



rosstarrant architects

West Irvine Elementary School HVAC Upgrades

Estill County Board of Education
Irvine, Kentucky

RTA 2109
BG 21-244

Project Manual

Volume 1 of 1
April 2021

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FOR
West Irvine Elementary School HVAC Upgrades
Estill County, Kentucky
BG 21-244
RTA 2109
VOLUME 1 OF 1**

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INDEX TO SPECIFICATIONS

SECTION 001115 - ADVERTISEMENT FOR BIDS

Sealed proposals for the following work will be received by the Estill County Board of Education in the manner and on the date hereinafter specified for the furnishing of all labor, materials, supplies, tools, equipment, services, etc., necessary for the construction of the West Irvine Intermediate ESSER II/HVAC Upgrades as set forth in the specifications and as shown on the drawings prepared by RossTarrant Architects, Inc., 101 Old Lafayette Avenue, Lexington, Kentucky 40502.

Bid Submittal: Contractors must submit their bids to the Estill County Board of Education, 253 Main Street, Irvine, Kentucky 40336 until: May 11, 2021, 2:00 pm, local time.

Each Proposal shall be submitted on forms contained in the Project Manual. Proposals shall be enclosed in a sealed envelope with the following information on the outside:

Sealed Bid for the:

West Irvine Intermediate ESSER II/HVAC Upgrades

No proposal shall be withdrawn for a period of sixty (60) days after the date of bid opening.

Pre-Bid Conference: A pre-bid conference will be held on April 27, 2021 at ____ local time, at the Board Office. Each bidder is encouraged to visit the site to review field conditions prior to submitting a bid.

Addenda: The last date for the Architect to receive items to be addressed in any addenda is May 4, 2021 by 12:00 p.m. EDT. All requests must be submitted to the Architect in writing.

Method of Receiving Bids: Bids will be received from Contractors for a Total Lump Sum Amount. All phases of the work shall be bid to and through the Contractor submitting the proposal. Bid Security in the amount of five (5) percent of each proposal submitted must accompany each Proposal in accordance with the Form of Proposal.

It is the Owner's intent to purchase significant quantities of materials through direct purchase orders. After review of bids, the Owner will issue purchase orders for major material items. Refer to the Supplemental Instructions to Bidders, General Conditions, Supplementary Conditions, additional bidding documentation and Division 1 sections for additional information.

Right to Reject and Waiver: The Owner reserves the right to accept any bid, to reject any or all bids, to waive any informalities in bids received where such acceptance, rejection, or waiver is considered to be in the best interest of the Owner or to reject any bid where evidence or information submitted by the bidder does not satisfy the Owner that the bidder is qualified to carry out the details of the Contract Documents. The Owner's desire to waive irregularities and informalities as to a bid shall be reviewed and final judgement made by the Kentucky Department of Education, Division of Facilities Management, prior to approval of the contract and financing plan.

Plans and Specifications Reviewed: Contract Documents may be examined at the following places:
Estill County Board of Education, 253 Main Street, Irvine, Kentucky 40336
CMTA, Inc., 2429 Members Way, Lexington, Kentucky 40504

Obtaining Plans and Specifications: Bidders may obtain contract documents from Lynn Imaging, 328 Old East Vine Street, Lexington, Kentucky 40507 (telephone (859) 255-1021), in accordance with the following deposit and charge schedule.

First and Second Set	\$75.00 Per Set	Refundable
Additional Sets	\$75.00 Per Set	Non-Refundable

Postage and handling fees shall be paid directly to Lynn Imaging. Deposit checks shall be made payable to RossTarrant Architects, Inc. It is most important that requesting firm identify the position of the firm as to prime bidder, miscellaneous Contractor, material supplier, or other. Please give name, address, telephone number and email address of person responsible for receiving Addenda material and general communication concerning this bidding.

Plans and Specifications must be returned directly to Lynn Imaging within thirty (30) calendar days after the closing date for the receipt of bids, in good condition, otherwise no refund will be made.

General Information: Federal Wage Rates are applicable. State Wage Rates are not applicable. Conflicts of interest, gratuities and kickbacks are defined in KRS 45A.445 and as provided for in KRS 45A.455 are absolutely prohibited. Preference for resident bidders shall be given as outlined in KRS 45A.90 to 45A.94. The successful bidder must supply a 100% Performance and Payment Bond as outlined in the Project Manual.

Project Location: West Irvine Intermediate School, 155 River View Road, Irvine, Kentucky 40336

Project Description: This project scope includes the improvement of air quality by repairing the existing make-up air units to function to provide fresh air to the building occupants, repairing the existing heat pump filtration by providing filter guards and ducted returns, and providing controls integration to integrate the existing controls to a District server.

END OF SECTION

SECTION 002100 - INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.01 Refer to the Kentucky Department of Education Version of AIA Document A701-1997.

END OF SECTION

Kentucky Department of Education Version of **AIA** Document A701™ – 1997

Instructions to Bidders



This version of AIA Document A701™–1997 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A701–1997 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A701–1997 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

Cite this document as "AIA Document A701™– 1997, Instructions to Bidders — KDE Version," or "AIA Document A701™–1997 — KDE Version."

Kentucky Department of Education Version of AIA® Document A701™ – 1997

Instructions to Bidders

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201™, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Form of Proposal for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids. The Base Bid shall include all labor, material, bonds, and the cost of all direct purchase orders for material to be purchased by the Owner.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

1. The submission of a Bid will be construed as evidence that a site visit and examination of local conditions have been made. Later claims for labor, equipment, or materials required or difficulties encountered which could have been foreseen had such an examination been made will not be recognized.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Copies

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 (Not Used)

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 Interpretation or Correction of Bidding Documents

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect and Construction Manager (if utilized) errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect and Construction Manager (if utilized) at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to all who are known by the Architect and Construction Manager (if utilized) to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the Form of Proposal shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the Form of Proposal nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

§ 4.2 Bid Security

§ 4.2.1 Each Bid greater than \$25,000 shall be accompanied by bid security in the form of a Bond provided by a Surety Company authorized to do business in the Commonwealth of Kentucky, or in the form of a certified check, and in an amount equal to at least five percent (5%) of the Base Bid amount, pledging that the Bidder will enter into a contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payments of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

§ 4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 Submission of Bids

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids as indicated in the Advertisement or Invitation to Bid or any extensions thereof made by Addendum. Bids received after the closing time and date for receipt and opening of Bids will be rejected and returned to the Bidder unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud.

§ 5.2 Rejection of Bids

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.3 Acceptance of Bid (Award) [Reference: KRS 45A.365]

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

§ 6.1.1 Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

§ 6.1.2 In determining the qualifications and responsibilities of the Bidder, the Owner shall take into consideration the Bidder's skill, experience, facility, previous work standing, financial standing, capacity and ability to handle work in addition to that in progress, and quality and efficiency of construction plant and equipment proposed to be used on the project.

§ 6.2 (Not Used)

§ 6.3 Submittals

§ 6.3.1 Each Bidder shall submit as part of the Form of Proposal a list of subcontractors proposed for each major branch of work itemized and described in the specifications for the Project. The Bidder's listing of a subcontractor for a work category certifies that the subcontractor has in current employment, skilled staff and necessary equipment to complete that category. The Architect and Construction Manager (if utilized) will evaluate the ability of all listed subcontractors to complete the work and notify the Owner. Listing of the Bidder as the subcontractor may invalidate the Bid should the Architect's and Construction Manager's (if utilized) review indicate the bidder does not have skilled staff and equipment to complete the work category at the time the Bid was submitted.

- .1 Changing subcontractors from those listed with the Form of Proposal is prohibited unless the bidder provides grounds for such a change that are consistent with provisions of the Instructions to Bidders. Said change shall be accompanied by a written explanation from the Bidder as well as a written release from the listed subcontractor. All letters shall be on original company stationery with original signatures from an officer in the company legally approved to act for the company. An unjustifiable change of subcontractors may invalidate the Bid. Any change to a proposed person or entity shall be addressed as noted in Section 6.3.3 of these Instructions to Bidders

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

§ 6.4 List of Materials, Suppliers, and Manufacturers

§ 6.4.1 Each Bidder shall submit a complete list of materials/equipment with supplier's and manufacturer's name in the form and manner indicated on the Form of Proposal and in compliance with materials and equipment specified.

§ 6.4.2 In addition to the list furnished with the Form of Proposal, the successful Bidder thereafter known as the Contractor, may be requested within thirty (30) calendar days after award of contract to furnish to the Architect and Construction Manager (if utilized) a more detailed and complete list of the materials and equipment, together with the manufacturer's or maker's name, brand and/or catalogue number, and product data or illustration thereof.

§ 6.4.3 Prior to the award of contract, the Architect and Construction Manager (if utilized) will make a preliminary check of the lists included with the Form of Proposal and advise the Bidder and the Owner of the acceptance thereof, and of such other actions as may be necessary in order to meet the requirements of the contract specifications. Should it develop that any of the materials or equipment named in the list do not meet the requirements of the project specifications, the Bidder shall be required to offer to the Owner other materials or equipment in compliance with the specifications at no change in contract price. Preliminary review and acceptance of the above list shall not relieve the Contractor of furnishing equipment and materials in accordance with the specifications.

§ 6.4.4 Written approval shall be obtained from the Architect regarding any material/equipment, supplier, and manufacturer substitution. Substitutions are permitted in the following instance:

- .1 Failure to comply with contract requirements;
- .2 Failure of the supplier or manufacturer to meet delivery schedules or other conditions of the contract;
- .3 Written release by the supplier or manufacturer.

§ 6.4.5 The Owner reserves the right to reject the bid of any Bidder who fails to furnish the information required under Sections 6.3 and 6.4.

§ 6.5 Unit Prices

§ 6.5.1 Each Bidder shall submit as part of the Bid a list of unit prices as designated on the Form of Proposal.

§ 6.5.2 Unit prices are for changing or adjusting the scope or quantity of work from that indicated by the contract drawings and specifications.

§ 6.5.3 Unit prices shall include all labor, materials, equipment, appliances, supplies, overhead and profit.

§ 6.5.4 Only a single unit price per item shall be given and it shall apply for either more or less work than indicated or specified in the contract documents. In the event the contract is adjusted by unit prices, a change order shall be issued for the change and for the increased or decreased amount.

§ 6.5.5 Unit prices listed by the Bidder and accepted by the Owner shall apply to all phases of work whether the work is performed by the Bidder or by the Bidder's (Contractor's) subcontractors.

§ 6.5.6 For unit prices that apply to a lump sum Base Bid, the Owner reserves the right, prior to an award of contract, to negotiate, adjust and/or reject any price that is determined by the Architect, Construction Manager, or Owner to be excessive or unreasonable in amount.

§ 6.5.7 On line item total sum bids where Bidders are quoting firm unit prices for estimated quantities of units of work, the unit price is the Bid and is not subject to change, either by the Bidder or Owner. The Owner reserves the right to correct mathematical errors in extensions and additions by the Bidder. The Owner's corrected bid sum total shall take preference over the Bidder's computed bid sum total.

§ 6.6 Bid Division, Material Suppliers, and Purchase Orders

§ 6.6.1 This Section applies to projects with or without Bid Division (Multiple Prime Contracts), and those Projects that provide for direct purchase by the Owner of materials and equipment from Material Suppliers.

§ 6.6.2 For Projects with Bid Division: General Construction and Concrete, Masonry, Plumbing, HVAC and Electrical Contractors shall provide with their Bid a breakdown of major material items (excluding sales tax). This breakdown shall include description of the item, name of the manufacturer, name of the supplier, and the amount of the supplier's quote. The Owner will issue Purchase Orders direct to the suppliers for these materials. The following shall be provided:

- .1 Within four (4) days from the Bid Date, the low Bidder shall furnish to the Owner the list of material suppliers of the items listed on the bid breakdown, with authorization given to the Contractor to quote the materials listed and that the Supplier will furnish the listed materials to the Owner under the Owner's standard Purchase Order for the amount stated on the Contractor's bid breakdown. Failure of any Contractor to provide this written list of material suppliers with authorization will cause forfeiture of the bid security.
- .2 The Contractor shall also guarantee to the Owner that materials listed in the breakdown to be purchased directly by the Owner shall comply with requirements of the Contract Documents and that the quantity of such material is sufficient to complete the Bid Division. The Performance and Payment Bonds required of the Contractor shall be in the combined amount of the materials designated in its bid to be acquired by Purchase Order by the Owner and all remaining items of cost in the respective Bid Division. Contractor shall provide an invoice from the supplier to the Owner with Contractor's Application for Payment.
- .3 Material Suppliers will be paid the full amount of their invoices. Retainage that would otherwise be withheld from invoices submitted by and paid to a material supplier shall be withheld from the approved payment request of the Contractor. Refer to General Conditions for further requirements regarding retainage.
 - .a Lockers, Library, Kitchen, Shop, Technology, Science or other major equipment bid divisions shall provide with their Bid a breakout price for the material portions of the Bid (excluding sales tax). Award of contract will be based on the lump sum price of the accepted Bid that includes labor and materials. The Owner will issue a Purchase Order for the material and a contract for the labor and incidental materials. Retainage will be held on both the Purchase Order and the Contract in accordance with the General Conditions.
 - .b The language of the Bid Divisions is designed to outline and define the work in general to be included in a particular Bid Division and to prevent overlapping and conflicting requirements within other Bid Divisions. No Bidder shall use the omission of any item from this language as a basis for a claim for additional cost when such item is specified or indicated to be part of a complete and workable system.
 - .c It is the responsibility of the Bidder to determine which Bid Division or combination of Bid Divisions the Bidder desires to Bid.

§ 6.6.3 For Projects without Bid Division but with direct purchase by the Owner of materials and equipment from Material Suppliers, Contractors shall comply with paragraph 6.6.2 above as applicable to the Project. The Owner will issue Purchase Orders direct to the suppliers for these materials. Award of contract will be based on the lump sum price of the accepted bid that includes labor and materials. Retainage will be held on both the Purchase Orders and the Contract(s) in accordance with the General Conditions.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 Unless stipulated otherwise in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds shall be executed by a surety company authorized to do business in Kentucky.

§ 7.1.2 The cost of such bonds shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312™-2010, Performance Bond and Payment Bond — KDE Version. Both bonds shall be written in the amount of the Contract Sum, being the total of the Base Bid, as described in Section 1.5 herein, and all Alternates accepted by the Owner.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101™-2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum — KDE Version, except for those Projects utilizing a Construction Manager the Agreement will be written on AIA Document A132™-2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Advisor Edition — KDE Version. Owner-Contractor Agreements shall be valid only after written notice by the Kentucky Department of Education that the proposed Agreements are approved.

ARTICLE 9 PUBLIC WORKS ACT [Reference: KRS 337.505 to 337.550]

§ 9.1 Labor Regulations

§ 9.1.1 Work shall be performed in compliance with applicable provisions of the Kentucky Prevailing Wage Act on Public Works Projects, KRS 337.505 through KRS 337.550.

§ 9.1.2 Prevailing wage rates, included with the Bidding Documents, shall be paid on this Project if required under Section 10.1.1. The stipulated wage rates represent prevailing minimum wage rates of pay allowable and shall not be construed to mean that higher rates may not have to be paid in order to secure labor.

§ 9.1.3 Any Bidder and/or subcontract bidder in violation of any wage or work act provision (KRS 337.510 to KRS 337.550) and under citation by the Kentucky Department of Labor is prohibited by KRS 337.990 from bidding on or working on any and all public works contracts either in their name or in the name of any other company, firm, or other entity in which there is vested interest. No Bid shall be submitted by a prime Bidder or sub-bidder in violation of KRS Chapter 337. The responsibility of the qualifications of the sub-contract Bidder is solely that of the prime Bidder. The rejection of the subcontract Bidder and resubmittal of a qualified subcontract Bidder shall be addressed per the provisions of these Instructions to Bidders relating to subcontract Bidders (subcontractors) and materials.

§ 9.2 Davis-Bacon Act Provisions

Projects funded with Federal Funds shall comply with the Davis-Bacon Act (Subchapter IV of Chapter 31 of the Title 40 of the United States Code). Where the amount received from federal revenue sharing is less than 25 percent of the estimated total construction cost of a public school project, state law and not the federal applies to the wage rate and the prevailing wage scale to be used for the project (OAG 74-329). Refer to Supplementary Conditions for direction regarding application of federal rates, if included in the bidding documents, to this project. In the event both state and federal wage rates apply, the higher of the two rates shall be used to determine labor costs.

ARTICLE 10 TAXES

§ 10.1 Kentucky Sales and/or Use Tax [Reference KRS 139.495(1)]

Bidders are informed that construction contracts of the Commonwealth of Kentucky and political subdivisions are not exempt from the provisions of the Kentucky Sales and/or Use Tax, unless provisions are clearly noted in the bidding documents for the direct purchase of certain materials and equipment by the Owner. Materials and equipment which are to be submitted for direct purchase are as noted by the Architect or Construction Manager in the Form of Proposal and shall be limited to forty (40) items with a minimum price of \$5,000 each. All other materials and equipment shall be included in the Contract Price and are subject to Kentucky Sales and/or Use Taxes. Current Sales and/or Use Tax shall be provided for and included in the bid amount as no adjustment will be permitted nor made after the receipt of bids.

§ 10.2 Federal Excise Tax

The Commonwealth of Kentucky and its political subdivisions are exempt from Federal Excise Tax.

ARTICLE 11 POST BID REVIEW AND MATERIAL SUBMITTAL

§ 11.1 Representative at Bid Opening

§ 11.1.1 Each prime Bidder shall have an authorized representative at the bid opening for submittal of the list of materials and equipment, and the post bid review which follows immediately after the opening and reading of bids.

§ 11.1.2 Following the opening of bids, the three (3) apparent low Bidders shall remain for a post-bid review, and shall submit a completed list of materials, equipment and suppliers within one (1) hour from the close of the reading of the bids. The list of materials and equipment shall be the listing contained in the Form of Proposal.

§ 11.1.3 The post bid review, open to all bidders, will be conducted jointly with representatives of the Architect and Construction Manager (if utilized), Owner, and apparent low Bidder. Preliminary review will be directed toward Bidder's qualifications, list of subcontractors, list of materials and equipment, and unit prices.

ARTICLE 12 EQUAL EMPLOYMENT AND NONDISCRIMINATION

The Commonwealth of Kentucky and its political subdivisions are committed to equal job opportunities on public contracts and prohibited from discrimination based on race, creed, color, sex, age, religion, or national origin.

ARTICLE 13 CONFLICT OF INTEREST, GRATUITIES AND KICKBACKS, USE OF CONFIDENTIAL INFORMATION [Reference KRS 45A.455]

Conflict of Interest, Gratuities, Kickbacks, and Use of Confidential Information as described in KRS 45A.455 are expressly prohibited. Penalties for any violation under this statute are located in KRS 45A.990.

ARTICLE 14 KENTUCKY FAIRNESS IN CONSTRUCTION ACT OF 2007 [Reference KRS 371.400 to 371.425]

Projects constructed for school districts in the Commonwealth of Kentucky are subject to provisions of the Kentucky Fairness in Construction Act of 2007 as it relates to the right to litigate, the right to delay damages against the Owner, the right to file a mechanic's lien, prompt payment by Owners, amount of retainage that can be withheld and other provisions of the Act.

ARTICLE 15 KENTUCKY PREFERENCE LAW [Reference KRS 45A.490 to 45A.494]

§ 15.1 Projects constructed for school districts in the Commonwealth of Kentucky are subject to provisions of the reciprocal preference for Kentucky Preference for Resident Bidders law, KRS 45A.490 to KRS 45A.494. Reciprocal preference shall be given by public agencies to resident bidders.

§ 15.2 The Kentucky Finance and Administration Cabinet shall maintain a list of states that give to or require a preference for their own resident bidders, including details of the preference given to such bidders, to be used by public agencies in determining resident bidder preferences. The cabinet shall also promulgate administrative regulations in accordance with KRS Chapter 13A establishing the procedure by which the preferences required by this Section shall be given.

§ 15.3 The reciprocal preference as described in KRS 45A.490 to KRS 45A.494 above shall be applied in accordance with Kentucky Administrative Regulation 200 KAR 5:400.

SECTION 002114 - SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

SCOPE

The following Supplemental Instructions to Bidders modify, change, delete from, or add to AIA Document A701-1997 "Instructions to Bidders", Kentucky Department of Education version, which is included herein as a part of the Contract Documents.

ARTICLE 3 - BIDDING DOCUMENTS

Add the following:

3.5 Bids will be received from Contractors for a total lump sum amount. All phases of the work shall be bid to and through the Contractor submitting the proposal.

ARTICLE 4 - BIDDING PROCEDURES

Modify Paragraph 4.2.1 as follows:

"Each Bid greater than \$100,000 shall be accompanied by bid security in the form of a Bond provided by a Surety company authorized to do business in the Commonwealth of Kentucky, or in the form of a certified check, and in an amount equal to at least five percent (5%) of the Base Bid amount, pledging that the Bidder will enter into a contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payments of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds, if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty."

Add to Paragraph 4.3.1:

- 4.3.1.1 The bidder shall submit the following documents at the time of the bid opening:
Form of Proposal (KDE Document) - Submit one original.
Bid Security - Submit one original.
- 4.3.1.2 The bidder shall submit the following documents within 1 hour of the bid opening:
Form of Proposal Pages 4 & 5: List of Proposed Suppliers and Manufacturers. An electronic copy is acceptable.
Form of Proposal Pages 6 & 7: Unit Prices. An electronic copy is acceptable.
- 4.3.1.3 The bidder shall submit the following documents within 24 hours of the bid opening:
Form of Proposal Section 004140: Bidder's Qualifications - Submit one completed form within 24 hours of the bid opening. An electronic copy is acceptable.
- 4.3.1.4 The bidder shall submit the following documents within 48 hours of the bid opening:
Form of Proposal Section 004145: Identification of Minority and Women Subcontractors and Material Suppliers. An electronic copy is acceptable.
- 4.3.1.5 The apparent successful bidder shall submit the following documents within 4 days of the bid opening:
Form of Proposal Pages 8-10: Direct Material Purchases. An electronic copy is acceptable.
Purchase Orders: Draft Purchase Order Forms should be submitted for each of the vendors listed on the Direct Material Purchases List. These Purchase Orders shall be submitted on the forms provided. Electronic copies are acceptable.
Contractor shall be responsible for verifying that the materials listed on the Bid Form Direct Material Purchases List are in full compliance with the Supplier/Manufacturer List provided within two hours of the bid opening. Should an inconsistency become apparent, the Architect shall be able to select the manufacturer at no additional cost to the Owner.
Kentucky Department of Education Purchase Order Summary Form Section 004156. An electronic copy is acceptable.

W9 Forms: Submit W9 Forms for each vendor listed on the Direct Material Purchases List. Electronic copies are acceptable.

4.3.1.6 The apparent successful bidder may be asked to submit the following document within 24 hours of the bid opening:

Form of Proposal Section 004142: Bidder's Financial Statement - Submit one completed form within 24 hours of the bid opening if requested. An electronic copy is acceptable.

ARTICLE 6 - POST-BID INFORMATION

Add the following paragraphs:

6.3.5 In determining the qualifications of the bidder with regard to the bidder's experience, the bidder is expected to be able to show experience which reflects a similar or equivalent scale, scope and complexity to the project. Qualifying bidders should expect to be able to provide the following:

6.3.5.1 Project experience of at least ten projects with a similar type of construction, directly related to educational function, if possible, within the last five years.

ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

Revise the last sentence of Paragraph 7.2.2 to read:

Both bonds shall be written in the amount of the sum of the contract amount plus the total amount of all purchase orders.

ARTICLE 9 - PUBLIC WORKS ACT (REFERENCE KRS 337.550)

Delete Article 9.1 Labor Regulations in its entirety. Kentucky prevailing wage rates will not apply to this project.

Refer to Article 9.2 David-Bacon Act Provisions. Federal prevailing wage rates will apply to this project.

ARTICLE 10 - TAXES

Add the following paragraphs:

10.3. It is the Owner's intention to purchase major material items by direct Purchase Order. Refer to documents included in this Project Manual for information concerning this process.

10.3.1 As provided by KRS 139.310 and the Kentucky Administrative Regulation 103 KAR 26:070 (Contract Construction), each contractor is responsible for Kentucky Sales and Use Tax on all materials purchased and installed by the Contractor or a third party hired by the Contractor.

10.3.2 The sales and use tax is to be excluded on those material items purchased by the Owner directly from the material supplier as indicated on the Direct Material Purchases List. If a contractor lists his own company as the supplier for items listed on this list, the Owner will not issue a Purchase Order and exemption certificate. Accordingly, the sales and use tax on the materials used to fulfill the terms of the contract will be the liability of the contractor.

10.3.3 The material breakout amount indicated by a prospective bidder is considered final.

END OF SECTION

BG No. 21-244

Date: _____ To: (Owner) Estill County Board of Education

Project Name: West Irvine Intermediate ESSER II/HVAC Upgrades Bid Package: NA (GC)

City, County: Irvine, Estill County, Kentucky

Name of Contractor: _____

Mailing Address: _____

Business Address: _____ Telephone: _____

Having carefully examined the Instructions to Bidders, Contract Agreement, General Conditions, Supplemental Conditions, Specifications, and Drawings, for the above referenced project, the undersigned bidder proposes to furnish all labor, materials, equipment, tools, supplies, and temporary devices required to complete the work in accordance with the contract documents and any addenda listed below for the price stated herein.

Addendum _____ (Insert the addendum numbers received or the word "none" if no addendum received.)

BASE BID: For the construction required to complete the work, in accordance with the contract documents, I/We submit the following lump sum price of:

_____ Use Figures

_____ Dollars & _____ Cents

_____ Use Words

_____ Use Words

ALTERNATE BIDS: (If applicable and denoted in the Bidding Documents)

For omission from or addition to those items, services, or construction specified in Bidding Documents by alternate number, the following lump sum price will be added or deducted from the base bid.

Alternate Bid No.	Alternate Description	+ (Add to the Base Bid)	- (Deduct from the Base Bid)	No Cost Change from the Base Bid
Alt. Bid No. 1				<input type="checkbox"/>
Alt. Bid No. 2				<input type="checkbox"/>
Alt. Bid No. 3				<input type="checkbox"/>
Alt. Bid No. 4				<input type="checkbox"/>
Alt. Bid No. 5				<input type="checkbox"/>
Alt. Bid No. 6				<input type="checkbox"/>
Alt. Bid No. 7				<input type="checkbox"/>
Alt. Bid No. 8				<input type="checkbox"/>

A maximum of 10 Alternate Bids will be acceptable with each Base Bid. Do not add supplemental sheets for Alternate Bids to this document.

LIST OF PROPOSED SUBCONTRACTORS:

List on the lines below each major branch of work and the subcontractor involved with that portion of work. If the branch of work is to be done by the Contractor, so indicate.

The listing of more than one subcontractor in a work category shall invalidate the bid.

The listing of the bidder as the subcontractor for a work category certifies that the bidder has in current employment, skilled staff and necessary equipment to complete that category. The architect/engineer will evaluate the ability of all listed subcontractors to complete the work and notify the owner. Listing of the bidder as the subcontractor may invalidate the bid should the architect's review indicate bidder does not have skilled staff and equipment to complete the work category at the time the bid was submitted.

A maximum of 40 subcontractors will be acceptable with each bid. Do not add supplemental sheets for subcontractors to this document.

The bidder shall submit the list of subcontractors with the bid.

	<u>BRANCH OF WORK</u> (to be filled out by the Architect)	<u>SUBCONTRACTOR</u> (to be filled out by the contractor)
1.	HVAC	
2.	Sheet Metal	
3.	Controls	
4.	Plumbing	
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		

	<u>BRANCH OF WORK</u> (to be filled out by the Architect)	<u>SUBCONTRACTOR</u> (to be filled out by the contractor)
18.		
19.		
20.		
21.		
22.		
23.		
24.		
25.		
26.		
27.		
28.		
29.		
30.		
31.		
32.		
33.		
34.		
35.		
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37.		
38.		
39.		
40.		

LIST OF PROPOSED SUPPLIERS AND MANUFACTURERS:

List on the lines below each major material category for this project and the suppliers and manufacturers involved with that portion of work. Listing the supplier below means the Contractor is acknowledging authorization from the Supplier to include the Supplier in this bid.

The listing of more than one supplier or manufacturer in a material category shall invalidate the bid.

A maximum of 40 suppliers and manufacturers will be acceptable with each bid. Do not add supplemental sheets for suppliers to this document.

The bidder shall submit the list of suppliers and manufacturers within one (1) hour of the bid.

	<u>MATERIAL DESCRIPTION BY SPECIFICATION DIVISION AND CATEGORY</u> (to be filled out by the Architect or Contractor)	<u>SUPPLIER</u> (to be filled out by the Contractor)	<u>MANUFACTURER</u> (to be filled out by the Contractor)
1.	MAU Parts		
2.	Trap Primer		
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			

	<u>MATERIAL DESCRIPTION BY SPECIFICATION DIVISION AND CATEGORY</u> (to be filled out by the Architect or Contractor)	<u>SUPPLIER</u> (to be filled out by the Contractor)	<u>MANUFACTURER</u> (to be filled out by the Contractor)
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

UNIT PRICES:

Indicate on the lines below those unit prices to determine any adjustment to the contract price due to changes in work or extra work performed under this contract. The unit prices shall include the furnishing of all labor and materials, cost of all items, and overhead and profit for the Contractor, as well as any subcontractor involved. These unit prices shall be listed in units of work.

A maximum of 40 unit prices will be acceptable with each bid. Do not add supplemental sheets for unit pricing to this document.

The bidder shall submit the list of unit prices within one (1) hour of the bid.

	<u>WORK</u> (to be filled out by the Architect)	<u>PRICE / UNIT</u> (to be filled out by the Contractor)	<u>UNIT</u> (to be filled out by the Contractor)
1	Filter/Cover Guard with 5 feet of return duct		/EA
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

	<u>WORK</u> (to be filled out by the Architect)	<u>PRICE / UNIT</u> (to be filled out by the Contractor)	<u>UNIT</u> (to be filled out by the Contractor)
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			

DIRECT MATERIAL PURCHASES:

Indicate on the lines below those materials to be purchased directly by the Owner with a Purchase Order to be issued by the Owner to the individual suppliers. The value of the direct Purchase Order cannot be less than \$5,000. Following the approval of bids, the Contractor shall formalize this list by completing and submitting the electronic Purchase Order Summary Form provided by KDE. Listing the supplier below means the Contractor is acknowledging authorization from the Supplier to include the Supplier in this bid.

A maximum of 50 POs will be acceptable with each bid. Do not add supplemental sheets for additional POs to this document.

The bidder shall submit the list of Purchase Orders within four (4) days of the bid.

	<u>SUPPLIER</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER DESCRIPTION</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER AMT.</u> (to be filled out by the Contractor)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			

	<u>SUPPLIER</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER DESCRIPTION</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER AMT.</u> (to be filled out by the Contractor)
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
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30.			
31.			
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35.			
36.			
37.			
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39.			
40.			
41.			
42.			
43.			
44.			

	<u>SUPPLIER</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER DESCRIPTION</u> (to be filled out by the Contractor)	<u>PURCHASE ORDER AMT.</u> (to be filled out by the Contractor)
45.			
46.			
47.			
48.			
49.			
50.			

TIME LIMIT FOR EXECUTION OF CONTRACT DOCUMENTS:

In the event that a bidder's proposal is accepted by the Owner and such bidder should fail to execute the contract within ten (10) consecutive days from the date of notification of the awarding of the contract, the Owner, at his option, may determine that the awardee has abandoned the contract. The bidder's proposal shall then become null and void, and the bid bond or certified check which accompanied it shall be forfeited to and become the property of the Owner as liquidated damages for failure to execute the contract.

The bidder hereby agrees that failure to submit herein above all required information and/or prices can cause disqualification of this proposal.

Submitted by:

NAME OF CONTRACTOR / BIDDER:

AUTHORIZED

REPRESENTATIVE'S

NAME:

Signature

AUTHORIZED

REPRESENTATIVE'S

NAME

(printed):

AUTHORIZED REPRESENTATIVE'S TITLE:

NOTICE: Bid security must accompany this proposal if the Base Bid price is greater than of \$25,000.

This form shall not be modified.

SECTION 004140 - BIDDER'S QUALIFICATION

PART 1 GENERAL

1.01 BIDDER'S QUALIFICATION

Company Name: _____

Mailing Address:

Shipping Address:

Telephone: _____

Fax Number: _____

Email (if applicable): _____

Projects completed within the last five (5) years with a similar type of construction, directly related to educational function, if possible:

_____	\$ _____
Owner: _____	Telephone: _____
_____	\$ _____
Owner: _____	Telephone: _____
_____	\$ _____
Owner: _____	Telephone: _____
_____	\$ _____
Owner: _____	Telephone: _____
_____	\$ _____
Owner: _____	Telephone: _____

We now have the following jobs under contract and bonded:

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

Personnel: The superintendent on site for the project is scheduled to be:

_____.

The project manager in the office for the project is scheduled to be:

_____.

END OF SECTION

SECTION 004142 - BIDDER'S FINANCIAL STATEMENT**PART 1 GENERAL****1.01 BIDDER'S QUALIFICATIONS**

The Bidder's Qualifications together with the attached affidavit are required by the conditions of the Invitation to be executed and submitted within 24 hours as part of the Proposal if requested.

- A. A permanent place of business is maintained at: _____

- B. The following construction Plant and Equipment will be made available for use of this Contract:

- C. Adequate finances are possessed as indicated: (Note: A prepared Company certified financial statement may be substituted in lieu of the following.)

Conditions at close of business _____, 20____

1.02 ASSETS

- | | | |
|----|--|----------|
| A. | Cash in bank and on hand | \$ _____ |
| B. | Receivable Notes, Accounts, Money Earned, Interest, Guarantee Loan | \$ _____ |
| C. | Stocks and Bonds | \$ _____ |
| D. | Real Estate, Furniture and Fixtures, and Materials | \$ _____ |
| E. | Equipment (After depreciation) | \$ _____ |
| F. | Other Assets (Name) | \$ _____ |
| | Total Assets: | \$ _____ |

1.03 LIABILITIES

- | | | |
|----|--|----------|
| A. | Payable Notes, Accounts, Interest, Loans | \$ _____ |
| B. | Real Estate Encumbrances | \$ _____ |
| C. | Other Encumbrances (Name) | \$ _____ |
| D. | Reserves | \$ _____ |
| E. | Capital Stock Paid Up (All Classes) | \$ _____ |
| F. | Surplus - Net Worth | \$ _____ |

In addition to the foregoing, a complete and detailed certified financial statement will be furnished if required.

In the event the Contract is awarded the undersigned, surety bonds will be furnished by:

(Surety Company)

Signed: _____

(Representative of Surety Company)

Agent: _____

Address: _____

END OF SECTION

SECTION 004145 - IDENTIFICATION OF MINORITY AND WOMEN SUBCONTRACTORS AND MATERIAL SUPPLIERS

PART 1 GENERAL

1.01 SUBMITTAL DATA

- A. The utilization of minority and women subcontractors and material suppliers is encouraged and supported, whenever possible, on public school projects. The bidder and contractor should make full efforts to locate minority- and women-owned business persons.
- B. The apparent successful bidder shall submit this form, along with required attachments, within 48 hours of the Bid Opening.
- C. For assistance in identifying subcontractors and material suppliers, bidders may contact the Kentucky Office for Minority Business Enterprises, mwbe.ky.gov, Phone (502) 564-8099 or the Office of Equal Opportunity, Contract Compliance, finance.ky.gov, Phone (502) 564-2874.
- D. Minority and women subcontractors and material suppliers to hold subcontracts on this project:

Company Name	City/State	Certified MWBE
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No
		Yes/No

- E. Bidder must attach to this Form of Proposal a list of all minority and women subcontractors and material suppliers contacted in order to prepare a bid.

END OF SECTION

SECTION 004155 - PURCHASE ORDER**PART 1 GENERAL****1.01 OWNER'S PURCHASE ORDER**

- A. Following approval of the Bid Breakout List on the Form of Proposal, the Contractor shall provide copies of Purchase Orders on the attached Kentucky Department of Education Purchase Order Form, or may also provide the same complete information in another format agreed to by the Architect. This Purchase Order shall be governed by the Terms and Conditions of the Purchase Order, also attached.
1. An electronic copy of this form may be requested from the Architect.
 2. Once the Architect has received complete information, the data will be entered into the Kentucky Department of Education FACPAC system, and an actual Purchase Order form will be generated for the Contractor to use in getting vendor signatures. This KDE Purchase Order form includes the same information on the form attached to this section.

END OF SECTION

Board of Education: _____

BG# _____

District PO Number: _____

(THIS PURCHASE ORDER NUMBER MUST APPEAR ON ALL PACKAGES,
INVOICES AND SHIPPING PAPERS)

Project Name: _____

Kentucky Sales Tax
Exemption Number: _____

Bid Package No.: _____

Date of Order: _____

Specification Section:
(IF APPLICABLE) _____

Vendor Name: _____

Material Description
/ Category: _____

Vendor Address: _____

Facility Name: _____

Requested By: _____

Vendor Phone: _____

AUTHORIZATION

THE ATTACHED TERMS & CONDITIONS ARE HEREBY
ACKNOWLEDGED AND MADE PART OF THIS ORDER.

Vendor Email: _____

Bill To: _____

Owner Authorized Name: _____

Bill to Address: _____

Owner Authorized Signature: _____

Owner Authorization Date: _____

Ship To: _____

Ship to Address: _____

Vendor Authorized Name: _____

Vendor Authorized Signature: _____

Attention of: _____

Vendor Authorization Date: _____

The following project contacts must be notified 48 hours in advance of delivery to jobsite.

Contact Name	Phone Number	Contact Name	Phone Number

Furnish the necessary materials to complete the following bid package(s) / specification section(s) in its entirety. All materials shall be in accordance with the requirements of the Contract.

ITEM NO.	QUANTITY	ITEM DESCRIPTION	UNIT PRICE	TOTAL
		Bid Package(s):	L. S.	
		Specification Section(s):	L. S.	
		SPECIMEN COPY ONLY		

TERMS & CONDITIONS OF PURCHASE ORDER

1. Drawings, catalogs, cut sheets, or samples shall be submitted for approval.
2. All invoices shall be sent to the contractor/subcontractor designated on the purchase order for approval. No invoices shall be sent directly to the Board of Education (Owner) for payment.
3. All invoices shall reference the purchase order number.
4. No change in, modification of, or revision of this order shall be valid unless in writing and signed by the Owner.
5. Vendor agrees to observe and comply with all applicable federal, state and locals laws, rules, ordinances and regulations in performance of this order.
6. Vendor shall not assign this order or any right hereunder without first having obtained the written consent of the Owner.
7. Deliveries are to be made in accordance with the Owner's schedule, as directed by the General Contractor (GC), Construction Manager (CM) or Qualified Provider (QP).
8. The Owner may cancel this purchase order in whole or in part in the event that the vendor fails or refuses to deliver any of the items purchased, within the time provided, or otherwise violates any of the conditions of this purchase order, or if it becomes evident that the vendor is not providing materials in accordance with the specifications or with such diligence as to permit delivery on or before the delivery date.
9. The vendor agrees to deliver the items to the supplied hereunder free and clear of all liens, encumbrances and claims.
10. If any of the goods covered under this purchase order are found to be defective in material or workmanship, or otherwise not in conformity with the requirements of this order, the Owner, in addition to the other rights which it may have under warranty or otherwise, shall have the right to reject the same or require that such articles or materials be corrected or replaced promptly with satisfactory materials or workmanship.
11. By acknowledging receipt of this order, by performing the designated work or any portion thereof, or by shipping the designated goods, the vendor agrees to the terms and conditions outlined.
12. This purchase order shall be governed in all respects by the laws of the Commonwealth of Kentucky.
13. In the event the quantities of materials supplied via this purchase order are insufficient to complete the work, the GC, CM or QP shall, at no expense to the Owner, provide such materials as necessary to complete the work.
14. In the event that at the completion of the work the vendor has not submitted invoices totaling the value of this purchase order, this purchase order shall be considered complete and closed.

SECTION 004156 - KENTUCKY DEPARTMENT OF EDUCATION PURCHASE ORDER SUMMARY

PART 1 GENERAL

1.01 KENTUCKY DEPARTMENT OF EDUCATION PURCHASE ORDER SUMMARY FORM

- A. The Contractor shall provide a signed Kentucky Department of Education Purchase Order Summary Form within four (4) calendar days from the date of the bid opening.
 - 1. An electronic copy of this form may be requested from the Architect in Excel format.

END OF SECTION

Purchase Order Summary Form

702 KAR 4:160

February 8, 2012

BG#	21-244
------------	--------

x Initial Statement

District Name Estill County Board of Education

District Code

Chang Order Stmt.

Date
Submitted

Facility Name W. Irvine Intermediate ESSER II/HVAC Upgrades

Facility Code

Final Statement

PO Number	Bid. Div.	Specification Section No.	Purchase Order Description	Vendor Name	Initial PO Amount	Change Order Amt. To Date	Reason For Change	Final PO Amount	
2109-01									
								-	
All signatures below are required based upon the appropriate PO certification					Initial PO Total	\$ -	\$ -	Final PO Total	\$ -

All signatures below are required based upon the appropriate PO certification statement phase. (Initial / Final)

Initial Certification Statement

I certify that to the best of my knowledge, information and belief, all materials listed within this document will be purchased in accordance with 103 KAR 26:070.

Owner's Signature	Date
-------------------	------

General Contractor's Signature _____ Date _____

Architect's Signature
Date

Final Certification Statement

I certify that to the best of my knowledge, information and belief, all materials listed within this document have been purchased in accordance with KRS 103 KAR 26:070.

Owner's Signature
Date

General Contractor's Signature

Date

Architect's Signature
Date

SECTION 005200 - CONTRACT AGREEMENT FORM

FORM OF GENERAL CONDITIONS

1.01 Refer to Kentucky Department of Education Version of AIA Document A101-2007, Standard Form of Agreement Between Owner and Contractor.

END OF SECTION

Kentucky Department of Education Version of **AIA** Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum



This version of AIA Document A101™–2007 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A101–2007 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A101–2007 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

Cite this document as "AIA Document A101™–2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum — KDE Version," or "AIA Document A101™–2007 — KDE Version."

Kentucky Department of Education Version of AIA® Document A101 – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____
in the year _____
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

The Architect:
(Name, legal status, address and other information)

The Owner and Contractor agree as follows.



This version of AIA Document A101–2007 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A101 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A101–2007 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Init.

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TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS
- 10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Owner direct Purchase Orders, Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement.

Init.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work. Either list requirements for earlier Substantial Completion here or refer to an exhibit attached to this Agreement.)

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

Liquidated Damages: As actual damages for delay in completion of Work are impossible to determine, the Contractor and his Surety shall be liable for and shall pay to the Owner the sum of

(\$), not as a penalty, but as fixed, agreed and liquidated damages for each calendar day of delay until the Contract Work is substantially completed as defined in the General Conditions of the Contract for Construction. The Owner shall have the right to deduct liquidated damages from money in hand otherwise due, or to become due, to the Contractor, or to sue and recover compensation for damages for failure to substantially complete the Work within the time stipulated herein. Said liquidated damages shall cease to accrue from the date of Substantial Completion.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be

(\$), subject to additions and deductions as provided in the Contract Documents.

(List the base bid amount, sum of accepted alternates, total construction cost (the sum of base bid amount plus sum of accepted alternates), sum of Owner's direct Purchase Orders. The Contract Sum shall equal the sum of Total Construction Cost, less Owner direct Purchase Orders. Either list this information here or refer to an exhibit attached to this Agreement.)

	Amount
Base Bid	\$
Sum of Accepted Alternates	\$
Total Construction Cost (the sum of base bid amount plus sum of accepted alternates)	\$
Sum of Owner's direct Purchase Orders	\$
Contract Sum (total construction cost less Owner direct Purchase Orders)	\$

Init.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires. Either list alternates here or refer to an exhibit attached to this Agreement.)

Number	Item Description	Amount
Total of Alternates		

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable. Either list unit prices here or refer to an exhibit attached to this Agreement.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

§ 4.4 Allowances included in the Contract Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price. Either list allowances here or refer to an exhibit attached to this Agreement.)

Item	Price
------	-------

Init.

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the _____ day of _____ a month, the Owner shall make payment of the certified amount to the Contractor not later than the _____ day of the _____ month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than _____ (_____) days after the Architect receives the Application for Payment.

State law (KRS 371.405) requires the Owner to pay undisputed Applications for Payment within forty-five (45) business days following receipt of the invoices. If the Owner fails to pay the Contractor within forty-five (45) business days following receipt of an undisputed Application for Payment, state law requires the Owner shall pay interest to the Contractor beginning on the forty-sixth business day after receipt of the Application for Payment, computed at the rate required by state law.

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of _____ percent (_____ %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction — KDE Version;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of _____ percent (_____ %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007 — KDE Version.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201-2007 — KDE Version requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007 — KDE Version.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

When Owner direct Purchase Orders are used, retainage that would otherwise be held on materials and equipment shall transfer to the Contractor, and the material suppliers will be paid the full amount of their invoices. The Owner shall retain ten percent (10%) from each Application for Payment, and an amount equal to ten percent (10%) of approved Purchase Order payments, up to fifty percent (50%) completion of the Work, then provided the Work is on schedule and satisfactory, and upon written request of the Contractor together with consent of surety and the recommendation of the Architect, the Owner shall approve a reduction in Retainage to five percent (5%) of the current Contract Sum plus Purchase Orders. No part of the five percent (5%) retainage shall be paid until after Substantial Completion of the Work, as defined in the General Conditions of the Contract for Construction. After Substantial Completion, if reasons for reduction in retainage are certified in writing by the Architect, a reduction to a lump sum amount less than the five percent (5%) retainage may be approved by the Owner when deemed reasonable. The minimum lump sum retainage shall be twice the estimated cost to correct deficient or incomplete work.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 FINAL PAYMENT

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201-2007 — KDE Version, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 a final Certificate for Payment has been issued by the Architect; and
- .3 the Contractor provides the Owner with affidavits that all payrolls, bills for materials, supplies and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied, and with Consent of Surety for final payment.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201-2007 — KDE Version, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

Init.

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007 — KDE Version, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2007 — KDE Version
- ☐ Litigation in a court of competent jurisdiction where the Project is located
- ☐ Other: *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007 — KDE Version.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007 — KDE Version.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 — KDE Version or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at such rate required by state law, or in the absence of law, at the legal rate prevailing at the time and place where the Project is located.
(Insert rate of interest agreed upon, if any.)

§ 8.3 The Owner's representative:
(Name, address and other information)

§ 8.4 The Contractor's representative:
(Name, address and other information)

Init.

§ 8.5 Neither the Owner's nor the Contractor's representative shall be changed without ten days written notice to the other party.

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor — KDE Version.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction — KDE Version.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

(Either list Supplementary and other Conditions of the Contract here or refer to an exhibit attached to this Agreement.)

Document	Title	Date	Pages
----------	-------	------	-------

§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
---------	-------	------	-------

init.

§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date
--------	-------	------

§ 9.1.6 The Addenda, if any:

(Either list the Addenda here or refer to an exhibit attached to this Agreement.)

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following
- .2 Other documents, if any, listed below:

Init.

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 — KDE Version provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

- A. AIA Document A701–1997, Instructions to Bidders — KDE Version
- B. Contractor's Form of Proposal
- C. KDE Purchase Order Summary Form

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007 – KDE Version.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007 – KDE Version. Either list insurance and bond information here or refer to an exhibit attached to this Agreement.)

Type of Insurance or Bond

Limit of Liability or Bond Amount (\$0.00)

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

Init.

SECTION 005410 - PERFORMANCE & PAYMENT BOND

FORM OF GENERAL CONDITIONS

1.01 Refer to the AIA Document A312, Performance & Payment Bond, 2010

END OF SECTION

Kentucky Department of Education Version of AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place
of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: ☐ None

☐ See Section 16

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____

Name

and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name

and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)



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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

§ 16.1 Surety Company shall be licensed to conduct business in the Commonwealth of Kentucky.

§ 16.2 Insurance Agency and Agents issuing bond shall be registered and licensed to conduct business in the Commonwealth of Kentucky with the appropriate Power of Attorney included.

§ 16.3 Bond shall comply with all statutory requirements of the Commonwealth of Kentucky including the Kentucky Unemployment Insurance Law.

§ 16.4 No suit, action or proceeding by reason or any default whatever shall be brought on this bond after two (2) years from the date on which final payment of the contract fall due and provided further that if any alterations or additions which may be made under the contract or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns for their liability hereunder. Notice to the Surety of any such alterations, extensions, or forbearance being expressly waived.

This obligation shall remain in force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

Kentucky Department of Education Version of AIA® Document A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place
of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____ Signature: _____

Name

Name

and Title:

and Title:

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)



This version of AIA Document A312–2010 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A312 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A312–2010 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any

Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

§ 18.1 Surety Company shall be licensed to conduct business in the Commonwealth of Kentucky.

§ 18.2 Insurance Agency and Agents issuing bond shall be registered and licensed to conduct business in the Commonwealth of Kentucky with the appropriate Power of Attorney included.

§ 18.3 Bond shall comply with all statutory requirements of the Commonwealth of Kentucky including the Kentucky Unemployment Insurance Law.

§ 18.4 No suit, action or proceeding by reason or any default whatever shall be brought on this bond after two (2) years from the date on which final payment of the contract fall due and provided further that if any alterations or additions which may be made under the contract or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns for their liability hereunder. Notice to the Surety of any such alterations, extensions, or forbearance being expressly waived.

This obligation shall remain in force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

SECTION 007200 - GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.01 Refer to the Kentucky Department of Education Version of AIA Document A201, General Conditions of the Contract for Construction, 2007 Edition.

END OF SECTION

SECTION 007300 - SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 007200 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.
- B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 DEFINITIONS

- A. The term "OWNER" as used throughout these documents means the Estill County Board of Education.
- B. The term "ARCHITECT" as used throughout these documents means RossTarrant Architects, Inc., 101 Old Lafayette Avenue, Lexington, Kentucky 40502.
- C. The terms "PLANS" and "DRAWINGS" are used interchangeably and are construed to have the same meaning.

1.03 GENERAL

- A. These specifications and drawings accompanying them describe the work to be done and the materials to be furnished for the construction of the project.
- B. The Contractor and each Subcontractor shall verify all measurements at the site before ordering any materials or doing any work. No additional compensation shall be allowed due to any discrepancy indicated and actual dimensions. The Contractor shall promptly notify the Architect of any dimensional discrepancies and shall obtain the direction of the Architect before proceeding with the Work.
- C. Bidders, before submitting proposals, shall visit and examine the site to satisfy themselves as to the nature and scope of the new construction and any difficulties attending the execution. The submission of a proposal will be construed as evidence that a visit and examination have been made. Later claims for labor, equipment, or materials required or difficulties encountered which could have been foreseen had such an examination been made will not be recognized.
- D. The Kentucky Fairness in Construction Act, KRS371.400 to KRS 371.990, applies to this construction contract, and where there is a conflict between the terms and conditions of these contract documents and the provisions of the Kentucky Fairness in Construction Act, the latter shall prevail.
- E. Within 10 days after award of contract and as required by KRS 45A.343, Section (2)(a), each Contractor and all Subcontractors performing work under the contract shall in writing to the Owner reveal any final determination of a violation by the Contractor or Subcontractor within the previous 5 year period pursuant to KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that apply to the Contractor or Subcontractor. As required by KRS 45A.343, Section (2)(b), Contractors and Subcontractors performing work under the contract shall be in continuous compliance with the provisions of KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that apply to the Contractor or Subcontractor for the duration of the contract.
- F. By signing any Change Order/Application and Certificate of Payment, the Contractor indicates his agreement therewith, including any adjustment in the Contract Sum or Contract Time and waives any and all claims for additional compensation or Contract time against either the Owner or the Architect for work associated with the Change Order/Application and Certificate of Payment. The Contractor expressly agrees that the Architect shall be deemed a Third Party Beneficiary of this provision.

1.04 ARCHITECT'S STATUS

- A. The Architect is the agent of the Owner during construction and until final payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument which will be shown to the Contractor. The Architect has authority to reject work which does not conform to the Contract Documents.

1.05 ARCHITECT'S WORK PRODUCT

- A. The Architect's work product is prepared and produced for the sole and exclusive benefit of the Owner. Any real or inferred benefits to third parties is hereby expressly disclaimed.

1.06 ADMINISTRATION OF THE CONTRACT

- A. The Architect will perform certain administrative functions of the construction contract. Nothing contained in these contract documents, not any other oral or written agreements, memoranda, or communications shall create any express or implied contractual relationship between the Architect and the Contractor.
- B. The Architect may make periodic visits to the work site in accordance with the conditions of his contract with the Owner. The purpose of these visits and observations is to endeavor to guard against defects and deficiencies, not to supervise the Contractor's work.
- C. The Architect makes no express or implied representations of guaranteeing the Contractor's work.
- D. The Architect is not a specialist in construction methods, techniques, sequences or procedures and therefore assumes no responsibility for the construction operations and safety program.

1.07 INDEMNIFICATION

- A. The Contractor shall hold harmless and indemnify the Architect, employees, officers, agents and consultants from all claims, loss, damage, actions, causes of actions, expense and/or liability resulting from, brought for, or an account of any personal injury or property damage received or sustained by any person, persons, (including third parties), or any property growing out of, occurring, or attributable to any work performed under or related to this contract, resulting in whole or in part from the negligence of the Contractor, any Subcontractor, any employee, agent or representative.
- B. None of the Bidding Documents or Contract Documents prepared for this project, including, but not limited to, all contracts, drawings, or specifications, shall be construed against the party preparing any document on the ground that the party prepared or drafted the document, or any portion thereof.

1.08 WORKMANSHIP

- A. The Workmanship shall be of the highest quality, in every respect, as usually recognized in the building industry. Poor or inferior workmanship (as determined by the Architect, Engineers, or inspecting authorities) is to be removed and replaced to conform to the highest quality standards of the trades concerned, or otherwise corrected.
- B. The Contractor shall only employ labor on the Project or in connection with the Work capable of working harmoniously with all trades, crafts and any other individuals associated with the Project. The Contractor shall also use its best efforts to minimize the likelihood of any strike, work stoppage or other labor disturbance.
- C. If the Work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage or cost to the owner and without recourse to the Architect or the Owner any conflict between the Contract Documents and any agreements or regulations of any kind in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade.

- D. In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of such conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive.

1.09 DRAWINGS AND SPECIFICATIONS

- A. None of the Bidding Documents or Contract Documents prepared for this project, including, but not limited to, all contracts, drawings or specifications, shall be construed against the party preparing any document on the grounds that the party prepared or drafted the document, or any portion thereof.
- B. Where it is obvious that a drawing illustrates only a part of a given work or of a number of items, the remainder shall be deemed repetitious and so constructed.
- C. If there is conflict within or between Contract Documents involving quality or quantity of work required, it is intention of Contract that work of highest quality or greater quantity indicated or specified shall be provided. Whether or not the word "all" is used, coverage is specifically and expressly noted. In all cases where an item is referred to in singular number, it is intended that reference shall apply to as many such items as are required to perform the work.
- D. The work under this contract does not include any items marked N.I.C. on the drawings (not in contract).
- E. Division of Specifications into sections is done for convenience of reference and is not intended to control contractors in dividing work among subcontractors or to limit scope of work performed by any trade under any given section.
- F. The Contractor's failure to report in writing to the Architect and Owner errors, omissions or inconsistencies in the Contract Documents within ten (10) days of the Contractor's Discovery of same shall operate as a waiver of any claim or defenses by the Contractor arising from those errors, omissions or inconsistencies.

1.10 ALLOCATION OF WORK

- A. Where certain materials are specified to be installed under various headings, it shall be the responsibility of the General Contractor to re-allocate such work under the proper subcontractor if the specification is in conflict with the local jurisdiction.

1.11 OWNER'S RIGHT TO STOP THE WORK

- A. If the Contractor fails to correct defective work or persistently fails to supply materials or equipment in accordance with the Contract Documents, the Owner may order the Contractor to stop the work, or any portion thereof, until the cause of such order has been eliminated.

1.12 NOTICE AND SERVICE THEREOF

- A. All notices (relating to any part of this contract) to Contractors from the Owner shall be in writing and considered delivered and the service thereof completed, when the notice is posted, by registered mail, to the Contractor at his last address or delivered in person to the Contractor or his authorized representative on the work.

1.13 CODES AND ORDINANCES

- A. All branches of the work shown on the plans or specified, whether specifically mentioned or not, shall be executed in strict compliance with all local or state regulations and codes, and shall be in compliance with all National Codes when same have jurisdiction.

1.14 DELAYS AND EXTENSION OF TIME

- A. In addition to the terms stated in Articles of the General Conditions, the following items apply to delays and extension of time.

1. It is agreed that time is of the essence for each and every portion of this Contract and where under the Contract an additional time is allowed for the completion of any Work, the new time limit fixed by such extension shall be of the essence of this Contract. An extension of time shall not be cause for extra compensation under the Contract. The Contractor may be granted an extension of time and/or relief from liquidated damages when the delay in completion of the Work is due to:
 - a. Any preference, priority, or allocation order duly issued by the government;
 - b. Unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in the performance of a Contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and unusually severe weather.
 2. Claims for extensions of time and/or relief from liquidated damages, except for weather related claims, must be made in writing not later than twenty-one (21) calendar days after the beginning of the delay. Claims for extension of time due to unusual inclement weather shall be made in writing not later than the tenth day of the month following the month in which the delay occurred.
 3. Claims for extensions of time or relief from liquidated damages shall be stated in numbers of whole or half calendar days. The actual dates on which delay(s) occurred must be stated. In case of claims, extension of time shall be granted only because such unusual inclement weather prevented the execution of critical items of the work.
- B. Any claim for extension of time for strikes or lockouts shall be supported by a citation of facts concerning the strike, including, but not limited to, the dates, the craft concerned, the reason for the strike, efforts to resolve the dispute, and efforts to minimize the impact of the strike on progress.
- C. Any claims for extension of time for delays in transportation or for failures of suppliers shall be supported by a citation of facts demonstrating that the delays are beyond the Contractor's control, including, but not limited to, his efforts to overcome such delays.
- D. The time extensions for changes in the Work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The Change Order granting the time extension may provide the Contract Completion Date will be extended only for those specific elements so delayed and that the remaining Work will not be altered or may further provide for an equitable readjustment of liquidated damages pursuant to the new Contract completion dates.

1.15 TIMES FOR COMPLETION

- A. Anticipated Start of Construction: June 8, 2021.
- B. Substantial Completion. Subject to the conditions of Article "Delays and Extensions of Time" of the General Conditions, the total work to be done under this combined construction contract shall be commenced upon execution of the contract agreement and shall be substantially completed no later than July 30, 2021.
- C. Final Completion. Subject to the conditions of Article "Delays and Extensions of Time" of the General Conditions, the total work to be done under this combined construction contract shall be fully completed in phases no later than within fifteen (15) consecutive calendar days from the Date of Substantial Completion .
- D. The date of Final Completion for each phase shall be as indicated in the Owner-Contractor Agreement and the work is complete and all Contract requirements have been fulfilled by the Contractor.

1.16 LIQUIDATED DAMAGES

- A. It is mutually understood and agreed by and between parties of this contract, in execution of same, that time is of essence of the contract. In the event that the Contractor fails to substantially complete work to be performed under this contract by and at applicable completion time as identified in Article - Times for Completion, including any extension of time granted, Contractor shall pay to Owner

\$250.00 per consecutive calendar day for each additional day because of delay in completing as amended above as for liquidated damages, such as Owner's increased overhead and cost of additional architectural supervision and not as a penalty, for each and every calendar day, that Contractor shall be in default.

- B. Liquidated damages will be waived for and during extent of delay caused by Contractor's inability to obtain material or equipment by reasons such as Federal embargoes, priority orders, or other restrictions imposed by the United States Government, provided that adequate evidence is presented by Contractor to prove such delay and enable Owner to determine with exactness the extent and duration of such delay for each item of material and equipment involved.
- C. Owner shall have right to deduct liquidated damages from money in its hands otherwise due, or to become due, to Contractor or to sue for and recover compensation for damages for non-performance of this Contract at time stipulated herein.
- D. As actual damages for any delay in completion are impossible to determine, the Contractors and their sureties shall be liable for and shall pay to the Owner the sum of \$250.00 per day as fixed, agreed, and liquidated damages for each calendar day of delay past 15 days past substantial completion, the work reaches Final Completion.

1.17 PUNCH LIST OBSERVATIONS

- A. At the time of substantial completion, the Architect shall prepare a list of deficient work items. The Contractor shall have thirty days to complete this list and achieve final completion, notifying the Architect once items are complete and ready to be verified. Should the Architect perform site observations to verify completion of these items more than two times, the Contractor shall be responsible for payment to the Architect for additional site visits, at a rate of \$100.00 per hour plus travel expenses. Time charged by the Architect shall include travel time, time on-site, and time in office preparing follow-up documentation.

1.18 ORDERING MATERIALS

- A. Immediately following award of contract for this work, Contractor shall determine the source of supply for all materials and length of time required for their delivery, including materials of subcontractors, and order shall be placed for such materials promptly.
- B. If, for any reason, any items specified will not be available when needed and the Contractor can show that he has made a reasonably persistent effort to obtain the items in question, the Architect is to be notified in writing within forty-five (45) days after the Contract is signed, and he will either determine a source of supply or arrange with the Owner for appropriate substitution within terms of Contract; otherwise, the Contractor will not be excused for delays in securing material specified and will be held accountable if completion of the building is thereby delayed.

1.19 HAZARDOUS MATERIALS

- A. The Contractor is hereby advised that RossTarrant Architects, Inc. is not a professional consultant in the determination of the presence of hazardous materials in any form, including, but not limited to, asbestos products, polychlorinated biphenyl (PCB) or other toxic substances. In addition, RossTarrant Architects, Inc. is not a design professional involved with making recommendations regarding the removal or encapsulation of hazardous materials in any form.
- B. If the work which is to be performed under this contract interferes in any way with existing components which contain hazardous materials, it shall be Contractor's responsibility to contact the Owner or Owner's Environmental Consultant regarding the proper means and methods to be utilized in dealing with the hazardous materials.
- C. By execution of the contract for construction, the Contractor hereby agrees to bring no claim for negligence, breach of contract, indemnity, or otherwise against the Architect, its principals, employees, agents, and consultants if such claim in any way would involve the investigation of, or any

work related to hazardous materials in any form at the project site, including, but not limited to, asbestos, asbestos products, polychlorinated biphenyl (PCB) or other toxic substances. By execution of the contract for construction, the Contractor further agrees to defend, indemnify, and hold the Architect and his principals, employees, agents and consultants harmless from any such claim related to hazardous materials that may be brought by the Contractor's Subcontractors, Suppliers, or other third parties who may be acting under the direction of the Contractor pursuant to this project.

1.20 RULES OF MEASUREMENT

- A. The following Rules of Measurement shall apply in the use of Unit Prices:
1. Except as provision is made hereinafter for arbitrary measurements, the quantity of excavation shall be its in-place volume before removal.
 2. No allowance will be made for excavating additional material of any nature taken out of the convenience of the Contractor, beyond the quantity computed under these Rules of Measurement.
 3. The quantities of excavation shall be computed from instrument readings in vertical cross sections located at such intervals as will assure accuracy.
 4. General excavation for buildings and sections of buildings, bases for equipment, sump pits, etc., involving an area of 200 or more square feet, shall be classified as "Mass Excavation".
 5. Excavation for pipes, wall footings, grade beams, column footings, and sections of buildings such as bases for equipment, sump pits, etc., involving an area of less than 200 square feet, shall be classified as "Trench Excavation".
 6. "Mass Excavation" shall be arbitrarily assumed to extend to vertical planes two (2) feet outside wall lines, and to the elevation of plan subgrade.
 7. "Trench Excavation" for walls, grade beams, and sections of building, such as bases for equipment, sump pits, etc., involving an area less than 200 square feet shall be arbitrarily assumed to extend 2 feet wider than wall and grade beam thicknesses and outside walls of sections of buildings such as bases for equipment, sump pit, etc., but in no case less than three (3) feet wide sides vertical.
 8. "Trench Excavation" for pipes shall be arbitrarily assumed to be two (2) feet wider than the outside diameter of the pipe barrel and with sides vertical.
 9. "Trench Excavation" for wall footings and column footings shall be computed as vertical shafts, each with a horizontal cross section identical in shape and size with the plan of the footing.
 10. The quantities of form work will be the area of forms in contact with concrete.
 11. Concrete quantities shall be computed from plan size or if there are no drawings, from actual measurement of the work ordered and placed, waste excluded.

1.21 PREVAILING WAGE RATE REQUIREMENTS

- A. This project is subject to Davis Bacon Prevailing Wage Rates, attached to the end of this section. The Contractor shall be responsible for compliance with federal requirements. Payroll records shall not be transmitted to the Architect or Owner unless requested.
- B. General guidance, fact sheets, E-tools, posters, forms and additional information can be found at <https://www.dol.gov/agencies/whd/government-contracts/construction>.

1.22 INSURANCE AND BONDS

Refer to Article 11.4.1 of the General Conditions. Modify the paragraph as follows:

"11.4.1 Unless otherwise provided, when the Contract Sum exceeds one hundred thousand (\$100,000) the Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. A surety company authorized to do business in Kentucky shall execute bonds, and the cost thereof shall be included in the Contract Sum. Unless otherwise provided, the amount of each bond shall be equal to 100% of the Contract Sum plus Purchase Orders, or 100% of the Lump Sum Base Bid plus or minus accepted Alternates, whichever is greater."

- A. Refer to Article 11 of the General Conditions. Add the following under Article 11.3 - Property Insurance: "The General Contractor shall provide property insurance related to the Bid Breakout (Owner purchased) components, including current Contract Sum plus Purchase Orders."
- B. Refer to Article 11.4.1 of the General Conditions. Revise the last sentence to read: "The amount of each bond shall be equal to 100% of the Contract Sum plus the total of all Purchase Orders."
- C. In no event shall any failure of the Owner or Architect to receive certified copies or certificates of policies required or to demand receipt of such certified copies or certificates prior to the Contractor commencing the Work be construed as a waiver by the Owner or the Architect of the Contractor's obligations to obtain insurance pursuant to requirements. The obligation to procure and maintain any insurance required is a separate responsibility of the Contractor and independent of the duty to furnish a certified copy or certificate of such insurance policies.
- D. If the Contractor fails to purchase and maintain, or require to be purchased and maintained, any insurance required, Owner may, but shall not be obligated to, upon five (5) days' written notice to the Contractor, purchase such insurance on behalf of the Contractor and shall be entitled to be reimbursed by the Contractor upon demand.
- E. When any required insurance, due to the attainment of a normal expiration date or renewal date shall expire, the Contractor shall supply the Owner with Certificates of Insurance and amendatory riders or endorsements that clearly evidence the continuation of all coverage in the same manner, limits of protection, and scope of coverage as was provided by the previous policy. In the event any renewal or replacement policy, for whatever reason obtained or required, is written by a carrier other than that with whom the coverage was previously placed, or the subsequent policy differs in any way from the previous policy, the Contractor shall also furnish the Owner with a certified copy of the renewal or replacement policy unless the Owner provides the Contractor with prior written consent to submit only a Certificate of Insurance for any such policy. All renewal and replacement policies shall be in form and substance satisfactory to the Owner and written by carriers acceptable to the Owner.
- F. Within ten (10) days of the filing of a mechanics' or materialmen's lien on the Project real estate or funds, Contractor shall at its expense furnish a bond or bonds in accordance with the appropriate statutes satisfactory for the release of or otherwise obtain the release of any mechanics' and materialmen's liens filed against the Project real estate or funds by any of Contractor's employees, subcontractors, suppliers, agents, consultants or anyone claiming through any of them. If the Contractor fails to furnish a bond within ten (10) days, the Owner may provide the bond and back charge all costs, including attorneys' fees, costs or expenses incurred as a result of a lien filed or asserted against Owner's property.

1.23 OWNER PURCHASED MATERIALS

- A. Kentucky State Sales Tax does apply to all materials purchased for this Project, except those materials purchased directly by the Owner with an approved Purchase Order in accordance with KRS 139.495 (1) after appropriate Advertisement for Bids.
 - 1. A Material Supplier is a person or organization who has a direct Purchase Order responsibility to the Owner. A Material Supplier cannot be an installing Contractor or Subcontractor.
 - 2. The Purchase Order amount as bid may include all costs of delivery to the job site.
 - 3. Material Supplier assumes all responsibility for materials until delivery is accepted by the Contractor. The designated Contractor or Subcontractor responsible for installation of Purchase Order material or equipment is to supervise and accept delivery, unload, handle, store, lay out and install the items.
 - a. Upon delivery, the designated Contractor is to verify product suitability, quantity, quality and condition as soon as it can be ascertained and shall accept care, custody and control responsibility as if it were his own purchase. Any damage or loss after acceptance will be the responsibility of the designated Contractor or subcontractor.

4. Material Supplier will guarantee all materials furnished under a purchase order to be in accordance with the requirements of the contract documents. This guarantee shall extend through the construction period and one (1) year from the date of substantial completion upon final acceptance by the Owner of the Project. Any damage or loss after acceptance will be the responsibility of the designated Contractor or subcontractor.
 5. The material breakout amount indicated by a prospective bidder is considered final. The KDE Form of Proposal stipulates the cost of the material and is validated by the signature of the Supplier. In order to qualify for tax exemption, the Kentucky Revenue Cabinet requires that the bid for the labor component and material component remain separate. Should a Purchase Order have an unused balance remaining at the close of the project, the Purchase Order will be closed out. At no time will the remaining balance be transferred to the Contractor.
 6. A Material Supplier can be paid by one payment upon satisfactory completion of the requirements of the Purchase Order with the Owner. This would include the delivery of materials and satisfactory verification of these materials and compliance with the closeout procedures as outlined in these specifications.
 7. Material Suppliers shall not require the Owner to complete any form of credit application. The General Contractor is responsible for guaranteeing the Owner's credit-worthiness.
- B. The Contractor shall provide a breakdown of major items (excluding sales tax) and associated Purchase Orders for the Owner's approval and signature.
1. The Contractor shall prepare Purchase Orders on the KDE forms included within this Project Manual, based upon his accepted Bid Breakout List from the Form of Proposal. Once executed, Purchase Orders are not to be altered, amended or changed in any way. Any Purchase Order not returned within the allotted time shall become null and void and the value of the Purchase Order will be added to the Contract Sum with the Contractor assuming responsibility for all taxes. Upon execution of the Purchase Orders by the Owner, the Purchase Orders will be delivered to the Contractor for distribution to the respective suppliers.
 2. In the event the quantities of materials supplied via Purchase Orders are insufficient to complete the Work, the Contractor shall, at no expense to the Owner, provide such materials as necessary to complete the Work.
 3. The Owner will provide to the Contractor Kentucky Sales Tax Exemption Certificates for each Material Supplier.
- C. The Contractor shall also guarantee and warrant to the Owner that all materials listed in the breakdown to be purchased directly by the Owner by Purchase Order shall fully conform to the requirements of the Contract Documents and the quantity of such material is sufficient to complete the work. Contractor will provide invoices from the Suppliers to the Owner with each Contractor's Application for Payment.
- D. As provided in KRS 139.310 and Kentucky Administrative Regulation 103 KAR 26:070 (Contract Construction), each contractor is responsible for Kentucky Sales and Use Tax on all materials purchased and installed by the contractor or a third party hired by the contractor.
1. The sales and use tax is to be excluded only on those material items purchased by the Owner directly from the Material Supplier. If a Contractor lists his own company, or an installing subcontractor, as the supplier on those items, any purchase order will be void, and the sales and use tax on the materials used to fulfill the terms of the contract will be the liability of the Contractor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

"General Decision Number: KY20210018 02/19/2021

Superseded General Decision Number: KY20200018

State: Kentucky

Construction Type: Building

Counties: Anderson, Bath, Boyle, Estill, Fleming, Garrard, Harrison, Lewis, Lincoln, Menifee, Nicholas, Owen, Powell, Robertson, Rockcastle and Washington Counties in Kentucky.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	01/15/2021
2	02/12/2021
3	02/19/2021

* ASBE0051-001 03/01/2020

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 25.81	16.86

BOIL0040-001 03/01/2018

	Rates	Fringes
BOILERMAKER.....	\$ 35.10	27.56

CARP1076-001 06/01/2018

	Rates	Fringes
MILLWRIGHT.....	\$ 27.20	19.97

CARP1650-003 06/01/2018

	Rates	Fringes
CARPENTER (Acoustical Ceiling Installation, Drywall Hanging, and Metal Stud Installation Only).....	\$ 25.36	15.74

ENGI0181-084 07/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Oiler).....	\$ 28.20	17.25

ENGI0181-085 07/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Crane).....	\$ 33.58	17.25

CRANES WITH BOOM 150 FEET & OVER, INCLUDING JIB, SHALL
RECEIVE \$.75 ABOVE THE WAGE RATE.
ALL CRANES WITH PILING LEADS WILL RECEIVE \$.50 ABOVE THE
WAGE, REGARDLESS OF BOOM LENGTH.

ENGI0181-086 07/01/2020

	Rates	Fringes
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POWER EQUIPMENT OPERATOR (Forklift).....	\$ 33.58	17.25
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IRON0070-004 06/01/2020

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 30.42	23.15

IRON0782-015 08/01/2020

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 28.54	23.75

* LAB00189-025 06/01/2020

	Rates	Fringes
LABORER (Carpenter Tender, Grade Checker).....	\$ 23.78	14.10

* LAB00189-027 06/01/2020

	Rates	Fringes
LABORER (Pipelayer, Tamper - Hand Held).....	\$ 24.18	14.15

LAB00189-029 06/01/2020

	Rates	Fringes
LABORER (Grouting).....	\$ 24.38	14.15

PAIN1072-006 12/01/2018

	Rates	Fringes
PAINTER (Drywall Finishing/Taping and Spray Only).....	\$ 27.76	18.50

PLUM0452-021 11/01/2020

	Rates	Fringes
PIPEFITTER (Includes HVAC Pipe and Unit Installation).....	\$ 34.50	19.79

SFKY0669-002 01/01/2021

	Rates	Fringes
SPRINKLER FITTER.....	\$ 36.63	22.07

SHEE0110-006 12/01/2020

	Rates	Fringes
SHEET METAL WORKER (Excludes HVAC Duct Installation).....	\$ 33.13	23.07

* UAVG-KY-0010 01/01/2019

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 29.46	23.50

* UAVG-KY-0012 01/01/2020

	Rates	Fringes
LABORER: Power Tool Operator....	\$ 24.23	14.67

* UAVG-KY-0013 01/01/2019

	Rates	Fringes
OPERATOR: Bulldozer.....	\$ 32.38	15.75

SUKY2015-048 06/02/2015

	Rates	Fringes
BRICKLAYER.....	\$ 23.53	11.62
CARPENTER (Form Work Only).....	\$ 19.97	9.54
CARPENTER, Excludes Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 22.53	10.25
CEMENT MASON/CONCRETE FINISHER...	\$ 20.92	10.90
ELECTRICIAN.....	\$ 29.53	12.94
LABORER: Common or General.....	\$ 20.67	7.65

LABORER: Mason Tender - Brick...	\$ 22.36	10.76
LABORER: Mason Tender - Cement/Concrete.....	\$ 23.17	10.05
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.55	10.61
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 24.64	13.00
OPERATOR: Grader/Blade.....	\$ 24.33	13.00
PAINTER (Brush and Roller).....	\$ 21.28	11.14
PLUMBER.....	\$ 30.36	13.62
ROOFER.....	\$ 22.31	7.41
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 27.74	13.20
TILE FINISHER.....	\$ 17.67	7.45
TILE SETTER.....	\$ 25.77	6.10
TRUCK DRIVER: Dump Truck.....	\$ 17.07	6.25

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information

on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates

the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

SECTION 011000 - SUMMARY**PART 1 GENERAL****1.01 PROJECT**

- A. Project Name: West Irvine Intermediate ESSER II/HVAC Upgrades.
- B. Owner's Name: Estill County Board of Education.

1.02 OWNER OCCUPANCY

- A. Owner intends to occupy the building throughout the construction period..
 - 1. Contractor shall coordinate work and deliveries to avoid traffic complications with the Owner.
 - 2. All utility outages affecting adjacent buildings are to be scheduled with the Owner at last 48 hours before outage.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy of the buildings and campuses.

1.03 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
- C. Provide access to and from site as required by law.
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
- E. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to these areas. If additional storage is necessary, obtain and pay for such storage off site.
- F. Pressure wash driveways where mud and debris from construction is generated on a regular basis.
- G. Existing building spaces may not be used for storage.
- H. The General Contractor shall conduct all his work, and the work of his subcontractors, without interruption of the business of the school.
- I. During school hours, Contractor maintains responsibility for noise abatement. No radios will be allowed and use of power-actuated and pneumatic tools, sawing, hammering, etc. should be limited as much as possible.
- J. Workers shall abide by a code of conduct to include wearing shirts at all times. Alcohol, smoking, drugs, firearms, foul language, and fraternizing with staff is strictly prohibited.

- K. The Contractor shall be responsible for ensuring no Contractor employee or subcontractor on its behalf appears on the school property who has been charged or convicted of a sex crime or violent crime like those covered in KRS 160.380(3) or KRS 17.545.

END OF SECTION

SECTION 012000 - PRICE AND PAYMENT PROCEDURES**PART 1 GENERAL****1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. General Conditions, Special Conditions and Document 007300 - Supplementary Conditions: Additional requirements for progress payments, schedules of values, final payment, changes in the work.
- B. Section 012100 - Allowances: Payment procedures relating to allowances.

1.03 SCHEDULE OF VALUES

- A. Form to be used: Use AIA Document G703 Continuation Sheets as form for Applications for Payment. If another form is used, the format must be consistent with AIA Document G703.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit a printed schedule on forms provided by the Owner or Architect.
- E. Revise schedule to list approved Change Orders, with each Application For Payment.
- F. Temporary facilities and other major cost items that are direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense.
- G. The Architect may from time to time require further verification of parts or the whole of the Schedule of Values. Modifications as required by the Architect shall be made by the Contractor as directed. Monies paid to the Contractor on previous payments shall then be modified to reflect the modifications made in the Schedule of Values.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals of once per month, within the schedule provided by the Architect and the Owner at the time of contract award.
- B. Form to be used: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment. If another form is used, the format must be consistent with AIA Document G702 and AIA Document G703.
- C. Form Completion: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
- D. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- E. Forms filled out by hand will not be accepted.

- F. For each item, provide a column for listing each of the following:
1. Item Number.
 2. Description of work.
 3. Scheduled Values.
 4. Previous Applications.
 5. Work in Place and Stored Materials under this Application.
 6. Authorized Change Orders.
 7. Total Completed and Stored to Date of Application.
 8. Percentage of Completion.
 9. Balance to Finish.
 10. Retainage.
- G. Execute certification by signature of authorized officer.
- H. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- I. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- J. Stored Materials: If payment is required on the basis of materials and equipment not incorporated into the Work, but delivered and suitably stored at the site or at another location agreed to in writing, the Contractor must provide the following documents:
1. A list of materials consigned to the Project (which shall be clearly identified), giving the place of storage, together with copies of invoices.
 2. Certification that all items have been tagged for delivery to the Project and that they will not be used for any other purpose.
 3. Evidence of adequate insurance covering the material in storage off-site, listing the Owner as an additional insured.
 4. Evidence that representatives of the Architect and/or Owner have visited the Contractor's place of storage and checked all items on the Contractor's Certificate.
 - a. Materials must be stored within a thirty minute travel time from either the project site or the Architect's place of business to be checked by the Architect's forces. If the Contractor desires to receive payment for materials stored outside of these travel parameters, then the Contractor may make a separate agreement with the Architect to pay their personnel at the firm's standard hourly rates, plus travel expenses, to verify stored materials.
- K. Submit digital copies of each Application for Payment.
- L. Include the following with the application:
1. Construction progress schedule, revised and current as specified in General Requirements.
 2. Partial release of liens from Subcontractors and vendors. With each application, submit waivers of mechanic's liens from subcontractors, suppliers and vendors for the construction period covered by the previous application.
 3. Affidavits and insurance certificates attesting to off-site stored products.
- M. Purchase Orders: With each Application for Payment, the Contractor shall submit invoices for direct payment by Owner for materials purchased by the Owner by Purchase Order. These invoices should be transmitted as follows:
1. All invoices should be accompanied by a payment summary sheet, which should include the following:
 - a. Name of Project.
 - b. Name of Contractor.
 - c. List of each payment to be made, in tabular format, with the following headings:
 - 1) Purchase Order Number.
 - 2) Name of Supplier.

- 3) Original Purchase Order Total.
 - 4) Any Change Order amounts for that Purchase Order.
 - 5) Current adjusted Purchase Order total.
 - 6) Previous Invoices.
 - 7) Current Invoices.
 - 8) Remaining Purchase Order Balance.
 - 9) Statement signed and notarized by the Contractor, as follows: "I hereby guarantee and warrant to the Owner that all materials listed in the breakdown above for payment conform fully to the requirements of the Contract Documents. These materials have been delivered to the project site, in good condition, and have been inspected to verify product suitability, quantity, quality and condition. I hereby accept responsibility for care, custody and control of these materials."
- d. Attach copies of invoices to Summary Sheet.

1.05 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor by Field Order.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications . Contractor shall prepare and submit a fixed price quotation within 14 days.
 1. Proposal requests issued by Architect are for information only. Do not consider them instructions either to stop the work in progress or to execute the proposed change.
 2. Use form AIA Document G709, or similar format, for proposal requests.
- D. Substantiation of Costs: Provide full information required for evaluation.
 1. Provide detailed breakdown of labor and materials costs.
 2. Overhead and profit shall not exceed a total of 15% of the cost of the labor and materials cost.
 3. The Contractor shall not include in the cost of the Work any cost or rental of small tools, or any portion of the time of the Contractor or the superintendent, or any allowance for the use of capital, insurance or bond premium or any actual or anticipated profit, or job or office overhead not previously mentioned. These items are considered as being covered under the added amount for general overhead.
 4. Provide justification for any change in Contract Time.
 5. Provide credit for deletions from Contract, similarly documented.
 6. Should this change result in a change to the price or terms of a purchase order issued directly by the Owner, provide a complete breakdown including purchase order number, name of supplier and net change amount.
 7. Support each claim for additional costs with additional information upon request:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 8. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- E. Contractor shall submit an updated construction schedule that indicates the effect of the change, including but not limited to changes in activity duration, start and finish times, and activity relationship.
- F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
 - 1. Change Orders modifying the contract amount by less than \$25,000.00 may be approved and executed by the Local Board of Education. Since the Local Board of Education typically meets on a monthly schedule, this approval could take as long as one month after the Contractor returns the signed documents to the Architect.
 - 2. Change Orders modifying the contract amount by more than \$25,000.00 cannot be executed by the Local Board of Education without prior approval from the Kentucky Department of Education. These Change Orders are to be approved by the Contractor and Architect, and then submitted to the Local Board of Education where they will be accepted. With acceptance from the Local Board of Education, they will then be submitted to the Kentucky Department of Education. Upon approval from the Kentucky Department of Education, Change Orders may be executed by the Owner, and then and only then do they become a part of the Contract Documents.
 - 3. Time for obtaining formal Change Order approval shall not be used as a claim for extending the construction period. Both the Architect and the Owner shall perform their responsibilities in a reasonable amount of time, but shall not be responsible for delays in the construction schedule.
 - 4. If modification affects the terms or price of a Purchase Order issued directly by the Owner, a Change Order will be issued to that Purchase Order.
- G. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- H. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- I. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 017000.
 - 2. All closeout documentation required by materials specifications sections.
 - 3. Evidence of completion of Project closeout requirements.
 - 4. AIA Document G707, Consent of Surety to Final Payment.
 - 5. AIA Document G706, Contractor's Affidavit of Payment of Debts & Claims
 - 6. AIA Document G706A, Contractor's Affidavit of Release of Liens
 - 7. Evidence that claims have been settled.
 - 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when Owner took possession of an assumed responsibility for corresponding elements of the Work.
 - 9. Final liquidated damages settlement statement.

END OF SECTION

SECTION 013800 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Unit Prices.
- B. Administrative Requirements.
- C. Construction Progress Schedule.
- D. Construction Progress Reports.
- E. Submittal Procedures.
- F. Quality Requirements.
- G. Product Requirements.
- H. Execution and Closeout Requirements.
- I. Closeout Submittals.

1.02 RELATED REQUIREMENTS

- A. General Conditions, Special Conditions and Document 007300 – Supplementary Conditions.
- B. Section 011000 – Summary of Work.
- C. Section 012000 - Price and Payment Procedures.
- D. Section 015000 – Temporary Facilities and Controls.

1.03 UNIT PRICES

- A. Costs Included:
 - 1. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. Measurement of Quantities:
 - 1. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
 - 2. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
 - 3. Measurement Devices:
 - a. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.
 - b. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - c. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
 - 4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
 - 5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
 - 6. Measurement by Area: Measured by square dimension using mean length and width or radius.
 - 7. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

8. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.
9. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.
10. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.
11. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to Contractor.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Electronic Documents:
 1. Throughout the course of the project, the Contractor shall submit documentation to the Architect through the Architect's document management software, Newforma.
 - a. The Architect shall provide the Contractor with log-in at no cost.
 - b. The Architect shall provide training upon request.
 - c. Documentation that will be required to be submitted through Newforma includes but is not limited to shop drawing submittals, requests for information (RFI's), proposed change orders, and any electronic document that exceeds one megabyte in size.
- B. Project Coordination:
 1. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend upon each other for proper installation, connection and operation.
- C. Preconstruction Meeting:
 1. Owner will schedule a meeting after contract award.
 2. Attendance Required:
 - a. Owner.
 - b. Architect.
 - c. Contractor.
 - d. All Subcontractors and Major Suppliers.
- D. Progress Meetings:
 1. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
 2. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
 3. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.

1.05 CONSTRUCTION PROGRESS SCHEDULE

- A. Schedule:
 1. Prepare schedule in the form of a horizontal bar chart.
- B. Content:
 1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
 2. Identify each item by specification section number.
 3. Identify work of separate stages and other logically grouped activities.
 4. Provide sub-schedules to define critical portions of the entire schedule.
 5. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
 6. Provide legend for symbols and abbreviations used.

- C. Bar Charts:
 1. Include a separate bar for each major portion of Work or operation.
 2. Identify the first work day of each week.

1.06 CONSTRUCTION PROGRESS REPORTS

- A. Daily Construction Reports:
 1. Prepare a daily construction report recording the following information concerning events at Project site:
 2. Submit 1 copy at weekly intervals to project team members.
- B. Field Condition Reports:
 1. Immediately on discovery of a difference between field conditions and the contract documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the contract documents.
- C. Special Reports:
 1. Submit special reports directly to Architect within one day of occurrence. Distribute copies of report to parties affected by the occurrence.
 2. When an event of an unusual and significant nature occurs at project site, whether or not related directly to the work, prepare and submit a special report. List chain of events, persons participating, response by contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Architect in advance when these events are known or predictable.

1.07 SUBMITTAL PROCEDURES

- A. Submittal Procedures:
 1. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 2. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 3. Identification: Place a permanent label or title block on each submittal for identification.
 4. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
 5. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will discard submittals received from sources other than Contractor.
 6. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 7. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
 8. Use for Construction: Use only final submittals with mark indicating final unrestricted release or final-but-restricted release.
 9. Each and every shop drawings, setting drawings, etc., submitted to the Architect shall bear a stamp certified over the Contractor's signature indicating the drawings have been thoroughly pre-checked and approved by the Contractor. Drawings which do not bear such certification will be returned for pre-checking. Any delay in securing final approval of such drawings shall be adjudged to the fault of the Contractor. By reviewing, approving and submitting shop drawings, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, member sizes catalog numbers, and similar data and that he has checked and coordinated shop drawings with the requirements of the project and of the contract documents.

10. Work requiring shop drawings, whether called for by the contract documents or requested by the Contractor, shall not commence until the submission has been reviewed by the Architect/Engineer. Work shall be in accordance with and performed from the reviewed drawings and the Contractor of his Subcontractor shall make certain that proper shop drawings are at the site of the work.

1.08 QUALITY REQUIREMENTS

- A. Submittals:
 1. Testing Agency Qualifications:
 - a. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 - b. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 2. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
 3. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - a. Include:
 - 1) Date issued.
 - 2) Project title and number.
 - 3) Name of inspector.
 - 4) Date and time of sampling or inspection.
 - 5) Identification of product and specifications section.
 - 6) Location in the Project.
 - 7) Type of test/inspection.
 - 8) Date of test/inspection.
 - 9) Results of test/inspection.
 - 10) Conformance with Contract Documents.
 - 11) When requested by Architect, provide interpretation of results.
 - b. All test reports shall be typewritten. The Architect reserves the right to reject handwritten reports.
 4. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - a. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - b. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- B. Testing and Inspection:
 1. See individual specification sections for testing required.

1.09 PRODUCT REQUIREMENTS

- A. New Products:
 1. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Product Options:
 1. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
 2. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
 3. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

4. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.
 - a. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - b. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - c. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - d. Where products are accompanied by the term "as selected," Architect will make selection.
 - e. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 - f. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 5. Product Selection Procedures: Procedures for product selection include the following:
 - a. Product: Where Specification paragraphs or subparagraphs titled "Product" name a single product and manufacturer, provide the product named.
 - b. Manufacturer/Source: Where Specification paragraphs or subparagraphs titled "Manufacturer" or "Source" name single manufacturers or sources, provide a product by the manufacturer or from the source named that complies with requirements.
 - c. Products: Where Specification paragraphs or subparagraphs titled "Products" introduce a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 - d. Manufacturers: Where Specification paragraphs or subparagraphs titled "Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
 - e. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed.
 - f. Product Options: Where Specification paragraphs titled "Product Options" indicate that size, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specific product or system indicated.
 - g. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.
 - h. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.
 - 1) Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.
 - 2) Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.
- C. Maintenance Materials:
1. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
 2. Deliver to Project site; obtain receipt prior to final payment.
- D. Substitution Procedures:

1. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
 2. Timing: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
 3. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Substitution request is fully documented and properly submitted.
 - e. Requested substitution will not adversely affect Contractor's Construction Schedule.
 - f. Substitution request includes a release from the supplier/manufacturer listed in the contract documents and the Contractor's Form of Proposal.
- E. Transportation and Handling:
1. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
 2. Transport and handle products in accordance with manufacturer's instructions.
- F. Storage and Protection:
1. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
 2. Store and protect products in accordance with manufacturers' instructions.

1.10 EXECUTION AND CLOSEOUT REQUIREMENTS

- A. Qualifications:
1. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.
 2. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located.
- B. Project Conditions:
1. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
 2. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 3. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 4. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
 5. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.
- C. Examination:

1. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
 2. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
 3. Examine and verify specific conditions described in individual specification sections.
 4. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
 5. Verify that utility services are available, of the correct characteristics, and in the correct locations.
 6. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.
- D. Laying Out the Work:
1. Verify locations of survey control points prior to starting work.
 2. Promptly notify Architect of any discrepancies discovered.
 3. Contractor shall locate and protect survey control and reference points.
 4. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
 5. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
 6. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
 7. Utilize recognized engineering survey practices.
 8. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
 9. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - a. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and .
 - b. Grid or axis for structures.
 - c. Building foundation, column locations, ground floor elevations, and .
 10. Periodically verify layouts by same means.
 11. Maintain a complete and accurate log of control and survey work as it progresses.
 12. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.
- E. General Installation Requirements:
1. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
 2. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
 3. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
 4. Make neat transitions between different surfaces, maintaining texture and appearance.
- F. Progress Cleaning:
1. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- G. Protection of Installed Work:
1. Protect installed work from damage by construction operations.
- H. Final Cleaning:
1. Execute final cleaning prior to final project assessment.
 - a. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

- I. Closeout Procedures:
 - 1. Substantial Completion:
 - a. Notify Architect when work is considered ready for Substantial Completion.
 - b. Field Observation: Submit a written request for field observation for Substantial Completion. On receipt of request, Architect will either proceed with field observation or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after field observation or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - c. Complete items of work determined by Architect's final field observation.
 - 2. Final Completion:
 - a. Preliminary Procedures: Before requesting final field observation for determining date of Final Completion, complete the following:
 - 1) Submit a final Application for Payment.
 - 2) Submit certified copy of Architect's Substantial Completion field observation list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3) Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - b. Final Field Observation: Submit a written request for final field observation for acceptance. On receipt of request, Architect will either proceed or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after field observation or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 3. Warranties:
 - a. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
 - b. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1.11 CLOSEOUT SUBMITTALS

- A. Submittals:
 - 1. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
 - 2. Warranties and Bonds:
 - a. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - b. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - c. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
- B. Project Record Documents:
 - 1. Maintain on site one set of the record documents; record actual revisions to the Work.
- C. Warranties and Bonds:
 - 1. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.

END OF SECTION

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities, support, security and protection facilities include, but are not limited to, the following:
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers and fencing.
- F. Temporary water service and distribution.
- G. Security requirements.
- H. Vehicular access and parking.
- I. Waste removal facilities and services.
- J. Temporary and additional required signs.
- K. Field offices.
- L. Storage and fabrication sheds.
- M. Fire extinguishers.
- N. Lifts and hoists.
- O. Construction aids and miscellaneous services and facilities.

1.02 RELATED REQUIREMENTS

- A. Section 024119 - Selective Structure Demolition.

1.03 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight: exterior walls are insulated and weathertight: and all openings are closed with permanent construction or substantial temporary closures.

1.04 TEMPORARY UTILITIES

- A. Contractor may use the Owner's existing water and electric utilities at the site (except phone/internet and utilities for field office(s)) as required for the renovation portions of this project. However, if the privilege of using the Owner's utilities are abused, then the Contractor shall reimburse the Owner any amount over a normal monthly bill amount.
 - 1. Conditions of Use of Owner's Utilities: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
 - 2. Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
 - 3. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

4. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner, Architect, testing agencies and authorities having jurisdiction.
5. Contractor to pay all fees, taps, certifications, permits, and etc. that comply with all Federal, State and local regulations and utility company requirements. Arrange for authorities having jurisdiction to test and inspect each temporary utility before use.
6. All required temporary work shall provide for safe and proper performance of the work. The Contractor shall be responsible for adequate design and construction of all temporary work used in construction of Contract Work.
7. Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
8. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
9. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed facilities.
10. At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.

1.05 ELECTRICAL SERVICE

- A. Provide, weatherproof, grounded electric power service and distribution system of size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnection means, automatic ground-fault , and main distribution switchgear.
 1. Electrical service to comply with NECA, NEMA, UL and NFPA for temporary electrical needs.
 2. Electrical outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110-to120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light. Provide receptacle outlets adequate for connection of power tools and equipment.
 3. Power distribution system circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.
 4. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 5. Provide warning signs at power outlets other than 110 to 120 V.

1.06 WATER SERVICE

- A. Owner will not provide water distribution service to specific areas of construction, that is the responsibility of the Contractor.
- B. Contractor to provide temporary water and distribution service as required by construction activities.
 1. Use trigger-operated nozzles for water hoses, to avoid waste of water.
- C. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

1.07 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telephone service to field office at time of project mobilization.
- B. Phone service shall be for use by all personnel engaged in construction activities, throughout the construction period.
 1. Cellular telephone service may be substituted for use by the Contractor's superintendent.

1.08 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization. Comply with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities.
 - 1. Single occupant units of chemical, aerated recirculation, or combustion type; fully vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar material.
 - 2. Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- B. Maintain daily in clean and sanitary condition.
- C. Owner's existing restroom facilities in the building are not to be used under any circumstances.

1.09 ENVIRONMENTAL PROTECTION

- A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or other entities near Project site.
 - 1. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

1.10 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
 - 1. Refer also to 2015 IBC with Kentucky Amendments, Chapter 33 for additional protection requirements.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Barricades, warning signs and lights shall comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
 - 1. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8 inch thick exterior plywood.

1.11 FENCING

- A. Contractor option to fence construction, staging and fabrication areas.

1.12 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.13 LIFTS AND HOISTS

- A. Provide facilities for hoisting materials and personnel. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

1.14 TEMPORARY FIRE PROTECTION

- A. Fire extinguishers: Hand carried portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA recommended classes for exposures.
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
- B. Store combustible materials in containers in fire-safe locations.
- C. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.

1.15 VEHICULAR ACCESS AND PARKING

- A. All employee, and project related, vehicles shall park in and areas as designated by the Owner
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain fire department access to fire hydrants, free of obstructions.
- D. Existing on-site roads and parking areas shall not be used for construction traffic, staging and storage, unless specifically addressed on the staging plan.
- E. Fire Truck Access: Access to the building site and surrounding buildings must be maintained during construction for local fire truck access. Phase construction as required to maintain access to new, existing, or temporarily relocated standpipe, fire hydrant connections, the requirements of Section 3311 and 3312 of the 2015 International Building Code with Kentucky Amendments, and fire alarm annunciator panels. Coordinate with the local fire department that would respond to an alarm during the initial start up of construction to ensure a complete understanding of their requirements.

1.16 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition. All exitways, walks, drives, grass areas, and landscaping must be kept free from debris at all times.
- B. Provide adequate trash containers of proper size.
- C. Provide containers with lids. Collect waste from construction areas and elsewhere daily. Remove trash from site per following.
 - 1. Dispose of all material in a lawful manner.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- E. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Comply with NFPA 241 for removal of combustible waste material and debris.
- F. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.
- G. Failure to comply with the above requirements shall be cause for stopping work until the condition is corrected.

1.17 PROJECT IDENTIFICATION

- A. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- B. Additional Required Signs: Contractor to provide sign or signs in a location or locations clearly visible to all Contractors, not less than 2' x 4' in dimension, with the following wording "Unlawful possession of a weapon on school property in Kentucky is a felony punishable by a maximum of five (5) years in prison and a ten thousand dollar (\$10,000) fine." Installation shall include all supporting framing and setting materials required.
 - 1. Sign can be digitally printed on pressure sensitive vinyl with UV resistant inks and mounted on a 1/2 inch MDO board or 10 mm PVC board or printed directly on the MDO or PVC board with UV resistant inks.
- C. No other signs are allowed without Owner permission except those required by law.

1.18 FIELD OFFICES

- A. Contractor's option to provide a field office on site.
 - 1. Progress meetings will be held either on-line or in the building at a location to be determined.

1.19 STORAGE AND FABRICATION SHEDS

- A. Provide sheds sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere on-site.
 - 1. Locate for easy access to the Project.
 - 2. Construct framing, sheathing, and siding using fire-retardant-treated lumber and plywood.
 - 3. Paint exposed lumber and plywood with exterior-grade acrylic-latex emulsion over exterior primer.

1.20 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove each temporary when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion.
- B. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- C. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED****END OF SECTION 015000**

SECTION 200100 - GENERAL PROVISIONS - MECHANICAL**1. GENERAL**

- A. The Advertisement for Bids, Instructions to Bidders, Bidding Requirements, General, Special and Supplementary Conditions, and all other contract documents shall apply to the Contractor's work as well as to each of his Sub-Contractor's work. All manufacturers, suppliers, fabricators, contractors, etc. submitting proposals to any part if for work, services, materials or equipment to be used on or applied to this project are hereby directed to familiarize themselves with all documents pertinent to this Contract. In case of conflict between these General Provisions and the General and/or Special Conditions, the affected Contractor shall contact the Engineer for clarification and final determination.
- B. Each Proposer shall also be governed by any unit prices and Addenda insofar as they may affect his part of the work or services.
- C. The work included in this division consists of the furnishing of all labor, equipment, transportation, excavation, backfill, supplies, material, appurtenances and services necessary for the satisfactory installation of the complete and operating Mechanical System(s) indicated or specified in the Contract Documents.
- D. Any materials, labor, equipment or services not mentioned specifically herein which may be necessary to complete or perfect any part of the Mechanical Systems in a substantial manner, in compliance with the requirements stated, implied or intended in the drawings and/or specifications, shall be included as part of this Contract.
- E. It is not the intent of this section of the specifications to make any Contractor, other than the Construction Manager, responsible to the Owner, Architect and Engineer. All transactions such as submittal of shop drawings, claims for extra costs, requests for equipment or materials substitution, shall be routed through the Construction Manager to the Architect, then to the Engineer. Also, this section of the specifications shall not be construed as an attempt to arbitrarily assign responsibility of work, material, equipment or services to a particular trade or Contractor. Unless stated otherwise, the subdivision and assignment of work under the various sections shall be optional.
- F. It is the intent of this Contract to deliver to the Owners a "like new" project once work is complete. Although plans and specifications are complete to the extent possible, it shall be the responsibility of the Contractors involved to remove and/or relocate or re-attach any existing or new systems which interfere with new equipment or materials required for the complete installation without additional cost to the Owner.
- G. In general, and to the extent possible, all work shall be accomplished without interruption of existing facilities operations. The Contractor shall advise the Owners at least two weeks prior to the interruption of any services or utilities. The Owners shall be advised of the exact time that interruption will occur and the length of time the interruption will last. Failure to comply with this requirement may result in complete work stoppage by the Contractors involved until a complete schedule of interruptions can be developed.
- H. Definitions and Abbreviations
 - (1) Contractor - Any Contractor whether proposing or working independently or under the supervision of a General Contractor and/or Construction Manager and who installs any type of mechanical work (Controls, Plumbing, HVAC, Sprinkler, Gas Systems, etc.) or, the General Contractor.
 - (2) Engineer - The Consulting Mechanical-Electrical Engineers either consulting to the Owners, Architect, other Engineers, etc. In this case: CMTA, Inc., Consulting Engineers.
 - (3) Architect - The Architect of Record for the project.

- (4) Furnish - Deliver to the site in good condition and turn over to the Contractor who is to install.
- (5) Provide - Furnish and install complete, tested and ready for operation.
- (6) Install - Receive and place in satisfactory operation.
- (7) Indicated - Listed in the Specifications, shown on the Drawings or Addenda thereto.
- (8) Typical - Where indicated repeat this work, method or means each time the same or similar condition occurs whether indicated or not.
- (9) Contract Documents - All documents pertinent to the quality and quantity of work to be performed on this project. Includes, but not limited to: Plans, Specifications, Instructions to Bidders, General and Special Conditions, Addenda, Alternates, Lists of Materials, Lists of Sub-Contractors, Unit Prices, Shop Drawings, Field Orders, Change Orders, Cost Breakdowns, Schedules of Value, Periodical Payment Requests, Construction Contract with Owners, etc.
- (10) Proposer - Any person, agency or entity submitting a proposal to any person, agency or entity for any part of the work required under this contract.
- (11) OSHA - Office of Safety and Health Administration.
- (12) KBC - Kentucky Building Code.
- (13) The Project - All of the work required under this Contract.
- (14) NEC - National Electrical Code.
- (15) NFPA - National Fire Protection Association.
- (16) ASME - American Society of Mechanical Engineers.
- (17) AGA - American Gas Association.
- (18) SMACNA - Sheet Metal and Air Conditioning Contractors National Association.
- (19) ANSI - American National Standards Institute.
- (20) ASHRAE - American Society of Heating, Refrigeration and Air Conditioning Engineers.
- (21) NEMA - National Electrical Manufacturers Association.
- (22) UL - Underwriters Laboratories.
- (23) ADA - Americans with Disabilities Act.
- (24) IMC - International Mechanical Code.
- (25) IECC - International Energy Conservation Code.
- (26) IFGC - International Fuel Gas Code.

I. Required Notices:

- (1) Ten days prior to the submission of a proposal, each proposer shall give written notice to the Engineer of any materials or apparatus believed inadequate or unsuitable; in violation of laws, ordinances, rules or regulations of authorities having jurisdiction; and any necessary items of work omitted. In the absence of such written notice, Proposers signify that they have included the cost of all required items in the proposal and that the Proposer will be responsible for the safe and satisfactory operation of the entire system.

2. INTENT

- A. It is the intention of the Contract Documents to call for finished work, tested and ready for operation.
- B. Details not usually shown or specified, but necessary for the proper installation and operation of systems, equipment, materials, etc., shall be included in the work, the same as if herein specified or indicated.

3. DRAWINGS AND SPECIFICATIONS

- A. The drawings are diagrammatic only and indicate the general arrangement of the systems and are to be followed. If deviations from the layouts are necessitated by field conditions, detailed layouts of the proposed departures shall be submitted to the Engineer for approval before proceeding with the work. The drawings are not intended to show every item which may be necessary to complete the systems. All proposers shall anticipate that additional items may be required and submit their bid accordingly.
- B. The drawings and specifications are intended to supplement each other. No Proposer shall take advantage of conflict between them, or between parts of either. Should this condition exist, the Proposer shall request a clarification not less than twelve days prior to the submission of the proposal so that the condition may be clarified by Addendum. In the event that such a condition arises after work is started, the interpretation of the Engineer shall be final.
- C. The drawings and specifications shall be considered to be cooperative and anything appearing in the specifications which may not be indicated on the drawings or conversely, shall be considered as part of the Contract and must be executed the same as though indicated by both.
- D. Contractor shall make all his own measurements in the field and shall be responsible for correct fitting. He shall coordinate this work with all other branches of work in such a manner as to cause a minimum of conflict or delay.
- E. The Engineer shall reserve the right to make adjustments in location of piping, ductwork, equipment, etc. where such adjustments are in the interest of improving the project.
- F. Should conflict or overlap (duplication) of work between the various trades become evident, this shall be called to the attention of the Engineer. In such event neither trade shall assume that he is to be relieved of the work which is specified under his branch until instructions in writing are received from the Engineer.
- G. Unless dimensioned, the mechanical drawings only indicate approximate locations of equipment, piping, ductwork, etc. Dimensions given in figures on the drawings shall take precedence over scaled dimensions and all dimensions, whether given in figures or scaled, shall be verified in the field to ensure no conflict with other work.
- H. Each Proposer shall review all drawings including Architectural, Mechanical, Electrical, Fire Protection, Landscaping, Structural, Surveys, etc., to ensure that the work he intends to provide does not encroach a conflict with or affect the work of others in any way. Where such effect does occur, it shall be the Proposer's responsibility to satisfactorily eliminate any such encroachment conflict or effect prior to the submission of his

proposal. Each Proposer shall in particular ensure that there is adequate space to install his equipment and materials. Failure to do so shall result in the correction of such encroachment conflict or effect of any work awarded the proposer and shall be accomplished fully without expense to others and that they are reasonably accessible for maintenance. Check closely all mechanical and electrical closets, chases, ceiling voids, wall voids, crawl spaces, etc., to ensure adequate spaces.

- I. Where on the drawings a portion of the work is drawn out and the remainder is indicated in outline, or not indicated at all, the parts drawn out shall apply to all other like portions of the work. Where ornamentation or other detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts of the work, unless otherwise indicated.
- J. Details not usually shown or specified, but necessary for the proper installation and operation of systems, equipment, materials, etc., shall be included in the work, the same as if herein specified or indicated.
- K. Where on the Drawings or Addenda the word typical is used, it shall mean that the work method or means indicated as typical shall be repeated in and each time it occurs whether indicated or not.

4. EXAMINATION OF SITE AND CONDITIONS

- A. Each Proposer shall inform himself of all of the conditions under which the work is to be performed, the site of the work, the structure of the ground, above and below grade, the obstacles that may be encountered, the availability and location of necessary facilities and all relevant matters concerning the work. Each Proposer shall also fully acquaint himself with all existing conditions as to ingress and egress, distance of haul from supply points, routes for transportation of materials, facilities and services, availability of utilities, etc. His proposal shall cover all expenses or disbursements in connection with such matters and conditions. No allowance will be made for lack of knowledge concerning such conditions after bids are accepted.

5. EQUIPMENT AND MATERIALS SUBSTITUTIONS OR DEVIATIONS

- A. When any Contractor requests approval of materials and/or equipment of different physical size, capacity, function, color, access, it shall be understood that such substitution, if approved, will be made without additional cost to anyone other than the Contractor requesting the change regardless of changes in connections, space requirements, electrical characteristics, electrical services, etc., from that indicated. In all cases where substitutions affect other trades, the Contractor requesting such substitutions shall advise all such Contractors of the change and shall remunerate them for all necessary changes in their work. Any drawings, Specifications, Diagrams, etc., required to describe and coordinate such substitutions or deviations shall be professionally prepared at the responsible Contractor's expense. Review of Shop Drawings by the Engineers does not in any way absolve the Contractor of this responsibility.
- B. Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make or catalog number, such reference shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; any devices, products, materials, fixtures, forms, or types of construction which, in the judgment of the Engineer, are equivalent to those specified are acceptable, provided the provisions of Paragraph (A) immediately preceding are met. Requested substitutions shall be submitted to the Engineer a minimum of twelve days prior to bids.
- C. Wherever any equipment and material is specified exclusively only such items shall be used unless substitution is accepted in writing by the Engineers.
- D. Each Proposer shall furnish along with his proposal a list of specified equipment and materials which he is to provide. Where several makes are mentioned in the specifications and the Contractor fails to state which he proposes to furnish, the Engineer shall choose any of the makes mentioned without change in price. Inclusion

in this list shall not ensure that the Engineers will approve shop drawings unless the equipment, materials, etc., submitted in shop drawings is satisfactorily comparable to the items specified and/or indicated.

6. SUPERVISION OF WORK

- A. The Contractor shall personally supervise the work for which he is responsible or have a competent superintendent, approved by the Engineers, on the work at all times during progress with full authority to act for him.

7. CODES, RULES, PERMITS, FEES, INSPECTIONS, REGULATIONS, ETC.

- A. The Contractor shall give all necessary notices, obtain and pay for all permits, government sales taxes, fees, inspections and other costs, including all utility connections, meters, meter settings, taps, tap fees, extensions, water and/or sewer system development charge, etc. in connection with his work. He shall also file all necessary plans, prepare all documents and obtain all necessary approvals of all governmental departments and/or the appropriate municipality or utility company having jurisdiction, whether indicated or specified or not. He shall hire an independent Registered Engineer to witness installations and provide necessary certifications where required by utility companies, municipal agencies or others that have review authority. He shall also obtain all required certificates of inspection for his work and deliver same to the Engineers before request for acceptance and final payment for the work. Ignorance of Codes, Rules, Regulations, Laws, etc. shall not render the Contractor irresponsible for compliance. The Contractor shall also be versed in all Codes, Rules and Regulations pertinent to his part of the work prior to submission of a proposal.
- B. The Contractor shall include in his work, without extra cost, any labor, materials, services, apparatus and drawings in order to comply with all applicable laws, ordinances, rules and regulations, whether or not indicated or specified.
- C. All materials furnished and all work installed shall comply with the National Fire Codes of the National Fire Protection Association, with the requirements of local utility companies, or municipalities and with the requirements of all governmental agencies having jurisdiction.
- D. All materials and equipment so indicated and all equipment and materials for the electrical portion of the mechanical systems shall bear the approval label of, or shall be listed by the Underwriters' Laboratories (UL), Incorporated. Each packaged assembly shall be approved as a package. Approval of components of a package shall not be acceptable. Where required by the Code and/or the Authority Having Jurisdiction, provide the services of a field labeling agency to provide a UL label for the entire system in the field under evaluation.
- E. All plumbing work is to be constructed and installed in accordance with plans and specifications which have been approved in their entirety and/or reflect any changes requested by the State Department of Health. Plumbing work shall not commence until such plans are in the hands of the Contractor.
- F. All Heating, Ventilation and Air Conditioning work shall be accomplished in accordance with the Kentucky Building Code (KBC) and amendments thereto, the latest standards recognized by the American Society of Heating, Refrigerating and Air Conditioning and the National Fire Protection Association. Contractor shall secure a permit from the Division of HVAC. Final inspection certificate shall be provided by Contractor and a copy included in Operation and Maintenance Manuals.
- G. The Contractor shall furnish three (3) copies of all Final Inspection Certificates obtained to the Engineer when work is complete. Final payment for work will be contingent upon compliance with this requirement.
- H. Where minimum code requirements are exceeded in the Design, the Design shall govern.

- I. The Contractor shall ensure that his work is accomplished in accord with the OSHA Standards and that he conducts his work and the work of his personnel in accord with same.
- J. All work relating to the handicapped shall be in accord with regulations currently enforced by the Department of Housing, Buildings and Construction, Commonwealth of Kentucky and the American Disabilities Act.
- K. All work in conjunction with a natural gas installation shall, in addition to all other Codes, Rules, Regulations, Standards, etc., comply with the requirements of the local gas supplier and/or standards and recommendations of the American Gas Association.
- L. All work in relation to domestic water systems shall, in addition to all other Codes, Rules, Regulations and Standards, be in compliance with the requirements of the local water utility company and the adopted edition of the 10 States Standards.
- M. All work in relation to the installation of sanitary or storm sewers shall, in addition to all other Codes, Rules, Regulations and Standards, be in compliance with the local agency governing such installations and the adopted edition of the 10 States Standards.

8. DUCT AND PIPE MOUNTING HEIGHTS

- A. All exposed or concealed ductwork, piping, etc., shall be held as high as possible unless otherwise noted and coordinated with all other trades. Exposed piping and ductwork shall, insofar as possible, run perpendicular or parallel to the building structure.

9. COST BREAKDOWNS (SCHEDULE OF VALUES)

- A. Within thirty days after acceptance of the Contract, the Contractor shall furnish to the Engineer, one copy of a detailed cost breakdown on each respective area of work. These cost breakdowns shall be made in a format approved by the Engineer. Payments will not be made until satisfactory cost breakdowns are submitted.

10. CHANGES IN MECHANICAL WORK

REFER TO GENERAL AND SPECIAL CONDITIONS.

11. CLAIMS FOR EXTRA COST

REFER TO GENERAL AND SPECIAL CONDITIONS.

12. MATERIALS AND WORKMANSHIP

- A. All equipment, materials and articles incorporated in the work shall be new and of comparable quality to that specified. Each Proposer shall determine that the materials and/or equipment he proposes to furnish can be brought into the building(s) and installed within the space available. In certain cases, it may be necessary to remove and replace walls, floors and/or ceilings and this work shall be the responsibility of the Contractor. All equipment shall be installed so that all parts are readily accessible for inspection, maintenance, replacement of filters, etc. Extra compensation will not be allowed for relocation of equipment for accessibility or for dismantling equipment to obtain entrance into the building(s). Ensure, through coordination, that no other Contractor seals off access to space required for equipment, materials, etc.
- B. Materials and equipment, where applicable, shall bear Underwriters' Laboratories label where such a standard has been established.

- C. Use extreme care in the selection of equipment and its installation to ensure that noise and vibration are kept at a minimum. The Engineer's determination shall be final and corrections to such discrepancies shall be made at the cost of the Contractor.
- D. Each length of pipe, fitting, trap, fixture and device used in the plumbing or drainage systems shall be stamped or indelibly marked with the weight or quality thereof and with the manufacturer's mark or name.
- E. All equipment shall bear the manufacturer's name and address. All electrically operated equipment shall bear a data plate indicating required horsepower, voltage, phase and ampacity.

13. COOPERATION AND COORDINATION WITH OTHER TRADES

- A. The Contractor shall give full cooperation to all other trades and shall furnish in writing with copies to the Engineer, any information necessary to permit the work of other trades to be installed satisfactorily and with the least possible interference or delay.
- B. Where any work is to be installed in close proximity to, or will interfere with work of other trades, each shall cooperate in working out space conditions to make a satisfactory adjustment. If so directed by the Engineer, the Contractor shall prepare composite working drawings and sections at a suitable scale not less than 1/4" = 1'-0", clearly indicating how his work is to be installed in relation to the work of other trades, or so as not to cause any interference with work of other trades. He shall make the necessary changes in his work to correct the condition without extra charge.
- C. The Contractor shall furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

14. QUALIFICATIONS OF WORKMEN

- A. All mechanical work shall be accomplished by qualified workmen competent in the area of work for which they are responsible. Untrained and incompetent workmen, as evidenced by their workmanship, shall be summarily relieved of their responsibilities in areas of incompetency. The Engineer shall reserve the right to determine the quality of workmanship of any workman and unqualified or incompetent workman shall refrain from work in areas not satisfactory to him. Requests for relief of a workman shall be made through the normal channels of Architect, Contractor, etc.
- B. All plumbing work shall be accomplished by Journeymen Plumbers under the direct supervision of a Master Plumber as defined and clarified under Kentucky State Plumbing Law Regulations and Code. Proof and Certification may be requested by the Engineer.
- C. All sheet metal, insulation and pipe fitting work shall be installed by workmen normally engaged or employed in these respective trades, except where only small amounts of such work are required and are within the competency of workmen directly employed by the Contractor involved.
- D. All automatic control systems shall be installed by workmen normally engaged or employed in this type work, except in the case of minor control requirements (residential type furnaces, packaged HVAC equipment with integral controls, etc.) in which case, if a competent workman is the employee of this Contractor, he may be utilized subject to review of his qualifications by the Engineer and after written approval from same.
- E. All electrical work shall be installed only by competent workmen under direct supervision of a fully qualified Electrician.

15. CONDUCT OF WORKMEN

- A. The Contractor shall be responsible for the conduct of all workmen under his supervision. Misconduct on the part of any workman to the extent of creating a safety hazard, or endangering the lives and property of others, shall result in the prompt relief of that workman. The consumption of alcoholic beverages or other intoxicants, narcotics, barbiturates, hallucinogens or debilitating drugs on the job site is strictly forbidden.

16. PROTECTION OF MATERIALS AND EQUIPMENT

- A. The Contractor shall be entirely responsible for all material and equipment furnished by him in connection with his work and special care shall be taken to properly protect all parts thereof from physical, sun, and weather damage during the construction period. Such protection shall be by a means acceptable to the manufacturer and Engineer. All rough-in soil, waste, vent and storm piping, ductwork, etc., shall be properly plugged or capped during construction in a manner approved by the Engineer. Equipment damaged, stolen or vandalized while stored on site, either before or after installation, shall be repaired or replaced by the Contractor at his own expense.

17. SCAFFOLDING, RIGGING AND HOISTING

- A. The Contractor shall furnish all scaffolding, rigging, hoisting and services necessary for erection and delivery onto the premises of any equipment and apparatus furnished. All such temporary appurtenances shall be set up in strict accord with OSHA Standards and Requirements. Remove same from premises when no longer required.

18. BROKEN LINES AND PROTECTION AGAINST FREEZING

- A. No conduits, piping, troughs, etc. carrying water or any other fluid subject to freezing shall be installed in any part of the building where danger of freezing may exist without adequate protection being given by the Contractor whether or not insulation is specified or indicated on the particular piping. All damages resulting from broken and/or leaking lines shall be replaced or repaired at the Contractor's own expense. If in doubt, contact the Engineer. Do not install piping across or near openings to the outside whether they are carrying static or moving fluids or not. Special Note: Insulation on piping does not necessarily ensure that freezing will not occur.

19. CLEANING

- A. The Contractor shall, at all times, keep the area of his work presentable to the public and clean of rubbish and debris caused by his operations; and at the completion of the work, shall remove all rubbish, debris, all of his tools, equipment, temporary work and surplus materials from and about the premises, and shall leave the area clean and ready for use. If the Contractor does not attend to such cleaning upon request, the Engineer may cause cleaning to be done by others and charge the cost of same to the Contractor. The Contractor shall be responsible for all damage from fire which originates in, or is propagated by, accumulations of his rubbish or debris.
- B. After completion of all work and before final acceptance of the work, the Contractor shall thoroughly clean all equipment and materials and shall remove all foreign matter such as grease, dirt, plaster, labels, stickers, etc., from the exterior of piping, equipment, fixtures and all other associated or adjacent fabrication.

20. MAINTENANCE OF EXISTING UTILITIES AND LINES

- A. The locations of all piping, conduits, cables, utilities and manholes existing, or otherwise, that comes within the contract construction site, shall be subject to continuous uninterrupted service with no other exception than the Owner of the utilities permission to interrupt same temporarily.

- B. Utilities and lines, where known, are indicated on the drawings. Locations and sizes are approximate. Prior to any excavation being performed, the Contractor shall ascertain that no utilities or lines are endangered by new excavation. Exercise extreme caution in all excavation work.
- C. If utilities or lines occur in the earth within the construction site, the Contractor shall probe and locate the lines prior to machine excavation or blasting in the respective area. Electromagnetic utility locators and acoustic pipe locators shall be utilized to determine where metallic and non-metallic piping is buried prior to any excavation.
- D. Cutting into existing utilities and services where required shall be done in coordination with and only at times designated by the Owner of the utility.
- E. The Contractor shall repair to the satisfaction of the Engineer, any surfaces or subsurface improvements damaged during the course of the work, unless such improvement is shown to be abandoned or removed.
- F. Machine excavation shall not be permitted within ten feet of electrical lines or lines carrying combustible and/or explosive materials. Hand excavate only.
- G. Protect all new or existing lines from damage by traffic, etc. during construction. Repairs or replacement of such damage shall be at the sole expense of the party responsible.

21. SMOKE AND FIRE PROOFING

- A. The Contractor shall fire and smoke stop all openings made in fire or smoke rated walls, chases, ceilings and floors in accord with the KBC. Patch all openings around ductwork and piping with appropriate type material to stop smoke at smoke walls and provide commensurate fire rating at fire walls, floors, ceilings, roofs, etc. Back boxes in rated walls shall be a minimum distance apart as allowed by code to maintain the rating. If closer provide rated box or fireproofing in code approved manner.

22. MOTORS

- A. Motors shall be built in accordance with the latest standards of NEMA and as specified. Motors shall be tested in accordance with standards of A.S.A. C50, conforming to this and all applicable standards for insulation resistance and dielectric strength.
- B. Each motor shall be provided by the equipment supplier, installer or manufacturer with conduit terminal box, and N.E.C. required disconnecting means as specified or required. Three-phase motors shall be provided with external thermal overload protection in their starter units. Single-phase motors shall be provided with thermal overload protection, integral to their windings or external, in control unit. All motors shall be installed with NEMA-rated starters as specified and shall be connected per the National Electrical Code.
- C. The capacity of each motor shall be sufficient to operate associated driven devices under all conditions of operation and load and without overload, and at least of the horsepower indicated or specified. Each motor shall be selected for quiet operation, maximum efficiency and lowest starting KVA per horsepower. Motors producing excessive noise or vibration shall be replaced by the responsible contractor. See Division 26 of Specifications for further requirements related to installation of motors.

23. CUTTING AND PATCHING

- A. The Contractor shall provide his own cutting and patching necessary to install his work. Patching shall match adjacent surfaces and shall be to the satisfaction of the Architect and Engineer.

- B. No structural members shall be cut without the approval of the Engineer and all such cutting shall be done in a manner directed by him.
- C. When installing conduit, pipe, or any other work in insulated concrete form (ICF) walls, the responsible subcontractor for the work shall provide spray foam insulation to patch the rigid insulation to maintain full integrity of the insulating value of the wall after the mechanical and electrical work is complete. Furthermore, all new work shall NOT be installed in concrete center of wall. All mechanical and electrical installations shall be on the interior side of the concrete.

24. CURBS, PLATES, ESCUTCHEONS & AIR TIGHT PENETRATIONS

- A. In all areas where ducts are exposed and ducts pass thru floors, the opening shall be surrounded by a 4-inch-high by 3-inch-wide concrete curb.
- B. Escutcheon plates shall be provided for all pipes and conduit passing thru walls, floors and ceilings. Plates shall be nickel plated, of the split ring type, of size to match the pipe or conduit. Where plates are provided for pipes passing thru sleeves which extend above the floor surface, provide deep recessed plates to conceal the pipe sleeves.
- C. Seal all duct, pipe, conduit, etc., penetrations through walls and floors air tight. If wall or floor assembly is rated then use similarly rated sealing method.

25. WEATHERPROOFING

- A. Where any work pierces waterproofing including waterproof concrete, the method of installation shall be as approved by the Engineer before work is done. The Contractor shall furnish all necessary sleeves, caulking and flashing required to make openings permanently watertight.

26. OPERATING INSTRUCTIONS, MAINTENANCE MANUALS AND PARTS LISTS

- A. Upon completion of all work tests, the Contractor shall instruct the Owner or his representative(s) fully in the operations, adjustment and maintenance of all equipment furnished. The time and a list of representatives required to be present will be as directed by the Engineer. Turn over all special wrenches, keys, etc., to the owner at this time.
- B. The Contractor shall furnish three (3) complete bound sets for delivery to the Engineer of typewritten and/or blueprinted instructions for operating and maintaining all systems and equipment included in this contract prior to substantial completion. All instructions shall be submitted in draft, for approval, prior to final issue. Manufacturer's advertising literature or catalogs alone will not be acceptable for operating and maintenance instructions.
- C. The Contractor, in the instructions, shall include a preventive maintenance schedule for the principal items of equipment furnished under this contract and a detailed, parts list and the name and address of the nearest source of supply.

27. ELECTRICAL CONNECTIONS

- A. The Contractor shall furnish and install all (1) temperature control wiring; (2) equipment control wiring and (3) interlock wiring. The Contractor shall furnish and install all power wiring complete from power source to motor or equipment junction box, including power wiring thru starters, and shall furnish and install all required starters not factory mounted on equipment.

- B. The Contractor shall, regardless of voltage, furnish and install all temperature control wiring and all associated interlock wiring, all equipment control wiring and conduit for the equipment that the Contractor furnishes. He may, at his option, employ at his own expense, the Electrical Contractor to accomplish this work.
- C. After all circuits are energized and completed, the Contractor shall be responsible for all power wiring, and all control wiring shall be the responsibility of the Contractor. Motors and equipment shall be provided for current characteristics as shown on the drawings.
- D. The Contractor shall furnish motor starters of the type and size required by the manufacturer for all equipment provided by him, where such starters are necessary. Starters shall have overloads for each phase.

28. FINAL CONNECTIONS TO EQUIPMENT

- A. The Contractor shall finally connect to mechanical services, any terminal equipment, appliances, etc., provided under this and other divisions of the work. Such connections shall be made in strict accord with current codes, safety regulations and the equipment manufacturer's recommendations. If in doubt, contact the Engineers prior to installation.

29. REQUIRED CLEARANCE FOR ELECTRICAL EQUIPMENT

- A. The NEC has specific required clearances above, in front, and around electrical gear, panels etc. The Contractor shall not install any piping, ductwork, etc., in the required clearance. If any appurtenance is located in the NEC required clearance, it shall be relocated at no additional cost.

30. INDEMNIFICATION

- A. The Contractor shall hold harmless and indemnify the Engineer, employees, officers, agents and consultants from all claims, loss, damage, actions, causes of actions, expense and/or liability resulting from, brought for, or on account of any personal injury or property damage received or sustained by any person, persons, (including third parties), or any property growing out of, occurring, or attributable to any work performed under or related to this contract, resulting in whole or in part from the negligence of the Contractor, any subcontractor, any employee, agent or representative.

31. ABOVE-CEILING AND FINAL PUNCH LISTS

- A. The Contractor shall review each area and prepare a punch list for each of the subcontractors, as applicable, for the project:
 - (1) For review of all other work as the project nears substantial completion.
- B. When all work from the Contractor's punch list is complete at each of these stages and prior to completing ceiling installations (or at the final punch list stage), the Contractor shall request that the Engineer develop a punch list. This request is to be made in writing seven days prior to the proposed date. After all corrections have been made from the Engineer's punch list, the Contractor shall review and initial off on each item. This signed-off punch list shall be submitted to the Engineer. The Engineer shall return to the site once to review each punch list and all work prior to the ceilings being installed and at the final punch list review.
- C. If additional visits are required by the Engineer to review work not completed by this review, the Engineer shall be reimbursed directly by the Contractor at a rate of \$160.00 per hour for extra trips required to complete either of the above-ceiling or final punch lists.



Phone: 859 253-0892

The following is CMTA's guide for Division 20-25 required information relative to the Schedule of Values. Please utilize all items that pertain to this project and add any specialized system as required. A thorough and detailed schedule of values will allow for fair and equitable Pay Application approval and minimize any discrepancies as to the status of the job.

<u>DIVISION 20-25 – MECHANICAL</u> Field Representative: _____ Project Engineer: _____			
Description of Work	Scheduled Value	Labor	Material
Shop Drawings			
Mobilization/Permits			
Mechanical Shop Drawings			
HVAC Sheet Metal			
Make Up Air Unit Sections			
Controls			
Air Balance			
Factory Start-Up Reports			
Owner Training			
O & M Manuals			
Punchlist/Closeout			
Controls Check-out			

END OF SECTION 200100

SECTION 200200- SCOPE OF THE MECHANICAL WORK**1. GENERAL**

- A. The Mechanical work for this Contract shall include all labor, materials, equipment, fixtures, excavation, backfill and related items required to completely install, test, place in service and deliver to the Owner the complete mechanical systems in accordance with the accompanying plans and all provisions of these specifications. This work shall primarily include, but is not necessarily limited to the following:
- (1) Complete balancing of air systems associated with Make-up Air Units.
 - (2) All applicable services and work specified in Section 200100; General Provisions - Mechanical.
 - (3) All specified or required control work.
 - (4) Provide all required motor starters, etc.
 - (5) One year guarantee of all mechanical equipment, materials and workmanship.
 - (6) Approved supervision of the mechanical work.
 - (7) Factory start-up of all make-up air units and submission of associated factory start-up reports to the Engineer.

END OF SECTION 200200

SECTION 200300 - SHOP DRAWINGS, DESCRIPTIVE LITERATURE, MAINTENANCE MANUALS, PARTS LISTS, SPECIAL KEYS & TOOLS**1. GENERAL**

- A. The Contractor's attention is directed also to the General and Special Conditions and Section 200100 - General Provisions - Mechanical as well as to all other Contract Documents as they may apply to his work.
- B. The Contractor shall prepare and submit to the Engineer, through the General Contractor and the Architect (where applicable) within thirty (30) days after the date of the Contract, a minimum of seven (7) copies of all shop drawings, certified equipment drawings, installation, operating and maintenance instructions, samples, wiring diagrams, etc. on all items of equipment specified hereinafter.
- C. Submittal data shall include specification data including metal gauges, finishes, accessories, etc. Also, the submittal data shall include certified performance data, wiring diagrams, dimensional data, and a spare parts list. Submittal data shall be reviewed by the Engineer before any equipment or materials is ordered or any work is begun in the area requiring the equipment.
- D. All submittal data shall have the stamp of approval of the Contractor submitting the data as well as the General Contractor and the Architect (if applicable) to show that the drawings have been reviewed by the Contractor. Any drawings submitted without these stamps of approval may not be considered and will be returned for proper resubmission.
- E. It shall be noted that review of shop drawings by the Engineer applies only to conformance with the design concept of the project and general compliance with the information given in the contract documents. In all cases, the Contractor alone shall be responsible for furnishing the proper quantity of equipment and/or materials required, for seeing that all equipment fits the available space in a satisfactory manner and that piping, electrical and all other connections are suitably located.
- F. The Engineers review of shop drawings, schedules or other required submittal data shall not relieve the Contractor from responsibility for: adaptability of the item to the project; compliance with applicable codes, rules, regulations and information that pertains to fabrication and installation; dimensions and quantities; electrical characteristics; and coordination of the work with all other trades involved in this project. Any items that differ from the Drawings or Specifications shall be flagged by the Contractor so the Engineer will be sure to see the item. Do not rely on the Engineer to "catch" items that do not comply with the Drawings or Specifications. The Contractor is responsible for meeting the Drawings and Specification requirements, regardless of whether or not something does not get caught by the Contractor or Engineer during shop drawing reviews.
- G. Equipment shall not be ordered and no final rough-in connections, etc., shall be accomplished until reviewed equipment shop drawings are in the hands of the Contractor. It shall be the Contractor's responsibility to obtain reviewed shop drawings and to make all connections, etc. in the neatest and most workmanlike manner possible. The Contractor shall coordinate with all the other trades having any connections, roughing-in, etc. to the equipment.
- H. If the Contractor fails to comply with the requirements set forth above, the Engineer shall have the option of selecting any or all items listed in the Specifications or on the drawings; and the Contractor shall be required to furnish all materials in accordance with this list.
- I. Shop Drawing Submittals

- (1) All submittals for HVAC equipment shall include all information specified. This shall include air and water pressure drops, RPM, noise data, face velocities, horsepower, voltage motor type, steel or aluminum construction, and all accessories clearly marked.
- (2) All items listed in the schedules shall be submitted for review in a tabular form similar to the equipment schedule.
- (3) All items submitted shall be designated with the same identifying tag as specified on each sheet.
- (4) Any submittals received in an unorganized manner without options listed and with incomplete data will be returned for resubmittal.

2. SHOP DRAWINGS

Shop Drawings, descriptive literature, technical data and required schedules shall be submitted on the following:

- (1)(2) Controls

SPECIAL NOTES:

- 1) Upon substantial completion of the project, the Contractor shall deliver to the Engineers (in addition to the required Shop Drawings) three (3) complete copies of operation and maintenance instructions and parts lists for each item marked (1) above. These documents shall include at least:
 - a. Detailed operating instructions
 - b. Detailed maintenance instructions including preventive maintenance schedules.
 - c. Addresses and phone numbers indicating where parts may be purchased.
- 2) Shop drawings for the Control Systems shall include detailed, scaled plans and schematic diagrams indicating the function and operation of the system.

3. SPECIAL WRENCHES, TOOLS, ETC.

- (1) The Contractor shall furnish, along with equipment provided, any special wrenches or tools necessary to dismantle or service equipment or appliances installed under the Contract. Wrenches shall include necessary keys, handles and operators for valves, cocks, hydrants, etc. A reasonable number of each shall be furnished.

4. BALANCE REPORTS

- A. Upon substantial completion of the project, the Contractor shall submit to the Engineers four (4) bound copies of the Certified Air and Hydronic Balance Report.

END OF SECTION 200300

SECTION 201300 - PIPE, PIPE FITTINGS AND PIPE SUPPORT**1. GENERAL**

- A. The Contractor's attention is directed to the General and Special Conditions, General Conditions-Mechanical and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified in this section.
- B. When a pipe size is not indicated, the Contractor shall request the pipe size from the Engineers. All piping shall be installed straight and true, parallel or perpendicular to the building construction. Piping shall be installed so as to allow for expansion without damage to the building finishes, structure, pipe, equipment, etc., use offsets, U-bends or expansion joints as required. Where a section of piping is not indicated but is obviously required for completion of the system, the Contractor shall provide same at no additional cost to the project. No mitered joints or field fabricated pipe bends shall be accepted. Pipe shall clear all windows, doors, louvers and other building openings.
- C. All pipe shall be supported in a neat and workmanlike manner and wherever possible, parallel runs of horizontal piping shall be grouped together on trapeze type hangers. Vertical risers shall be supported at each floor line with approved steel pipe riser clamps. The use of wire or perforated metal to support pipes will not be permitted. Hanging pipes from other pipes shall not be permitted. Spacing of pipe supports shall not exceed eight feet for pipes up to 1-1/4 inches and ten feet on all other piping. Small vertical pipes (1 inch and less) shall be bracketed to walls, structural members, etc. at four (4) foot intervals so as to prevent vibration or damage by occupants. Insulated piping shall be supported on a rigid insulation block at each hanger so as to prevent crushing of insulation by hangers. Hangers shall pass completely around the insulation jacket and a steel protective saddle shall be applied to prevent compression of the insulation. (Refer to Specifications Section entitled INSULATION-MECHANICAL).
- D. Where piping rests directly on a hanger, clip, bracket or other means of support, the support element shall be of the same material as the pipe, (e.g., copper to copper, ferrous to ferrous, etc.) or shall be electrically isolated one from the other so as to prevent pipe damage by electrolysis. Pay particular attention and do not allow copper pipe to rest on ferrous structural members, equipment, etc. without electrolytic isolation.
- E. In general, piping shall be installed concealed except in Mechanical, Janitor Rooms, etc. unless otherwise indicated, and shall be installed underground or beneath concrete slabs only where indicated. All lines at ceilings shall be held as high as possible and shall run so as to avoid conflicts with other trades, and to facilitate the Owner's use and maintenance. Location of pipe in interior partitions shall be carefully coordinated with whoever will construct the partitions after the piping is in place.
- F. Installation of pipe shall be in such a manner as to provide complete drainage of the system toward the source. Drain valves shall be provided at all drainage points on pipes. Drain valves shall be 1/2" size gate type with 3/4" hose thread end and vacuum breaker. Label each drain valve.
- G. All hot and cold-water piping shall be kept a sufficient distance apart so as to prevent heat transfer between them. Cold water piping shall also be kept apart from refrigerant hot gas lines.
- H. Piping carrying water or other fluids subject to freezing shall not be installed in locations subject to freezing; if in doubt, consult Engineer.
- I. Piping for all drainage systems shall be installed to permit flow, trapping, and venting in accord with current codes and sound practice.
- J. All cast iron soil pipe and fittings shall be coated inside and out with coal tar varnish.

- K. Non-metallic piping shall be installed in strict accordance with the manufacturer's instructions. If no such instructions are available, consult Engineers.
- L. Nipples shall be of the same material, composition and weight classification as pipe with which installed.
- M. Where piping is not indicated on the plans, but is obviously or apparently required, contact the Engineers prior to submission of a bid proposal.
- N. Pay particular attention to conflict of piping with other work. Do not install until conflict is resolved. If necessary, contact Engineers.
- O. Piping materials in each system shall, to the extent practicable, be of the same material. Frequent changes of material (for example, from copper to steel) shall be avoided and in no case, shall be accomplished without use of insulating unions and permission of the Engineers.
- P. Apply approved pipe dope (for service intended) to all male threaded joints. Pay particular attention to dope for fuel gas lines. The dope shall be listed for such use.
- Q. All piping shall be capped or plugged during erection as required to keep clean and debris and moisture free.
- R. Where plastic pipe penetrates a fire rated assembly, it shall be replaced with a metal threaded adapter and a metal pipe per code.
- S. Foam Core PVC is not permitted
- T. Where piping penetrates interior or exterior walls, the wall shall be sealed air tight. Refer to the sleeving, cutting, patching and repairing section of the specifications for additional requirements.

2. UNIONS AND FLANGES AND WELDED TEES

- A. Screwed unions, soldered unions or bolted flanges shall be provided as required to permit removal of equipment, valves and piping accessories from the piping system. Keep adequate clearances for coil removal, rodding, tube replacement, motor lubrication, filter replacement, etc. Flanged joints shall be assembled with appropriate flanges, gaskets and bolting. Gaskets for steam piping systems shall be flexitalic spiral wound type. The clearance between flange faces shall be such that the connections can be gasketed and bolted tight without imposing undue strain on the piping system.
- B. Dielectric insulating unions or couplings shall be used wherever the adjoining materials being connected are of dissimilar metals such as connections between copper and steel pipe.
- C. Tee connections for welded pipe shall be made up with welding fittings. Where the size of the side outlet is such that a different connection technique than on the run is required, a weldolet, sockolet, or threadolet type fitting may be used for the branch in place of reducing tees only where the branch is 2/3 the run size or smaller.

3. SPECIFICATIONS STANDARDS

All piping and material shall be new, made in the United States and shall conform to the following minimum applicable standards:

- A. Steel pipe; ASTM A-120, A-53 Grade A, A-53 Grade B.
- B. Copper tube; Type K, L, M; ASTM B88-62; Type DWV ASTM B306-62.

- C. Cast iron soil pipe; ASA A-40.1 and CS 188-59.
- D. Cast iron drainage fittings; ASA B16.12.
- E. Cast iron screwed fittings; ASA B16.4.
- F. Welding fittings; ASA B16.9.
- G. Cast brass and wrought copper fittings; ASA B16.18.
- H. Cast brass drainage fittings; ASA B16.23.
- I. Reinforced concrete pipe; ASTM-C-76-64T.
- J. Solder; Handy and Harmon, United Wire and Supply; Air Reduction Co. or equivalent.
- K. PVC plastic pipe; ASTM D1785.
- L. ABS plastic pipe; ASTM D1788-73.

4. PITCH OF PIPING

All piping systems shall be installed so as to drain to a low point. Certain minimum pitches shall be required for this drainage. For proper flow and/or for proper operation, provide ample pitch to a low point to allow 100 percent drainage of the system.

5. APPLICATIONS

A. General Notes

- (1) Where plastic piping penetrates a fire rated assembly, it shall be replaced with a threaded metal adapter and metal pipe or whatever means necessary to maintain the separation rating in accordance with local plumbing and fire codes.
- (2) Plastic piping or any materials with a flame and smoke spread rating not approved for plenum use shall not be permitted in supply, return, relief or exhaust plenums.

B. Soil, Waste and Vent Piping (Above Slab)

- (1) Schedule 40 galvanized steel piping with screwed ends and cast-iron drainage pattern fittings for piping 2" and less in size. Provide pipe adapters for connector of cast iron pipe at slab.
- (2) Schedule 40 PVC pipe with drainage pattern fittings and solvent cement joints made in accordance with the Kentucky Plumbing code.

C. Trap Prime Piping (Above Slab)

- (1) Type "L" hard copper tubing with wrought copper fittings with lead free solder equivalent in performance to 95/5. (Maximum lead content of solder and flux is 2%).

END OF SECTION 201300

SECTION 202200 - INSULATION - MECHANICAL**1. GENERAL**

- A. The Contractor's attention is directed to the General and Special Conditions, General Conditions-Mechanical and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified herein.
- B. Work under this section shall include all labor, equipment, accessories, materials and services required to furnish and install all insulation, fittings and finishes for all mechanical systems specified herein and/or as indicated.
- C. Application of insulation materials shall be done in accordance with manufacturer's written recommendations. Where thickness of insulation is not specified, use applicable thickness recommended by manufacturer for specific use. Insulation shall be applied by a company regularly engaged in the application of insulation and any work deemed unacceptable by the Engineers shall be removed and properly installed at the expense of the Contractor.

2. MANUFACTURERS

- A. Insulation shall be as manufactured by Manville, Knauf, CertainTeed, Owens-Corning, Armacell or approved equivalent. Insulation sundries, adhesives, and jackets/covers shall be as made by Benjamin Foster, Zeston, Speedline, Proto, Childers, Vimasco or approved equivalent.

3. FIRE RATINGS AND STANDARDS

- A. Insulations, jackets and facings shall have composite fire and smoke hazard ratings as tested by ASTM E-84, NFPA 255 and UL 723 procedures not exceeding Flame Spread 25, Smoke Developed 50.
- B. Adhesives, mastics, tapes and fitting materials shall have component ratings as listed above.
- C. All products and their packaging shall bear a label indicating above requirements are not exceeded.
- D. Duct linings shall meet the Erosion Test Method in compliance with UL Publication No. 181.

4. GENERAL APPLICATION REQUIREMENTS

- A. Insulation shall be applied on clean, dry surfaces in a neat and workmanlike manner reflecting the best current practices in the trade. Insulation shall not be applied to piping, ductwork or equipment until tested, inspected and released for insulation.
- B. All insulation shall be continuous through walls, ceiling openings and sleeves. However, insulation shall be broken through fire walls. All covered pipe and ductwork is to be located a sufficient distance from walls, other pipe, ductwork and other obstacles to permit the application of the full thickness of insulation specified. If necessary, extra fittings and pipe are to be used. No noticeable deformation of insulation or discontinuity of vapor seal, where required, will be accepted.
- C. "Concealed", where used herein, shall mean hidden from sight as in trenches, chases, furred spaces, pipe shafts, or above hung finished ceilings. "Exposed" shall mean that piping or equipment is not "concealed" as defined above. Piping and equipment in service tunnels, mechanical equipment rooms, mechanical platform, mezzanine, penthouses, storage areas, unfinished rooms, etc. is to be considered as "exposed".
- D. Existing and/or new insulation removed and/or damaged during course of construction shall be repaired or replaced as directed by the Engineer.

- E. Vapor barrier jackets shall be applied with a continuous unbroken vapor seal. Do not use staples thru the jacket. NO EXCEPTIONS!
- F. All insulation shall be installed with joints butted firmly together.
- G. The Contractor shall ensure that all insulation (piping, ductwork, equipment, etc.) is completely continuous along all conduits, equipment, connection routes, etc. carrying cold fluids (air, water, other) and that condensation can, in no way, collect in or on the insulation, equipment, conduits, etc. Any such occurrence of condensation collection and/or damage therefrom shall be repaired solely at the expense of the Contractor.

5. PIPING SYSTEMS

A. GENERAL

- (1) Bevel insulation and jacket at all points where insulation terminates at unions, flanges, valves and equipment. Note: Applies to hot water lines only; cold water lines require continuous insulation.
- (2) Pipe insulation shall extend around valve bodies to above drain pans in hydronic equipment over pumps, etc. to ensure no condensation drip or collection.
- (3) Factory molded fittings may be installed in lieu of built-up fittings. Jackets to be the same as adjoining insulation. Insulated fittings must have same or better K factors than adjoining straight run insulation.
- (4) Valves, flanges and unions shall only be insulated when installed on piping whose surface temperature will be at or below the dew point temperature of the ambient air.
- (5) Insulation shall not extend through fire and smoke walls. A UL-listed penetration system shall be used for each fire or smoke wall penetration in accordance with KBC. Materials used such as caulk, sleeves, etc. shall be manufactured by 3M, Hilti, or equal.

B. INSULATION MATERIAL (FOR THE FOLLOWING SYSTEMS)

Insulation shall be Owens-Corning Model 25ASJ/SSL, or approved equivalent fiberglass pipe insulation with an all service jacket. The insulation shall be a heavy density, pipe insulation with a K factor .23 at 75°F mean temperature. The insulation shall be wrapped with a vapor barrier jacket. Approved manufacturers are listed in Section 2 – Manufacturers. The jacket shall have an inside foil surface with self sealing lap and a water vapor permeability of .02 perm/inch. All circumferential joints shall be vapor sealed with butt strips. All insulation shall be installed in strict accordance with the manufacturers' recommendations. The following pipes shall be insulated with the thickness of insulation as noted.

(1) Domestic Cold Water

- a. Piping 3" or less – use 1/2" thick insulation. Provide an additional 1/2" layer of insulation 3" above and 3" below vertical pipe supports.

C. JACKETS

(1) Exposed (Mechanical Rooms, Interior Finished Rooms and Storage Rooms)

All insulated piping installed in the above areas shall have a canvas or PVC jacket:

- a. 6 oz. canvas jacket with fire retardant lagging. Apply to the insulation specified for the piping.
- b. For all systems, plenum rated PVC jacket equal to LoSmoke PVC jacket with flame/smoke rating of 25/50, ASTM-E84 test method. Minimum thickness 0.04 inches. Steam systems shall utilize plenum rated CPVC jacket with minimum thickness of 0.04 inches. Jackets shall be applied over

top of specified pipe insulation. Approved equal manufacturers are Zeston and Speedline.
Approved equal manufacturers are Zeston and Speedline.

END OF SECTION 202200

SECTION 231200 - SHEET METAL AND FLEXIBLE DUCT

1. GENERAL

- A. The Contractor's attention is directed to the General and Special Conditions, General Requirements-Mechanical and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified herein.
- B. This branch of the work includes all materials, labor and accessories for the fabrication and installation of all sheet metal work as shown on the drawings and/or as specified herein. Where construction methods for various items are not indicated on the drawings or specified herein, all such work shall be fabricated and installed in accordance with the recommended methods outlined in the latest edition of SMACNA's HVAC Duct Construction Standards, Metal and Flexible, and its subsequent addenda. HVAC duct systems shall be fabricated and installed in accordance with the SMACNA duct construction standards (SMACNA-HVAC and SMACNA-Seismic) including Appendix B of the Seismic Restraint Manual Guidelines for Mechanical Systems. These references and plate numbers shall be used by the Engineer for required sheet metal thicknesses and final acceptance of methods of fabrication, hanging, accessories, etc. All equipment furnished by manufacturers shall be installed in strict accord with their recommended methods.
- C. Ductwork shall be constructed and installed per the latest edition of the International Mechanical Code.
- D. Ductwork shall be kept clean at all times. Ductwork stored on the job site shall be placed a minimum of 4" above the floor and shall be completely covered in plastic. Installed ductwork shall be protected with plastic to prohibit dust and dirt from entering the installed ductwork, air handling unit, terminal devices, etc. Provide temporary filters on all return grilles and duct openings if the units are running prior to the building being satisfactorily cleaned. Do not install the ductwork if the building is not "dried-in". If this is required, the open ends of duct shall be covered in plastic to protect. The Owner/Engineer shall periodically inspect that these procedures are followed. If deemed unacceptable, the Contractor shall be required to clean the duct system utilizing a NADCA certified Contractor.

Prior to purchase and fabrication of ductwork (shop fabricated or manufactured), the Contractor shall coordinate installations with new and existing conditions. Notify the Engineer if there are any discrepancies for resolution.
- E. Provide a SMACNA duct cleanliness level "C" per the latest SMACNA standards. [Refer to LEED / Healthcare Requirements]
- F. If separate filter grilles are specified for an HVAC unit the Contractors shall remove any unit mounted filters and blank off the unused filter access opening with sheet metal and seal air tight.
- G. Wall Penetrations: Where ducts penetrate interior or exterior walls, the walls shall be sealed air tight. Refer to the sleeving, cutting, patching, and repairing section of the specifications for additional requirements.
- H. Duct dimensions indicated are required inside clear dimensions. Plan duct layouts for adequate insulation and fitting clearance.

2. LOW PRESSURE DUCTWORK

- A. General (Low Pressure)
 - (1) Double turning vanes shall be installed in all square turns and in any other locations indicated.

- (2) Provide a "high efficiency" type take-off with round damper (Flexmaster STOD-B03 or approved equal) for all round duct branches from a rectangular main to a GRD. Refer to the detail on the drawings for all installation requirements.
- (3) Cross-break all ducts where any duct section dimension or length is 18" or larger.
- (4) Air volume dampers shall be installed in each duct branch takeoffs and/or where indicated, whichever is more stringent. All such dampers shall be accessible without damage to finishes or insulation and shall be provided where required for proper system balance.
- (5) Splitter dampers shall be provided in all rectangular supply air duct tees. Damper blade operator shall extend a minimum two inches thru the insulation.
- (6) Unless otherwise dimensioned on the drawings, all diffusers, registers and grilles shall be located aesthetically and symmetrically with respect to lighting, ceiling patterns, doors, masonry bond, etc. Locate all supply, return and exhaust diffusers and grilles in the locations shown on the architectural reflected ceiling plan.
- (7) Ducts shall be hung by angles, rods, 18 ga. minimum straps, trapezes, etc., in accordance with SMACNA's recommended practices. Duct supports shall not exceed 12 ft intervals. There shall be no less than one set of hangers for each section of ductwork. Where ductwork contains filter sections, coils, fans or other equipment or items, such equipment or items shall be hung independently of ductwork with rods or angles. Do not suspend ducts from purlins or other weak structural members where no additional weight may be applied. If in doubt, consult the structural engineer.
- (8) Provide approved flexible connectors at inlet and outlet of each item of heating and cooling equipment whether indicated or not. Install so as to facilitate removal of equipment as well as for vibration and noise control.
- (9) All ductwork connections, fittings, joints, etc., including longitudinal and transverse joints, seams and connections shall be sealed. Seal with medium pressure, smooth-textured, water based duct sealant. Sealant shall be UL 181B-M listed, UL 723 classified, NFPA 90A & 90B compliant, permanently flexible, nonflammable, and rated to 15" wg. Apply per manufacturer's recommendations. Contractors shall ensure no exposed sharp edges or burrs on ductwork.
- (10) All angular turns shall be made with the radius of the center line of the duct equivalent to 1.5 times the width of the duct.
- (11) Miscellaneous accessories such as test openings with covers, latches, hardware, locking devices, etc., shall be installed as recommended by SMACNA and/or as indicated. Test openings shall be placed at the inlet and discharge of all centrifugal fans, coils, fan sections of air handling units, at the end and middle of all main trunk ducts and where indicated. All such openings shall be readily accessible without damage to finishes.
- (12) Whether indicated or not, provide code approved, full sized fire dampers at all locations where ductwork penetrates fire rated walls. Fire stop rating shall meet or exceed the rating of the wall. Provide an approved access panel at each fire damper located and sized so as to allow hand reset of each fire dampers. All such fire dampers and access panels shall be readily accessible without damage to finishes. Refer to Architectural Plans for locations of fire rated walls. All access doors shall be 16"x16" or as high as ductwork permits and 16" in length.
- (13) The Contractor who installs the sheet metal shall furnish to the Air Balancing Contractor, a qualified person to assist in testing and balancing the system.

- (14) All fans and other vibrating equipment shall be suspended by independent vibration isolators.
- (15) The interior surface of the ductwork connecting to return/exhaust air grilles shall be painted flat black. The ductwork shall be painted a minimum of 24" starting from the grille.

B. Materials (Low Pressure Single Wall)

- (1) Ductwork, plenums and other appurtenances shall be constructed of the following:
- Steel sheets, zinc coated, Federal Specification 00-S-775, Type I, Class E & ASTM A93-59T with G-90 zinc coating or aluminum alloy sheets 3003, Federal Specification AA-A-359, Temper H-14. Utilize Aluminum in MRI Scan Rooms or NMR Room applications.
 - Exposed ductwork in finished spaces requiring insulation such as gymnasiums, etc., shall be dual wall ductwork.
- (2) Ductwork, plenums and other appurtenances shall be constructed of the materials of the minimum weights or gauges as required by the latest SMACNA 2" W.G. Standard or the below table, whichever is more stringent. When gauge thickness differs, the heavier gauge shall be selected. The below table shall serve as a minimum:

ROUND DUCT		RECTANGULAR DUCT	
DIA., INCHES	GAUGE	WIDTH, INCHES	GAUGE
3 TO 12	26	UP TO 12	26
12 TO 18	24	13 TO 30	24
19 TO 28	22	31 TO 54	22
29 TO 36	20	55 TO 84	20
37 TO 52	18	85 AND ABOVE	18

C. Miscellaneous (Low Pressure)

- (1) Un-insulated Flexible ductwork (Use Only Where Indicated)
- Un-insulated flexible ductwork shall be corrugated aluminum. No sections shall be greater than five feet in length. Ductwork shall be UL rated and in accordance with IMC.
 - Flexible ductwork installed in a return or exhaust or other negative static pressure application shall be rated for installation in negative pressure systems.
 - Provide Titus "FlexRight" or equal flexible duct bracing at each diffuser connection utilizing flexible ductwork.
- (2) Insulated Flexible Duct (Use Only Where Indicated)

- a. Owens/Corning or equivalent, 1 ½" inch thick fiberglass insulation; flexible liner; with aluminum pigment vinyl vapor barrier facing. Insulated flexible duct shall meet Fire Hazards Standards of NFPA 90A and IMC, flame spread not to exceed 25, smoke develop and fuel contributed not to exceed 50 when tested in accordance with ASTM-E84. Minimum R-value of 6.0, tested in accordance with ASTM C177.71. Flexible duct may be used only for runouts and no sections shall be more than five feet in length.
 - b. When flexible duct is located in areas where it will be visible because the ceiling allows views to the ductwork above, the flexible duct shall be black. The black color shall be factory coloring and not field applied.
 - c. Flexible duct shall not be used in areas where there is no ceiling.
 - d. Flexible ductwork installed in a return or exhaust or other negative static pressure application shall be rated for installation in negative pressure systems
 - e. Provide Titus "FlexRight" or equal flexible duct bracing at each diffuser connection utilizing flexible ductwork.
- (3) Flexible Connectors: Duro-Dyne, Ventfabrics, Inc., U.S. Rubber or equivalent; conforming to NFPA Pamphlet No. 90-A; neoprene coated glass fabric; 20 oz. for low pressure ducts secured with snap lock.
 - (4) Turning Vanes: Duro-Dyne or equivalent fabricated as recommended by SMACNA: noiseless when in place without mounting projections in ducts. All turning vanes shall be double blade type.
 - (5) Splitter Damper: Splitter damper shall be constructed of 16-gauge galvanized steel. Provide with operating hardware by Ventfabrics, Inc. to include damper blade bracket, ball joint bracket and operator shaft. Operator shall extend two inches from duct to allow for external insulation, where required. Regulator shall seal operator shaft air tight. Install hardware as recommended by manufacturer.
 - (6) Architectural Access Doors in Ceilings or Walls: Provide where required to access equipment, dampers, valves, filters, etc. Provide Kees D Panel, Cesco, Milcor or equal. Panels shall be 24"x24" in size and constructed with 16 gauge galvanized steel for door and frame. In finished areas, provide with primed steel with 1" border to accept architectural specified finish. In Mechanical, Electrical, or service spaces, provide brushed satin finish with 1" border. Door shall include three (3) screwdriver operated cam latches and concealed continuous pivoting rod hinge. Door shall open 175 degrees. For masonry construction, furnish frames with adjustable metal masonry anchors. For fire rated units, provide manufacturer's standard insulated flush panel/doors with continuous piano hinge and self-closing mechanism. The Contractor shall include all required access doors in the bid and shall coordinate with the General Contractor prior to the bid to ensure a complete project.

END OF SECTION 231200

SECTION 250200 - CONTROLS – DIRECT DIGITAL**1. GENERAL**

- A. The Contractor shall furnish all labor, materials, equipment and services required to provide a complete temperature control system as specified and as shown on the plans.
- B. Prior to the installation of or payment for any work, the Contractor shall prepare submittals which shall be reviewed by the Architect and Engineer. These submittals shall include a complete control diagram and sequence of operation of the entire system, plus engineering data on all devices used.
- C. The Contractor shall be a licensed installer of HVAC temperature controls by a national temperature controls manufacturer. Acceptable manufacturers are Siemens, Johnson, Honeywell, Andover, Invensys, Alerton or Automated Logic. The installer shall have 5 years experience and installed a minimum of 8 systems of similar size. Their offices shall be within 150 miles of the project site.
- D. The new controls shall seamlessly interface to the existing controls server in use by Estill County Schools. All bidders shall include in their bid the cost to upgrade the software to the latest version. No new servers or workstations will be allowed.
- E. The system herein specified shall be free from defects in workmanship and material under normal use and service if, within twelve (12) months from the date of acceptance by the Engineer, any of the equipment herein described is proved to be defective in workmanship or material, it will be adjusted, repaired, or replaced free of charge by the Contractor.
- F. All equipment, unless specified to the contrary, shall be fully proportioning and adjustable. The Control System shall consist of all room thermostats, air stream thermostats, valves, damper operators, relays, freeze protection equipment, dampers, panels, and other accessory equipment not provided with the equipment to fill the intent of the specifications and drawings.
- G. All units, controls, equipment, heat pumps, etc., and controls shall reset automatically when power is restored after an outage.
- H. All control wiring concealed in walls and exposed in mechanical rooms, closets, etc., shall be in conduit. Provide plenum rated wiring where cable is concealed above ceilings. Do not paint wiring. The Contractor is responsible for protecting wiring from paint. Any painted cabling shall be replaced.
- I. All DDC controllers or control modules shall have covers to protect the circuit boards. All wiring shall be anchored securely within 6" of the controller.
- J. Provide all control dampers, etc. not supplied with the equipment or required to accomplish the sequences specified.
- K. Wiring and required conduit in connection with the control system(s), including power wiring of any voltage, shall be installed by the Contractor. The Contractor may, at his option, engage the Electrical Contractor to accomplish this work. It is emphasized however, that the Contractor is finally responsible for all such work.
- L. Electric power for the control panels, modules, unit controller, damper motors, etc., shall be derived from the building electric system. Power shall not be derived from the HVAC equipment power source or equipment low voltage transformers (internal or integral).

- M. The electrical work required for the installation of the control system(s), shall be provided by the Contractor in accordance with all National and Local Electrical Codes. All wiring shall be concealed except in Mechanical Rooms.
- N. All exterior electrical work, equipment, etc. shall be waterproofed.
- O. Controls system and all related components shall comply with ASHRAE Standard 135 (BACnet protocol) for communication to the operator workstation or web server and for communication between control modules. Schedules, setpoints, trends, and alarms specified in the Sequence of Operation shall be BACnet objects.
- P. The system shall directly control HVAC equipment as specified in the Sequence of Operation. Each zone controller shall provide occupied and unoccupied modes of operation by individual zone. Furnish energy conservation features such as optimal start and stop, night setback, request-based logic, and demand level adjustment of setpoints as specified.

2. PERFORMANCE STANDARDS

- A. System shall conform to the following minimum standards over network connections. Systems shall be tested using manufacturer's recommended hardware and software for operator workstation (server and browser for web-based systems).
 - (1) Graphic Display. A graphic with 20 dynamic points shall display with current data within 10 sec.
 - (2) Graphic Refresh. A graphic with 20 dynamic points shall update with current data within 8 sec. and shall automatically refresh every 15 sec.
 - (3) Configuration and Tuning Screens. Screens used for configuring, calibrating, or tuning points, PID loops, and similar control logic shall automatically refresh within 6 sec.
 - (4) Object Command. Devices shall react to command of a binary object within 2 sec. Devices shall begin reacting to command of an analog object within 2 sec.
 - (5) Alarm Response Time. An object that goes into alarm shall be annunciated at the workstation within 15 sec.
 - (6) Program Execution Frequency. Custom and standard applications shall be capable of running as often as once every 5 sec. Select execution times consistent with the mechanical process under control.
 - (7) Performance. Programmable controllers shall be able to completely execute DDC PID control loops at a frequency adjustable down to once per sec. Select execution times consistent with the mechanical process under control.
 - (8) Multiple Alarm Annunciation. Each workstation on the network shall receive alarms within 5 sec of other workstations.
 - (9) Reporting Accuracy. System shall report values with minimum end-to-end accuracy listed in Table 1.
 - (10) Control Stability and Accuracy. Control loops shall maintain measured variable at setpoint within tolerances listed in Table 1.

Table 1
Reporting Accuracy

Measured Variable	Reported Accuracy
Space Temperature	±0.5°C (±1°F)
Ducted Air	±0.5°C (±1°F)
Outside Air	±1.0°C (±2°F)

Dew Point	±1.5°C (±3°F)
Water Temperature	±0.5°C (±1°F)
Delta-T	±0.15°C (±0.25°F)
Relative Humidity	±5% RH
Water Flow	±2% of full scale
Airflow (terminal)	±10% of full scale (see Note 1)
Airflow (measuring stations)	±5% of full scale
Airflow (pressurized spaces)	±3% of full scale
Air Pressure (ducts)	±25 Pa (±0.1 in. w.g.)
Air Pressure (space)	±3 Pa (±0.01 in. w.g.)
Water Pressure	±2% of full scale (see Note 2)
Electrical (A, V, W, Power Factor)	±1% of reading (see Note 3)
Carbon Monoxide (CO)	±5% of reading
Carbon Dioxide (CO ₂)	±50 ppm

3. OWNER'S TRAINING

- A. The Contractor shall provide full instructions to designated personnel in the operation, maintenance, and programming of the system. The training shall be specifically oriented to the system and interfacing equipment installed. Four hours of Owner Training shall be provided at substantial completion, again after 6 months and again 1 year after substantial completion. The Owner Training shall include an overview of the entire HVAC system operation, temperature sensor setpoint manipulation, critical alarm training and graphics display overview. Subcontractors shall be present during Owner training sessions.
- B. The Contractor shall provide a Sign-in Sheet and Meeting Minutes of the training. Complete Operations and Maintenance Manuals shall be reviewed by the Contractor during training.

3. CONTROL SYSTEM CHECKOUT AND TESTING – BY CONTROLS CONTRACTOR PRIOR TO DEMONSTRATION AND ACCEPTANCE

- A. Startup Testing. Complete startup testing to verify operational control system before notifying Owner of system demonstration. Provide Owner with schedule for startup testing. Owner may have representative present during any of all startup testing.
 - (1) Calibrate and prepare for service each instrument, control, and accessory equipment furnished under Section 250200.
 - (2) Verify that control wiring is properly connected and free of shorts and ground faults.
 - (3) Enable control systems and verify each input device's calibration. Calibrate each device according to manufacturer's recommendations.
 - (4) Verify that binary output devices such as relays, solenoid valves, two-position actuators and control valves, and magnetic starters, operate properly and that normal positions are correct.
 - (5) Verify that analog output devices such as I/Ps and actuators are functional, that start and span are correct, and that direction and normal positions are correct. Check control valves and automatic dampers to ensure proper action and closure. Make necessary adjustments to valve stem and damper blade travel.
 - (6) Prepare a log documenting startup testing of each input and output device, with technician's initials certifying each device has been tested and calibrated. Submit log to Engineer for review.
 - (7) Verify that system operates according to sequences of operation. Simulate and observe each operational mode by overriding and varying inputs and schedules. Tune PID loops and each control routine that requires tuning.
 - (8) Alarms and Interlocks.
 - a. Check each alarm with an appropriate signal at a value that will trip the alarm.
 - b. Trip interlocks using field contacts to check logic and to ensure that actuators fail in the proper direction.

- c. Test interlock actions by simulating alarm conditions to check initiating value of variable and interlock action.

4. CONTROL SYSTEM DEMONSTRATION AND ACCEPTANCE

- A. Demonstration. Prior to acceptance, perform the following performance tests to demonstrate system operation and compliance with specification after and in addition to tests specified in Control System Checkout and Testing. Provide Engineer with log documenting completion of startup tests. Submission of log is required before Demonstration and Acceptance may begin.
 - (1) Engineer will be present to observe and review system demonstration. Schedule with Engineer at least 14 days before system demonstration begins. Systems balancing shall be complete prior to demonstration, coordinate scheduling with TAB agency accordingly.
 - (2) Demonstrate actual field operation of each sequence of operation as specified in these specifications. Provide at least two persons for two days each (32 man-hours) to demonstrate calibration and response of any input and output points requested by Engineer. Provide and operate test equipment required to prove proper system operation. Specified on site time does NOT include time necessary to correct deficiencies.
 - (3) Demonstrate complete operation of operator interface.
 - (4) Demonstrate all alarms, including external alarms to Owner selected pagers, phones, e-mail accounts, etc. Also demonstrate fire alarm system interface.
 - (5) Tests that fail to demonstrate proper system operation shall be repeated after Contractor makes necessary repairs or revisions to hardware or software to successfully complete each test.
 - (6) Provide all required tools to perform system demonstration and point calibration (drills, duct plugs, thermometers, hygrometers, hand-held carbon dioxide sensors, aerosol test smoke, 2-way radios, water probes, DP sensors for water and air, etc.)
- B. Acceptance
 - (1) After tests described in this specification are performed to the satisfaction of both Engineer and Owner, Engineer will accept control system. Engineer may exempt tests from completion requirements that cannot be performed due to circumstances beyond Contractor's control. Engineer will provide written statement of each exempted test. Exempted tests shall be performed as part of warranty.
 - (2) System shall not be accepted until completed demonstration forms and checklists are submitted and approved as required in these specifications. Warrantee will not start until acceptance by Owner and Engineer.

5. EQUIPMENT

A. CONTROL PANEL(S)

- (1) Each system shall be provided with a local panel for mounting of all relays, switches, controllers, and thermometers associated with that system. Where one cabinet will not accommodate all the equipment necessary for one system, a second cabinet shall be mounted and bolted adjacent to it. Cabinets shall be provided with a 2/3's door. All devices shall be provided with lamacoid plastic nameplates for identification.

C. RELAYS AND SWITCHES

- (1) Relays and switches shall be of the positive and gradual acting type and shall be furnished and installed as required for the successful operation of the system. All switches shall have suitable indicating plates.

6. CONTROLLERS AND DISPLAYS

- A. General. Provide Building Controllers (BC), Advanced Application Controllers (AAC), Application Specific Controllers (ASC), Smart Actuators (SA), and Smart Sensors (SS) as required to achieve performance specified in Section 250200 (System Performance). Every device in the system which executes control logic and directly controls HVAC equipment must conform to a standard BACnet Device profile as specified in ANSI/ASHRAE 135, BACnet Annex L. Unless otherwise specified, hardwired actuators and sensors may be used in lieu of BACnet Smart Actuators and Smart Sensors.
- B. BACnet.
 - (1) Building Controllers (BCs). Each BC shall conform to BACnet Building Controller (B-BC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-BC in the BACnet Testing Laboratories (BTL) Product Listing.
 - (2) Advanced Application Controllers (AACs). Each AAC shall conform to BACnet Advanced Application Controller (B-AAC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-AAC in the BACnet Testing Laboratories (BTL) Product Listing.
 - (3) Application Specific Controllers (ASCs). Each ASC shall conform to BACnet Application Specific Controller (B-ASC) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-ASC in the BACnet Testing Laboratories (BTL) Product Listing.
 - (4) Smart Actuators (SAs). Each SA shall conform to BACnet Smart Actuator (B-SA) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-SA in the BACnet Testing Laboratories (BTL) Product Listing.
 - (5) Smart Sensors (SSs). Each SS shall conform to BACnet Smart Sensor (B-SS) device profile as specified in ANSI/ASHRAE 135, BACnet Annex L and shall be listed as a certified B-SS in the BACnet Testing Laboratories (BTL) Product Listing.
- C. BACnet Communication.
 - (1) Each BC shall reside on or be connected to a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing.
 - (2) BACnet routing shall be performed by BCs or other BACnet device routers as necessary to connect BCs to networks of AACs and ASCs.
 - (3) Each AAC shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet/IP addressing, or it shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
 - (4) Each ASC shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
 - (5) Each SA shall reside on a BACnet network using the ARCNET or MS/TP Data Link/Physical layer protocol.
 - (6) Each SS shall reside on a BACnet network using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol with BACnet/IP addressing, or it shall reside on a BACnet network using ARCNET or MS/TP Data Link/Physical layer protocol.
- D. Communication.
 - (1) Service Port. Each controller shall provide a service communication port for connection to a Portable Operator's Terminal. Connection shall be extended to space temperature sensor ports where shown on drawings.

- (2) Signal Management. BC and ASC operating systems shall manage input and output communication signals to allow distributed controllers to share real and virtual object information and to allow for central monitoring and alarms.
 - (3) Data Sharing. Each BC and AAC shall share data as required with each networked BC and AAC.
 - (4) Stand-Alone Operation. Each piece of equipment specified in Section 15900 Appendix A shall be controlled by a single controller to provide stand-alone control in the event of communication failure. All I/O points specified for a piece of equipment shall be integral to its controller. Provide stable and reliable stand-alone control using default values or other method for values normally read over the network.
- E. Environment. Controller hardware shall be suitable for anticipated ambient conditions.
- (1) Controllers used outdoors or in wet ambient conditions shall be mounted in waterproof enclosures and shall be rated for operation at -29°C to 60°C (-20°F to 140°F).
 - (2) Controllers used in conditioned space shall be mounted in dust-protective enclosures and shall be rated for operation at 0°C to 50°C (32°F to 120°F).
- F. Keypad. Provide a local keypad and display for each BC and AAC. Operator shall be able to use keypad to view and edit data. Keypad and display shall require password to prevent unauthorized use. If the manufacturer does not normally provide a keypad and display for each BC and AAC, provide the software and any interface cabling needed to use a laptop computer as a Portable Operator's Terminal for the system. This shall be located within the High School Mechanical Room.
- G. Real-Time Clock. Controllers that perform scheduling shall have a real-time clock.
- H. Serviceability.
- (1) Controllers shall have diagnostic LEDs for power, communication, and processor.
 - (2) Wires shall be connected to a field-removable modular terminal strip or to a termination card connected by a ribbon cable.
 - (3) Each BC and AAC shall continually check its processor and memory circuit status and shall generate an alarm on abnormal operation. System shall continuously check controller network and generate alarm for each controller that fails to respond.
- I. Memory.
- (1) Controller memory shall support operating system, database, and programming requirements.
 - (2) Each BC and AAC shall retain BIOS and application programming for at least 72 hours in the event of power loss.
 - (3) Each ASC and SA shall use nonvolatile memory and shall retain BIOS and application programming in the event of power loss. System shall automatically download dynamic control parameters following power loss.
- J. Immunity to Power and Noise. Controllers shall be able to operate at 90% to 110% of nominal voltage rating and shall perform an orderly shutdown below 80% nominal voltage. Operation shall be protected against electrical noise of 5 to 120 Hz and from keyed radios up to 5 W at 1 m (3 ft).
- K. Transformer. ASC power supply shall be fused or current limiting and shall be rated at a minimum of 125% of ASC power consumption.

7. TREND LOGS

- A. **Trend Logs.** The operator shall be able to define a custom trend log for any data in the system. This definition shall include interval, start-time, and stop-time. Trend intervals of 1, 5, 15, 30, and 60 minutes as well as once a shift (8 hours), once a day, once a week, and once a month shall be selectable. All trends shall start based on the hour. Each trend shall accommodate up to 64 system objects. The system operator with proper password shall be able to determine how many samples are stored in each trend. Trend data shall be sampled and stored on the Building Controller panel and be archived on the hard disk. Trend data shall be able to be viewed and printed from the operator interface software. Trends must be viewable in a text-based format or graphically. They shall also be storable in a tab delimited ASCII format for use by other industry standard word processing and spreadsheet packages.
- B. **Dynamic Graphical Charting.** The operator shall be able to select system values to be charted in real time. Up to three values at one time can be selected for each chart. The type of chart (bar, line, 3-D, etc.) shall be selectable.
- C. **Alarm and Event Log.** The operator shall be able to view all logged system alarms and events from any location in the system. The operator shall be able to sort and filter alarms. Events shall be listed chronologically. An operator with the proper security level may acknowledge and clear alarms. All that have not been cleared by the operator shall be archived to the hard disk on the workstation.
- D. **Reports and Logs.** Provide a reporting package that allows the operator to select, modify, or create reports. Each report shall be definable as to data content, format, interval, and date. Report data shall be archived on the hard disk for historical reporting. Provide the ability for the operator to obtain real time logs of designated lists of objects. Reports and logs shall be stored on the PC hard disk in a format that is readily accessible by other standard software applications including spreadsheets and word processing. Reports and logs shall be readily printed to the system printer. The operator shall be able to designate reports that shall be printed or stored to disk at selectable intervals.
 - 1) **Custom Reports:** Provide the capability for the operator to easily define any system data into a daily, weekly, monthly, or annual report. These reports shall be time and date stamped and shall contain a report title and the name of the facility.

7. DEMONSTRATION

- A. A complete demonstration and readout of the capabilities of the monitoring and control system shall be performed. The contractor shall demonstrate on -site with the Owner and Engineer that all points and sequences operate as designed.

The warranty does not start until all controls, graphics, points, etc. are functioning.

All controls functioning on _____ Date

Witnessed by _____

8. SEQUENCE OF CONTROL

- A. **WATER SOURCE HEAT PUMP WITH APPLICATION SPECIFIC CONTROLLER (ASC)**
 - (1) **Unoccupied Operation** – In the unoccupied mode the unit shall be shut off. If the space temperature as sensed by the zone sensor falls above or below the unoccupied set point, the compressor, fan, and reversing valve shall be energized based on the need for either heating or cooling until the unoccupied setpoint is reached.
 - (2) **Unoccupied Override** – A unit can be returned to the occupied mode by depressing the ON button on the zone sensor. This causes the unit to control to its occupied setpoint for 120 minutes (adj.). The unit can be manually set back into unoccupied by depressing the CANCEL button on the zone sensor.

- (3) Zone Temperature – Each zone sensor offered shall use a thermistor element to measure the actual zone temperature. If the sensor has a set point option, the set point shall only be used by the application specific controller if there is not a communicated set point from the BAS. If the sensor has a TOV/Cancel option, the ON (TOV) and TOV (CANCEL) commands shall be issued by the zone sensor when the corresponding buttons are pressed. Zone sensor failure shall cause the unit to shut down.
- (4) Transition from Unoccupied to Occupied – When the water source heat pumps transition from the Unoccupied mode to the Occupied mode, morning warm-up or morning cool-down and random start programs shall be activated.
 - a. Morning Warm-up – When there is a call for heating and the zone temperature is 2°F off setpoint, a morning warm-up shall be initiated. The compressor and the fan shall be turned on. When the zone temperature reaches the heating setpoint, the ASC shall operate in the Occupied Mode.
 - b. Morning Cool-down – When there is a call for cooling and the zone temperature is 2°F off setpoint, a morning cool-down shall be initiated. The compressor and the fan shall be turned on. When the zone temperature reaches the cooling setpoint, the ASC shall operate in the Occupied Mode.
 - c. Random Start (Standard) – Random start of the unit on electric power up is intended to prevent all units in the building from energizing major loads at the same time. The fan and compressor start shall be delayed from 3 to 32 seconds when power has been either restored after a loss or outage, or after the unit is enabled. If there is no call for cooling or heating, or if no fan operation is required during the delay, the time delay shall be allowed to time out.
- (5) Unoccupied Heat Pump Operation – The heat pump shall operate to maintain both the cooling and heating set points within a zone. The compressor, fan, and reversing valve shall be energized to maintain the cooling set point. When there is a call for heating, the unit shall operate to maintain the set point.
- (6) Occupied Cooling Only Operation – The cooling only unit shall operate to maintain the cooling set point.
 - a. Heat/Cool Set point and Mode – The space temperature cooling set point shall be determined either by a local set point adjustment knob, the ASC default setpoint or BAS control. If the BAS is not communicating, the ASC shall use default setpoints or local zone sensor control.
 - b. Cooling Set point Limiting – The cooling set point shall be limited by adjustable parameters in the ASC or the BAS to prevent it from being set too high or low. The transition from heat to cool shall be based on the time between set point change. In the Unoccupied mode, the set points shall be widened to accommodate night setback and are adjustable.
 - c. Fan Operation – The supply air fan shall operate at the appropriate speed in the Occupied mode. The fan operation is to be cycled based upon load conditions.
 - d. Compressor Operation – Compressor operation shall be cycled based upon load conditions as sensed by a zone or discharge air temperature sensor. Compressor operation shall be overridden by a preset three minute minimum on/off time delay in order to maintain oil return when the unit is either initially energized, manually reset, switched between modes, or cycled within a single mode.
 - e. Reversing Valve Operation – A contact closure output shall be utilized to control the reversing valve state. The reversing valve shall be energized in the cooling mode. Once the valve is energized for cooling it shall stay energized until a heating cycle is initiated. The reversing valve operation shall be delayed after compressor shutdown to reduce noise due to refrigerant migration. In the event of a power failure the reversing valve shall fail to heating mode.
- (7) Occupied hours shall start 30 minutes (adj.) prior to school start time and stop 60 minutes (adj.) after school ending time.
- (8) Occupied Standby – When occupancy is communicated from the BAS, the ASC shall be able to accept a local binary input that will cause the unit to go into occupied standby mode. This mode will spread the heating and cooling setpoints 2°F each way.
- (9) Unit Protection – The following shall be standard unit protections as listed.

- a. Compressor Cycle Limit – The compressor operated with minimum 3 minute on and 3 minutes off cycles to maintain oil return for extended life of the compressor.
 - b. Smart Reset – The ASC will automatically try to restart the unit that is locked-out on a high pressure, low pressure, or low temperature detection. This will occur 30 minutes after the diagnostic and if the unit runs successfully the diagnostic is cleared. If the unit undergoes the same diagnostic within a 24-hour period the unit is locked-out until it is manually reset.
 - c. Reversing Valve Delay (Standard) – The reversing valve delay is inherent due to the compressor cycle limit. The delay prevents the reversing valve from changing positions against the large differentials in refrigerant pressures during the change from cooling to heating and vice versa, eliminating the noise normally heard due to refrigerant migration.
 - d. Low Pressure Cutout (Standard) – The low-pressure switch is a normally closed switch that opens to lock out the compressor under low refrigerant circuit pressure conditions. The low-pressure cutout is a safety protection that can be reset at the BAS. On multiple circuit units each circuit has a low-pressure cutout. If a circuit is locked out due to low pressure the remaining circuits shall continue to operate.
 - e. High Pressure Cutout (Standard) – The high-pressure switch is normally a closed switch that opens under high refrigerant circuit pressure conditions (395 psi) that shall lockout the compressor. The high-pressure switch is wired in series with the compressor contactor coil. On multiple circuit units each circuit has a high-pressure cutout. If a circuit is locked out due to high pressure the remaining circuits shall continue to operate.
 - f. Low Temperature Protection (Standard) – The low temperature protection is intended to sense and prevent water coil freeze up for low water temperature conditions. A low temperature condition is intended to stop and lockout compressor operation until a reset of the control is done. The low temperature protection temperature is adjustable for a ground source application where antifreeze is used in the loop.
 - g. Condensate Overflow – A condensate overflow alarm means the switch in the condensate pan has sensed the pan is full and requires servicing. When opened, the condensate overflow switch shall lockout the compressor and fan.
- (10) Unit Diagnostics – The following is unit diagnostic information, either standard or optional as listed.
- a. Discharge Air Temperature (Standard) – A temperature sensor in the discharge air stream shall provide information to the BAS or service tool.
 - b. Filter Maintenance Timer – The ASC will have the ability to sum the total fan run hours of the water-source unit. When the sum reaches a configurable threshold, the ASC will send an alarm to the BAS suggesting that the filter be changed in the unit. If the timer is set to 0 then this function will be disabled.
 - c. Fan Status – The fan output will be monitored on the ASC to ensure that the fan relay is closed, allowing the fan motor to operate.
 - d. Zone Sensor Failure – If there is a fault with the operation of the zone sensor module it shall be fed back to the BAS. Zone sensor failure shall cause the unit to shutdown.
 - e. Manual Output Test – The ASC shall have a push button on the board to allow local troubleshooting. When the button is depressed it will cycle the unit logically through the outputs as well as clear any diagnostics.
- (11) Data Sharing – The ASC shall have the ability to share data directly with other ASCs without passing the information through a BAS. This will allow several units to be slaved to a single unit and zone sensor. The master ASC shall share the same zone set point, zone temperature, mode, and fan speed with the slave ASCs.

B. PACKAGED 100% MAKE-UP AIR UNIT

- (1) The building automation system (BAS) shall perform the following building system level control strategies, provide the points listed on the point list and provide the specified monitoring and diagnostics. The 100% make-up air unit manufacturer shall provide the DDC controller for the unit sequence of operation. The BAS contractor shall provide and overlay DDC controller to perform the overall building system level strategies, diagnostics, and point monitoring.

- a. Unoccupied Operation – When the BAS initiates the unoccupied mode the unit shall be disabled.
- b. Occupied Operation – When the unit is controlled to the Occupied mode, all unit functions shall be enabled. The fresh air unit shall operate under supply air dew point temperature control. The unit shall default to this mode in the event that communications with the BAS are lost.
 - 1) Drying, Cooling, and Heating – During the Occupied mode, the fresh air unit shall control to a set of supply air set points in order to provide comfortable ventilation air to the space. The outdoor air damper shall open upon initiation of the occupied mode and remain open until the unoccupied mode.
- c. Occupied hours shall coincide with the regular school hours or 7:30 a.m. to 3:30 p.m. (adj.) for other circumstances.
- d. Timed Override – When a Timed Override is initiated by the user, the unit shall return to its normal occupied mode for a period of time as specified by the BAS. When the Timed Override period has ended, the unit shall automatically return to its unoccupied mode. The BAS shall monitor and store the override time for each Timed Override input for documentation of after-hours operation. The BAS shall also recognize a Timed Override function if provided.
- e. Shutdown – The BAS Priority Control program shall be able to put the zone in either the Shutdown or Occupied mode. All units that are members of that zone shall be immediately put in the Shutdown or Occupied mode. In the Shutdown mode, the unit shall turn off as rapidly as possible with all drying, cooling and heating disabled, and the outdoor damper shall be closed.
- f. Evaporator Coil Frost Protection – A temperature sensor on the evaporator shall be used to determine if the coil is at risk of a freezing condition. Mechanical refrigeration capacity shall be shed as necessary to prevent icing. The supply fan shall continue to run and de-ice the coil. Timers shall prevent the compressors for rapid cycling.
- g. Emergency Stop Input – A binary input shall be provided on the unit RTM module board for installation of a field-provided switch or contacts to immediately shut down all unit functions.
- (2) Unit Status Report – For each fresh air unit, the BAS shall provide an operating status summary of the following information to provide the operator with critical unit operating data.
 - a. Operating mode
 - b. Active cooling/drying/heating mode
 - c. General fault alarm
 - d. Supply fan status
 - e. Exhaust fan status
 - f. Energy recovery wheel status
 - g. Compressor on/off status
 - h. Outdoor air damper status
 - i. Outdoor air temperature
 - j. Outdoor air relative humidity
 - k. Energy wheel building return inlet temperature
 - l. Energy wheel building return inlet relative humidity
 - m. Energy wheel supply discharge air temperature
 - n. Energy wheel supply discharge air relative humidity
 - o. Supply air temperature
 - p. Supply air relative humidity
 - q. Outdoor airflow in CFM (air monitor provided by unit manufacture)
- (3) Diagnostics – The BAS system shall be able to alarm from all sensed points from the unit and diagnostic alarms sensed by the unit controller. Alarm limits shall be designated for all sensed points. Individual unit diagnostic and alarm statuses shall include the following at each unit:
 - a. Emergency stop
 - b. Supply fan failure
 - c. Exhaust fan failure
 - d. General fault alarm
 - e. Freeze stat trip
 - f. Outdoor air damper failure

- g. Dirty filter
- (4) Provide mechanical "Event" timer to initiate operation of make-up air unit introducing outside air to gymnasium. Timer shall be a 0-6 hour mechanically wound spring timer.

C. GEOTHERMAL WELL LOOP CIRCULATING PUMPS

- (1) When the building loop supply water temperature to the heat pumps is between 55°F (adj.) and 80°F (adj.), both geothermal well loop pumps shall be off.
- (2) When the building loop supply water temperature to the heat pumps rises above 80°F (adj.), the first geothermal well loop circulating pump shall start. When the building loop supply water temperature to the heat pumps rises to 85°F(adj.), the second geothermal loop circulating pump shall start.
- (3) When the building loop supply water temperature to the heat pumps drops below 55°F (adj.), the first geothermal well loop circulating pump shall start. When the building loop supply water temperature to the heat pumps drops below 53°F(adj.), the second geothermal loop circulating pump shall start.

D. ZONE BUILDING LOOP CIRCULATING PUMPS

- (1) When an HVAC building system zone is in the occupied mode the building loop circulating pump serving that zone shall run continuously.
- (2) When an HVAC building system zone is in the unoccupied mode the building loop circulating pump serving that zone shall run whenever any heat pump on that loop calls for compressor operation, and shall stop when all heat pumps on that loop are not calling for compressor operation.
- (3) Provide 5 minutes on delay relays or software-based timers to shut down pumps 5 minutes (adj.) after zone is placed in unoccupied mode.

E. AUTOMATIC CONTROL DAMPERS ASSOCIATED WITH MAKE-UP AIR UNIT

- (1) When make-up air unit MAU-4 is in the "Event" mode as initiated by the BAS system or the manual "Event" timer, make-up air unit MAU-4 shall be started, normally closed automatic control damper allowing make-up to enter gymnasium heat pump units shall open, and normally open automatic control dampers allowing make-up air to enter other areas of the building (except common area) shall close.
- (2) Automatic control dampers shall be monitored by the BAS system.

F. VENTILATION SYSTEMS LIMITS

- (1) If outside air temperature is 100°F and above, or 0°F and below, all make-up air units and all exhaust fans shall be shutdown and all outside air dampers closed.

G. ZONE FLOW SWITCHES

- (1) Provide one flow switch in each pumping zone supply pipe to inhibit heat pump operation if no water is flowing.

H. EXTREME WATER TEMPERATURES

- (1) Inhibit heat pump operation on extreme supply water temperatures. Provide alarm to operator workstation.

9. POINTS LIST

- A. The points in the following tables shall be accessible from the Graphical User Interface and the Web browser interface.
- B. Refer to the following three (3) pages.

END OF SECTION 250200

CONTROLS POINT LIST

WATER SOURCE HEAT PUMP

[illegible]

GENERAL NOTES:

G=Graphic Point 1.One point leaving Mech. Room

2. Where Required

MISCELLANEOUS CONTROLS (Continued)

[illegible]

GENERAL NOTES:

G=Graphic Point

END OF SECTION