a. Refrigerant suction temperature.
b. Refrigerant discharge temperature.
c. Outdoor air temperature.

d. Refrigerant high pressure.
e. Refrigerant low pressure.

2. Features and Functions: Self-diagnostics, time delay, auto-restart.

I. Refrigerant Leak Detection:

1. Sequence upon receiving leak detection signal from any indoor unit:

a. Switch to COOL operation regardless of previous operation mode.
b. Close liquid shutoff valve and run pump-down operation.
c. Upon completion of pump-down operation, close suction shutoff valve.
d. Stop compressor operation

J. Unit Electrical:

1. Field Connection: Single point connection to power each unit module and integral controls.
2. Disconnecting Means: Field-installed circuit breaker or switch, complying with NFPA 70.

2.4 INDOOR, EXPOSED, WALL-MOUNTED UNITS

A. Description: Factory-assembled and tested complete unit with components, piping, wiring, and controls required for mating to piping, power, and controls field connections.

B. Cabinet:

1. Material: Painted steel, or coated steel frame covered by a plastic cabinet, with an architectural acceptable finish suitable for tenant occupancy on exposed surfaces.
2. Insulation: Closed-cell insulation to provide thermal resistance and prevent condensation.
3. Internal Access: Removable panels of adequate size for field access to internal components for inspection, cleaning, service, and replacement.

DX Coil Assembly:

4. Coil Casing: Aluminum, galvanized, or stainless steel.
5. Coil Fins: Aluminum, mechanically bonded to tubes, with arrangement required by performance.
6. Coil Tubes: Copper, of diameter and thickness required by performance.
7. Capacity Control: Electronic modulating type valve with linear or proportional characteristics.
8. Unit Internal Tubing: Copper tubing with brazed joints.
9. Unit Internal Tubing Insulation: Closed-cell, of thickness to prevent condensation.
10. Factory Charge: Dehydrated air or nitrogen.
11. Testing: Factory pressure tested and verified to be without leaks.

C. Drain Assembly:

1. Pan: Non-ferrous material, with bottom sloped to low point drain connection.
2. Condensate Removal: Gravity.

a. If a floor drain is not available at unit per Drawings, provide unit with field-

installed condensate pump accessory.

3. Field Piping Connection: Non-ferrous material.

D. Fan and Motor Assembly:

1. Fan(s):

   a. Direct-drive arrangement.
   b. Single or multiple fans connected to a common motor shaft and driven by a single motor.
   c. Fabricated from non-ferrous components or ferrous components with corrosion protection finish.
   d. Wheels statically and dynamically balanced.

2. Motor: Brushless DC or electronically commutated with permanently lubricated bearings.
3. Motor Protection: Integral protection against thermal, overload, and voltage fluctuations.
4. Speed Settings and Control: Multiple or variable speed with speed setting adjustable via central or wall controllers when present.
5. Vibration Control: Integral isolation to dampen vibration transmission.

E. Filter Assembly:

1. Access: Front, to accommodate filter replacement without the need for tools.
2. Media: Manufacturer's standard washable filter with antimicrobial treatment.

F. Grille Assembly: Manufacturer's standard discharge grille within front face of unit cabinet.

1. Motorized Vane: Adjustable or oscillating flow pattern.

G. Field-Installed Unit Accessories:

1. [Condensate pump for mounting inside wall cavity and capable of at least 10 feet of lift with drain pan level sensor and overflow switch.]
2. [Condensate pump with integral white plastic housing for exposed surface mounting directly under indoor unit capable of at least 10 feet of lift with drain pan level sensor and overflow switch.]

H. Unit Controls:

1. Factory-Installed Sensors:

   a. Unit inlet air temperature.
   b. Coil entering refrigerant temperature.
   c. Coil leaving refrigerant temperature.
   d. Refrigerant detection.

2. Features and Functions:

   a. Self-diagnostics.
   b. Time delay.
   c. Auto-restart.
   d. Auto operation mode.

e. Manual operation mode.
f. Filter service notification.
g. Run test switch.

I. Refrigerant Leak Detection:

1. Integral refrigerant sensor: Factory-installed.
2. Sequence upon leak detection:

a. Refrigerant detection communicated to outdoor unit or shut-off valve kit.
b. Indoor unit fan operates regardless of setting.
c. Alarm indicator(s) may include sound from indoor unit or controller, flashing LED, error code or message on wall controller or central controller.

J. Unit Electrical:

1. Field Connection: Single point connection to power entire unit and integral controls.
2. Disconnecting Means: Field-installed circuit breaker or switch, complying with NFPA 70.

2.5 INDOOR, RECESSED, CEILING-MOUNTED UNITS WITH 33x33” GRILLES

A. Description: Factory-assembled and tested complete unit with components, piping, wiring, and controls required for mating to ductwork, piping, power, and controls field connections.

B. Cabinet:

1. Material: Painted steel, or coated steel frame covered by a plastic cabinet, with an architectural acceptable finish suitable for tenant occupancy on exposed surfaces.
2. Insulation: Closed-cell internal insulation to provide thermal resistance and prevent condensation.
3. Internal Access: Removable panels of adequate size for field access to internal components for inspection, cleaning, service, and replacement.

C. DX Coil Assembly:

1. Coil Casing: Aluminum, galvanized, or stainless steel.
2. Coil Fins: Aluminum, mechanically bonded to tubes, with arrangement required by performance.
3. Coil Tubes: Copper, of diameter and thickness required by performance.
4. Capacity Control: Electronic modulating type valve with linear or proportional characteristics.
5. Internal Tubing: Copper tubing with brazed joints.
6. Internal Tubing Insulation: Closed-cell, of thickness to prevent condensation.
7. Factory Charge: Dehydrated air or nitrogen.
8. Testing: Factory pressure tested and verified to be without leaks.

D. Drain Assembly:

1. Pan: Non-ferrous material, with bottom sloped to low point drain connection.
2. Condensate Removal: Unit-mounted integral lifting mechanism, capable of lifting drain water to an elevation above top of cabinet.
3. Field Piping Connection: Non-ferrous material.

E. Fan and Motor Assembly:

1. Fan(s):

    a. Direct-drive arrangement.
    b. Single or multiple fans connected to a common motor shaft and driven by a single motor.
    c. Fabricated from non-ferrous components or ferrous components with corrosion protection finish.
    d. Wheels statically and dynamically balanced.

2. Motor: Brushless DC or electronically commutated with permanently lubricated bearings.
3. Motor Protection: Integral protection against thermal, overload, and voltage fluctuations.
4. Speed Settings and Control: Multiple or variable speed with speed setting adjustable via central or wall controllers when present.

    a. Airflow volume shall vary based on three unit height settings.

5. Vibration Control: Integral isolation to dampen vibration transmission.

F. Filter Assembly:

1. Access: Bottom, to accommodate filter replacement without the need for tools.
2. Media: Washable screen.

G. Return/Discharge-Air Grille Assembly: Attached to bottom of unit cabinet.

1. Discharge Pattern: Include accessory air outlet shutter plates as required for two, three, or four-way throw as indicated on Drawings.

    a. Discharge Pattern Adjustment: Field-adjustable settings for up and down range of motion.
    b. Discharge Pattern Closure: Ability to close individual discharges of units with multiple patterns using wall-mounted controller.

2. Motorized Vanes: Modulating up and down flow pattern for uniform room air distribution.

H. Field-Installed Unit Accessories:

1. Condensate pump capable of at least 10 feet of lift.

I. Unit Controls:

1. Factory-Installed Sensors:

    a. Unit inlet air temperature.
    b. Coil entering refrigerant temperature.
    c. Coil leaving refrigerant temperature.
    d. Room occupancy/location.
    e. Refrigerant detection.

J. Refrigerant Leak Detection:

1. Integral refrigerant sensor: Factory-installed.
2. Sequence upon leak detection:

    a. Refrigerant detection communicated to outdoor unit or shut-off valve kit.
    b. Indoor unit fan operates regardless of setting.
    c. Alarm indicator(s) may include sound from indoor unit or controller, flashing LED, error code or message on wall controller or central controller.

K. Unit Electrical:

1. Field Connection: Single point connection to power entire unit and integral controls.
2. Disconnecting Means: Field-installed circuit breaker or switch, complying with NFPA 70.

2.6 INDOOR, RECESSED, CEILING-MOUNTED UNITS WITH 24x24" GRILLES

A. Description: Factory-assembled and tested complete unit with components, piping, wiring, and controls required for mating to ductwork, piping, power, and controls field connections.

B. Cabinet:

1. Material: Painted steel, or coated steel frame covered by a plastic cabinet, with an architectural acceptable finish suitable for tenant occupancy on exposed surfaces.
2. Insulation: Closed-cell internal insulation to provide thermal resistance and prevent condensation.
3. Internal Access: Removable panels of adequate size for field access to internal components for inspection, cleaning, service, and replacement.

C. DX Coil Assembly:

1. Coil Casing: Aluminum, galvanized, or stainless steel.
2. Coil Fins: Aluminum, mechanically bonded to tubes, with arrangement required by performance.
3. Coil Tubes: Copper, of diameter and thickness required by performance.
4. Capacity Control: Electronic modulating type valve with linear or proportional characteristics.
5. Internal Tubing: Copper tubing with brazed joints.
6. Internal Tubing Insulation: Closed-cell, of thickness to prevent condensation.
7. Factory Charge: Dehydrated air or nitrogen.
8. Testing: Factory pressure tested and verified to be without leaks.

D. Drain Assembly:

1. Pan: Non-ferrous material, with bottom sloped to low point drain connection.
2. Condensate Removal: Unit-mounted integral lifting mechanism, capable of lifting drain water to an elevation above top of cabinet.
3. Field Piping Connection: Non-ferrous material.

E. Fan and Motor Assembly:

1. Fan(s):

    a. Direct-drive arrangement.
    b. Single or multiple fans connected to a common motor shaft and driven by a single motor.
    c. Fabricated from non-ferrous components or ferrous components with corrosion protection finish.
    d. Wheels statically and dynamically balanced.

2. Motor: Brushless DC or electronically commutated with permanently lubricated bearings.
3. Motor Protection: Integral protection against thermal, overload, and voltage

fluctuations.

4. Speed Settings and Control: Multiple or variable speed with speed setting adjustable via central or wall controllers when present.
5. Vibration Control: Integral isolation to dampen vibration transmission.

F. Filter Assembly:

1. Access: Bottom, to accommodate filter replacement without the need for tools.
2. Media: Washable screen.

G. Return/Discharge-Air Grille Assembly: Attached to bottom of unit cabinet.

1. Discharge Pattern: Four-way throw.

    a. Discharge Pattern Adjustment: Field-adjustable settings for up and down range of motion for individual vanes. Provide Deluxe controller to enable configuration.

2. Motorized Vanes: Modulating up and down flow pattern for uniform room air distribution.
3. Energy Saving

    a. [**Default energy operation: Integral occupant and location detection will not be utilized to automatically enable setback or mode changes. Set point and setback and mode determined by wall controller or central control when provided**.]
    b. [**"No occupancy energy save": If there are no persons in the room for 60 minutes or more, energy saving operation (setback) equal to 4°F is performed**.]
    c. [**"Room occupancy energy save": If occupancy rate decreases to approximately 30% of the maximum occupancy rate, energy saving operation (setback) equal to 2°F is performed**.]
    d. [**No occupancy Auto-OFF: If no persons are in the room for set amount of time (60–180 minutes), MODE is automatically changed (OFF, COOL, or HEAT)**.]

H. Outdoor Air Ventilation Connection: Sheet metal knockout for optional connection to outdoor air ventilation duct per Drawings.

I. Field-Installed Unit Accessories:

1. Condensate pump capable of at least 10 feet of lift.

J. Unit Controls:

1. Factory-Installed Sensors:

a. Unit inlet air temperature.
b. Coil entering refrigerant temperature.
c. Coil leaving refrigerant temperature.
d. Refrigerant detection.

K. Refrigerant Leak Detection:

1. Integral refrigerant sensor: Factory-installed.
2. Sequence upon leak detection:

a. Refrigerant detection communicated to outdoor unit or shut-off valve kit.
b. Indoor unit fan operates regardless of setting.
c. Alarm indicator(s) may include sound from indoor unit or controller, flashing LED, error code or message on wall controller or central controller.

L. Unit Electrical:

1. Field Connection: Single point connection to power entire unit and integral controls.
2. Disconnecting Means: Field-installed circuit breaker or switch, complying with NFPA 70.

2.7 INDOOR, SUSPENDED, CEILING-MOUNTED UNITS

A. Description: Factory-assembled and tested complete unit with components, piping, wiring, and controls required for mating to piping, power, and controls field connections.

B. Cabinet:

1. Material: Painted or coated steel frame covered by a plastic cabinet, with an architectural acceptable finish suitable for tenant occupancy on exposed surfaces.
2. Insulation: Closed-cell internal insulation to provide thermal resistance and prevent condensation.
3. Internal Access: Removable panels of adequate size for field access to internal components for inspection, cleaning, service, and replacement.

C. DX Coil Assembly:

1. Coil Casing: Aluminum, galvanized, or stainless steel.
2. Coil Fins: Aluminum, mechanically bonded to tubes, with arrangement required by performance.
3. Coil Tubes: Copper, of diameter and thickness required by performance.
4. Expansion Valve: Electronic modulating type with linear or proportional characteristics.
5. Internal Tubing: Copper tubing with brazed joints.
6. Internal Tubing Insulation: Closed-cell, of thickness to prevent condensation.
7. Factory Charge: Dehydrated air or nitrogen.
8. Testing: Factory pressure tested and verified to be without leaks.

D. Drain Assembly:

1. Pan: Non-ferrous material, with bottom sloped to low point drain connection.

2. Condensate Removal: Gravity.

    a. If a floor drain is not available at unit, provide unit with field-installed condensate pump accessory.

3. Field Piping Connection: Non-ferrous material.

E. Fan and Motor Assembly:

1. Fan(s):

    a. Direct-drive arrangement.
    b. Single or multiple fans connected to a common motor shaft and driven by a single motor.
    c. Fabricated from non-ferrous components or ferrous components with corrosion protection finish.
    d. Wheels statically and dynamically balanced.

2. Motor: Brushless DC or electronically commutated with permanently lubricated bearings.
3. Motor Protection: Integral protection against thermal, overload, and voltage fluctuations.
4. Speed Settings and Control: Multiple or variable speed with speed setting adjustable via central or wall controllers when present.
5. Vibration Control: Integral isolation to dampen vibration transmission.

F. Filter Assembly:

1. Access: Bottom, to accommodate filter replacement without the need for tools.
2. Media: Manufacturer's washable filter with antimicrobial treatment.

G. Discharge-Air Grille Assembly: Mounted in front of unit cabinet.

1. Discharge Pattern: One-way throw.
2. Discharge Pattern Adjustment: Field-adjustable limits for range of pattern.
3. Motorized Vanes: Modulating up and down flow pattern for uniform room air distribution.

H. Return-Air Grille Assembly: Manufacturer's standard.

I. Outdoor Air Ventilation Connection: Sheet metal knockout for optional connection to outdoor air ventilation duct per Drawings.

J. Field-Installed Unit Accessories:

1. Condensate pump capable of at least 10 feet of lift with drain pan level sensor and overflow switch.

K. Unit Controls:

1. Factory-Installed Sensors:

    a. Unit inlet air temperature.
    b. Coil entering refrigerant temperature.
    c. Coil leaving refrigerant temperature.

d. Refrigerant detection.

L. Refrigerant Leak Detection:

1. Integral refrigerant sensor: Factory-installed.
2. Sequence upon leak detection:

a. Refrigerant detection communicated to outdoor unit or shut-off valve kit.
b. Indoor unit fan operates regardless of setting.
c. Alarm indicator(s) may include sound from indoor unit or controller, flashing LED, error code or message on wall controller or central controller.

M. Unit Electrical:

1. Field Connection: Single point connection to power entire unit and integral controls.
2. Disconnecting Means: Field-installed circuit breaker or switch, complying with NFPA 70.

2.8 HVAC SYSTEM CONTROLS

A. General Requirements:

1. Network: Indoor units and outdoor units shall include integral controls and connect through a manufacturer-selected control network.
2. Network Communication Protocol: Manufacturer proprietary control communication between interconnected units.
3. Operator Interface:

a. Operators shall interface with system and unit controls through the following:

1) Operator interfaces integral to controllers

b. Users shall be capable of interface with controllers for indoor units' control to extent privileges are enabled. Control features available to users shall include the following:

1) On/off control.
2) Temperature set-point adjustment.
3) Fan speed control.

2.9 HVAC SYSTEM REFRIGERANT AND OIL

A. Refrigerant:

1. As required by HVAC system manufacturer for system to comply with performance requirements indicated.
2. ASHRAE 34, Class A2L refrigerant classification.

B. Oil:

1. As required by HVAC system manufacturer and to comply with performance requirements indicated.

2.10 HVAC SYSTEM CONDENSATE DRAIN PIPING

A. If more than one material is listed, material selection is Contractor's option.

B. Copper Tubing:

1. Drawn-Temper Tubing: According to **ASTM B88, Type L** or Type DWV according to ASTM B306.
2. Wrought-Copper Fittings: ASME B16.22.
3. Wrought-Copper Unions: ASME B16.22.
4. Solder Filler Metals: ASTM B32, lead-free alloys, and water-flushable flux according to ASTM B813.

C. CPVC plastic pipe according to ASTM F441/F441M, Schedule 40, with socket-type pipe fittings according to ASTM F438 and solvent cement according to ASTM F493.

D. PVC plastic pipe according to ASTM D1785, Schedule 40, with socket-type pipe fittings according to ASTM D2466 and solvent cement according to ASTM D2564, primer according to ASTM F656.

E. Reducers: Where applied to piping connected to unit-mounted integral lifting mechanism, only eccentric reducers oriented horizontally are allowed.

2.11 HVAC SYSTEM REFRIGERANT PIPING

A. Refrigerant Piping:

1. Copper Tube: ASTM B280, Type ACR.
2. Wrought-Copper Fittings: ASME B16.22.
3. Brazing Filler Metals: AWS A5.8/A5.8M.

B. Refrigerant Tubing Kits:

1. Factory-rolled and -bundled, soft-copper tubing with tubing termination fittings at each end.
2. Standard one-piece length for connecting to indoor units.
3. Pre-insulated with flexible elastomeric insulation of thickness to comply with governing energy code and sufficient to eliminate condensation.
4. Factory Charge: dehydrated air or nitrogen.

C. Assemblies and Specialties:

1. Divided-Flow Specialty Fittings: Where required by HVAC system manufacturer for proper system operation, HVAC system manufacturer shall furnish specialty fittings with identification and instructions for proper installation by Installer.

2.12 HVAC SYSTEM CONTROL CABLE

A. General Requirements: Refer to and verify all wire and cabling requirements with the manufacturer's current installation and operation manuals to ensure compliance with the latest standards and specifications. Cables may not be spliced and shall be continuous from terminal to terminal. Do not splice cable.

B. Low-Voltage Control Network Cabling:

1. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.

a. Shielded wire (2-core) 16 AWG—CVVS, CPEVS or MVVS.
b. PVC insulation and jacket.
c. Foil shielded.
d. Flame Resistance: Comply with NFPA 262.

C. Low-Voltage Wall-Mounted Controller Cabling to Indoor Units:

1. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.

a. 22 AWG, 2-conductor unshielded 7-stranded bare copper wire.

1) Residential / multi-family style controllers require 4-conductor.
2) Touch controllers with integral occupancy and light sensing controllers require low-voltage control network cabling to the network.

b. PVC insulation and jacket.
c. Flame Resistance: Comply with NFPA 262.
d. Maximum cable distance (distance from controller to indoor unit) varies by controller style. Refer to manufacturer Submittal or Installation Guides.

D. Transmission power booster provided if additional signal power is required based on connected devices. Coordinate with manufacturer and install near middle of communication bus when required.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine products before installation. Reject products that are wet, moisture damaged, or mold damaged.

C. Examine roughing-in for piping and tubing to verify actual locations of connections before equipment installation.

3.2 EQUIPMENT INSTALLATION, GENERAL

A. Clearance:

1. Maintain manufacturer's recommended clearances for service and maintenance.
2. Maintain clearances required by governing code.

3.3 INSTALLATION OF INDOOR UNITS

A. Install units to be level and plumb while providing a neat and finished appearance.

B. Unless otherwise required by HVAC system manufacturer, support ceiling-mounted units from structure above using threaded rods; minimum rod size of 3/8 inch (10 mm).

C. Adjust supports of exposed and recessed units to draw units tight to adjoining surfaces.

D. Protect finished surfaces of ceilings, floors, and walls that come in direct contact with units. Refinish or replaced damaged areas after units are installed.

E. In rooms with ceilings, conceal piping and tubing, controls, and electrical power serving units above ceilings.

F. In rooms without ceiling, arrange piping and tubing, controls, and electrical power serving units to provide a neat and finished appearance.

3.4 INSTALLATION OF OUTDOOR UNITS

A. Install units to be level and plumb while providing a neat and finished appearance.

B. Pad-Mounted Installations: Install outdoor units on cast-in-place concrete equipment bases. Comply with requirements for equipment bases and foundations specified in Section 033000 "Cast-in-Place Concrete."

C. Roof-Mounted Installations: Install outdoor units on equipment supports designed to protect roof membrane. Pitch pockets shall be installed following the roof membrane manufacture's recommendations.

3.5 GENERAL REQUIREMENTS FOR PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping and tubing systems. Install piping and tubing as indicated unless deviations to layout are approved on coordination drawings.

B. Surface mounted piping and wiring should be avoided. If required, the location of any surface mounted utilities must be reviewed and approved by the Engineer.

C. Install piping and tubing in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping and tubing at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping and tubing above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Install piping and tubing to permit valve servicing.

G. Install piping and tubing at indicated slopes.

H. Install piping and tubing free of sags.

I. Install fittings for changes in direction and branch connections.

J. Install piping and tubing to allow application of insulation.

K. Install groups of pipes and tubing parallel to each other, spaced to permit applying insulation with service access between insulated piping and tubing.

L. Install sleeves for piping and tubing penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 230500 "Common Work Results for HVAC."

M. Install escutcheons for piping and tubing penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 230500 "Common Work Results for HVAC."

3.6 INSTALLATION OF SYSTEM CONDENSATE DRAIN PIPING

A. General Requirements for Drain Piping and Tubing:

1. Install a union in piping at each threaded unit connection.
2. Install an adjustable stainless steel hose clamp with adjustable gear operator on unit hose connections. Tighten clamp to provide a leak-free installation.
3. If required for unit installation, provide a trap assembly in drain piping to prevent air circulated through unit from passing through drain piping. Comply with more stringent of the following:

    a. Details indicated on Drawings.
    b. Manufacturer's requirements.
    c. Governing codes.
    d. In the absence of requirements, comply with requirements of ASHRAE handbooks.

4. Extend drain piping from units with drain connections to drain receptors as indicated on Drawings. If not indicated on Drawings, terminate drain connection at nearest accessible location that is not exposed to view by occupants.
5. Provide each 90-degree change in direction with a Y- or T-fitting. Install a threaded plug connection in the dormant side of fitting or future use as a service cleanout.

B. Gravity Drains:

1. Slope piping from unit connection toward drain termination at a constant slope of not less than one percent.

C. Pumped Drains:

1. If unit condensate pump or lift mechanism is not included with an integral check valve, install a full-size check valve in each branch pipe near unit connection to prevent backflow into unit.

3.7 INSTALLATION OF REFRIGERANT PIPING

A. Refrigerant Tubing Kits:

1. Unroll and straighten tubing to suit installation. Deviations in straightness of exposed tubing shall be unnoticeable to observer.
2. Support tubing as specified in Section 230516 “Hangers and Supports for HVAC Piping and Equipment.”
3. Prepare tubing ends and make mating connections to provide a pressure tight and leak-free installation.

B. Select system components with minimum 650 psig pressure rating.

C. Install piping as short and direct as possible, with a minimum number of joints and fittings.

D. Arrange piping to allow inspection and service of equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels as specified in Section 083113 "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.

E. Install refrigerant piping and tubing in protective conduit where installed below ground.

F. Install refrigerant piping and tubing in rigid or flexible conduit in locations where exposed to mechanical damage.

G. Unless otherwise required by HVAC system manufacturer, slope refrigerant piping and tubing as follows:

1. Install horizontal hot-gas discharge piping and tubing with a uniform slope downward away from compressor.
2. Install horizontal suction lines with a uniform slope downward to compressor.
3. Traps to entrain oil in vertical runs are not allowed.
4. Inverted traps for twinned systems may be required by manufacturer.
5. Liquid lines may be installed level.

H. When brazing, remove or protect components that could be damaged by heat. Braze pipes with a dry nitrogen purge to avoid oxidation.

I. Before installation, clean piping, tubing, and fittings to cleanliness level required by HVAC system manufacturer.

J. Joint Construction:

1. Brazed Joints

a. Ream ends of tubes and remove burrs.
b. Remove scale, slag, dirt, and debris from inside and outside of tube and fittings before assembly.
c. Construct joints in accordance with AWS's "Brazing Handbook," "Pipe and Tube" Chapter.
d. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze.
e. The piping being brazed shall be purged of air to remove the oxygen and filled with one of the following inert gases: oxygen-free nitrogen, helium or argon. The piping system shall be purged with an inert gas for a minimum time corresponding to five volume changes through the piping system prior to brazing. The pre-purge rate shall be at a minimum velocity of 100 feet per minute (0.508 m/s). The inert gas shall be directly connected to the tube system being brazed to prevent the entrainment of ambient air. After the pre-purge, the inert gas supply shall be maintained through the piping during the brazing operation at a minimum pressure of 1.0 psi and a maximum pressure of 3.0 psi. The joint shall be brazed with a filler metal conforming to AWS A5.8.

2. Mechanically Pressed Joints

    a. The installing contractor shall be fully trained and qualified by the manufacturer of the mechanically pressed joints to install the selected piping connections.
    b. Mechanical joints shall be installed in accordance with the manufacturer's instructions.

3. Flared Joints

    a. Flared fittings shall be installed in accordance with the manufacturer's instructions. The flared fitting shall be used with the tube material specified by the fitting manufacturer. The flared tube end shall be made by a tool designed for that operation.

4. Soldered Joints

    a. Use of soldered joints is prohibited within systems.

3.8 INSTALLATION OF PIPING AND TUBING INSULATION

A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated. Installation to maintain a continuous vapor barrier.

B. Insulation Installation on Pipe Fittings and Elbows:

1. Install mitered sections of pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed valve covers manufactured of same material as pipe insulation when available.
2. When preformed valve covers are unavailable, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Where PVC jackets are indicated, install with 1-inch overlap at longitudinal seams and end joints, for horizontal applications. Seal with manufacturer's recommended adhesive.

1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

E. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless steel bands 12 inches o.c. and at end joints.

3.9 FIELD QUALITY CONTROL

1. Final Inspection before Startup:

   a. All system equipment and operating components shall be inspected. If components are inaccessible for inspection, they shall be made accessible before the final inspection can be completed.
   b. Inspection reports for indoor units shall include, but not be limited to, the following:

      1) Unit designation on Drawings.
      2) Manufacturer model number.
      3) Serial number.
      4) Network address, if applicable.
      5) Each equipment setting.
      6) Mounting, supports, and restraints properly installed.
      7) Proper service clearance provided.
      8) Wiring and power connections correct.
      9) Line-voltage reading(s) within acceptable range.
      10) Wiring and controls connections correct.
      11) Low voltage reading(s) within an acceptable range.
      12) Controller type and model controlling unit.
      13) Controller location.
      14) Temperature settings and readings within an acceptable range.
      15) Condensate removal acceptable.
      16) Fan settings and readings within an acceptable range.
      17) Unit airflow direction within an acceptable range.
      18) If applicable, fan external static pressure setting.
      19) Filter type and condition acceptable.
      20) Noise level within an acceptable range.
      21) Refrigerant or hydronic piping properly connected and insulated.
      22) Condensate drain piping properly connected and insulated.
      23) If applicable, ductwork properly connected.
      24) If applicable, external interlocks properly connected.
      25) Remarks.

   c. Inspection reports for outdoor units shall include, but not be limited to, the following:

      1) Unit designation on Drawings.
      2) Manufacturer model number.
      3) Serial number.
      4) Network address, if applicable.
      5) Each equipment setting, including compressor speed control.
      6) Mounting, supports, and restraints properly installed.
      7) Proper service clearance provided.
      8) Wiring and power connections correct.
      9) Line-voltage reading(s) within acceptable range.
      10) Wiring and controls connections correct.
      11) Low voltage reading(s) within an acceptable range.
      12) Condensate removal acceptable.
      13) Noise level within an acceptable range.
      14) Refrigerant piping properly connected and insulated.
      15) Condensate drain piping properly connected and insulated.
      16) For water-source outdoor units, water piping properly connected and

insulated.

17) For water-source outdoor units, proof of water flow checked for proper operation.
18) Remarks.

B. System Refrigerant Charge:

1. System Installer shall consult system manufacturer to determine the correct system refrigerant charge based on as-built piping lengths.
2. Installer shall charge system following HVAC system manufacturer's written instructions.
3. Total refrigerant charge shall be recorded and permanently displayed at the system's outdoor unit.

3.10 STARTUP SERVICE

A. Startup checks shall include, but not be limited to, the following:

1. Check control communications of equipment and each operating component in system(s).
2. Check each outdoor unit’s power supply is connected 12 to 24 hours before startup of system.
3. Check each indoor unit's response to demand for cooling and heating.
4. Check each indoor unit's response to changes in airflow settings.
5. Check each indoor unit and outdoor unit for proper condensate removal.

B. Witness:

1. Invite Engineer and site personnell to witness startup service procedures.
2. Provide written notice not less than 7 business days before start of startup service.

3.11 ADJUSTING

A. Adjust equipment and components to function smoothly and lubricate as recommended by manufacturer.

B. Adjust initial temperature set points. Adjust initial airflow settings and discharge airflow patterns.

C. Set field-adjustable switches according to HVAC system manufacturer's written instructions, and as indicated.

NON-COLLUSIVE BIDDING CERTIFICATION

This Non-Collusive Bidding Certificate is made pursuant to Section 103-d of the General Municipal Law of the State of New York.

By submission of this bid, Bidder and each person signing on behalf of Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his or her knowledge and belief:

The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor;

Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by Bidder and will not knowingly be disclosed by Bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where (1) (2) and (3) above, have not been complied with; provided, however, that if in any case Bidder cannot make the foregoing certification, Bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

Dated: _____

Bidder: _____
(Legal name of person, firm or corporation)

By: _____
(Signature)

_____
(Please Print Name)

_____
(Title)

State of New York)
Town of_____)ss.:

On the _____ day of _____ in the year 2026 before me, the undersigned, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
(Notary Public)