

INVITATION FOR BIDS
HOUSING AUTHORITY OF MAYFIELD
FOR
HVAC and Water HEATER REPLACEMENT
KY040-03

The Housing Authority of Mayfield will receive sealed bids for the replacement of HVAC units and Water Heaters for 1 bedroom units at KY040-03 until 2:00PM, prevailing time on August 5, 2020 at the office of the Housing Authority of Mayfield, 312 Brookside Drive, Mayfield, KY at which time and place all bids will be publicly opened and read aloud.

This project consists of replacement of 22 Water Heater and HVAC units (furnace, evaporator, condenser, filter grill and related duct work) with new Energy Star rated units and Water Heaters.

Copies of the documents may be obtained from the Housing Authority of Mayfield, 312 Brookside Drive, Mayfield, KY 42066 (270) 247-6391 ext. 222.

The Housing Authority of Mayfield reserves the right to reject any or all bids or to waive any formalities in the bidding.

No bid shall be withdrawn for a period of forty-five (45) days after the opening of bids without the written consent of the Housing Authority of Mayfield.

Housing Authority of Mayfield
Donald E. Costello, Jr.
Executive Director

TO Housing Authority of Mayfield

312 Brookside Drive

Mayfield, KY 42066

FROM _____

312 Brookside Drive

Mayfield, KY 42066

- ## 2. PRICE PER UNIT

$$\begin{array}{ccccc} \$ \underline{\hspace{2cm}} & + & \$ \underline{\hspace{2cm}} & \times & = & \$ \underline{\hspace{2cm}} \\ \text{HVAC} & & \text{WATER HEATER} & & & \text{TOTAL} \end{array}$$

3. In submitting this bid, it is understood that the right is reserved by the Housing Authority of Mayfield to reject any and all bids. If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within forty-five (45) days after opening thereof, or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form within ten (10) days after the contract is presented to be signed.

CONTRACTOR:

DATE:

Certification and Insurance

The Contractor must be a licensed HVAC contractor with the state of Kentucky. Contractor is Responsible for agreement with licensed plumber. They must also, furnish proof of Liability Insurance and Workers Comp. As well as submit with the bid, a bid guarantee of 5% of the bid Price and one of the following:

- A. A performance and payment bond for 100% of the contract price
- B. Separate performance and payment bonds, each for 50% or more of the contract price
- C. A 20% cash escrow
- D. A 25% irrevocable letter of credit

Contractor must comply with Davis Bacon Act and Prevailing wages. Copy attached for this area.

LIST OF MATERIALS AND EQUIPMENT

Bidders are hereby advised that this list shall be completed and submitted with their proposal.

NOTE:

Every item must be identified so that the Housing Authority of Mayfield will know what the Bidder proposes to furnish.

Where more than one "Maker or Brand" is listed for any one item, the Housing Authority of Mayfield shall have the right to select the one to be used.

For material not listed below, any waive form manufactures' materials and finishes as listed on working drawings must be approved prior to bidding.

Failure to submit a list may result in rejection of bidder's proposal.

ITEM	MAKE OR BRAND	SERIES OR MODEL NO.
FURNACE	_____	_____
EVAPORATOR	_____	_____
CONDENSOR	_____	_____
THERMOSTAT	_____	_____
WATER HEATER	_____	_____

**U.S. Department of Housing and
Urban Development**
Office of Public and Indian Housing

**Instructions to Bidders for Contracts
Public and Indian Housing Programs**

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work of the General Conditions of the Contract for Construction**). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

- (1) Integrity;
- (2) Compliance with public policy;
- (3) Record of past performance; and
- (4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date and the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

(b) If the apparent low bid received in response to this solicitation exceeds the PHA's/IHA's available funding for the proposed contract work, the PHA/IHA may either accept separately priced items (see 8(e) below) or use the following procedure to determine contract award. The PHA/IHA shall apply in turn to each bid (proceeding in order from the apparent low bid to the high bid) each of the separately priced bid deductible items, if any, in their priority order set forth in this solicitation. If upon the application of the first deductible item to all initial bids, a new low bid is within the PHA's/IHA's available funding, then award shall be made to that bidder. If no bid is within the available funding amount, then the PHA/IHA shall apply the second deductible item. The PHA/IHA shall continue this process until an evaluated low bid, if any, is within the PHA's/IHA's available funding. If upon the application of all deductibles, no bid is within the PHA's/IHA's available funding, or if the solicitation does not request separately priced deductibles, the PHA/IHA shall follow its written policy and procedures in making any award under this solicitation.

(c) In the case of tie low bids, award shall be made in accordance with the PHA's/IHA's written policy and procedures.

(d) The PHA/IHA may reject any and all bids, except other than the lowest bid (e.g., the apparent low bid is unreasonably low), and waive informalities or minor irregularities in bids received, in accordance with the PHA's/IHA's written policy and procedures.

(e) Unless precluded elsewhere in the solicitation, the PHA/IHA may accept any item or combination of items bid.

(f) The PHA/IHA may reject any bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(g) A written award shall be furnished to the successful bidder within the period for acceptance specified in the bid and shall result in a binding contract without further action by either party.

9. Bid Guarantee (applicable to construction and equipment contracts exceeding \$25,000)

All bids must be accompanied by a negotiable bid guarantee which shall not be less than five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. In the case where the work under the contract will be performed on an Indian reservation area, the bid guarantee may also be an irrevocable Letter of Credit (see provision 10, Assurance of Completion, below). Certified checks and bank drafts must be made payable to the order of the PHA/IHA. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. Failure to submit a bid guarantee with the bid shall result in the rejection of the bid. Bid guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening.

10. Assurance of Completion

(a) Unless otherwise provided in State law, the successful bidder shall furnish an assurance of completion prior to the execution of any contract under this solicitation. This assurance may be [Contracting Officer check applicable items] —

[] (1) a performance and payment bond in a penal sum of 100 percent of the contract price; or, as may be required or permitted by State law;

[] (2) separate performance and payment bonds, each for 50 percent or more of the contract price;

[] (3) a 20 percent cash escrow;

[] (4) a 25 percent irrevocable letter of credit; or,

[] (5) an irrevocable letter of credit for 10 percent of the total contract price with a monitoring and disbursements agreement with the IHA (applicable only to contracts awarded by an IHA under the Indian Housing Program).

(b) Bonds must be obtained from guarantee or surety companies acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. Individual sureties will not be considered. U.S. Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing Government contracts, the maximum underwriting limits on each contract bonded, and the States in which the company is licensed to do business. Use of companies listed in this circular is mandatory. Copies of the circular may be downloaded on the U.S. Department of Treasury website <http://www.fms.treas.gov/c570/index.html>, or ordered for a minimum fee by contacting the Government Printing Office at (202) 512-2168.

(c) Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

(d) Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the PHA/IHA may grant based upon reasons determined adequate by the PHA/IHA, shall render the bidder ineligible for award. The PHA/IHA may then either award the contract to the next lowest responsible bidder or solicit new bids. The PHA/IHA may retain the ineligible bidder's bid guarantee.

11. Preconstruction Conference (applicable to construction contracts)

After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the PHA/IHA and its architect/engineer, and other interested parties convened by the PHA/IHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract (e.g., Equal Employment Opportunity, Labor Standards). The PHA/IHA will provide the successful bidder with the date, time, and place of the conference.

12. Indian Preference Requirements (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

(a) HUD has determined that the contract awarded under this solicitation is subject to the requirements of section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e(b)). Section 7(b) requires that any contract or subcontract entered into for the benefit of Indians shall require that, to the greatest extent feasible

(1) Preferences and opportunities for training and employment (other than core crew positions; see paragraph (h) below) in connection with the administration of such contracts or subcontracts be given to qualified "Indians." The Act defines "Indians" to mean persons who are members of an Indian tribe and defines "Indian tribe" to mean any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians; and,

(2) Preference in the award of contracts or subcontracts in connection with the administration of contracts be given to Indian organizations and to Indian-owned economic enterprises, as defined in section 3 of the Indian Financing Act of 1974 (25 U.S.C. 1452). That Act defines "economic enterprise" to mean any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, except that the Indian ownership must constitute not less than 51 percent of the enterprise; "Indian organization" to mean the governing body of any Indian tribe or entity established or recognized by such governing body; "Indian" to mean any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act; and Indian "tribe" to mean any Indian tribe, band, group, pueblo, or community including Native villages and Native groups (including

corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

(b) (1) The successful Contractor under this solicitation shall comply with the requirements of this provision in awarding all subcontracts under the contract and in providing training and employment opportunities.

(2) A finding by the IHA that the contractor, either (i) awarded a subcontract without using the procedure required by the IHA, (ii) falsely represented that subcontracts would be awarded to Indian enterprises or organizations; or, (iii) failed to comply with the contractor's employment and training preference bid statement shall be grounds for termination of the contract or for the assessment of penalties or other remedies.

(c) If specified elsewhere in this solicitation, the IHA may restrict the solicitation to qualified Indian-owned enterprises and Indian organizations. If two or more (or a greater number as specified elsewhere in the solicitation) qualified Indian-owned enterprises or organizations submit responsive bids, award shall be made to the qualified enterprise or organization with the lowest responsive bid. If fewer than the minimum required number of qualified Indian-owned enterprises or organizations submit responsive bids, the IHA shall reject all bids and readvertise the solicitation in accordance with paragraph (d) below.

(d) If the IHA prefers not to restrict the solicitation as described in paragraph (c) above, or if after having restricted a solicitation an insufficient number of qualified Indian enterprises or organizations submit bids, the IHA may advertise for bids from non-Indian as well as Indian-owned enterprises and Indian organizations. Award shall be made to the qualified Indian enterprise or organization with the lowest responsive bid if that bid is -

(1) Within the maximum HUD-approved budget amount established for the specific project or activity for which bids are being solicited; and

(2) No more than the percentage specified in 24 CFR 905.175(c) higher than the total bid price of the lowest responsive bid from any qualified bidder. If no responsive bid by a qualified Indian-owned economic enterprise or organization is within the stated range of the total bid price of the lowest responsive bid from any qualified enterprise, award shall be made to the bidder with the lowest bid.

(e) Bidders seeking to qualify for preference in contracting or subcontracting shall submit proof of Indian ownership with their bids. Proof of Indian ownership shall include but not be limited to:

(1) Certification by a tribe or other evidence that the bidder is an Indian. The IHA shall accept the certification of a tribe that an individual is a member.

(2) Evidence such as stock ownership, structure, management, control, financing and salary or profit sharing arrangements of the enterprise.

(f) (1) All bidders must submit with their bids a statement describing how they will provide Indian preference in the award of subcontracts. The specific requirements of that statement and the factors to be used by the IHA in determining the statement's adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement shall be rejected as nonresponsive. The IHA may require that comparable statements be provided by subcontractors to the successful Contractor, and may require the Contractor to reject any bid or proposal by a subcontractor that fails to include the statement.

(2) Bidders and prospective subcontractors shall submit a certification (supported by credible evidence) to the IHA in any instance where the bidder or subcontractor believes it is infeasible to provide Indian preference in subcontracting. The acceptance or rejection by the IHA of the certification shall be final. Rejection shall disqualify the bid from further consideration.

(g) All bidders must submit with their bids a statement detailing their employment and training opportunities and their plans to provide preference to Indians in implementing the contract; and the number or percentage of Indians anticipated to be employed and trained. Comparable statements from all proposed subcontractors must be submitted. The criteria to be used by the IHA in determining the statement(s)'s adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement(s), or that includes a statement that does not meet minimum standards required by the IHA shall be rejected as nonresponsive.

(h) Core crew employees. A core crew employee is an individual who is a bona fide employee of the contractor at the time the bid is submitted; or an individual who was not employed by the bidder at the time the bid was submitted, but who is regularly employed by the bidder in a supervisory or other key skilled position when work is available. Bidders shall submit with their bids a list of all core crew employees.

(i) Preference in contracting, subcontracting, employment, and training shall apply not only on-site, on the reservation, or within the IHA's jurisdiction, but also to contracts with firms that operate outside these areas (e.g., employment in modular or manufactured housing construction facilities).

(j) Bidders should contact the IHA to determine if any additional local preference requirements are applicable to this solicitation.

(k) The IHA [] does [] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders**
Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)(2) above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

[] [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit, (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities," and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

- (a) Result in an unfair competitive advantage to the bidder; or,
 - (b) Impair the bidder's objectivity in performing the contract work.
- [] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|------------------------|------------------------------|
| [] Black Americans | [] Asian Pacific Americans |
| [] Hispanic Americans | [] Asian Indian Americans |
| [] Native Americans | [] Hasidic Jewish Americans |

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract ☐ is, ☐ is not listed on the Environmental Protection Agency List of Violating Facilities;

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" ☐ is, ☐ is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

WATER HEATER AND FURNACE REPLACEMENT

July 01, 2020

PROJECT REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The general scope of work for this project shall include:

- a. Units are to be renovated.
- b. Provide per unit price.
- c. Provide and install new, tankless, electric water heaters in existing mechanical space.
- d. Provide and install new, ground mounted furnace and exterior condensing unit.
- e. Connect to existing supply ductwork in attic. Install new return grille in mechanical room sidewall.
- f. Remove and properly dispose of existing equipment.
- g. Disconnect and reconnect electrical wiring.
- h. Disconnect and reconnect gas piping.
- i. Disconnect and reconnect to existing water piping in mechanical space.
- j. Installing new intake and relief PVC flue piping to new concentric vent in exterior wall or roof for new furnaces.

1.02 REGULATORY REQUIREMENTS

- A. All work shall be executed and inspected in accordance with all local and state codes, laws, ordinances, rules and regulations applicable to the particular class of work. The Contractor shall include in his quotation all applicable service charges, fees, permits, royalties, and other similar costs in connection with the work. If, to the knowledge of the Contractor, the drawings and specifications conflict with the above, he shall promptly notify the engineer in writing so that necessary changes can be provided for in his contract. If the contractor performs any work without notice as required, he shall bear all the costs of corrective action.
- B. The Contractor shall obtain permits, and request inspections from authority having jurisdiction.

1.03 SUBMITTALS

- A. Install work in locations as indicated in specification, unless prevented by Project conditions. The Contractor shall make use of all data in all the contract documents and shall verify all information at the site prior to start of construction.
- B. The Contractor shall verify the exact location of each unit as necessary and existing conditions.
- C. The Contractor shall provide a submittal to the owner for approval prior to the procurement for:
 1. Furnace/Condensing unit—Trane TUH1B040/4TTR4018
 2. Electric Water Heater—Eemax HA018240
 3. Or equivalent as noted above

1.04 GUARANTEE

- A. Contractor shall guarantee all work performed under this contract to be free from defects in materials and workmanship for a period of one year from date of witnessed and approved startup.
- B. Refer to individual specification sections and drawings for additional guarantees and equipment warranty requirements.

PART 2 PRODUCTS

2.01 MOTORS

- A. Motors for all Division 15 equipment shall be furnished by suppliers of such equipment and shall be the type that has characteristics suitable for continuous operating conditions. Motors shall consist of NEMA frame construction, 40 degrees C temperature rise, suitable for the available electric current characteristics, and have quiet operating bearings.

2.02 TEMPERATURE CONTROL WIRING

- A. All temperature control wiring shall be furnished and installed by this division in accordance with all local codes and ordinances. All installations shall be in accordance with manufactures recommendations for connected devices. All temperature control wiring shall be in conduit when exposed.

2.03 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacture instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

2.04 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions, with seals and labels intact and legible.
- B. Store sensitive Products in weather tight, climate-controlled enclosures.
- C. For exterior storage of fabricated Products, place on sloped supports, above ground.
- D. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of Product.

2.05 PRODUCT OPTIONS

- A. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit request for substitution for any manufacturer not named.

2.06 SUBSTITUTIONS

- A. Product may be substituted in place of specified products as long as the substituted product meets or exceeds the specified product basis and is approved by the owner.

PART 3 EXECUTION

3.01 EQUIPMENT REPLACEMENT

- A. All work performed by this section shall utilize craftsman with a demonstrated ability to perform the specific work required.
- B. All work performed by this section shall be by a contractor licensed in the State of Kentucky for this class of work.
- C. All work shall be coordinated with owner. Construction activities shall not begin, and existing units shall not be disabled without owner's approval. Contractor shall, generally, only disable the existing units at the time that the replacement equipment is ready to install.
- D. Existing electrical at equipment shall be disconnected and wiring extended to new equipment locations. Contractor shall verify capacity of existing electrical service prior to installation and remove any unused breakers. Natural gas piping and control wiring shall be disconnected and extended to new furnace/thermostat location. Provide dirt leg and accessible shutoff valve in mechanical room.
- E. Provide and install new, non-programmable thermostat.
- F. Remove existing equipment, unused combustion air ducts and unused flue piping. Cap unused flues through roof. Cap any unused water piping.
- G. Install new water heater in mechanical closet. Maintain manufacturers recommended clearance. Install new water heater such that the new furnace can be installed next to short wall with the return grille.
- H. Connect to existing water piping.
- I. Install new furnace in existing mechanical closet. Extend supply duct through ceiling to existing ductwork in attic. Install new 20x20 filter return grille in low sidewall of mechanical room and connect via fully lined duct/plenum to furnace. All new duct shall have min R-8 insulation and shall be sealed properly. Permanently seal existing ceiling return opening.
- J. Provide little giant condensate pump. Route discharge to existing laundry box in mechanical room. Provide auxiliary drain pan with float switch.
- K. Contractor shall install new intake and relief PVC flue piping through roof/wall to concentric intake for new condensing furnace.
- L. Existing refrigerant piping may be reused if in acceptable condition. Contractor shall inspect prior to construction and replace as required. Reinsulate all refrigerant piping as required. Install new condensing unit on formed in place concrete pad. Preformed pads are not acceptable.

3.02 CAPACITIES

- A. Provide a per unit price to replace existing equipment per the following:

END OF SECTION

DOMESTIC WATER HEATERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:

1. Water heaters.
2. Accessories

1.02 References

- A. American National Standards Institute (ANSI) Publications:
1. Z21.22 "Relief Valves for Hot Water Supply Systems"
- B. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Publications:
1. 90.1 "Energy Code for Commercial and High-Rise Residential Buildings"
 2. 90.2 "Energy Code for New Low-Rise Residential Buildings"
- C. The American Society of Mechanical Engineers (ASME) Publications:
1. "(The 2004) ASME Boiler and Pressure Vessel Code"
 2. B 1.20.1 "Pipe Threads, General Purpose, Inch"
 3. B 16.5 "Pipe Flanges and Flanged Fittings: NPS ½ through 24"
 4. B 16.24 "Cast Copper Alloy Pipe Flanges and Flanged Fittings: Classes 150, 300, 400, 600, 900, 1500, and 2500"
- D. American Society of Sanitary Engineering (ASSE) Publications:
1. 1017 "Performance Requirements for Temperature Actuated Mixing Valves for Hot Water Distribution Systems"
- E. Canadian Standards Associations (CSA) Publications:
1. B125.1 "Plumbing Supply Fittings"
- F. National Fire Protection Association (NFPA) Publications:
1. 70 "National Electric Code"
- G. Underwriter's Laboratories, Inc. (UL) Publications:
1. 486A "Standard for Wire Connectors and Soldering Lugs for Use with Copper Conductors"
 2. 486B "Standard for Wire Connectors for Use with Aluminum Conductors:
 3. 778 "Standard for Motor-Operated Water Pumps"
 4. 795 "Standard for Commercial-Industrial Gas Heating Equipment"

1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
- B. Submit "Letter of Conformance" indicating specified items selected for use in project with the following supporting data.
1. Product Data:
 - a. For each type and size of water heater, include rated capacities; shipping, installed, and operating weights; furnished specialties and accessories.
 - b. Wiring Diagrams: Power, signal, and control systems. Differentiate between Manufacturer-installed and field-installed wiring.

2. Product Certificates: Signed by manufacturers of water heaters certifying that products Furnished comply with requirements.
3. Maintenance Data: For water heaters to include in maintenance manuals specified in Division 01.
4. Warranties: Special warranties specified in this Section.

1.04 QUALITY ASSURANCE

- A. Source Limitations: Obtain same type of water heaters through one source from a single manufacturer.
- B. Product Options: Drawings indicate size, profiles, and dimensional requirements of water Heaters and are based on specific units indicated.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction, and marked for Intended use.
- D. ASME Compliance: Fabricate and label water heater, hot-water storage tanks to comply With ASME Boiler and Pressure Vessel Code: Section VII, "Pressure Vessels," Division 01.
- E. ASHRAE Standards: Comply with performance efficiencies prescribed for the following:
 1. ASHRAE 90.1, "Energy Efficient Design for New Buildings except Low-Rise Residential Buildings," for commercial water heaters.

1.05 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of water heaters that fall in materials or workmanship specified warranty period.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Approved Manufacturers
 1. Electric Water Heaters: (Tankless Type)
 - a. Eemax
 - b. Rheem
 - c. Bosch

2.02 WATER HEATER ACCESSORIES

- A. Water Heater Stands: not used
- B. Water Heater Mounting Brackets: Water heater manufacturer's factory-fabricated steel bracket for wall mounting and capable of supporting water heater and water.
- C. Drip Pans: not used
- D. Piping-Type Heat Traps: Field-fabricated piping arrangement according to ASHRAE/IESNA 90.1 or ASHRAE 90.2

PART 3 EXECUTION

3.01 WATER HEATER INSTALLATION

- A. Install commercial water heaters on concrete bases.
 1. Exception: Omit concrete bases for commercial water heaters if installation on stand, Bracket, suspended platform, or direct on floor is indicated.

- B. Install water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.
- C. Install combination temperature and pressure relief valves in top portion of storage tanks. Use relief valves with sensing elements that extend into tanks. Extend relief valve outlet, with drain piping same as domestic water piping in continuous downward pitch, and discharge by positive air gap onto closet floor drain.
- D. Install water heater drain piping as indirect waste to spill by positive air gap into open drains or over floor drains. Install hose-end drain valves at low points in water piping for water heaters that do not have tank drains. Refer to Division 22 Section "Domestic Water Piping Specialties" for hose-end drain valves.
- E. Install thermometer on outlet piping of water heaters.
- F. Install piping-type heat traps on inlet and outlet piping of water heater storage tanks without integral or fitting-type heat traps.
- G. Fill water heaters with water.

3.02 CONNECTIONS

- A. Install piping adjacent to water heaters to allow service and maintenance. Arrange piping for easy removal of water heaters.
- B. Ground equipment according to NEC 2017
- C. Connect wiring according to NEC 2017

3.03 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections:
 - 1. Leak Test: After installation, test for leaks. Repair leaks and retest until no leaks exist.
 - 2. Operational Test: After electrical circuitry has been energized, confirm proper operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Remove and replace water heaters that do not pass tests and inspections and retest as specified above.

3.04 DEMONSTRATION

- A. Engage a factory-authorized representative to train Owner's maintenance personnel to adjust, operate, and maintain commercial electric water heaters.

END OF SECTION

FORCED AIR FURNACES

PART 1 - GENERAL:

1.01 WORK INCLUDES:

- A. Forced air furnaces.
- B. Refrigerant cooling coils
- C. Controls.

1.02 RELATED WORK:

- A. Not Used

1.03 REFERENCES:

- A. ARI 210/240-89 - Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- B. ARI 270 - Sound Rating of Outdoor Unitary Equipment.
- C. ARI 520 - Positive Displacement Refrigerant Compressors, Compressor Units and Condensing Units.
- D. Not Used
- E. ASHRAE 14 - Methods of Testing for Rating Positive Displacement Condensing Units.
- F. ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- G. ASHRAE 90A - Energy Conservation in New Building Design.
- H. ASHRAE 103 - Heating Seasonal Efficiency of Central Furnaces and Boilers, Methods of Testing.
- I. NEMA MG 1 - Motors and Generators
- J. NFPA 31 - Installation of Oil Burning Equipment.
- K. NFPA 54 (AGA Z223.1) - National Fuel Gas Code.
- L. NFPA 90A - Installation of Air Conditioning and Ventilating Systems.
- M. NFPA 90B - Installation of Warm Air Heating and Air Conditioning Systems.
- N. UL207 - Refrigerant-Containing Components and Accessories, Non-electrical.
- O. UL303 - Refrigeration and Air-Conditioning Condensing and Compressor Units.

1.04 SUBMITTAL FOR REVIEW:

- A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.

1.05 SUBMITTALS AT PROJECT CLOSEOUT:

- A. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.
- B. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE:

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years' experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum five years' experience approved by manufacturer.

1.07 REGULATORY REQUIREMENTS:

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.08 WARRANTY:

- A. Provide five-year manufacturer's warranty for heat exchangers.
- B. Provide three-year manufacturer's warranty for solid state ignition modules.
- C.

PART 2 PRODUCTS:

2.01 GAS FIRED FURNACES:

- A. Trane, Rheem, Carrier.
- B. Other acceptable manufacturers offering equivalent products.
- C. Units: Self-contained, packaged, factory assembled pre-wired unit consisting of cabinet, supply fan, heating element, controls, air filter, and accessories; wired for single power connection with control transformer.
 - 1 Air Flow Configuration: Upflow
 - 2 Heating: 95%+ efficient condensing Natural gas fired.
 - 3 Electric Refrigeration: Refrigerant cooling coil and outdoor package containing compressor, condenser coil and condenser fan.
- D. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
- E. Supply Fan: Centrifugal type rubber mounted with direct or belt drive.
- F. Motor: multiple speed, permanently lubricated, hinge mounted.
- G. Gas Burner:
 - 1. Gas valve, provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (on-off), automatic electric valve.
 - 2. Electronic pilotless ignition, with electric spark plug.
 - 3. Non-corrosive combustion air blower with permanently lubricated motor.
- H. Gas Burner Safety Controls:
 - 1. Thermocouple sensor: Prevents opening of gas valve until pilot flame is proven, combustion chamber has been proven and stops gas flow on ignition failure.
 - 2. Flame rollout switch: Installed on burner box and prevents operation.
 - 3. Vent safety shutoff sensor: Temperature sensor installed on draft hood and prevents operation, manual reset.
 - 4. Limit Control: Fixed stop at maximum permissible setting, de-energizes burner on excessive bonnet temperature, automatic resets.
- I. Operating Controls:
 - 1. Room Thermostat: Cycles burner to maintain room temperature setting (heating). Cycles blower and air-cooled condensing unit to maintain room temperature setting (cooling). Provide non-programmable thermostat.
- J. Air Filters: 1-inch thick glass fiber, disposable type in grille housing arranged for easy replacement. Filter mounting channels integral with unit. Verify details with owner.
- K. Performance:
 - 1. Ratings: Energy Efficiency Rating (SEER) not less than 14
 - 2. Refer to Furnace Schedule. 98%+. Gas heating capacities are sea level ratings.
 - 3. Air Handling: Refer to furnace schedule.

4. Heating Capacity: Refer to furnace schedule.

2.02 EVAPORATOR COIL UNITS:

- A. Manufacturer: Trane, Rheem, Carrier
- B. Other acceptable manufacturers offering equivalent products.
- C. Construction and Ratings: In accordance with ARI 210/240 and UL 207 and UL 303.
- D. Evaporator Coil: Copper tube aluminum fin assembly, galvanized drain pan, drain pan, drain connection, refrigerant piping connections, restricted distributor or thermostatic expansion valve, steel cabinet with baked enamel finish and insulation.

PART 3 - EXECUTION:

3.01 EXAMINATION:

- A. Verify that floors are ready for installation of units.
- B. Verify that proper power supply is available for furnace.
- C. Verify that proper fuel supply is available for connections.

3.02 INSTALLATION:

- A. Install in accordance with NFPA 90A and NFPA 90B.
- B. Install gas fired furnaces in accordance with ANSI Z223.1 and NFPA 54.
- C. Install refrigeration systems in accordance with ASHRAE 15.
- D. Pipe drain from cooling coil.

END OF SECTION

AIR COOLED CONDENSING UNITS

PART 1 – GENERAL:

1.01 WORK INCLUDES:

- A. Condensing unit package
- B. Charge of refrigerant and oil
- C. Controls and control connections
- D. Refrigerant piping connections
- E. Motor starters
- F. Electrical power connections

1.02 RELATED WORK:

Not used

Not used

1.03 REFERENCES:

- A. AIR 270 - Sound Rating of Outdoor Unitary Equipment
- B. ARI 365 - Commercial and Industrial Unitary Air-Conditioning Condensing Units.
- C. ASHRAE 14 – Methods of Testing for Rating Positive Displacement Condensing Units.
- D. ASHRAE 15 – Safety Code for Mechanical Refrigeration.
- E. ASHRAE 90A – Energy Conservation in new Building Design.
- F. NEMA MG 1 – Motors and Generators
- G. UL 207 – Refrigerant Containing Components and Accessories, Non-electrical.
- H. UL 303 – Refrigeration and Air-Conditioning Condensing, and Air-Source Heat Pump Equipment.

1.04 SUBMITTALS FOR REVIEW

- A. Product Data: Provide rated capacities, weights, specialties and accessories, electrical nameplate data, and wiring diagrams. Make submission with furnace units.

1.05 SUBMITTALS AT PROJECT CLOSE-OUT

- A. Operation and Maintenance Data: Include start-up instructions, maintenance instructions, parts lists, controls, and accessories.

1.06 REGULATORY REQUIREMENTS:

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.07 DELIVERY, STORAGE AND PROTECTION:

- A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.
- B. Protect units on site from physical damage. Protect coils.

1.08 WARRANTY

- A. Provide a five-year warranty to include coverage for refrigerant compressors.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Air Cooled Condensing Units
 - 1. Trane
 - 2. Other Acceptable Manufacturers:
 - a. Carrier
 - b. Rheem

2.02 MANUFACTURED UNITS:

- A. Units: Self-contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of cabinets, compressors, condensing coil and fans, integral sub-cooling coil, controls, liquid receiver, and screens.
- B. Construction and Ratings: In accordance with ARI 210/240-89 and 270-84. Testing shall be in accordance with ASHRAE 14.
- C. Performance Ratings: Energy Efficiency Rating (SEER) not less than 14.

2.03 CASING

- A. House components in galvanized steel panels with weather resistant, baked enamel finish.
- B. Mount starters, disconnects, controls and transformers in weatherproof panel provided with full opening access doors. Provide mechanical interlock to disconnect power when door is opened.
- C. Provide removable access doors or panels with quick fasteners.

2.04 CONDENSER COILS:

- A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide sub-cooling circuits. Air test under water to 425 psig.
- B. Coil Guard: Expanded metal with lint screens.

2.05 FANS AND MOTORS:

- A. Vertical discharge direct driven propeller type condenser fans with fan guard on discharge.
- B. Weatherproof motors suitable for outdoor use, with permanent lubricated balls bearings and built in current and thermal overload protection.

2.06 COMPRESSORS:

- A. Compressor: hermeticing type.
- B. Mounting: Statically and dynamically balance rotating parts and mount on vibration isolators.

2.07 CONTROLS:

- A. On unit, mount weatherproof steel control panel, NEMA 250, containing power and control wiring, factory wired with single point power connection.
- B. Provide safety controls arranged so any one will shut down machine:

1. High discharge pressure switch (automatic reset) for each compressor.
2. Low suction pressure switch (automatic reset) for each compressor.

PART 3 –EXECUTION

3.01 INSTALLATION:

- A. Install in accordance with manufacturer's installation instructions.
- B. Complete mechanical and electrical connections in accordance with manufacturer's Installation instructions.
- C. Provide for connection to electrical service.
- D. Provide connection to refrigeration piping system and evaporators. Comply with ASHRAE 15.
- E. Furnish charge of refrigerant and oil.

3.02 DEMONSTRATION AND INSTRUCTIONS:

- A. Supply initial charge of refrigerant and oil for each refrigerant system. Replace losses of oil or Refrigerant prior to end of correction period.
- B. Charge system with refrigerant and test entire system for leaks after completion of installation. Repair leaks put system into operation, and test equipment performance.
- C. Shut-down system if initial start-up and testing takes place in winter and machines are to remain Inoperative. Repeat start-up and testing operation at beginning of first cooling season.

END OF SECTION