

FRONT END  
DOCUMENTS

**AC System Improvements:  
Richland County Administration & Courthouse  
Building**

50 Park Avenue East  
Mansfield, OH 44903

Prepared By:



Karpinski Engineering  
8800 Lyra Drive  
Columbus, OH 43240  
614-430-9820



**Richland County Courthouse AC Upgrade**  
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## Legal Notice

Sealed bids will be received by the Board of Commissioners for Richland County, Ohio, as provided in this notice for the **Richland County Courthouse AC Upgrade**(the "Project"). Contract documents, which include additional details of the Project, are on file and available from **R.B. Print Shop** at the following address **\_165 Trimble Rd., Mansfield, Oh 44903**. **Bidders must be on record with R.B. Print Shop to qualify to bid.**

Bids shall be enclosed in a sealed envelope addressed to the Board of Commissioners for Richland County, Ohio, Attn: Stacey **C**rall, 50 Park Ave. East, Mansfield, Ohio 44902, and plainly marked on the outside "**Richland County Courthouse AC Upgrade Project BID.**" Bids will be received until Thursday, May 14, 2026, at 10AM.

All bids must include a Bid Guaranty, as described in the Instructions to Bidders. Prevailing wage rates apply. No bidder may withdraw its bid within 60 days after the opening; the County reserves the right to waive irregularities, reject any or all bids, and conduct necessary investigations to determine bidder responsibility.

This notice is posted on Richland County's website at:  
<https://www.richlandcountyoh.gov/departments/boardofcommissioners/PublicNotice>.

# INSTRUCTIONS TO BIDDERS

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**A. BIDDER'S PLEDGE AND AGREEMENT**

1. Each Bidder acknowledges that this is a public project involving public funds and that the Owner expects and requires that each successful Bidder adhere to the highest ethical and performance standards. Each Bidder by submitting a bid pledges and agrees that (a) it will act at all times with absolute integrity and truthfulness in its dealings with the Owner and the Design Professional, (b) it will use its best efforts to cooperate with the Owner and the Design Professional and all other Contractors on the Project and at all times will act with professionalism and dignity in its dealings with the Owner, Design Professional, and other Contractors, (c) it will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her, and (d) it has read, understands and will comply with the terms of the Contract Documents.

**B. EXAMINATION OF CONTRACT DOCUMENTS AND SITE CONDITIONS AND RELIANCE UPON TECHNICAL DATA**

1. Each Bidder shall have a competent person carefully and diligently review each part of the Contract Documents, including the Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work on which the Bidder is submitting its bid. By submitting its bid, each Bidder represents and agrees, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors, or omissions in the Contract Documents for which it has not notified the Design Professional in writing at least seven (7) days prior to the bid opening. If there are any such conflicts, inconsistencies, errors, or omissions in the Contract Documents, the Bidder (i) will provide the labor, equipment, or materials of the better quality or greater quantity of Work and/or (ii) will comply with the more stringent requirements. The Bidder will not be entitled to any additional compensation for any conflicts, inconsistencies, errors, or omissions that would have been discovered by such careful and diligent review, unless it has given prior written notice to the Design Professional.
2. Each Bidder shall have a competent person carefully and diligently inspect and examine the entire site and the surrounding area, including all parts of the site applicable to the Work for which it is submitting its bid, including location, condition, and layout of the site and the location of utilities, and carefully correlate the results of the inspection with the requirements of the Contract Documents. The Bidder's bid shall include all costs attributable to site and surrounding area conditions that would have been discovered by such careful and diligent inspection and examination of the site and the surrounding area, and the Bidder shall not be entitled to any Change Order, additional compensation, or additional time on account of such conditions.
3. The Bidder may rely upon the general accuracy of any technical data identified in the Owner-Contractor Agreement (e.g., any soils exploration reports, soil boring logs, site survey, or abatement reports) in preparing its bid, but such technical data are not part of the Contract Documents. Except for the limited reliance described in the preceding sentence, Bidder may not, if awarded a contract for the Work, rely upon or make any Claim against the Owner or Design Professional, or any of their agents or employees, with respect to any of the following:
  - (a) the completeness of such reports and drawings for Bidder's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by the successful Bidder and safety precautions and programs incident thereto; or

- (b) any interpretation by the successful Bidder of or conclusion drawn from any technical data or any such other data, interpretations, opinions, or information. For example, all interpolations and extrapolations of data performed by the Bidder to estimate locations or quantities of subsurface strata are independent factual assumptions, which Owner does not warrant.
4. Each Bidder will be deemed to have actual knowledge of all information provided or discussed at the pre-bid meeting.

**C. PROJECT**

1. The Project and Work for the Project consists of all labor, materials, equipment, and services necessary for construction of the project identified as **Richland County Courthouse AC Upgrade Project** ("the Project"), all in accordance with the Drawings and Specifications prepared by the Design Professional.

**D. WORK**

1. Only one contract will be issued by the Owner for constructing the Project, the General Contract, which will cover all scopes of work necessary to construct the Project.
2. The Contractor awarded the General Contract (General Contractor) will be responsible for the performance and coordination of any and all subcontractors and suppliers either directly or indirectly contracted with the General Contractor.
3. On request, Owner will provide Bidders access to the Project site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates. **Call Josh Hicks 419-295-1835 to arrange a site visit.**

**E. ESTIMATE OF COST**

1. The total estimated construction cost for the base bid Work for the Project for which bids are being solicited at this time is **\$711,684.00.**
2. The estimated construction cost of the Alternates for which Owner is seeking bids is as follows:  
**N/A – There are no alternates at this point in time.**

**F. CONTRACT DOCUMENTS**

The Contract Documents consist of the Contract Documents listed in Section 1 of the Owner-Contractor Agreement.

Bidders may purchase Contract Documents including a full-size set of drawings, specifications, and a bid packet, of all documents for a non-refundable cost of \$75.00 per set. Bidders may also purchase Contract Documents in a CD-ROM/flash drive containing PDF files of all drawings and specifications for a non-refundable cost of \$75.00 per set. Bids will be accepted regardless of whether the bidder has purchased the hard copy or the electronic copy of the documents.

Bidders may also view the Contract Documents online at <http://www.rbprintshop.com>.

**Bidders must be on record with R.B. Print Shop to qualify to bid.** Bidders may also view the Contract Documents at the following Plan Room(s):

### **Builders Exchange**

Bidders shall use complete sets of Contract Documents in preparing bids. Neither the Owner nor the Design Professional assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents.

The Owner or the Design Professional, in making the Contract Documents available on the above terms, does so only for the purpose of obtaining bids on the Work and does not confer a license or grant for any other use.

**A mandatory pre-bid conference will be held on Thursday April 30, 2026 at 10AM at 50 Park Avenue East, Mansfield, Ohio.**

## **G. PREPARATION OF BIDS**

1. All bids must be submitted on the "Bid Form" furnished with the Contract Documents.
2. All blank spaces shall be filled in, in ink or typewritten, in words and figures, and in figures only where no space is provided for words, and signed by the Bidder. The wording on the Bid Form shall be used without change, alteration, or addition. Any change in the wording or omission of specified accompanying documents may cause the bid to be rejected. If there is an inconsistency or conflict in the bid amount, the lowest amount shall control, whether expressed in numbers or words.
3. Bidders shall note receipt of Addenda on the Bid Form. If the Bidder fails to acknowledge receipt of each Addendum, the Bid shall be deemed non-responsive, unless the Bid amount clearly and unambiguously reflects receipt of the Addendum or the Addendum involves only a matter of form and does not affect the price, quantity or quality of the Work to be performed.
4. Each Bidder shall submit two (2) copies of its bid to the Owner. The Bid Form shall be signed with the name typed or printed below the signature. A Bid shall not be submitted by facsimile transmission. A Bidder that is a corporation shall sign its bid with the legal name of the corporation followed by the name of the state of incorporation and the legal signature of an officer authorized to bind the corporation to a contract.
5. Each Bid shall be enclosed in a sealed opaque envelope with the Bidder's name and the title of the Project printed in the upper left hand corner and addressed as follows:

Attn: Stacey Crall  
Board of Commissioners for Richland County, Ohio  
50 Park Ave. East  
Mansfield, Ohio 44902

Bids must be received at the designated location for the bid opening before Thursday, May 14, 2026, at 10 AM, local time.

6. **The completed Bid Form shall be accompanied by the following documents:**
- a. **Substitution Form, if any proposed substitutes have been pre-approved. (See Section J below.)**
  - b. **Bid Guaranty**
  - c. **Contractor's Qualification Statement (See Paragraph H.4 below.)**
7. The Bidder shall take the following precautions in preparing its bid:
- a. Sign the bid and check to ensure all blank spaces have been filled in with requested information and that the specified accompanying documents (listed in Paragraph G.6 above) have been included in a sealed opaque envelope addressed as described in item 5 above.
  - b. When the Bid Form provides for quoting either an addition or deduction for an Alternate item, indicate whether the sum named is an addition or deduction. If it is not indicated, it will be conclusively presumed that the amount is a deduction.
  - c. When the Bid Form provides for quoting a unit price, the Bidder should quote the unit price as set forth in the Bid Documents.
  - d. When applicable, make sure that the Bid Guaranty is properly executed and signed by:
    - 1) The Bidder
    - 2) The Surety or Sureties
  - e. Make sure that the amount of the Bid Guaranty (if the Bid Guaranty is in the form of a certified check, letter of credit, or cashier's check) is for a specific sum in an amount as instructed in Paragraph G.8.a below. If the Bid Guaranty is in the form of the Bid Guaranty and Contract Bond, the amount may be left blank; if an amount is inserted, it must equal the total of the base bid and all add alternates included. If inserted, then the failure to state an amount equal to the total of the base bid and all add alternates shall make the bid non-responsive if the Owner selects alternates not included in the amount.
  - f. Make sure that the appropriate bid package and scope of work is inserted in the correct space on the Bid Guaranty and Contract Bond Form. Failure to include work covered by the bid submitted may make the bid non-responsive.
8. Bonds and Guarantees
- a. **Bid Guaranty**: Bidder shall furnish a Bid Guaranty, as prescribed in Sections 153.54, 153.57, and 153.571 of the Ohio Revised Code, in the form of either: (1) a bond for the full amount of the bid in the form of the Bid Guaranty and Contract Bond included in the Bid Documents; or (2) a certified check, cashier's check, or irrevocable letter of credit in a form satisfactory to the Owner in an amount equal to 10% of the bid. Bid amount shall be the total of all sums bid, including all add alternatives, but excluding all deduct alternatives. NOTE: AIA Bid Bond forms are not acceptable.
  - b. **Contract Bond**: The successful Bidder, who, as a Bid Guaranty, submits a certified check, cashier's check, or irrevocable letter of credit in an amount equal to 10% of the bid, shall furnish a Contract Bond in the form Contract Bond included in the Bid Documents in an amount equal to 100% of the Contract Sum. NOTE: AIA Bond forms are not acceptable.

- c. The bond must be issued by a surety company authorized by the Ohio Department of Insurance to transact business in the State of Ohio and acceptable to the Owner. The bond must be issued by a surety capable of demonstrating a record of competent underwriting, efficient management, adequate reserves, and sound investments. These criteria will be deemed to be met if the surety currently has an A.M. Best Company Policyholders Rating of "A-" or better and has or exceeds the Best Financial Size Category of Class VI. Other sureties may be acceptable to the Owner, in its sole discretion
- d. All bonds shall be signed by an authorized agent of an acceptable surety and by the Bidder.
- e. Surety bonds shall be supported by credentials showing the Power of Attorney of the agent, a certificate showing the legal right of the Surety Company to do business in the State of Ohio, and a financial statement of the Surety.
- f. The Bid Guaranty, as applicable, shall be in the name of or payable to the order of the Owner.
- g. The name and address of the Surety and the name and address of the Surety's Agent should be typed or printed on each bond.

#### **H. METHOD OF AWARD**

1. All bids shall remain open for acceptance for sixty (60) days following the day of the bid opening, but the Owner may, in its sole discretion, release any bid and return the Bid Guaranty prior to that date. The Bid Guaranty shall be subject to forfeiture, as provided in the Ohio Revised Code, if a bid is withdrawn during the period when bids are being held.
2. The Owner reserves the right to reject any, part of any, or all bids and to waive any informalities and irregularities. The Bidder expressly acknowledges this right of the Owner to reject any or all bids or to reject any incomplete or irregular bid. Bidders must furnish all information requested on or accompanying the Bid Form. Failure to do so may result in disqualification of the bid.
3. Determination of the Lowest and Best Bid. Subject to the right of the Owner to reject any or all bids, the Owner will award the Contract for the Work to the responsible bidder submitting the lowest and best bid, taking into consideration accepted alternates. In evaluating bids, the Owner may consider the qualifications of the Bidders, whether or not the bids comply with the prescribed requirements, and alternates and unit prices, if requested, on the Bid Form. The Owner may also consider the qualifications and experience of subcontractors and suppliers. The Owner may conduct such investigations as are deemed necessary to establish the qualifications and financial ability of the Bidder and its subcontractors and suppliers. The factors the Owner may consider in determining which bid is lowest and best include the factors set forth below. The Owner, in its discretion, may consider and give such weight to these criteria as it deems appropriate.
  - a. The Bidder's work history. The Bidder should have a record of consistent customer satisfaction and of consistent completion of projects, including projects that are comparable to or larger and more complex than the Owner's Project, on time and in accordance with the applicable Contract Documents, and the Bidder's claims history. If the Bidder's management operates or has operated another construction company, the Owner may consider the work history of that company in determining whether the Bidder submitted the lowest and best bid.

The Owner will consider the Bidder's prior experience on other projects of similar scope and/or complexity including prior projects with the Owner and/or Design Professional, including the Bidder's demonstrated ability to complete its work on these projects in

accordance with the Contract Documents and on time, and will also consider its ability to work with the Owner and Design Professional as a willing, cooperative, and successful team member. Bringing overstated claims, an excessive number of claims, acting uncooperatively, and filing lawsuits against project owners and/or their design professionals on prior projects of similar scope and/or complexity will be deemed evidence of a Bidder's inability to work with the Owner and Design Professional as a willing, cooperative, and successful team member.

The Bidder authorizes the Owner and its representatives to contact the owners and design professionals (and construction managers, if applicable) on projects on which the Bidder has worked and authorizes and requests such owners and design professionals (and construction managers) to provide the Owner with a candid evaluation of the Bidder's performance. By submitting its bid, the Bidder agrees that if it or any person, directly or indirectly, on its behalf or for its benefit brings an action against any of such owners or design professionals (or construction managers) or the employees of any of them as a result of or related to such candid evaluation, the Bidder will indemnify and hold harmless such owners, design professionals (and construction managers) and the employees of any of them from any claims whether or not proven that are part of or are related to such action and from all legal fees and expenses incurred by any of them arising out of or related to such legal action. This obligation is expressly intended for the benefit of such owners, design professionals (and construction managers), and the employees of each of them.

- b. The Bidder's financial ability to complete the Contract successfully and on time without resort to its Surety.
  - c. The Bidder's prior experience with similar work on comparable or more complex projects.
  - d. The Bidder's prior history for the successful and timely completion of projects, including the Bidder's history of filing claims and having claims filed against it.
  - e. The Bidder's equipment and facilities.
  - f. The adequacy, in numbers and experience, of the Bidder's work force to complete the Contract successfully and on time.
  - g. The Bidder's compliance with federal, state, and local laws, rules, and regulations, including but not limited to the Occupational Safety and Health Act, the Ohio Prevailing Wage laws, and Ohio ethics laws.
  - h. The foregoing information with respect to each of the Subcontractors and Suppliers that the Bidder intends to use on the Project.
  - i. The Bidder's participation in a drug-free workplace program acceptable to the Owner, and the Bidder's record for both resolved and unresolved findings of the Auditor of State for recovery as defined in Section 9.24 of the Ohio Revised Code.
  - j. The Owner's prior experience with the Bidder's surety.
  - k. The Bidder's interest in the Project as evidenced by its attendance at any pre-bid meetings or conferences for bidders.
  - l. Depending upon the type of the work, other essential factors, as the Owner may determine and as are included in the Specifications.
4. **Qualifications Statement. Each Bidder will submit with its bid a completed Contractor Qualifications Statement, which is included with the Contract Documents, and thereafter provide the Design Professional promptly with such additional information as the Design Professional may request regarding the Bidder's qualifications. A Bidder shall submit any requested additional information within three (3) business days of the date on the request.**

5. The failure to submit requested information on a timely basis may result in the determination that the Bidder has not submitted the lowest and best bid.
6. By submitting its bid, the Bidder agrees that the Owner's determination of which bidder is the lowest and best bidder shall be final and conclusive, and that if the Bidder or any person on its behalf challenges such determination in any legal proceeding, the Bidder will indemnify and hold the Owner and its employees and agents harmless from any claims included or related to such legal proceeding, whether or not proven, and from legal fees and expenses incurred by the Owner, its employees, or agents that arise out of or are related to such challenge.
7. **After bid opening, within three (3) business days of a request made by the Design Professional, the apparent low Bidder and any other Bidder so requested by the Design Professional must submit the following:**
  - a. **For all subcontracts with an estimated value of at least \$20,000, a list of all Subcontractors that the Bidder will use to construct the Project, as well as an indication of whether or not the Bidder has ever worked with a proposed Subcontractor before, including the following information for the three most recent projects on which the Bidder and each Subcontractor have worked together:**
    - i. **Project Owner**
    - ii. **Project Name**
    - iii. **Subcontract Scope**
    - iv. **Subcontract Value**
    - v. **Owner's contact name and phone number.**

**If Bidder and a proposed Subcontractor have not worked together on at least three projects in the five years, Bidder must submit the information set forth above for the three most recent similar projects to the Project that a proposed Subcontractor has worked on.**

**The above Subcontractor information, as well as the information pertaining to each proposed Subcontractor as set forth in section I.3 herein, shall be used in the Owner's determination of the lowest and best bid.**

**Once a Bidder identifies its proposed Subcontractors as set forth herein, and Owner makes no objections, the list shall not be changed unless written approval of the change is authorized by the Owner and Design Professional.**

8. Affidavit as to Personal Property Taxes. Each successful Bidder shall submit, prior to the time of the entry into the Contract, an affidavit in the form required by Section 5719.042, Ohio Revised Code, regarding the status of the Bidder's personal property taxes. A copy of the affidavit form is included with the Contract Documents.
9. No Bidder may withdraw its bid within sixty (60) days after the date bids are opened. The Owner reserves the right to waive any formalities or irregularities or to reject any or all bids.

10. The Owner reserves the right to disqualify bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.
11. Award of Contract. The award of the Contract, when required, will only be made pursuant to a duly adopted resolution of the Owner.

**I. EXECUTION OF CONTRACT**

1. Within the time designated by the Design Professional after award of the Contract, the successful Bidder shall execute and deliver to the Design Professional the required number of copies of the Owner-Contractor Agreement, in the form included in the Contract Documents, and all accompanying documents requested, including, but not limited to, a Contract Bond (if applicable), insurance certificates, and a valid Workers' Compensation Certificate. The successful Bidder shall have no property interest or rights under the Owner-Contractor Agreement until the Agreement is executed by the Owner.

**J. SUBSTITUTIONS/NON-SPECIFIED PRODUCTS**

1. Certain brands of material or apparatus are specified. Each bid will be based on these brands, which may be referred to in the Contract Documents as Standards. The use of another brand (referred to as a substitution or proposed equal in the Contract Documents, when a bidder or the contractor seeks to have a different brand of material or apparatus than that specified approved by the Owner for use in the Project) may be requested as provided herein. Substitutions, however, will not be considered in determining the lowest and best bid.
2. The products specified in the Contract Documents establish a standard of required function, dimension, appearance, and quality.
3. Bidders wishing to obtain approval to bid non-specified products shall submit written requests to the Design Professional a minimum of fifteen (15) working days before the bid date and hour. To facilitate the submission of requests, a Substitution Form is included in the Bid Documents. The Bidder 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 the name of the proposed manufacturer and/or product and a complete description of the proposed product including manufacturer's name and model number or system proposed, drawings, product literature, performance and test data, color selections or limitations, and any other information necessary for evaluation. Include a statement including any changes in other materials, equipment, or other work that would be required if the proposed product is incorporated in the materials, equipment, or other work that would be required if the proposed product is incorporated in the work. The burden of proof of the merit of the proposed product is on the proposer. The Design Professional's decision on approval of a proposed product will be final.

The following will be cause for rejection of a proposed substitution:

- a. Requests submitted by subcontractors, material suppliers, and individuals other than Bidders;
- b. Requests submitted without adequate documentation;
- c. Requests received after the specified cut-off date.
4. When the Design Professional approves a product submission before receipt of bids, the approval will be included in an Addendum, and Bidders may include the pricing of this product in their bid. Bidders shall not rely on approvals made in any other manner.
5. In proposing a non-specified product or a substitution, the Bidder represents and warrants that each proposed product will not result in any changes to the Project, including changes to the Work of other contractors, or any decrease in the performance of any equipment or

systems to be installed in the Project and agrees to pay any additional costs incurred by the Owner and the Owner's consultants as a result of a non-specified or substitute product that is accepted.

6. Following the award of the Contract, there shall be no substitutions for specified products, except pursuant to a Change Order. The Owner in its sole discretion may decline to consider a substitution for a Change Order.

#### **K. ALTERNATES**

1. The Owner may request bids on alternates. If the Owner requests bids on alternates, the Bidder should include the cost of the alternates requested on its Bid Form.
2. At the time of awarding the contract, the Owner will select or reject alternates as it determines is in its best interest. A Bidder's failure to include on its Bid Form the cost of an alternate selected by the Owner and applicable to the Bidder's work shall render the bid non-responsive and be grounds for the rejection of the bid. Otherwise, the failure to include the cost of an alternate will not be deemed material.
3. The Bidder acknowledges that although there is an estimate for the cost of the Project, the market conditions may and frequently do result in the estimate being different from the sum of the bids received, either higher or lower. The Bidder understands that the Owner may include alternates, which may include deduct alternates as well as add alternates, to give it flexibility to build the Project with the funds available. The Bidder further understands and acknowledges that use of add and deduct alternates is a long held customary practice in the construction industry in the State of Ohio. The Bidder also acknowledges that the Owner will not make a decision about the alternates on which to base the award of contracts until the bids are received, and the Owner can compare its available funds with the base bids and the cost or savings from selecting different alternates. The Bidder understands that the award to the Bidder submitting the lowest and best bid will be based on the lowest base bid plus selected alternates, and may result in an award to a Bidder other than the Bidder that submitted the lowest base bid.
4. If, during the progress of the Work, the Owner desires to reinstate any alternate not included in the Contract, the Owner reserves the right to reinstate the alternate at the price bid by the Contractor provided that such action is taken in sufficient time so as not to delay the progress of the work or cause the Contractor additional expense.

#### **L. UNIT PRICES**

1. Where unit prices are requested in the Bid Form the Bidder should quote a unit price. Unless otherwise expressly provided in the Bid Documents, such unit prices shall include all labor, materials, and services necessary for the timely and proper installation of the item for which the unit prices are requested. The unit prices quoted in the bid shall be the basis for any Change Orders entered into under the Owner-Contractor Agreement, unless the Design Professional determines that the use of such unit prices will cause substantial inequity to either the Contractor or the Owner.

#### **M. ADDENDA**

1. The Owner reserves the right to issue Addenda changing, altering, or supplementing the Contract Documents prior to the time set for receiving bids. The Design Professional will issue the Addenda to clarify bidders' questions and/or to change, alter, or supplement the Contract Documents.
2. Any explanation, interpretation, correction, or modification of the Contract Documents will be issued in writing in the form of an Addendum, which shall be the only means considered binding; explanations, interpretations, etc., made by any other means shall NOT be legally binding. All Addenda shall become a part of the Contract Documents.

3. Bidders shall submit written questions to the Design Professional in sufficient time in advance of the bid opening to allow sufficient time for the Design Professional to respond. All Addenda will be issued, except as hereafter provided, and mailed or otherwise furnished to persons who have obtained Contract Documents for the Project, at least seventy-two (72) hours prior to the published time for the opening of bids, excluding Saturdays, Sundays, and legal holidays. If any Addendum is issued within such seventy-two (72) hour period, then the time for opening of bids shall be extended one (1) week with no further advertising of bids required.
4. Copies of each Addendum will be sent only to the Bidders to whom Contract Documents have been issued and to Plan Rooms where copies of the Contract Documents are maintained. Receipt of Addenda shall be indicated by Bidders in the space provided on the Bid Form. Bidders are responsible for acquiring issued Addenda in time to incorporate them into their bid. Bidders should contact the Design Professional prior to the bid opening to verify the number of Addenda issued.
5. Each Bidder shall carefully read and review the Contract Documents and immediately bring to the attention of the Design Professional any error, omission, inconsistency, or ambiguity therein.
6. If a Bidder fails to indicate receipt of all Addenda through the last Addendum issued by the Design Professional on its Bid Form, the bid of such Bidder will be deemed to be responsive only if:
  - a. The bid received clearly indicates that the Bidder received the Addendum, such as where the Addendum added another item to be bid upon and the Bidder submitted a bid on that item; or
  - b. The Addendum involves only a matter of form or is one which has either no effect or has merely a trivial or negligible effect on price, quantity, quality, or delivery of the item bid upon.

## **N. INTERPRETATION**

1. If a Bidder contemplating submitting a bid for the proposed Project is in doubt as to the true meaning of any part of the Contract Documents, it may submit a written request for an interpretation thereof to the Design Professional's representative via email at **cchristie@karpinskieng.com**. Requests received fewer than **7 days** prior to bid opening may not be answered. Any interpretation of the proposed documents will be made by Addendum only, duly signed by the Design Professional, and a copy of such Addendum will be mailed or delivered to each Bidder receiving a set of Contract Documents and each plan room where the Contract Documents are maintained. The Owner will not be responsible for any other explanation or interpretation of the proposed documents.
2. In interpreting the Contract Documents, words describing materials that have a well-known technical or trade meaning, unless otherwise specifically defined in the Contract Documents, shall be construed in accordance with the well-known meaning recognized by the trade.
3. Bidders are responsible for notifying the Design Professional in a timely manner of any ambiguities, inconsistencies, errors, or omissions in the Contract Documents. The Bidder shall not, at any time after the execution of the Contract, be compensated for a claim alleging insufficient data, incomplete Contract Documents, or incorrectly assumed conditions regarding the nature or character of the Work, if no request was made by the Bidder prior to the bid opening.

## **O. STATE SALES AND USE TAXES**

1. The Owner is a political subdivision of the State of Ohio and is exempt from taxation under the Ohio Sales Tax and Use Tax Laws. Building materials that the successful Bidder purchases for incorporation into the Project will be exempt from state sales and use taxes if

the successful Bidder provides a properly completed Ohio Department of Taxation Construction Contract Exemption Certificate to the vendors or suppliers when the materials are acquired. The Owner will execute properly completed certificates on request.

**P. DATE FOR SUBSTANTIAL COMPLETION/ DATE FOR FINAL COMPLETION /LIQUIDATED DAMAGES**

1. The Date for Substantial Completion (aka Contract Time), Date for Final Completion, and Liquidated Damages shall be as defined and set forth in the Owner-Contractor Agreement. **By submitting its Bid, each Bidder agrees that the period for performing its Work is reasonable.**

**Q. OWNER'S RIGHT TO WAIVE DEFECTS AND IRREGULARITIES**

1. The Owner reserves the right to waive any and all irregularities provided that the defects and irregularities do not affect the amount of the bid in any material respect or otherwise give the Bidder a competitive advantage.

**R. MODIFICATION/WITHDRAWAL OF BIDS**

1. Modification. A Bidder may modify its bid by written communication to the Owner addressed to the Owner's Representative at any time prior to the scheduled closing time for receipt of bids, provided such written communication is received by Owner's Representative prior to the bid deadline. The written communication shall not reveal the bid price, but should provide the addition or subtraction or other modification so that the final prices or terms will not be known until the sealed bid is opened. If the Bidder's written instructions with the change in bid reveal the bid amount in any way prior to the bid opening, the bid may be rejected as non-responsive.
2. Withdrawal Prior to Bid Deadline. A Bidder may withdraw its bid at any time for any reason prior to the bid deadline for the opening of bids established in the Request for Bids. The request to withdraw shall be made in writing to and received by the Owner's Representative prior to the time of the bid opening.
3. Withdrawal after Bid Deadline.
  - a. All bids shall remain valid and open for acceptance for a period of at least 60 days after the bid opening; provided, however, that a Bidder may withdraw its bid from consideration after the bid deadline when all of the following apply:
    - (1) the price bid was substantially lower than the other bids;
    - (2) the reason for the bid being substantially lower was a clerical mistake, rather than a mistake in judgment, and was due to an unintentional and substantial error in arithmetic or an unintentional omission of a substantial quantity of work, labor, or material;
    - (3) the bid was submitted in good faith; and
    - (4) the Bidder provides written notice to the Owner, to the attention of the Owner's Representative, within two (2) business days after the bid opening for which the right to withdraw is claimed.
  - b. No bid may be withdrawn under this provision if the result would be the awarding of the contract on another bid for the bid package from which the Bidder is withdrawing its bid to the same Bidder.
  - c. If a bid is withdrawn under this provision, the Owner may award the Contract to another Bidder determined by the Owner to be the lowest and best bidder or the Owner may reject all bids and advertise for other bids. In the event the Owner advertises for other bids, the withdrawing Bidder shall pay the costs incurred in connection with the rebidding by the Owner, including the cost of printing new Contract Documents, required

advertising, and printing and mailing notices to prospective bidders, if the Owner finds that such costs would not have been incurred but for such withdrawal.

**S. COMPLIANCE WITH APPLICABLE LAWS**

1. By submitting a bid for Work on the Project, the Bidder acknowledges that it is in compliance with applicable federal, state, and local laws and regulations, including, but not limited to, the following:
  - a. Equal Employment Opportunity/Nondiscrimination. The Bidder agrees that if it is awarded a contract that in the hiring of employees for performance of work under the contract or any subcontract, neither it nor any subcontractor, or any person acting on its behalf or its subcontractor's behalf, by reason of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color, shall discriminate against any citizen of the state in the employment of labor or workers who are qualified and available to perform work to which the employment relates. The Bidder further agrees that neither it nor any subcontractor or any person on its behalf or on behalf of any subcontractor, in any manner, shall discriminate against or intimidate any employees hired for the performance of the work under the contract on account of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color.
  - b. Ethics Laws. The Bidder represents that it is familiar with all applicable ethics law requirements, including without limitation Sections 102.04 and 3517.13 of the Ohio Revised Code, and certifies that it is in compliance with such requirements.

**T. FINDINGS FOR RECOVERY**

1. By submitting its bid, each Bidder certifies for reliance of the Owner that it has no unresolved finding for recovery against it issued by the Auditor of the State of Ohio on or after January 1, 2001, except as permitted by Section 9.24 (F) of the Ohio Revised Code.

**U. PREVAILING WAGES**

1. The successful Bidder and all of its subcontractors, regardless of tier, will strictly comply with its obligation to pay a rate of wages on the Project not less than the rate of wages fixed for this Project under Section 4115.04 of the Ohio Revised Code. Additionally, the successful Bidder will comply with all other provisions of Chapter 4115 of the Ohio Revised Code.

**V. OHIO PUBLIC WORKS COMMISSION FUNDING**

1. (Reserved.)

**END OF INSTRUCTIONS TO BIDDERS**

**BID FORM**

**1.01 BID SUBMITTED BY:**

\_\_\_\_\_

(Contractor)

Date bid submitted: \_\_\_\_\_

**1.02 DELIVER TO:**

Board of Commissioners for Richland County  
Attn: Stacey Crall  
50 Park Ave. East  
Mansfield, Ohio 44902

**1.03** Having carefully reviewed the Instructions to Bidders, Drawings, Specifications and other Contract Documents for the Project titled **Richland County Courthouse AC Upgrade Project** including having also received, read, and taken into account the following Addenda:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

and likewise having inspected the site and the conditions affecting and governing the Project, the undersigned hereby proposes to furnish all materials and to perform all labor, as specified and described in the said Specifications and/or as shown on the said Drawings for all Work necessary to complete the Project on a timely basis and in accordance with the Contract Documents regardless of whether expressly provided for in such Specifications and Drawings.

**1.04** Before completing the Bid Form, the undersigned represents that it has carefully reviewed the Request for Bids, Instructions to Bidders, this Bid Form, Form of Bid Guaranty and Contract Bond, Contractor's Affidavit (O.R.C. 5719.042), Owner-Contractor Agreement, General Conditions of the Contract (AIA A201, 2007) (as modified), Drawings, Project Specifications, and other Contract Documents. Failure to comply with provisions of the Contract Documents may be cause for disqualification of the bid.

**1.05 BONDS AND CONTRACT:** If the undersigned is notified of bid acceptance, it agrees to furnish required bonds as indicated in the Instructions to Bidders.

**1.06 COMPLETION OF WORK:** In submitting a bid, the undersigned agrees to execute the Owner-Contractor Agreement in the form included in the Contract Documents and to complete its Work as required by the Contract Documents.

**NOTE A:** The wording of the Bid Form shall be used throughout, without change, alteration, or addition. Any change may cause it to be rejected.

**NOTE B:** Bidder is cautioned to bid only on the Brands or Standards specified.

**NOTE C:** If there is an inconsistency or conflict in the Bid amount, the lowest amount shall control, whether expressed in numbers or words.

**2.01 BID:**

Include the cost of all labor and material for the contract listed below. Bidder is to fill in all blanks related to the Bid Package for which a bid is being submitted. If no bid is submitted for an item, leave the item blank or insert "NO BID" in the blank. For alternate items, indicate whether the amount stated is in addition to or a deduction from the base bid amount (if there is no indication whether the amount for an alternate is an addition or a deduction, the amount shall be a deduction).

**The Engineer will submit for all plan approvals and pay for required fees. These fees in their entirety will be reimbursed to the Engineer from the Contractor upon award. This supersedes all requirements in this regard.**

**2.02** Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Lump Sum – All work, not including unit price work or alternates.

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )  
 (Words) (Figures)

Unit Prices

ITEM	UNIT	Est. QUANTITY	BID UNIT PRICE (figures)	EXTENSION (figures)
1) _____	_____	_____	_____	_____
2) _____	_____	_____	_____	_____
3) _____	_____	_____	_____	_____
4) _____	_____	_____	_____	_____
TOTAL of ALL UNIT PRICE EXTENSIONS:				_____

**2.03** Alternates

NA

### 3.01 INSTRUCTIONS FOR SIGNING

- A. The person signing for a sole proprietorship must be the sole proprietor or his authorized representative. The name of the sole proprietor must be shown below.
- B. The person signing for a partnership must be a partner or his authorized representative.
- C. The person signing for a corporation must be the president, vice president or other authorized representative; or he must show authority, by affidavit, to bind the corporation.
- D. The person signing for some other legal entity must show his authority, by affidavit, to bind the legal entity.

### 4.01 BIDDER CERTIFICATIONS. The Bidder hereby acknowledges that the following representations in this bid are material and not mere recitals:

1. **The Bidder acknowledges that this is a public project involving public funds, and that the Owner expects and requires that each successful Bidder adhere to the highest ethical and performance standards. The Bidder by submitting its bid pledges and agrees that (a) it will act at all times with absolute integrity and truthfulness in its dealings with the Owner and the Design Professional, (b) it will use its best efforts to cooperate with the Owner and the Design Professional and all other Contractors on the Project and at all times will act with professionalism and dignity in its dealings with the Owner, Design Professional and other Contractors, (c) it will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her, and (d) it has read, understands and will comply with the terms of the Contract Documents.**
2. The Bidder represents that it has had a competent person carefully and diligently review each part of the Contract Documents, including any Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work on which the Bidder is submitting its bid. By submitting its bid, each Bidder represents and agrees, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors or omissions in the Contract Documents for which it has not notified the Design Professional in writing at least seven (7) days prior to the bid opening. If there are any such conflicts, inconsistencies, errors or omissions in the Contract Documents, the Bidder (i) will provide the labor, equipment or materials of the better quality or greater quantity of Work; and/or (ii) will comply with the more stringent requirements. The Bidder will not be entitled to any additional compensation for any conflicts, inconsistencies, errors or omissions that would have been discovered by such careful and diligent review, unless it has given such prior written notice to Design Professional.
3. The Bidder represents that it has had a competent person carefully and diligently inspect and examine the entire site for the Project and the surrounding area, including all parts of the site applicable to the Work for which it is submitting its bid, and carefully correlate the results of the inspection with the requirements of the Contract Documents. The Bidder agrees that its bid shall include all costs attributable to site and surrounding area conditions that would have been discovered by such careful and diligent inspection and examination of the site and the surrounding area, and the Bidder shall not be entitled to any Change Order, additional compensation, or additional time on account of conditions that could have been discovered by such an investigation.
4. The Bidder represents, understands and agrees that a) the Claim procedures in the Modified General Conditions are material terms of the Contract Documents, b) if it has a Claim, it will have its personnel provide complete and accurate information to complete and submit the Statement of Claim form on a timely basis, c) the proper completion and timely submission of a Statement of Claim form is a condition precedent to any change in the Contract Sum or the Contract Time(s), and d) the proper and timely submission of the Statement of Claim form provides the

Owner and the Design Professional with necessary information so that the Owner may investigate the Claim and mitigate its damages.

5. The Bidder represents that the bid contains the name of every person interested therein and is based upon the Standards specified by the Contract Documents.
6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a bid by joint venture, each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate bid in the bid have been arrived at independently without collusion, consultation, communication or agreement, or for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or will be made by the Bidder to induce any other Person to submit or not to submit a bid for the purpose of restricting competition; and (d) the statements made in this Bid Form are true and correct.
7. The Bidder will execute the form of Owner/Contractor Agreement in the form included with the Contract Documents, if a Contract is awarded on the basis of this bid, and if the Bidder does not execute the Contract Form for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the Owner.
8. The Bidder certifies that upon the award of a Contract, the Contractor will ensure that all of the Contractor's employees, while working on the Project site, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.
9. The Bidder agrees to furnish any information requested by the Design Professional or the Owner's authorized representative to evaluate that the Bidder has submitted the lowest and best bid and that the bid is responsive to the specifications.
10. The Bidder certifies that it has no unresolved findings for recovery issued by the Auditor of State.
11. The Bidder certifies that it is aware of and in compliance with the requirements of Ohio Revised Code Section 3517.13 regarding campaign contributions.

LEGAL NAME OF BIDDER: \_\_\_\_\_

BIDDER IS (check one):  sole proprietor  partnership  corporation  other legal entity

NAME & TITLE OF PERSON LEGALLY AUTHORIZED TO BIND BIDDER TO A CONTRACT:

Name	Title
DATE SIGNED: _____	SIGNATURE: _____
	ADDRESS: _____
	_____
	TELEPHONE: _____
	FAX: _____
	FEDERAL TAX I.D. # _____

When the Bidder is a partnership or a joint venture, state name and address of each partner in the partnership or participant in the joint venture below:

\_\_\_\_\_  
\_\_\_\_\_  
Name

\_\_\_\_\_  
\_\_\_\_\_  
Address

\_\_\_\_\_  
\_\_\_\_\_  
Name

\_\_\_\_\_  
\_\_\_\_\_  
Address

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Address

\_\_\_\_\_  
\_\_\_\_\_  
Name

\_\_\_\_\_  
\_\_\_\_\_  
Address

END OF SECTION

**OWNER-CONTRACTOR AGREEMENT**

**Owner:** Board of Commissioners for Richland County      **Contractor:** \_\_\_\_\_

**Address:**  
50 Park Ave. East      **Address:**  
\_\_\_\_\_  
\_\_\_\_\_  
Mansfield, Ohio 44902

**Owner's Representative:** Josh Hicks      **Contractor's Representative:** \_\_\_\_\_

**Project:** Richland County Courthouse AC Upgrade      **Contract:** General  
**Project**      **Alternates:** NA  
**Located at:** 50 Park Ave. East, Mansfield, Ohio

This document is an agreement between the Owner and the Contractor for the Work described in the Contract Documents related to the Contract identified above for the Project defined above and is effective as of the date the Agreement is signed by the Owner (the "Effective Date").

The Owner and the Contractor agree as set forth in the following sections:

1. CONTRACT DOCUMENTS. The Contract Documents consist of the following documents:
  - A. Legal Notice;
  - B. Instructions to Bidders;
  - C. Bid Form;
  - D. Owner-Contractor Agreement;
  - E. General Conditions of the Contract for Construction (AIA Document A201-2007), as modified;
  - F. Drawings;
  - G. Specifications;
  - H. Addenda issued;
  - I. Contractor's Personal Property Tax Affidavit (O.R.C. 5719.042);
  - J. Statement of Claim Form; and
  - K. Modifications issued after the execution of the contract, including:
    - i. A Change Order;
    - ii. A Work Change Directive; or,
    - iii. A written order for a minor change of the Work issued by the Design Professional in accordance with the General Conditions.

**Note:** Non-Contract Documents. The following are the reports and tests of subsurface conditions at or contiguous to the Site, if any, that the Design Professional has used in preparing the Contract Documents. These are not Contract Documents. The General Conditions, as modified, contain additional terms related to these reports and tests.

1.

**Note:** Non-Contract Documents. The following are those reports and drawings related to any Hazardous Conditions at the Site, if any. These are not Contract Documents. The General

Conditions, as modified, contain additional terms related to these reports and drawings. (None if none are listed).

2. DESIGN PROFESSIONAL RELATIONSHIP. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Design Professional and the Contractor or any Subcontractor or Material Supplier to the Project. The Design Professional, however, shall be entitled to performance of the obligations of the Contractor intended for its benefit and to enforcement of such obligations, but nothing contained herein shall be deemed to give the Contractor or any third party any claim or right of action against the Design Professional that does not otherwise exist without regard to this Contract. The Contractor and its Subcontractors shall not be deemed to be beneficiaries of any of the acts or services of the Design Professional that are performed for the sole benefit of the Owner. The Contractor shall forward all communications to the Owner through the Design Professional and hereby acknowledges and agrees that any instructions, reviews, advice, approvals, orders, or directives that are rendered to it by the Design Professional are specifically authorized and directed by the Owner to the Contractor through the Design Professional acting on behalf of the Owner.

2.1 The Design Professional (also called the "Architect") is:

Name: Karpinski Engineering

Address: 8800 Lyra Drive, Suite 530,  
Columbus, Ohio 43240

The Design Professional's Representative is Craig Christie

3. TIME FOR COMPLETION AND PROJECT COORDINATION.

3.1 DATE OF COMMENCEMENT. The date of commencement of the Work shall be the date identified as the "Date of Commencement" in the Notice to Proceed issued by the Owner, through the Design Professional, to the Contractor. Such Notice to Proceed may be issued by email and/or through the Design Professional, to the Contractor. If no Notice to Proceed is issued, then the date for commencement shall be the Effective Date of this Agreement.

3.2 CONTRACT TIME.

3.2.1 DATE FOR SUBSTANTIAL COMPLETION. The Project and Work for the Project consists of all labor, materials, equipment, and services necessary for construction of the Project, all in accordance with the Drawings and Specifications prepared by the Design Professional. Substantial Completion is the time at which the Work has progressed to the point where the Work is sufficiently complete, in accordance with the Contract Documents, so that the Work can be utilized for the purposes for which it is intended. Final Completion shall mean that the Work is complete in accordance with the Contract Documents and the Contractor has submitted to the Design Professional all documents required to be submitted to the Design Professional for final payment. The Project will be substantially complete within 224 calendar days of the Date of Commencement.

3.2.2 DATE FOR FINAL COMPLETION. The Project will be finally complete within 30 days of achieving Substantial Completion ("Date of Final Completion").

3.2.3 SHUTDOWN DATES. Due to events scheduled by the Owner and/or other Owner considerations, Contractor will not be able to perform Work on the Project on the following dates (there are no shutdown dates if none listed):

\_\_\_\_\_

Contractor's Construction Schedule for performing the Work shall account for Contractor not being able to perform Work on these dates and the contractual dates for Substantial Completion and Final Completion will not be changed due to Contractor not being able to perform Work on these dates.

3.3 CONSTRUCTION SCHEDULE. The Construction Schedule shall be developed by the Contractor as provided in the Contract Documents.

3.4 LIQUIDATED DAMAGES. If the Contractor does not have its Work on the Project Substantially Complete by the specified Date for Substantial Completion or Finally Complete by the specified Date of Final Completion, the Contractor shall pay the Owner (and the Owner may set off from sums coming due the Contractor) Liquidated Damages in the per diem amounts as set forth in the following tables, whichever may be applicable. "Contract Amount" of the Work will be determined by totaling the cost of all line items of Work, as set forth in the Schedule of Values.

**LIQUIDATED DAMAGES – DATE FOR SUBSTANTIAL COMPLETION**

<u>Original Contract Amount</u>	<u>Dollars Per Day</u>
\$1.00 to \$500,000.00	\$ 750.00
\$500,000.01 to \$2,000,000.00	\$ 1,000.00
\$2,000,000.01 to \$10,000,000.00	\$ 1,300.00
\$10,000,000.01 to \$50,000,000.00	\$ 2,000.00
\$50,000,000.01 and greater	\$ 2,500.00

**LIQUIDATED DAMAGES – FINAL COMPLETION**

<u>Original Contract Amount</u>	<u>Dollars Per Day</u>
\$1.00 to \$500,000.00	\$ 200.00
\$500,000.01 to \$2,000,000.00	\$ 250.00
\$2,000,000.01 to \$10,000,000.00	\$ 325.00
\$10,000,000.01 to \$50,000,000.00	\$ 500.00
\$50,000,000.01 and greater	\$ 625.00

The Contractor acknowledges that such amounts of Liquidated Damages represent a reasonable estimate of the actual damages for loss of or interference with the intended use of the Project that the Owner would incur if the Contractor's Work is not Substantially Complete by its Date for Substantial Completion or Finally Complete by the required date for Final Completion.

3.5 INITIAL DECISION MAKER. The Initial Decision Maker renders initial decisions on Claims in accordance with the claims process set forth in the General Conditions. The Initial Decision Maker shall be the Design Professional, unless a different Initial Decision Maker is identified below:

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
 \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

4. **CONTRACT SUM (also called Contract Price)**. The Contract Sum to be paid by the Owner to the Contractor, as provided herein, for the satisfactory performance and completion of the Work and all of the duties, obligations, and responsibilities of the Contractor under this Agreement and the other Contract Documents is \_\_\_\_\_ Dollars (\$\_\_\_\_\_), subject to adjustment as set forth in the Contract Documents. The Contract Sum includes all federal, state, county, municipal, and other taxes imposed by law, including but not limited to any sales, use, commercial activity, and personal property taxes payable by or levied against the Contractor on account of the Work or the materials incorporated into the Work. The Contractor will pay any such taxes. The Contract Sum includes the following:

Base Bid Amount:        \$ \_\_\_\_\_ (Lump Sum Bid and/or Total of all Unit Price Extensions)

List Accepted Alternates, if any:

Alternate No.	Description	Amount
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

If after Substantial Completion of its Work, the Contractor fails to submit its final payment application with all the documents required to be submitted with such application within ninety (90) days after written notice to do so from the Owner and without prejudice to any other rights and remedies the Owner may have available to it, the balance of the Contract Sum shall become the Owner's sole and exclusive property, and the Contractor shall have no further interest in or right to such balance.

5. **RETAINAGE**. Retainage applicable to the Contract by Ohio Revised Code Sections 153.12, .13, and .14 will be withheld as defined in the Modified General Conditions. The Contractor agrees that the financial institution selected by the Owner for deposit of retained funds is acceptable to the Contractor and will sign any documents requested related to said account.

6. **[NOT USED.]**

7. **GENERAL**.

7.1 **MODIFICATION**. No modification or waiver of any of the terms of this Agreement or of any other Contract Documents will be effective against a party unless set forth in writing and signed by or on behalf of a party. In the case of the Owner, the person executing the modification or waiver must have express authority to execute the Modification on behalf of the Owner pursuant to a resolution that is duly adopted by the Owner. Under no circumstances will forbearance, including the failure or repeated failure to insist upon compliance with the terms of the Contract Documents, constitute the waiver or modification of any such terms. The parties acknowledge that no person has authority to modify this Agreement or the

other Contract Documents or to waive any of its or their terms, except as expressly provided in this section.

7.2 ASSIGNMENT. The Contractor may not assign this Agreement without the written consent of the Owner, which the Owner may withhold in its sole discretion.

7.3 LAW AND JURISDICTION. All questions regarding the validity, intention, or meaning of this Agreement or any modifications of it relating to the rights and obligation of the parties will be construed and resolved under the laws of the State of Ohio. Any suit, which may be brought to enforce any provision of this Agreement or any remedy with respect hereto, shall be brought in the Common Pleas Court of Richland County, Ohio and each party hereby expressly consents to the exclusive jurisdiction of such court to the exclusion of any other court, including any U.S. District Court or any other federal court.

7.4 CONSTRUCTION. The parties acknowledge that each party has reviewed this Agreement and the other Contract Documents and entered into this Agreement as a free and voluntary act. Accordingly, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party will not be employed in the interpretation of this Agreement, the other Contract Documents, or any amendments or exhibits to it or them.

7.5 APPROVALS. Except as expressly provided herein, the approvals and determinations of the Owner and Design Professional will be subject to the sole discretion of the respective party and be valid and binding on the Contractor, provided only that they be made in good faith, i.e., honestly. If the Contractor challenges any such approval or determination, the Contractor has the burden of proving that it was not made in good faith by clear and convincing evidence.

7.6 PARTIAL INVALIDITY. If any term or provision of this Agreement is found to be illegal, unenforceable, or in violation of any laws, statutes, ordinances, or regulations of any public authority having jurisdiction, then, notwithstanding such term or provision, this Agreement will remain in full force and effect and such term will be deemed stricken; provided this Agreement will be interpreted, when possible, so as to reflect the intentions of the parties as indicated by any such stricken term or provision.

7.7 COMPLIANCE WITH LAWS AND REGULATIONS. The Contractor, at its expense, will comply with all applicable federal, state, and local laws, rules, and regulations applicable to the Work, including but not limited to Chapter 4115 of the Ohio Revised Code and Sections 153.59 and 153.60 of the Ohio Revised Code, which prohibit discrimination in the hiring and treatment of employees, with respect to which the Contractor agrees to comply and to require its subcontractors to comply.

7.7.1 NON-DISCRIMINATION. Contractor agrees:

- .1 That in the hiring of employees for the performance of Work under this Agreement or in any subcontract, neither the Contractor, subcontractor, or any person acting on behalf of either of them, shall by reason of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color discriminate against any citizen of the state in the employment of labor or workers who are qualified and available to perform the Work to which the employment relates.
- .2 That neither the Contractor, subcontractor, nor any person acting on behalf of either of them shall, in any manner, discriminate against or intimidate any employee hired for the performance of Work under this Agreement on account of race, creed, sex, disability as defined in Section 4112.01 of the Ohio Revised Code, or color.
- .3 That there shall be deducted from the amount payable to the Contractor by the Owner under this Agreement a forfeiture of twenty-five dollars (\$25.00) as required by Ohio Revised Code Section 153.60 for each person who is discriminated against or intimidated in violation of this Agreement.
- .4 That this Agreement may be canceled or terminated by the Owner and all money to become due hereunder may be forfeited for a second or subsequent violation of the terms of this section of this Agreement.

7.7.2 PREVAILING WAGE RATES. The Contractor and its subcontractors, regardless of tier, shall strictly comply with their obligation to pay their employees working on the Project site at the applicable prevailing wage rates for the type of work, including any changes thereto, pursuant to Ohio Revised Code Chapter 4115.

7.7.3 ETHICS. By signing and entering into this agreement with the Owner, the Contractor represents that it is familiar with all applicable ethics law requirements, including without limitation Sections 102.04 and 3517.13 of the Ohio Revised Code, and certifies that it is in compliance with such requirements. The Contractor understands that failure to comply with the ethics laws is, in itself, grounds for termination of this contract and may result in the loss of other contracts with the Owner.

7.8 JOB MEETINGS. The Contractor or one of its representatives with authority to bind the Contractor will attend all job meetings. The Owner anticipates that job meetings will be scheduled on a weekly basis during construction or as needed. The Contractor will ensure that its Subcontractors also hold regular job meetings at which safety issues and job matters are discussed as these relate to the Work being performed. Job meetings include, but are not limited to, pre-construction meetings, weekly job meetings, weekly safety tool box meetings, and monthly safety meetings.

7.9 PROPERTY TAX AFFIDAVIT. The Contractor's affidavit given under Section 5719.024, Ohio Revised Code, is incorporated herein.

7.10 [Not Used]

7.11 ENTIRE AGREEMENT. This Agreement and the other Contract Documents constitute the entire agreement among the parties with respect to their subject matter and will supersede all prior and contemporaneous, oral or written, agreements, negotiations, communications, representations, and understandings with respect to such subject matter, and no person is justified in relying on such agreements, negotiations, communications, representations, or understandings.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their properly authorized representatives and agree that this Agreement is effective as of the date first set forth above.

Owner: **Richland County, Ohio**

Contractor: \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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# CERTIFICATE

## (Section 5705.41, R.C.)

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The undersigned, fiscal officer of the Owner, certifies that the moneys required to pay that part of the Contract Sum coming due during the current fiscal year, under the Agreement to which this Certificate is attached have been lawfully appropriated for such purpose and are in the appropriate account of the Owner, or in the process of collection to the credit of the appropriate account or fund, free from any previous encumbrances. Moneys due in excess of the Contract Sum shall require an additional and separate Fiscal Officer's Certificate.

DATED: \_\_\_\_\_

\_\_\_\_\_  
Fiscal Officer



**AIA**<sup>®</sup>

# Document A201™ – 2007

## General Conditions of the Contract for Construction

for the following PROJECT:

*(Name and location or address)*

Refer to the Owner/Contractor Agreement for the name, location, and description of the Project

**THE OWNER:**

*(Name, legal status and address)*

Board of Commissioners for Richland County  
50 Park Ave. East  
Mansfield, Ohio 44902

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

Refer to the Owner/Contractor Agreement for address and representative's contact information.

**THE ARCHITECT:**

*(Name, legal status and address)*

Refer to the Owner/Contractor Agreement for the Design Professional's name and contract information. All references to the Architect in this document and the other Contract Documents shall be deemed to refer to the Design Professional identified in the Owner/Contractor Agreement.

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(1766733388)

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## ARTICLE 1 GENERAL PROVISIONS

**§ 1.1 BASIC DEFINITIONS** The definitions in this Section 1.1 shall apply throughout the Contract Documents.

### **§ 1.1.1 THE CONTRACT DOCUMENTS**

~~The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) the Contract Documents identified in the Owner-Contractor Agreement ("Agreement"). A Modification is (1) a Change Order, (2) a Construction Change Directive or (3) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.~~

### **§ 1.1.2 THE CONTRACT**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

### **§ 1.1.3 THE WORK**

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, ~~equipment~~ equipment, paperwork, reports, documentation, other requirements and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

### **§ 1.1.4 THE PROJECT**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

### **§ 1.1.5 THE DRAWINGS**

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

### **§ 1.1.6 THE SPECIFICATIONS**

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

### **§ 1.1.7 INSTRUMENTS OF SERVICE**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

### § 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

### § 1.1.9 SUBSTANTIAL COMPLETION

Substantial Completion is the stage in the progress of the Work when the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy and utilize the Work for its intended use.

### § 1.1.10 DATE FOR SUBSTANTIAL COMPLETION

The Date for Substantial Completion is the Date for Substantial Completion as set forth in the Owner-Contractor Agreement. The Date for Substantial Completion shall only be changed or modified by Change Order, or other Modification, regardless of any dates in the Construction Schedule.

### § 1.1.12 CLAIM

Claim is defined in Section 15.1.1 of these General Conditions.

### § 1.1.13 STATEMENT OF CLAIM FORM

Statement of Claim Form means the Statement of Claim Form included with the Project Manual.

### § 1.1.14 FINAL COMPLETION

Final Completion shall mean that the Work is complete in accordance with the Contract Documents and the Contractor has submitted to the Architect all documents required to be submitted to the Architect for final payment.

## § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the ~~Contractor~~ Contractor whether or not expressly shown or described. The Contract Documents are complementary, and what is required by one shall be as binding as if required by ~~all~~ all and performance by the Contractor shall be required ~~only~~ to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.4 In the event of an inconsistency between the Drawings and Specifications or within either document that is not clarified by addenda, the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

## § 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

## § 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

## § 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 ~~The~~ Unless otherwise indicated in the Owner-Architect Agreement, the Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own

or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

#### **§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM**

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

#### **§ 1.7 PRECONSTRUCTION CONFERENCE**

Before any Work at the Site is started, a conference attended by Owner, Contractor, Architect, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the Submittal Schedule, Construction Schedule, and Schedule of Values, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

#### **§ 1.8 INITIAL ACCEPTANCE OF SCHEDULES**

At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Architect, and others as appropriate will be held to review for acceptability to Architect the schedules submitted in accordance with the Contract Documents, including the Submittal Schedule, Construction Schedule, and Schedule of Values. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Architect and Owner.

### **ARTICLE 2 OWNER**

#### **§ 2.1 GENERAL**

~~§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative may designate in writing a representative. The Owner's representative shall only have such authority as is expressly authorized by the Owner's legislative body and as is permitted under the law of the State of Ohio.~~

~~§ 2.1.2 The Owner may prepare a Notice of Commencement for the Project, as required by the Ohio Revised Code and shall furnish to the Contractor a copy of the Notice of Commencement for the Project within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.~~

#### **§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

~~§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements. The Owner shall complete the certificate(s) of available resources required by the Ohio Revised Code as evidence of available funds to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.~~

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 ~~The Owner shall~~ To the extent necessary for the Work and as requested by the Contractor, the Owner may furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

### § 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or ~~repeatedly~~ fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

### § 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within ~~a ten-day period~~ two (2) business days after receipt of written notice from the Owner to commence ~~and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case or thereafter proceed without interruption to correct such default or neglect within fifteen (15) days of such notice, the Owner, without prejudice to its other remedies, may correct such deficiencies.~~ correct such deficiencies. In such case or thereafter proceed without interruption to correct such default or neglect within fifteen (15) days of such notice, the Owner, without prejudice to its other remedies, may correct such deficiencies. If such default or neglect results in a threat to the safety of any person or property, the Contractor shall immediately commence to correct such default or neglect upon receipt of written or oral notice thereof. In all such cases of default or neglect, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the ~~reasonable cost of correcting such deficiencies, including Owner's expenses and costs arising out of or related to the investigation and correction of such deficiencies, including the Owner's attorneys' and consultants' fees and expenses and other expenses and~~ compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. The Contractor irrevocably designates the Owner as the Contractor's attorney-in-fact to execute the Change Orders provided for in this section.

## ARTICLE 3 CONTRACTOR

### § 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract ~~Documents.~~ Documents and shall comply with all rules, regulations and policies of the Owner and all applicable federal, State, and local codes, statutes, ordinances, and regulations in the performance of the Work on the Project.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

### § 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the ~~Contract Agreement~~ by the Contractor is a representation that the Contractor has visited the site, ~~become generally~~ carefully and diligently investigated the entire site and the surrounding area, including location, condition and layout of the site and utility locations, ~~become thoroughly~~ familiar with local conditions under which the Work is to be performed and ~~correlated personal observations performed, including the generally occurring climatic conditions and carefully correlated personal observations and other information~~ with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the ~~Work, Work and in addition to the reviews required by the Instructions to Bidders and by these General Conditions,~~ carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section ~~2.2.3, 2.2.3.~~ In addition prior to performing each portion of its Work, the Contractor shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. ~~These obligations are for the purpose of facilitating coordination and construction by the Contractor and it, including the Work of the other Contractors. The obligations of this Section 3.2.2 are for the purposes of facilitating construction by the Contractor, for determining that the Work is constructible, for determining if the work of the Contractor is coordinated in the Contract Documents with the work of the other Contractors, and for verifying that field conditions, including the Work of other Contractors, are consistent with the information in the Contract Documents and ready for the Work. These obligations are not for the purpose of discovering errors, omissions, or inconsistencies errors or omissions in the sizing, load bearing capacity or other similar design information in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions and the Owner any errors or omissions in the sizing, load bearing capacity or other similar design information in the Contract Documents discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.~~

§ 3.2.3 ~~The Contractor is not required to ascertain that the Contract Documents are in accordance. Additionally, prior to performing each portion of the Work, the Contractor shall have a competent person review the Contract Documents for compliance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require. authorities and shall immediately report in writing any conflicts with such laws, statutes, ordinances, building codes, and rules and regulations to the Architect and Owner.~~

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. ~~If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.~~

### § 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and ~~attention, attention and consistent with the skill of a competent contractor.~~ The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, ~~unless the Contract Documents give other specific instructions concerning these matters, the Contract Documents.~~ If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods,

techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. ~~If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner required means, methods, techniques, sequences or procedures.~~

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§3.3.4 The Contractor shall maintain readily accessible to the Architect and the Owner at the Project site, the following documents, all of which shall be "public records" within the meaning of the Ohio Public Records Act:

- .1 A set of Drawings and Project Manuals, as approved by the appropriate Building Department.
- .2 Unless otherwise specifically provided in the Contract Documents, a neat and legible set of As-Built Drawings and Project Manuals on which:
  - .1 The Contractor shall keep an accurate record of all approved changes made to the Drawings to show actual installation where installation varies from Work as originally shown, including the exact location and depth of underground utility lines. Any such changes shall be noted by Change Order Number and drawn neatly in a contrasting color;
  - .2 When Shop Drawings are used, the Contractor shall cross-reference the corresponding sheet numbers on the As-Built Drawings and sections of the Specifications;
  - .3 A daily log at the Project site in which it has recorded Project-related information, including, but not limited to, the weather, number of workers on site for each Contractor, identification of equipment, Work accomplished, problems encountered, and other similar relevant Project data;
  - .4 As applicable to its Work, all Bulletins, Addenda, approved Shop Drawings, Product Data, Samples, manufacturers' installation, operating and/or maintenance instructions or requirements, certificates, warranties, Change Orders, Change Directives, other Modifications and complete back up data for all Change Orders, Change Directives and other Modifications;
  - .5 All the Contractor's communications, including but not limited to letters, memoranda, e-mail, invoices and bills of lading, arising out of or related to the Project with the Architect, Owner and/or its subcontractors, materialmen and/or employees; and
  - .6 The payroll reports for its employees and the employees of its Subcontractors working on the Project.
- .3 Claims for the Contractor's failure to comply with the Ohio Public Records Act, if applicable, shall be claims under Section 3.18.1.

### § 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, which the Owner may

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withhold in its sole discretion, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them, only assign competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks assigned. If the Owner or Architect deems any employee of the Contractor or a Subcontractor unsatisfactory, the Contractor will transfer or require its Subcontractor to transfer such employee from the Project immediately and replace or require the prompt replacement of such employee with a competent employee.

### **§ 3.5 WARRANTY**

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 3.5.2** If the Contractor breaches any of its obligations under Section 3.5.1, the Contractor will pay the Owner for its damages and expenses, including but not limited to attorneys' and consultants' fees and expenses, arising out of or related to such breach.

**§ 3.5.3** Except to the extent that the Contractor has notified the Architect in writing at least ten (10) days prior to the bid opening of specific problems with specified equipment or materials, the Contractor warrants that any equipment or materials selected by it from among the equipment or materials specified will be fit for its intended purposes, compatible with the design intent, and, if the other contractors construct their work in accordance with the Contract Documents, constructible all without additional cost to the Owner. Such notice shall be conspicuously stated at the top of the first page in not less than twelve point type as follows: "**NOTICE OF PROBLEMS WITH SPECIFIED EQUIPMENT OR MATERIALS.**"

**§ 3.5.4 Additional Warranties.** The Contractor gives the Owner the following additional warranties:

- .1 If the Contractor's Work includes all or part of the exterior roofing system, provided that the Architect has designed the roofing system to be weather tight, the Contractor warrants that the roofing system will be weather tight; and
- .2 If the Contractor's Work includes all or part of the exterior wall system, provided that the Architect has designed the wall system to be weather tight, the Contractor warrants that the wall system will be weather tight.

Weather tight shall mean the roofing and/or wall system does not permit any infiltration of water in any form that would have any adverse effect on the Owner's operations or the Project.

### **§ 3.6 TAXES**

The Contractor shall pay sales, consumer, use-use, commercial activity, and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect. The Contractor acknowledges that the Owner is a political subdivision of the State of Ohio or tax exempt organization and is exempt from state sales, use, and commercial

activity taxes. Upon written request, the Owner will provide the Contractor with any applicable certificates of exemption.

### § 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, and except as provided in Section 3.7.1.1, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.1.1 Owner shall pay all charges of utility owners for connections for providing permanent service to the Work. If applicable, Owner will obtain and pay for the following construction permits and licenses:

Permit to Install from the Ohio EPA

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of the Work.

~~§ 3.7.3 If the Contractor~~ In addition to its other obligations under the Contract Documents, if the Contractor or any of its Subcontractors or Sub-subcontractors performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders and all other requirements of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** ~~If Except as provided herein, if~~ the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.7.6 Prevailing Wage Rates. Each laborer, worker, or mechanic employed by Contractor, Subcontractor, or other persons performing Work on the Project shall be paid not less than the applicable prevailing rate of wages pursuant to Ohio Revised Code Chapter 4115.

### § 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 ~~Allowances-allowances~~ shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum ~~but not in the allowances; and shall not be chargeable against the allowance;:~~ and
- .3 ~~Whenever-whenver~~ costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect ~~(4)-the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2,3.8.2.1.~~ The Contractor must obtain the Change Order before incurring any costs in excess of an allowance.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 SUPERINTENDENT & CONSTRUCTION SUPERVISION

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. ~~The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.~~ replace the assigned Superintendent without the consent of the Owner, except with another Superintendent who is satisfactory to the Owner. If the Contractor proposes to change the Superintendent, the Contractor must submit to the Architect a written request for the change, including the justification for the change, the name and qualifications for the proposed replacement, and the time frame within which the change is proposed to take place. The Contractor shall provide promptly any related additional information the Architect or Owner requests.

### § 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 ~~The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work within five (5) days of the date of any request from the Architect or the Owner to submit scheduling information, shall submit the scheduling information for its Work to the Architect and to the Owner in such form and in such detail as requested. The Contractor shall prepare the Construction Schedule within ten (10) days of the date of the Effective Date. The Construction Schedule shall include and be consistent with any applicable Milestone Dates in the Bidding Documents. The Contractor shall prepare all Construction Schedules in CPM format unless provided otherwise in the Contract Document or otherwise agreed in writing by the Owner. The Construction Schedule is for the purpose of coordinating the timing, phasing and sequence of the Work of the Contractors and shall not change or modify the Date for Substantial Completion. The Date for Substantial Completion shall only be changed or modified by Change Order or other Modification, regardless of the date in the Construction Schedule.~~

- .1 The Contractor shall update the Construction Schedule each month;
- .2 The Construction Schedule shall be manpower loaded and shall include a schedule of the submission of Shop Drawings, Product Data and Samples;
- .3 The Contractor shall, on a weekly basis, prepare and submit to the Architect a written report describing the activities begun or finished during the preceding week, Work in progress, expected completion of the Work, a look-ahead projection of all activities to be started or finished in the upcoming two (2)

weeks, including without limitation the Contractor's workforce crew size and total resource hours associated with such Work and any other information requested;

.4 The float in the Construction Schedule and any updates to it shall belong to the Owner. Float shall mean the amount of time by which activities may be delayed without affecting the Contract Date for Substantial Completion; and

.5 The Contractor's obligation to submit requested scheduling information is a material term of its Contract. If the Contractor fails to submit requested scheduling information in writing within five (5) days of a request for such information from the Architect or Owner, the Contractor shall pay and the Owner may withhold from the Contractor Liquidated Damages at the rate of Fifty Dollars (\$50.00) a day for each calendar day thereafter that the Contractor fails to submit the requested information.

**§ 3.10.2** The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

**§ 3.10.3** The Contractor shall perform the Work in ~~general accordance with the most recent schedules submitted to the Owner and Architect.~~ accordance with the most recent Construction Schedule submitted to the Owner and Architect, provided that the Contractor shall comply with any orders under Section 3.10.4.

.1 **Notice of Delays.** The Contractor shall give the Owner and the Architect verbal notice of any delay affecting its Work within two (2) business days of the commencement of the delay. In addition, the Contractor shall give the Owner and Architect written notice of the delay within ten (10) business days of the commencement of the delay with specific recommendations about how to minimize the effect of the delay. The written notice of the delay shall conspicuously state at the top of the first page of the notice in twelve point type or larger that it is a "**NOTICE OF DELAY.**" A notice of a delay shall not constitute the submission of a Claim. The Contractor acknowledges and agrees that these notice provisions are material terms of the Contract Documents and give the Owner the opportunity to take action to minimize the cost and/or effect of delays.

**§ 3.10.4** If the Architect or the Owner determines that the performance of the Work has not progressed so that it is likely that the Contractor will not Substantially Complete its Work by its Date for Substantial Completion, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the Work, including, without limitation: (i) working additional shifts or overtime; (ii) supplying additional manpower, equipment, and facilities; and (iii) other similar measures (collectively referred to as "Corrective Measures"). If the Owner orders the Contractor to take such corrective measures, the Contractor shall take and continue such Corrective Measures until the Owner is satisfied that the Contractor is likely to Substantially Complete its Work by its Date for Substantial Completion.

.1 The Contractor shall not be entitled to adjustment in the Contract Sum in connection with the Corrective Measures required by the Owner pursuant to this Section 3.10.4, unless the Contractor is able to establish that it is entitled to additional compensation under the terms of the Contract Documents.

### **§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE**

The Contractor shall maintain at the site for the Owner ~~one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals.~~ and the Architect the documents required by Section 3.3.4. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed, or earlier when required by the Contract Documents.

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

- .1 If the Shop Drawings or other submittals show variations from the requirements of the Contract Documents, the Contractor shall specify such variations in the Contractor's letter of submittal to the Architect accompanying the submittal. Variations must be approved by Change Order.
- .2 If the Contractor's Shop Drawings or its submittals do not contain sufficient information, and the Architect must perform more than two reviews with respect to any submittal, the Contractor shall pay the additional costs and expenses incurred by the Owner as a result of such additional reviews by the Architect, and the Owner may withhold from sums due or coming due the Contractor amounts to cover such additional costs and expenses.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, ~~or will do so~~ and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of

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the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design ~~professional~~, professional who shall comply with reasonable requirements of the Owner regarding qualifications and insurance and whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

**§ 3.12.11 Instructions.** Unless otherwise expressly provided in the Contract Documents, the Contractor shall provide typed or printed instructions covering the operation and maintenance of each item of equipment furnished in a notebook submitted to the Architect for review and transmittal to the Owner. The instructions, as applicable, shall include the following:

- .1 Any schematic piping and wiring diagrams;
- .2 Any valve charts and schedules;
- .3 Any lubrication charts and schedules;
- .4 Guides for troubleshooting;
- .5 Pertinent diagrams and maintenance instructions for all equipment;
- .6 Manufacturer's data on all equipment;
- .7 Operating and maintenance instructions for all equipment;
- .8 Manufacturer's parts list;
- .9 Any testing procedures for operating tests; and
- .10 Other instructions and materials as required by the Contract Documents.

The Contractor shall provide two (2) copies of the above instruction books on or before the Substantial Completion of its Work. The books shall describe the information to be covered clearly and in detail and shall be in form and content satisfactory to the Architect and the Owner.

**§ 3.12.12 Testing Following Final Completion.** The Contractor will participate in training sessions for the Owner's maintenance personnel. During the first twelve (12) months following Final Completion of each part of the Project, the Contractor (without additional compensation) will participate in tests scheduled by the Owner, which test the following building systems to the extent applicable to the Contractor's Work: air conditioning system (which shall be conducted during the first full summer following the completion of the Project or at such earlier time as scheduled by the Owner), heating system (which shall be conducted during the first full winter following the completion of the Project or at such earlier time as scheduled by the Owner), and such other systems, including the electrical system, plumbing system, fire protection system, communications systems, as reasonably requested by the Owner. The Owner will be advised when the testing will be conducted and may observe the testing. It is intended that the testing be a comprehensive series of operation tests designed to determine whether the systems are fully operational in accordance with the requirements of the Contract Documents. If it appears that any of the systems, including equipment and software, do not conform to the requirements of the Contract Documents, the Contractor will remedy the defective and/or non-conforming work as provided in Section 12.2.2.1 of these General Conditions.

**§ 3.12.13 Manufacturer's Instructions or Requirements.** Without waiving, modifying or relieving the Contractor from its other obligations under the Contract Documents, including its warranties and any performance specifications, the Contractor shall furnish and install its Work in accordance with any applicable manufacturer's instructions or requirements. Prior to installation, the Contractor shall review carefully the manufacturer's

instructions and requirements, and if there is a conflict between such instructions or requirements and the Drawings and/or Specifications, the Contractor shall request clarification from the Architect prior to commencing the Work.

### **§ 3.13 USE OF SITE**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.  
**§3.13.1** The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

**§ 3.13.2 Signage.** The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner, which may be withheld in the sole discretion of the Owner.

**§ 3.13.3 Restricted Activities.** Unless expressly permitted by the Contract Documents or by the Owner in writing, the Contractor shall not interfere with the Owner's ongoing operations, shall not permit any of its employees or its Subcontractor's or materialmen's employees to use any existing facilities on the Project site, including, without limitation, lavatories, toilets, entrances, and parking areas, and shall not permit its employees or its Subcontractor's or materialmen's employees to bring any tobacco products, alcoholic beverages, controlled substances, or firearms onto the Project site or any other property owned or controlled by the Owner. Additionally, the Contractor shall not permit its employees or its Subcontractor's or materialmen's employees to use any radios, tape or compact disc players, or sound amplification equipment that is audible outside of the immediate area where the Work is being performed.

**§ 3.13.4** The Contractor shall conspicuously post notice of the prohibitions listed in the preceding subparagraphs at the Project site in the same locations as OSHA notices are required to be posted, and shall verbally inform all of the Contractor's employees, and the employees of the Contractor's Subcontractors and materialmen, regardless of tier, of such prohibitions.

### **§ 3.14 CUTTING AND PATCHING**

**§ 3.14.1** The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

### **§ 3.15 CLEANING UP**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor. The Architect's determination of the costs to be charged to the Contractor shall be final and binding.

### **§ 3.16 ACCESS TO WORK**

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

### § 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

### § 3.18 INDEMNIFICATION

**§ 3.18.1** To the fullest extent permitted by law the Contractor shall ~~indemnify~~ ~~indemnify, defend,~~ and hold harmless the Owner, Architect, Architect's consultants, and ~~agents~~ ~~the officers, directors, partners, consultants, subcontractors, agents,~~ and employees of any of them from and against ~~claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.~~ any and all claims (whether alleged or proven), demands, costs, losses and/or damages, including but not limited to all fees and charges of architects, attorneys and other professionals and all court, arbitration or other dispute resolution costs, arising out of or relating to any claim or action, legal or equitable, caused or alleged to have been caused by the Contractor's performance of the Work or any breach of Contractor's obligations under the Contract Documents, including but not limited to the breach of any warranty provided in the Contract Documents.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

**§ 3.19 Compliance with Demolition Laws.** The Contractor will, at the Contractor's expense, fully comply with all statutes and regulations regarding notification and disposal of construction and demolition debris, including, without limitation, Ohio Revised Code Chapter 3714 and the regulations enacted thereunder.

### **§ 3.20 Underground Utility Facilities.**

**§ 3.20.1** The Contractor, at least two (2) working days prior to commencing any excavation or demolition, shall give notice to the Architect and the Owner and to the registered underground utility protection services and the owners of underground utility facilities shown on the Drawings and Specifications.

**§ 3.20.2** The Contractor shall notify immediately the occupants of any premises near the Work and the Architect and the Owner as to any emergency that it may create or discover. The Contractor shall notify immediately the operator of any underground utilities and the Architect and Owner of any break or leak in the lines of such operator or any dent, gouge, groove, or other damage to such lines or to their rating or cathodic protection, made or discovered in the course of excavation.

### **§ 3.21 Waivers of Claims**

**§ 3.21.1** Beginning with the second Application for Payment, the Contractor will submit (a) a release and/or waiver of claims, including a waiver of all lien rights, in the form required by the Owner for itself and each of its Subcontractors and Suppliers, regardless of tier, and (b) a complete list of its Subcontractors and Suppliers or as required by the Owner.

## ARTICLE 4 ARCHITECT

### § 4.1 GENERAL

§ 4.1.1 The Owner ~~shall~~ may retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the ~~Owner, Contractor~~ Owner and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner ~~shall employ a successor architect as to whom the Contractor has no reasonable objection and~~ may employ a successor architect whose status under the Contract Documents shall be that of the Architect.

### § 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 ~~The~~ Unless otherwise set forth in the Agreement, the Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative ~~during construction~~ (1) during construction, (2) until the date the Architect issues the final Certificate for Payment, For Payment, and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Section 12.2 and for such additional periods as the Owner and Architect may agree. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract ~~Documents.~~ Documents and as authorized by the Owner's Board.

§ 4.2.2 The Architect will visit the site ~~at intervals appropriate to the stage of construction, or as otherwise agreed upon with the Owner,~~ Owner (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work ~~observed~~ is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner ~~reasonably~~ reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. ~~The Architect will not be responsible.~~ Except as required by its duty of care owed to the Owner, the Architect (a) will not be responsible to the Owner for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect Documents, and (b) will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

### § 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors under contract directly with the Owner shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed.

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However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the ~~date of final completion~~; Date of Final Completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; ~~and issue and execute and distribute~~ a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be ~~as set forth in an exhibit to be incorporated in the Contract Documents~~; consistent with these General Conditions.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them and the Contractor establishes the Architect's delay in responding delayed the Work.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### § 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within ~~14~~ twenty (20) days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the ~~14 day~~ twenty (20) day period shall constitute notice of no ~~reasonable objection~~ objection. Copies of all bids or other proposals from Subcontractors or Sub-subcontractors shall, upon the request of the Owner or Architect, be submitted to the Owner and the Architect.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made ~~reasonable and~~ timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has ~~reasonable an~~ objection to a person or entity proposed by the Contractor, the Contractor shall propose within 10 days another to whom the Owner or Architect has no ~~reasonable~~ objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect ~~makes reasonable objection to such substitution~~ objects to such substitute. The Owner, through the Architect, may require the Contractor to change any Subcontractor previously approved and, except as provided hereafter, the Contract Sum shall be increased or decreased by the difference in cost resulting from such change. If the Contractor is in default because of the Subcontractor's performance, then the Contractor shall not be entitled to any adjustment in the Contract Sum and shall remain liable to the Owner for any damages or losses caused by such default.

### § 5.3 SUBCONTRACTUAL RELATIONS

By appropriate ~~agreement, written where legally required for validity, written agreement,~~ the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may

be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

#### § 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

~~When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.~~

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in ~~cost~~ direct costs incurred by the Subcontractor resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. ~~If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.~~

### ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

#### § 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, ~~and to and/or~~ award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall ~~provide for coordination of~~ coordinate the activities of the Owner's own ~~forces~~ forces, if any, and of each separate ~~contractor~~ contractor, if any, with the Work of the Contractor, who shall cooperate with them. ~~The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.~~

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

#### § 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable

for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

~~§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction. [This section is deleted.]~~

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the ~~Owner or Owner~~, separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### § 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible. The Architect's decision allocating the cost shall be final and binding on the Contractor and the Owner.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 If a fixed fee is not agreed upon by the parties, then, the Contractor's fee shall be 15 percent for the following costs incurred:

- a. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
- b. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

§ 7.1.4.1 Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Section 7.1.4 is that the Subcontractor who actually performs the Work, at whatever tier,

will be paid a fee of 15 percent of the costs incurred by such Subcontractor Section 7.1.4 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor except, the maximum total allowable costs to Owner shall be the cost of the Work plus a maximum collective aggregate fee for Contractor and all tiers Subcontractors of 25 percent.

**§ 7.1.5** If a fixed fee is not agreed upon by the parties, then, the Contractor's fee shall be 5 percent for the following costs incurred: Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Architect, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

## **§ 7.2 CHANGE ORDERS**

**§ 7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

**§ 7.2.2** Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

**§ 7.2.3** The agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including but not limited to, all direct, indirect and cumulative costs associated with such change and any and all adjustments to the Contract Sum and the Contract Time.

## **§ 7.3 CONSTRUCTION CHANGE DIRECTIVES**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**§ 7.3.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Subject to a not-to-exceed amount, a Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.3.7; or
- .5 Except where unit prices are applicable, that Contractor agrees and represents to the Owner for the Owner's reliance that all Change Order or Change Directive pricing submitted by the Contractor shall be based on the Contractor's actual costs or the Contractor's reasonable estimate of what would be its actual costs plus permitted overhead and profit.

**§ 7.3.4** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and ~~present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data.~~ present a true and accurate itemized accounting of all labor and material with appropriate supporting data. If the Architect prescribes a format for such accounting, the Contractor shall provide the accounting in such format. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; ~~and~~
- .5 Additional costs of supervision and field office personnel directly attributable to the ~~change~~ change;

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the ~~Architect.~~ Architect plus the credit for overhead and profit. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, or decrease if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order conspicuously marked at the top of the order as a "MINOR CHANGE IN THE WORK" and signed by the Architect and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

## ARTICLE 8 TIME

### § 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 ~~The date of commencement~~ Date of Commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### § 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. ~~The date of commencement~~ Date of Commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### § 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an ~~act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay.~~ Excusable Delay as set forth elsewhere in these General Conditions, and timely and sufficient notice has been given to the Owner as set forth in these General Conditions, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### § 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

### § 9.2 SCHEDULE OF VALUES

~~Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, Within 10 days of the Effective Date, the Contractor shall submit to the Architect, before the first Application for Payment, for the Architect's review and approval,~~ a schedule of values allocating the entire Contract Sum to the various portions of the Work and 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, By submitting such schedule of values, the Contractor represents for the reliance of the Architect and the Owner that the allocation of the values to the portions of the Work is a fair and reasonable estimate of such allocation. Once approved, the Contractor will not change the allocations in the Schedule of Values without the Architect's further approval. The Architect may from time to time require the Contractor to adjust such schedule if the Architect determines it to be in any way unreasonable or inaccurate. The Contractor then shall adjust the schedule of values as required by the Architect within ten (10) days. This schedule, with any adjustments approved by the Architect shall be used as a basis for reviewing the Contractor's~~

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Applications for Payment. The Contractor shall include a separate line item in its schedule of values for its Project Superintendent.

### § 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, values for completed portions of the Work. Such application shall be notarized, if required, and supported by such be submitted with any supporting documentation required by the Contract Documents or by the Architect. The Application for Payment will be in the form and submitted with the number of copies of it and all related documents as required by the Contract Documents. The Contractor also shall submit with its Application for Payment such other data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 The Contractor shall submit its Application for Payment to the Architect on AIA Documents G-702 and G-703 and Certification on or before the twenty-fifth (25th) day of each month for Work completed to that date. The Owner will issue payment to the Contractor within thirty (30) days from the date of its receipt of the certified Application for Payment from the Architect.

§ 9.3.1.4 Partial payments to Contractor for labor performed shall be made at the rate of 92 percent of the amount invoiced through the Application for Payment that shows the total Contract Completion at 50 percent or greater, pursuant to Ohio Revised Code Section 153.14. After the Contract is 50 percent complete as evidenced by payments in the amount of at least 50 percent of the Contract Price to Contractor, no additional funds shall be retained from payments for labor.

§ 9.3.1.5 Documentation. Upon request, the Contractor immediately will supply the Owner and the Architect with such information as may be requested so as to verify the amounts due to the Contractor, including but not limited to original invoices for materials and equipment and documents showing that the Contractor has paid for such materials and equipment, and so as to verify that amounts due laborers, Subcontractors, and Material Suppliers have been paid to them. The failure to provide such information shall be justification for withholding payment to the Contractor.

§ 9.3.1.6 Construction Retainage Account. The Owner and the Contractor agree that any interest-bearing account required in connection with this Agreement shall be established at a bank or savings and loan association in the State of Ohio used by the Owner, or another fund selected by Owner, and that the depository agent shall be compensated for its services in accordance with the schedule approved by the Owner from income from the account or fund. If the costs to establish and maintain the account or fund will exceed the interest earned on the account or fund, the Contractor agrees that the Owner may retain the funds in a special cost center within the Owner's construction or permanent improvement fund.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The Contractor agrees to bond off any lien filed on the Project by providing a bond meeting the requirements of Ohio Revised Code. The Contractor shall do so within sixty (60) days of the filing of the lien.

#### § 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's ~~Application for Payment, properly completed Application for Payment and Certification, and such other data substantiating the Contractor's right to payment as the Owner or Architect may require,~~ either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### § 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not ~~remedied;~~ remedied; or the Contractor is in default of the performance of any of its obligations under the Contract Documents including but not limited to: failure to provide sufficient skilled workers, failure to provide scheduling information as provided in Section 3.10.1, failure to prepare the Construction Schedule as provided in Section 3.10.1, failure to conform to the Project Construction Schedule and/or failure to coordinate its Work with the work of other contractors;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or
- .7 ~~repeated~~ failure to carry out the Work in accordance with the Contract Documents. Documents; or

.8 the Contractor is in default of the performance of any of its obligations under another contract it has with the Owner.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

#### § 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall ~~make payment in the manner and within the time provided in the Contract Documents,~~ issue payment to the Contractor within thirty (30) days from the date of its receipt of the certified Application for Payment from the Architect and shall so notify the Architect.

§ 9.6.2 The Contractor shall ~~pay each Subcontractor no later than seven days after promptly,~~ within the time period required by Ohio law, pay each Subcontractor upon receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner. Neither the Contractor nor its Subcontractors shall withhold retainage from its Subcontractors or their sub-subcontractors beyond the retainage withheld by the Owner from the Contractor.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

#### § 9.7 FAILURE OF PAYMENT

~~If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, Owner does not pay the Contractor the amount certified by the Architect within thirty (30) days after receipt of the certified Application of Payment for the Architect,~~ then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has

been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

## § 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The Work shall be fit for its intended purpose if it is free from any known failures or known nonconformities that the Owner in its sole discretion determines to be too substantial to be addressed pursuant to the punchlist. Failure to provide contract documentation shall be considered a nonconformity for purposes of this Section 9.8.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final ~~payment~~ payment together with all required documents neatly bound and indexed. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When a specific manufacturer's warranty is required by the Specifications, the Contractor shall state in writing to the Architect that all the manufacturer's requirements for the issuance of the warranty has been completed and that the Work is ready for the Architect's and Owner's inspection. All manufacturer's warranties required for the Work shall commence as of the Date of Substantial Completion stated on the certificate issued by the Architect.

§ 9.8.3 Upon receipt of the Contractor's ~~list~~ list and the documents required by Section 3.12.11 neatly bound and indexed, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that ~~the Owner can occupy or utilize the Work or designated portion thereof for its intended use,~~ the Work is Substantially Complete, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.3.1 **Time for Completion of Items on List and Remedies.** The Contractor shall complete all items on the list accompanying the Architect's Certificate of Substantial Completion by the Date of Final Completion set forth in the Owner-Contractor Agreement for the Project. If the Contractor fails to do so, the Owner in its discretion may perform the Work by itself or others and the cost thereof shall be charged against the Contractor. The Contractor irrevocably designates the Owner as the Contractor's attorney-in-fact to execute a Change Order deducting such cost from the balance of the Contract Sum and also any additional costs or expenses incurred by the Owner arising out of or related to the failure of the Contractor to complete such items, including but not limited to attorneys', consultants' and Architect's fees. If the balance of the Contract Sum is insufficient, the Contractor will pay the Owner the balance on demand. The Contractor's warranties and obligations under the Contract Documents shall remain in full force and effect and cover any remedial work even if performed by others. If more than one inspection by the Architect for purposes of evaluating corrected Work is required, the Contractor shall pay the additional costs and expenses incurred by the Owner as a result of more than one inspection by the Architect, and the Owner may withhold from sums due or coming due the Contractor amounts to cover such additional costs and expenses.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and consistent with Section 9.8.3.1 shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 ~~The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of~~ Upon receipt of the Certificate of Substantial Completion from the Architect and consent of the Contractor's surety, if any,

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the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

### § 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the ~~Contractor~~, Contractor and/or with the Architect's approval, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. In the event of a disagreement about such responsibilities, correction period, or commencement of warranties, the Architect will resolve the disagreement, and the Architect's decision will be final and binding. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. ~~Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld.~~ The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the ~~Architect~~. Architect, which shall be final and binding.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### § 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for ~~Payment~~, Payment and any other supporting documentation required by the Contract Documents or by the Architect, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, including all required documents submitted, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. Final Completion shall mean that the Work is complete in accordance with the Contract Documents and the Contractor has submitted to the Architect all documents required to be submitted to the Architect for final payment.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

.1 Unless otherwise provided in the Contract Documents, the final Application for Payment shall be itemized, and the Contractor shall ensure that the final Application for Payment transmitted to the

Architect also is accompanied by the following additional documents, if not previously delivered to the Architect:

- .1 Evidence that all Completion/Punchlist List items have been completed;
- .2 Where applicable, keys and keying schedule;
- .3 The documents, including as-built set of Drawings and Specifications, referred to in Section 3.3.4 not otherwise required by the Contract Documents to be delivered earlier; and
- .4 Other documents required by the Contract Documents.

**§ 9.10.3** If, after Substantial Completion of the Work, ~~final completion~~ Final Completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting ~~final completion~~, Final Completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner ~~except including~~ those arising from or related to:

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; ~~or~~
- .3 terms of special warranties required by the Contract ~~Documents~~.Documents; or
- .4 any claims, damages, losses or expenses for indemnification under Section 3.18.1.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS**

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the ~~Contract~~. Contract, including compliance with OSHA and other state and federal regulations applicable to the Work. The Contractor's safety program shall be written and a copy maintained at the Project site for inspection, upon request. Neither the Owner nor the Architect accept any responsibility or liability for the safety of the Contractor's employees or for enforcing the Contractor's safety program. Additionally, Contractor shall comply with the Owner's rules, regulations, and policies including, but not limited to, the Owner's safety, health, and infection control policies and programs.

### **§ 10.2 SAFETY OF PERSONS AND PROPERTY**

**§ 10.2.1** The Contractor shall take all reasonable precautions for safety and health of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected ~~thereby~~; thereby, including the Owner's employees, employees of other contractors, their subcontractors, material suppliers, and persons on the site or adjoining property;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or ~~Sub-subcontractors~~; Sub-subcontractors and/or the Work of any other contractor and the materials and equipment to be incorporated in such Work; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

**§ 10.2.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. The Contractor shall be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall not bring any hazardous materials onto the Project site unless expressly required by the Contract Documents.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18. In the event of a dispute about who is responsible for damage and loss to such property, the issue shall be submitted to the Architect and the Architect's decision shall be final and binding on the respective parties. The Contractor irrevocably designates the Owner as its attorney-in-fact to execute a Change Order consistent with the Architect's decision.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### § 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

~~If either party the Contractor suffers injury or damage to person or property because of an act or omission of the other party, Owner, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter. The Owner is legally responsible, the Contractor shall submit a Statement of Claim Form for such injury or damage as required by Section 15.1.2.~~

#### § 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, ~~Documents upon written request,~~ the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. ~~The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered~~

~~harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. Work in the affected area shall be resumed immediately following the occurrence of any one of the following events: (i) the Owner causes remedial work to be performed that results in the hazardous substance being rendered harmless; or (ii) the Owner and the Contractor, by written agreement, decide to resume performance of the Work; or (iii) the Work may safely and lawfully proceed using appropriate protective measures, as determined by a competent person employed by the Owner. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up. The term "rendered harmless" shall be interpreted to mean that exposure levels of asbestos and polychlorinated biphenyl (PCB) are less than any applicable exposure standards set forth in OSHA regulations.~~

~~§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity. [This section is deleted]~~

~~§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are expressly required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.~~

~~§ 10.3.5 The In addition to the Contractor's obligations in Section 3.18 and elsewhere in the Contract Documents, the Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.~~

~~§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred. [This section is deleted]~~

#### § 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, without special instructions or authorization, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 CONTRACTOR'S LIABILITY INSURANCE

~~§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized approved by the Owner and licensed to do business in the jurisdiction in which the Project is located State of Ohio such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:~~

- ~~.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;~~
- ~~.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;~~
- ~~.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;~~
- ~~.4 Claims for damages insured by usual personal injury liability coverage; reasonably available personal injury liability coverage which are sustained: a) by any person as a result of an offense directly or~~

- indirectly related to the employment of such person by Contractor, or b) by any other person for any other reason;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
  - .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
  - .7 Claims for bodily injury or property damage arising out of ~~completed operations;~~ operations, which coverage shall be maintained for no less than two (2) years following final payment; and
  - .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

**§ 11.1.2** The insurance required by Section 11.1.1 shall include at least the specific coverages and be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, ~~whether written on an occurrence or claims made basis,~~ shall be maintained without interruption from the ~~date of commencement~~ Date of Commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

**§ 11.1.2.1** The minimum limits of liability for the required policies shall be not less than the following, unless a greater amount is required by law:

- .1 Commercial General Liability ("CGL"): Bodily injury (including death and emotional distress) and property damage with limits of \$1,000,000 each occurrence and \$2,000,000 aggregate. CGL shall include: (i) Premises-Operations, (ii) Explosion and Collapse Hazard, (iii) Underground Hazard, (iv) Independent Contractors' Protective, (v) Broad Form Property Damage, including Completed Operations, (vi) Contractual Liability, (vii) Products and Completed Operations, (viii) Personal/Advertising Injury, (ix) Stopgap liability with Ohio Intentional Tort endorsement for \$1,000,000 limit; and (x) per project aggregate endorsement.
- .2 Automobile Liability, covering all owned, non-owned, and hired vehicles used in connection with the Work: Bodily injury (including death and emotional distress) and property damage with a combined single limit of \$1,000,000 per person and \$1,000,000 each accident.

**§ 11.1.2.2** Such policies shall be supplemented by an umbrella policy in the amount of \$1,000,000 each occurrence and \$1,000,000 aggregate for contracts with a Contract Sum of \$250,000 or less, \$2,000,000 each occurrence and \$2,000,000 aggregate for contracts with a Contract Sum greater than \$250,000 but less than or equal to \$500,000, \$3,000,000 each occurrence and \$3,000,000 aggregate for contracts with a Contract Sum greater than \$500,000 but less than or equal to \$1,000,000; and \$5,000,000 each occurrence and \$5,000,000 aggregate for contracts with a Contract Sum greater than \$1,000,000.

**§ 11.1.2.3** By requiring such insurance and insurance limits herein, Owner does not represent that coverage and limits will necessarily be adequate to protect Contractor, and such coverage and limits shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner.

**§ 11.1.2.4** All insurance policies required in Section 11.1 shall be written on an occurrence basis.

**§ 11.1.2.5** Products and completed operations coverage shall commence with the certification of the final Certificate for Payment to the Contractor and extend for not less than two years beyond that date. Contractor will furnish Owner and each other additional insured identified in the General Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

**§ 11.1.2.6** The Contractor shall require all Subcontractors to provide Workers' Compensation, CGL, and Automobile Liability insurance with the same minimum limits specified herein, unless the Owner agrees to a lesser amount.

**§ 11.1.2.7** All liability policies required in Section 11.1 shall include an additional insured endorsement naming the Owner and Architect, and any other individuals or entities identified in these General Conditions, all of whom shall

be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds.. The additional insured endorsement shall be ISO 20 10 10 01 and CG 2037 10 01 or their equivalents so that Completed Operations liability extends to the additional insureds.

§ 11.1.2.8 All liability policies required in Section 11.1 shall be primary and non-contributory.

§ 11.1.2.9 All liability policies required in Section 11.1 must include contractual liability insurance covering Contractor's indemnity obligations.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. Owner, copies of endorsements, and other evidence of insurance requested by Owner or any other additional insured, prior to commencement of the Work, shall be delivered to the Owner with copies to each additional insured identified in these General Conditions, when the Contractor delivers the executed counterparts of the Agreement to Owner and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled, materially changed with respect to coverage for the Project or allowed to expire until at least 30 days' prior written notice has been given to the Owner. Owner and Contractor and to each other additional insured identified in the General Conditions to whom a certificate of insurance has been issued. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.3.1 The Contractor shall furnish to the Owner, through the Architect, one copy of each of the Certificates of Insurance required herein. The Certificate of Insurance shall specifically set forth evidence of all coverage required by Section 11.1. The form of certificate shall be the form prescribed by the Owner, which shall be the ACORD Form 25 (2009/09 or more recent) with AIA Document G-715 "Supplemental Attachment" attached thereto. The Contractor shall furnish to the Owner copies of any endorsement that is subsequently issued amending coverage or limits.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations. In no event will any failure of the Owner to receive certified copies or certificates of policies required under Section 11.1 or to demand receipt of such certified copies or certificates prior to the Contractor's commencing the Work be construed as a waiver by the Owner or the Architect of the Contractor's obligations to obtain insurance pursuant to this Article 11. The obligation to procure and maintain any insurance required by this Article 11 is a separate responsibility of the Contractor and independent of the duty to furnish a certified copy or certificate of such insurance policies.

§ 11.1.5 If the Contractor fails to purchase and maintain, or require to be purchased and maintained, any insurance required under Section 11.1, the 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.

§ 11.1.6 When any required insurance, due to the attainment of a normal expiration date or renewal date expires, 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 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.

§ 11.1.7 Any aggregate limit under the Contractor's liability insurance shall, by endorsement, apply to the Project separately.

§ 11.1.8 The Contractor shall require each of its Subcontractors to (i) procure insurance reasonably satisfactory to the Owner and (ii) name the Owner and Architect, and any of their employees and agents, as additional insureds under the Subcontractor's CGL policy. The additional insured endorsement included on the Subcontractor's CGL policy shall state that coverage is afforded the additional insureds with respect to claims arising out of operations performed by or on behalf of the Contractor. If the additional insureds have other insurance that is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurer's liability under this insurance policy shall not be reduced by the existence of such other insurance.

## **§ 11.2 OWNER'S LIABILITY INSURANCE**

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance. Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

## **§ 11.3 PROPERTY INSURANCE**

§ 11.3.1 Unless otherwise provided, the Owner provided in the Contract Documents, the Owner may or Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles, the full replacement cost thereof (subject to such deductible amounts as may be provided in the Contract Documents or required by Laws and Regulations). Such property insurance shall include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects.) Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, ~~Subcontractors and Sub-subcontractors~~ Subcontractors, Sub-subcontractors, Architect, and any other individuals or entities identified in the Contract Documents and the officers, directors, partners, employees, agents, and consultants of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured; in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent open peril or special causes of loss policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, lightning, theft, vandalism, malicious mischief, collapse, earthquake, ~~flood, water damage (other than caused by flood)~~, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, such other perils or causes of loss as may be specifically required by the Contract Documents, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss. Property insurance provided by the Owner does not cover any tools, apparatus, machinery, scaffolding, hoists, forms, staging, shoring, and other similar items commonly referred to as construction equipment that may be on the site and the capital value of which is not included in the Work, nor does such insurance cover any materials or equipment before these materials and equipment are physically incorporated into the Work. The Contractor must procure any insurance it requires on such construction equipment and materials and equipment. Any policy obtained by the Contractor under this Section 11.3 and related sections shall include a waiver of subrogation in accordance with the requirements of Section 11.3.7. If economically feasible, the Work is located in a Special Flood Hazard Area, as defined by the Federal Emergency Management Agency, the Owner may provide an endorsement to the property insurance policy that provides coverage for physical loss or damage caused by flood.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or

maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

~~§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.~~

Owner shall not be responsible for purchasing and maintaining any property insurance specified in Section 11.3 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Contract Documents. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

~~§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit-site provided that location was agreed to in writing by Owner prior to being incorporated in the Work, provided that such portions of the Work have been included in an Application for Payment recommended by Architect.~~

§ 11.3.1.5 This property insurance must allow for partial utilization of the Work by Owner and shall contain no partial occupancy restriction for utilization of the Project by Owner. Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurers providing the property insurance pursuant to Section 11.3 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurance company or companies providing property insurance have consented shall consent to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

§ 11.3.1.6 Damages to Other Property. The maintaining of such insurance as outlined in Section 11.1 shall in no way constitute a waiver of the Contractor's legal liability for damage to any adjoining buildings or existing buildings or their contents or the Work and property of others on the site beyond the limits of insurance thus maintained. The Contractor shall hold the Owner free and harmless from any injury and damage resulting from the negligent or faulty performance of the Contract by the Contractor or its Subcontractors or others under its control or direction.

§ 11.3.1.7 This property insurance must include testing and startup.

#### § 11.3.2 BOILER AND MACHINERY INSURANCE

~~The Owner shall~~ Owner, at Owner's option, may purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor ~~shall be named insureds and any other individuals or entities identified in the Contract Documents and the officers, directors, partners, employees, agents, and consultants of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.~~

#### § 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

~~§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor. The Owner may deliver to Contractor, with copies to each additional insured identified in these General Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.~~

~~§ 11.3.7 All policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Section 11.3 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with these General Conditions.~~

### **§ 11.3.7 WAIVERS OF SUBROGATION**

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent ~~covered by~~ actual recovery of any insurance proceeds under any property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as ~~fiduciary~~ in good faith. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

~~§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary in good faith and made payable to the Owner as fiduciary in good faith for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.~~

~~[This section is deleted.]~~

~~§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.~~

~~§ 11.3.10 The Owner as fiduciary in good faith shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within ~~five~~ fifteen days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved ~~in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement.~~ as provided in Sections 15.3 and 15.4. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary in good faith shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.~~

## § 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. Contractor shall provide a contract bond to guaranty payment and performance of the Work, as required by Ohio law. When the Contractor delivers the executed counterparts of the Agreement to the Owner, Contractor shall deliver such bond to the Owner, along with other documents as may be required.

§ 11.4.1.1 If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of the Agreement or Ohio law, Contractor shall promptly notify Owner and Architect and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of the Agreement and Ohio law.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.4.3 MATERIAL DEFAULT OR TERMINATION. If the Owner notifies the Contractor's surety that the Contractor is in material default or terminates the Contract, the surety will promptly and in not more than 21 days investigate the claimed material default or termination. If the Owner gives a notice of material default and then terminates the Contract, the surety shall complete its investigation within 21 days of the notice of material default. As part of such investigation, the surety shall visit the offices of the Contractor, Architect and Owner to review the available project records. If the surety proposes to take over the Work, the surety shall do so no later than the expiration of such 21 day period or 10 days after the date the Owner terminates the Contract, whichever is later. If the Owner terminates the Work, and the surety proposes to provide a replacement contractor, the replacement contractor shall be fully capable of performing the Work in accordance with the Contract Documents, including meeting all the requirements of the Contract Documents. If the Contractor is terminated, the replacement contractor shall not be the Contractor. The surety will provide the Owner with the results of its investigation, including any written report or documents. This Section 11.4.3 is in addition to the Owner's rights under Section 14.2.2 and is not intended to create any rights of the surety, including but not limited to the right to takeover the Contractor's obligations.

## ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

### § 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

### § 12.2 CORRECTION OF WORK

#### § 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

#### § 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents,

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any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly and in not more than 30 days after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. ~~During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.~~ If the Contractor fails to correct nonconforming Work within a reasonable time during that period 30 days after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made. Any such acceptance shall be in writing and executed by a representative of the Owner who has been expressly authorized to do so.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is ~~located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~located.

### § 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

### § 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered

mail, over night delivery, or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

#### § 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach ~~there under, thereunder,~~ except as may be specifically agreed in writing.

#### § 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. ~~The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.~~ Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Sections 13.5.1.1 and 13.5.1.2 below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Section 12.1 shall be paid as provided in said Section 12.1; and
3. as otherwise specifically provided in the Contract Documents.

§ 13.5.1.1 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Architect the required certificates of inspection or approval.

§ 13.5.1.2 Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Architect's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Architect. Tests required by the Contract Documents to be performed by Contractor that require test certificates to be submitted to Owner or Architect for acceptance shall be made by an independent testing laboratory or agency licensed or certified in accordance with Laws and Regulations and applicable state and local statutes. In the event state license or certification is not required, testing laboratories or agencies shall meet the following applicable requirements:

1. "Recommended Requirements for Independent Laboratory Qualification," published by the American Council of Independent Laboratories.
2. Basic requirements of ASTM E329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials used in Construction" as applicable.
3. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Institute of Standards and Technology or accepted values of natural physical constants.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written

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authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

#### § 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

#### § 13.7 TIME LIMITS ON CLAIMS

~~The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7. As between the Owner and Contractor, the statute of limitations shall commence as provided in current Ohio law.~~

#### § 13.8 ATTORNEY-CLIENT CONFIDENTIAL AND PRIVILEGED COMMUNICATIONS

~~§ 13.8.1 The Contractor acknowledges and agrees that the Owner's legal counsel may from time to time provide legal services to the Project and that in doing so may communicate with the Architect. The Contractor agrees that such communications will be privileged communications and, if there is a Claim contemplated or pending, any written communications will be confidential work product.~~

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of ~~30~~90 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- ~~1~~ Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- ~~2~~ An act of government, such as a declaration of national emergency that requires all Work to be stopped; or
- ~~3~~ Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- ~~4~~ ~~The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1-Documents.~~

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work

by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

## § 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract ~~Documents~~. Documents, including but not limited to failure to maintain the Construction Schedule or failure to correct defective and/or non-conforming Work.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the ~~surety~~ surety as expressly stated in the applicable surety bond:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

As set forth in this section, the Owner's termination of the Contractor is without prejudice to any other rights and remedies of the Owner, including but not limited to the Owner's rights and remedies under the Contract Documents and at law, all of which shall survive termination.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other costs or damages incurred by the Owner and not expressly waived, including but not limited to the Owner's attorneys' and consultants' fees and expenses, arising out of or related to the termination, such excess shall be paid to the Contractor. If such ~~costs~~ costs, and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

## § 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

#### § 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 ~~The~~ Upon three business days written notice to Contractor and Architect, the Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such ~~termination, along with reasonable overhead and profit on the Work not executed.~~ termination.

### ARTICLE 15 CLAIMS AND DISPUTES

#### § 15.1 CLAIMS

##### § 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The Contractor's Claims must be initiated by submitting the Statement of Claim Form ("Claim Form") included with the Contract Documents to the Architect and the Owner, properly completed in accordance with the instructions accompanying the Form and submitted within the 30 day period under Section 15.1.2. The responsibility to substantiate Claims shall rest with the party making the Claim. The Contractor shall not knowingly present or cause to be presented to the Owner a false or fraudulent Claim. "Knowingly" shall have the same meaning as in Section 3729(b) USC of the Federal False Claims Act. If the Contractor knowingly presents or causes to be presented a false or fraudulent Claim, then the Contractor shall be liable to the Owner for the same civil penalty and damages as the United States Government would be entitled to recover under such Section 3729(a) USC and shall also indemnify and hold the Owner harmless from all costs and expenses, including Owner's attorneys' and consultants' fees and expenses incurred in investigating and defending against such Claim and in pursuing the collection of such penalty, damages and fees and expenses.

The Contractor acknowledges and agrees that the Owner and/or parties in privity of contract with the Owner may delay, interfere with and/or disrupt the Work of the Contractor, and such actions do not constitute a breach of contract by the Owner, since the Contractor is entitled to additional compensation by properly submitting and pursuing a Claim as permitted by these General Conditions. Pending final resolution of the Claim, the Contractor shall continue performance of the Work as provided in Section 15.1.3.

##### § 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the As a condition precedent to a change in the Contract Price or the Contract Times, for each Claim the Contractor shall deliver a fully completed Statement of Claim Form, a copy of which form is a Contract Document, to the Initial Decision Maker with a copy sent to the Owner and the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Maker, within 21 days of the start of the event giving rise to the Claim. The Contractor shall be responsible for substantiating its Claim. The Contractor's failure to deliver a fully completed Statement of Claim form shall be an irrevocable waiver of Contractor's right to any form of additional compensation, be it in time or money, arising

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out of the Claim or the circumstances underlying the Claim. Further, the Contractor's obligation to deliver a fully completed Statement of Claim form within such 21 day period is a material term of the Contract Documents and provides the Owner with the opportunity to mitigate its damages.

**§ 15.1.3 CONTINUING CONTRACT PERFORMANCE**

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

**§ 15.1.4 CLAIMS FOR ADDITIONAL COST**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, ~~written notice as provided herein shall be given before proceeding to execute the Work~~ the Contractor shall submit the Statement of Claim Form as required by Section 15.1.2. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

**§ 15.1.5 CLAIMS FOR ADDITIONAL TIME**

**§ 15.1.5.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, ~~written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary,~~ the Contractor shall submit a Statement of Claim Form as required by Section 15.1.2.

**§ 15.1.5.2** ~~If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction,~~ the Contractor is prevented from completing any part of the Work within the Contract Time due to weather conditions and the Contractor wants additional time to complete the Work, the Contractor shall initiate a Claim by submission of the Claim Form in accordance with Section 15.1.2. The Contractor's entitlement to additional time shall be evaluated and substantiated as provided in Section 15.1.5.2.1.

**§15.1.5.2.1 Weather Delays.** When the Contractor is prevented from completing any part of the Work on the critical path within the Contract Time due to weather conditions, provided the Contractor properly initiates a Claim, the Contract Time will be extended by one (1) day for each work day lost due to weather that delays Work on the critical path in excess of those in the following table:

<u>Month</u>	<u>Number of Workdays Lost Due To Weather</u>
<u>January</u>	<u>8</u>
<u>February</u>	<u>8</u>
<u>March</u>	<u>7</u>
<u>April</u>	<u>6</u>
<u>May</u>	<u>5</u>
<u>June</u>	<u>4</u>
<u>July</u>	<u>4</u>
<u>August</u>	<u>4</u>
<u>September</u>	<u>5</u>
<u>October</u>	<u>6</u>
<u>November</u>	<u>6</u>
<u>December</u>	<u>6</u>

**§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

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~~2~~ damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

**§ 15.1.5.3 Excusable and Compensable Delays.** The delays for which the Contractor is entitled to additional time are "Excusable Delays." The only Excusable Delays are delays which the Contractor establishes were: (a) caused by the Owner or those in privity of contract with the Owner, (b) physical damage to the Project over which the Contractor has no control, (c) labor disputes beyond the control of the Contractor, (d) work days lost due to weather conditions as provided under Section 15.1.5.2, and (e) concealed or unknown conditions under Section 3.7.4.

The delays for which the Contractor is entitled to additional time and money are "Compensable Delays." The only Compensable Delays are the following Excusable Delays which the Contractor establishes were: (a) caused by the Owner or those in privity of contract with the Owner, (b) physical damage to the Project over which the Contractor has no control, and/or (c) concealed or unknown conditions under Section 3.7.4.

[This section is deleted.]

**§ 15.1.7 Settlement Offers.** If the Contractor initiates a Claim, the Owner may make settlement offers to settle the Claim at any time up to the date of the trial. Such settlement offers shall be subject to Rule 408 (Compromise and Offers of Compromise) of the Ohio Rules of Evidence. If at any stage of the litigation, including any appeals, the Contractor's Claim is dismissed or found to be without merit, or if the damages awarded to the Contractor on its Claim do not exceed the Owner's last settlement offer, the Contractor shall be liable to the Owner and shall reimburse the Owner for all of the Owner's attorneys' fees and expenses, arising out of or related to such Claim since the date of such last settlement offer.

## § 15.2 INITIAL DECISION

**§ 15.2.1** Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to ~~mediation of any Claim arising~~ any further proceeding permitted under these General Conditions prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ~~ten~~ forty-five (45) days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§15.2.2.1 Owner's Request for Documents.** The Owner may request such documents and information from the Contractor as the Owner determines necessary to evaluate and comment upon the Claim. Upon receipt of such request from the Owner, the Contractor shall provide all requested documents and information within ten (10) days. Such documents and information may include but shall not be limited to the Contractor's Project accounting records, estimate for the Project, daily job logs, and other information from which the Contractor's Project costs may be derived. The Contractor shall provide the requested documents in the formats requested, which include both paper and electronic copies. If requested by the Owner, the electronic copies shall be provided in native computer language. To the extent permitted by law, the Owner shall keep the Project accounting records and estimate for the Project confidential. The Contractor's provision of the requested documents to the Owner in the format requested by the Owner shall be a condition precedent to any further proceeding under the Contract Documents.

Failure to provide the requested documents shall be a material breach of the Contract, and Contractor shall indemnify Owner for all of Owner's costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to Contractor's failure to comply with this provision. If the Contractor fails to provide the requested documents, the Contractor shall be precluded from presenting such documents in any subsequent dispute resolution proceedings, if the data was reasonably available at the time of the request.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part. If the Initial Decision Maker requests supporting data from a party and the party fails to provide it, the party thereafter shall be precluded from presenting such data in any subsequent dispute resolution proceedings, if the data was reasonably available to it at the time of the request.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, ~~if the parties fail to resolve their dispute through mediation, to binding dispute resolution litigation~~ and other methods of dispute resolution as set forth in these General Conditions. Venue for such litigation shall be exclusively in the county in which the Owner has its principal office.

[This section is deleted.]

~~§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.~~

~~§ 15.2.6.1 Either party may, When a written decision of the Initial Decision Maker states that (1) the decision is final but subject to mediation and litigation and (2) the Contractor does not initiate litigation within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision. then failure to initiate litigation within said 30-day period shall result in the Initial Decision Maker's decision becoming final and binding upon the Contractor. If the Initial Decision Maker renders a decision after litigation has been initiated, such decision may be entered as evidence, but shall not supersede the litigation proceedings unless the decision is acceptable to all parties concerned. Litigation shall be considered "initiated" upon either the service of the original complaint on the Owner or, if litigation relating to the project has already been filed, when a motion for leave to amend the complaint to add the claim has been filed.~~

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

[This section is deleted.] [This section is deleted.]

[This section is deleted.]

### § 15.3 MEDIATION

~~§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.~~

~~§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.~~

~~§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.~~

### § 15.4 ARBITRATION – This Section is changed to LITIGATION

~~§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded. Any Claim arising out of or related to the Contract, except Claims that are not otherwise disposed of under the Contract Documents, shall, after decision by the Initial Decision Maker or 60 days after submission of the Claim to the Architect, be subject to litigation unless the parties agree in writing to arbitrate the Claims.~~

Any Claim may be decided by arbitration if the parties mutually agree in writing. There shall be no mandatory arbitration of Claims.

~~§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim. [this section is deleted]~~

~~§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. [this section is deleted]~~

~~§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof. [this section is deleted]~~

### § 15.4.4 CONSOLIDATION OR JOINDER [this section is deleted in its entirety]

~~§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).~~

~~§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an~~

~~additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.~~

~~§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.~~



**RICHLAND COUNTY**  
**CONTRACTOR'S PERSONAL PROPERTY TAX AFFIDAVIT**  
(O.R.C. § 5719.042)

State of Ohio  
County of \_\_\_\_\_, ss:

\_\_\_\_\_, being first duly sworn, deposes and says that he is the  
(Name)

\_\_\_\_\_ of \_\_\_\_\_ with offices located at  
(Title) (Contractor)

\_\_\_\_\_, and as its duly  
(Address of Contractor)

authorized representative, states that effective this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Name of Contractor)

( ) is charged with delinquent personal property taxes on the general list of personal property as set forth below:

<u>County</u>	<u>Amount</u> (includes total amount due, plus penalties and interest thereon)
Richland	\$ _____

( ) is not charged with delinquent personal property taxes on the general list of personal property in Richland County.

\_\_\_\_\_  
\_\_\_\_\_  
(Affiant)

Sworn to and subscribed before me by the above-named affiant this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(Notary Public)

My commission expires

\_\_\_\_\_, 20\_\_

## CONTRACTOR'S QUALIFICATION STATEMENT

SUBMITTED TO:      Richland County  
                            50 Park Ave. East  
                            Mansfield, Ohio 44902

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

NAME OF PROJECT:

1.      ORGANIZATION

1.1      How many years has your organization been in business as a Contractor?

1.2      How many years has your organization been in business under its present business name?

1.2.1    Under what other or former names has your organization operated?

1.3      If your organization is a corporation, answer the following:

1.3.1    Date of incorporation:

1.3.2    State of incorporation:

1.3.3    President's name:

1.3.4    Vice President's name(s):

1.3.5    Secretary's name:

1.3.6    Treasurer's name:

1.4      If your organization is a partnership, answer the following:

CONTRACTOR'S QUALIFICATION STATEMENT

CQS-1

1.4.1 Date of organization:

1.4.2 Type of partnership (if applicable):

1.4.3 Name(s) of general partner(s):

1.5 If your organization is individually owned, answer the following:

1.5.1 Date of organization:

1.5.2 Name of owner:

1.6 If the form of your organization is other than those listed above, describe it and name the principals:

## 2. LICENSING

2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

2.2 List jurisdictions in which your organization's partnership or trade name is filed.

## 3. EXPERIENCE

3.1 List the categories of work that your organization normally performs with its own forces.

3.2 Claims and Lawsuits (If the answer to any of the questions below is yes, please attach details.)

3.2.1 Has your organization ever failed to complete any work?

3.2.2 Within the last five (5) years has your organization or any of its officers prosecuted any Claims, had any Claims prosecuted against it or them, or been involved in or is currently involved in any mediation or arbitration proceedings or lawsuits suits related to any construction project, or has any judgments or awards outstanding against it or them? If the answer is yes, please attach the details for

each Claim, including the names and telephone numbers of the persons who are parties, the amount of the Claim, the type of Claim and basis for the Claim, and the outcome.

Note: As used in this document "Claim" means a Claim initiated under the Contract Documents for a project.

3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? If the answer is yes, please attach details for each instance, including the names and telephone numbers of the persons who are parties to the contract, and the reason(s) the contract was not completed.

3.4 On a separate sheet, list construction projects your organization has in progress with an original Contract Sum of more than \$100,000.00, giving the name of project, owner and its telephone number, design professional and its telephone number, contract amount, percent complete and scheduled completion date.

3.4.1 State total amount of work in progress and under contract:

3.5 Provide the following information for each contract your organization has had during the last five (5) years, including current contracts, where the Contract Sum is fifty percent (50%) or more of the bid amount for this Project, including add alternates. If there are more than ten (10) of these contracts only provide information on the most recent ten (10) contracts, including current contracts.

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number

3.5.1 Provide the following information for each project your organization has had during the last five (5) years, which your organization believes is of comparable or greater size and complexity than the Owner's project. If there are more than five (5) of these projects, only provide information on the most recent five (5) projects, including current projects.

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number

3.5.2 State average annual amount of construction work your organization has performed during the last five years.

3.5.3 If any of the following members of your organization's management--president, chairman of the board, or any director--operates or has operated another construction company during the last five (5) years, identify the member of management and the name of the construction company.

3.5.4 If your organization is operating under a trade name registration with the Secretary of State for the State of Ohio, identify the entity for which the trade name is registered. If none, state "none."

3.5.5. If your organization is a division or wholly-owned subsidiary of another entity or has another relationship with another entity, identify the entity of which it is a division or wholly-owned subsidiary or with which it has another relationship and also identify the nature of the relationship. If none, state "not applicable."

- 3.6 On a separate sheet, list the construction education, training and construction experience for each person who will fill a management role on the Project, including without limitation the Project Executive, Project Architect, Project Manager, and Project Superintendent. For each person listed, include with the other information the last three projects on which the person worked and the name and telephone number of the Design Professional and the Owner.

#### 4. REFERENCES

4.1 Trade References:

4.2 Bank References:

4.3 Surety:

4.3.1 Name of bonding company:

4.3.2 Name and address of agent:

#### 5. FINANCING

5.1 Financial Statement

5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

5.1.2 Name and address of firm preparing attached financial statement, and date thereof.

5.1.3 Is the attached financial statement for the identical organization named on page one?

5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsiary).

5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

**Certification.** The undersigned certifies for the reliance of the Owner that after diligent investigation, to the best of the undersigned's belief, the information provided with this Contractor's Qualification Statement is true, accurate and not misleading.

SIGNATURE

Dated at this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Name of Organization: \_\_\_\_\_

By: \_\_\_\_\_ [PRINT NAME]

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_, being duly sworn, deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this \_\_\_\_ day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires: \_\_\_\_\_

SEAL

**BID GUARANTY AND  
CONTRACT BOND**  
(O.R.C. § 153.571)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned \_\_\_\_\_  
\_\_\_\_\_ ("Contractor") as principal and \_\_\_\_\_  
\_\_\_\_\_ as surety are hereby held and firmly bound unto the **Board of  
Commissioners for Richland County, Ohio**, as obligee in the penal sum of the dollar amount of the bid  
submitted by the principal to the obligee on \_\_\_\_\_, 20\_\_, to undertake the construction of  
the Richland County Courthouse AC Upgrade Project ("Project"). The penal sum referred to herein shall  
be the dollar amount of the principal's bid to the obligee, incorporating any additive or deductive  
Alternates made by the principal on the date referred to above to the obligee, which are accepted by the  
obligee. In no case shall the penal sum exceed the amount of \_\_\_\_\_  
Dollars (\$\_\_\_\_\_). (If the foregoing blank is not filled in, the penal sum will be the full amount of  
the principal's bid, including add Alternates. Alternatively, if the blank is filled in the amount stated must  
not be less than the full amount of the bid including add Alternates, in dollars and cents. A percentage is  
not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and  
severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the above named principal has  
submitted a bid for work on the Project.

Now, therefore, if the obligee accepts the bid of the principal and the principal fails to enter into a  
proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the  
event the principal pays to the obligee the difference not to exceed ten percent (10%) of the penalty  
hereof between the amount specified in the bid and such larger amount for which the obligee may in good  
faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the  
obligee does not award the contract to the next lowest bidder and resubmits the project for bidding, the  
principal pays to the obligee the difference not-to-exceed ten percent (10%) of the penalty hereof  
between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new  
contract documents, required advertising, and printing and mailing notices to prospective bidders,  
whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect; if  
the obligee accepts the bid of the principal and the principal within ten (10) days after the awarding of the  
contract enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of  
material, which said contract is made a part of this bond the same as though set forth herein.

Now also, if the said principal shall well and faithfully do and perform the things agreed by said  
principal to be done and performed according to the terms of said contract; and shall pay all lawful claims  
of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying  
forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall  
be for the benefit of any materialman or laborer having a just claim, as well as for the obligee herein; then  
this obligation shall be void; otherwise the same shall remain in full force and effect; and surety shall  
indemnify the obligee against all damage suffered by failure of the principal to perform the contract  
according to its provisions and in accordance with the plans, details, specifications, and bills of material  
therefor and to pay all lawful claims of subcontractors, materialmen, and laborers for labor performed or  
material furnished in carrying forward, performing, or completing the contract and surety further agrees  
and assents that this undertaking is for the benefit of any subcontractor, materialman, or laborer having a  
just claim, as well as for the obligee; it being expressly understood and agreed that the liability of the  
surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as  
herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of the said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of said surety on its bond, and does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the work or to the specifications.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
PRINCIPAL

By: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

\_\_\_\_\_  
SURETY

By: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Surety's Address: \_\_\_\_\_

Surety's Telephone Number: \_\_\_\_\_

Surety's Fax Number: \_\_\_\_\_

\_\_\_\_\_  
SURETY'S AGENT

Surety's Agent's Address: \_\_\_\_\_

Surety's Agent's Telephone Number: \_\_\_\_\_

Surety's Agent's Fax Number: \_\_\_\_\_

**NOTE: The Contract Bond form that follows is to be used ONLY by a bidder that is awarded a contract and submits a form of bid guaranty other than the combined Bid Guaranty and Contract Bond with its bid. If a bidder submits a combined Bid Guaranty and Contract Bond, then the bid guaranty becomes the contract bond when the contract is awarded.**

**AIA Bid Bond or Payment and Performance Bond forms are not acceptable for this Project.**

**CONTRACT BOND**  
(O.R.C. § 153.57)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned ("Contractor"), as principal, and \_\_\_\_\_, as surety, are hereby held and firmly bound unto the **Board of Commissioners for Richland County, Ohio** ("Owner") as obligee, in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas, the above-named principal did on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, enter into a contract with the Owner for construction of the Richland County Courthouse AC Upgrade Project ("Project"), which said contract is made a part of this bond the same as though set forth herein:

Now, if the said Contractor shall well and faithfully do and perform the things agreed by the Contractor to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of the said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of said surety on its bond, and does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the work or to the specifications.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(PRINCIPAL)

\_\_\_\_\_  
(SURETY)

By: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Surety's Address: \_\_\_\_\_

\_\_\_\_\_

Surety's Telephone Number: \_\_\_\_\_

Surety's Fax Number: \_\_\_\_\_

\_\_\_\_\_  
NAME OF SURETY'S AGENT

Surety's Agent's Address: \_\_\_\_\_

\_\_\_\_\_

Surety's Agent's Telephone Number: \_\_\_\_\_

Surety's Agent's Fax Number: \_\_\_\_\_





STEC-CC  
Rev. 3/15/04

# Sales and Use Tax Construction Contract Exemption Certificate

### Identification of Contract:

Contractee's (Owner's) name: Board of Commissioners for Richland County  
Exact location of job/project: \_\_\_\_\_  
Name of job/project as it appears on contract documentation: \_\_\_\_\_

The undersigned hereby certifies that the tangible personal property purchased under this exemption certificate was purchased for incorporation into:

<input checked="" type="checkbox"/>	real property under a construction contract with the United States government, its agencies, the State of Ohio, or an Ohio political subdivision;	<input type="checkbox"/>	real property which is owned, or will be accepted for ownership at the time of completion, by the United States government, its agencies, the State of Ohio, or an Ohio political subdivision;
<input type="checkbox"/>	a horticulture structure or livestock structure for a person engaged in the business of horticulture or producing livestock;	<input type="checkbox"/>	a house of public worship or religious education;
<input type="checkbox"/>	a building used exclusively for charitable purposes by a nonprofit organization operated exclusively for charitable purposes as defined in section 5739.02(B)(12) of the Revised Code;	<input type="checkbox"/>	a building under a construction contract with an organization exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986 when the building is to be used exclusively for the organization's exempt purposes;
<input type="checkbox"/>	the original construction of a sports facility under section 307.696 of the Revised Code;	<input type="checkbox"/>	a hospital facility entitled to exemption under section 140.08 of the Revised Code;
<input type="checkbox"/>	real property outside this state if such materials and services, when sold to a construction contractor in the state in which the real property is located for incorporation into real property in that state, would be exempt from a tax on sales levied by that state		

The original of this certificate must be signed by the owner/contractee and/or government official and must be retained by the prime contractor. Copies must be maintained by the owner/contractee and all subcontractors. When copies are issued to suppliers when purchasing materials, each copy must be signed by the contractor or subcontractor making the purchase.

### Prime Contractor

Name: \_\_\_\_\_  
Signed by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Street address: \_\_\_\_\_  
City, state, ZIP code: \_\_\_\_\_  
Date: \_\_\_\_\_

### Owner/Contractee

Name: Board of Commissioners for Richland County  
Signed by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Street address: 50 Park Ave. East  
City, state, ZIP code: Mansfield, Ohio 44902  
Date: \_\_\_\_\_

### Subcontractor

Name: \_\_\_\_\_  
Signed by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Street address: \_\_\_\_\_  
City, state, ZIP code: \_\_\_\_\_  
Date: \_\_\_\_\_

### Political Subdivision

Name: same as Owner/Contractee  
Signed by: \_\_\_\_\_  
Title: \_\_\_\_\_  
Street address: \_\_\_\_\_  
City, state, ZIP code: \_\_\_\_\_  
Date: \_\_\_\_\_

**STATEMENT OF CLAIM FORM**

**Claim No. \_\_\_ for Contractor**

1. Name of Contractor: \_\_\_\_\_

2. Date written claim given: \_\_\_\_\_.

3. Contractor's representative to contact regarding the claim:

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Telephone No. \_\_\_\_\_ (office) FAX No. \_\_\_\_\_

E-mail: \_\_\_\_\_

4. General description of claim:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Contract Documents. If the claim is based upon any part or provision in the Contract Documents, including but not limited to pages in the Drawings and/or paragraphs in the Specifications, Owner-Contractor Agreement, General Conditions or Supplementary General Conditions, state upon which parts or provisions the claim is based:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Delay claims:

6.1 Date delay commenced: \_\_\_\_\_

6.2 Duration or expected duration of the delay, if known: \_\_\_\_\_

6.3 Apparent cause of the delay and part of critical path affected:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6.4 Expected impact of the delay and recommendations for minimizing such impact:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Additional compensation. Set forth in detail all additional compensation to which the Contractor believes it is entitled with respect to this claim:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Instructions for Completing the Statement of Claim Form ("Instructions"). The Instructions are incorporated in this Form.

9. Truth of Claim. By submitting this claim, the Contractor and its representative certify that after conscientious and thorough review and to the best of his or her knowledge and belief a) the Contractor has complied fully with the Instructions, b) the information in this State of Claim is accurate, c) the Contractor is entitled to recover the compensation in paragraph 7, and d) the Contractor has not knowingly presented a false or fraudulent claim. The Contractor by its authorized representative must acknowledge this Statement of Claim before a notary public.

CONTRACTOR: \_\_\_\_\_

By: \_\_\_\_\_

Name and Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CONTRACTOR'S ACKNOWLEDGMENT**

State of \_\_\_\_\_,

County of \_\_\_\_\_, ss:

\_\_\_\_\_ first being sworn, states that after conscientious and thorough review, the statements made in attached Statement of Claim Form are complete and true to the best of his or her knowledge and belief.

\_\_\_\_\_

Sworn to before me a notary public by \_\_\_\_\_ on \_\_\_\_\_, 20\_\_.

\_\_\_\_\_

Notary Public

WHEN COMPLETED, FORWARD A COPY OF THIS NOTICE AND STATEMENT OF CLAIM FORM TO THE OWNER AND DESIGN PROFESSIONAL.

## INSTRUCTIONS FOR COMPLETING THE STATEMENT OF CLAIM FORM

1. Completing the Statement of Claim Form ("Claim Form") is a material term of the Contract. The Claim Form tells the Owner and Design Professional that the Contractor is making a Claim and that they need to act promptly to mitigate the effects of the occurrence giving rise to the Claim. The Claim Form also provides them with information so that they can mitigate such effects. The Contractor acknowledges that constructive knowledge of the conditions giving rise to the Claim through job meetings, correspondence, site observations, etc. is inadequate notice, because knowledge of these conditions does not tell the Owner and Design Professional that the Contractor will be making a Claim and most often is incomplete.
2. If the space provided in the Claim Form is insufficient, the Contractor, as necessary to provide complete and detailed information, must attach pages to the Claim Form with the required information.
3. Paragraph 4. The Contractor must state what it wants, *i.e.*, time and/or compensation, and the reason why it is entitled to time and/or compensation.
4. Paragraph 5. The Contractor must identify the exact provisions of the Contract Documents it is relying on in making its Claim. For example, if the Claim is for a change in the scope of the Contractor's Work, the Contractor must identify the specific provisions of the Specifications, and the Plan sheets and details that provide the basis for the scope change.
5. Paragraph 6. This paragraph applies to delay claims, including delays that the Contractor believes result in constructive acceleration. The Contractor must identify the cause of the delay, party or parties responsible, and what the party did or did not do that caused the delay, *i.e.*, specific work activities. The Contractor acknowledges that general statements are not sufficient, and do not provide the Owner with sufficient information to exercise the remedies available to the Owner or to mitigate the effects of the delay.

For example, if the Contractor claims a slow response time on submittals caused a delay, the Contractor must identify the specific submittals, all relevant dates, and then show on the applicable schedule, by circling or highlighting, the activities immediately affected by the delays. Also for example, if the Contractor claims it was delayed by another Contractor, the Contractor must identify the delaying Contractor, specifically what the delaying Contractor did or did not do that caused the delay, and then show the applicable schedule, by circling or highlighting, the activities immediately affected by the delays. Further by example, if the Contractor seeks an extension of time for unusually severe weather, the Contractor must submit comparative weather data along with a record of the actual weather at the job site and job site conditions.

6. Paragraph 6.4. Time is of the essence under the Contract Documents. If there is a delay, it is important to know what can be done to minimize the impact of the delay. It therefore is important that the Contractor provide specific recommendations on how to do so.
7. Paragraph 7. The Contractor must provide a specific and detailed breakdown of the additional compensation it seeks to recover. For future compensation, the Contractor shall provide its best estimate of such compensation.
8. Paragraph 9 and Acknowledgment. By submitting this Claim, the Contractor and its representative certify that after conscientious and thorough review and to the best of his or her knowledge and belief a) the Contractor has complied fully with the Instructions, b) the information in this Claim Form is accurate, c) the Contractor is entitled to recover the compensation in paragraph 7, and d) the Contractor has not knowingly presented a false or fraudulent claim. The Contractor by its authorized representative must acknowledge this Statement of Claim before a notary public.

End of Instructions

**DESIGN PROFESSIONAL'S  
CERTIFICATE OF SUBSTANTIAL COMPLETION**

Project:  
**Richland County Courthouse AC  
Upgrade Project**

Contract For:  
General Contract

Owner:  
Board of Commissioners for Richland County

CONTRACTOR: [insert name and address]  
\_\_\_\_\_

The Design Professional hereby certifies that the Date for Substantial Completion of the Contractor's Work as set forth in the Owner-Contractor Agreement is:

\_\_\_\_\_ (Insert Date for Substantial Completion of the Work)

The Design Professional hereby certifies that the Date for Substantial Completion in the Contractor's Agreement with the Owner (the "Agreement"), as extended by Change Orders and Claims submitted by the Contractor that have been Finally Resolved, as defined below, is:

1. Date for Substantial Completion in the Agreement (above): \_\_\_\_\_
2. Additional days added to Date for Substantial Completion by Change Order: \_\_\_\_\_
3. Additional days added by Claims that have been Finally Resolved: \_\_\_\_\_
4. Date for Substantial Completion in the Contract Adjusted by days under No. 2 and No. 3: \_\_\_\_\_

"Finally Resolved" means that the Design Professional has made a decision (or declined to make a decision) on the Claim under the General Conditions and that any litigation regarding the Claim has been concluded.

The Design Professional certifies that the Contractor's Work to the best of the Design Professional's knowledge, information, and belief was Substantially Complete, as Substantial Completion is defined in the Contract Documents, on \_\_\_\_\_.

The Design Professional hereby certifies that the difference between (a) the Date for Substantial Completion adjusted by the days under No. 2 and No. 3 above and (b) the date the Contractor's Work was Substantially Complete is \_\_\_\_\_ days.

NOTICES OF DELAY. The Design Professional hereby certifies that all "NOTICES OF DELAY" submitted by the Contractor and described in the General Conditions are attached to this Certificate. This certification is solely for the purpose of identifying all "NOTICES OF DELAY" submitted by the Contractor and is not intended to imply that any of these NOTICES OF DELAY were properly submitted in accordance with Contract Documents or are valid.

STATEMENT OF CLAIM FORMS. The Design Professional hereby certifies that all Statement of Claim Forms described in the General Conditions and submitted by the Contractor are attached to this Certificate. This certification is solely for the purpose of identifying all Statement of Claim Forms submitted by the Contractor and is not intended to imply that any of these Statement of Claim Forms were properly submitted in accordance with Contract Documents or are valid.

PUNCHLIST ITEMS. A list of items to be completed by the Contractor is attached to this Certificate. The failure to include items on this list does not change the responsibility of the Contractor to complete its Work in accordance with the Contract Documents. The Contractor shall complete all items on the Punchlist in accordance with the Contract Documents.

Security, maintenance, utilities, damage to the Work and insurance are the responsibility of the Owner and the Contractor based on their operations pursuant to final completion of the Work.

Copies of this Certificate were provided to the Contractor and the Owner on \_\_\_\_\_

Design Professional: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_





WITHHOLDINGS FROM SUBCONTRACTORS AND/OR SUPPLIERS:

Typed or Printed Name of Subcontractor or Supplier	Amount Withheld	Reason for Withholding

Moreover, Contractor certifies that, except for as set forth immediately above, Contractor has paid all of its subcontractors and suppliers who were due to be paid with the proceeds of the prior Application for Payment and Contractor acknowledges that Owner is relying upon such certification when paying Contractor the amount asked for in the payment application that this Affidavit and Certification supports.

CONTRACTOR: [insert name]

\_\_\_\_\_  
 BY: \_\_\_\_\_  
 (Signature of authorized representative)

NOTARY PUBLIC

Subscribed and sworn to before me on this date by \_\_\_\_\_ on behalf of \_\_\_\_\_.

\_\_\_\_\_  
 Signature of Notary Public

Notary Public: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

Date

**SENT BY REGULAR U.S. MAIL**

Surety: name and address

Surety's Agent: name and address; include name of individual who signed the bond

Re: Notice of Award of Contract

To Whom It May Concern:

You are notified that your principal, **Contractor**, has been awarded a contract for construction of the **Richland County Courthouse AC Upgrade Project** in the amount of **\$Contract Sum** by the **Board of Commissioners for Richland County**.

Thank you,

\_\_\_\_\_

By \_\_\_\_\_  
Name/Title: \_\_\_\_\_

**Date for Commencement:** \_\_\_\_\_

**SENT BY REGULAR U.S. MAIL**

Contractor Name

Address

Address

Re: Notice to Proceed  
**Richland County Courthouse AC Upgrade Project**

Dear Contractor Representative:

You are notified to proceed with your Work on the **Richland County Courthouse AC Upgrade Project** (Project).

Thank you,

By \_\_\_\_\_  
Name/Title of Owner or Design Professional  
Representative Giving Notice

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Asbestos Local 207

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Asbestos Worker

**Effective Date:**  
8/6/2025

**Effective Date:**  
8/6/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Asbestos Abatement	\$32.50		\$10.95	\$7.25	\$0.75	\$3.75	\$0.00	\$0.05	\$0.00	\$0.00	\$55.25	\$71.50
Apprentice	BHR	Percent										
Trainee	\$22.00	\$67.69	\$10.95	\$1.90	\$0.75	\$1.00	\$0.00	\$0.05	\$0.00	\$0.00	\$36.65	\$47.65

**(\*)Special Calculation Note :**

Other: Drug Testing

**Ratio :**

3 Journeymen to 1 Trainee

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Ashtabula\*, Athens, Auglaize, Brown, Butler\*, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Erie\*, Fairfield, Fayette, Franklin, Geauga, Greene, Guernsey, Hamilton, Hardin, Harrison, Highland, Hocking, Holmes, Huron, Knox, Lake, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Miami, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Portage, Preble, Richland, Ross, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren\*, Wayne

**Special Jurisdictional Note :**

Ashtabula County: (post offices & townships of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrove, Kingville, Lenox, Monroe, Morgan, New Lyme, North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Sheffield, Trumbull, Wayne, Williamsfield & Windsor)

Butler County: (townships of Fairfield, Hanover, Liberty, Milford, Morgan, Oxford, Ripley, Ross, St. Clair, Union & Wayne) (Lemon & Madison)

Erie County: (post offices & townships of Berlin, Berlin Heights, Birmingham, Florence, Huron, Milan, Shinrock & Vermilion)

Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington) (Clear Creek, Franklin, Mossie, Turtle Creek & Wayne)

**Details :**

An Abatement Journeyman is anyone who has more than 600 hours in the Asbestos Abatement field.

Asbestos & lead paint abatement including, but not limited to the removal or encapsulation of asbestos & lead paint, all work in conjunction with the preparation of the removal of same & all work in conjunction with the clean up after said removal. The removal of all insulation materials, whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Abatement Workers.

On all mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) that are going to be demolished, the removal of all insulating materials whether they contain asbestos or not shall be the exclusive work of the Laborers.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Asbestos Local 84 Heat & Frost Insulators

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Asbestos Worker

**Effective Date:**  
6/4/2025

**Effective Date:**  
6/4/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Asbestos Insulation Worker	\$39.02		\$8.65	\$10.00	\$0.46	\$0.00	\$7.24	\$0.00	\$0.00	\$0.00	\$65.37	\$84.88
Apprentice	BHR	Percent										
1st Year	\$23.41	\$60.00	\$8.65	\$6.00	\$0.46	\$0.00	\$5.08	\$0.00	\$0.00	\$0.00	\$43.60	\$55.31
2nd Year	\$25.36	\$65.00	\$8.65	\$6.50	\$0.46	\$0.00	\$5.35	\$0.00	\$0.00	\$0.00	\$46.32	\$59.00
3rd Year	\$29.27	\$75.02	\$8.65	\$7.50	\$0.46	\$0.00	\$5.89	\$0.00	\$0.00	\$0.00	\$51.77	\$66.41
4th Year	\$33.17	\$85.00	\$8.65	\$8.50	\$0.46	\$0.00	\$6.43	\$0.00	\$0.00	\$0.00	\$57.21	\$73.79

**(\*)Special Calculation Note :**

Other is Industry and Labor Management Fund

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Ashtabula\*, Carroll, Columbiana, Coshocton, Harrison, Holmes, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, Wayne

**Special Jurisdictional Note :**

Ashtabula County: except for the townships of Ashtabula, Austinburg, Geneva, Harpersfield, Jefferson, Plymouth and Saybrook.

**Details :**

The removal of all insulation materials, whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Workers. On all mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) that are going to be demolished, the removal of all insulating materials whether they contain asbestos or not shall be the exclusive work of the Laborers.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Boilermaker Local 85

**Type of Rate:** Commercial

**Change #:**  
LCN01-2012kp

**Craft:**  
Boilermaker

**Effective Date:**  
3/28/2012

**Effective Date:**  
3/28/2012

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Boilermaker	\$31.01		\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$54.19	\$69.70
Apprentice	BHR	Percent										
1st 6 months	\$21.71	\$70.00	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$31.62	\$42.47
2nd 6 months	\$22.48	\$72.50	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$32.39	\$43.63
3rd 6 months	\$23.26	\$75.00	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$33.17	\$44.80
4th 6 months	\$24.03	\$77.50	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$47.21	\$59.23
5th 6 months	\$24.81	\$80.00	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$47.99	\$60.39
6th 6 months	\$26.36	\$85.00	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$49.54	\$62.72
7th 6 months	\$27.91	\$90.00	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$51.09	\$65.04
8th 6 months	\$29.46	\$95.00	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$52.64	\$67.37

**(\*)Special Calculation Note :**

No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

5 Journeymen to 1 Apprentice 10 Journeymen to 2 Apprentice 15 Journeymen to 3 Apprentice Helpers will be referred in the event that apprentices are NOT available.

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Allen, Ashland, Auglaize, Crawford, Darke, Defiance, Delaware, Erie, Fulton, Hancock, Hardin, Henry, Huron, Knox, Logan, Lucas, Marion, Mercer, Morrow, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Shelby, Union, Van Wert, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Bricklayer Local 23 (Mansfield)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Bricklayer

**Effective Date:**  
6/1/2025

**Effective Date:**  
6/1/2025

Classification	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Bricklayer	\$37.07		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$63.41	\$81.95
Pointer Caulker Cleaner	\$37.07		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$63.41	\$81.95
Tile Setter, Stone, Marble & Cement Masons, Plasterer and Terrazzo & Mosaic Workers	\$37.07		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$63.41	\$81.95
Tile Marble Terrazzo Finishers	\$32.42		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$58.76	\$74.97
Lay Out Man	\$37.07		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$63.41	\$81.95
Saw Man	\$37.07		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$63.41	\$81.95
Stack Worker	\$38.57		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$64.91	\$84.20
Refractory Hot Work	\$39.57		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$65.91	\$85.70
Carbon Masonry and Swing Sand Blasting	\$38.57		\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$64.91	\$84.20
Masonry Maintenance Specialist	\$18.54		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.54	\$27.81
Apprentice	BHR	Percent										
1st 6 Months	\$22.24	\$60.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$48.58	\$59.70
2nd 6 Months	\$24.10	\$65.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$50.44	\$62.48
3rd 6 Months	\$25.95	\$70.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$52.29	\$65.26
4th 6 Months	\$27.80	\$75.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$54.14	\$68.04
5th 6 Months	\$29.66	\$80.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$56.00	\$70.82
6th 6 Months	\$31.51	\$85.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$57.85	\$73.60

7th 6 Months	\$33.36	\$90.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$59.70	\$76.38
8th 6 Months	\$35.22	\$95.00	\$10.60	\$11.90	\$0.84	\$0.00	\$3.00	\$0.00	\$0.00	\$0.00	\$61.56	\$79.16
Mason Trainee 1-90 Days	\$22.24	\$60.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.24	\$33.36
91-365 Days	\$22.24	\$60.00	\$10.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.84	\$43.96
2nd Year	\$25.95	\$70.00	\$10.60	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.55	\$49.52

**(\*)Special Calculation Note :**

APPRENTICES BASED ON % OF EACH CLASS ABOVE PLUS FULL FRINGES

**Ratio :**

1-2 Journeymen to 1 Apprentice 3-4 Journeymen to 2 Apprentices 5-6 Journeymen to 2 Apprentices 6-10 Journeymen to 3 Apprentices \*\* Apprentices must be hired prior to hiring Mason Trainees\*\*\* Mason Finisher Ratio 1 Apprentice permits 1 Mason Trainee 2 Apprentice permits 1 Mason Trainee 3 Apprentice permits 2 Mason Trainee 4 Apprentice permits 2 Mason Trainee

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Hardin, Holmes, Marion, Morrow, Richland, Wayne, Wyandot

**Special Jurisdictional Note :**

**Details :**

All Free Standing Work shall be \$ 1.50 per hour above the Regular rate. Radial brick, common brick, face brick, and acid brick linings, All sandblasting and the leaving of carbon masonry material on all swinging stage and/or scaffolding will be at the rate of \$1.50 per hour above Regular rate. "Hot Work" shall receive \$ 2.50 per hour above Regular Rate. Working on vertical slip forms, jump forms or continuous forming of any kind shall be \$1.50 per hour above Regular rate, for all work from the base up to 5th (50)feet. Above that height they shall be paid at the Regular rate of time and one-half. Topping Materials (emery, iron etc.) will be \$.50 per hour above regular rate. Layout man and Sawman shall receive .25 per hour over the Journeymen Rate.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Bricklayer Local 23 Heavy Hwy (A)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Bricklayer

**Effective Date:**  
3/25/2026

**Effective Date:**  
3/25/2026

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason Bricklayer Sewer Water Works A	\$34.56		\$10.20	\$9.68	\$0.56	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$56.30	\$73.58
Apprentice	BHR	Percent										
1st year	\$24.19	\$70.00	\$10.20	\$9.68	\$0.56	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$45.93	\$58.03
2nd year	\$27.65	\$80.00	\$10.20	\$9.68	\$0.56	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$49.39	\$63.21
3rd year	\$31.10	\$90.00	\$10.20	\$9.68	\$0.56	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$52.84	\$68.39

**(\*)Special Calculation Note :**

This rate is not for building construction.

This rate applies only to the Cement Masons. All other Bricklaying, PCC, Stone, Tile, Marble, Refractory, Industrial and all other applicable work performed will be performed under the applicable rates for those contracts.

**Ratio :**

- 3 Journeymen to 1 Apprentice
- 6 Journeymen to 2 Apprentice
- 9 Journeymen to 3 Apprentice
- 12 Journeymen to 4 Apprentice
- 15 Journeymen to 5 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Geauga, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne

**Special Jurisdictional Note :**

**Details :**

Bricklayer Local 23 Heavy Hwy (A): Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

Bricklayer Local 23 Heavy Hwy (B): Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control, Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Bricklayer Local 23 Heavy Hwy (B)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Bricklayer

**Effective Date:**  
3/25/2026

**Effective Date:**  
3/25/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason Bricklayer Power Plants Tunnels Amusement Parks B	\$35.56		\$10.20	\$9.68	\$0.57	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$57.31	\$75.09
Apprentice	BHR	Percent										
1st year	\$24.89	\$70.00	\$10.20	\$9.68	\$0.57	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$46.64	\$59.09
2nd year	\$28.45	\$80.00	\$10.20	\$9.68	\$0.57	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$50.20	\$64.42
3rd year	\$32.00	\$90.00	\$10.20	\$9.68	\$0.57	\$0.00	\$1.30	\$0.00	\$0.00	\$0.00	\$53.75	\$69.75

**(\*)Special Calculation Note :**

This rate is not for building construction.

This rate applies only to the Cement Masons. All other Bricklaying, PCC, Stone, Tile, Marble, Refractory, Industrial and all other applicable work performed will be performed under the applicable rates for those contracts.

**Ratio :**

- 3 Journeymen to 1 Apprentice
- 6 Journeymen to 2 Apprentice
- 9 Journeymen to 3 Apprentice
- 12 Journeymen to 4 Apprentice
- 15 Journeymen to 5 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Geauga, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne

**Special Jurisdictional Note :**

**Details :**

Bricklayer Local 23 Heavy Hwy (A): Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

Bricklayer Local 23 Heavy Hwy (B): Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control, Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Commercial Zone NEO 4B

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$34.10		\$8.88	\$10.83	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$57.56	\$74.61
Apprentice	BHR	Percent										
1st 3 Months	\$20.46	\$60.00	\$8.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.34	\$39.57
2nd 3 Months	\$20.46	\$60.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$33.09	\$43.32
2nd 6 Months is 1st year	\$22.17	\$65.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$34.80	\$45.88
3rd 6 Months	\$23.87	\$70.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$36.50	\$48.44
4th 6 Months is 2nd year	\$25.58	\$75.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$38.21	\$50.99
5th 6 Months	\$27.28	\$80.00	\$8.88	\$8.66	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$48.57	\$62.21
6th 6 Months is 3rd year	\$28.99	\$85.02	\$8.88	\$9.21	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$50.83	\$65.33
7th 6 Months	\$30.69	\$90.00	\$8.88	\$9.75	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$53.07	\$68.42
8th 6 Months is 4th year	\$32.40	\$95.00	\$8.88	\$10.29	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$55.32	\$71.51

**(\*)Special Calculation Note :**

Other: International Training

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Huron, Richland

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Floorlayer Zone NEO 4B

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Floorlayer	\$34.10		\$8.88	\$10.83	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$57.58	\$74.63
Apprentice	BHR	Percent										
1st 3 Months	\$20.46	\$60.00	\$8.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.34	\$39.57
2nd 3 Months	\$20.46	\$60.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$33.11	\$43.34
2nd 6 Months	\$22.17	\$65.02	\$8.88	\$0.00	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$34.82	\$45.91
3rd 6 Months	\$23.87	\$70.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$36.52	\$48.46
4th 6 Months	\$25.58	\$75.02	\$8.88	\$0.00	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$38.23	\$51.02
5th 6 Months	\$27.28	\$80.00	\$8.88	\$8.66	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$48.59	\$62.23
6th 6 Months	\$28.99	\$85.02	\$8.88	\$9.21	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$50.85	\$65.35
7th 6 Months	\$30.69	\$90.00	\$8.88	\$9.75	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$53.09	\$68.44
8th 6 Months	\$32.40	\$95.02	\$8.88	\$10.29	\$0.72	\$0.00	\$2.88	\$0.17	\$0.00	\$0.00	\$55.34	\$71.54

**(\*)Special Calculation Note :**

Other: International Training

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Huron, Richland

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Hev Hwy Zone NHH C2-H

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$34.67		\$8.91	\$10.83	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$58.26	\$75.60
Apprentice	BHR	Percent										
1st 3 Months	\$20.80	\$60.00	\$8.91	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.71	\$40.11
2nd 3 Months	\$20.80	\$60.00	\$8.91	\$0.00	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$33.56	\$43.96
2nd 6 Months	\$22.54	\$65.00	\$8.91	\$0.00	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$35.30	\$46.56
3rd 6 Months	\$24.27	\$70.00	\$8.91	\$0.00	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$37.03	\$49.16
4th 6 Months	\$26.00	\$75.00	\$8.91	\$0.00	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$38.76	\$51.76
5th 6 Months	\$27.74	\$80.00	\$8.91	\$8.66	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$49.16	\$63.02
6th 6 Months	\$29.47	\$85.00	\$8.91	\$9.21	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$51.44	\$66.17
7th 6 Months	\$31.20	\$90.00	\$8.91	\$9.75	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$53.71	\$69.31
8th 6 Months	\$32.94	\$95.00	\$8.91	\$10.29	\$0.72	\$0.00	\$2.99	\$0.14	\$0.00	\$0.00	\$55.99	\$72.45

**(\*)Special Calculation Note :**

Other: Training

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Huron, Richland

**Special Jurisdictional Note :**

**Details :**

Any construction work as performed within the definitions listed here below, all of which, taken together are "Heavy-Highway Construction" work: "HIGHWAY CONSTRUCTION" work is defined as work performed to provide a facility to accommodate vehicular or pedestrian traffic and includes, but is not limited to, the construction of all streets, roads, expressways, turnpikes, bridges, drainage structures, grade separations, parking lots, rest areas, alleys, sidewalks, guardrails, fences, and sound barriers, but shall not include construction of buildings. "AIRPORT CONSTRUCTION" work is defined as including site preparation, grading, paving, drainage, fences, sidewalks, driveways, parking areas and similar work incidental to the construction of airfields but shall not include the construction of buildings. "HEAVY CONSTRUCTION" work is defined as including, but not limited to grade separations, foundations (does not include building foundations), abutments, retaining walls, shafts, tunnels, subways, elevators, drainage projects, flood control projects, reclamation projects, reservoirs, water supply projects, water development projects, hydro-electric development, utility transmission lines, including right-of-way clearing, locks, dams, dikes, levees, revetments, channels, channel cutoffs, intakes, dredging projects, jetties, breakwater, docks, harbors; and all municipal and utility construction except construction classified as building construction. "RAILROAD CONSTRUCTION" work is defined as including, grading, drainage, placing of rails, crossties, ballast and the construction of bridges, and other incidentals for railroads, street railways construction projects and rapid transit system projects, but shall not include the construction of buildings. "SEWER WATERWORKS AND UTILITY CONSTRUCTION" work is defined as including construction of all storm sewers, sanitary sewers, supplying and distributing waterlines, gas lines, telephone and television conduit, underground electrical lines, and similar utility construction. Main waterline and trunk sewers connecting water works and/or sewage disposal plants are included within this definition. "SUPPORTIVE EXCAVATION AND DEEP FOUNDATIONS" work is all driven and drilled foundations within the building site. "POWER PLANT SITE" work is defined as all work which is inside the property line, but outside the actual building construction. Such work shall include, but is not limited to, the grading and installation of sewer lines, drainage lines, gas lines, telephone and television conduit, underground electrical lines and similar utility construction, parking lots, bridges, roads, streets, sidewalks, reservoirs, ash pits, storage tanks, ramps and other such construction work performed on the work site, but shall not include the actual excavation for the buildings, foundations or footers or construction of the buildings. "POLLUTION CONTROL, SEWAGE PLANT, WASTE PLANT AND WATER TREATMENT FACILITIES CONSTRUCTION" WORK shall be all work in construction of pumping stations, waste and sewage disposal plants, incinerator plants, water treatment plants, filtration plants, solid waste disposal and similar pollution control facilities. "SOLAR & WIND FARM" WORK is considered "HEAVY CONSTRUCTION" and includes all work in the construction of solar fields/farms and wind fields/farms (not installations on buildings).

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Insulation Zone NEO 4B

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Insulation	\$27.28		\$8.88	\$10.83	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$50.74	\$64.38
Apprentice	BHR	Percent										
1st 3 Months	\$16.37	\$60.00	\$8.88	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.25	\$33.43
2nd 3 Months	\$16.37	\$60.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$29.00	\$37.18
2nd 6 Months	\$17.73	\$65.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$30.36	\$39.23
3rd 6 Months	\$19.10	\$70.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$31.73	\$41.27
4th 6 Months	\$20.46	\$75.00	\$8.88	\$0.00	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$33.09	\$43.32
5th 6 Months	\$21.82	\$80.00	\$8.88	\$8.66	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$43.11	\$54.03
6th 6 Months	\$23.19	\$85.02	\$8.88	\$9.21	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$45.03	\$56.63
7th 6 Months	\$24.55	\$90.00	\$8.88	\$9.75	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$46.93	\$59.21
8th 6 Months	\$25.92	\$95.02	\$8.88	\$10.29	\$0.72	\$0.00	\$2.89	\$0.14	\$0.00	\$0.00	\$48.84	\$61.80

**(\*)Special Calculation Note :**

\*Other is Training

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Huron, Richland

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Millwright NE Zone M1-A

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Millwright	\$36.41		\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$63.91	\$82.12
Certified Welder	\$37.41		\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$64.91	\$83.62
Layout man on Monorail	\$39.14		\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$66.64	\$86.21
Apprentice	BHR	Percent										
1st 6 months	\$21.85	\$60.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$49.35	\$60.27
2nd 6 months	\$23.67	\$65.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$51.17	\$63.00
3rd 6 months	\$25.49	\$70.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$52.99	\$65.73
4th 6 months	\$27.31	\$75.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$54.81	\$68.46
5th 6 months	\$29.13	\$80.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$56.63	\$71.19
6th 6 months	\$30.95	\$85.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$58.45	\$73.92
7th 6 months	\$32.77	\$90.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$60.27	\$76.65
8th 6 months	\$34.59	\$95.00	\$8.90	\$11.33	\$0.72	\$0.00	\$6.36	\$0.19	\$0.00	\$0.00	\$62.09	\$79.38

**(\*)Special Calculation Note :**

Other is Training.

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Ashtabula, Cuyahoga, Erie, Geauga, Huron, Lake, Lorain, Medina, Portage, Richland, Summit

**Special Jurisdictional Note :**

**Details :**

The term "Millwright and Machine Erectors" jurisdiction shall mean the unloading, hoisting, rigging, skidding, moving, dismantling, aligning, erecting, assembling, repairing, maintenance and adjusting of all structures, processing areas either under cover, under ground or elsewhere, required to process material, handle, manufacture or service, be it powered or receiving power manually, by steam, gas, electricity, gasoline, diesel, nuclear, solar, water, air or chemically, and in industries such as and including, which are identified for the purpose of description, but not limited to, the following: woodworking plants; canning industries; steel mills; coffee roasting plants; paper and pulp; cellophane; stone crushing; gravel and sand washing and handling; refineries; grain storage and handling; asphalt plants; sewage disposal; water plants; laundries; bakeries; mixing plants; can, bottle and bag packing plants; textile mills; paint mills; breweries; milk processing plants; power plants; aluminum processing or manufacturing plants; and amusement and entertainment fields. The installation of mechanical equipment in atomic energy plants; installation of reactors in power plants; installation of control rods and equipment in reactors; and installation of mechanical equipment in rocket missile bases, launchers, launching gantry, floating bases, hydraulic escape doors and any and all component parts thereto, either assembled, semi-assembled or disassembled. The installation of, but not limited to, the following: setting-up of all engines, motors, generators, air compressors, fans, pumps, scales, hoppers, conveyors of all types, sizes and their supports; escalators; man lifts; moving sidewalks; hoists; dumb waiters; all types of feeding machinery; amusement devices; mechanical pin setters and spotters in bowling alleys; refrigeration equipment; and the installation of all types of equipment necessary and required to process material either in the manufacturing or servicing. The handling and installation of pulleys, gears, sheaves, fly wheels, air and vacuum drives, worm drives and gear drives directly or indirectly coupled to motors, belts, chains, screws, legs, boots, guards, booth tanks, all bin valves, turn heads and indicators, shafting, bearings, cable sprockets, cutting all key seats in new and old work, troughs, chippers, filters, calendars, rolls, winders, rewinders, slitters, cutters, wrapping machines, blowers, forging machines, rams, hydraulic or otherwise, planing, extruder, ball, dust collectors, equipment in meat packing plants, splicing of ropes and cables. The laying-out, fabrication and installation of protection equipment including machinery guards, making and setting of templates for machinery, fabrication of bolts, nuts, pans, drilling of holes for any equipment which the Millwrights install regardless of materials; all welding and burning regardless of type, fabrication of all lines, hose or tubing used in lubricating machinery installed by Millwrights; grinding, cleaning, servicing and any machine work necessary for any part of any equipment installed by the Millwrights; and the break-in and trial run of any equipment or machinery installed by the Millwrights. It is agreed the Millwrights shall use the layout tools and optic equipment necessary to perform their work.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Carpenter Pile Driver Hev Hwy Zone NHH P2-B

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Carpenter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Pile Driver	\$36.34		\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$63.91	\$82.08
Diver	\$54.51		\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$82.08	\$109.34
Certified Welder	\$37.39		\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$64.96	\$83.66
Apprentice	BHR	Percent										
1st 6 months	\$21.80	\$60.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$49.37	\$60.28
2nd 6 months	\$23.62	\$65.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$51.19	\$63.00
3rd 6 months	\$25.44	\$70.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$53.01	\$65.73
4th 6 months	\$27.26	\$75.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$54.83	\$68.45
5th 6 months	\$29.07	\$80.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$56.64	\$71.18
6th 6 months	\$30.89	\$85.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$58.46	\$73.90
7th 6 months	\$32.71	\$90.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$60.28	\$76.63
8th 6 months	\$34.52	\$95.00	\$8.85	\$11.33	\$0.72	\$0.00	\$6.48	\$0.19	\$0.00	\$0.00	\$62.09	\$79.35

**(\*)Special Calculation Note :**

\*Other is Training

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Ashtabula, Cuyahoga, Erie, Geauga, Huron, Lake, Lorain, Medina, Portage, Richland, Summit

**Special Jurisdictional Note :**

**Details :**

Pile Drivers duties shall include but not limited to: Pile driving, milling, fashioning, joining assembling, erecting, fastening, or dismantling of all material of wood, plastic, metal, fiber, cork and composition and all other substitute materials: pile driving, cutting, fitting and placing of lagging, and the handling, cleaning, erecting, installing and dismantling of machinery, equipment and erecting pre-engineered metal buildings. Pile Drivers work but not limited to: unloading, assembling, erection, repairs, operation, signaling, dismantling and reloading all equipment that is used for pile driving including pile butts is defined as sheeting or scrap piling. Underwater work that may be required in connection with the installation of piling. The driver and his tender work as a team and shall arrive at their own financial arrangements with the contractor. Any configuration of wood, steel, concrete or composite that is jetted, driven or vibrated onto the ground by conventional pile driving equipment for the purpose of supporting a future load that may be permanent or temporary. The construction of all wharves and docks, including the fabrication and installation of floating docks. Driving bracing, plumbing, cutting off and capping of all piling whether wood, metal, pipe piling or composite, loading, unloading, erecting, framing, dismantling, moving and handling of pile driving equipment piling used in the construction and repair of all wharves, docks, piers, trestles, caissons, cofferdams and erection of all sea walls and breakwaters. All underwater and marine work on bulkheads, wharves, docks, shipyards, caissons, piers, bridges, pipeline, work, viaducts, marine cable and trestles, as well as salvage and reclamation work where divers are employed. Rate shall include carpenters, acoustic and ceiling installers, drywall installers, pile drivers and floorlayers.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Cement Mason Local 132 (Columbus)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Cement Mason

**Effective Date:**  
6/4/2025

**Effective Date:**  
6/4/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$35.12		\$8.90	\$4.65	\$0.75	\$0.00	\$3.10	\$0.06	\$0.00	\$0.00	\$52.58	\$70.14
Apprentice	BHR	Percent										
1st Year	\$24.58	\$70.00	\$8.90	\$4.65	\$0.75	\$0.00	\$3.10	\$0.06	\$0.00	\$0.00	\$42.04	\$54.34
2nd Year	\$28.10	\$80.00	\$8.90	\$4.65	\$0.75	\$0.00	\$3.10	\$0.06	\$0.00	\$0.00	\$45.56	\$59.60
3rd Year	\$31.61	\$90.00	\$8.90	\$4.65	\$0.75	\$0.00	\$3.10	\$0.06	\$0.00	\$0.00	\$49.07	\$64.87

**(\*)Special Calculation Note :**

Other: International Training Fund

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Guernsey, Hocking, Knox, Licking, Madison, Marion, Morrow, Muskingum, Perry, Pickaway, Richland, Ross, Union, Vinton, Wyandot

**Special Jurisdictional Note :**

**Details :**

Working on swing stage, slip scaffold, window jack scaffold, scissor lifts, and aerial lifts shall receive the following rates: \$.50 above the regular rate for heights up to fifty (50) feet above grade level \$1.00 above the regular rate for heights over fifty (50) feet above grade level

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Cement Mason Local 132 Hev Hwy (Columbus)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Cement Mason

**Effective Date:**  
5/1/2025

**Effective Date:**  
5/1/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	\$37.29		\$9.00	\$7.65	\$0.75	\$0.00	\$2.40	\$0.07	\$0.00	\$0.00	\$57.16	\$75.81
Apprentice	BHR	Percent										
1st Year	\$26.10	\$70.00	\$9.00	\$7.65	\$0.75	\$0.00	\$2.40	\$0.07	\$0.00	\$0.00	\$45.97	\$59.02
2nd Year	\$29.83	\$80.00	\$9.00	\$7.65	\$0.75	\$0.00	\$2.40	\$0.07	\$0.00	\$0.00	\$49.70	\$64.62
3rd Year	\$33.56	\$90.00	\$9.00	\$7.65	\$0.75	\$0.00	\$2.40	\$0.07	\$0.00	\$0.00	\$53.43	\$70.21

**(\*)Special Calculation Note :**

Other: International Training Fund

**Ratio :**

1 Journeyman to 1 Apprentice 2 Journeymen to 1 Apprentice thereafter

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Athens, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Guernsey, Hocking, Knox, Licking, Madison, Marion, Meigs, Monroe, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Richland, Ross, Union, Vinton, Washington, Wyandot

**Special Jurisdictional Note :**

**Details :**

Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy Construction, Airport Construction Or Railroad Construction Work, Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facilities Construction.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 688 Inside

**Type of Rate:** Commercial

**Change #:**  
LCN02-2025ib

**Craft:**  
Electrical

**Effective Date:**  
9/10/2025

**Effective Date:**  
9/10/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$38.00		\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$1.14	\$0.00	\$0.00	\$60.85	\$79.85
Over 50 feet	\$76.00		\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$2.28	\$0.00	\$0.00	\$99.99	\$137.99
1st Level Constructi on Wireman 0-2000 hours	\$15.29		\$6.83	\$0.46	\$0.92	\$0.00	\$0.46	\$0.00	\$0.00	\$0.00	\$23.96	\$31.61
2nd Level CW 2001-4000 hours	\$16.25		\$6.83	\$0.49	\$0.92	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$24.98	\$33.11
3rd Level CW 4001-6000 hours	\$17.20		\$6.83	\$0.52	\$0.92	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$25.99	\$34.59
4th Level CW 6001-8000 hours	\$19.12		\$6.83	\$0.57	\$0.92	\$0.00	\$0.57	\$0.00	\$0.00	\$0.00	\$28.01	\$37.57
1st Level Constructi on Electrician 8001-10000 hours	\$21.03		\$6.83	\$0.63	\$0.92	\$0.00	\$0.63	\$0.00	\$0.00	\$0.00	\$30.04	\$40.56
2nd Level CE 10001-12000 hours	\$22.94		\$6.83	\$0.69	\$0.92	\$0.00	\$0.69	\$0.00	\$0.00	\$0.00	\$32.07	\$43.54
3rd Level CE 12001-14000 hours	\$28.67		\$6.83	\$0.86	\$0.92	\$0.00	\$0.86	\$0.00	\$0.00	\$0.00	\$38.14	\$52.48
Apprentice	BHR	Percent										
1st Period	\$19.00	\$50.00	\$10.10	\$0.00	\$0.60	\$0.00	\$0.00	\$0.57	\$0.00	\$0.00	\$30.27	\$39.77
2nd Period	\$20.90	\$55.00	\$10.10	\$0.00	\$0.60	\$0.00	\$0.00	\$0.63	\$0.00	\$0.00	\$32.23	\$42.68
3rd Period	\$22.80	\$60.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.68	\$0.00	\$0.00	\$45.19	\$56.59
4th Period	\$24.70	\$65.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.74	\$0.00	\$0.00	\$47.15	\$59.50
5th Period	\$28.50	\$75.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.86	\$0.00	\$0.00	\$51.07	\$65.32
6th Perod	\$32.30	\$85.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.93	\$0.00	\$0.00	\$54.94	\$71.09

**(\*)Special Calculation Note :**

Other: NEBF (National Electrical Benefit Fund).

**Ratio :**

1-3 Journeymen to 2 Apprentices  
4-6 Journeymen to 4 Apprentices  
7-9 Journeymen to 6 Apprentices Etc.

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Huron\*, Knox\*, Marion, Morrow, Richland, Wyandot\*

**Special Jurisdictional Note :**

In Huron County the following townships: Richmond, New Haven, Ripley, and Greenwich  
In Knox County the following townships: Liberty, Clinton, Union, Howard, Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown, Jefferson  
In Wyandot County the following townships: Sycamore, Crane, Eden, Pitt, Antrim and Tymochee

**Details :**

Scope of work for CW/CEs will be limited only by what the employer deems appropriate and within the individual's qualifications to properly perform safely and in a workmanlike manner. Projects where CW/CEs could be utilized are office buildings, shopping centers, gas stations, auto sales agencies and garages, educational facilities, food service centers, restaurants, entertainment facilities, funeral homes, hospitals, clinics, motels, retail and wholesale facilities not to exceed 200,000 square feet and small manufacturing facilities not to exceed 50,000 square feet.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 688 Inside Lt Commercial South West

**Type of Rate:** Commercial

**Change #:**  
LCN02-2025ib

**Craft:**  
Electrical

**Effective Date:**  
9/10/2025

**Effective Date:**  
9/10/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$38.00		\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$1.14	\$0.00	\$0.00	\$60.85	\$79.85
Over 50 feet	\$76.00		\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$2.28	\$0.00	\$0.00	\$99.99	\$137.99
CE-3 12,001-14,000 Hrs	\$28.67		\$6.83	\$0.86	\$0.92	\$0.00	\$0.86	\$0.00	\$0.00	\$0.00	\$38.14	\$52.48
CE-2 10,001-12,000 Hrs	\$22.94		\$6.83	\$0.69	\$0.92	\$0.00	\$0.69	\$0.00	\$0.00	\$0.00	\$32.07	\$43.54
CE-1 8,001-10,000 Hrs	\$21.03		\$6.83	\$0.63	\$0.92	\$0.00	\$0.63	\$0.00	\$0.00	\$0.00	\$30.04	\$40.56
CW-4 6,001-8,000 Hrs	\$19.12		\$6.83	\$0.57	\$0.92	\$0.00	\$0.57	\$0.00	\$0.00	\$0.00	\$28.01	\$37.57
CW-3 4,001-6,000 Hrs	\$17.20		\$6.83	\$0.52	\$0.92	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$25.99	\$34.59
CW-2 2,001-4,000 Hrs	\$16.25		\$6.83	\$0.49	\$0.92	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$24.98	\$33.11
CW-1 0-2,000 Hrs	\$15.29		\$6.83	\$0.46	\$0.92	\$0.00	\$0.46	\$0.00	\$0.00	\$0.00	\$23.96	\$31.61
Apprentice	BHR	Percent										
1st Period	\$19.00	\$50.00	\$10.10	\$0.00	\$0.60	\$0.00	\$0.00	\$0.57	\$0.00	\$0.00	\$30.27	\$39.77
2nd Period	\$20.90	\$55.00	\$10.10	\$0.00	\$0.60	\$0.00	\$0.00	\$0.63	\$0.00	\$0.00	\$32.23	\$42.68
3rd Period	\$22.80	\$60.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.68	\$0.00	\$0.00	\$45.19	\$56.59
4th Period	\$24.70	\$65.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.74	\$0.00	\$0.00	\$47.15	\$59.50
5th Period	\$28.50	\$75.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.86	\$0.00	\$0.00	\$51.07	\$65.32
6th Period	\$32.30	\$85.00	\$10.10	\$7.75	\$0.60	\$0.00	\$3.26	\$0.93	\$0.00	\$0.00	\$54.94	\$71.09
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$

**(\*)Special Calculation Note :**

Other: NEBF (National Electrical Benefit Fund) and Administration Fund

**Ratio :**

Journeyman 1-3 to 2 Apprentices  
Journeyman 4-6 to 4 Apprentices  
Journeyman 7-9 to 6 Apprentices Etc.

Construction Electrician and Construction Wireman Ratio There shall be a minimum ratio of one inside Journeyman to every (4) employees of different classification per jobsite. An inside Journeyman Wireman is required on the project as the fifth (5th) worker or when apprentices are used.

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Huron\*, Knox\*, Marion, Morrow, Richland, Wyandot\*

**Special Jurisdictional Note :**

In Huron County the following townships: Richland, New Haven, Ripley, and Greenwich  
In Knox County the following townships: Liberty, Clinton, Union, Howard, Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown, Jefferson  
In Wyandot County the following townships: Sycamore, Crane, Eden, Pitt, Antrim and Tymochee

**Details :**

The scope of work for the light commercial agreement shall apply to the following facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail and wholesale facilities, small stand-alone manufacturing facilities when free standing and not part of a larger facility (not to exceed 50,000 square fee), solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures, warehouses, gas stations, food service centers, restaurants, entertainment facilities, hospitals, clinics, motels, residential buildings.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 688 Voice Data Video

**Type of Rate:** Commercial

**Change #:**  
LCN01-2022sks

**Craft:**  
Electrical

**Effective Date:**  
6/29/2022

**Effective Date:**  
6/29/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Installer Technician B	\$29.50		\$9.65	\$2.14	\$0.70	\$0.00	\$1.21	\$0.68	\$0.00	\$0.00	\$43.88	\$58.63
Installer Technician A	\$30.75		\$9.65	\$2.18	\$0.70	\$0.00	\$1.21	\$0.71	\$0.00	\$0.00	\$45.20	\$60.58
Cable Puller	\$14.75		\$9.65	\$1.70	\$0.70	\$0.00	\$1.21	\$0.34	\$0.00	\$0.00	\$28.35	\$35.73
Apprentice	BHR	Percent										
1st Period 0-1000hrs	\$16.23	\$55.00	\$9.65	\$1.74	\$0.70	\$0.00	\$1.21	\$0.38	\$0.00	\$0.00	\$29.91	\$38.02
2nd 1001-2000 hours	\$17.70	\$60.00	\$9.65	\$1.79	\$0.70	\$0.00	\$1.21	\$0.41	\$0.00	\$0.00	\$31.46	\$40.31
3rd 2001-3000 hours	\$19.18	\$65.00	\$9.65	\$1.83	\$0.70	\$0.00	\$1.21	\$0.45	\$0.00	\$0.00	\$33.02	\$42.60
4th 3001-4000 hours	\$20.65	\$70.00	\$9.65	\$1.87	\$0.70	\$0.00	\$1.21	\$0.48	\$0.00	\$0.00	\$34.56	\$44.89
5th 4001-5000 hours	\$22.13	\$75.00	\$9.65	\$1.92	\$0.70	\$0.00	\$1.21	\$0.51	\$0.00	\$0.00	\$36.12	\$47.18
6th 5001-6000 hours	\$23.60	\$80.00	\$9.65	\$1.96	\$0.70	\$0.00	\$1.21	\$0.55	\$0.00	\$0.00	\$37.67	\$49.47

**(\*)Special Calculation Note :**

Other is for Holiday Pay. Vacation: Only applies to employees with one (1) continuous year of service with a firm.

**Ratio :**

1 Journeyman Installer to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Huron\*, Knox\*, Marion, Morrow, Richland, Wyandot\*

**Special Jurisdictional Note :**

In Knox County the following townships: Liberty, Clinton, Union, Howard, Monroe, Middleberry, Morris, Wayne, Berlin, Pike, Brown, Jefferson. In Wyandot County: Sycamore, Crane, Eden, Pitt, Antrim & Tymochee. In Huron County: Richmond, New Haven, Ripley, & Greenwich.

**Details :**

An employee who is required to wear an electronic device after hours will receive an additional 1.00 per hour for all hours worked. HOLIDAYS: Memorial Day, 4th of July, Labor Day, Thanksgiving Day, Christmas Day, New Years Day. The following work is EXCLUDED from the Teledata Technician work scope: - Installation of computer systems in industrial applications such as assembly lines, robotics, computer controller manufacturing systems. - Installation of conduit &/or raceways shall be installed by Inside Wireman . On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway, or conduit not greater than 10 foot. - Fire Alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit - All HVAC control work. TECHNICIAN (A) is a Technician B who holds a current Technician Certification from BICSI (Building Industry Consulting Service International, Inc.) CABLE PULLERS are for the installation of cable from one termination point to another.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 71 High Tension Pipe Type Cable

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Electrical

**Effective Date:**  
1/7/2026

**Effective Date:**  
1/7/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$54.94		\$7.50	\$1.65	\$0.55	\$0.00	\$13.19	\$1.00	\$0.00	\$0.00	\$78.83	\$106.30
Certified Lineman Welder	\$54.94		\$7.50	\$1.65	\$0.55	\$0.00	\$13.19	\$1.00	\$0.00	\$0.00	\$78.83	\$106.30
Certified Cable Splicer	\$54.94		\$7.50	\$1.65	\$0.55	\$0.00	\$13.19	\$1.00	\$0.00	\$0.00	\$78.83	\$106.30
Operator A	\$49.20		\$7.50	\$1.48	\$0.49	\$0.00	\$11.81	\$1.00	\$0.00	\$0.00	\$71.48	\$96.08
Operator B	\$43.52		\$7.50	\$1.31	\$0.44	\$0.00	\$10.44	\$1.00	\$0.00	\$0.00	\$64.21	\$85.97
Operator C	\$34.93		\$7.50	\$1.05	\$0.35	\$0.00	\$8.38	\$1.00	\$0.00	\$0.00	\$53.21	\$70.67
Groundman 0-12 months Exp	\$27.47		\$7.50	\$0.82	\$0.27	\$0.00	\$6.59	\$1.00	\$0.00	\$0.00	\$43.65	\$57.38
Groundman 0-12 months Exp w/CDL	\$30.22		\$7.50	\$0.91	\$0.30	\$0.00	\$7.25	\$1.00	\$0.00	\$0.00	\$47.18	\$62.29
Groundman 1 yr or more	\$30.22		\$7.50	\$0.91	\$0.30	\$0.00	\$7.25	\$1.00	\$0.00	\$0.00	\$47.18	\$62.29
Groundman 1 yr or more w/CDL	\$35.71		\$7.50	\$1.07	\$0.36	\$0.00	\$8.57	\$1.00	\$0.00	\$0.00	\$54.21	\$72.06
Equipment Mechanic A	\$43.52		\$7.50	\$1.31	\$0.44	\$0.00	\$10.44	\$1.00	\$0.00	\$0.00	\$64.21	\$85.97
Equipment Mechanic B	\$39.22		\$7.50	\$1.18	\$0.39	\$0.00	\$9.41	\$1.00	\$0.00	\$0.00	\$58.70	\$78.31
Equipment Mechanic C	\$34.92		\$7.50	\$1.05	\$0.35	\$0.00	\$8.38	\$1.00	\$0.00	\$0.00	\$53.20	\$70.66
X-Ray Technician	\$54.94		\$7.50	\$1.65	\$0.55	\$0.00	\$13.19	\$1.00	\$0.00	\$0.00	\$78.83	\$106.30
Apprentice	BHR	Percent										
1st 1000 hrs	\$32.96	\$60.00	\$7.50	\$0.99	\$0.33	\$0.00	\$7.91	\$1.00	\$0.00	\$0.00	\$50.69	\$67.17
2nd 1000 hrs	\$35.71	\$65.00	\$7.50	\$1.07	\$0.36	\$0.00	\$8.57	\$1.00	\$0.00	\$0.00	\$54.21	\$72.06
3rd 1000 hrs	\$38.46	\$70.00	\$7.50	\$1.15	\$0.38	\$0.00	\$9.23	\$1.00	\$0.00	\$0.00	\$57.72	\$76.95

4th 1000 hrs	\$41.20	\$75.00	\$7.50	\$1.24	\$0.41	\$0.00	\$9.89	\$1.00	\$0.00	\$0.00	\$61.24	\$81.84
5th 1000 hrs	\$43.95	\$80.00	\$7.50	\$1.32	\$0.44	\$0.00	\$10.55	\$1.00	\$0.00	\$0.00	\$64.76	\$86.74
6th 1000 hrs	\$46.70	\$85.00	\$7.50	\$1.39	\$0.47	\$0.00	\$11.21	\$1.00	\$0.00	\$0.00	\$68.27	\$91.62
7th 1000 hrs	\$49.45	\$90.00	\$7.50	\$1.48	\$0.49	\$0.00	\$11.87	\$1.00	\$0.00	\$0.00	\$71.79	\$96.52

**(\*)Special Calculation Note :**

Other is Health Reimbursement Account

**Ratio :**

1 Journeyman to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Fairfield, Fayette, Franklin, Gallia, Geauga, Greene, Guernsey, Hamilton, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Preble, Richland, Ross, Scioto, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren, Washington, Wayne

**Special Jurisdictional Note :**

**Details :**

Operator "A": John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater than 25 tons and less than 45 tons).  
 Operator "B": Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.  
 Operator "C": Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

**Special Notes:**

When Cable Splicer helpers are used, they must be a Journeyman Lineman.

Pipe installation, holiday testing, welding, cable splicing operation of vacuum pumps and cable pulling equipment and all work requiring the use of hand tools shall be done by Journeymen and Apprentices. Pipe coating, manhole preparations and conditioning, nitrogen connections and flowmeter installation shall be done by or under the direct supervision of a Journeyman.

At least two (2) Journeyman Linemen in addition to certified lineman welders shall be employed to install high voltage pipe.

When pulling cable, at least six (6) of the workmen shall be no less than Journeyman classifications. When pumping oil, only Journeyman Lineman or equipment operators shall be permitted to operate degasifying and oil pumping equipment

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 71 Outside (Central OH Chapter)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Electrical

**Effective Date:**  
6/4/2025

**Effective Date:**  
6/4/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$46.03		\$7.50	\$1.38	\$0.46	\$0.00	\$9.20	\$0.50	\$0.00	\$0.00	\$65.07	\$88.09
Traffic Signal & Lighting Journeyman	\$44.43		\$7.50	\$1.33	\$0.44	\$0.00	\$8.89	\$0.50	\$0.00	\$0.00	\$63.09	\$85.31
Equipment Operator	\$40.44		\$7.50	\$1.21	\$0.40	\$0.00	\$8.09	\$0.50	\$0.00	\$0.00	\$58.14	\$78.36
Groundman 0-12 months (W/O CDL)	\$24.52		\$7.50	\$0.74	\$0.25	\$0.00	\$4.90	\$0.50	\$0.00	\$0.00	\$38.41	\$50.67
Groundman 0-12 Months W/CDL	\$26.78		\$7.50	\$0.80	\$0.27	\$0.00	\$5.36	\$0.50	\$0.00	\$0.00	\$41.21	\$54.60
Groundman greater than 1 Year W/CDL	\$29.07		\$7.50	\$0.87	\$0.29	\$0.00	\$5.81	\$0.50	\$0.00	\$0.00	\$44.04	\$58.58
Traffic Signal Apprentices	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1st 1,000 hours	\$26.66		\$7.50	\$0.80	\$0.27	\$0.00	\$5.33	\$0.50	\$0.00	\$0.00	\$41.06	\$54.39
2nd 1,000 hours	\$28.88		\$7.50	\$0.87	\$0.29	\$0.00	\$5.78	\$0.50	\$0.00	\$0.00	\$43.82	\$58.26
3rd 1,000 hours	\$31.10		\$7.50	\$0.93	\$0.31	\$0.00	\$6.22	\$0.50	\$0.00	\$0.00	\$46.56	\$62.11
4th 1,000 hours	\$33.32		\$7.50	\$1.00	\$0.33	\$0.00	\$6.66	\$0.50	\$0.00	\$0.00	\$49.31	\$65.97
5th 1,000 hours	\$35.54		\$7.50	\$1.07	\$0.36	\$0.00	\$7.11	\$0.50	\$0.00	\$0.00	\$52.08	\$69.85
6th 1,000 hours	\$39.99		\$7.50	\$1.20	\$0.40	\$0.00	\$8.00	\$0.50	\$0.00	\$0.00	\$57.59	\$77.59
Apprentice	BHR	Percent										
1st 1,000 Hours	\$27.62	\$60.00	\$7.50	\$0.83	\$0.28	\$0.00	\$5.52	\$0.50	\$0.00	\$0.00	\$42.25	\$56.06
2nd 1,000 Hours	\$29.92	\$65.00	\$7.50	\$0.90	\$0.30	\$0.00	\$5.98	\$0.50	\$0.00	\$0.00	\$45.10	\$60.06
3rd 1,000 Hours	\$32.22	\$70.00	\$7.50	\$0.97	\$0.32	\$0.00	\$6.44	\$0.50	\$0.00	\$0.00	\$47.95	\$64.06
4th 1,000 Hours	\$34.52	\$75.00	\$7.50	\$1.04	\$0.35	\$0.00	\$6.90	\$0.50	\$0.00	\$0.00	\$50.81	\$68.07

5th 1,000 Hours	\$36.82	\$80.00	\$7.50	\$1.10	\$0.37	\$0.00	\$7.36	\$0.50	\$0.00	\$0.00	\$53.65	\$72.07
6th 1,000 Hours	\$39.13	\$85.00	\$7.50	\$1.17	\$0.39	\$0.00	\$7.82	\$0.50	\$0.00	\$0.00	\$56.51	\$76.07
7th 1,000 Hours	\$41.43	\$90.00	\$7.50	\$1.24	\$0.41	\$0.00	\$8.28	\$0.50	\$0.00	\$0.00	\$59.36	\$80.07

**(\*)Special Calculation Note :**

Other is Health Reimbursement Account

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Athens, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Gallia, Guernsey, Highland, Hocking, Jackson, Knox, Lawrence, Licking, Madison, Marion, Meigs, Monroe, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Richland, Ross, Scioto, Tuscarawas, Union, Vinton, Washington

**Special Jurisdictional Note :**

**Details :**

A groundman when directed shall assist a Journeyman Lineman, Traffic Signal and Lighting Journeyman or Equipment Operator in the performance of his/her work on the ground, including the use of hand tools. Under no circumstances shall this classification climb poles, towers, or work from an elevated platform or bucket truck. This classification shall not perform work normally assigned to an Apprentice. No more than three (3) Groundmen shall work alone. Jobs with more than three Groundmen shall be supervised by a Groundcrew Foreman, Journeyman Lineman, Journeyman Traffic Signal Technician or an Equipment Operator. Scope of Work: installation and maintenance of highway and street lighting, highway and street sign lighting, electronic message boards and traffic control systems, camera systems, traffic signal work, substation and line construction including overhead and underground projects for private and industrial work as in accordance with the IBEW Constitution. This Agreement includes the operation of all tools and equipment necessary for the installation of the above projects.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 71 Outside Utility Power

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Electrical

**Effective Date:**  
1/7/2026

**Effective Date:**  
1/7/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Lineman	\$52.03		\$7.50	\$1.56	\$0.52	\$0.00	\$12.49	\$1.00	\$0.00	\$0.00	\$75.10	\$101.12
Substation Technician	\$52.03		\$7.50	\$1.56	\$0.50	\$0.00	\$12.49	\$1.00	\$0.00	\$0.00	\$75.08	\$101.09
Cable Splicer	\$54.50		\$7.50	\$1.64	\$0.55	\$0.00	\$13.08	\$1.00	\$0.00	\$0.00	\$78.27	\$105.52
Operator A	\$46.61		\$7.50	\$1.40	\$0.47	\$0.00	\$11.19	\$1.00	\$0.00	\$0.00	\$68.17	\$91.47
Operator B	\$41.17		\$7.50	\$1.23	\$0.41	\$0.00	\$9.87	\$1.00	\$0.00	\$0.00	\$61.18	\$81.77
Operator C	\$33.00		\$7.50	\$0.99	\$0.33	\$0.00	\$7.92	\$1.00	\$0.00	\$0.00	\$50.74	\$67.24
Groundman 0-12 months Exp	\$26.02		\$7.50	\$0.78	\$0.26	\$0.00	\$6.24	\$1.00	\$0.00	\$0.00	\$41.80	\$54.81
Groundman 0-12 months Exp w/CDL	\$28.62		\$7.50	\$0.86	\$0.29	\$0.00	\$6.87	\$1.00	\$0.00	\$0.00	\$45.14	\$59.45
Groundman 1 yr or more	\$28.62		\$7.50	\$0.86	\$0.29	\$0.00	\$6.87	\$1.00	\$0.00	\$0.00	\$45.14	\$59.45
Groundman 1 yr or more w/CDL	\$33.82		\$7.50	\$1.01	\$0.34	\$0.00	\$8.12	\$1.00	\$0.00	\$0.00	\$51.79	\$68.70
Equipment Mechanic A	\$41.17		\$7.50	\$1.23	\$0.41	\$0.00	\$9.87	\$1.00	\$0.00	\$0.00	\$61.18	\$81.77
Equipment Mechanic B	\$37.09		\$7.50	\$1.11	\$0.37	\$0.00	\$8.90	\$1.00	\$0.00	\$0.00	\$55.97	\$74.52
Equipment Mechanic C	\$33.00		\$7.50	\$0.99	\$0.33	\$0.00	\$7.92	\$1.00	\$0.00	\$0.00	\$50.74	\$67.24
Line Truck w/auger	\$36.40		\$7.50	\$1.09	\$0.36	\$0.00	\$8.71	\$1.00	\$0.00	\$0.00	\$55.06	\$73.26
Apprentice	BHR	Percent										
1st 1000 hrs	\$31.22	\$60.00	\$7.50	\$0.94	\$0.31	\$0.00	\$7.49	\$1.00	\$0.00	\$0.00	\$48.46	\$64.07
2nd 1000 hrs	\$33.82	\$65.00	\$7.50	\$1.01	\$0.34	\$0.00	\$8.12	\$1.00	\$0.00	\$0.00	\$51.79	\$68.70
3rd 1000 hrs	\$36.42	\$70.00	\$7.50	\$1.09	\$0.36	\$0.00	\$8.74	\$1.00	\$0.00	\$0.00	\$55.11	\$73.32

4th 1000 hrs	\$39.02	\$75.00	\$7.50	\$1.17	\$0.39	\$0.00	\$9.37	\$1.00	\$0.00	\$0.00	\$58.45	\$77.96
5th 1000 hrs	\$41.62	\$80.00	\$7.50	\$1.25	\$0.44	\$0.00	\$9.99	\$1.00	\$0.00	\$0.00	\$61.80	\$82.61
6th 1000 hrs	\$44.23	\$85.00	\$7.50	\$1.33	\$0.44	\$0.00	\$10.61	\$1.00	\$0.00	\$0.00	\$65.11	\$87.22
7th 1000 hrs	\$46.83	\$90.00	\$7.50	\$1.40	\$0.47	\$0.00	\$11.24	\$1.00	\$0.00	\$0.00	\$68.44	\$91.86

**(\*)Special Calculation Note :**

Other: Health Reimbursement Account

**Ratio :**

(1) Journeyman Lineman to (1) Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Fairfield, Fayette, Franklin, Gallia, Geauga, Greene, Guernsey, Hamilton, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Preble, Richland, Ross, Scioto, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren, Washington, Wayne

**Special Jurisdictional Note :**

**Details :**

Operator "A": John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater than 25 tons and less than 45 tons).  
 Operator "B": Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.  
 Operator "C": Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 71 Underground Residential Distribution

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Electrical

**Effective Date:**  
1/7/2026

**Effective Date:**  
1/7/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
URD Electrician	\$39.42		\$7.50	\$1.18	\$0.39	\$0.00	\$9.43	\$1.00	\$0.00	\$0.00	\$58.92	\$78.63
Equipment Operator A	\$35.24		\$7.50	\$1.06	\$0.35	\$0.00	\$8.46	\$1.00	\$0.00	\$0.00	\$53.61	\$71.23
Equipment Operator B	\$32.34		\$7.50	\$0.97	\$0.32	\$0.00	\$7.76	\$1.00	\$0.00	\$0.00	\$49.89	\$66.06
Directional Drill Locator	\$35.24		\$7.50	\$1.06	\$0.35	\$0.00	\$8.46	\$1.00	\$0.00	\$0.00	\$53.61	\$71.23
Directional Drill Operator	\$32.34		\$7.50	\$0.97	\$0.32	\$0.00	\$7.76	\$1.00	\$0.00	\$0.00	\$49.89	\$66.06
Groundman 0-12 months Exp	\$25.50		\$7.50	\$0.77	\$0.26	\$0.00	\$6.12	\$1.00	\$0.00	\$0.00	\$41.15	\$53.90
Groundman 0-12 months Exp w/CDL	\$28.15		\$7.50	\$0.84	\$0.28	\$0.00	\$6.76	\$1.00	\$0.00	\$0.00	\$44.53	\$58.60
Groundman 1 yr or more	\$28.15		\$7.50	\$0.84	\$0.28	\$0.00	\$6.76	\$1.00	\$0.00	\$0.00	\$44.53	\$58.60
Groundman 1 yr or more w/CDL	\$33.47		\$7.50	\$1.00	\$0.33	\$0.00	\$8.03	\$1.00	\$0.00	\$0.00	\$51.33	\$68.06
Apprentice	BHR	Percent										
1st 1000 hrs	\$31.54	\$80.00	\$7.50	\$0.95	\$0.32	\$0.00	\$7.57	\$1.00	\$0.00	\$0.00	\$48.88	\$64.65
2nd 1000 hrs	\$33.51	\$85.00	\$7.50	\$1.01	\$0.34	\$0.00	\$8.04	\$1.00	\$0.00	\$0.00	\$51.40	\$68.16
3rd 1000 hrs	\$35.48	\$90.00	\$7.50	\$1.06	\$0.35	\$0.00	\$8.51	\$1.00	\$0.00	\$0.00	\$53.90	\$71.64
4th 1000 hrs	\$37.45	\$95.00	\$7.50	\$1.12	\$0.37	\$0.00	\$8.99	\$1.00	\$0.00	\$0.00	\$56.43	\$75.16

**(\*)Special Calculation Note :**

Other: Health Reimbursement Account

**Ratio :**

(1) Journeyman Lineman to (1) Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Fairfield, Fayette, Franklin, Gallia, Geauga, Greene, Guernsey, Hamilton, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Preble, Richland, Ross, Scioto, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren, Washington, Wayne

**Special Jurisdictional Note :**

**Details :**

This work applies to projects designated for any outside Underground Residential Distribution construction work for electrical utilities, municipalities and rural electrification projects.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Electrical Local 71 Voice Data Video Outside

**Type of Rate:** Commercial

**Change #:**  
LCN02-2024ib

**Craft:**  
Electrical

**Effective Date:**  
3/6/2024

**Effective Date:**  
3/6/2024

Classification	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)		
Electrical Installer Technician I	\$35.39		\$7.25	\$1.06	\$0.00	\$0.00	\$1.77	\$0.00	\$0.00	\$45.47	\$63.17
Installer Technician II	\$33.37		\$7.25	\$1.00	\$0.00	\$0.00	\$1.67	\$0.00	\$0.00	\$43.29	\$59.98
Installer Repairman	\$33.37		\$7.25	\$1.00	\$0.00	\$0.00	\$1.67	\$0.00	\$0.00	\$43.29	\$59.98
Equipment Operator II	\$24.98		\$7.25	\$0.75	\$0.00	\$0.00	\$1.25	\$0.00	\$0.00	\$34.23	\$46.72
Cable Splicer	\$35.39		\$7.25	\$1.06	\$0.00	\$0.00	\$1.77	\$0.00	\$0.00	\$45.47	\$63.17
Ground Driver W/CDL	\$16.69		\$7.25	\$0.50	\$0.00	\$0.00	\$0.83	\$0.00	\$0.00	\$25.27	\$33.62
Groundman	\$14.57		\$7.25	\$0.44	\$0.00	\$0.00	\$0.73	\$0.00	\$0.00	\$22.99	\$30.28
Apprentice	BHR	Percent									
Trainee F	\$17.70	\$50.01	\$7.25	\$0.53	\$0.00	\$0.89	\$0.00	\$0.00	\$0.00	\$26.37	\$35.22
Trainee E	\$20.53	\$58.00	\$7.25	\$0.62	\$0.00	\$1.03	\$0.00	\$0.00	\$0.00	\$29.43	\$39.69
Trainee D	\$23.36	\$66.00	\$7.25	\$0.70	\$0.00	\$1.17	\$0.00	\$0.00	\$0.00	\$32.48	\$44.16
Trainee C	\$26.19	\$74.00	\$7.25	\$0.79	\$0.00	\$1.31	\$0.00	\$0.00	\$0.00	\$35.54	\$48.63
Trainee B	\$29.02	\$82.00	\$7.25	\$0.87	\$0.00	\$1.45	\$0.00	\$0.00	\$0.00	\$38.59	\$53.10
Trainee A	\$31.85	\$90.00	\$7.25	\$0.96	\$0.00	\$1.59	\$0.00	\$0.00	\$0.00	\$41.65	\$57.58

**(\*)Special Calculation Note :**

**Ratio :**

1Trainee to 1 Journeyman

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Delaware, Fairfield, Fayette, Franklin, Gallia, Geauga, Greene, Guernsey, Hamilton, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Perry, Pickaway, Pike, Portage, Preble, Richland, Ross, Scioto, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Vinton, Warren, Washington, Wayne

### **Special Jurisdictional Note :**

### **Details :**

Cable Splicer: Inspect and test lines or cables, analyze results, and evaluate transmission characteristics. Cover conductors with insulation or seal splices with moisture-proof covering. Install, splice, test, and repair cables using tools or mechanical equipment. This will include the splicing of fiber. Installer Technician I: Must know all aspects of telephone and cable work. This is to include aerial, underground, and manhole work. Must know how to climb and run bucket. Must have all the tools required to perform these tasks. Must be able to be responsible for the safety of the crew at all times. Must also have CDL license and have at least 5 years experience. Installer Repairman: Perform tasks of repairing, installing, and testing phone and CATV services. Installer Technician II: Have at least three years of telephone and CATV experience. Must have the knowledge of underground, aerial, and manhole work. Must be able to climb and operate bucket. Must have CDL. Must have all tools needed to perform these tasks. Equipment Operator II: Able to operate a digger derrick or bucket truck. Have at least 3 years of experience and must have a valid CDL license. Groundman W/CDL: Must have a valid CDL license and be able to perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Must have at least 5 year's experience. Groundman: Perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Experience 0-5 years.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Elevator Local 45

**Type of Rate:** Commercial

**Change #:**  
LCN01-2026ib

**Craft:**  
Elevator

**Effective Date:**  
3/18/2026

**Effective Date:**  
3/18/2026

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Elevator Mechanic	\$63.14		\$16.37	\$11.06	\$0.85	\$5.05	\$10.70	\$2.38	\$0.00	\$0.00	\$109.55	\$141.12
Assistant Mechanic	\$50.51		\$16.37	\$11.06	\$0.85	\$4.04	\$10.70	\$1.90	\$0.00	\$0.00	\$95.43	\$120.69
Helper	\$44.20		\$16.37	\$11.06	\$0.85	\$3.54	\$10.70	\$1.66	\$0.00	\$0.00	\$88.38	\$110.48
Apprentice	BHR	Percent										
0-6 months Probation	\$31.57	\$50.00	\$0.00	\$0.00	\$0.00	\$1.89	\$0.00	\$0.00	\$0.00	\$0.00	\$33.46	\$49.25
1st year	\$34.73	\$55.00	\$16.37	\$11.06	\$0.85	\$2.08	\$10.70	\$1.31	\$0.00	\$0.00	\$77.10	\$94.47
2nd year	\$41.04	\$65.00	\$16.37	\$11.06	\$0.85	\$2.46	\$10.70	\$1.55	\$0.00	\$0.00	\$84.03	\$104.55
3rd year	\$44.20	\$70.00	\$16.37	\$11.06	\$0.85	\$2.65	\$10.70	\$1.66	\$0.00	\$0.00	\$87.49	\$109.59
4th year	\$50.51	\$80.00	\$16.37	\$11.06	\$0.85	\$3.03	\$10.70	\$1.90	\$0.00	\$0.00	\$94.42	\$119.68

**(\*)Special Calculation Note :**

Other: Holiday Pay

**Ratio :**

- 1 Journeyman to 1 Apprentice
- 1 Journeyman to 1 Helper
- 1 Journeyman to 1 Assistant Mechanic

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Carroll, Columbiana, Coshocton, Harrison, Holmes, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, Wayne

**Special Jurisdictional Note :**

**Details :**

Vacation 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Glazier Local 1162

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Glazier

**Effective Date:**  
5/1/2025

**Effective Date:**  
5/1/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Glazier	\$32.87		\$7.75	\$7.04	\$0.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.04	\$64.48
Apprentice	BHR	Percent										
1st Year	\$21.37	\$65.00	\$7.75	\$7.04	\$0.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.54	\$47.22
2nd Year	\$24.65	\$75.00	\$7.75	\$7.04	\$0.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.82	\$52.15
3rd Year	\$27.94	\$85.00	\$7.75	\$7.04	\$0.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.11	\$57.08
4th Year	\$31.23	\$95.00	\$7.75	\$7.04	\$0.38	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.40	\$62.01

**(\*)Special Calculation Note :**

**Ratio :**

1 Journeyman to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Carroll, Coshocton, Holmes, Medina, Portage, Richland, Stark, Summit, Tuscarawas, Wayne

**Special Jurisdictional Note :**

**Details :**

Add \$1.25 per hour for High Pay which is all work that requires the employee be supported by equipment which hangs or suspends from the roof of a building or structure including all repelling .

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Ironworker Local 550

**Type of Rate:** Commercial

**Change #:**  
LCR01-2025ib

**Craft:**  
Ironworker

**Effective Date:**  
9/3/2025

**Effective Date:**  
9/3/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker	\$36.00		\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$60.08	\$78.08
Apprentice	BHR	Percent										
1st 6 months	\$23.40	\$65.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$47.48	\$59.18
2nd 6 months	\$24.84	\$69.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$48.92	\$61.34
3rd 6 months	\$26.28	\$73.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$50.36	\$63.50
4th 6 months	\$27.72	\$77.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$51.80	\$65.66
5th 6 months	\$29.16	\$81.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$53.24	\$67.82
6th 6 months	\$30.60	\$85.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$54.68	\$69.98
7th 6 months	\$32.40	\$90.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$56.48	\$72.68
8th 6 months	\$34.20	\$95.00	\$10.82	\$9.27	\$0.78	\$0.00	\$3.00	\$0.21	\$0.00	\$0.00	\$58.28	\$75.38

**(\*)Special Calculation Note :**

OTHER: JIW Upgrading & Drug Testing Fund

**Ratio :**

- 4 Journeymen to 1 Apprentice
- 1 Journeyman to 1 Apprentice, Spinning of Cable for Suspension Bridge
- 1 Journeyman to 1 Apprentice, Ornamental Work
- 2 Journeymen to 1 Apprentice, Reinforcing Work
- 1 Journeyman to 2 Apprentices, Roadway

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Carroll, Columbiana\*, Coshocton, Holmes\*, Huron, Mahoning\*, Medina\*, Portage\*, Richland, Stark, Summit\*, Tuscarawas, Wayne

**Special Jurisdictional Note :**

The jurisdictional line between Local 17 and Local 550 is determined as follows: All territory North of Old Route 224 line to be within the jurisdiction of Local 17. All territory South of Old Route 224 line is to be the jurisdiction of Local 550, except for everything within the City limits of Barberton which shall be under the jurisdiction of Local 17.

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Labor HevHwy 3

**Type of Rate:** Commercial

**Change #:**  
LCN02-2025ib

**Craft:**  
Laborer

**Effective Date:**  
6/11/2025

**Effective Date:**  
6/11/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$37.27		\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$53.37	\$72.01
Group 2	\$37.44		\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$53.54	\$72.26
Group 3	\$37.77		\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$53.87	\$72.76
Group 4	\$38.22		\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$54.32	\$73.43
Watch Person	\$32.00		\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$48.10	\$64.10
Apprentice	BHR	Percent										
0-1000 hrs	\$29.82	\$80.00	\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$45.92	\$60.82
1001-2000 hrs	\$31.68	\$85.00	\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$47.78	\$63.62
2001-3000 hrs	\$33.54	\$90.00	\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$49.64	\$66.41
3001-4000 hrs	\$35.41	\$95.00	\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$51.51	\$69.21
More than 4000 hrs	\$37.27	\$100.00	\$8.60	\$4.45	\$0.45	\$0.00	\$2.50	\$0.00	\$0.10	\$0.00	\$53.37	\$72.01

**(\*)Special Calculation Note :**

Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate. Commercial Driver's License – Any Laborer required to utilize a valid Commercial Driver's License (CDL), are in compliance with necessary FMCSA regulations and approved by the Contractor to operate a Commercial Motor Vehicle (CMV), shall be paid one dollar (\$1.00) per hour above the base rate for the entirety of their working shift.

**Ratio :**

1 Journeymen to 1 Apprentice 3 Journeymen to 1 Apprentice thereafter

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Darke, Defiance, Delaware, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Madison, Marion, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Paulding, Perry, Pickaway, Pike, Preble, Putnam, Richland, Ross, Scioto, Seneca, Shelby, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wyandot

**Special Jurisdictional Note :**

Hod Carriers and Common Laborers - Heavy, Highway, Sewer, Waterworks, Utility, Airport, Railroad, Industrial and Building Site, Sewer Plant, Waste Water Treatment Facilities Construction

## Details :

Group 1 Laborer (Construction); Plant Laborer or Yardman, Right-of-way Laborer, Landscape Laborer, Highway Lighting Worker, Signalization Worker, (Swimming) Pool Construction Laborer, Utility Man, \*Bridge Man, Handyman, Joint Setter, Flagperson, Carpenter Helper, Waterproofing Laborer, Slurry Seal, Seal Coating, Surface Treatment or Road Mix Laborer, Riprap Laborer & Grouter, Asphalt Laborer, Dump Man (batch trucks), Guardrail & Fence Installer, Mesh Handler & Placer, Concrete Curing Applicator, Scaffold Erector, Sign Installer, Hazardous Waste (level D), Diver Helper, Zone Person and Traffic Control. \*Bridge Man will perform work as per the October 31, 1949, memorandum on concrete forms, by and between the United Brotherhood of Carpenters and Joiners of America and the Laborers' International Union of North America, which states in; "the moving, cleaning, oiling and carrying to the next point of erection, and the stripping of forms which are not to be re-used, and forms on all flat arch work shall be done by members of the Laborers' International Union of North America." Group 2 Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air), Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), \*\*\*Lead Abatement, Hazardous Waste (level C) \*\*\*Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process. Group 3 Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarnier, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling. Group 4 Miner, Welder, Gunite Nozzle Person A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc. The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Labor Local 1216 Building

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Laborer

**Effective Date:**  
5/1/2025

**Effective Date:**  
5/1/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$34.12		\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.67	\$65.73
Group 2	\$34.32		\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.87	\$66.03
Group 3	\$34.62		\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.17	\$66.48
Group 4	\$31.45		\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$46.00	\$61.73
Apprentice	BHR	Percent										
0-1000 hrs	\$27.29	\$79.98	\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.84	\$55.48
1001-2000 hrs	\$29.00	\$85.00	\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$43.55	\$58.05
2001-3000 hrs	\$30.70	\$89.98	\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$45.25	\$60.60
3001-4000 hrs	\$32.41	\$95.00	\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$46.96	\$63.17
4001+ hrs	\$34.12	\$100.00	\$8.60	\$4.45	\$0.40	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.67	\$65.73

**(\*)Special Calculation Note :**

No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

1 Journeyman to 1 Apprentice 4 Journeymen to 1 Apprentice thereafter per project

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Knox, Morrow, Richland

**Special Jurisdictional Note :**

**Details :**

Group 1 Concrete Handler, Finisher tender, Building and Construction Laborer, Signalman, Flagman, Tool Cribman, Carpenter Tender, Utility Construction Laborer, Guardrail Erector, and Hazardous Waste (Level C,D) Group 2 Guniting Operator, Bottom Men, Tunnel Laborer, Pipe Layer, Air and Power Driven Tools, Burner on Demolition work, Swinging Scaffold, Mucker, Caisson Worker, Cofferdam Worker, Powder Man and Dynamite Blaster, Creosote Worker, Form Setter, Plasterer Tender, Hod Carrier, Laser Beam Set-up Man, and Hazardous Waste (Level A, B) Group 3 Fork Lift, Scaffold Builders, Mortar Mixer, Mason Tender, Stone Mason Tender Group 4 Watchman Hazardous Waste Removal and Lead Abatement For laborers working in an exclusive or "hot" area with toxic or hazardous materials, one of the following personal protective equipment ensembles will be required for necessary protection against toxic contaminants. Level A Protective equipment is required when the area has been determined to contain extremely toxic contaminants of contaminants unknown but may be expected to be extremely toxic and/or immediately Dangerous to life and health (IDLH). This ensemble includes a full encapsulated chemical suit (moon suit), Self-Contained Breathing Apparatus (SUBA), or Airline Fed Respirator, and various types and numbers of boots and gloves; cool vests and voice-activated radios are optional equipment sometimes worn. This level places the greatest physical and mental stress on the worker. Level B Protective equipment includes a chemically resistant splash suit and SCBA or airline Respirator. This ensemble is required when the situation is very hazardous, such as oxygen deficient atmospheres, IDLH atmospheres, or confined space entries, but the risk of skin exposure is not as great as in Level D situations Level C Protective equipment includes a protective suit and an Air Purifying Respirator (APR) with the appropriate filter canisters. The ensemble is used when the contaminants are reliably known not to be hazardous to the skin and not IDLH (immediately Dangerous to Life or Health) and correct filter protection is available. This ensemble offers adequate protection for many jobs. Level D Normal work clothes to normal skin protection such as gloves, face shields, goggles, coveralls and occasionally respiratory protection.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Operating Engineers - Building Local 18 - Zone III

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Operating Engineer

**Effective Date:**  
5/1/2025

**Effective Date:**  
5/1/2025

Classification	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Operator Group A	\$45.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$62.74	\$85.66
Operator Group B	\$45.72		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$62.62	\$85.48
Operator Group C	\$44.68		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$61.58	\$83.92
Operator Group D	\$43.50		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$60.40	\$82.15
Operator Group E	\$38.04		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$54.94	\$73.96
Master Mechanic	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Lift Director	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Cranes & Mobile Concrete Pumps 150'-180'	\$46.34		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.24	\$86.41
Cranes & Mobile Concrete Pumps 180'-249'	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Cranes & Mobile Concrete Pumps 249' and over	\$47.09		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.99	\$87.54
Apprentice	BHR	Percent										
1st Year	\$22.92	\$50.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$39.82	\$51.28
2nd Year	\$27.50	\$60.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$44.40	\$58.16
3rd Year	\$32.09	\$70.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$48.99	\$65.03
4th Year	\$36.67	\$80.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$53.57	\$71.91
Field Mechanic Trainee	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1st Year	\$27.50	\$60.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$44.40	\$58.16
2nd Year	\$32.09	\$70.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$48.99	\$65.03
3rd Year	\$36.67	\$80.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.57	\$71.91
4th Year	\$41.26	\$90.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$58.16	\$78.78

**(\*)Special Calculation Note :**

Other: Education & Safety Misc: National Training

**Ratio :**

For every (3) Operating Engineer Journeymen employed by the company there may be employed (1) Registered Apprentice or trainee Engineer through the referral when they are available. An apprentice, while employed as part of a crew per Article VIII, paragraph 77, will not be subject to the apprenticeship ratios in this collective bargaining agreement

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Coshocton, Crawford, Darke, Defiance, Delaware, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Madison, Marion, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wyandot

**Special Jurisdictional Note :**

**Details :**

Note: There will be a 10% increase for the apprentices on top of the percentages listed above provided they are operating mobile equipment.

Group A - Barrier Moving Machines; Boiler Operators or Compressor Operators, when compressor or boiler is mounted on crane (Piggyback Operation); Boom Trucks (all types); Cableways Cherry Pickers; Combination - Concrete Mixers & Towers; All Concrete Pumps with Booms; Cranes (all types); Compact Cranes, track or rubber over 4,000 pounds capacity; Cranes self-erecting, stationary, track or truck (all configurations); Derricks (all types); Draglines; Dredges (dipper, clam or suction) 3-man crew; Elevating Graders or Euclid Loaders; Floating Equipment; Forklift (rough terrain with winch/hoist); Gradalls; Helicopter Operators, hoisting building materials; Helicopter Winch Operators, Hoisting building materials; Hoes (All types); Hoists (with two or more drums in use); Horizontal Directional Drill; Hydraulic Gantry (lift system); Laser Finishing Machines; Laser Screed and like equipment; Lift Slab or Panel Jack Operators; Locomotives (all types); Maintenance Operator/Technician(Mechanic Operator/Technician and/or Welder); Mixers, paving (multiple drum); Mobile Concrete Pumps, with booms; Panelboards, (all types on site); Pile Drivers; Power Shovels; Prentice Loader; Rail Tamper (with automatic lifting and aligning device); Rotary Drills (all), used on caissons for foundations and sub-structure; Side Booms; Slip Form Pavers; Straddle Carriers (Building Construction on site); Trench Machines (over 24" wide); Tug Boats.

Group B - Articulating/end dumps (minus \$4.00/hour from Group B rate); Asphalt Pavers; Bobcat-type and/or skid steer loader with hoe attachment greater than 7000 lbs.; Bulldozers; CMI type Equipment; Concrete Saw, Vermeer-type; Endloaders; Hydro Milling Machine; Kolman-type Loaders (Dirt Loading); Lead Greasemen; Mucking Machines; Pettibone-Rail Equipment; Power Graders; Power Scoops; Power Scrapers; Push Cats; Rotomills (all), grinders and planers of all types.

Group C - A-Frames; Air Compressors, Pressurizing Shafts or Tunnels; All Asphalt Rollers; Bobcat-type and/or Skid Steer Loader with or without attachments; Boilers (15 lbs. pressure and over); All Concrete Pumps (without booms with 5 inch system); Fork Lifts (except masonry); Highway Drills - all types (with integral power); Hoists (with one drum); House Elevators (except those automatic call button controlled), Buck Hoists, Transport Platforms, Construction Elevators; Hydro Vac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Man Lifts; Material hoist/elevators; Mud Jacks; Pressure Grouting; Pump Operators (installing or operating Well Points or other types of Dewatering Systems); Pumps (4 inches and over discharge); Railroad Tie (Inserter/Remover); Rotovator (Lime-Soil Stabilizer); Submersible Pumps (4" and over discharge); Switch & Tie Tampers (without lifting and aligning device); Trench Machines (24" and under); Utility Operators.

Group D - Backfillers and Tampers; Ballast Re-locator; Batch Plant Operators; Bar and Joint Installing Machines; Bull Floats; Burlap and Curing Machines; Clefplanes; Compressors, on building construction; Concrete Mixers, more than one bag capacity; Concrete Mixers, one bag capacity (side loaders); All Concrete Pumps (without boom with 4" or smaller system); Concrete Spreader; Conveyors, used for handling building materials; Crushers; Deckhands; Drum Fireman (in asphalt plants); Farm type tractors pulling attachments; Finishing Machines; Form Trenchers; Generators; Guniting Machines; Hydro-seeders; Pavement Breakers (hydraulic or cable); Post Drivers; Post Hole Diggers; Pressure Pumps (over 1/2" discharge); Road Widening Trenchers; Rollers (except asphalt); Self-propelled sub-graders; Shotcrete Machines; Tire Repairmen; Tractors, pulling sheepsfoot post roller or grader; VAC/ALLS; Vibratory Compactors, with integral power; Welders.

Group E - Allen Screed Paver (concrete); Boilers (less than 15 lbs. pressure); Cranes-Compact, track or rubber (under 4,000 pounds capacity); Directional Drill "Locator"; Fueling and greasing +\$3.00; Inboard/outboard Motor Boat Launches; Light Plant Operators; Masonry Fork Lifts; Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson, Submersible Pumps (under 4" discharge).

Master Mechanics - Master Mechanic

Cranes 150' - 180' - Boom & Jib 150 - 180 feet    Cranes 180' - 249' - Boom & Jib 180 - 249 feet    Cranes 250' and over - Boom & Jib 250 feet or over

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Operating Engineers - HevHwy Zone II

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Operating Engineer

**Effective Date:**  
5/1/2025

**Effective Date:**  
5/1/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Class A	\$45.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$62.74	\$85.66
Operator Class B	\$45.72		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$62.62	\$85.48
Operator Class C	\$44.68		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$61.58	\$83.92
Operator Class D	\$43.50		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$60.40	\$82.15
Operator Class E	\$38.04		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$54.94	\$73.96
Master Mechanic	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Lift Director	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Crane and Mobile Concrete Pump 150' - 179'	\$46.34		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.24	\$86.41
Crane and Mobile Concrete Pump 180' - 249'	\$46.84		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.74	\$87.16
Crane and Mobile Concrete Pump 250' and Ove	\$47.09		\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$63.99	\$87.54
Apprentice	BHR	Percent										
1st Year	\$22.92	\$50.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$39.82	\$51.28
2nd Year	\$27.50	\$60.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$44.40	\$58.16
3rd Year	\$32.09	\$70.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$48.99	\$65.03
4th Year	\$36.67	\$80.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.10	\$53.57	\$71.91
Field Mech Trainee	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1st year	\$27.50	\$60.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$44.40	\$58.16
2nd year	\$32.09	\$70.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$48.99	\$65.03
3rd year	\$36.67	\$80.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.57	\$71.91
4th year	\$41.26	\$90.00	\$9.51	\$6.25	\$0.95	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$58.16	\$78.78

**(\*)Special Calculation Note :**

Other: Education & Safety Fund Misc: National Training

**Ratio :**

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the referral when they are available. An Apprentice, while employed as part of a crew per Article VIII, paragraph 68 will not be subject to the apprenticeship ratios in this collective bargaining agreement

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Coshocton, Crawford, Darke, Defiance, Delaware, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Lucas, Madison, Marion, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

\*\*Apprentices will receive a 10% increase on top of the percentages listed above provided they are operating mobile equipment.

Class A - Air Compressors on Steel Erection; Asphalt Plant Engineers (Cleveland District Only); Barrier Moving Machine; Boiler Operators, Compressor Operators, or Generators, when mounted on a rig; Boom Trucks (all types); Cableways; Cherry Pickers; Combination- Concrete Mixers & Towers; Concrete Plants (over 4 yd capacity); Concrete Pumps; Cranes (all types); Compact Cranes track or rubber over 4,000 pounds capacity; Cranes self-erecting stationary, track or truck; Derricks (all types); Draglines; Dredges dipper, clam or suction; Elevating Graders or Euclid Loaders; Floating Equipment (all types); Gradalls; Helicopter Crew (Operator- hoist or winch); Hoes (all types); Hoisting Engines; Hoisting Engines, on shaft or tunnel work; Hydraulic Gantry (lifting system); Industrial-type Tractors; Jet Engine Dryer (D8 or D9) diesel Tractors; Locomotives (standard gauge); Maintenance Operators/Technicians (class A); Mixers, paving (single or double drum); Mucking Machines; Multiple Scrapers; Piledriving Machines (all types); Power Shovels, Prentice Loader; Quad 9 (double pusher); Rail Tamper (with automatic lifting and aligning device); Refrigerating Machines (freezer operation); Rotary Drills, on caisson work; Rough Terrain Fork Lift with winch/hoist; Side Booms; Slip Form Pavers; Survey Crew Party Chiefs; Tower Derricks; Tree Shredders; Trench Machines (over 24" wide); Truck Mounted Concrete Pumps; Tug Boats; Tunnel Machines and /or Mining Machines; Wheel Excavators.

Class B - Asphalt Pavers; Automatic Subgrade Machines, self-propelled (CMI-type); Bobcat-type and /or Skid Steer Loader with hoe attachment greater than 7000 lbs.; Boring Machine Operators (more than 48 inches); Bulldozers; Concrete Saws, Vermeer type; Endloaders; Horizontal Directional Drill (50,000 ft. lbs. thrust and over); Hydro Milling Machine; Kolman-type Loaders (production type-dirt); Lead Greasemen; Lighting and Traffic Signal Installation Equipment includes all groups or classifications; Maintenance Operators/Technicians, Class B; Material Transfer Equipment (shuttle buggy) Asphalt; Pettibone-Rail Equipment; Power Graders; Power Scrapers; Push Cats; Rotomills (all), Grinders and Planners of all types, Groovers (excluding walk-behinds); Trench Machines (24 inch wide and under).

Class C - A-Frames; Air Compressors, on tunnel work (low Pressure); Articulating/straight bed end dumps if assigned (minus \$4.00 per hour); Asphalt Plant Engineers (Portage and Summit Counties only); Bobcat-type and/or skid steer loader with or without attachments; Drones; Highway Drills (all types); HydroVac/Excavator (when a second person is needed, the rate of pay will be "Class E"); Locomotives (narrow gauge); Material Hoist/Elevators; Mixers, concrete (more than one bag capacity); Mixers, one bag capacity (side loader); Power Boilers (over 15 lbs. pressure); Pump Operators (installing or operating well Points); Pumps (4 inch and over discharge); Railroad Tie Inserter/Remover; Rollers, Asphalt; Rotovator (lime-soil Stabilizer); Switch & Tie Tampers (without lifting and aligning device); Utilities Operators, (small equipment); Welding Machines and Generators.

Class D – Backfillers and Tampers; Ballast Re-locator; Bar and Joint Installing Machines; Batch Plant Operators; Boring Machine Operators (48 inch or less); Bull Floats; Burlap and Curing Machines; Concrete Plants (capacity 4 yds. and under); Concrete Saws (multiple); Conveyors (highway); Crushers; Deckhands; Farm type tractors, with attachments (highway); Finishing Machines; Firemen, Floating Equipment (all types); Fork Lifts (highway), except masonry; Form Trenchers; Hydro Hammers; Hydro Seeders; Pavement Breakers (hydraulic or cable); Plant Mixers; Post Drivers; Post Hole Diggers; Power Brush Burners; Power Form Handling Equipment; Road Widening Trenchers; Rollers (brick, grade, macadam); Self-Propelled Power Spreaders; Self-Propelled Sub-Graders; Steam Firemen; Survey Instrument men; Tractors, pulling sheepsfoot rollers or graders; Vibratory Compactors, with integral power.

Class E - Compressors (portable, Sewer, Heavy and Highway); Cranes-Compact, track or rubber under 4,000 pound capacity; Drum Firemen (asphalt plant); Fueling and greasing (Primary Operator with Specialized CDL Endorsement Add \$3.00/hr); Generators; Inboard-Outboard Motor Boat Launches; Masonry Fork Lifts; Oil Heaters (asphalt plant); Oilers/Helpers; Power Driven Heaters (oil fired); Power Scrubbers; Power Sweepers; Pumps (under 4 inch discharge); Signalperson; Survey Rodmen or Chairmen; Tire Repairmen; VAC/ALLS.

Master Mechanic - Master Mechanic

Cranes and Mobile Concrete Pumps 150' -179' - Boom & Jib 150 - 179 feet Cranes and Mobile Concrete Pumps 180' - 249' - Boom & Jib 180 - 249 feet Cranes and Mobile Concrete Pumps 250' and over - Boom & Jib 250 feet or over

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Painter Local 639 Sign and Display

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Painter

**Effective Date:**  
6/18/2025

**Effective Date:**  
6/18/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Top Mechanic Class A	\$27.53		\$4.50	\$0.00	\$0.00	\$0.00	\$0.00	\$1.45	\$0.00	\$0.00	\$33.48	\$47.25
Top Mechanic Class B	\$27.53		\$4.50	\$0.75	\$0.00	\$0.53	\$0.00	\$1.45	\$0.00	\$0.00	\$34.76	\$48.53
Top Helper Class A	\$22.33		\$4.50	\$0.00	\$0.00	\$0.00	\$0.00	\$1.20	\$0.00	\$0.00	\$28.03	\$39.20
Top Helper Class B	\$22.33		\$4.50	\$0.75	\$0.00	\$0.43	\$0.00	\$1.20	\$0.00	\$0.00	\$29.21	\$40.38
Helper Class A	\$17.19		\$4.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.90	\$0.00	\$0.00	\$22.59	\$31.19
Helper Class B	\$17.19		\$4.50	\$0.75	\$0.00	\$0.30	\$0.00	\$0.90	\$0.00	\$0.00	\$23.64	\$32.24
New Hire (90 Days)	\$15.75		\$4.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.55	\$0.00	\$0.00	\$20.80	\$28.68
Apprentice	BHR	Percent										

**(\*)Special Calculation Note :**

Other: Sick, Personal & Holiday Pay Swing Stage Rate: Employees shall receive a differential of \$1.50 per hour for all hours worked on scaffolds four sections or higher, including any boom lifts and swing stage scaffolds. In addition, the rigging and derigging of hanging/suspended swing stage systems and rappelling/bolson chair work of a single employee will qualify for \$1.50 differential, will be paid to a single lead Top Mechanic or single lead Top Helper on any given swing stage job, even when it includes multiple running rigs on a single jobsite.

**Ratio :**

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Cuyahoga, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Geauga, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lake, Lawrence, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

The work performed by employees covered by this rate shall include cleaning and refinishing of architectural metals using chemicals, solvents, coatings and hand-applied lacquer thinner, removing scratches from mirror finished metals, burnishing of bronze, statuary finishes on exterior and interior surfaces during the course of the restoration and maintenance of architectural metals, and other specialty metal finishing work, and the use of all tools required to perform such work, including but not limited to polishes, spray equipment and scaffolding. Class A: Less Than 1 Year of Service Class B: More Than 1 Year of Service Top Mechanic: Top Mechanic shall be responsible for ensuring the highest quality of workmanship by Helpers, and be highly competent and knowledgeable in the following areas: coatings, both solvent and waterborne, spraying ability, stainless steel, aluminum and bronze finishing, scaffolding and swing stage work. The Top Mechanic shall also be responsible for providing necessary training of employees in lower classifications and for directing all employees in his/her crew to perform their responsibilities in a productive and efficient manner. Top Helper: For existing Top Helpers at the time of this Agreement shall, in addition to performing the responsibilities of a Helper, be responsible and accountable for the setup, breakdown, safety and quality of the Company's product. Helper: A Helper shall be responsible for performing tasks in refinishing, compliance with safety procedures, setting up and breaking down job sites, setting up and breaking down scaffolding and swing stages, preparing surfaces for refinishing, including but not limited to masking and stripping, cleaning, oxidizing, polishing and scratch removal on various finishes.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Painter Local 639 Zone 1 Sign

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Painter

**Effective Date:**  
7/30/2025

**Effective Date:**  
7/30/2025

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Class A: Painter Sign Erector/Service/Pattern/Metal Fab/Neon	\$26.28	\$8.91	\$5.57	\$0.25	\$0.79	\$0.00	\$1.10	\$0.00	\$0.00	\$42.90	\$56.04
Class B: Painter Sign Erector/Service/Pattern/Metal Fab/Neon	\$26.28	\$8.91	\$5.57	\$0.25	\$1.58	\$0.00	\$1.10	\$0.00	\$0.00	\$43.69	\$56.83
Class C: Painter Sign Erector/Service/Pattern/Metal Fab/Neon	\$26.28	\$8.91	\$5.57	\$0.25	\$2.37	\$0.00	\$1.10	\$0.00	\$0.00	\$44.48	\$57.62
Class D: Painter Sign Erector/Service/Pattern/Metal Fab/Neon	\$26.28	\$8.91	\$5.57	\$0.25	\$3.15	\$0.00	\$1.10	\$0.00	\$0.00	\$45.26	\$58.40
Class A: Computer Operator, Router, Spray Painter/Wood	\$24.60	\$8.91	\$5.57	\$0.25	\$0.76	\$0.00	\$1.06	\$0.00	\$0.00	\$41.15	\$53.45
Class B: Computer Operator, Router, Spray Painter/Wood	\$24.60	\$8.91	\$5.57	\$0.25	\$1.51	\$0.00	\$1.06	\$0.00	\$0.00	\$41.90	\$54.20
Class C: Computer Operator, Router, Spray Painter/Wood	\$24.60	\$8.91	\$5.57	\$0.25	\$2.27	\$0.00	\$1.06	\$0.00	\$0.00	\$42.66	\$54.96
Class D: Computer Operator, Router, Spray Painter/Wood	\$24.60	\$8.91	\$5.57	\$0.25	\$3.03	\$0.00	\$1.06	\$0.00	\$0.00	\$43.42	\$55.72

Class A: Final Assembly, Helper	\$19.62	\$8.91	\$5.57	\$0.25	\$0.66	\$0.00	\$0.92	\$0.00	\$0.00	\$35.93	\$45.74
Class B: Final Assembly, Helper	\$19.62	\$8.91	\$5.57	\$0.25	\$1.32	\$0.00	\$0.92	\$0.00	\$0.00	\$36.59	\$46.40
Class C: Final Assembly, Helper	\$19.62	\$8.91	\$5.57	\$0.25	\$1.98	\$0.00	\$0.92	\$0.00	\$0.00	\$37.25	\$47.06
Class D: Final Assembly, Helper	\$19.62	\$8.91	\$5.57	\$0.25	\$2.64	\$0.00	\$0.92	\$0.00	\$0.00	\$37.91	\$47.72
Apprentice	BHR	Percent									
1-2000 hrs	\$13.14	\$50.00	\$8.91	\$5.57	\$0.25	\$0.00	\$0.75	\$0.00	\$0.00	\$28.62	\$35.19
2001-3000 hrs	\$14.45	\$55.00	\$8.91	\$5.57	\$0.25	\$0.56	\$0.79	\$0.00	\$0.00	\$30.53	\$37.75
3001-4000 hrs	\$15.77	\$60.00	\$8.91	\$5.57	\$0.25	\$0.59	\$0.82	\$0.00	\$0.00	\$31.91	\$39.80
4001-5000 hrs	\$17.08	\$65.00	\$8.91	\$5.57	\$0.25	\$1.22	\$0.86	\$0.00	\$0.00	\$33.89	\$42.43
5001-6000 hrs	\$18.40	\$70.00	\$8.91	\$5.57	\$0.25	\$1.27	\$0.89	\$0.00	\$0.00	\$35.29	\$44.49
6001-7000 hrs	\$22.34	\$85.00	\$8.91	\$5.57	\$0.25	\$1.43	\$1.00	\$0.00	\$0.00	\$39.50	\$50.67
7001-8000 hrs	\$23.65	\$90.00	\$8.91	\$5.57	\$0.25	\$1.48	\$1.03	\$0.00	\$0.00	\$40.89	\$52.71

**(\*)Special Calculation Note :**

Other: Holiday Pay

Apprentice Pay Rate should be based on proper Classification.

Any employee working over 100 ft. above the ground shall receive \$1.00 per hour additional pay.

**Ratio :**

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Ashtabula, Cuyahoga, Geauga, Lake, Medina, Portage, Richland, Summit

**Special Jurisdictional Note :**

**Details :**

Class A Worker: More than 1 year but less that 2 years

Class B Worker: More than 2 years but less than 10 years

Class C Worker: More than 10 years but less that 20 years

Class D Worker: More than 20 years

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Painter Local 788

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Painter

**Effective Date:**  
7/23/2025

**Effective Date:**  
7/23/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Brush Roll	\$30.23		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.75	\$63.86
REFINERY RATE	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Painter Brush Roll	\$32.02		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.54	\$66.55
POWERHOUSE RATE	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Painter Brush Roll	\$34.90		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.42	\$70.87
Apprentice	BHR	Percent										
1st Year	\$19.65	\$65.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.17	\$47.99
2nd Year	\$22.67	\$75.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.19	\$52.53
3rd Year	\$25.70	\$85.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.22	\$57.07
4th Year	\$28.72	\$95.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.24	\$61.60

**(\*)Special Calculation Note :**

Apprentice rate based upon % of each classification.

- A. \$0.50 per hour shall be added to the rate of pay for the classification of work, while working: Swing stage, Boatswain Chair, Needle Beam & Horizontal Cable.
- B. \$1.00 per hour shall be added to the rate of pay for the classification of work, while operating: Any spray equipment, Sandblasting, Cob blasting, High Pressure Water blasting (4000 PSI), and for Automatic Taping & Finishing Tools for Drywall.
- C. \$0.50 per hour shall be added to the rate of pay for the classification of work, for tending: three (3) or more sprayers.
- D. \$1.00 per hour shall be added to the rate of pay for the classification of work, for the application of: Catalyzed Epoxy, including latex Epoxy that is deemed hazardous, Lead Abatement, or for work or material, where special precautions beyond normal work duties must be taken. Questionable work or material shall be approved by the Business Representative and/or Joint Trade Board.
- E. \$1.00 per hour shall be added to the rate of pay for the classification of work, for working on: Stacks, Tanks, and Towers over forty (40) feet in height.
- F. \$0.40 per hour shall be added to the rate of pay for the classification of work, for Paperhanging.
- G. \$1.00 per hour shall be added to the rate of pay for the classification of work, for Spray Painting.
- H. \$1.50 per hour shall be added to the rate of pay for the classification of work, for Drywall Finishing.

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Erie, Hancock, Huron, Marion, Morrow, Ottawa, Richland, Sandusky, Seneca, Wyandot

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Painter Local 788 Drywall

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Painter

**Effective Date:**  
7/23/2025

**Effective Date:**  
7/23/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Drywall Finisher	\$31.73		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.25	\$66.11
REFINERY RATE	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Painter Drywall Finisher	\$33.52		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.04	\$68.80
POWERHOUSE RATE	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Painter Drywall Finisher	\$36.40		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.92	\$73.12
Apprentice	BHR	Percent										
1st Year	\$20.62	\$65.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.14	\$49.45
2nd Year	\$23.80	\$75.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.32	\$54.22
3rd Year	\$28.56	\$90.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.08	\$61.36

**(\*)Special Calculation Note :**

Apprentice rate based upon % of each classification.

- A. \$0.50 per hour shall be added to the rate of pay for the classification of work, while working: Swing stage, Boatswain Chair, Needle Beam & Horizontal Cable.
- B. \$1.00 per hour shall be added to the rate of pay for the classification of work, while operating: Any spray equipment, Sandblasting, Cob blasting, High Pressure Water blasting (4000 PSI), and for Automatic Taping & Finishing Tools for Drywall.
- C. \$0.50 per hour shall be added to the rate of pay for the classification of work, for tending: three (3) or more sprayers.
- D. \$1.00 per hour shall be added to the rate of pay for the classification of work, for the application of: Catalyzed Epoxy, including latex Epoxy that is deemed hazardous, Lead Abatement, or for work or material, where special precautions beyond normal work duties must be taken. Questionable work or material shall be approved by the Business Representative and/or Joint Trade Board.
- E. \$1.00 per hour shall be added to the rate of pay for the classification of work, for working on: Stacks, Tanks, and Towers over forty (40) feet in height.
- F. \$0.40 per hour shall be added to the rate of pay for the classification of work, for Paperhanging.
- G. \$1.00 per hour shall be added to the rate of pay for the classification of work, for Spray Painting.

**Ratio :**

1 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Erie, Hancock, Huron, Marion, Morrow, Ottawa, Richland, Sandusky, Seneca, Wyandot

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Painter Local 788 Hvy Hwy

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Painter

**Effective Date:**  
7/30/2025

**Effective Date:**  
7/30/2025

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Class 1: Bridge Blaster	\$41.71	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$60.23	\$81.08
Class 2: Bridge Painter, Rigger, Containment Builder, Spot Blaster	\$38.71	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$57.23	\$76.58
Class 3: Equipment Operator/ Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (0-5 Years Exp.)	\$31.71	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.23	\$66.08
Class 3: Equipment Operator/ Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (5 Plus Years Exp.)	\$34.71	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.23	\$70.58
Class 4: Concrete Sealing, Concrete Blasting/P ower Washing/ Etc.	\$34.71	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.23	\$70.58

Class 5: Quality Control/Q uality Assurance , Traffic Safety, Competen t Person	\$34.71		\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.23	\$70.58
Apprentice	BHR	Percent										
1st Year	\$29.20	\$70.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.72	\$62.32
2nd Year	\$33.37	\$80.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.89	\$68.57
3rd Year	\$37.54	\$90.00	\$9.52	\$8.55	\$0.45	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.06	\$74.83

**(\*)Special Calculation Note :**

Apprentice pay based upon percentage of each classification.

**Ratio :**

1 Apprentice to 1 Journeyman

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Erie, Hancock, Huron, Marion, Morrow, Ottawa, Richland, Sandusky, Seneca, Wyandot

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Plasterer Local 132 (Columbus)

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Plasterer

**Effective Date:**  
6/1/2025

**Effective Date:**  
6/1/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plasterer	\$31.68		\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$47.14	\$62.98
Fireproofing Gunner	\$32.68		\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$48.14	\$64.48
Apprentice	BHR	Percent										
1st 800 hrs	\$22.18	\$70.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$37.64	\$48.72
2nd 800 hrs	\$23.44	\$74.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$38.90	\$50.62
3rd 800 hrs	\$24.71	\$78.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$40.17	\$52.53
4th 800 hrs	\$25.98	\$82.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$41.44	\$54.43
5th 800 hrs	\$27.24	\$86.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$42.70	\$56.33
6th 800 hrs	\$28.51	\$90.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$43.97	\$58.23
7th 800 hrs	\$29.78	\$94.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$45.24	\$60.13
8th 800 hrs	\$31.05	\$98.00	\$8.20	\$4.70	\$0.50	\$0.00	\$2.00	\$0.06	\$0.00	\$0.00	\$46.51	\$62.03

**(\*)Special Calculation Note :**

\*Other is International Training Fund

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Coshocton, Crawford, Delaware, Fairfield, Fayette, Franklin, Guernsey, Hocking, Knox, Licking, Madison, Marion, Morrow, Muskingum, Perry, Pickaway, Richland, Ross, Union, Vinton, Wyandot

**Special Jurisdictional Note :**

**Details :**

Fireproofing Gunner: If any mechanical means is used in the gauging of lime for any finish coat, the mixing shall be gauged by a member of the crew who is to apply the respective gauging. This clause applies on jobs where cementitious and fibrous type fireproofing is the material being applied. There shall be an equal number of plasterers to nozzles used. Working on swing stage, slip scaffold or window jack scaffold shall receive the following rates: \$0 above the regular rate for heights up to forty-nine (49) feet above grade level \$0.75 above the regular rate for heights over fifty (50) feet above grade level

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Plumber Pipefitter Local 42

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Plumber Pipefitter

**Effective Date:**  
7/1/2025

**Effective Date:**  
7/1/2025

Classification	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Plumber Pipefitter	\$42.02		\$12.62	\$12.63	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$68.50	\$89.51
Plumber Pipefitter Heavy Industrial	\$43.02		\$12.62	\$12.63	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$69.50	\$91.01
Apprentice Heavy Industrial	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1st Year	\$22.49		\$8.92	\$0.00	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.64	\$43.89
2nd Year	\$26.81		\$12.62	\$8.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.07	\$62.48
3rd Year	\$31.11		\$12.62	\$8.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.37	\$68.93
4th Year	\$34.41		\$12.62	\$9.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$57.67	\$74.88
5th Year	\$37.71		\$12.62	\$10.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$61.97	\$80.83
Apprentice	BHR	Percent										
1st Year	\$22.07	\$52.52	\$8.92	\$0.00	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.22	\$43.25
2nd Year	\$26.28	\$62.54	\$12.62	\$8.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.54	\$61.68
3rd Year	\$30.48	\$72.54	\$12.62	\$8.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.74	\$67.98
4th Year	\$33.68	\$80.15	\$12.62	\$9.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.94	\$73.78
5th Year	\$36.89	\$87.79	\$12.62	\$10.41	\$1.23	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$61.15	\$79.59

**(\*)Special Calculation Note :**

**Ratio :**

1 Journeyman to 1 Apprentice 2 Journeymen to 2 Apprentices 3 Journeymen to 3 Apprentices 4-6 Journeymen to 4 Apprentices 7-10 Journeymen to 5 Apprentices 11-13 Journeymen to 6 Apprentices 14-15 Journeymen to 7 Apprentices 16-18 Journeymen to 8 Apprentices 19-20 Journeymen to 9 Apprentices 21-23 Journeymen to 10 Apprentices 24-26 Journeymen to 11 Apprentices 27-30 Journeymen to 12 Apprentices 31-34 Journeymen to 13 Apprentices 35-38 Journeymen to 14 Apprentices 39-40 Journeymen to 15 Apprentices Then 1 Journeyman to 5 Apprentices thereafter Water Treatment Work described below is a ratio of: 1 Journeyman to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Crawford, Erie, Huron, Knox, Lorain, Morrow, Richland, Wyandot

**Special Jurisdictional Note :**

**Details :**

Includes but not limited to : all water services from main to building including water meters and water meter foundations, all lawn sprinkler work including piping, fittings, and lawn sprinkler heads, all power plant piping of every description. All fire extinguishing systems and piping whether by water, steam, gas, or chemical, fire alarm piping and control tubing. On Water Treatment Plants, waste water treatment plants, prefabricated water treatment plants, lift stations, elevated water tanks, meter vaults, underground work on site at treatment, water mains and fire protection external mains, all construction work on public utilities obtained by employer other than plumbing and heating. On all construction projects wherein the work involves sanitary sewers, storm sewers and water lines (site work) performed outside the structure of the building.

# Prevailing Wage Rate Skilled Crafts

Name of Union: Roofer Local 88

Type of Rate: Commercial

Change #: LCN01-2025ib

Craft: Roofer

Effective Date: 7/9/2025

Effective Date: 7/9/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Roofer	\$33.75		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$56.42	\$73.30
HELPERS	\$		\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Helper -500 Hrs. 1st 6 months	\$20.00		\$2.25	\$0.00	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$25.21	\$35.21
Helper -500 Hrs. 2nd 6 months	\$21.94		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$44.61	\$55.58
2nd year Helper	\$23.63		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$46.30	\$58.12
3rd year Helper	\$25.32		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$47.99	\$60.65
4th year Helper	\$27.00		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$49.67	\$63.17
5th year Helper	\$28.69		\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$51.36	\$65.71
Apprentice	BHR	Percent										
1st 6 months w/500 hrs	\$21.94	\$65.00	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$44.61	\$55.58
2nd 6 months w/500 hrs	\$23.63	\$70.00	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$46.30	\$58.12
3rd 6 months w/500 hrs	\$25.32	\$75.02	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$47.99	\$60.65
4th 6 months w/500 hrs	\$27.00	\$80.00	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$49.67	\$63.17
5th 6 months w/500 hrs	\$28.69	\$85.02	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$51.36	\$65.71
6th 6 months w/500 hrs	\$30.38	\$90.00	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$53.05	\$68.24
7th 6 months w/500 hrs	\$32.07	\$95.02	\$9.91	\$9.80	\$0.40	\$0.00	\$2.35	\$0.21	\$0.00	\$0.00	\$54.74	\$70.78

**(\*)Special Calculation Note :**

Other: \$0.07 Drug Education, \$0.05 Construction Industry Development Board, \$0.09 International Training Fund  
Roofers working in any form of coal tar pitch, whether hot or cold, installing and/or removing will be paid \$.25 more per hour.

**Ratio :**

1 Journeyman to 1 Apprentice to 1 Helper

No helper shall be used on any one job unless 1 Journeyman and 1 Apprentice are working on said job

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Carroll, Coshocton, Crawford, Holmes, Huron, Lorain\*, Medina, Portage, Richland, Stark, Summit, Tuscarawas, Wayne

**Special Jurisdictional Note :**

Lorain County: South of the Turnpike

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Sheet Metal Local 33 (Akron)

**Type of Rate:** Commercial

**Change #:**  
LCN02-2025sks

**Craft:**  
Sheet Metal Worker

**Effective Date:**  
8/13/2025

**Effective Date:**  
8/13/2025

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)		
Classification											
Sheet Metal Worker	\$37.66		\$10.00	\$13.86	\$0.95	\$0.00	\$8.00	\$0.00	\$0.00	\$70.47	\$89.30
Apprentice	BHR	Percent									
1st year	\$22.60	\$60.00	\$10.00	\$4.91	\$0.19	\$0.00	\$0.00	\$0.00	\$0.00	\$37.70	\$48.99
2nd year	\$24.48	\$65.00	\$10.00	\$6.58	\$0.95	\$0.00	\$4.00	\$0.00	\$0.00	\$46.01	\$58.25
3rd year	\$26.36	\$70.00	\$10.00	\$6.99	\$0.95	\$0.00	\$4.00	\$0.00	\$0.00	\$48.30	\$61.48
4th year	\$30.13	\$80.00	\$10.00	\$7.80	\$0.95	\$0.00	\$4.00	\$0.00	\$0.00	\$52.88	\$67.94

**(\*)Special Calculation Note :**

No special calculations for this skilled craft wage rate are required at this time.

**Ratio :**

- 1 Journeymen to 1 Apprentice
- 2 Journeymen to 1 Apprentice
- 3 Journeymen to 2 Apprentice
- 4 Journeymen to 2 Apprentice
- 5-7 Journeymen to 3 Apprentice
- 8-10 Journeymen to 4 Apprentice
- 11-13 Journeymen to 5 Apprentice
- 14-15 Journeymen to 6 Apprentice and maintaining a three to one apprentice ratio thereafter.

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Carroll, Coshocton, Crawford, Holmes, Medina, Portage, Richland, Stark, Summit, Tuscarawas, Wayne

**Special Jurisdictional Note :**

**Details :**

Scope of Work: This Agreement covers the rates of pay and conditions of employment of all employees of the Employer engaged in, but not limited to, the a) manufacture, fabrication, assembling, handling, erection, installation, dismantling, conditioning, adjustment, alteration, repairing and servicing of all ferrous or non-ferrous metal work and all other materials used in lieu thereof and of all HVAC systems, air-veyor systems, exhaust systems, and air handling systems regardless of material used, including the setting of all equipment and all reinforcements in connection therewith; (b) all lagging over insulation and all duct-lining; (c) testing, servicing, and balancing of all air-handling equipment and duct work; (d) the preparation of all shop and field sketches, whether manually drawn or computer assisted, used in fabrication and erection, including those taken from original architectural and engineering drawings or sketches, and (e) metal roofing; and (f) all other work included in the jurisdictional claims of Sheet Metal Worker's International Association. Industrial Door-Installation and service of overhead doors roll up doors, docks and dock leveling.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Sheet Metal Local 33 Industrial Door

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Sheet Metal Worker

**Effective Date:**  
8/1/2025

**Effective Date:**  
8/1/2025

Classification	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Sheet Metal Worker	\$26.53		\$8.71	\$5.66	\$0.19	\$0.00	\$2.61	\$0.61	\$0.00	\$0.00	\$44.31	\$57.58
Apprentice	BHR	Percent										
Probationary Period (60 Days)	\$13.80	\$52.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13.80	\$20.70
61st day -12 months	\$15.39	\$58.00	\$8.71	\$1.96	\$0.19	\$0.00	\$1.68	\$0.35	\$0.00	\$0.00	\$28.28	\$35.98
2nd Year	\$18.04	\$68.00	\$8.71	\$1.96	\$0.19	\$0.00	\$1.90	\$0.41	\$0.00	\$0.00	\$31.21	\$40.23
3rd Year	\$19.37	\$73.00	\$8.71	\$1.96	\$0.19	\$0.00	\$2.05	\$0.45	\$0.00	\$0.00	\$32.73	\$42.41
4th Year	\$21.22	\$80.00	\$8.71	\$1.96	\$0.19	\$0.00	\$2.17	\$0.49	\$0.00	\$0.00	\$34.74	\$45.35
5th Year	\$22.82	\$86.00	\$8.71	\$1.96	\$0.19	\$0.00	\$2.31	\$0.52	\$0.00	\$0.00	\$36.51	\$47.92

**(\*)Special Calculation Note :**

Other: Holiday Pay

**Ratio :**

- 1-2 Journeyman to 1 Trainee
- 3-4 Journeymen to 2 Trainee
- 5-6 Journeymen to 3 Trainees
- 7-8 Journeymen to 4 Trainees
- 9-10 Journeymen to 5 Trainees
- 11-13 Journeymen to 6 Trainees
- 14-16 Journeymen to 7 Trainees
- 17-19 Journeymen to 8 Trainees
- Maintaining a 3 Journeymen to 1 Trainee ratio thereafter

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Ashland, Ashtabula, Carroll, Columbiana, Coshocton, Crawford, Cuyahoga, Defiance, Erie, Fulton, Geauga, Hancock, Henry, Holmes, Huron, Lake, Lorain, Lucas, Mahoning, Medina, Ottawa, Paulding, Portage, Putnam, Richland, Sandusky, Seneca, Stark, Summit, Trumbull, Tuscarawas, Wayne, Williams, Wood

**Special Jurisdictional Note :**

**Details :**

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Sprinkler Fitter Local 669

**Type of Rate:** Commercial

**Change #:**  
LCR01-2025ib

**Craft:**  
Sprinkler Fitter

**Effective Date:**  
8/6/2025

**Effective Date:**  
8/6/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sprinkler Fitter	\$48.28		\$12.40	\$7.40	\$0.54	\$0.00	\$7.74	\$0.00	\$0.00	\$0.00	\$76.36	\$100.50
Apprentice	BHR	Percent										
CLASS 1	\$24.14	\$50.00	\$9.03	\$0.00	\$0.54	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.71	\$45.78
CLASS 2	\$27.04	\$56.00	\$9.03	\$0.00	\$0.54	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.61	\$50.13
CLASS 3	\$29.45	\$61.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$50.94	\$65.66
CLASS 4	\$31.38	\$65.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$52.87	\$68.56
CLASS 5	\$33.31	\$69.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$55.05	\$71.70
CLASS 6	\$36.21	\$75.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$57.95	\$76.05
CLASS 7	\$38.14	\$79.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$59.88	\$78.95
CLASS 8	\$40.56	\$84.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$62.30	\$82.58
CLASS 9	\$42.97	\$89.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$64.71	\$86.19
CLASS 10	\$44.90	\$93.00	\$12.40	\$7.40	\$0.54	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$66.64	\$89.09

**(\*)Special Calculation Note :**

**Ratio :**

1 Journeyman to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

Sprinkler Fitter work shall consist of the installation, dismantling, maintenance, repairs, adjustments, and corrections of all fire protection and fire control systems including the unloading, handling by hand, power equipment and installation of all piping or tubing, appurtenances and equipment pertaining thereto, including both overhead and underground water mains, fire hydrants and hydrant mains, standpipes and hose connections to sprinkler systems used in connection with sprinkler and alarm systems. Also all tanks and pumps connected thereto, also included shall be CO-2 and Cardox Systems, Dry Chemical Systems, Foam Systems and all other fire protection systems.

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Truck Driver Locals 20,40,92,100,175,284,348,377,637,697,908,957 - Bldg & HevHwy Class 1

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Truck Driver

**Effective Date:**  
5/28/2025

**Effective Date:**  
5/28/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 1	\$34.26		\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.51	\$70.64
Apprentice	BHR	Percent										
First 6 months	\$27.41	\$80.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.66	\$60.36
7-12 months	\$29.12	\$85.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.37	\$62.93
13-18 months	\$30.83	\$90.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.08	\$65.50
19-24 months	\$32.55	\$95.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.80	\$68.07
25-30 months	\$34.26	\$100.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.51	\$70.64

**(\*)Special Calculation Note :**

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

CLASS 1: Drivers on trucks, including but not limited to: 4-wheel service trucks; 4-wheel dump trucks; batch trucks; drivers on tandems; truck sweepers (not to include power sweepers and scrubbers) Drivers on tractor – trailer combinations including but not limited to the following: Semi-tractor trucks; pole trailers; ready-mix trucks; fuel trucks; all trucks five (5) axle and over; drivers on belly dumps; truck mechanics (when needed).

# Prevailing Wage Rate Skilled Crafts

**Name of Union:** Truck Driver Locals 20,40,92,100,175,284,348,377,637,697,908,957 - Bldg & HevHwy Class 2

**Type of Rate:** Commercial

**Change #:**  
LCN01-2025ib

**Craft:**  
Truck Driver

**Effective Date:**  
5/28/2025

**Effective Date:**  
5/28/2025

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 2	\$35.26		\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.51	\$72.14
Apprentice	BHR	Percent										
First 6 months	\$28.21	\$80.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.46	\$61.56
7-12 months	\$29.97	\$85.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.22	\$64.21
13-18 months	\$31.73	\$90.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.98	\$66.85
19-24 months	\$33.50	\$95.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.75	\$69.50
25-30 months	\$35.26	\$100.00	\$9.25	\$9.60	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.51	\$72.14

**(\*)Special Calculation Note :**

**Ratio :**

3 Journeymen to 1 Apprentice

**Jurisdiction ( \* denotes special jurisdictional note ) :**

Adams, Allen, Ashland, Ashtabula, Athens, Auglaize, Belmont, Brown, Butler, Carroll, Champaign, Clark, Clermont, Clinton, Columbiana, Coshocton, Crawford, Darke, Defiance, Delaware, Erie, Fairfield, Fayette, Franklin, Fulton, Gallia, Greene, Guernsey, Hamilton, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Holmes, Huron, Jackson, Jefferson, Knox, Lawrence, Licking, Logan, Lorain, Lucas, Madison, Mahoning, Marion, Medina, Meigs, Mercer, Miami, Monroe, Montgomery, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pickaway, Pike, Portage, Preble, Putnam, Richland, Ross, Sandusky, Scioto, Seneca, Shelby, Stark, Summit, Trumbull, Tuscarawas, Union, Van Wert, Vinton, Warren, Washington, Wayne, Williams, Wood, Wyandot

**Special Jurisdictional Note :**

**Details :**

CLASS 2: Drivers on articulated dump trucks; rigid-frame rock trucks; distributor trucks; low boys/drag driver on the construction site only and heavy duty equipment (irrespective of load carried) when used exclusively for transportation on the construction site only.

**SECTION 200100 - COMMON GENERAL PROVISIONS**

~~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR PERSON ASSIGNED BY THE PROJECT MANAGER.

CHOOSE "ARCHITECT" WHEN KE'S CLIENT IS THE ARCHITECT.

CHOOSE "ENGINEER" WHEN KE IS THE PRIME CONSULTANT TO THE OWNER (NO ARCHITECT).

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

FOR OHIO STATE UNIVERSITY PROJECTS, THE TERM "OWNER" MUST BE CHANGED TO "UNIVERSITY".

AFTER THE SPECLINK CHECKLIST IS COMPLETE, MAKE THE FOLLOWING MANUAL EDITS:

--IF IN A STATE OTHER THAN OH, PA, NY, OR WV, EDIT 1.5.G, 1.5.H.2, 1.5.H.14, 1.5.H.15 & 1.5.H.17.

--IF A HEALTHCARE PROJECT, EDIT 1.5.H.10 & 1.5.H.16

--IF REQUIRED, ADD ANY SPECIFIC AHJ REQUIREMENTS TO 1.5.H.19.

--IF PROJECT DOES NOT HAVE AN HVAC CONTRACTOR AND A CONSTRUCTION MODEL OR COORDINATION DRAWINGS ARE REQUIRED, EDIT 1.8.A.1 OR 1.8.B.1.

--IF DOMESTIC STEEL IS REQUIRED, EDIT 2.1.D.

--IF NOT AN OSU PROJECT AND SERVICE SHUTDOWN NOTIFICATION LONGER THAN ONE WEEK IS REQUIRED, EDIT 3.6.C.

--SEE DESIGN NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE GENERAL PROVISIONS SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S GENERAL PROVISIONS SPECIFICATION IS CREATED, THE PROJECT MANAGER OR PERSON ASSIGNED, MUST MANUALLY EDIT ARTICLE 1.10.A RECORD DRAWINGS, BASED ON THE SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS FROM DIVISIONS 22, 23, 26, AND 27. SEE NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, THE PROJECT MANAGER IS TO NOTIFY THE STAFF ASSIGNED TO EACH DIVISION SO SUPPLEMENTAL GENERAL PROVISIONS SPECIFICATIONS CAN BE CREATED FOR EACH DIVISION.

ALSO, AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S GENERAL PROVISIONS IS REVISED ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

## PART 1 GENERAL

### 1.1 RELATED CONTRACT DOCUMENTS

- A Contractor shall examine Division 0 and/or Division 1 Contract Documents for general project requirements and instructions to bidders.
- B Refer to this Division's Supplemental General Provisions for additional Project requirements.
- C The provisions of the Instructions to Bidders, General Conditions, Supplementary Conditions, Alternates and Addenda are a part of this Specification. Contractors and Subcontractors shall examine these provisions as they may affect work under this Division.
- D Contractor shall also examine the Contract Documents of all Divisions which may affect and require work under this Division and be responsible for all work required under this Division.

### 1.2 DESCRIPTION OF WORK

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~ **END OF PROJECT NOTE** ~~~~

- A This project involves work in an existing operating facility and will require close communication with Owner with regard to access and work hours. Coordinate all work schedules with Owner prior to bidding.
- B All Drawings as well as the Specifications for all Divisions shall be defined as the Contract Documents. Contractor shall review entire set of Contract Documents prior to bidding.
- C Drawings and Specifications are to be considered as supplementing each other. Work specified but not shown, or shown but not specified, shall be performed or furnished as though mentioned in both the Specifications and the Drawings.
- D Prior to submitting bid, Contractor shall examine all Drawings and Specifications to develop a complete understanding of the project scope. Contractor shall ask for clarifications during the pre-bid phase of the project. Failure to do so will not relieve the Contractor of their responsibility to perform all required work.

~~~~~ **PROJECT NOTE** ~~~~~

KE STANDARD REQUIRES BIDDING CONTRACTOR TO VISIT SITE. HOWEVER, DO NOT USE "REQUIRED" FOR STATE OR FEDERAL FUNDED PROJECTS, INCLUDING OSU PROJECTS, USE "RECOMMENDED".

~~~ **END OF PROJECT NOTE** ~~~~

- E Where the project scope involves renovations and additions, it is required that Contractors visit the site of the work and become familiar with the conditions affecting the installation. Submission of a Bid shall presuppose knowledge of such conditions and no additional compensation shall be allowed where extra labor or materials are required because of the lack of knowledge of these conditions.
- F Bid shall include any special phasing requirements related to the construction work as described in the Contract Documents.
- G Extra costs which might result from deviations from the Drawings, so as to avoid interferences, shall be considered a "Job Condition", and no additional compensation shall be considered applicable. In the event that such interferences occur in course of the work, due to an error, omission, or oversight by the Contractor, no additional compensation shall be allowed. Interferences that may occur during the course of construction shall be brought to the immediate attention of the Engineer, and the Engineer's decision, confirmed in writing, shall be final.
- H The following general terms as used within the context of the Contract Documents shall be defined as follows:
  - 1. "Contract Documents" - The complete set of Drawings and Specifications for all Divisions included in the project.
  - 2. "Drawings" - Drawings furnished as part of the Contract Documents.
  - 3. "Contractor" - This Division's Contractor and the Subcontractors to this Division's Contractor.
  - 4. "Responsible" - To perform work required.
  - 5. "Furnish" - To supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations.
  - 6. "Install" - Work which includes the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
  - 7. "Provide" - To furnish and install, complete and ready for the intended use.
  - 8. "Equal" - To meet or exceed the standards of the specified products or listed manufacturers.

**1.3 WORK INCLUDES**

~~~~~ **PROJECT NOTE** ~~~~~

FOR SOME STATE FUNDED PROJECTS, THE A/E MUST SUBMIT AND OBTAIN PERMITS PRIOR TO BIDDING. IF THIS IN THE CASE, PERMITS AND FEES ARE NOT INCLUDED IN THE CONTRACTOR'S SCOPE. COORDINATE ON A PER PROJECT BASIS.

~~~ **END OF PROJECT NOTE** ~~~~

- A Include all labor, material, equipment, services, coordination, supervision and administration necessary for the proper completion of all work shown. Items omitted, but necessary, to make all systems complete and workable shall be understood to form part of the work.

- B Material for work required to complete installation such as earthwork, concrete, masonry, mortar, reinforcing steel, patching, and painting shall be provided as specified in other applicable Divisions covering such work.
- C Provide material and labor which is neither drawn nor specified but which is obviously a component part of and necessary to complete work and which is customarily a part of work of similar character.
- D Include all testing, test reports, system programming, start-up reports and warranties for each system as outlined elsewhere in these Specifications. Refer to "Operating and Maintenance Manuals" for additional requirements.

#### **1.4 PERMITS AND FEES**

- A Give proper authorities notice as required by law relative to the work in their charge. Comply with the regulations regarding temporary enclosures, obstructions, or excavations and pay all legal fees involved.
- B Permits and inspection fees have been paid for by the Engineer. THESE FEES SHALL BE CONSIDERED A REIMBURASBLE FROM THE CONTRACTOR TO ENGINEER. Any additional inspection fees required for work that is considered deficient or otherwise not approved by the Inspector shall be the responsibility of the Contractor.

#### **1.5 QUALITY ASSURANCE**

- A Work shall be installed in accordance with provisions of all applicable codes, as interpreted by the local Authority Having Jurisdiction (AHJ), as well as any further modifications or regulations published by local or State Authorities.
- B Reference to the codes and standards listed shall constitute the minimum acceptable requirements. Nothing in the Specifications shall be construed to permit deviation from the requirements of the governing code. Where requirements of the Drawings and Specifications exceed those of the code listed, follow the Drawings and Specifications.

#### ***~~~~ PROJECT NOTE ~~~~***

IT IS IMPORTANT THAT A CODE SEARCH IS COMPLETED EARLY IN THE PROJECT TO DETERMINE WHAT CODES AND STANDARDS APPLY. THIS EFFORT SHOULD BE COORDINATED WITH THE ARCHITECT AND ALL OTHER DISCIPLINES. IF NECESSARY CHECK WITH THE LOCAL AHJ. VERIFY STATE REQUIREMENTS AND EDIT THE FOLLOWING LISTS AS NECESSARY. THE APPLICABLE STATE OR INTERNATIONAL CODE EDITION (YEAR) MUST BE LISTED. TO ASSIST WITH YOUR CODE SEARCH, REFER TO THE FOLLOWING FOLDER IN THE E-DRIVE.

E:\ - Library\Codes\ Code Locator

IF A CODE/STANDARD REFERENCE TABLE IS INCLUDED ON THE DRAWINGS, THE INFORMATION ON THE DRAWINGS MUST MATCH THE INFORMATION IN THIS SPECIFICATION AND SUPPLEMENTAL GENERAL PROVISIONS.

INCLUDE THE FOLLOWING FOR OHIO PROJECTS.

#### ***~~~~ END OF PROJECT NOTE ~~~~***

- C The following building codes with amendments shall be followed:

Alterations For: Board of Commissioners for Richland County Courthouse AC Upgrade

1. 2024 Ohio Building Code
  2. 2017 Ohio Fire Code
  3. 2024 Ohio Mechanical Code
  4. 2024 Ohio Plumbing Code
  5. 2021 International Fuel Gas Code
- D Applicable portions of the following codes, standards, societies and agencies shall be followed. Where a specific edition is listed, it shall be used. Where not listed, the edition recognized by the Authority Having Jurisdiction shall be used. Listing of a specific portion of a code, standard, society or agency does not preclude the Contractor from following all other applicable portions of the code, standard, society or agency.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST IS A GUIDE. EDIT AND ADD SPECIFIC DOCUMENTS AND EDITIONS BASED SPECIFIC PROJECT REQUIREMENTS. IF YOU FOLLOWED A SPECIFIC DOCUMENT DURING DESIGN, IT SHOULD BE LISTED.

~~~ **END OF PROJECT NOTE** ~~~

1. American National Standards Institute (ANSI)
2. American Society of Testing and Materials (ASTM)
3. American with Disabilities Act (ADA) - American with Disabilities Act Accessibility Guidelines (ADAAG)
4. ANSI A117.1: Accessible and Usable Buildings and Facilities
5. Federal Occupational Safety and Health Act (OSHA)
6. NFPA Standards as referenced by the Building Codes.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 70 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2023, NY - 2017, PA - 2017, WV – 2020

~~~ **END OF PROJECT NOTE** ~~~

7. NFPA 70-2023: National Electrical Code

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 72 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2022, NY - 2016, PA - 2016, WV - 2016.

~~~ **END OF PROJECT NOTE** ~~~

8. NFPA 72-2016: National Fire Alarm and Signaling Code.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR ACCREDITED HEALTH CARE FACILITIES AND ADJUST EDITION (YEAR) ACCORDINGLY - DISCUSS WITH PROJECT TEAM. IN JULY 2016 THE CENTER FOR MEDICARE & MEDICAID SERVICES (CMS) ADOPTED THE 2012 EDITION OF NFPA 101.

~~~ **END OF PROJECT NOTE** ~~~

9. NFPA 101-2021: Life Safety Code

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE AND EDIT THE FOLLOWING WHEN ELECTRONIC MEDIA WILL BE USED TO TRANSFER ELECTRONIC FILES BETWEEN CONTRACTOR AND ENGINEER. COORDINATE WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

**1.6 ELECTRONIC MEDIA**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE FOLLOWING WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

- A Electronic drawing files are available to the Contractor from the Engineer for coordination purposes.
- B Contractor shall deliver closeout documents, in an electronic format, on a portable memory device. Device type shall be coordinated with the Owner.

**1.7 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE SUBMITTAL REQUIREMENTS WITH THE ARCHITECT AND EDIT THE FOLLOWING. CHOOSE BETWEEN ONE OF THE TWO CHOICES BELOW.

~~~ **END OF PROJECT NOTE** ~~~

- A Provide Submittals in an electronic format. The file format shall be portable data file (.pdf).
- B Submittal transmittal shall list corresponding Specification Section and a description of item(s) being submitted. Each submittal shall only include items from one Specification Section. Submittals which include items from multiple specification sections will be returned "REVISE AND RESUBMIT."
- C Prepare Submittals with adequate details and dimensions as necessary to clearly show construction. Clearly identify each item on the submittal with designation as indicated on Drawings including location and use. Include with Submittals Manufacturers published descriptive literature, specifications, performance data (normal operating characteristics, curves, ratings, etc.), wiring diagrams and installation instructions. Indicate for each item the operating characteristics, design conditions, features, and optional items that are intended for application on this project. Where contents of Submittal literature include data not pertinent to the Submittal, clearly indicate (highlight) which portion of content is being submitted for review.
- D Contract Documents include scheduled equipment which is the Basis of Design and used to establish design and space requirements. Contract Documents may also include alternative acceptable manufacturers. Where alternative manufacturer's equipment is submitted which alters the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all

associated trades involved. No costs associated with deviations from the Basis of Design shall be borne by the Owner.

- E If for any reason, the Submittal shows variations from the requirements of the Contract Documents, the Contractor shall make mention of such variation in the letter of transmittal. The Contractor shall note in red on the Submittal any change in design or dimension on the items submitted including changes made by the Manufacturer which may differ from catalog information.
- F Where additional installation drawings, wiring diagrams or other drawings are specified elsewhere as part of the project requirements, they shall be submitted at the same time as the Submittals. Partial Submittals are not acceptable.
- G Contractor shall review each Submittal prior to submission, and check for compliance with the Contract Documents. Corrections shall be noted. Mark with approval stamp prior to submission. Submittals that do not bear the Contractor's approval stamp will be returned without action.
- H The Submittals will be reviewed only for General compliance and not for dimensions, quantities, etc. The responsibility of correct procurement remains solely with the Contractor. The Submittal review shall not relieve the Contractor of responsibility for errors or omissions and deviations from the Contract Document requirements. Submittals which are not required under this Division shall be returned to the Contractor.
- I Where Submittal review includes pre-determined language that includes the word "Approved", the following shall apply:
  - 1. "Approved" shall be defined as "Reviewed, No Exceptions Taken".
  - 2. "Approved as Noted" or similar verbiage shall be defined as "Reviewed, Exceptions as Noted".
- J After review of submittals by the Engineer, the Contractor shall revise and resubmit if required to establish compliance with the Contract Document requirements. Resubmittal shall include a document with a written response to each of the Engineer's previous comments.

~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING IS INCLUDED TO PROMPT US TO REVIEW AND LOOK FOR ITEMS THAT HAVE NOT BEEN SUBMITTED.

~~~ **END OF PROJECT NOTE** ~~~~

- K The Contractor shall notify the Engineer when all product data and/or shop drawings for all equipment, materials and systems have been submitted for review.
- L The Contractor agrees that Submittals, processed by the Engineer, are not change orders; that the purpose of Submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design intent of the project. This understanding is demonstrated by indicating which equipment and material is required, and by what methods of fabrication and installation will be utilized.
- M The Contractor further agrees that if deviations, discrepancies or conflicts between the Submittals and the Contract Documents are discovered, either prior to or after Submittals are

processed by the Engineer, the Drawings and Specifications shall control and shall be followed.

- N Final reviewed Submittals shall be included in the Operating and Maintenance Manuals. Where Submittals are returned "REVIEWED, EXCEPTIONS AS NOTED", the final Submittals shall be updated to include the exceptions.

### 1.8 CONSTRUCTION DOCUMENTATION

- A Coordination Drawings

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATION DRAWINGS BY THE HVAC CONTRACTOR ARE STANDARD. EDIT AS REQUIRED WHEN NO HVAC CONTRACTOR.

~~~ **END OF PROJECT NOTE** ~~~

1. Preparation of the Coordination Drawings shall be the responsibility of the HVAC Contractor.
2. Coordination Drawings shall include but not be limited to: locations of equipment and devices, ductwork, piping, and conduit routing and required service clearances for all trades. If used, include off-site prefabricated assemblies. Show the relationship of all components as related to installation and future access for maintenance and removal. Where access doors are required, indicate locations and type. Show locations of all ductwork, piping and conduit penetrations through wall and floors.
  - a. Show existing items affecting new installation in remodeled areas.
3. Coordination meetings between all trades are recommended.
4. Proceed with installation, including off-site fabrication and assembly, only after review of Coordination Drawings by Engineer and approval from other trades affected. Engineer does not approve Coordination Drawings.
5. The Coordination Drawings shall be updated to include any deviations made during construction as required to create Record Drawings.

### 1.9 GUARANTEE AND WARRANTIES

~~~~~ **PROJECT NOTE** ~~~~~

ENGINEER NEEDS TO COORDINATE WARRANTY AND COMMENCEMENT WITH ARCHITECT, CM AND/OR OWNER.

~~~ **END OF PROJECT NOTE** ~~~

- A Warrant that equipment and all work is installed in accordance with good workmanship practice. All equipment shall be installed in accordance with the Manufacturer's recommendations and shall meet the requirements specified. Any equipment failing to perform or function as specified shall be replaced with complying equipment without cost to the Owner. Warranty shall commence upon acceptance of substantial completion of construction by the Owner. Sign-off of individual equipment start-up procedures shall not activate the warranty commencement.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE NEED FOR THE FOLLOWING ON LARGE, LONG DURATION PROJECTS. EDIT AS REQUIRED.

~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall review the construction schedule requirements. Where necessary to accommodate the schedule and where equipment and systems are installed that are used by the project until the date of substantial completion, the Contractor shall provide an extended warranty as part of the Bid to cover the equipment warranty until the date of substantial completion.
- C Guarantee against defects in workmanship and materials; repair or replace any defective work, material or equipment within one year from date of formal written warranty commencement. Longer product warranties provided by individual equipment manufacturers shall supersede this one year guarantee; however, the Contractor shall maintain the one year workmanship and materials guarantee for installation of such equipment.

**1.10 CLOSEOUT DOCUMENTS**

~~~~~ **PROJECT NOTE** ~~~~~

THE CONTRACTOR IS TYPICALLY RESPONSIBLE FOR PRODUCING THE RECORD DRAWINGS, HOWEVER IN SOME INSTANCES, SUCH AS OSU PROJECTS, THE ENGINEER IS RESPONSIBLE. COORDINATE WITH THE ARCHITECT AND PROJECT TEAM. REGARDLESS OF WHO IS RESPONSIBLE, WHEN THEY ARE REQUIRED, INCLUDE THE FOLLOWING. THIS SECTION MUST BE MANUALLY EDITTED BASED ON SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS COMPARED TO DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

- A Record Drawings:

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISION 21, SELECT ONE OF THE FOLLOWING TWO OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

- 1. Record Drawings shall consist of an updated Construction Model as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISIONS 22, 23, 26, 27 SELECT ONE OF THE FOLLOWING THREE OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

- 2. Record Drawings shall consist of updated Coordination Drawings as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED SHOP DRAWINGS ARE REQUIRED FOR DIVISION 21.

~~~ **END OF PROJECT NOTE** ~~~~

3. The Contractor shall produce updated shop drawings electronically from the original shop drawings in an approved format. Updated CAD drawings shall include any deviations or changes made during construction. At the end of the project, the Contractor shall transfer the electronic drawings onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN MARKED-UP DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

4. The Contractor shall keep one complete set of the original Drawings on the project site on which shall be recorded any deviations or changes from such Drawings made during construction. These drawings shall become the Record Drawings, shall be kept clean and undamaged, and shall not be used for any other purpose other than recording deviations from the original Drawings. At the end of the project, the Contractor shall make electronic .pdfs of these drawings and transfer them onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED COORDINATION DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27. IT'S IMPORTANT THAT COORDINATION DRAWINGS ARE SPECIFIED UNDER CONSTRUCTION DOCUMENTATION.

~~~ **END OF PROJECT NOTE** ~~~~

5. The Contractor shall maintain updated Coordination Drawings, reproduced electronically from the original Coordination Drawings in an approved format. Drawings shall include any deviations or changes made during construction. Drawings shall only include work of this Division. Work of other Divisions shall be removed. At the end of the project, the Contractor shall transfer the electronic drawing files onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

CHOOSE BETWEEN THE FOLLOWING TWO PARAGRAPHS.

~~~ **END OF PROJECT NOTE** ~~~~

6. After the project is completed, the Record Drawings shall be delivered to the Engineer for inclusion into the Operating and Maintenance Manuals, as a permanent record of the installation as constructed.

### 1.11 SITE REPORTS AND PUNCHLISTS

- A The Engineer may visit the site periodically during construction and provide written Construction Observation Reports to the Contractor identifying areas where installation does not meet the intent of the Contract Documents. The Contractor shall provide a written response to these reports within 5 business days, indicating the reason the installation is out of compliance with the Contract Documents. After review, the Engineer may or may not require the Contractor to correct the installation. The Contractor shall correct the installation unless the reason for non-compliance is accepted, in writing, by the Engineer or Owner.
- B Final Punch List
  1. The Engineer will visit the site to perform a scheduled Final Punch List to identify areas where the installation is incomplete or does not meet the intent of the Contract Documents.
  2. If the Engineer is requested to perform the Final Punch List prior to the Contractor being 100% complete with their scope of work, the Contractor shall furnish a Contractor's Completion List, indicating all incomplete work. This list shall be furnished to the Engineer a minimum of 24 hours prior to the scheduled Final Punch List.
  3. The Contractor shall respond to each punch list item along with a date, indicating that the item has been completed or corrected.
  4. A copy of the Final Punch List with the Contractor's responses shall be included in the Operating and Maintenance Manual.
- C Where on-line documentation management services or project management software requires the author/initiator of a corrective action to close it, and the Engineer is the author/initiator, the following shall apply:
  1. When the corrective action is reported as corrected/complete, by either the responsible Contractor or the Construction Manager, the Engineer will assume that the parties responsible for construction have reviewed and approved the correction.
  2. By closing the corrective action, the Engineer is in no way approving nor assuming responsibility for the installation.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT AND MATERIALS

- A All equipment and materials used on this project shall be new and listed or labeled by a Nationally Recognized Testing Laboratory (NRTL) such as UL, ETL, CSA, etc. or as approved by the local Authority Having Jurisdiction. Equipment and materials shall be installed or used in accordance with instructions included with the listing or labeling. Where possible, the same brand or manufacturer shall be used for each type of material or equipment. such as.
- B Equipment and materials for the construction shall be the responsibility of the Contractor and shall be protected by the Contractor until formally accepted by the Owner.
- C All Manufacturers of equipment shall verify to the satisfaction of the Contractor and Engineer that their equipment will function properly under the conditions of use, as shown on the Drawings and as specified herein. Dimensions, weights, operating characteristics and all other related appurtenances shall be verified before submittal of shop drawings.

### ~~~~ *PROJECT NOTE* ~~~~~

INCLUDE AND EDIT THE FOLLOWING PARAGRAPH FOR ALL OHIO OR PENNSYLVANIA PROJECTS RECEIVING STATE FUNDS OR WHEN REQUESTED BY CLIENT - COORDINATE WITH PROJECT

TEAM. FOR FEDERAL OR OTHER STATE PROJECTS, COORDINATE WITH CLIENT.

~~~ **END OF PROJECT NOTE** ~~~

- D Domestic steel shall be used for steel products as required by the Ohio Revised Code, Chapter 153.

## **2.2 MATERIAL SUBSTITUTIONS**

- A Bids shall be based upon the specified products, suppliers or listed alternatives. The Drawings and Specifications are based on the products specified by type, model, size and suppliers if indicated and thus establish minimum qualities which substitutes must meet to qualify for review.
- B Should the Contractor propose to furnish materials, equipment and/or suppliers other than those specified, submit a written request for substitutions to the Engineer. The request shall be an alternate to the original Bid and shall be accompanied with complete descriptive (manufacturer, brand name, catalog number, supplier name and references, etc.) and technical data for all items. Indicate any additions or deductions to the base Bid price.
  - 1. Requests for substitutions shall be submitted no later than 10 days prior to the bid opening. Requests received less than 10 days prior to the bid opening shall not be considered.
- C Where substitutions alter the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all associated trades involved. No costs associated with the use of a substitution shall be borne by the Owner.
- D Acceptance or rejection of the proposed substitutions shall be subject to approval of the Engineer. If requested, the Contractor shall submit inspection samples of both the specified and the proposed substitute items for review.
- E In all cases where substitutions are permitted, the Contractor shall bear any and all extra cost of evaluating the equality of the material and equipment to be installed.
- F Verbal requests or approvals of substitutions shall not be binding on the Engineer or Owner.

## **PART 3 EXECUTION**

### **3.1 SAFETY**

- A The Contractor shall follow all safety requirements as defined elsewhere in the Specifications and as defined by Owner safety protocols.
- B Work shall be performed on de-energized equipment in accordance with NFPA 70E.
- C Should suspected hazardous materials be encountered, Contractor shall adhere to procedures, methods and regulations of the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) and immediately notify Owner.

### **3.2 COORDINATION**

- A Take all field measurements necessary and assume responsibility for the accuracy.
- B If any work is fabricated or assembled off-site, assume responsibility for the accuracy of such pre-manufactured assemblies.
- C Install work that is to be concealed within the building construction in sufficient time to secure proper location without delay to the work of other trades.

- D Assume responsibility for location of chases, other openings through masonry and concrete construction. When work cannot be installed concurrent with building construction, arrange for rough-in boxes, sleeves, inserts and other items, as necessary for installation thereof at a later date.
- E If any work is installed so that the design cannot be adhered to, Contractor is responsible for making such changes as Engineer may require. Before installing work, report any interferences between work of this Division and work of other Divisions to Engineer as soon as discovered. Architect will determine which work must be relocated, or make adjustments to maintain clearances, maximum headroom and to avoid conflict with other work.
- F Become familiar with the construction where work attaches. Review Structural Drawings for coordination of openings. Cut no structural members or slabs without Engineer's and/or Structural Engineer's written approval.
- G Exercise caution when working in areas where concealed systems or materials may exist. Any costs for repair of damage incurred shall be the responsibility of Contractor causing the damage.

### 3.3 PROTECTION

- A All finished surfaces shall be protected from damage and spills during construction.
  - 1. Protect finished floors with a heavy duty flexible fiber reinforced floor protection board - Ram Board or equal.
  - 2. When setting up pipe cutting and threading machines, protect area against staining and abrasion. Provide plywood protection over Ram Board underlayment.
  - 3. Protect finished surfaces from chips and cutting oil by use of a chip receiving pan and oil proof cover.
  - 4. Protect equipment and finished surfaces from welding and cutting spatters with baffles and spatter blankets.
  - 5. Protect finished surfaces from paint droppings, insulation adhesive, etc. by use of drop cloths.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE SECOND PARAGRAPH FOR OSU PROJECTS.

~~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall provide protection for any roof areas that will be affected by this scope of work. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- C The Contractor shall provide protection for any roof areas that will be affected by this scope of work. Protection shall consist of 1/2-inch thick plywood with foam board attached. The composite board shall be placed with the foam towards the roof surface and shall be secured in a non-destructive manner, such as weighted down. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- D The cost of correcting any such condition will be charged against the respective Contractor.

### 3.4 EQUIPMENT INSTALLATION

- A Install equipment in accordance with equipment manufacturer's published installation instructions.

- B Should the Drawings and/or Specifications include procedures that exceed or call for materials that differ from the manufacturer's instructions, the Contractor shall follow the Drawings and/or Specifications. This requirement does not release the Contractor from the obligation to follow all other published instructions and installation recommendations. Contractor shall make Engineer aware, in writing, of discrepancies between the Drawings and Specifications and the manufacturer's published installation instructions, and/or confirm Engineer's design intent, prior to installation of the equipment. Failure to comply may result in reworking the equipment installation or replacement of materials associated with the equipment at no additional cost to the Owner.

### 3.5 CUTTING AND PATCHING

- A All cutting and patching in construction as necessary for installation of this work shall be the responsibility of this Division and performed by the Tradesmen related to that specific Division of work. Subcontract this work to the appropriate Trade Division.
- B Do not cut any structural member, including but not limited to steel framing and structural floors, without specific permission from the Engineer and/or Structural Engineer.
- C Do not cut openings in roof or floor construction without specific permission from the Engineer and/or Structural Engineer.
  - 1. Existing roof warranty must be maintained.
- D Where locations of penetrations are inaccurate or where building components are improperly cut by inadequate methods, the Contractor in error shall be responsible for complete repair.

~~~~ **PROJECT NOTE** ~~~~~

KEEP THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~~ **END OF PROJECT NOTE** ~~~~~

### 3.6 SERVICE SHUTDOWNS

- A This project involves remodeling of existing areas in an operating facility. Plan work including alterations and connections to existing facilities, to permit carrying on normal building functions. When necessary to temporarily interrupt a service, shutdowns shall be scheduled through the Owner and shall be done at a time as directed by the Owner. No additional compensation shall be allowed for these shutdown periods even though premium time work may be required unless specifically defined elsewhere in the Specifications.
- B Provide temporary service to equipment or systems that cannot be shut down, and as determined by Owner, or as described in the Contract Documents. Remove temporary services when permanent work is completed.

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING IF LONGER NOTICE IS REQUIRED BY OWNER. OSU PROJECTS REQUIRE 2 WEEK'S NOTICE.

~~~~ **END OF PROJECT NOTE** ~~~~~

- C Provide a minimum of two weeks' notice to the Owner before any service shutdown is scheduled.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING SECTION FOR RENOVATION PROJECTS, IN AN OPERATING FACILITY AND NEW PROJECTS WITH PHASING WHERE OCCUPIED AREAS ARE ADJACENT TO THE CONSTRUCTION AREA. ALTHOUGH ANOTHER TRADE MAY PROVIDE THE IAQ REQUIREMENTS FOR THE PROJECT, THERE MAY BE SPACES OUTSIDE THE PROJECT SITE WHERE THIS DIVISION'S CONTRACTOR HAS TO MAKE A TIE-IN AND EXTEND SERVICES TO THE PROJECT SITE.

~~~ **END OF PROJECT NOTE** ~~~~

**3.7 INDOOR AIR QUALITY**

- A All occupied areas of building shall remain free from odors, fumes, dust and smoke generated from installation of material and equipment.
- B Arrange with the Owner to schedule isolation of areas where paints, adhesives, solvents, etc., will be used. Areas shall remain isolated until all materials have cured sufficiently as to stop out-gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
- C Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas.

**END OF SECTION 200100**

**SECTION 200400 - COMMON FIRESTOPPING**

~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR THE PERSON ASSIGNED BY THE PROJECT MANAGER.

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. UNDER NORMAL CIRCUMSTANCES, FIRESTOPPING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION AS IT RELATES TO THEIR WORK. HOWEVER, SEVERAL CLIENTS HAVE THE DIVISION 7 CONTRACTOR FURNISH AND INSTALL FIRESTOPPING. EDIT THIS SECTION ACCORDINGLY. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

THIS SPECIFICATION DOES NOT INCLUDE THE OPTION WHERE THE PRODUCTS ARE FURNISHED BY THE DIVISION 7 CONTRACTOR AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION.

2024 OBC 714.6 AND 2021 IBC 714.6 REQUIRE FIRESTOPPING OF NON-FIRE RATED FLOORS (EXCEPTION: SLAB ON GRADE FLOORS). INCLUDE THIS SPECIFICATION SECTION IF PENETRATIONS ARE TO BE MADE THROUGH FLOORS REGARDLESS OF THE FIRE RATING.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE FIRESTOPPING SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S FIRESTOPPING SPECIFICATION IS CREATED, THE PERSON ASSIGNED TO THAT DIVISION MUST EDIT THEIR SPECIFIC DIVISION. PAY CLOSE ATTENTION TO AND EDIT: ARTICLE 1.1 WORK INCLUDES - PENETRATING ITEMS SHALL INCLUDE THE FOLLOWING:

ALSO, IN ARTICLE 1.3 SUBMITTALS - UPDATE THE SECTION ID AS APPLICABLE.

AFTER EACH DIVISION'S FIRESTOPPING IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S FIRESTOPPING IS REVISED ACCORDINGLY.

~~~~ **END OF PROJECT NOTE** ~~~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING IF FIRESTOPPING IS FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION. COORDINATE WHO IS SPECIFYING THE PRODUCTS

WITH ARCHITECT AND EDIT PART 2 - PRODUCTS ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

- A Work of this Section includes, but is not limited to, furnishing and installing firestopping for fire-rated construction in the following areas:
1. All openings in fire-rated floor, wall, ceiling and roof assemblies, both empty and those accommodating penetrating items.
  2. Openings at each floor level in shafts or stairwells.
  3. Empty openings intentionally designed as spare openings in fire rated Construction.

~~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION.

~~~ **END OF PROJECT NOTE** ~~~~

- B Penetrating items shall include the following:
1. Cables.
  2. Conduit.
  3. Pipes without insulation.
  4. Pipes with insulation. All insulation must remain intact, undamaged and shall run continuously through walls and floors.
  5. Ductwork without fire dampers. Where insulated, all insulation must remain intact, undamaged and shall run continuously through walls and floors.
  6. Raceways.

## 1.2 QUALITY ASSURANCE

- A General
1. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings required by local building code and as tested by nationally accepted test agencies per fire tests in a configuration that is representative of field conditions. The F rating must be a minimum of one (1) hour but not less than the fire resistance of the assembly being penetrated.
  2. Manufacturer's engineering judgments will be accepted for non-standard applications or where no tested system exists. Drawings for engineering judgments must indicate the UL tested system or systems upon which the judgment is based, in order to evaluate the engineering judgment against a known performance. Engineering judgments shall be approved by the Architect.
  3. Firestopping materials and systems shall be capable of closing or filling openings created by:
    - a. The burning or melting of combustible materials.
    - b. Deflection of materials due to thermal expansion.
  4. Firestopping material shall be non-halogenated, lead and asbestos free and shall not incorporate nor require the use of hazardous solvents.
  5. Firestop products which dissolve in water after curing are not acceptable.
  6. Firestopping materials shall not shrink upon drying as evidenced by cracking or pulling back from contact surfaces.

7. All firestopping materials shall be manufactured by one manufacturer (to the maximum extent possible).
- B Engage an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install firestop products per specified requirements. A manufacturer's willingness to sell its through-penetration firestop system products to a Contractor or to an installer engaged by Contractor does not in itself confer qualifications on buyer.
- C Manufacturer's Field Representative: The Manufacturer of the firestop material of this Section shall provide a qualified field representative at the site.
- D Pre-Installation Conference: Contractor shall hold a pre-installation conference with representatives of the Engineer, Contractor, Installer, Materials Manufacturer and various trades involved in the Work, to review conditions affecting the installation and consistency of manufacturer to be used by all trades.
- E Conform to Manufacturer's printed instructions for installation in accordance with a U.L rated system or Manufacturer's engineering judgement.
- F Codes and Standards
  1. ASTM E 84
  2. ASTM E 119
  3. ASTM E 814
  4. UL 263
  5. UL 1479

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR HEALTHCARE PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

6. NFPA 101

**1.3 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION

~~~ **END OF PROJECT NOTE** ~~~

- A Refer to Sections 2X 01 00 and 2X 01 01 for additional requirements.
- B All submittals shall conform completely to the requirements of the Contract Documents.
- C Product Data: For each type of material to be installed, literature shall indicate product characteristics, typical uses, performance, test data and Manufacturer's installation procedures.
- D Shop Drawings: Include U.L. rated system number and details for each type of penetration or configuration.
  1. Show typical installation details including:
    - a. Minimum and maximum allowable annular spacing.
    - b. Base material composition.

- c. Firestop materials selected.
  - d. Applied thickness required to achieve the hourly rating.
- E Where required, submit Product Data and Shop Drawings to the Authority Having Jurisdiction (AHJ) for review and approval. Information shall include the Manufacturer's assembly detail with UL system number, technical data and installation instructions for each penetration type occurring on the project.
- F Close-out Documents
- 1. Final approved product data and shop drawings of all materials installed shall be included in operating and maintenance manuals.
  - 2. Record Drawings shall indicate rated walls where firestop materials have been applied.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- A Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacturer, UL label, date of manufacturer; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instructions for multicomponent materials.
- B Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes. Materials shall be stored off the ground and protected from environmental conditions as required by manufacturer.
- C All firestop materials shall be installed prior to expiration of shelf life.

#### **PART 2 PRODUCTS**

##### *~~~~ PROJECT NOTE ~~~~~*

USE THE FOLLOWING PART 2 IF KE IS SPECIFYING FIRESTOP MATERIALS. DELETE IF ARCHITECT IS SPECIFYING MATERIALS AND REFER TO ALTERNATIVE PART 2.

##### *~~~ END OF PROJECT NOTE ~~~*

#### **2.1 GENERAL**

- A Firestopping materials shall meet the requirements specified herein.
- B For applications where combustible penetrants are involved, i.e. insulated or plastic pipe, a suitable intumescent material must be used.

##### *~~~~ PROJECT NOTE ~~~~~*

INCLUDE THE FOLLOWING PARAGRAPH FOR LEED PROJECTS.

##### *~~~ END OF PROJECT NOTE ~~~*

- C All firestopping materials shall have a maximum VOC limit of 250 g/L. Submittals shall include documentation indicating compliance with this requirement.

#### **2.2 ACCEPTABLE MANUFACTURERS**

##### *~~~~ PROJECT NOTE ~~~~~*

THE FOLLOWING LIST INCLUDES MANUFACTURERS TYPICALLY USED ON KE PROJECTS. OTHER

MANUFACTURERS INCLUDE TREMCO, INC., NELSON FIRESTOP AND PROSET SYSTEMS. STI IS THE ONLY ACCEPTABLE MANUFACTURER FOR ALL CLEVELAND CLINIC, METRO HEALTH AND UH CASE MED CENTER PROJECTS. EDIT AS REQUIRED. HILTI IS THE ONLY KNOWN MANUFACTURER COMPATIBLE WITH PLASTIC FLOW-GUARD GOLD, CORZAN, AND BLAZEMASTER PIPING. ALL ARE COMPATIBLE WITH PVC AND CPVC.

~~~ **END OF PROJECT NOTE** ~~~~

- A Specified Technologies, Inc. (STI)
- B 3M
- C Hilti, Inc.

### **2.3 FIRESTOP MATERIALS**

- A Firestop Mortar
- B Intumescent Firestop Sealants and Caulks
- C Elastomeric Firestop Sealants and Caulks
- D Endothermic Firestop Sealants and Caulks
- E Firestop Putty
- F Firestop Pillows/Blocks
- G Fire Rated Pathways
- H Firestop Grommets
- I Firestop Collars
- J Wrap Strips
- K Cast in Place Devices
- L Firestop Foams
- M Composite Sheets
- N Intumescent Gaskets

### **PART 3 EXECUTION**

~~~~~ **PROJECT NOTE** ~~~~~

WHEN FIRESTOPPING IS FURNISHED AND INSTALLED BY THE DIVISION 7 CONTRACTOR INCLUDE THE FOLLOWING 3.1 COORDINATION AND OMIT ALL REMAINING PART 3 SECTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

### **3.1 COORDINATION**

- A Coordinate with Project schedule and sequence work to assure all piping, ductwork, conduits, cables, and other items which penetrate fire rated construction have been permanently installed prior to installation of firestopping.
- B Sleeves and core-drilled holes shall be sized at least 1-1/2" larger than penetrating items. Coordinate with Division 7 Contractor.

### 3.2 GENERAL

- A In an occupied building, permanent firestopping shall be installed within 24 hours of penetrating a fire rated assembly. If permanent firestopping cannot be installed within this time period, temporary firestop pillows/blocks are permitted, where installation allows, until permanent firestop materials can be properly installed.

### 3.3 INSPECTION

- A Examine the areas and conditions where firestops are to be installed and notify the Engineer of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until the Contractor, in a manner acceptable to the Architect has corrected unsatisfactory conditions.
- B Verify that environmental conditions are safe and suitable for the installation of the firestop products.

### 3.4 CONDITIONS REQUIRING FIRESTOPPING

- A General
  1. Provide firestopping for conditions specified elsewhere whether or not firestopping is indicated and, if indicated whether such material is designed as insulation, safing, or otherwise.
  2. All firestopping shall be installed in accordance to the UL rated system designed for the application.
  3. Grout, Mortar or Gypsum based products shall not be installed in lieu of firestopping material specified herein.
  4. All smoke walls (smoke barriers, smoke partitions, etc.), rated or non-rated, shall be firestopped with systems designed to maintain a minimum 1 hour rating or that which is equal to the rating of the wall.
- B Penetrations - Provide firestopping as follows:
  1. Where penetrations pass through one or both surfaces of a fire rated floor or wall.
  2. Where a penetration occurs through fire rated walls or partitions of hollow-type construction, provide firestopping to completely fill spaces around the penetration, on each side of the wall or partition.
  3. Except for slab on grade, where penetrations pass through a non-fire rated floor.
  4. The requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space, if any, between sleeve and wall opening. Upon installation of cabling through sleeve, firestop the remaining open area within the conduit.
- C Where demolition has occurred in rated walls, floors and assemblies, the material used to patch the opening shall match the material used for the assembly construction. Firestopping materials may be utilized upon approval of Architect and Engineer. Materials used shall be provided with submittals. Work performed shall be the responsibility of the Contractor whose work was removed, performed by the appropriate trade.

### 3.5 PREPARATION

- A Surface to receive firestop shall be free of dirt, dust, grease, oil, oil from release agents, or other matter that would impair the bond of the firestop material to the substrate or penetrating items.

- B Substrate shall be frost free.

### 3.6 INSTALLATIONS

#### A General

1. Sleeves and core-drilled holes shall be sized at least 1-1/2" larger in diameter than penetrating items.
2. Installation of firestops shall be performed by applicators/installers qualified and trained by the Manufacturer. Installation shall be performed in strict accordance with the Manufacturer's detailed installation procedures.
3. Apply firestops in strict accordance with UL rated system designs, and Manufacturer's recommendations.
4. Coordinate with all other trades to assure that all items which penetrate fire rated construction have been permanently installed prior to installation of firestops. Schedule and sequence the work to assure that partitions and other Construction which would conceal penetrations are not erected prior to the installation of firestop.
5. Gun grade sealants and putties shall be tooled into place to insure proper adhesion to penetrations and surrounding surfaces.
6. Where existing penetrations are reused that contain remnants of existing firestop products remain, remove all existing firestopping.

#### B Dam Construction

1. Install dams when required to properly contain firestopping materials within openings and as required to achieve required fire resistance rating.
2. Placement of dams shall not interfere with functions or adversely affect the appearance of adjacent construction.

#### C Field Quality Control

1. Install work in full accordance with rules, regulations, and safety requirements of Federal, State, County and City authorities having jurisdiction over premises. Do not construe this as relieving Contractor from compliance with any requirements of the Specifications which are in excess of Code requirements and not in conflict therewith.
2. Correct unacceptable firestopping and provide additional inspection to verify compliance with this Specification at no additional cost.
3. Finish surfaces of firestopping that is to remain exposed in the completed work to a uniform and level condition.

### 3.7 LABELING

- A Where firestopping installations occur, Contractor shall provide a label adjacent to each penetration. Label shall include:

1. UL rated system used.
2. Date of installation.
3. Name of installing Contractor

- B Labels shall be furnished by the firestop manufacturer.

### END OF SECTION 200400

**SECTION 230100 - HVAC GENERAL PROVISIONS**

~~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR PERSON ASSIGNED BY THE PROJECT MANAGER.

CHOOSE "ARCHITECT" WHEN KE'S CLIENT IS THE ARCHITECT.

CHOOSE "ENGINEER" WHEN KE IS THE PRIME CONSULTANT TO THE OWNER (NO ARCHITECT).

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

FOR OHIO STATE UNIVERSITY PROJECTS, THE TERM "OWNER" MUST BE CHANGED TO "UNIVERSITY".

AFTER THE SPECLINK CHECKLIST IS COMPLETE, MAKE THE FOLLOWING MANUAL EDITS:

--IF IN A STATE OTHER THAN OH, PA, NY, OR WV, EDIT 1.5.G, 1.5.H.2, 1.5.H.14, 1.5.H.15 & 1.5.H.17.

--IF A HEALTHCARE PROJECT, EDIT 1.5.H.10 & 1.5.H.16

--IF REQUIRED, ADD ANY SPECIFIC AHJ REQUIREMENTS TO 1.5.H.19.

--IF PROJECT DOES NOT HAVE AN HVAC CONTRACTOR AND A CONSTRUCTION MODEL OR COORDINATION DRAWINGS ARE REQUIRED, EDIT 1.8.A.1 OR 1.8.B.1.

--IF DOMESTIC STEEL IS REQUIRED, EDIT 2.1.D.

--IF NOT AN OSU PROJECT AND SERVICE SHUTDOWN NOTIFICATION LONGER THAN ONE WEEK IS REQUIRED, EDIT 3.6.C.

--SEE DESIGN NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE GENERAL PROVISIONS SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S GENERAL PROVISIONS SPECIFICATION IS CREATED, THE PROJECT MANAGER OR PERSON ASSIGNED, MUST MANUALLY EDIT ARTICLE 1.10.A RECORD DRAWINGS, BASED ON THE SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS FROM DIVISIONS 22, 23, 26, AND 27. SEE NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, THE PROJECT MANAGER IS TO NOTIFY THE STAFF ASSIGNED TO EACH DIVISION SO SUPPLEMENTAL GENERAL PROVISIONS SPECIFICATIONS CAN BE CREATED FOR EACH DIVISION.

ALSO, AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S GENERAL PROVISIONS IS REVISED ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

PART 1 GENERAL

**1.1 RELATED CONTRACT DOCUMENTS**

- A Contractor shall examine Division 0 and/or Division 1 Contract Documents for general project requirements and instructions to bidders.
- B Refer to this Division's Supplemental General Provisions for additional Project requirements.
- C The provisions of the Instructions to Bidders, General Conditions, Supplementary Conditions, Alternates and Addenda are a part of this Specification. Contractors and Subcontractors shall examine these provisions as they may affect work under this Division.
- D Contractor shall also examine the Contract Documents of all Divisions which may affect and require work under this Division and be responsible for all work required under this Division.

**1.2 DESCRIPTION OF WORK**

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~ **END OF PROJECT NOTE** ~~~~

- A This project involves work in an existing operating facility and will require close communication with Owner with regard to access and work hours. Coordinate all work schedules with Owner prior to bidding.
- B All Drawings as well as the Specifications for all Divisions shall be defined as the Contract Documents. Contractor shall review entire set of Contract Documents prior to bidding.
- C Drawings and Specifications are to be considered as supplementing each other. Work specified but not shown, or shown but not specified, shall be performed or furnished as though mentioned in both the Specifications and the Drawings.
- D Prior to submitting bid, Contractor shall examine all Drawings and Specifications to develop a complete understanding of the project scope. Contractor shall ask for clarifications during the pre-bid phase of the project. Failure to do so will not relieve the Contractor of their responsibility to perform all required work.

~~~~~ **PROJECT NOTE** ~~~~~

KE STANDARD REQUIRES BIDDING CONTRACTOR TO VISIT SITE. HOWEVER, DO NOT USE "REQUIRED" FOR STATE OR FEDERAL FUNDED PROJECTS, INCLUDING OSU PROJECTS, USE "RECOMMENDED".

~~~ **END OF PROJECT NOTE** ~~~~

- E Where the project scope involves renovations and additions, it is required that Contractors visit the site of the work and become familiar with the conditions affecting the installation. Submission of a Bid shall presuppose knowledge of such conditions and no additional compensation shall be allowed where extra labor or materials are required because of the lack of knowledge of these conditions.
- F Bid shall include any special phasing requirements related to the construction work as described in the Contract Documents.
- G Extra costs which might result from deviations from the Drawings, so as to avoid interferences, shall be considered a "Job Condition", and no additional compensation shall be considered applicable. In the event that such interferences occur in course of the work, due to an error, omission, or oversight by the Contractor, no additional compensation shall be allowed. Interferences that may occur during the course of construction shall be brought to the immediate attention of the Engineer, and the Engineer's decision, confirmed in writing, shall be final.
- H The following general terms as used within the context of the Contract Documents shall be defined as follows:
  - 1. "Contract Documents" - The complete set of Drawings and Specifications for all Divisions included in the project.
  - 2. "Drawings" - Drawings furnished as part of the Contract Documents.
  - 3. "Contractor" - This Division's Contractor and the Subcontractors to this Division's Contractor.
  - 4. "Responsible" - To perform work required.
  - 5. "Furnish" - To supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations.
  - 6. "Install" - Work which includes the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
  - 7. "Provide" - To furnish and install, complete and ready for the intended use.
  - 8. "Equal" - To meet or exceed the standards of the specified products or listed manufacturers.

**1.3 WORK INCLUDES**

~~~~~ **PROJECT NOTE** ~~~~~

FOR SOME STATE FUNDED PROJECTS, THE A/E MUST SUBMIT AND OBTAIN PERMITS PRIOR TO BIDDING. IF THIS IN THE CASE, PERMITS AND FEES ARE NOT INCLUDED IN THE CONTRACTOR'S SCOPE. COORDINATE ON A PER PROJECT BASIS.

~~~ **END OF PROJECT NOTE** ~~~~

- A Include all labor, material, equipment, services, coordination, supervision and administration necessary for the proper completion of all work shown. Items omitted, but necessary, to make all systems complete and workable shall be understood to form part of the work.

- B Material for work required to complete installation such as earthwork, concrete, masonry, mortar, reinforcing steel, patching, and painting shall be provided as specified in other applicable Divisions covering such work.
- C Provide material and labor which is neither drawn nor specified but which is obviously a component part of and necessary to complete work and which is customarily a part of work of similar character.
- D Include all testing, test reports, system programming, start-up reports and warranties for each system as outlined elsewhere in these Specifications. Refer to "Operating and Maintenance Manuals" for additional requirements.

#### 1.4 PERMITS AND FEES

- A Give proper authorities notice as required by law relative to the work in their charge. Comply with the regulations regarding temporary enclosures, obstructions, or excavations and pay all legal fees involved.
- B Permits and inspection fees have been paid for by the Engineer. THESE FEES SHALL BE CONSIDERED A REIMBURASBLE FROM THE CONTRACTOR TO ENGINEER. Any additional inspection fees required for work that is considered deficient or otherwise not approved by the Inspector shall be the responsibility of the Contractor.

#### 1.5 QUALITY ASSURANCE

- A Work shall be installed in accordance with provisions of all applicable codes, as interpreted by the local Authority Having Jurisdiction (AHJ), as well as any further modifications or regulations published by local or State Authorities.
- B Reference to the codes and standards listed shall constitute the minimum acceptable requirements. Nothing in the Specifications shall be construed to permit deviation from the requirements of the governing code. Where requirements of the Drawings and Specifications exceed those of the code listed, follow the Drawings and Specifications.

#### ~~~~ **PROJECT NOTE** ~~~~~

IT IS IMPORTANT THAT A CODE SEARCH IS COMPLETED EARLY IN THE PROJECT TO DETERMINE WHAT CODES AND STANDARDS APPLY. THIS EFFORT SHOULD BE COORDINATED WITH THE ARCHITECT AND ALL OTHER DISCIPLINES. IF NECESSARY CHECK WITH THE LOCAL AHJ. VERIFY STATE REQUIREMENTS AND EDIT THE FOLLOWING LISTS AS NECESSARY. THE APPLICABLE STATE OR INTERNATIONAL CODE EDITION (YEAR) MUST BE LISTED. TO ASSIST WITH YOUR CODE SEARCH, REFER TO THE FOLLOWING FOLDER IN THE E-DRIVE.

E:\ - Library\Codes\ Code Locator

IF A CODE/STANDARD REFERENCE TABLE IS INCLUDED ON THE DRAWINGS, THE INFORMATION ON THE DRAWINGS MUST MATCH THE INFORMATION IN THIS SPECIFICATION AND SUPPLEMENTAL GENERAL PROVISIONS.

INCLUDE THE FOLLOWING FOR OHIO PROJECTS.

#### ~~~~ **END OF PROJECT NOTE** ~~~~~

- C The following building codes with amendments shall be followed:

1. 2024 Ohio Building Code
  2. 2017 Ohio Fire Code
  3. 2024 Ohio Mechanical Code
  4. 2024 Ohio Plumbing Code
  5. 2021 International Fuel Gas Code
- D Applicable portions of the following codes, standards, societies and agencies shall be followed. Where a specific edition is listed, it shall be used. Where not listed, the edition recognized by the Authority Having Jurisdiction shall be used. Listing of a specific portion of a code, standard, society or agency does not preclude the Contractor from following all other applicable portions of the code, standard, society or agency.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST IS A GUIDE. EDIT AND ADD SPECIFIC DOCUMENTS AND EDITIONS BASED SPECIFIC PROJECT REQUIREMENTS. IF YOU FOLLOWED A SPECIFIC DOCUMENT DURING DESIGN, IT SHOULD BE LISTED.

~~~ **END OF PROJECT NOTE** ~~~

1. American National Standards Institute (ANSI)
2. American Society of Testing and Materials (ASTM)
3. American with Disabilities Act (ADA) - American with Disabilities Act Accessibility Guidelines (ADAAG)
4. ANSI A117.1: Accessible and Usable Buildings and Facilities
5. Federal Occupational Safety and Health Act (OSHA)
6. NFPA Standards as referenced by the Building Codes.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 70 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2023, NY - 2017, PA - 2017, WV – 2020

~~~ **END OF PROJECT NOTE** ~~~

7. NFPA 70-2023: National Electrical Code

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 72 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2022, NY - 2016, PA - 2016, WV - 2016.

~~~ **END OF PROJECT NOTE** ~~~

8. NFPA 72-2016: National Fire Alarm and Signaling Code.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR ACCREDITED HEALTH CARE FACILITIES AND ADJUST EDITION (YEAR) ACCORDINGLY - DISCUSS WITH PROJECT TEAM. IN JULY 2016 THE CENTER FOR MEDICARE & MEDICAID SERVICES (CMS) ADOPTED THE 2012 EDITION OF NFPA 101.

~~~ **END OF PROJECT NOTE** ~~~

9. NFPA 101-2021: Life Safety Code

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE AND EDIT THE FOLLOWING WHEN ELECTRONIC MEDIA WILL BE USED TO TRANSFER ELECTRONIC FILES BETWEEN CONTRACTOR AND ENGINEER. COORDINATE WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

**1.6 ELECTRONIC MEDIA**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE FOLLOWING WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

- A Electronic drawing files are available to the Contractor from the Engineer for coordination purposes.
- B Contractor shall deliver closeout documents, in an electronic format, on a portable memory device. Device type shall be coordinated with the Owner.

**1.7 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE SUBMITTAL REQUIREMENTS WITH THE ARCHITECT AND EDIT THE FOLLOWING. CHOOSE BETWEEN ONE OF THE TWO CHOICES BELOW.

~~~ **END OF PROJECT NOTE** ~~~

- A Provide Submittals in an electronic format. The file format shall be portable data file (.pdf).
- B Submittal transmittal shall list corresponding Specification Section and a description of item(s) being submitted. Each submittal shall only include items from one Specification Section. Submittals which include items from multiple specification sections will be returned "REVISE AND RESUBMIT."
- C Prepare Submittals with adequate details and dimensions as necessary to clearly show construction. Clearly identify each item on the submittal with designation as indicated on Drawings including location and use. Include with Submittals Manufacturers published descriptive literature, specifications, performance data (normal operating characteristics, curves, ratings, etc.), wiring diagrams and installation instructions. Indicate for each item the operating characteristics, design conditions, features, and optional items that are intended for application on this project. Where contents of Submittal literature include data not pertinent to the Submittal, clearly indicate (highlight) which portion of content is being submitted for review.
- D Contract Documents include scheduled equipment which is the Basis of Design and used to establish design and space requirements. Contract Documents may also include alternative acceptable manufacturers. Where alternative manufacturer's equipment is submitted which alters the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all

- associated trades involved. No costs associated with deviations from the Basis of Design shall be borne by the Owner.
- E If for any reason, the Submittal shows variations from the requirements of the Contract Documents, the Contractor shall make mention of such variation in the letter of transmittal. The Contractor shall note in red on the Submittal any change in design or dimension on the items submitted including changes made by the Manufacturer which may differ from catalog information.
  - F Where additional installation drawings, wiring diagrams or other drawings are specified elsewhere as part of the project requirements, they shall be submitted at the same time as the Submittals. Partial Submittals are not acceptable.
  - G Contractor shall review each Submittal prior to submission, and check for compliance with the Contract Documents. Corrections shall be noted. Mark with approval stamp prior to submission. Submittals that do not bear the Contractor's approval stamp will be returned without action.
  - H The Submittals will be reviewed only for General compliance and not for dimensions, quantities, etc. The responsibility of correct procurement remains solely with the Contractor. The Submittal review shall not relieve the Contractor of responsibility for errors or omissions and deviations from the Contract Document requirements. Submittals which are not required under this Division shall be returned to the Contractor.
  - I Where Submittal review includes pre-determined language that includes the word "Approved", the following shall apply:
    - 1. "Approved" shall be defined as "Reviewed, No Exceptions Taken".
    - 2. "Approved as Noted" or similar verbiage shall be defined as "Reviewed, Exceptions as Noted".
  - J After review of submittals by the Engineer, the Contractor shall revise and resubmit if required to establish compliance with the Contract Document requirements. Resubmittal shall include a document with a written response to each of the Engineer's previous comments.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING IS INCLUDED TO PROMPT US TO REVIEW AND LOOK FOR ITEMS THAT HAVE NOT BEEN SUBMITTED.

~~~ **END OF PROJECT NOTE** ~~~

- K The Contractor shall notify the Engineer when all product data and/or shop drawings for all equipment, materials and systems have been submitted for review.
- L The Contractor agrees that Submittals, processed by the Engineer, are not change orders; that the purpose of Submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design intent of the project. This understanding is demonstrated by indicating which equipment and material is required, and by what methods of fabrication and installation will be utilized.
- M The Contractor further agrees that if deviations, discrepancies or conflicts between the Submittals and the Contract Documents are discovered, either prior to or after Submittals are

processed by the Engineer, the Drawings and Specifications shall control and shall be followed.

- N Final reviewed Submittals shall be included in the Operating and Maintenance Manuals. Where Submittals are returned "REVIEWED, EXCEPTIONS AS NOTED", the final Submittals shall be updated to include the exceptions.

### 1.8 CONSTRUCTION DOCUMENTATION

- A Coordination Drawings

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATION DRAWINGS BY THE HVAC CONTRACTOR ARE STANDARD. EDIT AS REQUIRED WHEN NO HVAC CONTRACTOR.

~~~ **END OF PROJECT NOTE** ~~~

1. Preparation of the Coordination Drawings shall be the responsibility of the HVAC Contractor.
2. Coordination Drawings shall include but not be limited to: locations of equipment and devices, ductwork, piping, and conduit routing and required service clearances for all trades. If used, include off-site prefabricated assemblies. Show the relationship of all components as related to installation and future access for maintenance and removal. Where access doors are required, indicate locations and type. Show locations of all ductwork, piping and conduit penetrations through wall and floors.
  - a. Show existing items affecting new installation in remodeled areas.
3. Coordination meetings between all trades are recommended.
4. Proceed with installation, including off-site fabrication and assembly, only after review of Coordination Drawings by Engineer and approval from other trades affected. Engineer does not approve Coordination Drawings.
5. The Coordination Drawings shall be updated to include any deviations made during construction as required to create Record Drawings.

### 1.9 GUARANTEE AND WARRANTIES

~~~~~ **PROJECT NOTE** ~~~~~

ENGINEER NEEDS TO COORDINATE WARRANTY AND COMMENCEMENT WITH ARCHITECT, CM AND/OR OWNER.

~~~ **END OF PROJECT NOTE** ~~~

- A Warrant that equipment and all work is installed in accordance with good workmanship practice. All equipment shall be installed in accordance with the Manufacturer's recommendations and shall meet the requirements specified. Any equipment failing to perform or function as specified shall be replaced with complying equipment without cost to the Owner. Warranty shall commence upon acceptance of substantial completion of construction by the Owner. Sign-off of individual equipment start-up procedures shall not activate the warranty commencement.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE NEED FOR THE FOLLOWING ON LARGE, LONG DURATION PROJECTS. EDIT AS REQUIRED.

~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall review the construction schedule requirements. Where necessary to accommodate the schedule and where equipment and systems are installed that are used by the project until the date of substantial completion, the Contractor shall provide an extended warranty as part of the Bid to cover the equipment warranty until the date of substantial completion.
- C Guarantee against defects in workmanship and materials; repair or replace any defective work, material or equipment within one year from date of formal written warranty commencement. Longer product warranties provided by individual equipment manufacturers shall supersede this one year guarantee; however, the Contractor shall maintain the one year workmanship and materials guarantee for installation of such equipment.

**1.10 CLOSEOUT DOCUMENTS**

~~~~~ **PROJECT NOTE** ~~~~~

THE CONTRACTOR IS TYPICALLY RESPONSIBLE FOR PRODUCING THE RECORD DRAWINGS, HOWEVER IN SOME INSTANCES, SUCH AS OSU PROJECTS, THE ENGINEER IS RESPONSIBLE. COORDINATE WITH THE ARCHITECT AND PROJECT TEAM. REGARDLESS OF WHO IS RESPONSIBLE, WHEN THEY ARE REQUIRED, INCLUDE THE FOLLOWING. THIS SECTION MUST BE MANUALLY EDITTED BASED ON SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS COMPARED TO DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

- A Record Drawings:

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISION 21, SELECT ONE OF THE FOLLOWING TWO OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

1. Record Drawings shall consist of an updated Construction Model as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISIONS 22, 23, 26, 27 SELECT ONE OF THE FOLLOWING THREE OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

2. Record Drawings shall consist of updated Coordination Drawings as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED SHOP DRAWINGS ARE REQUIRED FOR DIVISION 21.

~~~ **END OF PROJECT NOTE** ~~~~

3. The Contractor shall produce updated shop drawings electronically from the original shop drawings in an approved format. Updated CAD drawings shall include any deviations or changes made during construction. At the end of the project, the Contractor shall transfer the electronic drawings onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN MARKED-UP DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

4. The Contractor shall keep one complete set of the original Drawings on the project site on which shall be recorded any deviations or changes from such Drawings made during construction. These drawings shall become the Record Drawings, shall be kept clean and undamaged, and shall not be used for any other purpose other than recording deviations from the original Drawings. At the end of the project, the Contractor shall make electronic .pdfs of these drawings and transfer them onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED COORDINATION DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27. IT'S IMPORTANT THAT COORDINATION DRAWINGS ARE SPECIFIED UNDER CONSTRUCTION DOCUMENTATION.

~~~ **END OF PROJECT NOTE** ~~~~

5. The Contractor shall maintain updated Coordination Drawings, reproduced electronically from the original Coordination Drawings in an approved format. Drawings shall include any deviations or changes made during construction. Drawings shall only include work of this Division. Work of other Divisions shall be removed. At the end of the project, the Contractor shall transfer the electronic drawing files onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

CHOOSE BETWEEN THE FOLLOWING TWO PARAGRAPHS.

~~~ **END OF PROJECT NOTE** ~~~~

6. After the project is completed, the Record Drawings shall be delivered to the Engineer for inclusion into the Operating and Maintenance Manuals, as a permanent record of the installation as constructed.

### 1.11 SITE REPORTS AND PUNCHLISTS

- A The Engineer may visit the site periodically during construction and provide written Construction Observation Reports to the Contractor identifying areas where installation does not meet the intent of the Contract Documents. The Contractor shall provide a written response to these reports within 5 business days, indicating the reason the installation is out of compliance with the Contract Documents. After review, the Engineer may or may not require the Contractor to correct the installation. The Contractor shall correct the installation unless the reason for non-compliance is accepted, in writing, by the Engineer or Owner.
- B Final Punch List
  1. The Engineer will visit the site to perform a scheduled Final Punch List to identify areas where the installation is incomplete or does not meet the intent of the Contract Documents.
  2. If the Engineer is requested to perform the Final Punch List prior to the Contractor being 100% complete with their scope of work, the Contractor shall furnish a Contractor's Completion List, indicating all incomplete work. This list shall be furnished to the Engineer a minimum of 24 hours prior to the scheduled Final Punch List.
  3. The Contractor shall respond to each punch list item along with a date, indicating that the item has been completed or corrected.
  4. A copy of the Final Punch List with the Contractor's responses shall be included in the Operating and Maintenance Manual.
- C Where on-line documentation management services or project management software requires the author/initiator of a corrective action to close it, and the Engineer is the author/initiator, the following shall apply:
  1. When the corrective action is reported as corrected/complete, by either the responsible Contractor or the Construction Manager, the Engineer will assume that the parties responsible for construction have reviewed and approved the correction.
  2. By closing the corrective action, the Engineer is in no way approving nor assuming responsibility for the installation.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT AND MATERIALS

- A All equipment and materials used on this project shall be new and listed or labeled by a Nationally Recognized Testing Laboratory (NRTL) such as UL, ETL, CSA, etc. or as approved by the local Authority Having Jurisdiction. Equipment and materials shall be installed or used in accordance with instructions included with the listing or labeling. Where possible, the same brand or manufacturer shall be used for each type of material or equipment. such as.
- B Equipment and materials for the construction shall be the responsibility of the Contractor and shall be protected by the Contractor until formally accepted by the Owner.
- C All Manufacturers of equipment shall verify to the satisfaction of the Contractor and Engineer that their equipment will function properly under the conditions of use, as shown on the Drawings and as specified herein. Dimensions, weights, operating characteristics and all other related appurtenances shall be verified before submittal of shop drawings.

### ~~~~ *PROJECT NOTE* ~~~~~

INCLUDE AND EDIT THE FOLLOWING PARAGRAPH FOR ALL OHIO OR PENNSYLVANIA PROJECTS RECEIVING STATE FUNDS OR WHEN REQUESTED BY CLIENT - COORDINATE WITH PROJECT

TEAM. FOR FEDERAL OR OTHER STATE PROJECTS, COORDINATE WITH CLIENT.

~~~ **END OF PROJECT NOTE** ~~~

- D Domestic steel shall be used for steel products as required by the Ohio Revised Code, Chapter 153.

## **2.2 MATERIAL SUBSTITUTIONS**

- A Bids shall be based upon the specified products, suppliers or listed alternatives. The Drawings and Specifications are based on the products specified by type, model, size and suppliers if indicated and thus establish minimum qualities which substitutes must meet to qualify for review.
- B Should the Contractor propose to furnish materials, equipment and/or suppliers other than those specified, submit a written request for substitutions to the Engineer. The request shall be an alternate to the original Bid and shall be accompanied with complete descriptive (manufacturer, brand name, catalog number, supplier name and references, etc.) and technical data for all items. Indicate any additions or deductions to the base Bid price.
  - 1. Requests for substitutions shall be submitted no later than 10 days prior to the bid opening. Requests received less than 10 days prior to the bid opening shall not be considered.
- C Where substitutions alter the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all associated trades involved. No costs associated with the use of a substitution shall be borne by the Owner.
- D Acceptance or rejection of the proposed substitutions shall be subject to approval of the Engineer. If requested, the Contractor shall submit inspection samples of both the specified and the proposed substitute items for review.
- E In all cases where substitutions are permitted, the Contractor shall bear any and all extra cost of evaluating the equality of the material and equipment to be installed.
- F Verbal requests or approvals of substitutions shall not be binding on the Engineer or Owner.

## **PART 3 EXECUTION**

### **3.1 SAFETY**

- A The Contractor shall follow all safety requirements as defined elsewhere in the Specifications and as defined by Owner safety protocols.
- B Work shall be performed on de-energized equipment in accordance with NFPA 70E.
- C Should suspected hazardous materials be encountered, Contractor shall adhere to procedures, methods and regulations of the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) and immediately notify Owner.

### **3.2 COORDINATION**

- A Take all field measurements necessary and assume responsibility for the accuracy.
- B If any work is fabricated or assembled off-site, assume responsibility for the accuracy of such pre-manufactured assemblies.
- C Install work that is to be concealed within the building construction in sufficient time to secure proper location without delay to the work of other trades.

- D Assume responsibility for location of chases, other openings through masonry and concrete construction. When work cannot be installed concurrent with building construction, arrange for rough-in boxes, sleeves, inserts and other items, as necessary for installation thereof at a later date.
- E If any work is installed so that the design cannot be adhered to, Contractor is responsible for making such changes as Engineer may require. Before installing work, report any interferences between work of this Division and work of other Divisions to Engineer as soon as discovered. Architect will determine which work must be relocated, or make adjustments to maintain clearances, maximum headroom and to avoid conflict with other work.
- F Become familiar with the construction where work attaches. Review Structural Drawings for coordination of openings. Cut no structural members or slabs without Engineer's and/or Structural Engineer's written approval.
- G Exercise caution when working in areas where concealed systems or materials may exist. Any costs for repair of damage incurred shall be the responsibility of Contractor causing the damage.

### 3.3 PROTECTION

- A All finished surfaces shall be protected from damage and spills during construction.
  - 1. Protect finished floors with a heavy duty flexible fiber reinforced floor protection board - Ram Board or equal.
  - 2. When setting up pipe cutting and threading machines, protect area against staining and abrasion. Provide plywood protection over Ram Board underlayment.
  - 3. Protect finished surfaces from chips and cutting oil by use of a chip receiving pan and oil proof cover.
  - 4. Protect equipment and finished surfaces from welding and cutting spatters with baffles and spatter blankets.
  - 5. Protect finished surfaces from paint droppings, insulation adhesive, etc. by use of drop cloths.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE SECOND PARAGRAPH FOR OSU PROJECTS.

~~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall provide protection for any roof areas that will be affected by this scope of work. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- C The Contractor shall provide protection for any roof areas that will be affected by this scope of work. Protection shall consist of 1/2-inch thick plywood with foam board attached. The composite board shall be placed with the foam towards the roof surface and shall be secured in a non-destructive manner, such as weighted down. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- D The cost of correcting any such condition will be charged against the respective Contractor.

### 3.4 EQUIPMENT INSTALLATION

- A Install equipment in accordance with equipment manufacturer's published installation instructions.

- B Should the Drawings and/or Specifications include procedures that exceed or call for materials that differ from the manufacturer's instructions, the Contractor shall follow the Drawings and/or Specifications. This requirement does not release the Contractor from the obligation to follow all other published instructions and installation recommendations. Contractor shall make Engineer aware, in writing, of discrepancies between the Drawings and Specifications and the manufacturer's published installation instructions, and/or confirm Engineer's design intent, prior to installation of the equipment. Failure to comply may result in reworking the equipment installation or replacement of materials associated with the equipment at no additional cost to the Owner.

### 3.5 CUTTING AND PATCHING

- A All cutting and patching in construction as necessary for installation of this work shall be the responsibility of this Division and performed by the Tradesmen related to that specific Division of work. Subcontract this work to the appropriate Trade Division.
- B Do not cut any structural member, including but not limited to steel framing and structural floors, without specific permission from the Engineer and/or Structural Engineer.
- C Do not cut openings in roof or floor construction without specific permission from the Engineer and/or Structural Engineer.
  - 1. Existing roof warranty must be maintained.
- D Where locations of penetrations are inaccurate or where building components are improperly cut by inadequate methods, the Contractor in error shall be responsible for complete repair.

~~~~ **PROJECT NOTE** ~~~~~

KEEP THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~~ **END OF PROJECT NOTE** ~~~~~

### 3.6 SERVICE SHUTDOWNS

- A This project involves remodeling of existing areas in an operating facility. Plan work including alterations and connections to existing facilities, to permit carrying on normal building functions. When necessary to temporarily interrupt a service, shutdowns shall be scheduled through the Owner and shall be done at a time as directed by the Owner. No additional compensation shall be allowed for these shutdown periods even though premium time work may be required unless specifically defined elsewhere in the Specifications.
- B Provide temporary service to equipment or systems that cannot be shut down, and as determined by Owner, or as described in the Contract Documents. Remove temporary services when permanent work is completed.

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING IF LONGER NOTICE IS REQUIRED BY OWNER. OSU PROJECTS REQUIRE 2 WEEK'S NOTICE.

~~~~ **END OF PROJECT NOTE** ~~~~~

- C Provide a minimum of two weeks' notice to the Owner before any service shutdown is scheduled.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING SECTION FOR RENOVATION PROJECTS, IN AN OPERATING FACILITY AND NEW PROJECTS WITH PHASING WHERE OCCUPIED AREAS ARE ADJACENT TO THE CONSTRUCTION AREA. ALTHOUGH ANOTHER TRADE MAY PROVIDE THE IAQ REQUIREMENTS FOR THE PROJECT, THERE MAY BE SPACES OUTSIDE THE PROJECT SITE WHERE THIS DIVISION'S CONTRACTOR HAS TO MAKE A TIE-IN AND EXTEND SERVICES TO THE PROJECT SITE.

~~~ **END OF PROJECT NOTE** ~~~~

**3.7 INDOOR AIR QUALITY**

- A All occupied areas of building shall remain free from odors, fumes, dust and smoke generated from installation of material and equipment.
- B Arrange with the Owner to schedule isolation of areas where paints, adhesives, solvents, etc., will be used. Areas shall remain isolated until all materials have cured sufficiently as to stop out-gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
- C Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas.

**END OF SECTION 230100**

**SECTION 230101 - HVAC SUPPLEMENTAL GENERAL PROVISIONS**

~~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION SECTION SUPPLEMENTS AND EXPANDS ON TOPICS ADDRESSED IN THE COMMON GENERAL PROVISIONS.

CHOOSE "ARCHITECT" WHEN KE'S CLIENT IS THE ARCHITECT.

CHOOSE "ENGINEER" WHEN KE IS THE PRIME CONSULTANT TO THE OWNER (NO ARCHITECT).

THE CHOICE OF ARCHITECT OR ENGINEER SHOULD MATCH THE CHOICE MADE IN COMMON GENERAL PROVISIONS.

CHOOSE "OWNER" WHEN APPLICABLE TO THE GENERIC TERM FOR THE BUILDING'S "OWNER".

CHOOSE "UNIVERSITY" FOR OHIO STATE UNIVERSITY PROJECTS.

THE CHOICE OF OWNER OR UNIVERSITY SHOULD MATCH THE CHOICE MADE IN COMMON GENERAL PROVISIONS.

SEE THE FOLLOWING TO ASSIST WITH THE WRITING OF THIS SPECIFICATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

AFTER THE SPECLINK CHECKLIST IS COMPLETE, IF A HEALTHCARE PROJECT, EDIT 1.7.B.2 AND 1.7.B.8 YEAR (EDITION).

AFTER THE SPECLINK CHECKLIST IS COMPLETE, SEE DESIGN NOTES AND BOLD/BRACKETED TEXT WITHIN SPECIFICATION FOR SPECIFIC MANUAL EDITING REQUIREMENTS.

~~~ **END OF PROJECT NOTE** ~~~

PART 1 GENERAL

**1.1 RELATED CONTRACT DOCUMENTS**

- A Refer to 23 01 00: HVAC General Provisions for additional Project requirements.

**1.2 QUALITY ASSURANCE**

- A Reference to the codes and standards listed shall constitute the minimum acceptable requirements. Nothing in the Specifications shall be construed to permit deviation from the requirements of the governing code. Where requirements of the Drawings and Specifications exceed those of the code listed, follow the Drawings and Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

IT IS IMPORTANT THAT A CODE SEARCH IS COMPLETED EARLY IN THE PROJECT TO DETERMINE WHAT CODES AND STANDARDS APPLY. THIS EFFORT SHOULD BE COORDINATED WITH THE ARCHITECT AND ALL OTHER DISCIPLINES. IF NECESSARY, CHECK WITH THE LOCAL AHJ. LIST ANY APPLICABLE CODES NOT INCLUDED IN GENERAL PROVISIONS.

IF A CODE/STANDARD REFERENCE TABLE IS INCLUDED ON THE DRAWINGS, THE INFORMATION

ON THE DRAWINGS MUST MATCH THE INFORMATION IN THIS SPECIFICATION AND GENERAL PROVISIONS.

~~~ **END OF PROJECT NOTE** ~~~~

- B Applicable portions of the following codes, standards, societies and agencies shall be followed. Where a specific edition is listed, it shall be used. Where not listed, the edition recognized by the Authority Having Jurisdiction shall be used. Listing of a specific portion of a code, standard, society or agency does not preclude the Contractor from following all other applicable portions of the code, standard, society or agency.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST IS A GUIDE. EDIT AND ADD SPECIFIC DOCUMENTS AND EDITIONS BASED SPECIFIC PROJECT REQUIREMENTS. IF YOU FOLLOWED A SPECIFIC DOCUMENT DURING DESIGN, IT SHOULD BE LISTED.

~~~ **END OF PROJECT NOTE** ~~~~

1. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
2. American Society of Mechanical Engineers (ASME)

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING ON PROJECTS WITH HYDRONIC OR STEAM SYSTEMS. COORDINATE THE EDITION (YEAR) OF THE ASME BPVC WITH THE STATE WHICH THE PROJECT IS LOCATED: OH - 2023, NY - 2015, PA - 2015, WV - 2015.

~~~ **END OF PROJECT NOTE** ~~~~

3. ASME BPVC-2023: Boiler and Pressure Vessel Code
4. American Welding Society (AWS)
5. National Fire Protection Association (NFPA)

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR ALL PROJECTS WITH EQUIPMENT CONTAINING REFRIGERANTS - BOTH NEW AND EXISTING TO BE REMOVED OR SERVICED.

~~~ **END OF PROJECT NOTE** ~~~~

- C All Contractor personnel who perform installation, maintenance or repair work who might have the opportunity to release CFC's, HCFC's, or HFC's into the atmosphere shall have a UNIVERSAL certification as required by Environmental Protection Agency, Section 608 Regulatory Requirements: Stationary Refrigeration and Air Conditioning.

**1.3 SUBMITTALS**

- A Prior to commencing work, submit product data and/or shop drawings for HVAC equipment, materials and systems as required in each individual Division 23 Specification section. Provide all Submittals far enough in advance of scheduled dates for installation to provide sufficient

time for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

#### **1.4 CONSTRUCTION DOCUMENTATION**

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING ONLY IF TAB IS IN THE CONTRACTORS SCOPE OF WORK. DO NOT INCLUDE FOR THE FOLLOWING: CLEVELAND CLINIC PROJECTS - TAB CONTRACTOR IS HIRED BY THE OWNER. OSU PROJECTS - TAB CONTRACTOR IS HIRED BY THE AE, TYPICALLY UNDER KARPINSKI ENGINEERING'S CONTRACT.

~~~ **END OF PROJECT NOTE** ~~~

- A Testing, Adjusting and Balancing Report
  - 1. Submit Testing, Adjusting and Balancing Report to Engineer upon completion.
  - 2. Refer to Section 23 05 93 for additional information.
  - 3. Final copy shall be included in Operating and Maintenance Manuals.

~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING SHALL BE INCLUDED WHEN EQUIPMENT CONTAINING REFRIGERANT COMPRESSORS IS USED ON THE PROJECT. IT'S A FOUR YEAR PARTS ONLY EXTENSION OF THE STANDARD ONE YEAR PARTS AND LABOR WARRANTY. IF A LABOR WARRANTY EXTENSION IS REQUIRED, IT SHOULD BE NOTED AS PART OF THE EQUIPMENT SPECIFICATION.

~~~ **END OF PROJECT NOTE** ~~~

#### **1.5 GUARANTEE AND WARRANTIES**

- A Guarantee air conditioning equipment refrigeration compressors for five years.

#### **1.6 CLOSEOUT DOCUMENTS**

- A Record Drawings:
  - 1. Record Drawings shall reflect as-built conditions and show changes in:
    - a. Size, type, capacity, etc. of any material, device or piece of equipment
    - b. Location of any device or piece of equipment
    - c. Location of any outlet or source in building service system.
    - d. Routing of any piping, conduit, ducts or other building services.
  - 2. Where applicable, Record Drawings shall indicate the location of all underground, under floor and concealed piping. Include the location of all utility service entries.
  - 3. Record Drawings shall indicate rated walls where firestop materials have been applied.
  - 4. Where applicable, Record Drawings shall indicate the location of all tagged valves including the tag designations.
  - 5. Where applicable, Record Drawings shall indicate the location of all tagged steam drip traps including tag designations.
- B Operating and Maintenance Manual (OMM)
  - 1. Once submittals are completed, provide an OMM index to the Engineer for review. Once index is approved, submit an electronic Portable Document Format (PDF) copy of the OMM to the Engineer for review.

2. Each OMM shall be assembled into one electronic file or multiple files broken up by section if the file size is larger than 15Mb.

~~~~ **PROJECT NOTE** ~~~~~

FOR LARGE PROJECTS, YOU MAY WANT TO REVISE THE FOLLOWING SO THERE IS A SEPARATE BINDER FOR EACH SYSTEM. FOR EXAMPLE: CENTRAL STEAM SYSTEM, CENTRAL CHILLED WATER SYSTEM, TEMPERATURE CONTROL SYSTEM, ETC.

~~~ **END OF PROJECT NOTE** ~~~

3. Combine all electronic files and arrange as follows. Include a title tab for each section and an index at the beginning of each individual section. If a section listed below does not apply to the Project, renumber sections accordingly.
  - a. Page 1 --- Title of Project, Address, Date of Submittal, Name of Contractor and Name of Engineer, including contact information, phone numbers and email addresses.
  - b. Page 2 --- Index. Index shall include hyperlinks to each section listed.
  - c. Section 1 --- A copy of each final Submittal. Where Submittals are returned "REVIEWED, EXCEPTIONS AS NOTED", the final Submittals shall be updated to include the exceptions.
  - d. Section 2 --- A copy of each equipment Manufacturer's operating and maintenance instructions and where applicable, a copy of the equipment startup report. Maintenance instructions shall include name of service agency, spare and replacements parts lists, lubrication instructions, and replacement belt information (size, type and length). For packaged equipment with manufacturer supplied controls, provide information listing any programming that is not a factory default.
  - e. Section 3 --- Temperature Control System component information, drawings and sequences of operation.
  - f. Section 4 --- A copy of the testing, adjusting and balancing report.
  - g. Section 5 --- A copy of all test results performed by the Contractor. Test results shall include, where applicable, pipe cleaning and pressure tests, ductwork pressure tests, freeze protection cable tests, life safety damper operational tests, temperature control cable/conductor integrity tests, and steam piping welded joint inspections.
  - h. Section 6 --- A copy of the valve directory. Where applicable, a copy of the drip steam trap directory.
  - i. Section 7 --- A copy of all guarantees and warranties.
  - j. Section 8 --- Training sign-in sheets including all data utilized in the training sessions and a list of all digitally recorded training sessions. Include an electronic copy of all recorded training sessions.
  - k. Section 9 --- Record Drawings.
  - l. Section 10 --- A list of attic stock furnished for the project.
  - m. Section 11 --- Final Punch List with Contractor's responses.
4. The electronic OMM shall be delivered to the Owner and Engineer on a portable memory device - Owner shall be provided with up to 5 copies on separate portable memory devices and the Engineer shall be provided with a single copy.

- a. OMM index page shall have active links to the first page of each section.
- b. Sections containing more than 30 pages shall have a section index with corresponding links.
- c. PDF text shall be recognizable and shall be searchable by use of a "Ctrl-F" or "find text" function.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING ON PROJECTS WHERE OWNER DEMONSTRATION AND TRAINING IS REQUIRED. KEEP UNLESS OTHERWISE NOTED.

~~~ **END OF PROJECT NOTE** ~~~

**1.7 DEMONSTRATION AND TRAINING**

- A Before final payment, demonstrate to the Owner's satisfaction the proper operation of each of the systems provided as part of the Contract Documents.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR OSU PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

- B Equipment training shall be performed by the original equipment manufacturer. Training by the Contractor or sales personnel shall be prohibited.
- C Provide to Owner after all equipment, systems and controls are in operation and at an agreeable time, instructions for the purpose of training Owner's maintenance personnel in the operation and maintenance of all HVAC equipment, systems and controls.
- D Provide a "sign-in" sheet at each training session. A copy of each "sign-in" sheet shall be included in the Operating and Maintenance Manual.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE NEED FOR VIDEO TAPING ON A PER PROJECT BASIS. INCLUDE THE FOLLOWING PARAGRAPH IF REQUIRED.

~~~ **END OF PROJECT NOTE** ~~~

- E The Contractor shall video record training sessions for systems if required in other Specification sections. Turn one copy of each recording over to the Owner upon completion as part of Operating and Maintenance Manual. Coordinate preferred type of recording media with the Owner.
- F Refer to individual Division 23 sections for minimum time periods for training. When a minimum time period is not listed, provide sufficient time to thoroughly demonstrate the proper operation of the equipment or system as requested by the Owner.
- G Deliver to the Owner all special tools and appurtenances for proper operation and maintenance of the equipment provided and request receipt for same. Attach to the Contractor's request for final payment.

PART 2 PRODUCTS

**2.1 NOT USED**

PART 3 EXECUTION

**3.1 COORDINATION**

- A Consult the Contract Documents and Submittals pertaining to the work for other trades. Review the field layouts for all trades and make adjustments accordingly in laying out the HVAC work.
- B Examine the work of all other trades when it comes in contact with, or is covered by, work in this Division. Do not attach to, cover up, or finish against any defective work, or install work in a manner which will prevent proper installation of the work of other trades. HVAC Contractor shall be responsible for the costs of adjustments required.

**3.2 PRODUCT HANDLING**

- A Pay all costs for transportation of materials, equipment to job site.
- B Provide all scaffolding, tackle, hoists, rigging necessary for placing HVAC materials and equipment in their proper place. Scaffolding, hoisting equipment: comply with applicable Federal, State, and Local regulations. Remove temporary work when no longer required.
- C Arrange for packaging of equipment, which must be hoisted, so that there will be no damage or distortion caused by hoisting operation. Protect all piping, ductwork, and equipment from any damage during hoisting operation.
- D Store equipment, controllers, insulation, ductwork, etc., in a dry location and protect from dirt and moisture until building is ready to receive them.
- E Coordinate location of stored items with other trades. Where necessary, store materials and equipment on movable carts so they may be moved when interfering with the work of other trades.

**3.3 DAMAGE AND EMERGENCY REPAIRS**

- A Assume responsibility for any damage to new or existing building components caused by work provided as part of the Contract Documents, including leaks in piping systems being installed or reworked. Repair all damage without extra cost to Owner.
- B Owner reserves the right to make emergency repairs as required to keep equipment in operation, without voiding Contractor's guarantee or relieving him of responsibility during warranty period.
- C Restore roads, grounds, paving, insulation, piping, ductwork building components, etc., to their original condition whenever this work causes damage.

**3.4 CLEANING**

- A At all times keep premises and building in neat and orderly condition, follow explicitly any instructions in regard to storing of materials, protective measures and disposing of debris.
- B After all tests and adjustments have been completed, clean all equipment leaving everything in working order at the completion of this work. Thoroughly clean all piping, ductwork, and equipment of dirt, dust, grease, oil, debris and paint, after all other trades have completed their work.
- C All debris created by the execution of this work shall be removed as directed by the Engineer or Owner.

- D Upon completion of work remove all tools, equipment and surplus materials.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING SECTION FOR RENOVATION PROJECTS, IN AN OPERATING FACILITY AND NEW PROJECTS WITH PHASING WHERE OCCUPIED AREAS ARE ADJACENT TO THE CONSTRUCTION AREA.

~~~ **END OF PROJECT NOTE** ~~~

**3.5 INDOOR AIR QUALITY**

- A Provide temporary ventilation and/or filtration systems of sufficient size and quantity to ensure complete removal of all odors, fumes, and airborne contaminants generated. Maintain 25 feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.
- B If the building HVAC system is used and adjustments are made for ventilation purposes, rebalance systems to maintain occupied areas pressurization and air change requirements.
- C Arrange with Owner to override the HVAC system control of night setback functions to assist with ventilation of building.
- D Comply with SMACNA guideline "IAQ Guidelines for Occupied Buildings Under Construction" Second Edition - 2007.

**END OF SECTION 230101**

**SECTION 230200 - HVAC DEMOLITION**

~~~~ **PROJECT NOTE** ~~~~~

THIS SECTION SHALL BE USED FOR ALL RENOVATION PROJECTS REQUIRING DEMOLITION. WHEN A SEPARATE DEMOLITION PACKAGE IS ISSUED SEPARATE FROM THE REMAINDER OF THE PROJECT, INCLUDE THIS SECTION ALONG WITH 23 01 00, 23 01 01, 23 03 00, AND 23 04 00 – EDIT ALL SECTIONS AS REQUIRED.

THE STANDARD IS TO REMOVE ALL EQUIPMENT, DUCTWORK AND PIPING NO LONGER REQUIRED. DO NOT ABANDON IN PLACE UNLESS DIRECTED OTHERWISE. IF EQUIPMENT, DUCTWORK AND PIPING IS ABANDONED, IT IS RECOMMENDED THAT "INACTIVE" LABELING AND SIGNAGE IS PROVIDED.

~~~ **END OF PROJECT NOTE** ~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

- A HVAC equipment, piping, ductwork, and systems indicated on the Demolition Drawings are shown to indicate the extent of demolition only and are not intended to be a record drawing of the existing conditions. The Drawings and Specifications establish the minimum standards for workmanship and materials.
  - 1. If additional interpretation is required regarding the scope of demolition, contact the Engineer prior to bid.
- B Include all labor, materials, equipment, services, and permits necessary for completion of the demolition work.
- C Provide protection for all adjacent areas before, during, and after execution of the demolition work.
- D Comply with all the rules and regulations of local and state Authorities Having Jurisdiction, including applicable OSHA safety requirements.
- E Visit the site and become familiar with conditions affecting the demolition work. No additional compensation shall be approved on claims that arise from a lack of knowledge of the existing conditions.
- F Normal building functions shall be maintained during the demolition work. Coordinate the day and time of any temporary building system interruptions with the Owner. Additional compensation shall not be approved for premium time effort.

PART 2 PRODUCTS

**2.1 MATERIALS**

- A Provide materials and equipment for completion of the demolition work as described within the Specifications and on the Drawings.
- B Materials and equipment shall be new and UL labeled for the application.

PART 3 EXECUTION

**3.1 GENERAL DEMOLITION WORK**

- A Disconnect and remove existing HVAC Work made necessary because of Project alterations as indicated or implied on the Contract Documents of all trades. Relocate equipment and/or devices where indicated. Existing HVAC equipment, piping, ductwork and systems not affected by these changes shall remain and shall be protected whether shown on the Drawings or not.
- B HVAC equipment, piping, ductwork and systems shall be de-energized prior to disconnection and removal.
- C Demolition Work under this Contract shall be accomplished by the Contractor in complete accordance with the Construction Procedure and Progress Schedule. Proposal shall include any special phasing requirements related to demolition work as described elsewhere in the Specifications.
- D Remove existing equipment indicated including piping and ductwork connections. Existing equipment shown as being reused or relocated shall be carefully removed, stored on the premises, and refurbished before reinstallation.
- E Equipment to be salvaged by the Owner shall be carefully removed and stored on site by the Contractor for delivery to the Owner. All other materials, equipment and debris shall become the property of the Contractor and shall be removed from the site.
- F Remove piping and ductwork as described on the Drawings. Cap or plug as indicated or as required by Code. Insulate portion of system left exposed by the piping or ductwork removal. Insulation shall match that of the existing adjacent insulation or be as specified for new service. Identify in the field where piping or ductwork connections are to be reused.
- G Provide drainage, capping, and re-filling as necessary to isolate portions of systems to enable full or partial demolition.
- H Provide valves as necessary whether indicated or not to isolate portions of systems to enable full or partial demolition and to make ready for re-connection of the new work.

~~~~ **PROJECT NOTE** ~~~~~

IF THE LAST SENTENCE IS INCLUDED IN THE FOLLOWING PARAGRAPH, THE REQUIREMENT FOR VALVE UNIT PRICING MUST BE INCLUDED IN SECTION 23 01 01.

~~~ **END OF PROJECT NOTE** ~~~

- I In case of existing valves failures, replace valves in kind or as specified for new service to enable positive shut-off and keep with project schedule as much as possible. Report any such cases immediately upon discovery to the Architect or Engineer. Provide unit pricing with bid for all valve types and sizes anticipated.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE AND EDIT THE LAST SENTENCE IN THE FOLLOWING PARAGRAPH ON A PER PROJECT BASIS - REVIEW WITH TM.

~~~ **END OF PROJECT NOTE** ~~~

- J For portions of existing piping and ductwork systems to be re-used, visually inspect for signs of leaks. Report any such cases immediately upon discovery to the Architect or Engineer. Provide testing similar to that as required for new piping and ductwork systems to ensure adequate condition.
- K Remove temperature control devices and components associated with removed equipment, piping, and ductwork including controllers, sensors, actuators, wiring, conduit, etc.
- L Where Building Automation Systems wiring is interrupted because of the demolition Work, Contractor shall reroute or relocate, modify and reconnect to provide a continuous system.
- M Cutting, patching, finishing, etc., for removed or relocated HVAC equipment, piping, ductwork, and systems shall be included as part of the HVAC Work. All holes and damage caused by the demolition work shall be properly patched with suitable materials to match existing construction. Patching shall be performed by the qualified trade.
- N Where equipment, piping, ductwork and systems are removed from fire or smoke rated construction, penetrations shall be patched to match existing ratings with suitable materials matching existing construction. Patching shall be performed by the qualified trade.

**3.2 MERCURY**

- A Where existing thermostats contain mercury or mercury based products follow EPA universal waste rule, Regulation 40 CFR 273 for removal, transportation and recycling.

**3.3 REFRIGERANTS**

- A Where existing systems contain CFCs, HCFCs, or HFCs, Contractor personnel shall have a UNIVERSAL certification as required by Environmental Protection Agency, Section 608 Regulatory Requirements: Stationary Refrigeration and Air Conditioning.

**END OF SECTION 230200**

## **SECTION 230300 - HVAC BASIC MATERIALS AND METHODS**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Hangers and Supports
- B Roof Flashings
- C Electrical Connections
- D Paint
- E Nameplates, Markers and Tags
- F Access to Equipment and Devices
- G Cleaning
- H Equipment Startups
- I Tests and Adjustments

#### **1.2 SUBMITTALS**

- A Refer to Sections 23 01 00 and 23 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES. Exceptions: Escutcheons, Sleeves, Paint.

#### **1.3 CONSTRUCTION DOCUMENTATION**

- A Refer to Section 23 01 01.

### **PART 2 PRODUCTS**

#### **2.1 HANGERS AND SUPPORTS**

- A The following components may not all be required on the Project. Refer to the Drawings and other Specification sections for system types to determine specific requirements.
- B Provide hangers, rollers, anchors, guides and supports to properly support and retain piping and conduits; to control expansion, contraction, anchorage, and drainage and to prevent sway and vibration.
- C Provide angles, rails, struts, brace plates, and platforms to properly support ductwork and equipment; and to prevent sway and vibration.
- D Provide supplementary steel angles, channels, and plates where supports are required between building structural members, span the space and attach to building structural members by welding, bolting or anchors.
- E Provide threaded rods, turnbuckles, and all other miscellaneous specialties for the attachment of hangers and supports to structure. Provide additional lock nut on each support rod.
- F Provide inserts or anchors for support of work in concrete construction.
- G Provide forged steel beam clamps when attaching to steel construction.
  - 1. For up to 3/4 inch diameter rod: Anvil Figure 92, 93, or 94 beam clamps.
  - 2. For 7/8 inch and 1 inch diameter rod: Anvil Figure 134 beam clamp with Anvil Figure 290 eyenut.
  - 3. Pressed steel beam clamps are not permitted.
- H Piping Support

Alterations For: Board of Commissioners for Richland County Courthouse AC Upgrade

1. Refer to other portions of the Contract Documents for specific information regarding system type, pipe materials, pipe sizes, and insulation requirements.
2. Support individual piping from hangers as follows:
  - a. Insulated piping 2 inches and smaller - Anvil Figure 260 carbon steel adjustable clevis hanger with the following to protect against insulation compression:
    - 1) Fiberglass insulation: Anvil Figure 167 18 gage galvanized steel insulation protection shield between hanger and insulation, minimum 12" long.
    - 2) Closed-cell insulation: Pre-insulated pipe hanger supports matching adjacent insulation.
  - b. Insulated chilled water piping and piping where there is a possibility of condensation 2-1/2 inches and larger - Anvil Figure 260 carbon steel adjustable clevis hanger with Anvil Figure 167 18 gage galvanized steel shield, minimum 12" long. Provide hard block non-conducting type saddles, 180 degree segments, between shield and pipe. Saddle length shall match shield length. Saddle thickness shall match insulation thickness.
  - c. Rollers - Where thermal movement may cause a hanger rod to deviate more than five degrees from the vertical or where longitudinal expansion may cause hanger to move more than 1/2 inch on the piping, provide Anvil Figure 171, 175 or 181 pipe roller hangers or chairs. Install with pipe covering protection saddles.

3. Minimum rod diameter

| PIPE SIZE     | MINIMUM ROD DIAMETER |
|---------------|----------------------|
| 2" AND LESS   | 3/8"                 |
| 2-1/2", 3"    | 1/2"                 |
| 4", 5"        | 5/8"                 |
| 6", 8"        | 3/4"                 |
| 10", 12"      | 7/8"                 |
| 14", 16", 18" | 1"                   |

4. Maximum hanger spacing

a. Steel Pipe

| PIPE SIZE         | MAXIMUM SPACING |
|-------------------|-----------------|
| 1" and smaller    | 6'              |
| 1-1/4"            | 8'              |
| 1-1/2", 2"        | 10'             |
| 2-1/2" and larger | 12'             |

b. Copper Pipe

| PIPE SIZE          | MAXIMUM SPACING |
|--------------------|-----------------|
| 1-1/4" and smaller | 5'              |
| 1-1/2" and larger  | 10'             |

5. Provide additional hanger support within two feet of each elbow and at valves, strainers and other equipment in pipe lines.
6. Trapeze hangers may be used for multiple runs of piping. Construct of a steel channel with adjustable hanger rods. Determine hanger spacing by the smallest pipe supported. Install all piping free for independent movement on the trapeze hanger.

Attach pipe with pipe clamps. Provide insulation protection shields and saddles as specified for individual pipe support.

7. Support vertical pipe risers with friction clamps at least at alternate floors.
8. Provide saddles or insulation protectors where pipes are insulated. Insulation shall be continuous through all hangers.
9. Acceptable manufacturers:
  - a. Anvil - basis of design
  - b. Mason
  - c. Modern
  - d. Erico/Caddy

~~~~ **PROJECT NOTE** ~~~~~

IF PROJECT INCLUDES EQUIPMENT ON THE ROOF, INCLUDED PARAGRAPH A.

IF PROJECT INCLUDES DUCTWORK ON THE ROOF, INCLUDE PARAGRAPH B.

IF PROJECT INCLUDES PIPING ON THE ROOF, INCLUDE PARAGRAPHS C AND F.

ALWAYS INCLUDE PARAGRAPH D.

~~~ **END OF PROJECT NOTE** ~~~

## 2.2 ROOF CURBS AND SUPPORTS

~~~~ **PROJECT NOTE** ~~~~~

WHEN PIPING IS INSTALLED ON THE ROOF, THE USE OF NON-PENETRATING TYPE ROOF SUPPORTS ARE PERMITTED FOR SMALLER PIPES (2" AND LESS). HOWEVER, THEY SHOULD ONLY BE USED FOR EVERY OTHER SUPPORT ALONG WITH PREFABRICATED ROOF SUPPORTS. USE OF NON-PENETRATING TYPE SUPPORTS MUST BE INDICATED ON THE DRAWINGS.

~~~ **END OF PROJECT NOTE** ~~~

- A Provide prefabricated pipe curb assemblies for piping roof penetrations. Provide prefabricated roof supports for piping installed on the roof.
  1. Where indicated, provide non-penetrating type roof supports.
- B Prefabricated roof curbs and supports shall be 18 gauge galvanized steel with continuous welded seams, wood nailer, and counterflashing of type/style as required by roofing. All curbs shall be insulated.
  1. The height of roof curbs and supports shall be a minimum of 18 inches, or 12 inches above the finished roof surface (whichever is greater). Total curb height shall accommodate the roof insulation thickness. Refer to Architectural Drawings for details.
  2. For support of ductwork or piping provide stainless steel strut, fittings and fasteners as required. Fasteners shall not penetrate the top surface of the support curb cap. All connections shall be through the side and sealed with silicone caulking.
  3. Acceptable manufacturers:

- a. Custom Curb
  - b. Roof Products & Systems
  - c. Pate
  - d. Thycurb
- C Non-penetrating rooftop supports shall prevent damage to roofing membranes using non-corrosive bases with gently rounded edges and drain ports to prevent ponding.
- 1. Base material shall be polycarbonate with a carbon black additive for UV stabilization.
  - 2. Metal supports, all-thread rod, fasteners, and accessories shall be stainless steel or hot-dipped galvanized.
  - 3. Acceptable manufacturers:
    - a. Miro Industries, Inc.
    - b. Engineer approved equal.

### **2.3 ROOF FLASHINGS**

- A Roof flashings for HVAC equipment are the responsibility of the contractor installing the equipment.
- 1. Existing roof warranty must be maintained.

### **2.4 ELECTRICAL CONNECTIONS**

- A Refer to those portions of the Contract Documents which establish electrical characteristics and furnish equipment to operate on that service.
- B Starters shall be provided under Division 26 Work, unless otherwise noted. Starters to be provided with proper NEMA enclosures, surface or flush application as required. Where equipment has magnetic starters furnished as an integral part of the equipment, disconnect switches shall be provided under Division 26 Work.
- C Provide coordinated wiring diagrams for motor equipment of heating, ventilating, air conditioning, and temperature control conforming to system operation specified. Provide line diagrams, power diagrams, terminal connections. Submit all such drawings as shop drawings.
- D Provide power wiring from closest available circuit breaker for powering of the temperature controls system. Install according to the requirements of Division 26.
- E Install all equipment requiring an electrical connection in such a manner so that proper clearance for service is provided per the National Electric Code.

### **~~~~ PROJECT NOTE ~~~~~**

COORDINATE PAINTING REQUIREMENTS WITH ARCHITECT. INCLUDED THE FOLLOWING ONLY IF PAINTING IS REQUIRED BY DIVISION 23. ALSO INCLUDE IF STENCILING IS REQUIRED FOR EQUIPMENT AND SYSTEM IDENTIFICATION.

### **~~~ END OF PROJECT NOTE ~~~**

### **2.5 PAINT**

- A Painting shall be done with products of Sherwin-Williams, Pittsburgh Plate Glass, Pratt and Lambert, or Tnemec, according to the following Sherwin-Williams paints.
- 1. Paints applied to interior non-metal surfaces shall not exceed the VOC content limits established in the Green Seal Standard GS-11, first edition, May 20, 1993. VOC limits are as follows:

- a. Flat paints: 50 grams per liter
- b. Non-flat paints: 150 grams per liter
2. Paints applied to interior metal surfaces shall not exceed the VOC content limit of 250 grams per liter established in the Green Seal Standard GS-03, second edition, January 7, 1997.
3. Galvanized and Ferrous Metal Surfaces (Exterior)
  - a. First Coat: ProCryl Universal Primer, B66-310 Series (2 to 4 mils dry)
  - b. Second and Third coat: Duration Exterior Latex Acrylic Gloss coating, K34 Series (7 mils wet, 2.8 mils dry, per coat)
4. Galvanized and Ferrous Metal Surfaces (Interior)
  - a. First Coat: ProCryl Universal Primer, B66-310 Series (2 to 4 mils dry)
  - b. Second and Third coat: Sherwin-Williams DTM Acrylic Gloss paint, B66W00111 Series (6.5 mils wet, 2.5 mils dry, per coat)
5. Insulated Coverings
  - a. First Coat: ProGreen 200 Interior Latex Primer, B28W600 (4 mils wet, 1.5 mils dry)
  - b. Second and Third coat: ProClassic Waterborne Acrylic High Gloss, B21-351 Series (4 mils wet, 1.5 mils dry, per coat)
6. Where safety colors or facility standard colors are not available in the ProClassic paint, Sherwin-Williams DTM Acrylic Gloss paint, B66W00111 Series, may be used for the specific colors.

B Colors shall conform to ANSI A13.1.

## 2.6 NAMEPLATES, MARKERS AND TAGS

### ~~~~ *PROJECT NOTE* ~~~~~

FOLLOWING IS THE KE STANDARD FOR EQUIPMENT NAMEPLATES. COORDINATE NAMEPLATE REQUIREMENTS WITH OWNER. EDIT AS REQUIRED.

### ~~~ *END OF PROJECT NOTE* ~~~

- A Equipment Nameplates
1. Nameplates located indoors shall be laminated rigid phenolic with a black surface and white core. Use 1/16" thick material for plates up to 2 inch by 4 inch. For larger sizes use 1/8" thick material.
  2. Nameplates located outdoors shall be 0.032" aluminum with a black enamel background with engraved natural aluminum letters.
  3. Nameplate size shall be as required to include complete text.
  4. Lettering shall be condensed Gothic. The space between lines shall be equal to the width of the letters. Use 1/2" minimum height letters.
  5. Nameplates shall be attached to equipment with brass screws or rivets; no adhesive attachments will be permitted.

### ~~~~ *PROJECT NOTE* ~~~~~

EDIT AND ADD CUSTOM PIPE MARKER INFORMATION AS REQUIRED.

### ~~~ *END OF PROJECT NOTE* ~~~

- B Pipe Markers
  1. Each marker background shall be appropriately color coded with a clearly printed legend to identify the contents of the pipe in conformance with the "Scheme for the Identifications of Piping Systems" (ANSI A13.1).
  2. Flow direction arrows shall be included on each marker.
  3. Snap-around markers shall be used for overall diameters up to 6" and strap-around markers shall be used above 6" overall diameters. Self-adhesive type markers are permitted if secured in-place with pipe banding tape installed at both ends of the marker, completely around the pipe and overlapping itself to secure in place.
- C Acceptable manufacturers:
  1. Seton Nameplate Company
  2. Marking Services Inc

PART 3 EXECUTION

**3.1 GENERAL INSTALLATION REQUIREMENTS**

- A Location of piping, equipment, ducts, etc., on the drawings are diagrammatic; indicated positions shall be followed as closely as possible, exact locations shall be subject to building construction and interferences with other work. In general, conceal piping and ductwork located outside of equipment rooms. Difficulties preventing the installation of any part of work as indicated, shall be called to the attention of the Architect or Engineer. Architect or Engineer will determine locations and changes. Contractor shall install the work accordingly. Architect or Engineer reserves right to make minor changes in location of any part of the work up to the time of roughing-in without additional cost.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING PARAGRAPH WHEN PROJECT IS LOCATED IN AN EXISTING FACILITY.

~~~ **END OF PROJECT NOTE** ~~~

- B Attempts have been made to identify existing equipment locations and piping and ductwork routing and sizes with use of existing drawings and field observations. Contractor shall field verify all existing information, report any discrepancies to the Architect or Engineer and note on the Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING PARAGRAPH WHEN PROJECT INCLUDES DEMOLITION.

~~~ **END OF PROJECT NOTE** ~~~

- C At locations in project involving alterations, assume responsibility for removal, rerouting, protection and replacement of existing facilities as necessary to install new work. Work to be executed by craft which customarily or by jurisdictional award performs such service. Refer to 23 02 00 for additional information.
- D Install all materials and equipment in a neat and workmanlike manner by competent specialist for each subtrade. The installation of any materials and equipment not meeting these standards may require removal and reinstallation at no additional cost to the Owner.
- E All hangers and supports shall be attached to the building structure.

1. Do not support equipment, piping, ductwork, or conduit from other equipment, piping, ductwork, or conduit.
  2. Do not support ceiling framing or lighting from equipment, piping, ductwork, or conduit.
  3. Do not support equipment, piping, ductwork, or conduit from metal roof deck.
  4. Where fireproofing is removed or damaged to allow attachment to building structural members, repair to maintain integrity of fireproofing.
- F Locate piping, ductwork and other services, in pipe spaces, to ensure maximum accessibility. Where necessary to cross pipe spaces, crossing must be made near the floor or 6 feet or more above floor.
- G Install, connect equipment, services, materials according to best engineering practice and in conformity with manufacturer's printed instructions. Provide complete auxiliary piping, water seals, valves, electric connections, controls, etc., as recommended by respective equipment manufacturer or required for proper operation.
- H Take all measurements and determine all elevations at the building.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING TWO PARAGRAPHS WHEN EQUIPMENT, PIPING OR DUCTWORK IS LOCATED ON THE ROOF.

~~~ **END OF PROJECT NOTE** ~~~

- I All roof mounted equipment shall be installed a minimum of 10 feet from edge of roof, unless indicated otherwise.
- J Provide perimeter reinforcement for all roof penetrations where penetration compromises structural integrity of roof deck. Perimeter supports shall frame the opening and be welded or bolted to structural members as required to support the weight of the roof decking and the equipment above, where applicable. Supports shall not compromise the integrity of structural members. Coordinate installation with structural engineer where details are not provided.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING ON ALL PROJECTS - COORDINATE WITH ARCHITECT AND PROJECT TEAM. THIS REQUIREMENT MUST BE MENTIONED IN THE PRE-BID MEETING.

~~~ **END OF PROJECT NOTE** ~~~

### 3.2 ACCESS TO EQUIPMENT AND DEVICES

- A All valves, dampers, air vents, equipment, control components and other devices requiring examination, adjustment, service, and maintenance shall be accessible. If located above drywall ceiling or behind finished walls, provide an access door. Coordinate all access door locations with the Architect and General Trades.
- B To ensure accessibility during and after construction, when a device is installed, its location shall be marked with securely attached temporary signage. Signage shall indicate the amount of clearance required for the specific device. Signage shall remain in place until the ceiling or access door is installed or until substantial completion.

- C Clearance shall include not only code required clearance but also clearance for Owner's staff to access the device. This access shall be from the floor or from the floor level using normal maintenance ladders and apparatus to meet all OSHA requirements. Consideration shall be given to accessing a device through an access door.
- D HVAC Contractor shall monitor these access locations until substantial completion and notify Architect, Owner and Engineer when the access area is encroached upon so that corrective action may be taken immediately.
- E Corrective action shall be the responsibility of the trade encroaching the access area unless identified that the equipment in question is installed incorrectly or not where indicated on the signed-off coordination drawings, when included in the project.

### **3.3 CLEANING**

- A After all tests and adjustments have been completed, clean all equipment leaving everything in working order at the completion of this work. Thoroughly clean all piping, ductwork, and equipment of dirt, dust, grease, oil, debris and paint, after all other trades have completed their work.
- B Do not operate air handling equipment without proper filtration. Replace all filters used during construction with proper system filters at completion of work. Refer to Specification 23 41 00 for additional information.

### **3.4 EQUIPMENT STARTUPS**

- A Coordinate schedule for start-up of various equipment and systems. Notify Architect/Engineer and Owner, seven days prior to start-up of each item.
- B Lubrication, Packing and Supplies
  1. Properly lubricate all rotating, reciprocating equipment before it is started with correct grade, type and quantity of lubricant.
  2. Check each shaft containing a packing gland for condition by backing packing gland off and examine for proper grade, amount and type of packing as recommended by manufacturer.
  3. Maintain all lubrication, gaskets and packing during construction; assure that at the time of acceptance all are in first class condition.
  4. Provide all supplies required to place equipment in operation
- C Verify that each piece of equipment or system has been checked for proper drive rotation, alignment, belt tension, control sequence, or other conditions which may cause damage.
- D Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E Verify wiring and support components for equipment are complete and tested.
- F Execute start-up by service technicians employed or authorized by the manufacturer to provide startup service according to manufacturer's instructions.
- G Provide a factory authorized representative for startup of the following equipment. Representative shall be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
  1. Chillers
  2. Temperature control system

- H Provide written reports that equipment and systems have been properly installed and are functioning correctly. Where start-up is by a factory authorized representative, report shall be on manufacturer's forms intended for the purpose. Reports shall be included in the Operating and Maintenance Manual.
- I Equipment and systems not installed properly or operating correctly shall be corrected or replaced and its proper operation shall again be verified. This Contractor shall be responsible for the costs of any and all re-inspections.

### **3.5 TESTS AND ADJUSTMENTS**

- A Obtain all inspections required by law, ordinances, rules, regulations of authorities having jurisdiction, furnish certificates of such inspections. Pay all fees, and provide all equipment, power and labor necessary for inspections and tests.
- B During testing period maintain on the project an engineer thoroughly familiar with all phases for as long a period as required to thoroughly adjust all systems and demonstrate that they are functioning properly.
- C Perform all tests, including but not limited to those specified, make necessary adjustments to obtain specified equipment and system characteristics.
- D Do not consider work under this Specification complete until required inspections have been obtained, tests performed, necessary adjustments made and satisfactory evidence of compliance has been submitted. Architect reserves right to make spot checks to determine accuracy and completeness of final adjustments.
- E HVAC Systems Testing, Adjusting and Balancing - Refer to Section 23 05 93.

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE PAINTING REQUIREMENTS WITH ARCHITECT. INCLUDE PARAGRAPH B IF PAINTING IS REQUIRED BY DIVISION 23.

~~~ **END OF PROJECT NOTE** ~~~

### **3.6 PAINTING**

- A Unless noted otherwise, finish painting is included under Division 9 - Finishes.
- B Division 23 Contractor shall be responsible for the painting of all exposed equipment, iron work, supports, hangers, pipe, pipe covering, ductwork and breechings, except factory finished items, installed in the Contract.
  - 1. "Exposed" as indicated above, shall refer to exposed to view and shall not include piping concealed above ceilings or under floor slabs, buried in walls or installed in mechanical and electrical rooms.
  - 2. Clean and prepare items to be painted as recommended in the paint manufacturer's printed recommendations.
- C Materials and equipment installed under this Division shall be left free from dirt, grease and foreign matter, ready for painting.
- D No equipment, piping or ductwork shall be painted before being tested.
- E Damaged surfaces of prefinished materials and equipment shall be touch-up painted to match existing finish.
- F Under no circumstance shall any open cabling be painted.

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE FOLLOWING WITH THE OWNER EARLY IN THE PROJECT. FOLLOW THE OWNER'S BUILDING STANDARDS IF ONE EXISTS. ADD CUSTOM TAGGING INFORMATION AS REQUIRED. EQUIPMENT AND DEVICE NAMING WILL BE USED FOR MECH/ELEC COORDINATION, TEMPERATURE CONTROL COORDINATION, AND THE OWNER'S RECORD KEEPING FOR SERVICE AND MAINTENANCE.

~~~ **END OF PROJECT NOTE** ~~~

**3.7 SYSTEM AND EQUIPMENT IDENTIFICATION**

A Equipment Identification

1. Provide two color engraved nameplates for all scheduled equipment. Nameplate text shall match corresponding designation on the Drawings.
2. Where equipment does not have a location to attach a nameplate, provide stenciling with 1 inch high letters.
3. Peel and stick labels are not acceptable.
4. Where equipment is installed in finished areas, nameplate shall be located so it is visible after removal of equipment cover.
5. For equipment installed above the ceiling, nameplate shall be located so it is visible from a ladder when viewing through a removed ceiling tile or open access door.
6. In addition to scheduled equipment, provide nameplates for all Temperature Control Panels. Coordinate text with Temperature Control Contractor.

B Pipe Markers

1. Identify each pipe located within equipment rooms, above accessible ceilings, in accessible shafts/tunnels and at exterior exposed locations.
2. Markers shall be located:
  - a. Adjacent to each valve.
  - b. At each branch, excluding short runs to equipment.
  - c. At each cap for future connection.
  - d. At each riser take-off.
  - e. At each pipe passage through a wall (each side of wall).
  - f. At each pipe passing through a floor (above and below).
  - g. At 20' intervals (maximum) on piping runs.
  - h. At each piece of equipment.
  - i. At all access doors, manholes and similar access points.
  - j. A minimum of one (1) marker shall be provided in each room
3. Where pipe is located above or below the normal line of vision, the marker shall be placed below of above horizontal centerline of the pipe so the marker is easily visible.

**END OF SECTION 230300**

**SECTION 230400 - HVAC FIRESTOPPING**

~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR THE PERSON ASSIGNED BY THE PROJECT MANAGER.

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. UNDER NORMAL CIRCUMSTANCES, FIRESTOPPING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION AS IT RELATES TO THEIR WORK. HOWEVER, SEVERAL CLIENTS HAVE THE DIVISION 7 CONTRACTOR FURNISH AND INSTALL FIRESTOPPING. EDIT THIS SECTION ACCORDINGLY. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

THIS SPECIFICATION DOES NOT INCLUDE THE OPTION WHERE THE PRODUCTS ARE FURNISHED BY THE DIVISION 7 CONTRACTOR AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION.

2024 OBC 714.6 AND 2021 IBC 714.6 REQUIRE FIRESTOPPING OF NON-FIRE RATED FLOORS (EXCEPTION: SLAB ON GRADE FLOORS). INCLUDE THIS SPECIFICATION SECTION IF PENETRATIONS ARE TO BE MADE THROUGH FLOORS REGARDLESS OF THE FIRE RATING.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE FIRESTOPPING SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S FIRESTOPPING SPECIFICATION IS CREATED, THE PERSON ASSIGNED TO THAT DIVISION MUST EDIT THEIR SPECIFIC DIVISION. PAY CLOSE ATTENTION TO AND EDIT: ARTICLE 1.1 WORK INCLUDES - PENETRATING ITEMS SHALL INCLUDE THE FOLLOWING:

ALSO, IN ARTICLE 1.3 SUBMITTALS - UPDATE THE SECTION ID AS APPLICABLE.

AFTER EACH DIVISION'S FIRESTOPPING IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S FIRESTOPPING IS REVISED ACCORDINGLY.

~~~~ **END OF PROJECT NOTE** ~~~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING IF FIRESTOPPING IS FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION. COORDINATE WHO IS SPECIFYING THE PRODUCTS

WITH ARCHITECT AND EDIT PART 2 - PRODUCTS ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

- A Work of this Section includes, but is not limited to, furnishing and installing firestopping for fire-rated construction in the following areas:
1. All openings in fire-rated floor, wall, ceiling and roof assemblies, both empty and those accommodating penetrating items.
  2. Openings at each floor level in shafts or stairwells.
  3. Empty openings intentionally designed as spare openings in fire rated Construction.

~~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION.

~~~ **END OF PROJECT NOTE** ~~~~

- B Penetrating items shall include the following:
1. Cables.
  2. Conduit.
  3. Pipes without insulation.
  4. Pipes with insulation. All insulation must remain intact, undamaged and shall run continuously through walls and floors.
  5. Ductwork without fire dampers. Where insulated, all insulation must remain intact, undamaged and shall run continuously through walls and floors.
  6. Raceways.

## 1.2 QUALITY ASSURANCE

- A General
1. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings required by local building code and as tested by nationally accepted test agencies per fire tests in a configuration that is representative of field conditions. The F rating must be a minimum of one (1) hour but not less than the fire resistance of the assembly being penetrated.
  2. Manufacturer's engineering judgments will be accepted for non-standard applications or where no tested system exists. Drawings for engineering judgments must indicate the UL tested system or systems upon which the judgment is based, in order to evaluate the engineering judgment against a known performance. Engineering judgments shall be approved by the Architect.
  3. Firestopping materials and systems shall be capable of closing or filling openings created by:
    - a. The burning or melting of combustible materials.
    - b. Deflection of materials due to thermal expansion.
  4. Firestopping material shall be non-halogenated, lead and asbestos free and shall not incorporate nor require the use of hazardous solvents.
  5. Firestop products which dissolve in water after curing are not acceptable.
  6. Firestopping materials shall not shrink upon drying as evidenced by cracking or pulling back from contact surfaces.

7. All firestopping materials shall be manufactured by one manufacturer (to the maximum extent possible).
- B Engage an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install firestop products per specified requirements. A manufacturer's willingness to sell its through-penetration firestop system products to a Contractor or to an installer engaged by Contractor does not in itself confer qualifications on buyer.
- C Manufacturer's Field Representative: The Manufacturer of the firestop material of this Section shall provide a qualified field representative at the site.
- D Pre-Installation Conference: Contractor shall hold a pre-installation conference with representatives of the Engineer, Contractor, Installer, Materials Manufacturer and various trades involved in the Work, to review conditions affecting the installation and consistency of manufacturer to be used by all trades.
- E Conform to Manufacturer's printed instructions for installation in accordance with a U.L rated system or Manufacturer's engineering judgement.
- F Codes and Standards
  1. ASTM E 84
  2. ASTM E 119
  3. ASTM E 814
  4. UL 263
  5. UL 1479

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR HEALTHCARE PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

6. NFPA 101

**1.3 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION

~~~ **END OF PROJECT NOTE** ~~~

- A Refer to Sections 2X 01 00 and 2X 01 01 for additional requirements.
- B All submittals shall conform completely to the requirements of the Contract Documents.
- C Product Data: For each type of material to be installed, literature shall indicate product characteristics, typical uses, performance, test data and Manufacturer's installation procedures.
- D Shop Drawings: Include U.L. rated system number and details for each type of penetration or configuration.
  1. Show typical installation details including:
    - a. Minimum and maximum allowable annular spacing.
    - b. Base material composition.

- c. Firestop materials selected.
  - d. Applied thickness required to achieve the hourly rating.
- E Where required, submit Product Data and Shop Drawings to the Authority Having Jurisdiction (AHJ) for review and approval. Information shall include the Manufacturer's assembly detail with UL system number, technical data and installation instructions for each penetration type occurring on the project.
- F Close-out Documents
- 1. Final approved product data and shop drawings of all materials installed shall be included in operating and maintenance manuals.
  - 2. Record Drawings shall indicate rated walls where firestop materials have been applied.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- A Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacturer, UL label, date of manufacturer; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instructions for multicomponent materials.
- B Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes. Materials shall be stored off the ground and protected from environmental conditions as required by manufacturer.
- C All firestop materials shall be installed prior to expiration of shelf life.

#### **PART 2 PRODUCTS**

~~~~ **PROJECT NOTE** ~~~~~

USE THE FOLLOWING PART 2 IF KE IS SPECIFYING FIRESTOP MATERIALS. DELETE IF ARCHITECT IS SPECIFYING MATERIALS AND REFER TO ALTERNATIVE PART 2.

~~~ **END OF PROJECT NOTE** ~~~

#### **2.1 GENERAL**

- A Firestopping materials shall meet the requirements specified herein.
- B For applications where combustible penetrants are involved, i.e. insulated or plastic pipe, a suitable intumescent material must be used.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING PARAGRAPH FOR LEED PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

- C All firestopping materials shall have a maximum VOC limit of 250 g/L. Submittals shall include documentation indicating compliance with this requirement.

#### **2.2 ACCEPTABLE MANUFACTURERS**

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST INCLUDES MANUFACTURERS TYPICALLY USED ON KE PROJECTS. OTHER

MANUFACTURERS INCLUDE TREMCO, INC., NELSON FIRESTOP AND PROSET SYSTEMS. STI IS THE ONLY ACCEPTABLE MANUFACTURER FOR ALL CLEVELAND CLINIC, METRO HEALTH AND UH CASE MED CENTER PROJECTS. EDIT AS REQUIRED. HILTI IS THE ONLY KNOWN MANUFACTURER COMPATIBLE WITH PLASTIC FLOW-GUARD GOLD, CORZAN, AND BLAZEMASTER PIPING. ALL ARE COMPATIBLE WITH PVC AND CPVC.

~~~ **END OF PROJECT NOTE** ~~~~

- A Specified Technologies, Inc. (STI)
- B 3M
- C Hilti, Inc.

### **2.3 FIRESTOP MATERIALS**

- A Firestop Mortar
- B Intumescent Firestop Sealants and Caulks
- C Elastomeric Firestop Sealants and Caulks
- D Endothermic Firestop Sealants and Caulks
- E Firestop Putty
- F Firestop Pillows/Blocks
- G Fire Rated Pathways
- H Firestop Grommets
- I Firestop Collars
- J Wrap Strips
- K Cast in Place Devices
- L Firestop Foams
- M Composite Sheets
- N Intumescent Gaskets

### **PART 3 EXECUTION**

~~~~~ **PROJECT NOTE** ~~~~~

WHEN FIRESTOPPING IS FURNISHED AND INSTALLED BY THE DIVISION 7 CONTRACTOR INCLUDE THE FOLLOWING 3.1 COORDINATION AND OMIT ALL REMAINING PART 3 SECTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

### **3.1 COORDINATION**

- A Coordinate with Project schedule and sequence work to assure all piping, ductwork, conduits, cables, and other items which penetrate fire rated construction have been permanently installed prior to installation of firestopping.
- B Sleeves and core-drilled holes shall be sized at least 1-1/2" larger than penetrating items. Coordinate with Division 7 Contractor.

### **3.2 GENERAL**

- A In an occupied building, permanent firestopping shall be installed within 24 hours of penetrating a fire rated assembly. If permanent firestopping cannot be installed within this time period, temporary firestop pillows/blocks are permitted, where installation allows, until permanent firestop materials can be properly installed.

### **3.3 INSPECTION**

- A Examine the areas and conditions where firestops are to be installed and notify the Engineer of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until the Contractor, in a manner acceptable to the Architect has corrected unsatisfactory conditions.
- B Verify that environmental conditions are safe and suitable for the installation of the firestop products.

### **3.4 CONDITIONS REQUIRING FIRESTOPPING**

- A General
  1. Provide firestopping for conditions specified elsewhere whether or not firestopping is indicated and, if indicated whether such material is designed as insulation, safing, or otherwise.
  2. All firestopping shall be installed in accordance to the UL rated system designed for the application.
  3. Grout, Mortar or Gypsum based products shall not be installed in lieu of firestopping material specified herein.
  4. All smoke walls (smoke barriers, smoke partitions, etc.), rated or non-rated, shall be firestopped with systems designed to maintain a minimum 1 hour rating or that which is equal to the rating of the wall.
- B Penetrations - Provide firestopping as follows:
  1. Where penetrations pass through one or both surfaces of a fire rated floor or wall.
  2. Where a penetration occurs through fire rated walls or partitions of hollow-type construction, provide firestopping to completely fill spaces around the penetration, on each side of the wall or partition.
  3. Except for slab on grade, where penetrations pass through a non-fire rated floor.
  4. The requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space, if any, between sleeve and wall opening. Upon installation of cabling through sleeve, firestop the remaining open area within the conduit.
- C Where demolition has occurred in rated walls, floors and assemblies, the material used to patch the opening shall match the material used for the assembly construction. Firestopping materials may be utilized upon approval of Architect and Engineer. Materials used shall be provided with submittals. Work performed shall be the responsibility of the Contractor whose work was removed, performed by the appropriate trade.

### **3.5 PREPARATION**

- A Surface to receive firestop shall be free of dirt, dust, grease, oil, oil from release agents, or other matter that would impair the bond of the firestop material to the substrate or penetrating items.

- B Substrate shall be frost free.

### 3.6 INSTALLATIONS

#### A General

1. Sleeves and core-drilled holes shall be sized at least 1-1/2" larger in diameter than penetrating items.
2. Installation of firestops shall be performed by applicators/installers qualified and trained by the Manufacturer. Installation shall be performed in strict accordance with the Manufacturer's detailed installation procedures.
3. Apply firestops in strict accordance with UL rated system designs, and Manufacturer's recommendations.
4. Coordinate with all other trades to assure that all items which penetrate fire rated construction have been permanently installed prior to installation of firestops. Schedule and sequence the work to assure that partitions and other Construction which would conceal penetrations are not erected prior to the installation of firestop.
5. Gun grade sealants and putties shall be tooled into place to insure proper adhesion to penetrations and surrounding surfaces.
6. Where existing penetrations are reused that contain remnants of existing firestop products remain, remove all existing firestopping.

#### B Dam Construction

1. Install dams when required to properly contain firestopping materials within openings and as required to achieve required fire resistance rating.
2. Placement of dams shall not interfere with functions or adversely affect the appearance of adjacent construction.

#### C Field Quality Control

1. Install work in full accordance with rules, regulations, and safety requirements of Federal, State, County and City authorities having jurisdiction over premises. Do not construe this as relieving Contractor from compliance with any requirements of the Specifications which are in excess of Code requirements and not in conflict therewith.
2. Correct unacceptable firestopping and provide additional inspection to verify compliance with this Specification at no additional cost.
3. Finish surfaces of firestopping that is to remain exposed in the completed work to a uniform and level condition.

### 3.7 LABELING

- A Where firestopping installations occur, Contractor shall provide a label adjacent to each penetration. Label shall include:

1. UL rated system used.
2. Date of installation.
3. Name of installing Contractor

- B Labels shall be furnished by the firestop manufacturer.

### END OF SECTION 230400

## **SECTION 230593 - TESTING, ADJUSTING, AND BALANCING**

### **PART 1 GENERAL**

#### **1.1 SECTION INCLUDES**

- A Testing, adjusting, and balancing of hydronic systems.
- B Measurement of final operating condition of HVAC systems.

#### **1.2 RESPONSIBILITY**

#### *~~~~ PROJECT NOTE ~~~~~*

INCLUDE ONE OF THE FOLLOWING. KE STANDARD IS FOR THE TAB CONTRACTOR TO WORK AS A SUB TO THE HVAC CONTRACTOR. THE CLEVELAND CLINIC HIRES THE TAB CONTRACTOR DIRECTLY. SOME OHIO STATE UNIVERSITY PROJECTS REQUIRE THE TAB CONTRACTOR TO BE HIRED BY THE ENGINEER. COORDINATE ON A PER PROJECT BASIS.

#### *~~~ END OF PROJECT NOTE ~~~*

- A The work of this section shall be the responsibility of the Testing, Adjusting, and Balancing Contractor (TAB Contractor) working as a Sub-Contractor to the HVAC Contractor. The HVAC Contractor shall provide labor and materials necessary to coordinate with this work.

#### **1.3 REFERENCES**

- A AABC - National Standards for Total System Balance.
- B ASHRAE 111 - Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems.
- C NEBB - Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems.
- D SMACNA - HVAC Systems Testing, Adjusting, and Balancing.

#### **1.4 SUBMITTALS**

- A Refer to Sections 23 01 00 and 23 01 01 for additional requirements.
- B Submit name of testing, adjusting and balancing agency for approval within 30 days after award of Contract.

#### **1.5 CONSTRUCTION DOCUMENTATION**

- A Refer to Section 23 01 01.
- B Submit draft copy of Testing, Adjusting and Balancing Report to Engineer for review. After review, perform additional testing, adjusting and balancing as noted and revise report as required. Include final copy in the Operating and Maintenance Manuals.
- C Provide reports in an electronic format, complete with Index. The file format shall be a portable data file (.pdf). Include bookmarks or links to major equipment and to Air and Hydronic Systems sections.
- D Report data shall be documented on one of the following:
  1. AABC National Standards for Total System Balance forms.
  2. Forms prepared following ASHRAE 111.
  3. NEBB forms.

#### **1.6 QUALITY ASSURANCE**

- A Perform total system balance in accordance with one of the following:

1. AABC National Standards for Field Measurement and Instrumentation, Total System Balance.
  2. ASHRAE 111
  3. NEBB Procedural Standards for Testing, Balancing and Adjusting of Environmental Systems.
- B Record all final equipment data after system balancing is complete. Provide final operating conditions of HVAC systems.

### **1.7 QUALIFICATIONS**

- A TAB Contractor shall specialize in the testing, adjusting, and balancing of HVAC systems with a minimum of three years documented experience certified by AABC or NEBB.
- B Perform Work under supervision of one of the following:
1. AABC Certified Test and Balance Engineer.
  2. NEBB Certified Testing, Balancing and Adjusting Supervisor.
  3. Registered Professional Engineer experienced in performance of this Work and licensed in the State where the Project is located.

### **1.8 SEQUENCING**

- A Sequence work to commence after completion of systems and schedule completion of work before Substantial Completion of Project.

### **1.9 RESPONSIBILITIES OF THE TEMPERATURE CONTROL CONTRACTOR**

- A The Temperature Control Contractor (TCC) shall complete the installation of the temperature control system and operate/test all control systems to ensure they are functioning properly. The TCC shall assist the TAB Contractor in testing, adjusting and balancing of the HVAC systems, as described in the following:
1. Verify that all control components are installed according to project requirements and are functional, including, but not limited to, all electrical interlocks, damper and valve sequences, air and water resets, and freeze stats.
  2. Verify that all controlling instruments are calibrated and set for design operating conditions.
  3. The TCC shall allow sufficient time in the project to provide assistance to the TAB Contractor.
- B The installation, programming, establishment of initial set points and debugging of all control system functions is the responsibility of the TCC. The testing of the entire HVAC system including the temperature control system is the responsibility of the TAB Contractor.
- C During the testing, adjusting and balancing phase of work, the TCC shall provide a technician at the request of the TAB Contractor to operate the entire control system to establish the mode of operation required for properly testing, adjusting and balancing and for testing and verifying temperature control operation.
- D Programming of set point changes required as a result of system analysis and balancing shall be made by the TCC.
- E The TCC shall provide the software and associated cables/devices in order for the TAB Contractor to access the temperature control system information and adjust setpoints.
- F Assist the TAB Contractor to perform a "spot" recheck of balancing conditions between 30 to 90 days after final balancing is complete.

**1.10 RESPONSIBILITIES OF THE HVAC CONTRACTOR**

- A The HVAC Contractor shall complete the installation and start all HVAC systems to ensure they are working properly and shall perform all other items as described hereinafter to assist the TAB Contractor in performing the testing and balancing of the HVAC systems.
- B Hydronic System Requirements - where applicable
  - 1. Verify installation for conformity to design.
  - 2. Check all pumps to verify pump alignment and rotation.
  - 3. Ensure that systems are clean, with the proper strainer screens installed for normal operation.
  - 4. Provide overload protection of proper size and rating.
  - 5. Ensure that all hydronic systems are full and free of air; that expansion tanks are set for proper fill pressure, and that all air vents are installed at high points of systems and are operating.
  - 6. Check and set operating temperatures of heat exchangers to design requirements.

PART 2 PRODUCTS

**2.1 NOT USED**

PART 3 EXECUTION

**3.1 ACCEPTABLE CONTRACTORS.**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE AND EDIT THE FOLLOWING ON A PER PROJECT BASIS. THE FOLLOWING CONTRACTORS ARE FOR THE CLEVELAND AREA.

~~~~ **END OF PROJECT NOTE** ~~~~~

- A Fulton & Associates Balance Company
- B Kahoe Air Balance Company
- C Professional Balance Company

**3.2 EXAMINATION**

- A Verify that systems are complete and operable before commencing work. Ensure the following conditions – where applicable:
  - 1. Systems are started and operating in a safe and normal condition.
  - 2. Temperature control systems are installed completely and operable.
  - 3. Proper thermal overload protection is in place for electrical equipment.
  - 4. Hydronic systems are flushed, filled, vented, and treated.
  - 5. Pumps are rotating correctly.
  - 6. Proper strainer baskets are clean and in place.
  - 7. Service and balance valves are open.
- B Report system defects and deficiencies noted during verification of systems which prevent testing, adjusting, and balancing of the HVAC system.
- C Beginning of work means acceptance of existing conditions.

### **3.3 PREPARATION**

- A Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Architect/Engineer, if requested, to facilitate spot checks during testing.
- B Provide additional balancing devices as required.
- C Lifts and platforms required to access equipment and devices, are the responsibility of the TAB Contractor.

### **3.4 BALANCING TOLERANCES**

- A Hydronic Systems
  - 1. Hydronic equipment such as pumps, chiller evaporators and condensers, heat exchanges, coils, etc.: Adjust to within  $\pm 5\%$  of design.

### **3.5 ADJUSTING**

- A Ensure recorded data represents actual measured or observed conditions.
- B Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
- C Direct the HVAC Contractor to add additional air volume dampers where required.
- D After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
- E Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.
- F At final inspection, recheck random selections of data recorded in report. Recheck points or areas as selected and witnessed by the Owner.
- G Perform a "spot" recheck of balancing conditions between 30 to 90 days after final balancing is complete, jointly with a representative of the TCC, who is capable of making adjustments to the temperature control system. Include a check of space temperatures, calibration of controls, pump heads, fan performance, and any adjustments, thereto. Submit written report to Engineer.
- H TAB Contractor shall check and adjust systems during the opposite season from when the initial adjustments were made after final acceptance and submittal of report. All testing, adjusting, and balancing shall be done under both summer and winter design conditions. Make any minor adjustments that may be necessary to ensure uniform temperatures throughout the space.

### **3.6 HYDRONIC SYSTEM PROCEDURE**

- A Perform the following where applicable.
- B Adjust hydronic systems to provide required or design quantities.
- C Use calibrated flow metering devices and pressure gauges to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.
- D Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.
- E Perform system balance with automatic control valves fully open to heat transfer elements.

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- F Perform adjustment of water distribution systems by means of balancing valves. Do not use service or shut-off valves for balancing unless indexed for balance point.
- G Where available pump capacity is less than total (connected load) flow requirements, full flow in one part may be simulated by temporary restriction of flow to other parts.
- H Pumps:
  - 1. Identify each pump as to designation, location, type and system. List pump, motor, and starter data.
  - 2. Balance, test and record flow rate, pump head, brake horsepower, and full load amps. Include both design and final (actual) values.
- I Hydronic Equipment:
  - 1. Hydronic equipment such as chiller evaporators and condensers, heat exchanges, coils, etc.
  - 2. Identify each as to designation, type, and system. List specific equipment data.
  - 3. Balance, test and record flow rate, water pressure drop, and entering and leaving water temperatures. Include both design and final (actual) values.

**END OF SECTION 230593**

**SECTION 230700 - HVAC INSULATION**

~~~~~ **PROJECT NOTE** ~~~~~

INSULATION IS REQUIRED FOR FIVE REASONS:

1. FOR ENERGY EFFICIENCY.
2. TO PREVENT CONDENSATION.
3. TO PROVIDE PERSONNEL PROTECTION.
4. TO REDUCE HEAT GAIN TO SPACE - ELIMINATE OVERHEATING.
5. TO CREATE A FIRE RATED ENCLOSURE.

~~~~ **END OF PROJECT NOTE** ~~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

- A All labor, equipment, accessories, materials and services required to provide the following insulation systems:
  1. Pipe Insulation
  2. Equipment Insulation

**1.2 SUBMITTALS**

- A Refer to Section 23 01 00 and 23 01 01 for additional information.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.

**1.3 QUALITY ASSURANCE**

- A The Insulation Contractor shall be regularly engaged in the installation of insulation systems and shall have a minimum of five (5) years of demonstrated experience in the installation of insulation systems similar in type and size.
- B Install insulation materials and accessories in accordance with the manufacturer's published instructions, recognized industry standards and this specification to ensure that it will serve its intended purpose.

PART 2 PRODUCTS

~~~~~ **PROJECT NOTE** ~~~~~

OWENS CORNING FIBERGLASS INSULATION PRODUCTS ARE AVAILABLE WITH THREE TYPES OF FACING -

1. ASJ - ALL SERVICE JACKET
2. FRK - FOIL REINFORCED KRAFT
3. PSK - POLYPROPYLENE SCRIM KRAFT

ASJ FACING CAN BE PAINTED WITH WATER-BASED LATEX PAINTS. IF INSULATION IS TO BE FIELD PAINTED, ASJ FACING IS RECOMMENDED. FRK AND PSK FACINGS HAVE BEEN SUCCESSFULLY PAINTED BUT SHOULD BE AVOIDED. FOR INFORMATION ON THIS ISSUE SEE THE FOLLOWING E DRIVE LOCATION: E:23 - HVACInsulationTechnical LiteraturePainting Insulation.pdf

~~~~ **END OF PROJECT NOTE** ~~~~

## 2.1 GENERAL

- A Provide all insulation material (insulation, jackets, fitting covers, tapes, adhesives, cements, mastics, sealants, coatings and finishes) with a composite Fire and Smoke Hazard rating as tested under procedure ASTM E-84 or UL 723, not exceeding the following:

1. Flame Spread 25
2. Smoke Developed 50

~~~~ **PROJECT NOTE** ~~~~~

THE SECOND SENTENCE IN THE FOLLOWING PARAGRAPH IS A LEED REQUIRMENT, HOWEVER INCLUDE FOR ALL PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

- B Mastics, cements, coatings, adhesives, sealants and finishes shall be suitable for contact with the surface material for which it is applied to and rated for the working temperature of the service. All adhesives and sealants wet applied on site shall comply with chemical content requirements of the South Coastal Air Quality Management District (SCAQM) Rule 1168. Acceptable Manufacturers: Foster Products, Childers Products and Vimasco Corporation.

## 2.2 PIPE INSULATION

- A Insulation Types:

~~~~ **PROJECT NOTE** ~~~~~

IF FIBERGLASS PIPE INSULATION IS SPECIFIED, ALSO INCLUDE CLOSED CELL FOR INSULATION OF VALVE BONNETS, UNIONS AND STRAINERS. SEE PART 3 - EXECUTION.

~~~ **END OF PROJECT NOTE** ~~~

1. Closed-Cell: Armacell AP/Armaflex Black Lapseal fiber free elastomeric tube insulation. Furnish as a complete system with contact adhesives, pressure-sensitive seam tape, prefabricated fitting covers and pre-insulated pipe hanger supports (Armacell Armaflex Insulation Pipe Hanger). For non-EPDM elastomeric insulation located outdoors provide a UV resistant protective coating - Armaflex WB. Other acceptable manufacturers: K-Flex USA and Aeroflex USA, Inc.

~~~~ **PROJECT NOTE** ~~~~~

VERIFY THAT EDITED PIPE INSULATION SCHEDULE IS ON THE DRAWINGS.

~~~ **END OF PROJECT NOTE** ~~~

- B Refer to Pipe Insulation Schedule on Drawings.

## 2.3 EQUIPMENT INSULATION

- A Insulation Types:

~~~~ **PROJECT NOTE** ~~~~~

USE THE FOLLOWING FOR STEAM, CONDENSATE AND HEATING WATER EQUIPMENT.

~~~ **END OF PROJECT NOTE** ~~~~

1. Rigid ASJ: Owens-Corning FIBERGLAS Insulation, Type 705, 6.0 pcf, glass fiber rigid insulation with factory applied white All Service Jacket. For equipment with a round/curved shape, use Owens-Corning FIBERGLAS Pipe and Tank Insulation with All Service Jacket. Furnish as a complete system with pressure-sensitive tape matching the facing. Other acceptable manufacturers: Knauf and Johns Manville

~~~~~ **PROJECT NOTE** ~~~~~

VERIFY THAT EDITED EQUIPMENT INSULATION SCHEDULE IS ON THE DRAWINGS.

~~~ **END OF PROJECT NOTE** ~~~~

- B Refer to Equipment Insulation Schedule on Drawings.

PART 3 EXECUTION

**3.1 GENERAL**

- A Install insulation products according to manufacturer's published instructions, this specification and recognized industry standards to ensure it will serve its intended purpose.
- B Protect insulation stored on site and during delivery from damage and moisture such as rainwater and building system leaks.
- C Ensure that insulation is clean, dry, and in good mechanical condition and that all factory-applied facings are intact and undamaged. Wet, dirty, or damaged insulation is not acceptable for installation
- D Install insulation over clean dry surfaces. Exception: Owens-Corning VaporWick insulation can be installed on wet piping systems.
- E Install insulation subsequent to pressure testing and painting.
- F Install insulation materials with smooth and even surfaces. Rework poorly fitted joints. Do not use joint sealer or mastic as filler for joint gaps or excessive voids resulting from poor workmanship.
- G Once in place, all tape shall be sealed with a squeegee type device provided by the Manufacturer.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING TWO PARAGRAPHS FOR RENOVATION PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~~

- H Repair existing pipe, ductwork and equipment insulation where removed to make new connections, to add temperature controls, or where damaged by new construction. Use same insulation as specified for new service.
- I Where existing asbestos containing materials are discovered or suspected notify the building Owner immediately so they can be removed under a separate "Asbestos Removal Contract" direct with the Owner.

### 3.2 PIPE INSULATION

- A Insulate each continuous run of piping with full-length units of insulation, with single cut piece to complete run. Do not use cut pieces or scraps abutting each other. Butt insulation joints firmly to ensure complete, tight fit over all piping surfaces.
- B Install insulation continuous through all sleeves and all wall, floor and ceiling penetrations. Sleeves and penetration openings shall be sized accordingly to allow application of full thickness insulation. Coordinate requirements with wall, floor and ceiling construction.
- C On exposed piping, locate insulation and cover seams in least visible locations.
- D Extend all pipe insulation through floors and countertops. Wherever subject to moisture or cleaning equipment provide 0.016 inch thick aluminum jacket of sufficient length for protection.
- E Seal closed-cell pipe insulation longitudinal seams with integral lap seal and butt joints with seam tape. Apply the manufacturer's recommended adhesive based on the working temperature of service. Insulate all valve bodies, fittings, strainer bodies and flanges using prefabricated fitting covers. Apply two coats of UV resistant protective coating on non-EDPM elastomeric insulation located outdoors.
- F Install insulation continuous through all pipe hanger locations with circumferential insulation joint made outside the hanger. Piping shall be supported in such a manner that the insulation is not compromised by the hanger or the effects of the hanger. Include hanger accessories as follows:
  - 1. Piping 2" and smaller - to protect against compression. Provide insulation protection shields for fiberglass insulation. Provide insulation protection shield with pre-insulated pipe hanger supports for closed-cell insulation.
  - 2. Chilled water piping and piping with a possibility of condensation (2-1/2 inches and larger) - provide thermal break between piping and hanger by use of an insulation protection shield with polyisocyanurate hard block insulation, capable of supporting the weight of the filled piping system. Polyisocyanurate insulation thickness shall match the adjacent pipe insulation thickness. Wood blocking is not acceptable.
  - 3. Other piping 2-1/2 inches and larger - provide pipe covering protection saddle.
- G Do not cover valve bonnets, unions and strainer cleanouts with insulation on heating water systems, steam systems and systems where there is no possibility of condensation.
- H Insulation system for chilled water piping, refrigerant piping and all piping with a possibility of condensation shall be continuous and provided with a vapor barrier jacket with vapor seal integrity maintained throughout the entire system, including valves and fittings.
  - 1. Longitudinal seams shall be vapor sealed with factory-applied pressure-sensitive adhesive vapor retarder, self-sealing lap. All circumferential joints shall be vapor sealed with factory-furnished, matching pressure-sensitive butt strip seals. Coat all raw edges of pipe insulation with vapor retarder mastic extending onto the adjacent insulation jacketing a minimum of 2 inches.
  - 2. Cover valve bodies, unions and strainer cleanouts with prefabricated 1" thick closed-cell insulation, suitable for removal without damaging the permanent adjacent pipe insulation. All insulation shall be form fitted and tight to surface to prevent condensation.
  - 3. Insulate chilled water system thermometer and pressure gage extensions with ½" thick closed-cell insulation.

4. Insulation at piping connections to air handling equipment shall be sealed to the unit cabinet.

### **3.3 EQUIPMENT INSULATION**

- A Apply insulation using staggered joint method for both single and multi-layer installations, applying each layer of insulation separately.
- B Miter rigid fiberglass equipment insulation to fit shape of equipment and secure in place with steel bands at 12 to 18 inches on center. Seal all joints with matching pressure sensitive joint sealing tape.
- C For field-applied all-service vapor barrier jacketing, neatly fit and tightly secure. Lap seams a minimum of 2 inches. Seal all joints with adhesive and tape with matching pressure-sensitive tape.
- D Items such as ASME stamps, Manufacture's nameplates, and parts of equipment requiring removal or opening for periodic service shall be left uninsulated unless omitting insulation would cause a condensation problem. When such is the case, provide removable insulation sections with appropriate tagging to identify the presence of the covered items. Provide neatly beveled edges at all interruptions of insulation.

### **3.4 FIELD QUALITY ASSURANCE**

- A Upon completion of all insulation work covered by this specification, visually inspect the work and verify that it has been correctly installed. This may be accomplished while work is in progress to assure compliance with requirements to cover and protect insulation materials during installation.

### **3.5 PROTECTION**

- A Replace damaged insulation which cannot be satisfactorily repaired, including insulation with vapor barrier damage and moisture-saturated insulation.
- B Maintain the integrity of factory-applied vapor barrier jacketing on all insulation, protecting it against puncture, tears or other damage.
- C The insulation installer shall advise all other trades as to requirements for protection of the insulation work during the remainder of the construction period, to avoid damage and deterioration of the finished insulation work.

**END OF SECTION 230700**

**SECTION 232001 - HYDRONIC PIPING SYSTEMS**

**PART 1 GENERAL**

**1.1 WORK INCLUDES**

- A Pipe and Fittings

**1.2 SUBMITTALS**

- A Refer to Section 23 01 00 and 23 01 01 for additional information.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Grooved steel piping system joint couplings and fittings shall be referred to on drawings and product submittals, and shall be specifically identified with the manufacturer's applicable style or series designation.

~~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING AS REQUIRED FOR THE PROJECT.

~~~ **END OF PROJECT NOTE** ~~~

**1.3 CONSTRUCTION DOCUMENTATION**

- A Refer to Section 23 01 01.

**PART 2 PRODUCTS**

**2.1 PIPE AND FITTINGS**

- A Chilled Water:
  - 1. 10 inches and smaller - Schedule 40 black steel (ASTM A53) or Type "L" hard drawn seamless copper tube (ASTM B88).

~~~~~ **PROJECT NOTE** ~~~~~

ALTHOUGH THE FOLLOWING IS NOT ACTUALLY HYDRONIC PIPING, IT IS UTILIZED FOR AN INDOOR WATER COOLED CHILLER WHICH SUPPORTS A HYDRONIC SYSTEM.

~~~ **END OF PROJECT NOTE** ~~~

- B Refrigerant Relief - Schedule 40 black steel (ASTM A53).
- C System Drain - Piping shall match system piping type unless noted otherwise.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING FITTINGS CAN BE UTILIZED FOR MOST PROJECTS, HOWEVER IN HIGH-RISE BUILDINGS, HIGH PRESSURE RATED FITTINGS MAY BE REQUIRED. EDIT FITTING TYPES BASED ON THE PIPE MATERIALS SELECTED ABOVE.

~~~ **END OF PROJECT NOTE** ~~~

- D Fittings for black steel pipe.
  - 1. Chilled Water - 125 PSIG, black cast iron screwed fittings on sizes through 2 inches and standard factory formed welding fittings on sizes over 2 inches. Flanges shall be Class 150 steel.

2. Refrigerant Relief - Standard factory formed welding fittings. Flanges shall be Class 150 steel.
3. Flanges shall be weld-neck or slip-on type. Slip-on type shall only be used when attaching flanges to straight pipe, not fittings. Where slip-on flanges are used, two welds are required, one on the back side of the flange and one on the inside of the flange. For the inside weld, the pipe shall be recessed from the flange face to avoid damage to the gasket seating surface or face. Weld shall be filed smooth.

~~~~ **PROJECT NOTE** ~~~~~

ENGINEER SHALL OBTAIN APPROVAL FROM BUILDING OWNER PRIOR TO SPECIFYING THE FOLLOWING GROOVED STEEL PIPING SYSTEM. IF OK WITH OWNER, CONSIDER MAXIMUM PIPE SIZE ALLOWABLE.

CONFIRM WITH OWNER THAT THE USE OF THE ASSOCIATED VALVES, STRAINERS AND SPECIALTIES IS ACCEPTABLE. IF NOT, EDIT SPECIFICATION ACCORDINGLY.

DO NOT USE IN SPAS, POOLS OR NATATORIUMS. JOINTS MUST BE SOLDERED, THREADED, WELDED, OR FLANGED.

ONLY INCLUDE AS AN OPTION IF THE PREVIOUSLY LISTED BLACK STEEL PIPE FITTINGS ARE RATED FOR 125 PSIG. DO NOT INCLUDE IF HIGHER PRESSURE RATED BLACK STEEL PIPE FITTINGS ARE SPECIFIED.

~~~~ **END OF PROJECT NOTE** ~~~~~

E Grooved Steel Piping System:

1. At the contractor's option, the following grooved steel piping system may be used for the following piping systems, operating at a maximum of 125 PSIG, in lieu of welded joints for pipe 2-1/2 inches and larger. EXCEPTION: The use of a grooved steel piping system is not permitted in shafts and other concealed locations - all joints shall be welded.
  - a. Chilled Water
2. Model numbers in the following paragraphs are based on and the "Standard of Acceptance" is the Victaulic Company.
3. Grooved steel piping system joint couplings and fittings shall be referred to on drawings and product submittals and shall be specifically identified with the manufacturer's applicable style or series designation.
4. Lightweight couplings and couplings with housings dual rated for fire ARE NOT APPROVED for hydronic piping. The following couplings will not be accepted: Victaulic 75 and 009, Grinnell 577 & 705, or Gruvlok FP7400 & FP7000.
  - a. Contractor is responsible to insure that bolt pads must have equal gaps on each side and a torque wrench must be used where specified by the manufacturer's documented torque rating.
  - b. Contractor is responsible to use high temperature gasket lubricant if required by manufacturer for applications above 150 degrees F. Example but not limited to Gruvlok "Xtreme" Lubricant.

5. Piping: 2-1/2 inches through 24 inches. Standard weight Schedule 40, black steel, ASTM A53, Grade B with roll grooved ends. Groove piping according to manufacturer's recommendations. Be responsible for final verification of proper groove dimensions.
6. Gaskets: Grade E, EDPM, green color stripe, temperature range minus 30 degree F to 230 degree F, Grade EHP, green with red color stripe, temperature range minus 30 degrees F to 250 degrees or Grade T, Nitrile, orange color stripe, temperature range minus 20 degree F to 180 degree F, within the manufacturer's rated working pressures selection guide.
7. Pipe Couplings: Consisting of two pieces of ductile iron. Coupling gaskets will be a synthetic rubber gasket with a central cavity pressure responsive design. Coupling bolts and nuts heat treated carbon steel, trackhead conforming to chemical and physical properties of ASTM A449 and physical properties of ASTM A183.
  - a. Rigid Type: Housing shall be cast with torque-absorber and shift-limiting slant bolt pad design to provide system rigidity and support and hanging in accordance with ASME B31.1 and B31.9, and to prevent mis-assembly due to over-shift. Housings shall be cast with alignment indicator notch for proper visual alignment to adjoining fitting. Installation-Ready, for direct stab installation without field disassembly.
    - 1) 2" through 12" Sizes: Victaulic Style 107V with center-leg gasket (includes pipe stop to ensure proper groove engagement, alignment, and pipe insertion depth) , Grinnell 772, or Gruvlok 7401.
  - b. Flexible Type: For use in location where vibration attenuation and stress relief are required.
    - 1) 2" through 8" Sizes: Victaulic Style 177 "Quick Vic" Installation-Ready, Grinnell 707, or Gruvlok 7001.
    - 2) 10" through 12" Sizes: Victaulic Style 77, Grinnell 707 or Gruvlok 7001.
  - c. 14" to 60" Couplings: Victaulic AGS Couplings or welded joints. Two ASTM A536 ductile-iron housing segments cast with wedge-shaped AGS key profile, 350 PSI, lead in chamfer and flat bolt pads for metal-to-metal contact or welded joints.
    - 1) Rigid Type: Victaulic Style W07, provides system rigidity and support and hanging in accordance with ASME B31.1 and B31.9.
    - 2) Flexible Type: Victaulic Style W77, allows for linear and angular movement, vibration attenuation and stress relief.
8. Fittings: Full flow cast ductile iron fittings, steel fittings or manufacturer's fabricated grooved or shouldered fittings. Fabricated fittings are acceptable when cast fittings are not available. 14" to 60" AGS fittings to match Victaulic AGS couplings.
  - a. 2" through 12"; ASTM A536 Grade 65-45-12 ductile iron with Victaulic Original Grooved System (OGS) grooved ends, stiffening ribs, and alignment indicators, orange coated or hot dipped galvanized as per ASTM A123, working pressure 400-psi (2758-kPa). Victaulic QuickVic™ V10 (90-deg), V11 (45-deg), and V20 (tee).
  - b. Branch connections, pressure gauges, thermometers, and pressure/temperature test plugs: Reducing tees (SW) No. 25 and 29. Style 72 outlet coupling with threaded outlet, or Style 920,920N Mechanical-T with threaded or grooved outlet. Use of Style 923 or 924 is not permitted.
  - c. Optional fittings for black steel piping systems: In place of standard tees and 45 degree laterals, weld-on fittings may be used. Use of weld-on fittings is limited

to locations where branch pipe size is at least two pipe sizes under main pipe size.

9. Size increases or reductions: Made with concentric or eccentric reducing fittings. Reducing couplings Style 750 are not permitted.
10. Flange Transition Connectors: Style 741 (2 inches - 12 inches) and W741 (14 inches - 60 inches) for connections to Class 125 cast iron and Class 150 steel flanged components. Style 743 (2 inches - 12 inches) for connection to ANSI Class 300 flanges.
11. Pipe Hanging: Hanger types are specified elsewhere in this Section. Support flexible piping systems according to the grooved piping system manufacturer's latest published literature.
12. Suspended Piping Joints: Style 107V or 07 Zero-Flex Coupling. Coupling housings cast with offsetting, angle-pattern bolt pads. Rigid piping systems should permit supporting per Building Services ANSI-31.1 - B31.9 Hanging & Support.
13. Manufacturer: Victaulic Company of America or equivalent by Grinnell or Gruvlok.

### PART 3 EXECUTION

#### 3.1 GENERAL PIPING INSTALLATION

- A Drawings (floor plans, schematics, and diagrams) indicate the general location and arrangement of the piping systems. Location and arrangement of piping layout take into consideration pipe sizing and friction loss, expansion, pump sizing, and other design considerations. So far as practical, install piping as indicated.
- B Provide hose end drain valves with cap at all low points, trapped sections and on equipment side of all branch valves to permit draining of all or part of hydronic piping systems. Install valves at high points of equipment and piping to allow venting.
- C Make piping connections to equipment indicated.
- D Plug open ends of pipe or equipment at all times during installation to keep dirt and foreign material out of system.
- E Arrange and install all pipes, valves, access openings and equipment so as to be accessible for service. Locate equipment to maintain clearances for tube, coil pulling, periodic servicing.
- F Make reductions in piping lines with reducing coupling or weld fitting reducer.
- G Support piping so as not to place a strain on valves or equipment.

#### ~~~~ PROJECT NOTE ~~~~~

EDIT THE FOLLOWING BASED ON THE PIPE MATERIALS SELECTED IN PART 2-PRODUCTS.

#### ~~~ END OF PROJECT NOTE ~~~

#### 3.2 JOINTS

- A Refer to PART 2: 2.1 PIPE AND FITTINGS for the required pipe/fitting joining methods for each system type.
- B All pipes must be reamed and cleaned before assembly.
- C Black Steel Piping:
  1. For threaded joints, apply pipe compound to male end of pipe or fitting.
  2. For welded joints, refer to 23 03 00 for welding requirements.
  3. For flanged joints, provide gaskets for flanged connections.

4. For grooved joints, follow the manufacturer's instructions.
  - a. Grooved couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
  - b. Grooved ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove.
  - c. The grooved coupling manufacturer's factory trained representative shall provide on-site training for contractor's field personnel in the use of grooving tools and installation of grooved joint products. The representative shall periodically visit the jobsite and review if contractor is following best recommended practices in grooved product installation. A distributor's representative is not considered qualified to conduct the training or jobsite visit(s).

**END OF SECTION 232001**

## **SECTION 232005 - REFRIGERANT PIPING SYSTEMS**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Pipe and Fittings
- B Refrigerant System Specialties
- C Pipe Markers
- D Piping Pressure Tests

#### **1.2 QUALITY ASSURANCE**

- A Installation shall comply with ASHRAE Standard 15 - Safety Standard for Refrigeration Systems.

#### **1.3 SUBMITTALS**

- A Refer to Section 23 01 00 and 23 01 01 for additional information.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Refrigerant Piping: Equipment manufacturer is responsible for piping design and layout including pipe sizing. Submit refrigerant piping diagrams indicating layout, pipe sizes, accessories and any requirement for multiple suction risers and traps.

### **PART 2 PRODUCTS**

#### **2.1 PIPE AND FITTINGS**

- A Type "L - ACR" hard drawn seamless copper tube (ASTM B280). Fittings shall be wrought copper solder joint type ASTM B16.22 suitable for brazing.

#### **2.2 REFRIGERANT SYSTEM SPECIALTIES**

- A Where not furnished with the equipment, provide refrigerant system specialties as required by the equipment manufacturer. Specialties shall include but not be limited to the following: thermal expansion valves, sight glasses, solenoid valves, receivers, head pressure control valves, service valves and filter/dryers.

#### **2.3 PIPE MARKERS.**

- A Markers shall indicate the refrigerant designation and safety group classification of the refrigerant used in the piping system.
- B For Group A2, A3, B2 and B3 refrigerants, the marker shall also include the following: "DANGER - Risk of Fire or Explosion. Flammable Refrigerant".
- C For Group B refrigerants, the marker shall also include the following: "DANGER - Toxic Refrigerant".
- D Refer to Section 23 03 00 for additional information.

### **PART 3 EXECUTION**

#### **3.1 GENERAL PIPING INSTALLATION**

- A Drawings (floor plans, schematics, and diagrams) indicate the general location and arrangement of the piping systems. Final location and arrangement of piping layout shall take into consideration pipe sizing and friction loss, and other design considerations. So far as practical, install piping as indicated.

- B Conceal all pipe installations in walls, pipe chases, utility spaces or above ceilings, unless indicated to be exposed to view.
- C Locate covered piping a sufficient distance from walls, other pipe, ductwork, or other obstacles, to permit application of the full thickness of insulation specified; if necessary, use extra fittings and pipe.
- D Make piping connections to equipment indicated.
- E Install all piping to equipment line size as indicated on the Drawings with reduction in size being made only at equipment connection.
- F Plug open ends of pipe or equipment at all times during installation to keep dirt and foreign material out of system.
- G Arrange and install all piping, specialties and equipment so as to be accessible for service.
- H Make reductions in piping lines with reducing coupling.
- I Support piping so as not to place a strain on equipment.
- J Protection of copper piping from physical damage:
  - 1. In concealed locations, where piping is installed through a framing member and there is less than 1-1/2 inch between the pipe and the finished face of a framing member, protective shield plates shall be provided to protect the pipe from nail or screw penetrations. Shield plates shall be installed on the finished face and extend not less than 2 inches on either side of the framing member.
  - 2. Protective shield plates shall be constructed of steel having a minimum thickness of 0.0598 inch (16-gauge).

### **3.2 JOINTS**

- A All pipes must be reamed and cleaned before assembly.
- B Make brazed joints using a silver brazing alloy having a melting point above 1000 degree F.
  - 1. Joint shall be brazed with a filler metal conforming to AWS A5.8. An approved flux shall be applied where required by the braze filler metal manufacturer.
  - 2. Piping shall be purged of air to remove oxygen then pre-purged with an inert gas. After the pre-purge, the inert gas shall be maintained through the piping during the brazing operation.

### **3.3 INSTALLATION OF REFRIGERANT PIPING SYSTEMS**

- A Piping and specialties shall be sized to prevent excessive pressure drop and allow compressors and evaporators to operate together with balance points at or above the specified capacities.
- B Piping and specialties shall be arranged to return oil at all loads and prevent liquid from "slugging" the compressor or siphoning to the evaporator. Provide double suction risers and traps as required.
- C Pitch horizontal refrigerant piping 1/2 inch per 10 feet in direction of flow.
- D Provide separate refrigerant circuits for multiple compressor applications.
- E Exposed refrigerant piping installed in open spaces that afford passage shall be not less than 7 feet, 3 inches above the finished floor.

### **3.4 PIPING PRESSURE TESTS**

- A All piping shall be given the following pressure test without pressure drop. Equipment which would be damaged by the required test pressure shall be isolated from the system during test.
- B Refrigerant piping and joints shall be exposed for visual inspection and testing prior to being concealed or covered.
- C Test medium for refrigerant piping shall be oil free pumped dry nitrogen. Twenty-four hour standing time minimum. Tests shall include both the high and low pressure sides of each system at not less than the lower of the design pressures or the setting of the pressure relief device(s). The design pressures for testing shall be those listed on the condensing unit, compressor or compressor unit nameplate.
- D A certificate of test shall be provided for all systems containing 55 lb or more of refrigerant. Certificate shall include test date, name of refrigerant, test medium, and the field test pressure applied to the high-pressure side and the low-pressure side of the system. Certificate shall be signed by the installing Contractor.
- E All tests shall be scheduled and documented. Include copy of the piping system pressure test reports in the Operating and Maintenance Manual.

**END OF SECTION 232005**

**SECTION 236001 - PACKAGED AIR-COOLED CHILLERS**

~~~~ **PROJECT NOTE** ~~~~~

EDIT THIS SPECIFICATION IN DETAIL AS REQUIRED PER THE BASIS OF DESIGN AIR COLLED CHILLER.

IF YOUR CHILLER HAS A VARIABLE FREQUENCY DRIVE, IT IS IMPORTANT THAT HARMONIC MITIGATION IS CONSIDERED.

A HARMONIC FILTER MAY BE REQUIRED, EITHER INTEGRAL TO THE EQUIPMENT OR PROVIDED AS A SEPARATE ITEM, WHICH IS TYPICAL.

THIS MUST BE COORDINATED IN DETAIL WITH THE CHILLER MANUFACTURER AND ELECTRICAL ENGINEER.

IF THIS SPECIFICATION IS USED FOR AN AIR COLLED CHILLER WITH A REMOTE INDOOR EVAPORATOR, IT MUST BE EDITTED ACCORDINGLY - COORDINATE WITH THE CHILLER MANUFACTURER.

~~~ **END OF PROJECT NOTE** ~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

- A Outdoor Packaged Air-Cooled Chillers

**1.2 SUBMITTALS**

- A Refer to Section 23 01 00 and 23 01 01 for additional information.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C All submittals for chiller performance must include an AHRI approved selection at AHRI standard conditions, in addition to scheduled chiller operating conditions. Note that AHRI standard conditions may not match the scheduled performance conditions indicated on the Drawings. Chiller performance and efficiency metrics must be clearly indicated.
- D Submittal must include both sound power and sound pressure data in decibels, per AHRI. A-weighted sound pressure at 30 feet should be provided at 100%, 75%, 50%, and 25% load points to identify the full operational noise envelope.

**1.3 QUALITY ASSURANCE**

- A All Air Cooled Chillers shall conform to the applicable sections of the following requirements:
  1. AHRI 550/590: Performance Rating of Water-chilling and Heat Pump Water-heating Packages Using the Vapor Compression Cycle
  2. ANSI/ASHRAE Standard 15: Safety Standard for Refrigeration Systems
  3. ANSI/ASHRAE Standard 34: Designation and Safety Classification of Refrigerants
  4. ANSI/ASHRAE Standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings
  5. ASME Boiler & Pressure Vessel Code, Section VIII, Division I. Chillers shall be fabricated and stamped to verify compliance.
  6. UL-984: Safety Standards for Hermetic Motor-Compressors
  7. ETL/cETL or UL Listing

**1.4 FACTORY RUN TEST**

- A Chiller shall be functionally tested at the factory to ensure trouble free field operation.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A Protect any accessories shipped loose from weather, dirt, fumes, water, construction debris, and physical damage.
- B Comply with manufacturer’s rigging and moving instructions for unloading chillers and moving them to final location.

**1.6 WARRANTY**

- A Provide five (5) year entire unit parts (including refrigerant) and labor warranty.

~~~~ **PROJECT NOTE** ~~~~~

TYPICAL WARRANTY STARTS 18 MONTHS FROM SHIPMENT OR 12 MONTHS FROM START-UP, WHICH EVER COMES FIRST. THIS DOES NOT MEET OHIO REQUIREMENTS FOR OFCC PROJECTS; IT MUST BE 12 MONTHS FROM THE DATE OF SUBSTANTIAL PROJECT COMPLETION. FOR PROJECTS WITH A LONG PROJECT SCHEDULE, A DELAYED WARRANTY START DATE CAN BE PROVIDED - THIS SHOULD BE COORDINATED WITH OWNER OR CONSTRUCTIN MANAGER ON A PER PROJECT BASIS, INCLUDING ANY ADDITIONAL COST.

MANUALLY EDIT THE FOLLOWING IF REQUIRED.

~~~ **END OF PROJECT NOTE** ~~~

- B Warranty shall start 18 months from date of shipment or 12 months from date of start-up, whichever comes first.

PART 2 PRODUCTS

**2.1 PACKAGED AIR-COOLED CHILLERS**

- A General: Provide factory-assembled and tested outdoor packaged air-cooled liquid chiller(s) consisting of: housing and enclosure, compressors, evaporator, condenser(s), condenser fan(s), refrigerant expansion control device(s), refrigerant and refrigerant circuit components (per circuit, as applicable), and integral chiller controller. Provide all components inherently required for stable, safe, and automatic chiller operation.
- B Housing & Enclosure:
  - 1. Provide manufacturer’s standard equipment housing construction, corrosion protection, coating, and exterior finish. Provide removable panels and/or access doors for inspection and access to internal parts and components. All structural frames and panels shall be constructed of galvanized steel with either baked-on powder coat or paint coatings by the manufacturer.

~~~~~ **PROJECT NOTE** ~~~~~

NO NEED TO EDIT THE FOLLOWING, JUST LIST THE SPECIFIC REQUIREMENTS IN THE AIR-COOLED CHILLER EQUIPMENT SCHEDULE.

~~~ **END OF PROJECT NOTE** ~~~

2. Where scheduled, provide the following to protect the unit against environmental and tampering damage. Panels and Guards shall be provided to match the chiller color.
  - a. Condenser Coil Louvers
  - b. Lower Service Area (below coils, surrounding refrigerant components) Coated Wire Guards
  - c. Full Unit Louvers
  - d. Full Unit Coated Wire Guards
  - e. Solid Steel Panels Over Condenser Coil Piping
  - f. Cottonwood Screen
3. The coating or paint system shall withstand 500 hours in a salt-spray fog test in accordance with ASTM B117.

C Compressors:

~~~~ **PROJECT NOTE** ~~~~~

SELECT COMPRESSOR TYPE BASED ON CHILLERS SELECTED AND SCHEDULED FOR THE PROJECT.

IT IS IMPORTANT THAT THE CAPACITY STEPS FOR THE BASIS OF DESIGN CHILLER IS LISTED IN THE EQUIPMENT SCHEDULE.

~~~ **END OF PROJECT NOTE** ~~~~

1. Rotary-type hermetic scroll compressors:
  - a. Compressors shall provide complete axial and radial seals against undesired refrigerant flow.
  - b. Compressors shall be provided with integral discharge check valves. Suction and discharge service shutoff valves shall be provided at each compressor.
  - c. Capacity control shall be provided using compressor staging. Hot gas bypass shall only be used as a last resort, and shall provide no more than 25% of the total cooling capacity through the bypass. Refer to equipment schedule for additional information.
2. Compressors shall be mounted to the chiller frame using vibration isolators.
3. All rotating parts shall be statically and dynamically balanced, at all rotational speeds encountered during operation
4. Compressor motors shall be cooled by refrigerant vapor.
5. Each compressor shall have internal thermal overload sensors and a safety cut-out through chiller's controller.
6. Electrical connections to each compressor motor shall be weather tight. Compressor motors shall be accessible and shall be field-serviceable.
7. Provide current overload prevention at each phase to each compressor.
8. Each compressor shall be provided with a crankcase heater, wired independently to prevent one compressor's heater failure from causing other compressor's heaters to fail.
9. Each compressor shall contain one field replaceable media/cartridge oil filter, and all equipment required to filter oil serving compressor and refrigerant circuit. An oil separator shall be provided at the refrigerant outlet of each compressor, serviceable separately from the compressor

10. Any compressors driven by a motor powered through a VFD must be provided with a means to eliminate stray currents that could result in equipment damage.
11. Provide a lubrication system with oil filter or strainer, oil level sight glass, and an oil charging valve.

D Evaporator:

~~~~~ **PROJECT NOTE** ~~~~~

EVAPORATORS ARE AVAILABLE AS BRAZED-PLATE TYPE, OR SHELL-AND-TUBE TYPE. SCROLL TYPE CHILLERS ALMOST ALWAYS USE BRAZED-PLATE. SCREW TYPE CHILLERS TYPICALLY USE SHELL-AND-TUBE, HOWEVER SMALL SCREW TYPE CHILLERS MAY USE BRAZED-PLATE. SELECT TYPE BELOW BASED ON BASIS-OF-DESIGN CHILLER.

~~~~ **END OF PROJECT NOTE** ~~~~

1. Brazed Plate (Remote)

~~~~~ **PROJECT NOTE** ~~~~~

150 PSIG WATER/LIQUID SIDE WORKING PRESSURE IS STANDARD, 300 PSIG SHOULD ONLY BE NECESSARY FOR VERY TALL BUILDINGS WHERE AIR-COOLED CHILLER SITS ON GRADE (SYSTEM PRESSURES AT CHILLER EVAPORATOR COULD EXCEED 150 PSIG).

~~~~ **END OF PROJECT NOTE** ~~~~

- a. Provide brazed-plate design evaporator using stainless steel plates brazed together water and refrigerant tight. Constructed, tested, and stamped for refrigerant side working pressure of 650 PSIG minimum, and water/liquid side working pressure of 150 PSIG minimum, according to ASME Pressure Vessel Code. Provide manual air vent and drain valves at high and low point(s) in evaporator water/liquid circuit. Heat exchanger shall be UL-listed.
  - b. Heat exchanger shall be provided with grooved couplings (ANSI/AWWA C-606) or bolted flanges for connection to chilled water piping to permit heat exchanger cleaning and/or replacement. If piping is installed within chiller frame/structure/housing, additional bolted flanges must be provided at the chiller perimeter to permit chiller replacement.
2. Provide thermal dispersion-style flow switch factory mounted and wired to chiller integral controller to prevent chiller operation with inadequate flow.
  3. Provide a differential pressure sensor across the evaporator for BAS calculations of chilled liquid flow through chiller. Chiller manufacturer shall provide pressure drop vs. flow information to BAS for accurate calculations.
  4. Provide evaporator freeze protection heater to prevent evaporator temperature from falling below 32°F down to scheduled ambient outside air temperature with zero chilled liquid flow.
  5. Insulate evaporator with 1-1/2" thick minimum flexible closed-cell insulation with maximum K-value of 0.26.
  6. Water/liquid piping connections to the evaporator shall be single-point connections; one inlet and one outlet connection, maximum.

~~~~~ **PROJECT NOTE** ~~~~~

A STRAINER AT THE CHILLED WATER INLET IS REQUIRED TO MAINTAIN THE WARRANTY FOR ALL AIR COOLED CHILLERS. STRAINER CAN COME SHIPPED LOOSE WITH CHILLER OR PROVIDED BY THE MC. SHIPPED LOOSE WITH THE CHILLER IS BEST SO MESH SIZE IS WHAT MANUFACTUER REQUIRES. ENSURE CHILLER PIPING DIAGRAM INCLUDES STRAINER. ENSURE STRAINER PD IS INCLUDED IN PUIMP HEAD CALCULATION.

~~~ **END OF PROJECT NOTE** ~~~

7. Provide a Y-strainer within 5' of chilled water inlet connection to chiller. Strainer shall be furnished and shipped loose with the chiller for installation by the Contractor. Strainer mesh size shall be as required by chiller manufacturer. Furnish with an additional fine mesh start-up screen.
- E Condenser Coils:
1. Provide all-aluminum micro-channel design coil, with parallel flow high-corrosion-resistance aluminum alloy tubes, and enhanced aluminum fins. Tubes and fins shall be of the same alloy material, and shall be brazed together. Coils shall be designed for 350 PSIG working pressure, minimum.
  2. Coils shall be factory leak tested with 500 PSIG air (minimum) under water, with no leaks present.
  3. Provide multiple coil circuits based on compressor quantity and tonnage. Ensure condenser circuit coils' fans are controlled together through the chiller's internal controller.
- F Condenser Fans:

~~~~~ **PROJECT NOTE** ~~~~~

MANY FAN OPTIONS ARE AVAILABLE. STANDARD (AND LOWEST COST) IS MULTIPLE BANKS/ARRAYS OF CONSTANT-SPEED FANS. VARIABLE SPEED FANS OFFER REDUCED ENERGY USE AND NOISE.

~~~ **END OF PROJECT NOTE** ~~~

1. Fans shall be direct-drive, draw-through, propeller/axial type fans, with vertical discharge, and shall use TEAO motors with class F insulation. Fan assemblies shall be statically and dynamically balanced at all operating rotational speeds. Fans and motors shall be permanently lubricated and shall be provided with a protective corrosion-resistant grille over the fan and air discharge. All fans shall be designated as 'low sound' fans, with airfoil shaped blades. Each fan motor shall be provided with individual overload protection.
2. Fan Speed Control
  - a. Variable speed fans shall be provided at all fans for each refrigerant circuit. Fans shall be arranged to prevent cross circulation at inactive condenser coil sections. Fans' speeds shall increase to maintain refrigerant head pressure, as controlled by the chiller's integral controller. All fans for an active circuit shall operate at the lowest speed before all fans increase speed together.

~~~~~ **PROJECT NOTE** ~~~~~

TYPICAL CHILLERS CAN OPERATE, AS STANDARD, AT AMBIENT TEMPERATURE DOWN TO 32°F. WHERE LOW AMBIENT CONTROL IS REQUIRED, IT MUST BE LISTED IN THE AIR-COOLED CHILLER

EQUIPMENT SCHEDULE.

~~~ **END OF PROJECT NOTE** ~~~~

3. Where scheduled, provide refrigerant head pressure low ambient control, designed to operate at listed ambient temperature.

~~~~~ **PROJECT NOTE** ~~~~~~

WHERE HIGH AMBIENT CONTROL IS REQUIRED, IT MUST BE LISTED IN THE AIR-COOLED CHILLER EQUIPMENT SCHEDULE.

~~~ **END OF PROJECT NOTE** ~~~~

4. Where scheduled, provide high ambient temperature controls and heat rejection components to provide 100% of scheduled cooling capacity at ambient temperatures up to 125°F
- G Refrigerant Circuit Components (per circuit):
1. Provide full operating charge of refrigerant and required oil prior to equipment start-up.
  2. Liquid line solenoid valve.
  3. Removable and replaceable core filter-dryer.
  4. Liquid line sight glass.
  5. Electronically-controlled expansion device.
  6. Insulated refrigerant suction piping.
  7. Liquid and suction piping connections for refrigerant charge/discharge and service.
  8. High side pressure relief valve.
- H Integral Unit Controller:
1. A UL-approved weatherproof electrical control panel shall contain the unit control system, control interlock terminals and field-power connections. Panel shall be designed in accordance with NEMA 3R rating. Hinged control panel access doors shall be tool-lockable. Barrier panels shall be factory mounted to protect against accidental contact with line voltage when accessing the control system components.
  2. Chiller shall be provided with a micro-processor based integral automatic controller and operator interface panel. Operator interface shall display all functions and operating parameters of chiller; modifications of these setpoints or navigation options shall be possible after user authorization/authentication/login. Operator interface shall be protected from damage from all outdoor conditions. Operator interface display at each chiller shall be able to be viewed in direct sunlight, and shall be illuminated for visibility in low light conditions.
  3. Chiller shall be provided with internal safeties to protect against over- and under-pressure at chiller components, and to prevent damage due to compressor short-cycling. Hardwired points (as shown on controls diagrams) shall be provided to the BAS for general alarming; specific alarm and/or error codes shall be communicated through the BACnet connection.

~~~~~ **PROJECT NOTE** ~~~~~~

COORDINATE OWNER'S CONTROL COMMUNICATION PROTOCOL REQUIREMENTS, AND LIST

BELOW. BACNET IS KE'S RECOMMENDATION.

~~~ **END OF PROJECT NOTE** ~~~~

4. Controller shall provide cooling capacity control at all compressors, staging and speed control of all condenser fans, control of evaporator and compressor heaters, and control of leaving chilled water setpoint. Controller shall be able to accept hardwired inputs from the BAS for chilled water supply setpoint temperatures, commands to enable/disable cooling, and pump package staging and speed control. A network communication connection shall be provided for communication with the BAS using BACnet. Controller shall be located to permit operation by authorized personnel.
5. Controller shall include either PI or PID control logic loops to stage compressors based on system load; time-only-based compressor staging shall not be permitted.
6. All controller memory shall be non-volatile, with battery backup for real time clock functions. Battery shall be guaranteed to operate for 5 years prior to required replacement. If setpoint values are able to be set or overridden locally by the operator and not received from the BAS, such setpoints shall be retained in battery-backed-up memory. A low battery warning shall be displayed at the operator interface, and shall be able to be transmitted via BACnet to the BAS.
7. Provide the following control functions:
  - a. Power controls for all compressor starters/VFDs
  - b. Terminal wiring strip
  - c. Pumpdown control relay(s), per compressor circuit
  - d. Compressor starter relay
  - e. Reset relay
  - f. Integral recycle timer(s)
  - g. Anti-coincidence timer(s)
  - h. High pressure cutout
  - i. Low pressure cutout
  - j. Oil pressure cutout, except for low oil pressure compressor systems
  - k. Low temperature cutout
  - l. Chilled water temperature controller
  - m. Cycle counter (per compressor)
  - n. Hour meter (per compressor, and machine total)
  - o. General alarm contacts (hardwired)
  - p. Demand Limiting (hardwired input from BAS)

~~~~~ **PROJECT NOTE** ~~~~~

MOST CHILLERS CAN COME WITH A HARDWIRED OUTPUT FROM THE CHILLER CONTROLLER INDICATING LOW EVAPORATOR TEMPERATURE OR "PUMP REQUEST". THIS OUTPUT FROM THE CHILLER CAN BE WIRED TO A BAS INPUT AND USED TO START THE CHILLED WATER PUMP TO MOVE SYSTEM WATER THROUGH THE CHILLER'S EVAPORATOR.

~~~ **END OF PROJECT NOTE** ~~~~

8. Provide a hardwired output from the chiller's controller for connection to the BAS indicating low evaporator temperature. This freeze protection feature requests the BAS to operate the system chilled water pump. See sequences of operation.

9. Starters for constant speed compressors shall be wye-delta type, for all chiller voltages and all motors.
10. Unless noted otherwise, provide a control power transformer.
11. Where scheduled, provide an Uninterruptible Power Supply within the chiller's controls enclosure to provide continuous power to chiller's controller. Ensure UPS alarm (low battery) is incorporated
12. Where scheduled, provide factory-set controls to operate chiller in a low-temperature brine application.
13. Where scheduled, provide factory-set controls to operate chiller in an ice-making thermal storage application.

~~~~ **PROJECT NOTE** ~~~~~

LIST THE SPECIFIC ACCESSORIES IN THE AIR-COOLED CHILLER EQUIPMENT SCHEDULE. NO NEED TO EDIT THE FOLLOWING.

~~~ **END OF PROJECT NOTE** ~~~

- I Include the following accessories where scheduled:

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN CHILLER IS LOCATED NEAR WINDOWS OR BUILDING ENTRANCES, NEAR THE PROPERTY LINE, OR IN AREAS WHERE NOISE IS A CONCERN.

IF SOMETHING SUPER QUIET IS REQUIRED SEE THE FOLLOWING FOR AFTER MARKET OFFERINGS. COORDINATE WITH MANUFACTURER'S REP.

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~~~ **END OF PROJECT NOTE** ~~~

1. Low-sound package. Package shall include removable noise reducing blankets or enclosures surrounding each compressor, and low noise variable speed condenser fans.
2. Spring type vibration isolators, shipped loose.
3. Integral service outlet.

~~~~ **PROJECT NOTE** ~~~~~

CHOOSE BETWEEN SINGLE OR MULTIPLE POWER CONNECTIONS. IF EMERGENCY POWER IS AVAILABLE, YOU MAY WANT TO CONSIDER MULTIPLE POWER CONNECTIONS SO CERTAIN DEVICES IN THE CHILLER ARE ON EMERGENCY POWER, SUCH AS THE EVAPORATOR FREEZE PROTECTION HEATER.

ALL POWER CONNECTIONS MUST BE PROVIDED WITH A DISCONNECT. NON-FUSED IS TYPICAL. COORDINATE WITH ELECTRICAL ENGINEER. IF FUSED IS REQUIRED, EDIT THE FOLLOWING ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~

J Electrical Connections:

~~~~ **PROJECT NOTE** ~~~~~

THERE ARE SEVERAL OPTIONS WHEN MULTIPLE POWER CONNECTIONS IS SELECTED. LIST THE SPECIFIC REQUIREMENTS IN THE AIR-COOLED CHILLER EQUIPMENT SCHEDULE. NO NEED TO EDIT THE FOLLOWING. COORDINATE CONNECTIONS, VOLTAGES, ELECTRICAL SOURCES (NORMAL VS. EMERGENCY) AND CIRCUITS WITH ELECTRICAL ENGINEER.

~~~ **END OF PROJECT NOTE** ~~~

1. Where scheduled, provide the following multiple power connections:
  - a. Dedicated 120 volt control power connection. Provide with non-fused disconnect external to chiller.
  - b. Dedicated 120 volt integral service outlet power connection. Provide with non-fused disconnect external to chiller.
  - c. Primary power connection for compressors, condenser fans, and all other components not listed previously. This power connection shall include an integral non-fused disconnect with access door interlock. Ensure high voltage section (line side of disconnect) is internally blocked from load side of disconnect.

K Manufacturers: Carrier, Daikin, Johnson Controls / York, and Trane.

PART 3 EXECUTION

**3.1 INSTALLATION**

- A Comply with manufacturer's installation instructions for rigging, unloading, and transporting the chiller.
- B Protect unit from physical damage. Leave factory shipping covers in place until installation. Ensure unit and all components are protected from damage.
- C Install chiller according to manufacturer's written installation instructions. Install chiller on concrete foundation, equipment rails, or structural steel support as indicated on the Drawings. Provide vibration isolators when included elsewhere in the Contract Documents.
- D Chiller shall be installed plumb and level in both directions, within manufacturer's installation levelness tolerances.
- E Coordinate connections to electrical power service with Division 26 Contractor. Coordinate connections to control system (BAS) with Temperature Controls Contractor.
- F Connect to chilled water piping to rem. Ensure piping is arranged for easy dismantling and removal to permit tube cleaning, with minimal system fluid drainage required. Provide all components indicated in Piping Diagram and as required by manufacturer.
- G Provide fine mesh start-up strainer screen at the chiller inlet during initial system fill, in accordance with manufacturer's installation instructions to prevent accumulation of debris and degradation of chiller performance.
- H Ensure all manufacturer's maintenance and clearance areas surrounding the chiller, including air inlet and discharge space, are maintained during installation. Maintain clear areas to prevent chiller de-rating, unless chiller is scheduled with de-rating factors less than 100%

- I Provide touch-up of all surface coatings damaged prior to project substantial completion. Ensure all condenser coil components are undamaged and provide design heat transfer.

**3.2 MANUFACTURERS' FIELD SERVICES**

- A Provide services of a manufacturer's factory trained service representative to start-up chillers, per the manufacturer's start-up procedures. Include testing of controls, demonstration of compliance with requirements, and replacement of damaged or malfunctioning controls and equipment.
- B Provide a manufacturer's start-up report to document the chiller's start-up date, signed by the Owner or their authorized representative upon completion of start-up and commissioning (if applicable) of the chiller(s).
- C Provide service of a manufacturer's factory trained service representative to instruct the Owner on operations and maintenance of the chiller(s).

**END OF SECTION 236001**

## **SECTION 260100 - ELECTRICAL GENERAL PROVISIONS**

### *~~~~~ PROJECT NOTE ~~~~~*

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR PERSON ASSIGNED BY THE PROJECT MANAGER.

CHOOSE "ARCHITECT" WHEN KE'S CLIENT IS THE ARCHITECT.

CHOOSE "ENGINEER" WHEN KE IS THE PRIME CONSULTANT TO THE OWNER (NO ARCHITECT).

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

FOR OHIO STATE UNIVERSITY PROJECTS, THE TERM "OWNER" MUST BE CHANGED TO "UNIVERSITY".

AFTER THE SPECLINK CHECKLIST IS COMPLETE, MAKE THE FOLLOWING MANUAL EDITS:

--IF IN A STATE OTHER THAN OH, PA, NY, OR WV, EDIT 1.5.G, 1.5.H.2, 1.5.H.14, 1.5.H.15 & 1.5.H.17.

--IF A HEALTHCARE PROJECT, EDIT 1.5.H.10 & 1.5.H.16

--IF REQUIRED, ADD ANY SPECIFIC AHJ REQUIREMENTS TO 1.5.H.19.

--IF PROJECT DOES NOT HAVE AN HVAC CONTRACTOR AND A CONSTRUCTION MODEL OR COORDINATION DRAWINGS ARE REQUIRED, EDIT 1.8.A.1 OR 1.8.B.1.

--IF DOMESTIC STEEL IS REQUIRED, EDIT 2.1.D.

--IF NOT AN OSU PROJECT AND SERVICE SHUTDOWN NOTIFICATION LONGER THAN ONE WEEK IS REQUIRED, EDIT 3.6.C.

--SEE DESIGN NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE GENERAL PROVISIONS SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S GENERAL PROVISIONS SPECIFICATION IS CREATED, THE PROJECT MANAGER OR PERSON ASSIGNED, MUST MANUALLY EDIT ARTICLE 1.10.A RECORD DRAWINGS, BASED ON THE SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS FROM DIVISIONS 22, 23, 26, AND 27. SEE NOTES WITHIN SPECIFICATION FOR SPECIFIC REQUIREMENTS.

AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, THE PROJECT MANAGER IS TO NOTIFY THE STAFF ASSIGNED TO EACH DIVISION SO SUPPLEMENTAL GENERAL PROVISIONS SPECIFICATIONS CAN BE CREATED FOR EACH DIVISION.

ALSO, AFTER EACH DIVISION'S GENERAL PROVISIONS IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S GENERAL PROVISIONS IS REVISED ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

## PART 1 GENERAL

### 1.1 RELATED CONTRACT DOCUMENTS

- A Contractor shall examine Division 0 and/or Division 1 Contract Documents for general project requirements and instructions to bidders.
- B Refer to this Division's Supplemental General Provisions for additional Project requirements.
- C The provisions of the Instructions to Bidders, General Conditions, Supplementary Conditions, Alternates and Addenda are a part of this Specification. Contractors and Subcontractors shall examine these provisions as they may affect work under this Division.
- D Contractor shall also examine the Contract Documents of all Divisions which may affect and require work under this Division and be responsible for all work required under this Division.

### 1.2 DESCRIPTION OF WORK

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~ **END OF PROJECT NOTE** ~~~~

- A This project involves work in an existing operating facility and will require close communication with Owner with regard to access and work hours. Coordinate all work schedules with Owner prior to bidding.
- B All Drawings as well as the Specifications for all Divisions shall be defined as the Contract Documents. Contractor shall review entire set of Contract Documents prior to bidding.
- C Drawings and Specifications are to be considered as supplementing each other. Work specified but not shown, or shown but not specified, shall be performed or furnished as though mentioned in both the Specifications and the Drawings.
- D Prior to submitting bid, Contractor shall examine all Drawings and Specifications to develop a complete understanding of the project scope. Contractor shall ask for clarifications during the pre-bid phase of the project. Failure to do so will not relieve the Contractor of their responsibility to perform all required work.

~~~~~ **PROJECT NOTE** ~~~~~

KE STANDARD REQUIRES BIDDING CONTRACTOR TO VISIT SITE. HOWEVER, DO NOT USE "REQUIRED" FOR STATE OR FEDERAL FUNDED PROJECTS, INCLUDING OSU PROJECTS, USE "RECOMMENDED".

~~~ **END OF PROJECT NOTE** ~~~~

- E Where the project scope involves renovations and additions, it is required that Contractors visit the site of the work and become familiar with the conditions affecting the installation. Submission of a Bid shall presuppose knowledge of such conditions and no additional compensation shall be allowed where extra labor or materials are required because of the lack of knowledge of these conditions.
- F Bid shall include any special phasing requirements related to the construction work as described in the Contract Documents.
- G Extra costs which might result from deviations from the Drawings, so as to avoid interferences, shall be considered a "Job Condition", and no additional compensation shall be considered applicable. In the event that such interferences occur in course of the work, due to an error, omission, or oversight by the Contractor, no additional compensation shall be allowed. Interferences that may occur during the course of construction shall be brought to the immediate attention of the Engineer, and the Engineer's decision, confirmed in writing, shall be final.
- H The following general terms as used within the context of the Contract Documents shall be defined as follows:
  - 1. "Contract Documents" - The complete set of Drawings and Specifications for all Divisions included in the project.
  - 2. "Drawings" - Drawings furnished as part of the Contract Documents.
  - 3. "Contractor" - This Division's Contractor and the Subcontractors to this Division's Contractor.
  - 4. "Responsible" - To perform work required.
  - 5. "Furnish" - To supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations.
  - 6. "Install" - Work which includes the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
  - 7. "Provide" - To furnish and install, complete and ready for the intended use.
  - 8. "Equal" - To meet or exceed the standards of the specified products or listed manufacturers.

**1.3 WORK INCLUDES**

~~~~~ **PROJECT NOTE** ~~~~~

FOR SOME STATE FUNDED PROJECTS, THE A/E MUST SUBMIT AND OBTAIN PERMITS PRIOR TO BIDDING. IF THIS IN THE CASE, PERMITS AND FEES ARE NOT INCLUDED IN THE CONTRACTOR'S SCOPE. COORDINATE ON A PER PROJECT BASIS.

~~~ **END OF PROJECT NOTE** ~~~~

- A Include all labor, material, equipment, services, coordination, supervision and administration necessary for the proper completion of all work shown. Items omitted, but necessary, to make all systems complete and workable shall be understood to form part of the work.

- B Material for work required to complete installation such as earthwork, concrete, masonry, mortar, reinforcing steel, patching, and painting shall be provided as specified in other applicable Divisions covering such work.
- C Provide material and labor which is neither drawn nor specified but which is obviously a component part of and necessary to complete work and which is customarily a part of work of similar character.
- D Include all testing, test reports, system programming, start-up reports and warranties for each system as outlined elsewhere in these Specifications. Refer to "Operating and Maintenance Manuals" for additional requirements.

#### **1.4 PERMITS AND FEES**

- A Give proper authorities notice as required by law relative to the work in their charge. Comply with the regulations regarding temporary enclosures, obstructions, or excavations and pay all legal fees involved.
- B Permits and inspection fees have been paid for by the Engineer. THESE FEES SHALL BE CONSIDERED A REIMBURASBLE FROM THE CONTRACTOR TO ENGINEER. Any additional inspection fees required for work that is considered deficient or otherwise not approved by the Inspector shall be the responsibility of the Contractor.

#### **1.5 QUALITY ASSURANCE**

- A Work shall be installed in accordance with provisions of all applicable codes, as interpreted by the local Authority Having Jurisdiction (AHJ), as well as any further modifications or regulations published by local or State Authorities.
- B Reference to the codes and standards listed shall constitute the minimum acceptable requirements. Nothing in the Specifications shall be construed to permit deviation from the requirements of the governing code. Where requirements of the Drawings and Specifications exceed those of the code listed, follow the Drawings and Specifications.

#### ***~~~~ PROJECT NOTE ~~~~***

IT IS IMPORTANT THAT A CODE SEARCH IS COMPLETED EARLY IN THE PROJECT TO DETERMINE WHAT CODES AND STANDARDS APPLY. THIS EFFORT SHOULD BE COORDINATED WITH THE ARCHITECT AND ALL OTHER DISCIPLINES. IF NECESSARY CHECK WITH THE LOCAL AHJ. VERIFY STATE REQUIREMENTS AND EDIT THE FOLLOWING LISTS AS NECESSARY. THE APPLICABLE STATE OR INTERNATIONAL CODE EDITION (YEAR) MUST BE LISTED. TO ASSIST WITH YOUR CODE SEARCH, REFER TO THE FOLLOWING FOLDER IN THE E-DRIVE.

E:\ - Library\Codes\ Code Locator

IF A CODE/STANDARD REFERENCE TABLE IS INCLUDED ON THE DRAWINGS, THE INFORMATION ON THE DRAWINGS MUST MATCH THE INFORMATION IN THIS SPECIFICATION AND SUPPLEMENTAL GENERAL PROVISIONS.

INCLUDE THE FOLLOWING FOR OHIO PROJECTS.

#### ***~~~ END OF PROJECT NOTE ~~~***

- C The following building codes with amendments shall be followed:

1. 2024 Ohio Building Code
  2. 2017 Ohio Fire Code
  3. 2024 Ohio Mechanical Code
  4. 2024 Ohio Plumbing Code
  5. 2021 International Fuel Gas Code
- D Applicable portions of the following codes, standards, societies and agencies shall be followed. Where a specific edition is listed, it shall be used. Where not listed, the edition recognized by the Authority Having Jurisdiction shall be used. Listing of a specific portion of a code, standard, society or agency does not preclude the Contractor from following all other applicable portions of the code, standard, society or agency.

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST IS A GUIDE. EDIT AND ADD SPECIFIC DOCUMENTS AND EDITIONS BASED SPECIFIC PROJECT REQUIREMENTS. IF YOU FOLLOWED A SPECIFIC DOCUMENT DURING DESIGN, IT SHOULD BE LISTED.

~~~ **END OF PROJECT NOTE** ~~~

1. American National Standards Institute (ANSI)
2. American Society of Testing and Materials (ASTM)
3. American with Disabilities Act (ADA) - American with Disabilities Act Accessibility Guidelines (ADAAG)
4. ANSI A117.1: Accessible and Usable Buildings and Facilities
5. Federal Occupational Safety and Health Act (OSHA)
6. NFPA Standards as referenced by the Building Codes.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 70 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2023, NY - 2017, PA - 2017, WV – 2020

~~~ **END OF PROJECT NOTE** ~~~

7. NFPA 70-2023: National Electrical Code

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE EDITION (YEAR) OF NFPA 72 FOR THE STATE WHICH THE PROJECT IS LOCATED: OH - 2022, NY - 2016, PA - 2016, WV - 2016.

~~~ **END OF PROJECT NOTE** ~~~

8. NFPA 72-2016: National Fire Alarm and Signaling Code.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR ACCREDITED HEALTH CARE FACILITIES AND ADJUST EDITION (YEAR) ACCORDINGLY - DISCUSS WITH PROJECT TEAM. IN JULY 2016 THE CENTER FOR MEDICARE & MEDICAID SERVICES (CMS) ADOPTED THE 2012 EDITION OF NFPA 101.

~~~ **END OF PROJECT NOTE** ~~~

9. NFPA 101-2021: Life Safety Code

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE AND EDIT THE FOLLOWING WHEN ELECTRONIC MEDIA WILL BE USED TO TRANSFER ELECTRONIC FILES BETWEEN CONTRACTOR AND ENGINEER. COORDINATE WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

**1.6 ELECTRONIC MEDIA**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE FOLLOWING WITH THE ARCHITECT.

~~~ **END OF PROJECT NOTE** ~~~

- A Electronic drawing files are available to the Contractor from the Engineer for coordination purposes.
- B Contractor shall deliver closeout documents, in an electronic format, on a portable memory device. Device type shall be coordinated with the Owner.

**1.7 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE SUBMITTAL REQUIREMENTS WITH THE ARCHITECT AND EDIT THE FOLLOWING. CHOOSE BETWEEN ONE OF THE TWO CHOICES BELOW.

~~~ **END OF PROJECT NOTE** ~~~

- A Provide Submittals in an electronic format. The file format shall be portable data file (.pdf).
- B Submittal transmittal shall list corresponding Specification Section and a description of item(s) being submitted. Each submittal shall only include items from one Specification Section. Submittals which include items from multiple specification sections will be returned "REVISE AND RESUBMIT."
- C Prepare Submittals with adequate details and dimensions as necessary to clearly show construction. Clearly identify each item on the submittal with designation as indicated on Drawings including location and use. Include with Submittals Manufacturers published descriptive literature, specifications, performance data (normal operating characteristics, curves, ratings, etc.), wiring diagrams and installation instructions. Indicate for each item the operating characteristics, design conditions, features, and optional items that are intended for application on this project. Where contents of Submittal literature include data not pertinent to the Submittal, clearly indicate (highlight) which portion of content is being submitted for review.
- D Contract Documents include scheduled equipment which is the Basis of Design and used to establish design and space requirements. Contract Documents may also include alternative acceptable manufacturers. Where alternative manufacturer's equipment is submitted which alters the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all

associated trades involved. No costs associated with deviations from the Basis of Design shall be borne by the Owner.

- E If for any reason, the Submittal shows variations from the requirements of the Contract Documents, the Contractor shall make mention of such variation in the letter of transmittal. The Contractor shall note in red on the Submittal any change in design or dimension on the items submitted including changes made by the Manufacturer which may differ from catalog information.
- F Where additional installation drawings, wiring diagrams or other drawings are specified elsewhere as part of the project requirements, they shall be submitted at the same time as the Submittals. Partial Submittals are not acceptable.
- G Contractor shall review each Submittal prior to submission, and check for compliance with the Contract Documents. Corrections shall be noted. Mark with approval stamp prior to submission. Submittals that do not bear the Contractor's approval stamp will be returned without action.
- H The Submittals will be reviewed only for General compliance and not for dimensions, quantities, etc. The responsibility of correct procurement remains solely with the Contractor. The Submittal review shall not relieve the Contractor of responsibility for errors or omissions and deviations from the Contract Document requirements. Submittals which are not required under this Division shall be returned to the Contractor.
- I Where Submittal review includes pre-determined language that includes the word "Approved", the following shall apply:
  - 1. "Approved" shall be defined as "Reviewed, No Exceptions Taken".
  - 2. "Approved as Noted" or similar verbiage shall be defined as "Reviewed, Exceptions as Noted".
- J After review of submittals by the Engineer, the Contractor shall revise and resubmit if required to establish compliance with the Contract Document requirements. Resubmittal shall include a document with a written response to each of the Engineer's previous comments.

~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING IS INCLUDED TO PROMPT US TO REVIEW AND LOOK FOR ITEMS THAT HAVE NOT BEEN SUBMITTED.

~~~ **END OF PROJECT NOTE** ~~~~

- K The Contractor shall notify the Engineer when all product data and/or shop drawings for all equipment, materials and systems have been submitted for review.
- L The Contractor agrees that Submittals, processed by the Engineer, are not change orders; that the purpose of Submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design intent of the project. This understanding is demonstrated by indicating which equipment and material is required, and by what methods of fabrication and installation will be utilized.
- M The Contractor further agrees that if deviations, discrepancies or conflicts between the Submittals and the Contract Documents are discovered, either prior to or after Submittals are

processed by the Engineer, the Drawings and Specifications shall control and shall be followed.

- N Final reviewed Submittals shall be included in the Operating and Maintenance Manuals. Where Submittals are returned "REVIEWED, EXCEPTIONS AS NOTED", the final Submittals shall be updated to include the exceptions.

### 1.8 CONSTRUCTION DOCUMENTATION

- A Coordination Drawings

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATION DRAWINGS BY THE HVAC CONTRACTOR ARE STANDARD. EDIT AS REQUIRED WHEN NO HVAC CONTRACTOR.

~~~~ **END OF PROJECT NOTE** ~~~~

1. Preparation of the Coordination Drawings shall be the responsibility of the HVAC Contractor.
2. Coordination Drawings shall include but not be limited to: locations of equipment and devices, ductwork, piping, and conduit routing and required service clearances for all trades. If used, include off-site prefabricated assemblies. Show the relationship of all components as related to installation and future access for maintenance and removal. Where access doors are required, indicate locations and type. Show locations of all ductwork, piping and conduit penetrations through wall and floors.
  - a. Show existing items affecting new installation in remodeled areas.
3. Coordination meetings between all trades are recommended.
4. Proceed with installation, including off-site fabrication and assembly, only after review of Coordination Drawings by Engineer and approval from other trades affected. Engineer does not approve Coordination Drawings.
5. The Coordination Drawings shall be updated to include any deviations made during construction as required to create Record Drawings.

### 1.9 GUARANTEE AND WARRANTIES

~~~~~ **PROJECT NOTE** ~~~~~

ENGINEER NEEDS TO COORDINATE WARRANTY AND COMMENCEMENT WITH ARCHITECT, CM AND/OR OWNER.

~~~~ **END OF PROJECT NOTE** ~~~~

- A Warrant that equipment and all work is installed in accordance with good workmanship practice. All equipment shall be installed in accordance with the Manufacturer's recommendations and shall meet the requirements specified. Any equipment failing to perform or function as specified shall be replaced with complying equipment without cost to the Owner. Warranty shall commence upon acceptance of substantial completion of construction by the Owner. Sign-off of individual equipment start-up procedures shall not activate the warranty commencement.

~~~~~ **PROJECT NOTE** ~~~~~

COORDINATE THE NEED FOR THE FOLLOWING ON LARGE, LONG DURATION PROJECTS. EDIT AS REQUIRED.

~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall review the construction schedule requirements. Where necessary to accommodate the schedule and where equipment and systems are installed that are used by the project until the date of substantial completion, the Contractor shall provide an extended warranty as part of the Bid to cover the equipment warranty until the date of substantial completion.
- C Guarantee against defects in workmanship and materials; repair or replace any defective work, material or equipment within one year from date of formal written warranty commencement. Longer product warranties provided by individual equipment manufacturers shall supersede this one year guarantee; however, the Contractor shall maintain the one year workmanship and materials guarantee for installation of such equipment.

**1.10 CLOSEOUT DOCUMENTS**

~~~~~ **PROJECT NOTE** ~~~~~

THE CONTRACTOR IS TYPICALLY RESPONSIBLE FOR PRODUCING THE RECORD DRAWINGS, HOWEVER IN SOME INSTANCES, SUCH AS OSU PROJECTS, THE ENGINEER IS RESPONSIBLE. COORDINATE WITH THE ARCHITECT AND PROJECT TEAM. REGARDLESS OF WHO IS RESPONSIBLE, WHEN THEY ARE REQUIRED, INCLUDE THE FOLLOWING. THIS SECTION MUST BE MANUALLY EDITTED BASED ON SPECIFIC DIVISION. DIVISION 21 HAS DIFFERENT REQUIREMENTS COMPARED TO DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

- A Record Drawings:

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISION 21, SELECT ONE OF THE FOLLOWING TWO OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

- 1. Record Drawings shall consist of an updated Construction Model as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

FOR DIVISIONS 22, 23, 26, 27 SELECT ONE OF THE FOLLOWING THREE OPTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

- 2. Record Drawings shall consist of updated Coordination Drawings as defined in the Specifications.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED SHOP DRAWINGS ARE REQUIRED FOR DIVISION 21.

~~~ **END OF PROJECT NOTE** ~~~~

3. The Contractor shall produce updated shop drawings electronically from the original shop drawings in an approved format. Updated CAD drawings shall include any deviations or changes made during construction. At the end of the project, the Contractor shall transfer the electronic drawings onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN MARKED-UP DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27.

~~~ **END OF PROJECT NOTE** ~~~~

4. The Contractor shall keep one complete set of the original Drawings on the project site on which shall be recorded any deviations or changes from such Drawings made during construction. These drawings shall become the Record Drawings, shall be kept clean and undamaged, and shall not be used for any other purpose other than recording deviations from the original Drawings. At the end of the project, the Contractor shall make electronic .pdfs of these drawings and transfer them onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN UPDATED COORDINATION DRAWINGS ARE REQUIRED FOR DIVISIONS 22, 23, 26, 27. IT'S IMPORTANT THAT COORDINATION DRAWINGS ARE SPECIFIED UNDER CONSTRUCTION DOCUMENTATION.

~~~ **END OF PROJECT NOTE** ~~~~

5. The Contractor shall maintain updated Coordination Drawings, reproduced electronically from the original Coordination Drawings in an approved format. Drawings shall include any deviations or changes made during construction. Drawings shall only include work of this Division. Work of other Divisions shall be removed. At the end of the project, the Contractor shall transfer the electronic drawing files onto a portable memory device. Both hard copy drawings and the portable memory device shall be provided as Record Drawings.

~~~~ **PROJECT NOTE** ~~~~~

CHOOSE BETWEEN THE FOLLOWING TWO PARAGRAPHS.

~~~ **END OF PROJECT NOTE** ~~~~

6. After the project is completed, the Record Drawings shall be delivered to the Engineer for inclusion into the Operating and Maintenance Manuals, as a permanent record of the installation as constructed.

### 1.11 SITE REPORTS AND PUNCHLISTS

- A The Engineer may visit the site periodically during construction and provide written Construction Observation Reports to the Contractor identifying areas where installation does not meet the intent of the Contract Documents. The Contractor shall provide a written response to these reports within 5 business days, indicating the reason the installation is out of compliance with the Contract Documents. After review, the Engineer may or may not require the Contractor to correct the installation. The Contractor shall correct the installation unless the reason for non-compliance is accepted, in writing, by the Engineer or Owner.
- B Final Punch List
  1. The Engineer will visit the site to perform a scheduled Final Punch List to identify areas where the installation is incomplete or does not meet the intent of the Contract Documents.
  2. If the Engineer is requested to perform the Final Punch List prior to the Contractor being 100% complete with their scope of work, the Contractor shall furnish a Contractor's Completion List, indicating all incomplete work. This list shall be furnished to the Engineer a minimum of 24 hours prior to the scheduled Final Punch List.
  3. The Contractor shall respond to each punch list item along with a date, indicating that the item has been completed or corrected.
  4. A copy of the Final Punch List with the Contractor's responses shall be included in the Operating and Maintenance Manual.
- C Where on-line documentation management services or project management software requires the author/initiator of a corrective action to close it, and the Engineer is the author/initiator, the following shall apply:
  1. When the corrective action is reported as corrected/complete, by either the responsible Contractor or the Construction Manager, the Engineer will assume that the parties responsible for construction have reviewed and approved the correction.
  2. By closing the corrective action, the Engineer is in no way approving nor assuming responsibility for the installation.

## PART 2 PRODUCTS

### 2.1 EQUIPMENT AND MATERIALS

- A All equipment and materials used on this project shall be new and listed or labeled by a Nationally Recognized Testing Laboratory (NRTL) such as UL, ETL, CSA, etc. or as approved by the local Authority Having Jurisdiction. Equipment and materials shall be installed or used in accordance with instructions included with the listing or labeling. Where possible, the same brand or manufacturer shall be used for each type of material or equipment. such as.
- B Equipment and materials for the construction shall be the responsibility of the Contractor and shall be protected by the Contractor until formally accepted by the Owner.
- C All Manufacturers of equipment shall verify to the satisfaction of the Contractor and Engineer that their equipment will function properly under the conditions of use, as shown on the Drawings and as specified herein. Dimensions, weights, operating characteristics and all other related appurtenances shall be verified before submittal of shop drawings.

### ~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE AND EDIT THE FOLLOWING PARAGRAPH FOR ALL OHIO OR PENNSYLVANIA PROJECTS RECEIVING STATE FUNDS OR WHEN REQUESTED BY CLIENT - COORDINATE WITH PROJECT

TEAM. FOR FEDERAL OR OTHER STATE PROJECTS, COORDINATE WITH CLIENT.

~~~ **END OF PROJECT NOTE** ~~~

- D Domestic steel shall be used for steel products as required by the Ohio Revised Code, Chapter 153.

## **2.2 MATERIAL SUBSTITUTIONS**

- A Bids shall be based upon the specified products, suppliers or listed alternatives. The Drawings and Specifications are based on the products specified by type, model, size and suppliers if indicated and thus establish minimum qualities which substitutes must meet to qualify for review.
- B Should the Contractor propose to furnish materials, equipment and/or suppliers other than those specified, submit a written request for substitutions to the Engineer. The request shall be an alternate to the original Bid and shall be accompanied with complete descriptive (manufacturer, brand name, catalog number, supplier name and references, etc.) and technical data for all items. Indicate any additions or deductions to the base Bid price.
  - 1. Requests for substitutions shall be submitted no later than 10 days prior to the bid opening. Requests received less than 10 days prior to the bid opening shall not be considered.
- C Where substitutions alter the design or space requirements indicated in the Contract Documents, the Contractor shall be responsible for the revised design and construction including the costs of all associated trades involved. No costs associated with the use of a substitution shall be borne by the Owner.
- D Acceptance or rejection of the proposed substitutions shall be subject to approval of the Engineer. If requested, the Contractor shall submit inspection samples of both the specified and the proposed substitute items for review.
- E In all cases where substitutions are permitted, the Contractor shall bear any and all extra cost of evaluating the equality of the material and equipment to be installed.
- F Verbal requests or approvals of substitutions shall not be binding on the Engineer or Owner.

## **PART 3 EXECUTION**

### **3.1 SAFETY**

- A The Contractor shall follow all safety requirements as defined elsewhere in the Specifications and as defined by Owner safety protocols.
- B Work shall be performed on de-energized equipment in accordance with NFPA 70E.
- C Should suspected hazardous materials be encountered, Contractor shall adhere to procedures, methods and regulations of the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) and immediately notify Owner.

### **3.2 COORDINATION**

- A Take all field measurements necessary and assume responsibility for the accuracy.
- B If any work is fabricated or assembled off-site, assume responsibility for the accuracy of such pre-manufactured assemblies.
- C Install work that is to be concealed within the building construction in sufficient time to secure proper location without delay to the work of other trades.

- D Assume responsibility for location of chases, other openings through masonry and concrete construction. When work cannot be installed concurrent with building construction, arrange for rough-in boxes, sleeves, inserts and other items, as necessary for installation thereof at a later date.
- E If any work is installed so that the design cannot be adhered to, Contractor is responsible for making such changes as Engineer may require. Before installing work, report any interferences between work of this Division and work of other Divisions to Engineer as soon as discovered. Architect will determine which work must be relocated, or make adjustments to maintain clearances, maximum headroom and to avoid conflict with other work.
- F Become familiar with the construction where work attaches. Review Structural Drawings for coordination of openings. Cut no structural members or slabs without Engineer's and/or Structural Engineer's written approval.
- G Exercise caution when working in areas where concealed systems or materials may exist. Any costs for repair of damage incurred shall be the responsibility of Contractor causing the damage.

### 3.3 PROTECTION

- A All finished surfaces shall be protected from damage and spills during construction.
  - 1. Protect finished floors with a heavy duty flexible fiber reinforced floor protection board - Ram Board or equal.
  - 2. When setting up pipe cutting and threading machines, protect area against staining and abrasion. Provide plywood protection over Ram Board underlayment.
  - 3. Protect finished surfaces from chips and cutting oil by use of a chip receiving pan and oil proof cover.
  - 4. Protect equipment and finished surfaces from welding and cutting spatters with baffles and spatter blankets.
  - 5. Protect finished surfaces from paint droppings, insulation adhesive, etc. by use of drop cloths.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE SECOND PARAGRAPH FOR OSU PROJECTS.

~~~~ **END OF PROJECT NOTE** ~~~~

- B The Contractor shall provide protection for any roof areas that will be affected by this scope of work. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- C The Contractor shall provide protection for any roof areas that will be affected by this scope of work. Protection shall consist of 1/2-inch thick plywood with foam board attached. The composite board shall be placed with the foam towards the roof surface and shall be secured in a non-destructive manner, such as weighted down. The roof protection shall be positioned such that it provides protection from falling objects such as tools and materials.
- D The cost of correcting any such condition will be charged against the respective Contractor.

### 3.4 EQUIPMENT INSTALLATION

- A Install equipment in accordance with equipment manufacturer's published installation instructions.

- B Should the Drawings and/or Specifications include procedures that exceed or call for materials that differ from the manufacturer's instructions, the Contractor shall follow the Drawings and/or Specifications. This requirement does not release the Contractor from the obligation to follow all other published instructions and installation recommendations. Contractor shall make Engineer aware, in writing, of discrepancies between the Drawings and Specifications and the manufacturer's published installation instructions, and/or confirm Engineer's design intent, prior to installation of the equipment. Failure to comply may result in reworking the equipment installation or replacement of materials associated with the equipment at no additional cost to the Owner.

### 3.5 CUTTING AND PATCHING

- A All cutting and patching in construction as necessary for installation of this work shall be the responsibility of this Division and performed by the Tradesmen related to that specific Division of work. Subcontract this work to the appropriate Trade Division.
- B Do not cut any structural member, including but not limited to steel framing and structural floors, without specific permission from the Engineer and/or Structural Engineer.
- C Do not cut openings in roof or floor construction without specific permission from the Engineer and/or Structural Engineer.
  - 1. Existing roof warranty must be maintained.
- D Where locations of penetrations are inaccurate or where building components are improperly cut by inadequate methods, the Contractor in error shall be responsible for complete repair.

~~~~ **PROJECT NOTE** ~~~~~

KEEP THE FOLLOWING FOR WORK IN AN EXISTING OPERATING FACILITY.

~~~~ **END OF PROJECT NOTE** ~~~~~

### 3.6 SERVICE SHUTDOWNS

- A This project involves remodeling of existing areas in an operating facility. Plan work including alterations and connections to existing facilities, to permit carrying on normal building functions. When necessary to temporarily interrupt a service, shutdowns shall be scheduled through the Owner and shall be done at a time as directed by the Owner. No additional compensation shall be allowed for these shutdown periods even though premium time work may be required unless specifically defined elsewhere in the Specifications.
- B Provide temporary service to equipment or systems that cannot be shut down, and as determined by Owner, or as described in the Contract Documents. Remove temporary services when permanent work is completed.

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING IF LONGER NOTICE IS REQUIRED BY OWNER. OSU PROJECTS REQUIRE 2 WEEK'S NOTICE.

~~~~ **END OF PROJECT NOTE** ~~~~~

- C Provide a minimum of two weeks' notice to the Owner before any service shutdown is scheduled.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING SECTION FOR RENOVATION PROJECTS, IN AN OPERATING FACILITY AND NEW PROJECTS WITH PHASING WHERE OCCUPIED AREAS ARE ADJACENT TO THE CONSTRUCTION AREA. ALTHOUGH ANOTHER TRADE MAY PROVIDE THE IAQ REQUIREMENTS FOR THE PROJECT, THERE MAY BE SPACES OUTSIDE THE PROJECT SITE WHERE THIS DIVISION'S CONTRACTOR HAS TO MAKE A TIE-IN AND EXTEND SERVICES TO THE PROJECT SITE.

~~~ **END OF PROJECT NOTE** ~~~

**3.7 INDOOR AIR QUALITY**

- A All occupied areas of building shall remain free from odors, fumes, dust and smoke generated from installation of material and equipment.
- B Arrange with the Owner to schedule isolation of areas where paints, adhesives, solvents, etc., will be used. Areas shall remain isolated until all materials have cured sufficiently as to stop out-gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
- C Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas.

**END OF SECTION 260100**

**SECTION 260101 - ELECTRICAL SUPPLEMENTAL GENERAL PROVISIONS**

~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION SECTION SUPPLEMENTS AND EXPANDS ON TOPICS ADDRESSED IN THE COMMON GENERAL PROVISIONS.

CHOOSE "ARCHITECT" WHEN KE'S CLIENT IS THE ARCHITECT.

CHOOSE "ENGINEER" WHEN KE IS THE PRIME CONSULTANT TO THE OWNER (NO ARCHITECT).

THE CHOICE OF ARCHITECT OR ENGINEER SHOULD MATCH THE CHOICE MADE IN COMMON GENERAL PROVISIONS.

CHOOSE "OWNER" WHEN APPLICABLE TO THE GENERIC TERM FOR THE BUILDING'S "OWNER".

CHOOSE "UNIVERSITY" TO COMPLY WITH THE OHIO STATE UNIVERSITY STANDARDS.

THE CHOICE OF OWNER OR UNIVERSITY SHOULD MATCH THE CHOICE MADE IN COMMON GENERAL PROVISIONS.

~~~ **END OF PROJECT NOTE** ~~~

PART 1 GENERAL

**1.1 RELATED CONTRACT DOCUMENTS**

- A Refer to 26 01 00: Electrical General Provisions for additional Project requirements.

**1.2 WORK INCLUDES**

~~~~ **PROJECT NOTE** ~~~~~

IF WORK INCLUDES GENERAL DESCRIPTION IN 260100 IS NOT SUFFICIENT, PROVIDE AN ADDITIONAL DISCRPTION WITHIN WORK INCLUDES SECTION.

~~~ **END OF PROJECT NOTE** ~~~

- A Furnish and install all work required by Division 26 as described in 260100.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN PROJECT INCLUDES DIVISION 26 ALTERNATES.

COORDINATE CLOSELY WITH ARCHITECT/CLIENT TO DETERMINE WHERE TO INCLUDE A DESCRIPTION OF ALTERNATES. EITHER IN DIVISION 1 OR THIS SPECIFICATION.

~~~ **END OF PROJECT NOTE** ~~~

### 1.3 ALTERNATES

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING WHEN ALTERNATES ARE DESCRIBED IN DIVISION 1.

~~~ **END OF PROJECT NOTE** ~~~

- A Include Alternates where defined elsewhere in the specifications.

### 1.4 QUALITY ASSURANCE

- A Workmanship shall be in accordance with the best NECA (National Electrical Contractor Association) practices of the trade. Electrical work shall be installed by journeymen electricians under the supervision of a competent foreman.
- B Reference to the code and standards listed shall constitute the minimum acceptable requirements. Nothing in the Specifications shall be construed to permit deviation from the requirements of the governing code. Where requirements of the Drawings and Specifications exceed those of the code listed, follow the Drawings and Specifications.
- C Applicable portions of the following codes, standards, societies and agencies shall be followed. Where a specific edition is listed, it shall be used. Where not listed, the edition recognized by the Authority Having Jurisdiction shall be used. Listing of a specific portion of a code, standard, society or agency does not preclude the Contractor from following all other applicable portions of the code, standard, society or agency.

~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST IS A GUIDE. EDIT AND ADD SPECIFIC DOCUMENTS AND EDITIONS BASED SPECIFIC PROJECT REQUIREMENTS. IF YOU FOLLOWED A SPECIFIC DOCUMENT DURING DESIGN, IT SHOULD BE LISTED.

~~~ **END OF PROJECT NOTE** ~~~

1. National Electrical Manufacturers Association (NEMA)
2. Institute of Electrical and Electronic Engineers (IEEE)
3. Illuminating Engineering Society (IES)

### 1.5 SUBMITTALS

- A Prior to commencing work, submit product data and/or shop drawings for Electrical equipment, materials and systems as required in each individual Division 26 Specification section. Provide all submittals far enough in advance of scheduled dates for installation to provide sufficient time for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

### 1.6 CONSTRUCTION DOCUMENTATION

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING IF COORDINATION DRAWINGS ARE REQUIRED AND INCLUDED IN GENERAL PROVISIONS.

~~~ **END OF PROJECT NOTE** ~~~

- A Coordination Drawings:
1. Supply HVAC Contractor information necessary for the development of coordination drawings. Information shall include but not be limited to: locations and sizes of Electrical equipment and devices; conduit routing and sizes; and required service clearances affecting the work of other trades. How this information is supplied shall be discussed and decided between all trades.
  2. Before supplying information to the HVAC Contractor, coordinate locations of all floor, wall, and roof penetrations including sleeve requirements with General Trades. Coordinate locations and types of all access doors with the Engineer and General Trades.
  3. Before supplying information to the HVAC Contractor, provide the Engineer and/or Structural Engineer information indicating the size and location of all penetrations through floor slabs. The Contractor shall make all adjustments as required by the Engineer and/or Structural Engineer.
  4. Contractor shall approve Coordination Drawings prior to Submittal to Engineer for review and must indicate acceptance of illustrated conditions by attaching their endorsement to each Drawing.

~~~~ **PROJECT NOTE** ~~~~~

IF GUARANTEE AND WARRANTIES IN 26 01 00 ISN'T SUFFICIENT, INCLUDE THE FOLLOWING AND ADD SPECIFIC REQUIREMENTS.

~~~ **END OF PROJECT NOTE** ~~~

**1.7 GUARANTEE AND WARRANTIES**

**1.8 CLOSEOUT DOCUMENTS**

- A Record Drawings:
1. Record Drawings shall indicate the location of all concealed conduits .
  2. Record Drawings shall indicate rated walls where firestop materials have been applied.
- B Operating and Maintenance Manual (OMM)
1. Once submittals are completed, provide an OMM index to the Engineer for review. Once index is approved, submit an electronic copy of the OMM to the Engineer for acceptance.
  2. Furnish electronic Portable Document Format (PDF) of Operating and Maintenance Manuals.
  3. Each OMM shall be assembled into electronic file or multiple files broken up by section if the file size is larger than 15Mb.
  4. Combine all electronic files and arrange as follows. If a section listed below does not apply to the Project, renumber sections accordingly. Multiple files broken up by section are allowed if file size is greater than 15Mb.
    - a. First Page --- Title of Project, Address, Date of Submittal, Name of Contractor and Name of Engineer, including contact information, phone number and email addresses.
    - b. Second Page --- Index. Index shall include hyperlinks to each section listed.
    - c. First Section --- Written description of system contents including where actually located in building, how each part functions individually, and how system works

- as a whole. Conclude with a list of items requiring service and either state the service needed or refer to the Manufacturer's data in the file that describes the proper service.
- d. Second Section --- A copy of each shop drawing and catalog data sheet with an index at the beginning of the section. Index shall include hyperlinks to each item listed.
  - e. Third Section --- A copy of each Manufacturer's operating and maintenance instructions with an index at the beginning of the section, and a copy of each Manufacturer's start up report.
  - f. Fourth Section --- A copy of each wiring diagram utilized in the installation.
  - g. Fifth Section --- A copy of all test results, in chart form, performed by the Contractor.
  - h. Sixth Section --- Copies of all warranties, approvals, etc.
  - i. Seventh Section --- Training sign-in sheets and a list of all digitally recorded training sessions.
    - 1) Include electronic format of all recorded training sessions on portable memory device (Optical media or USB).
  - j. Eighth Section --- Record Drawings.
  - k. Ninth Section --- A list of attic stock furnished for the project.
  - l. An index shall be included at the beginning of each individual section.
5. The electronic OMM shall be delivered to the Owner and Engineer on portable memory device or other optical media – Owner shall be provided with up to 5 copies on separate portable memory devices or optical media and the Engineer shall be provided with a single copy.
- a. OMM index page shall have cross-reference links to each section.
  - b. Sections containing more than 30 pages shall have a section index with cross-reference links.
  - c. PDF text shall be recognizable and shall be searchable by use of a "Ctrl-F" or "find text" function.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING ON PROJECTS WHERE TRAINING IS REQUIRED. KEEP UNLESS OTHERWISE DIRECTED.

~~~ **END OF PROJECT NOTE** ~~~

**1.9 DEMONSTRATION AND TRAINING**

- A Before final payment, demonstrate to the Owner's satisfaction the proper operation of each of the systems provided as part of the Contract Documents.
- B Provide to Owner after all equipment, systems and controls are in operation and at an agreeable time, instructions for the purpose of training Owner's maintenance personnel in the operation and maintenance of all Electrical equipment, systems, and controls.
- C Provide a "sign-in" sheet at each training session. A copy of each "sign-in" sheet shall be included in the Operating and Maintenance Manual.
- D The Contractor shall video record training sessions for systems if required in other Specification sections. Turn one copy of each on DVD over to the Owner upon completion as

part of Operating and Maintenance Manual. Coordinate preferred type of recording media with the Owner.

- E Refer to individual Division 26 sections for minimum time periods for training. When a minimum time period is not listed, provide sufficient time to thoroughly demonstrate the proper operation of the equipment or system as requested by the Owner.
- F Deliver to the Owner all special tools and appurtenances for proper operation and maintenance of the equipment provided and request receipt for same. Attach to the Contractor's request for final payment.

## PART 2 PRODUCTS

### 2.1 NOT USED

## PART 3 EXECUTION

### 3.1 COORDINATION

- A Consult the Contract Documents and Submittals pertaining to the work for other trades. Review the field layouts for all trades and make adjustments accordingly in laying out the Division 26 work.
- B Examine the work of all other trades when it comes in contact with, or is covered by, work in this Division. Do not attach to, cover up, or finish against any defective work, or install work in a manner which will prevent proper installation of the work of other trades. Electrical Contractor shall be responsible for the costs of adjustments required.

### 3.2 PRODUCT HANDLING

- A Pay all costs for transportation of materials and equipment to job site.
- B Provide all scaffolding, tackle, hoists, rigging necessary for placing electrical materials and equipment in their proper place. Scaffolding, hoisting equipment: comply with applicable Federal, State, and Local regulations. Remove temporary work when no longer required.
- C Arrange for packaging of equipment, which must be hoisted, so that there will be no damage or distortion caused by hoisting operation.
- D Store Electrical equipment, etc., in a dry location and protect all Electrical equipment from dirt and moisture until the building is ready to receive them.
- E Coordinate location of stored items with other trades. Where necessary, store materials and equipment on movable carts so they may be moved when interfering with the work of other trades.

### 3.3 DAMAGE AND EMERGENCY REPAIRS

- A Assume responsibility for any damage to new or existing building components caused by work provided as part of Contract Documents. Repair all damage without extra cost to Owner.
- B Owner reserves the right to make emergency repairs as required to keep equipment in operation, without voiding Contractor's guarantee or relieving him of responsibility during warranty period.

### 3.4 CLEANING

- A At all times keep premises and building in neat and orderly condition, follow explicitly any instructions in regard to storing of materials, protective measures and disposing of debris.

- B After all tests and adjustments have been completed, clean all equipment leaving everything in working order at the completion of this work. Clean all equipment of dirt, dust, grease, oil, debris and paint, after all other trades have completed their work.
- C All debris created by the execution of this work shall be removed as directed by the Architect or Owner.
- D Upon completion of work remove all tools, equipment, and surplus materials.

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING SECTION FOR RENOVATION PROJECTS AND NEW PROJECTS WITH PHASING WHERE OCCUPIED AREAS ARE ADJACENT TO THE CONSTRUCTION AREA WHEN THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE NECESSARY IAQ EQUIPMENT.

ALTHOUGH ANOTHER TRADE MAY PROVIDE THE IAQ REQUIREMENTS FOR THE PROJECT, THERE MAY BE SPACES OUTSIDE THE PROJECT SITE WHERE THE ELECTRICAL CONTRACTOR HAS TO MAKE A TIE-IN AND EXTEND SERVICES TO THE PROJECT SITE - VERIFY ON A PER PROJECT BASIS.

~~~ **END OF PROJECT NOTE** ~~~

**3.5 INDOOR AIR QUALITY**

- A Provide temporary ventilation and/or filtration systems of sufficient size and quantity to ensure complete removal of all odors, fumes, and airborne contaminants generated. Maintain 25 feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.
- B If the building HVAC system is used and adjustments are made for ventilation purposes, rebalance systems to maintain occupied areas pressurization and air change requirements.
- C Arrange with Owner to override the HVAC system control of night setback functions to assist with ventilation of building.
- D Comply with SMACNA guideline "IAQ Guidelines for Occupied Buildings Under Construction" Second Edition - 2007.

**END OF SECTION 260101**

~~~~ **PROJECT NOTE** ~~~~~

THIS SECTION SHALL BE USED FOR ALL RENOVATION PROJECTS REQUIRING DEMOLITION.

WHEN A SEPARATE DEMOLITION PACKAGE IS ISSUED SEPARATE FROM THE REMAINDER OF THE PROJECT, ALSO INCLUDE THIS SECTION.

THE STANDARD IS TO REMOVE ALL EQUIPMENT, CONDUIT, CONDUCTORS AND DEVICES NO LONGER REQUIRED.

DO NOT ABANDON CONDUCTORS IN PLACE PER NEC. IF CONDUIT IS ABANDONED, IT IS RECOMMENDED THAT "INACTIVE/SPARE" LABELING AND SIGNAGE IS PROVIDED.

~~~~ **END OF PROJECT NOTE** ~~~~~

**SECTION 260200 - ELECTRICAL DEMOLITION**

**PART 1 GENERAL**

**1.1 WORK INCLUDES**

- A Electrical equipment indicated on the Demolition Drawings is shown to indicate the extent of demolition only and is not intended to be a record drawing of the existing conditions. The Drawings and Specifications establish the minimum standards for workmanship and materials.
  - 1. If additional interpretation is required regarding the scope of demolition, contact the Engineer prior to bid.
- B Visit the site and become familiar with conditions affecting the demolition work. No additional compensation shall be approved on claims that arise from a lack of knowledge of the existing conditions.
- C Include all labor, materials, equipment, services, and permits necessary for completion of the demolition work.
- D Normal building functions shall be maintained during the demolition work. Coordinate the day and time of any temporary building system interruptions with the Owner. Additional compensation shall not be approved for premium time effort.
- E Provide protection for all adjacent areas before, during and after execution of the demolition work.
- F "Electrical equipment" as used in this section shall refer to lighting fixtures, light switches, receptacles and all other power connection system devices.

**1.2 QUALITY ASSURANCE**

- A Comply with all the rules and regulations of local and state Authorities Having Jurisdiction, including applicable OSHA safety requirements.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A Provide materials and equipment for completion of the demolition work as described within the Specifications and on the Drawings.

PART 3 EXECUTION

**3.1 GENERAL DEMOLITION WORK**

- A Disconnect and remove the existing Electrical Work made necessary because of Project alterations as indicated or implied on the Contract Documents of all trades.
- B Existing electrical equipment and systems not affected by these changes shall remain and shall be protected whether shown on the Drawings or not.
- C Relocate equipment and/or devices where indicated. Maintain existing circuit continuity as described in the Specifications and on the Drawings, or as required for continued operation of the electrical equipment and systems.
- D The Contractor shall de-energize circuits and panel feeders as required to make areas being demolished safe for demolition work. Coordinate exact power shutdown procedures with the Owner. Maintain power to areas that cannot be de-energized as determined by the Owner. All work shown on Contract Documents assumes work is performed on de-energized equipment unless otherwise noted.
- E Demolition Work under this Contract shall be accomplished by the Contractor in complete accordance with the Construction Procedure and Progress Schedule. Proposal shall include any special phasing requirements related to demolition work as described elsewhere in the Specifications.
- F Where required, re-support existing conduits and cabling above ceilings being removed.
- G Electrically disconnect devices and equipment to be removed at the point of power supply and remove conduit and wiring complete to devices and equipment being removed. For building and mechanical equipment being removed by other trades, remove related disconnect switches, starters, and/or VFD's, as well as related conduit and wiring complete to the point of power supply.
- H Where building systems or circuits are interrupted because of the demolition work, Contractor shall reroute or relocate, modify, and reconnect to provide a continuous system.
- I Cutting, patching, and finishing, etc., for removed and relocated electrical equipment shall be included as part of the electrical work. All holes and damage caused by the demolition work shall be properly patched with suitable materials to match existing construction. Patching shall be performed by the qualified trade.
- J Where devices or conduits are removed from fire or smoke rated construction, penetrations shall be patched to match existing ratings with suitable materials to match existing construction. Patching shall be performed by the qualified trade. Where floor devices are removed, provide approved patching or fill components to maintain required fire ratings.
- K Existing electrical equipment shown as being reused or relocated shall be carefully removed, stored on the premises, and refurbished , where indicated, before reinstallation.
- L Cap existing empty conduits and plug open knockouts in existing electrical boxes or enclosures.
- M Remove and reinstall existing ceiling tiles in areas outside the scope of demolition work as required to complete the demolition work outlined within these Specifications or indicated on the Demolition Drawings. Damaged tiles shall be replaced to match existing.

**END OF SECTION 260200**

## **SECTION 260300 - ELECTRICAL BASIC MATERIALS AND METHODS**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Supporting Devices
- B Painting
- C Roof Curbs and Supports
- D Roof Flashings

#### **1.2 SUBMITTALS**

- A Refer to Sections 260100 and 260101 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.

#### **1.3 QUALITY ASSURANCE**

- A All equipment specified herein and in other specification sections shall be new unless otherwise noted on drawings to be removed and/or relocated.
- B All equipment specified herein and in other sections shall be UL listed for its intended use.
- C All equipment specified herein and in other sections shall be installed per manufacturer's requirements.
- D All equipment specified herein and in other sections shall be installed per National Electrical Contractors Association (NECA) standards as published by National Installation Standards (NEIS) for quality installation, workmanship, and performance.
- E All supporting devices shall conform to the latest requirements of ANSI Codes.
- F All supporting system miscellaneous steel shall be in accordance with American Institute of Steel Construction (AISC) Steel Construction Manual and as specified under other Divisions within these Specifications.

### **PART 2 PRODUCTS**

#### **2.1 SUPPORTING DEVICES**

- A All hardware, supports, hangers, brackets, angle iron, channels, rods, and clamps necessary to install Electrical equipment shall be provided to suit the field conditions and the applications intended as shown on the Drawings.
- B Provide inserts for support of work in concrete construction.
- C Provide forged steel beam clamps when attaching to steel construction.
- D Provide supplementary steel angles, channels, and plates where supports are required between building structural members.
- E Provide hangers, threaded rods, anchors, and all other miscellaneous specialties for the attachment of hangers and supports to structure.
- F Provide rods, angels, rails, struts, brace plates, and platforms required for suspension or support of, conduit and equipment.
- G Refer to Power Distribution Specification section 262100 for additional requirements for supporting panelboards.
- H Refer to Raceways, Enclosures, and Pathways section 260320 for additional requirements for supporting the electrical systems.

- I Supporting devices and hardware shall be galvanized steel or aluminum material.
  - 1. Acceptable manufacturers shall be:
    - a. Unistrut
    - b. Allied
    - c. Kindorf
    - d. Anvil

~~~~ **PROJECT NOTE** ~~~~~

KEEP WHEN EXPOSED CONDUITS ARE REQUIRED TO BE PAINTED TO MATCH FINISHED WALLS AND CEILINGS. COORDINATE IF REQUIRED WITH ARCHITECT.

~~~~ **END OF PROJECT NOTE** ~~~~~

**2.2 PAINTING**

- A Where exposed electrical systems and components are installed in finished areas, painting of systems shall be required.
- B Painting shall be provided by Division 26 Contractor as performed by qualified tradesman.
- C Materials and equipment installed under this Division shall be left free from dirt, grease, and foreign matter, ready for painting.
- D No equipment or conduits shall be field painted before being connected or terminated. Where in-field painting occurs, ensure components required for continuation of grounding systems are protected from paint until connected and installed.
- E Damaged surfaces of prefinished materials and equipment shall be touch-up painted to match the existing finish.
- F Indoor air quality during painting shall adhere to precautions specified elsewhere in these Specifications.
- G Under no circumstance shall painting of open cabling be acceptable.

**2.3 ROOF CURBS AND SUPPORTS**

- A Where curbs and supports are specified with HVAC equipment, electrical contractor may share the roof curb assembly for conduit roof penetration. Refer to drawings for details.
- B Where curbs and supports are specified for electrical-only installation, the EC shall provide the prefabricated roof curb for roof penetrations.
- C Units shall be 18 gauge galvanized steel, insulated, continuous welded seams, wood nailer, counterflashing of type and style as indicated.
- D The height of roof curbs and supports shall be a minimum of 18 inches, or 12 inches above the finished roof surface (whichever is greater). Total curb height shall accommodate the roof insulation thickness. Refer to details on drawings.
- E Acceptable manufacturers:
  - 1. Custom Curb
  - 2. Roof Products and Systems Corp.
  - 3. Pate
  - 4. Thycurb

## **2.4 ROOF FLASHINGS**

- A Roof flashings for electrical equipment are the responsibility of the contractor installing the equipment.
- B Where applicable, the existing roof warranty shall be maintained.

## **PART 3 EXECUTION**

### **3.1 GENERAL REQUIREMENTS**

- A Where fireproofing is removed to install supporting hardware, it shall be patched and re-installed using approved products.
- B The painting of electrical systems shall follow manufacturer's recommendations and shall not void warranty.

### **3.2 SUPPORTING DEVICES**

- A Design and install all miscellaneous steel in accordance with American Institute of Steel Construction (AISC) Steel Construction Manual and as specified under other Divisions within these Specifications.
- B Supporting devices shall be installed per manufacturer's recommendations and following current NECA standards for good workmanship. At minimum, the following supports shall be installed per the standards:
  1. Safe, permanent support systems adequately secured to the building structural components.
  2. Fasteners and support systems shall be sufficient to substantially secure the equipment in place.
  3. Supports shall be plumb, level, and true.
  4. When field cut, appropriate non-corrosive protection shall be provided, suitable for the equipment atmosphere.

## **END OF SECTION 260300**

## **SECTION 260310 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Copper Wire and Cable

#### **1.2 QUALITY ASSURANCE**

- A UL83 - Thermoplastic insulated wires and cables
- B UL 66, 83, 1479, 1581, 2566 - Standard for safety fixture wiring

#### **1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Provide test reports as described in Part 3 as part of O&M manuals.

### **PART 2 PRODUCTS**

#### **2.1 MATERIALS AND EQUIPMENT**

- A Materials and equipment installed under this Contract shall be new and of the quality herein specified.

#### **2.2 600V COPPER CONDUCTORS**

- A Wire and cable for branch circuits and feeders, 600 volt and below shall be 90°C., 600 volt rated, Type THHN/THWN-2, copper only, unless otherwise indicated on the Drawings. Type XHHW shall also be acceptable for feeders.
  - 1. Acceptable wire and cable manufacturers shall be:
    - a. Southwire
    - b. General Cable
    - c. Allied
- B All 600 volt wiring shall be installed in conduit. Conduit type shall be as specified elsewhere in these Specifications.
- C Where wire size is not indicated on the Drawings, use ampacity ratings of 60°C for wire 100 amperes and below, and 75°C for wire above 100 amperes, as listed in Table 310.16 of the National Electrical Code.
- D The minimum size for power and lighting branch circuits shall be #12. Wire sizes #10 and smaller may be solid or stranded. Wire sizes #8 and larger shall be stranded.

#### **2.3 CONDUCTOR IDENTIFICATION**

- A Identify wire and cable for branch circuits as follows:
  - 1. For 208Y/120V, 3-phase, 4-wire systems, phase A/B/C shall be black/red/blue respectively with white neutral and green ground conductors.
  - 2. For 480Y/277V, 3-phase, 4-wire systems, phase A/B/C shall be brown/orange/yellow with gray neutral and green ground conductors.
- B Acceptable color coding of feeders shall be by means of colored tape or colored conductor sheath.
- C Provide all branch circuits wiring with adhesive label indicating circuit number at the phase and neutral conductor at the termination location in each panelboard.

## 2.4 CONTROL WIRES

- A Control wires shall be #14 stranded THWN copper.
- B All control wiring shall be terminated with fork-type connectors.
- C Acceptable control wiring connector manufacturers shall be:
  - 1. Stay-Kon
  - 2. Engineer approved equal

## 2.5 TERMINATIONS, JOINTS, AND SPLICES

- A Joints in conductor size #10 and smaller shall be made with wire connectors UL listed for their intended use.
  - 1. Acceptable manufacturers shall be:
    - a. 3M "Scotch locks"
    - b. Ideal Industries "Wire nut"
    - c. Thomas and Betts "Marrette"
- B Joints shall be additionally secured with pressure sensitive electrical tape.
- C Where joints are subjected to wet or damp conditions, including all indoor or outdoor/underground installations, provide cold shrink splice kits.
  - 1. Acceptable manufacturers shall be:
    - a. Raychem GHFC-1-90
    - b. Blackburn WR9
    - c. Brundy YPCZA8U
- D Joints and splices in conductor size #8 and larger shall be made with a clear, insulated conductor splice kit.
  - 1. Approved manufacturers shall be:
    - a. Allen Bradley
    - b. Burndy
    - c. IlSCO
- E Splices in wireways, where indicated on Drawings, where an incoming feeder conductor is spliced to serve multiple outgoing conductors shall be provided with a clear, insulated Multi-tap conductor kit.
  - 1. Acceptable manufacturers shall be:
    - a. Hubbell
    - b. Burndy
    - c. IlSCO

## PART 3 EXECUTION

### 3.1 CONDUCTOR - CIRCUITING REQUIREMENTS

- A Conductors shall be installed in all lighting and appliance panelboards, power distribution panelboards, switchboards, in a neat and workmanlike manner per NEC requirements and NECA standards.
- B Conductors coiled in excess, and draped wiring are not permissible.
- C Splices and joints are not acceptable in panelboards, switchboards.
- D Neutral conductors shall not be shared.

~~~~ **PROJECT NOTE** ~~~~~

ENGINEER MAY MODIFY FOR SPECIAL CONDITIONS - SUCH AS BRANCH CIRCUITS SERVING POWERED FURNITURE SYSTEMS. DE-RATE WIRING PER THE NATIONAL ELECTRICAL CODE. SELECT TWO CIRCUITS FOR SINGLE PHASE DISTRIBUTION SYSTEMS.

~~~ **END OF PROJECT NOTE** ~~~

- E Individual branch circuits are shown on the Drawings for clarity. .
- F Where applicable, 120 volt branch circuits where size is not shown, conductor size #12 minimum shall be used for circuits less than 125 feet, and size #10 minimum shall be used for circuits 125 feet or greater. Ground conductors shall also be increased to #10 accordingly.
- G Where applicable, 277 volt branch circuits where size is not shown, conductor size #12 minimum shall be used for circuits less than 250 feet, and size #10 minimum shall be used for circuits 250 feet or greater. Ground conductors shall also be increased to #10 accordingly.

**3.2 CONDUCTOR - GENERAL INSTALLATION REQUIREMENTS**

- A It is the Contractor's responsibility to coordinate termination lug sizes with the corresponding conductor sizes shown on Drawings, including but not limited to all mechanical equipment, and all other equipment requiring an electrical termination. Coordinate during submittal phase, prior to procurement of Electrical equipment.
- B Any compression cable adapters required shall be provided and shall be listed for the intended current carrying capacity of the conductors specified.
- C Mechanical means may be used to pull conductor size #4 and larger.
- D All mechanical wire and cable terminations shall be torque tightened with a torque wrench or a torque screwdriver to Manufacturer's recommended torque values.
- E Pull wire and cables into conduit using pulling lubricants UL listed for their intended use.
- F Leave 6 inches free wire at all outlet boxes for wiring device connection.

**3.3 CONDUCTOR TESTING**

- A Tests, Start Ups and Adjustments
  - 1. During the construction period provide the following tests. Results of the following tests shall be provided at the completion of the project as part of O&M manuals:
    - a. Voltage and confirmation that voltage is within acceptable tolerance.
    - b. Ground ohm readings and confirmation that readings are within acceptable tolerance.

**END OF SECTION 260310**

## **SECTION 260320 - RACEWAYS, ENCLOSURES, AND PATHWAYS**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Boxes and Enclosures
- B Conduits
- C Conductor sealants and splice kits

#### **1.2 QUALITY ASSURANCE**

- A Materials and equipment specified shall be new, UL listed for their intended use and of the quality specified herein.
- B UL 797, ANSI C80.3 standard for electric metallic tubing
- C UL standard 6 for galvanized rigid conduit
- D UL standard 6A for rigid aluminum conduit
- E UL 2420 standard for fiberglass conduit
- F UL 50 - Enclosures for Electrical Equipment

#### **1.3 SUBMITTALS**

- A Refer to Sections 260100 and 260101 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.

### **PART 2 PRODUCTS**

#### **2.1 BOXES AND ENCLOSURES - GENERAL APPLICATIONS**

- A Junction boxes and pull boxes for electrical systems shall be 4 inch x 4 inch x 2 inch deep minimum, or sized in accordance with the National Electrical Code if a larger box is required.
- B Surface mounted device boxes shall be stamped steel UL listed for their intended use.
- C Masonry wall device boxes shall be 4-inch square boxes with raised cover plates UL listed for masonry construction.
- D Exterior device boxes shall be cast aluminum type. Where outdoor weatherproof receptacles are installed, weatherproof gasketing shall be provided.
- E Provide identification on junction box cover plates as described elsewhere in these Specifications.
- F Acceptable manufacturers shall be:
  - 1. Crouse Hinds
  - 2. Cooper
  - 3. B-Line

#### **2.2 CONDUIT TYPES**

- A Electrical Metallic Tubing (EMT) - Steel
  - 1. Hot galvanized exterior and interior coating for corrosion protection.
  - 2. 10' lengths
  - 3. Acceptable manufacturers shall be:
    - a. Allied
    - b. Western Tube
    - c. Wheatland Tube

- B Galvanized Rigid Steel Conduit (GRC)
  - 1. Hot galvanized exterior with corrosion resistant interior coating for smooth pulling surface.
  - 2. 10' lengths
  - 3. Acceptable manufacturers shall be:
    - a. Allied
    - b. Wheatland Tube
    - c. Cal-Bond
- C Aluminum Rigid Conduit (ARC)
  - 1. High purity 6063 aluminum alloy
  - 2. 10' lengths
  - 3. Acceptable manufacturers shall be:
    - a. Allied
    - b. ABB (Thomas and Betts)
    - c. Robroy
- D Flexible Metal Conduit
  - 1. UL Listed flexible raceways for intended use.
  - 2. Acceptable manufacturers shall be:
    - a. Allied
    - b. ABB
    - c. Electri-flex
- E Flexible Liquid-tight Metal Conduit
  - 1. UL listed liquid-tight/seal-tight for intended use.
  - 2. Acceptable manufacturers shall be:
    - a. Allied
    - b. ABB
    - c. Electri-flex

~~~~ **PROJECT NOTE** ~~~~~

REVIEW SECTION 2.5 FOR WHERE YOUR PROJECT HAS APPLICABLE CONDUIT TYPES. WHEN COMPLETE, REMOVE CONDUIT TYPES IN SECTION 2.4 THAT ARE NOT APPLICABLE. ALSO REMOVE CONDUIT TYPES THAT ARE NOT ACCEPTABLE BY OWNER'S STANDARDS OR ENGINEER PREFERENCE.

~~~ **END OF PROJECT NOTE** ~~~

**2.3 CONDUIT APPLICATIONS AND REQUIREMENTS**

- A Conduit type in the following area where applicable:
  - 1. Interior wall construction for electrical and technology system rough-ins
  - 2. Acceptable conduit types:
    - a. Electric Metallic Tubing - Steel (EMT)
- B Conduit type in the following areas where applicable:
  - 1. Exterior masonry walls on exterior side of vapor barrier
  - 2. In masonry walls below grade
  - 3. Damp, wet locations

4. Where exposed conduits are located in high traffic areas susceptible to damage from motorized equipment and processes within the building.
5. Acceptable conduit types:
  - a. Galvanized Rigid Conduit (GRC)
- C Conduit type in the following areas where applicable:
  1. Roof mounted conduits serving mechanical equipment.
  2. Roof mounted conduits for feeders where roof mounted installation is approved by architect/engineer and owner.
  3. Acceptable conduit types:
    - a. Galvanized Rigid Conduit (GRC)
- D Conduit type in the following areas where applicable:
  1. Connections to motors
  2. Connections to vibrating equipment with or without isolators.
  3. Acceptable conduit types:
    - a. Flexible Metal Conduit
    - b. Flexible Seal-tight/Liquid-tight Metal Conduit

#### **2.4 CONDUIT TYPES AND INSTALLATION COMPONENTS**

- A Conduits for electrical systems shall be  $\frac{3}{4}$  inch trade size, minimum, unless otherwise noted on the Drawings or within these Specifications. Where sizes are not shown, conduits shall be as required to accommodate the number and type of conductors in accordance with the National Electrical Code wiring tables but shall not be smaller than  $\frac{3}{4}$  inch.
- B Electrical Metallic Tubing (EMT)
  1. EMT shall be installed utilizing the following methods:
- C Galvanized Rigid Steel Conduit (GRC)
  1. GRC shall be installed utilizing the following methods:
    - a. Heavy wall galvanized rigid steel shall have threaded fittings. Where installed in wet locations, fittings shall be UL listed for intended use with identifying color for inspection.
    - b. Galvanized rigid steel conduits shall include product to treat conduit end after cutting per manufacturer's requirements to prevent corrosion.
- D Flexible Metal Conduit
  1. Flexible metal conduit shall be installed utilizing the following methods:
    - a. Conduit shall be of the same size as the feeder conduit.
    - b. Such connections shall be as short as practical.
    - c. Transition to flexible conduit shall occur at a junction box, a disconnect switch or equipment enclosure.
- E Flexible Liquid-tight/Seal-tight Metal Conduit
  1. Flexible metal conduit shall be installed utilizing the following methods:
    - a. Conduit shall be of the same size as the feeder conduit.
    - b. Such connections shall be as short as practical.
    - c. Transition to flexible conduit shall occur at a junction box, a disconnect switch or equipment enclosure.

PART 3 EXECUTION

**3.1 BOXES AND ENCLOSURES**

- A Boxes, fittings, and mounting accessories shall be appropriate, and shall follow NECA standards for quality installation.
- B All boxes shall be rigidly supported from the building structure independent of the conduit system.
- C Box stabilizers shall be utilized to properly support boxes in metal stud construction.
- D Boxes cast into masonry or concrete are considered to be rigidly supported.
- E Boxes shall be level and plumb to accommodate flush device and cover plate for final device installation.
- F All outlet boxes for receptacles shall be centered with regard to paneling, trim equipment, etc., and shall line up with either bottom or top of masonry courses. Changes to the specified mounting heights of any device shall be approved by the Architect/Engineer prior to rough-in.
- G Boxes concealed in masonry construction shall be installed during wall construction.
- H Changes will not be permitted where such changes conflict with ADA mounting height requirements.

**3.2 CONDUIT INSTALLATION - GENERAL LOCATIONS**

- A All conduits listed as acceptable for installation indicated herein shall be installed in accordance with manufacturer's requirements, including appropriate fittings and adhesives as applicable.
- B Conduit installation shall include materials to protect the floor when conduit bending equipment is utilized.
- C Coordinate and install all conduits for all systems as described in Specification Section 260101.
- D Conduits shall be supported in accordance with the National Electrical Code.
- E Conduits shall be installed per current NECA standards for good workmanship. Installation shall include, but not limited to the following requirements:
  - 1. Compensation for temperature fluctuation causing expansion and contraction of conduit.
  - 2. Supports and spacing as described in section 260300 and herein.
  - 3. Continuity and bonding of conduit to comply with NEC as effective grounding and bonding path.
  - 4. Splices and taps within the conduit are strictly prohibited.
- F Conduits installed in all interior construction shall be concealed in new construction, unless noted otherwise on the Drawings.
- G Conduit supporting systems shall be attached to the deck, slab, or structural framing only and not to any other appurtenances at the ceiling such as mechanical ducts, pipes and suspended ceiling hanger wires, framing members, etc.
- H Conduit routing shall be installed to suit the various field conditions. Any field changes necessary to conceal conduit or to avoid work of other trades shall be made without additional expense.

- I Conduits shall be continuous and secured to all boxes in such a manner that each conduit system shall be electrically continuous from the point of service to all device boxes.
- J Conduits shall be furnished with locknuts and insulating bushings.
- K Conduits shall have ends plugged with an approved cap to prevent the entrance of foreign materials during construction.
- L Flexible metal conduit for motors and vibrating equipment shall be kept at a minimum length as required by the National Electrical Code.
- M Conduits concealed in masonry construction shall be installed during wall construction.
- N Conduits installed in concealed construction shall be parallel to, or at right angles to building structural members. Vertical runs shall be plumb.
- O Conduits installed in exposed areas shall be parallel to, or at right angles to building structural members. Vertical runs shall be plumb.
- P Conduits terminating in sheet metal enclosures shall be provided with a single grounding/bonding type locknut with a set screw.
- Q Conduits exposed within enclosures shall be provided with insulated bushings.
- R Conduits crossing expansion joints shall be provided with expansion fittings.
- S Conduits, boxes or other raceway systems that penetrate through fire rated floors, walls, ceilings, decks, smoke partitions, etc. shall be constructed so as to maintain the integrity of the fire or smoke rated areas. Penetrations shall not exceed an aggregate area of 1 square foot in any 100 square feet of surface area, or as dictated by local codes.

~~~~~ **PROJECT NOTE** ~~~~~

FOR BIM MODEL COORDINATION, INDICATE THIS WHERE APPLICABLE.

~~~~ **END OF PROJECT NOTE** ~~~~

- T A separation of 12 inches minimum is required between conduits and hot water piping, steam piping, and similar system piping.
- U Conduits shall not be installed on the exterior walls or on the roof of the building, unless approved by Architect/Engineer and Owner and as noted on the Drawings.

**3.3 CONDUIT INSTALLATION IN DAMP AND WET LOCATIONS**

- A Conduits in wet or damp areas shall be watertight. Joints shall be sealed with waterproof sealing compound.
- B Contractor shall provide covers during Construction to prevent water from entering conduits.

**END OF SECTION 260320**

**SECTION 260340 - WIRING DEVICES**

**PART 1 GENERAL**

**1.1 WORK INCLUDES**

- A Receptacles
- B Coverplates and Associated Identification

**1.2 QUALITY ASSURANCE**

- A Materials and equipment specified shall be new, UL listed, and of the quality specified herein.
- B UL 498 – Attachment plugs and receptacles.

**1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.

**PART 2 PRODUCTS**

**2.1 MATERIALS AND EQUIPMENT**

- A Materials and equipment installed under this Contract shall be new and of the quality herein specified.

**2.2 RECEPTACLES**

~~~~~ **PROJECT NOTE** ~~~~~

FOR DWELLINGS, DORMS, AND GUEST ROOMS WHERE ARC-FAULT CIRCUIT INTERRUPTION IS REQUIRED, KE DESIGN STANDARD IS TO UTILIZE CIRCUIT BREAKERS.

~~~ **END OF PROJECT NOTE** ~~~

- A Duplex receptacles shall be Heavy Duty tamper resistant, 20A, 125V, 2 pole, 3 wire grounding type as follows:

~~~~~ **PROJECT NOTE** ~~~~~

EDIT THE LIST BELOW AS APPLICABLE. CHOOSE KE STANDARD HEAVY DUTY (OR DECORATIVE-RECTANGULAR AND WHERE APPLICABLE).

~~~ **END OF PROJECT NOTE** ~~~

- 1. Heavy duty tamper resistant duplex receptacles:
  - a. Hubbell # HBL5362TR.
- 2. Heavy duty tamper resistant ground fault duplex receptacles:
  - a. Hubbell # GF5362SG.
- 3. Heavy duty tamper resistant wet/damp location, weather resistant ground fault duplex receptacles:
  - a. Hubbell # GF5362SG.
- B Faceless ground fault circuit interrupter device shall be, self testing, 20A, 125V, 2 pole, 3 wire grounding with LED status indicator.
  - 1. Hubbell # GFBFST20.
- C All types listed herein acceptable equivalent manufacturers shall be:

1. Pass and Seymour
2. Cooper
3. Leviton

### **2.3 DEVICE COLOR REQUIRMENTS**

- A Receptacles an served by the normal electrical system shall be ivory unless otherwise indicated within these Specifications.
- B Verify device color for the normal electrical system with the engineer

### **2.4 DEVICE COVERPLATE REQUIREMENTS**

- A Coverplates shall be procured by the same Manufacturer as the device.
- B Coverplate color for devices served by the normal electrical system shall match the device color.
- C Coverplate color shall be verified with the Engineer prior to procurement of the coverplates.

### **2.5 DEVICE COVERPLATE IDENTIFICATION REQUIREMENTS**

#### *~~~~ PROJECT NOTE ~~~~~*

CHOOSE FROM TWO SELECTIONS BELOW. CHOOSE WHEN STANDARD LABELING ON REAR OF PLATE IS REQUIRED. IF SPECIFIC LABELING IS REQUIRED SUCH AS ENGRAVING, CHOOSE SELECTION BELOW AND ALSO EDIT 250500.

#### *~~~ END OF PROJECT NOTE ~~~*

- A The inside of all coverplates shall be permanently marked to identify panel and circuit number using the following acceptable method:

### **2.6 DEVICE COVERPLATE TYPES**

- A Coverplates for receptacles shall be as described below:
  1. #302 stainless steel
- B In unfinished areas, use cadmium plated, round corner, steel coverplates for surface mounted outlet boxes.
- C Weatherproof receptacle covers in damp locations shall be single gang, GFCI duplex type, flip-up/self-closing type, die cast aluminum, UL Listed for wet locations while in use.

### **2.7 DEVICES IN SPECIAL APPLICATIONS**

- A Where applicable, Roof mounted receptacle assembly shall be NEMA 3R UL listed for intended use. The device shall be mounted to roof structural component, with single roof penetration for conduit. The device shall not require additional support. The device shall be 30" high. The device shall be sized to support ¾" conduit for 20 amp receptacles.
  1. Acceptable manufacturers shall be:
    - a. Orbit Industries
    - b. Engineer approved equivalent.

## **PART 3 EXECUTION**

### **3.1 RECEPTACLES**

- A Installation of devices shall follow NECA standards for quality installation and workmanship. Devices shall be installed such that the cover plates can also be mounted flush, level, and plumb.

Alterations For: Board of Commissioners for Richland County Courthouse AC Upgrade

- B Mounting heights to the center of outlet boxes shall be as indicated on the Drawings.
- C Verify mounting heights and locations with the Architect before rough-in. Refer to details and interior wall elevations shown on the Architectural Drawings.
- D Verify and adjust box gaps and setbacks are compliant with all NEC code requirements.
- E Where applicable, provide individual duplex GFCI receptacles as shown on the Drawings. Standard receptacles wired to "upstream" GFCI receptacle for GFCI protection shall NOT be acceptable. GFCI receptacles shall not be through-wired.
- F Faceless GFCI devices shall be provided with label or engraving on coverplate to indicate the equipment on load side of device. Label or engraving shall match adjacent device labeling requirements indicated in specification section 260500.
- G Where devices are protected by either GFCI receptacles or a GFCI overcurrent protective device, they shall be provided with labels or engraving on coverplate to indicate the equipment on load side of device. Label or engraving shall match adjacent device labeling requirements indicated in specification section 260500.
- H Adjacent devices of the same voltage class shall be mounted in ganged boxes. Provide a common multi-gang cover plate.
- I All receptacles shall be installed with the ground opening above the phase and neutral openings.
- J Where applicable, horizontally mounted receptacles shall be installed with the neutral opening above the phase opening.
- K All devices shall be secured with more than a single screw. Torque as required by the manufacturer.
- L Coverplates shall be installed after final painting and wall finishes.

**END OF SECTION 260340**

**SECTION 260400 - ELECTRICAL FIRESTOPPING**

~~~~ **PROJECT NOTE** ~~~~~

THIS SPECIFICATION IS TO BE EDITED BY THE PROJECT MANAGER OR THE PERSON ASSIGNED BY THE PROJECT MANAGER.

WHEN THE ARCHITECT IS OUR CLIENT, THIS SPECIFICATION MUST BE COORDINATED IN DETAIL WITH THE ARCHITECT. UNDER NORMAL CIRCUMSTANCES, FIRESTOPPING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION AS IT RELATES TO THEIR WORK. HOWEVER, SEVERAL CLIENTS HAVE THE DIVISION 7 CONTRACTOR FURNISH AND INSTALL FIRESTOPPING. EDIT THIS SECTION ACCORDINGLY. SEE THE FOLLOWING TO ASSIST WITH THIS COORDINATION:

E:\05 - MASTER SPECIFICATIONS\Common Specifications\Project Specification Coordination.docx

THIS SPECIFICATION DOES NOT INCLUDE THE OPTION WHERE THE PRODUCTS ARE FURNISHED BY THE DIVISION 7 CONTRACTOR AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION.

2024 OBC 714.6 AND 2021 IBC 714.6 REQUIRE FIRESTOPPING OF NON-FIRE RATED FLOORS (EXCEPTION: SLAB ON GRADE FLOORS). INCLUDE THIS SPECIFICATION SECTION IF PENETRATIONS ARE TO BE MADE THROUGH FLOORS REGARDLESS OF THE FIRE RATING.

AFTER THE SPECLINK CHECKLIST IS COMPLETE, THE PROJECT MANAGEMENT SPECIALIST OR TRAINED STAFF WILL CREATE A SEPARATE FIRESTOPPING SPECIFICATION FOR EACH DIVISION. IN THE COPY MENU, REPLACE "20" IN THE SECTION ID WITH EACH RESPECTIVE DIVISION NUMBER: 21, 22, 23, 26, & 27. REPLACE "COMMON" IN THE SECTION NAME WITH EACH DIVISION NAME: "FIRE PROTECTION", "PLUMBING", "HVAC", "ELECTRICAL" AND "TECHNOLOGY". REPLACE "USER" WITH "KE" IN THE SUFFIX FIELD. SPECLINK WILL AUTOMATICALLY UPDATE THE SECTION ID AND NAME IN BOTH THE FIRST AND LAST LINES OF THE SECTION TEXT.

AFTER EACH DIVISION'S FIRESTOPPING SPECIFICATION IS CREATED, THE PERSON ASSIGNED TO THAT DIVISION MUST EDIT THEIR SPECIFIC DIVISION. PAY CLOSE ATTENTION TO AND EDIT: ARTICLE 1.1 WORK INCLUDES - PENETRATING ITEMS SHALL INCLUDE THE FOLLOWING:

ALSO, IN ARTICLE 1.3 SUBMITTALS - UPDATE THE SECTION ID AS APPLICABLE.

AFTER EACH DIVISION'S FIRESTOPPING IS EDITED, IT IS THE PROJECT MANAGER'S RESPONSIBILITY THAT IF ANY CHANGES ARE MADE, ALL DIVISION'S FIRESTOPPING IS REVISED ACCORDINGLY.

~~~~ **END OF PROJECT NOTE** ~~~~~

PART 1 GENERAL

**1.1 WORK INCLUDES**

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING IF FIRESTOPPING IS FURNISHED AND INSTALLED BY THE CONTRACTOR MAKING THE PENETRATION. COORDINATE WHO IS SPECIFYING THE PRODUCTS

WITH ARCHITECT AND EDIT PART 2 - PRODUCTS ACCORDINGLY.

~~~ **END OF PROJECT NOTE** ~~~~

- A Work of this Section includes, but is not limited to, furnishing and installing firestopping for fire-rated construction in the following areas:
1. All openings in fire-rated floor, wall, ceiling and roof assemblies, both empty and those accommodating penetrating items.
  2. Openings at each floor level in shafts or stairwells.
  3. Empty openings intentionally designed as spare openings in fire rated Construction.

~~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION.

~~~ **END OF PROJECT NOTE** ~~~~

- B Penetrating items shall include the following:
1. Cables.
  2. Conduit.
  3. Pipes without insulation.
  4. Pipes with insulation. All insulation must remain intact, undamaged and shall run continuously through walls and floors.
  5. Ductwork without fire dampers. Where insulated, all insulation must remain intact, undamaged and shall run continuously through walls and floors.
  6. Raceways.

## 1.2 QUALITY ASSURANCE

- A General
1. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings required by local building code and as tested by nationally accepted test agencies per fire tests in a configuration that is representative of field conditions. The F rating must be a minimum of one (1) hour but not less than the fire resistance of the assembly being penetrated.
  2. Manufacturer's engineering judgments will be accepted for non-standard applications or where no tested system exists. Drawings for engineering judgments must indicate the UL tested system or systems upon which the judgment is based, in order to evaluate the engineering judgment against a known performance. Engineering judgments shall be approved by the Architect.
  3. Firestopping materials and systems shall be capable of closing or filling openings created by:
    - a. The burning or melting of combustible materials.
    - b. Deflection of materials due to thermal expansion.
  4. Firestopping material shall be non-halogenated, lead and asbestos free and shall not incorporate nor require the use of hazardous solvents.
  5. Firestop products which dissolve in water after curing are not acceptable.
  6. Firestopping materials shall not shrink upon drying as evidenced by cracking or pulling back from contact surfaces.

7. All firestopping materials shall be manufactured by one manufacturer (to the maximum extent possible).
- B Engage an experienced installer who is certified, licensed or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install firestop products per specified requirements. A manufacturer's willingness to sell its through-penetration firestop system products to a Contractor or to an installer engaged by Contractor does not in itself confer qualifications on buyer.
  - C Manufacturer's Field Representative: The Manufacturer of the firestop material of this Section shall provide a qualified field representative at the site.
  - D Pre-Installation Conference: Contractor shall hold a pre-installation conference with representatives of the Engineer, Contractor, Installer, Materials Manufacturer and various trades involved in the Work, to review conditions affecting the installation and consistency of manufacturer to be used by all trades.
  - E Conform to Manufacturer's printed instructions for installation in accordance with a U.L rated system or Manufacturer's engineering judgement.
  - F Codes and Standards
    1. ASTM E 84
    2. ASTM E 119
    3. ASTM E 814
    4. UL 263
    5. UL 1479

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING FOR HEALTHCARE PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~~

6. NFPA 101

**1.3 SUBMITTALS**

~~~~ **PROJECT NOTE** ~~~~~

EDIT THE FOLLOWING BASED ON THE SPECIFIC DIVISION

~~~ **END OF PROJECT NOTE** ~~~~

- A Refer to Sections 2X 01 00 and 2X 01 01 for additional requirements.
- B All submittals shall conform completely to the requirements of the Contract Documents.
- C Product Data: For each type of material to be installed, literature shall indicate product characteristics, typical uses, performance, test data and Manufacturer's installation procedures.
- D Shop Drawings: Include U.L. rated system number and details for each type of penetration or configuration.
  1. Show typical installation details including:
    - a. Minimum and maximum allowable annular spacing.
    - b. Base material composition.

- c. Firestop materials selected.
  - d. Applied thickness required to achieve the hourly rating.
- E Where required, submit Product Data and Shop Drawings to the Authority Having Jurisdiction (AHJ) for review and approval. Information shall include the Manufacturer's assembly detail with UL system number, technical data and installation instructions for each penetration type occurring on the project.
- F Close-out Documents
- 1. Final approved product data and shop drawings of all materials installed shall be included in operating and maintenance manuals.
  - 2. Record Drawings shall indicate rated walls where firestop materials have been applied.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- A Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturer's labels identifying product and manufacturer, UL label, date of manufacturer; lot number; shelf life, if applicable; qualified testing and inspection agency's classification marking; and mixing instructions for multicomponent materials.
- B Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes. Materials shall be stored off the ground and protected from environmental conditions as required by manufacturer.
- C All firestop materials shall be installed prior to expiration of shelf life.

#### **PART 2 PRODUCTS**

~~~~ **PROJECT NOTE** ~~~~~

USE THE FOLLOWING PART 2 IF KE IS SPECIFYING FIRESTOP MATERIALS. DELETE IF ARCHITECT IS SPECIFYING MATERIALS AND REFER TO ALTERNATIVE PART 2.

~~~ **END OF PROJECT NOTE** ~~~

#### **2.1 GENERAL**

- A Firestopping materials shall meet the requirements specified herein.
- B For applications where combustible penetrants are involved, i.e. insulated or plastic pipe, a suitable intumescent material must be used.

~~~~~ **PROJECT NOTE** ~~~~~

INCLUDE THE FOLLOWING PARAGRAPH FOR LEED PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~

- C All firestopping materials shall have a maximum VOC limit of 250 g/L. Submittals shall include documentation indicating compliance with this requirement.

#### **2.2 ACCEPTABLE MANUFACTURERS**

~~~~~ **PROJECT NOTE** ~~~~~

THE FOLLOWING LIST INCLUDES MANUFACTURERS TYPICALLY USED ON KE PROJECTS. OTHER

MANUFACTURERS INCLUDE TREMCO, INC., NELSON FIRESTOP AND PROSET SYSTEMS. STI IS THE ONLY ACCEPTABLE MANUFACTURER FOR ALL CLEVELAND CLINIC, METRO HEALTH AND UH CASE MED CENTER PROJECTS. EDIT AS REQUIRED. HILTI IS THE ONLY KNOWN MANUFACTURER COMPATIBLE WITH PLASTIC FLOW-GUARD GOLD, CORZAN, AND BLAZEMASTER PIPING. ALL ARE COMPATIBLE WITH PVC AND CPVC.

~~~ **END OF PROJECT NOTE** ~~~~

- A Specified Technologies, Inc. (STI)
- B 3M
- C Hilti, Inc.

### **2.3 FIRESTOP MATERIALS**

- A Firestop Mortar
- B Intumescent Firestop Sealants and Caulks
- C Elastomeric Firestop Sealants and Caulks
- D Endothermic Firestop Sealants and Caulks
- E Firestop Putty
- F Firestop Pillows/Blocks
- G Fire Rated Pathways
- H Firestop Grommets
- I Firestop Collars
- J Wrap Strips
- K Cast in Place Devices
- L Firestop Foams
- M Composite Sheets
- N Intumescent Gaskets

### **PART 3 EXECUTION**

~~~~~ **PROJECT NOTE** ~~~~~

WHEN FIRESTOPPING IS FURNISHED AND INSTALLED BY THE DIVISION 7 CONTRACTOR INCLUDE THE FOLLOWING 3.1 COORDINATION AND OMIT ALL REMAINING PART 3 SECTIONS.

~~~ **END OF PROJECT NOTE** ~~~~

### **3.1 COORDINATION**

- A Coordinate with Project schedule and sequence work to assure all piping, ductwork, conduits, cables, and other items which penetrate fire rated construction have been permanently installed prior to installation of firestopping.
- B Sleeves and core-drilled holes shall be sized at least 1-1/2" larger than penetrating items. Coordinate with Division 7 Contractor.

### 3.2 GENERAL

- A In an occupied building, permanent firestopping shall be installed within 24 hours of penetrating a fire rated assembly. If permanent firestopping cannot be installed within this time period, temporary firestop pillows/blocks are permitted, where installation allows, until permanent firestop materials can be properly installed.

### 3.3 INSPECTION

- A Examine the areas and conditions where firestops are to be installed and notify the Engineer of conditions detrimental to the proper and timely completion of the work. Do not proceed with work until the Contractor, in a manner acceptable to the Architect has corrected unsatisfactory conditions.
- B Verify that environmental conditions are safe and suitable for the installation of the firestop products.

### 3.4 CONDITIONS REQUIRING FIRESTOPPING

- A General
  1. Provide firestopping for conditions specified elsewhere whether or not firestopping is indicated and, if indicated whether such material is designed as insulation, safing, or otherwise.
  2. All firestopping shall be installed in accordance to the UL rated system designed for the application.
  3. Grout, Mortar or Gypsum based products shall not be installed in lieu of firestopping material specified herein.
  4. All smoke walls (smoke barriers, smoke partitions, etc.), rated or non-rated, shall be firestopped with systems designed to maintain a minimum 1 hour rating or that which is equal to the rating of the wall.
- B Penetrations - Provide firestopping as follows:
  1. Where penetrations pass through one or both surfaces of a fire rated floor or wall.
  2. Where a penetration occurs through fire rated walls or partitions of hollow-type construction, provide firestopping to completely fill spaces around the penetration, on each side of the wall or partition.
  3. Except for slab on grade, where penetrations pass through a non-fire rated floor.
  4. The requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space, if any, between sleeve and wall opening. Upon installation of cabling through sleeve, firestop the remaining open area within the conduit.
- C Where demolition has occurred in rated walls, floors and assemblies, the material used to patch the opening shall match the material used for the assembly construction. Firestopping materials may be utilized upon approval of Architect and Engineer. Materials used shall be provided with submittals. Work performed shall be the responsibility of the Contractor whose work was removed, performed by the appropriate trade.

### 3.5 PREPARATION

- A Surface to receive firestop shall be free of dirt, dust, grease, oil, oil from release agents, or other matter that would impair the bond of the firestop material to the substrate or penetrating items.

- B Substrate shall be frost free.

### **3.6 INSTALLATIONS**

#### **A General**

1. Sleeves and core-drilled holes shall be sized at least 1-1/2" larger in diameter than penetrating items.
2. Installation of firestops shall be performed by applicators/installers qualified and trained by the Manufacturer. Installation shall be performed in strict accordance with the Manufacturer's detailed installation procedures.
3. Apply firestops in strict accordance with UL rated system designs, and Manufacturer's recommendations.
4. Coordinate with all other trades to assure that all items which penetrate fire rated construction have been permanently installed prior to installation of firestops. Schedule and sequence the work to assure that partitions and other Construction which would conceal penetrations are not erected prior to the installation of firestop.
5. Gun grade sealants and putties shall be tooled into place to insure proper adhesion to penetrations and surrounding surfaces.
6. Where existing penetrations are reused that contain remnants of existing firestop products remain, remove all existing firestopping.

#### **B Dam Construction**

1. Install dams when required to properly contain firestopping materials within openings and as required to achieve required fire resistance rating.
2. Placement of dams shall not interfere with functions or adversely affect the appearance of adjacent construction.

#### **C Field Quality Control**

1. Install work in full accordance with rules, regulations, and safety requirements of Federal, State, County and City authorities having jurisdiction over premises. Do not construe this as relieving Contractor from compliance with any requirements of the Specifications which are in excess of Code requirements and not in conflict therewith.
2. Correct unacceptable firestopping and provide additional inspection to verify compliance with this Specification at no additional cost.
3. Finish surfaces of firestopping that is to remain exposed in the completed work to a uniform and level condition.

### **3.7 LABELING**

- A Where firestopping installations occur, Contractor shall provide a label adjacent to each penetration. Label shall include:

1. UL rated system used.
2. Date of installation.
3. Name of installing Contractor

- B Labels shall be furnished by the firestop manufacturer.

### **END OF SECTION 260400**

## **SECTION 260500 - EQUIPMENT IDENTIFICATION**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

~~~~ ***PROJECT NOTE*** ~~~~~

EDIT BELOW AS APPLICABLE TO YOUR PROJECT

~~~~ ***END OF PROJECT NOTE*** ~~~~~

- A This Section includes identification of electrical materials, equipment, and installations. It includes requirements for electrical identification components including but not limited to the following:
  - 1. Identification for Normal system service
  - 2. Identification for conduits, raceways, cables and conductors
  - 3. Equipment labels and signs
  - 4. Identification of control devices, receptacles and coverplates
  - 5. Identification for Arc Flash warning labels
  - 6. Identification for Electrical room signage
  - 7. Warning and caution signs
- B Refer to other Division 26 sections for additional specific requirements and details shown on drawings.

#### **1.2 QUALITY ASSURANCE**

- A Electrical Component Standard: Components and installation shall comply with NFPA 70 "National Electrical Code".

#### **1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Submittals for electrical equipment nameplates shall be provided. Submittal shall include all nameplates that include each individual nameplate.

### **PART 2 PRODUCTS**

#### **2.1 LABEL MANUFACTURERS**

- A Subject to compliance with requirements, provide products by the following manufacturers:
  - 1. 3M
  - 2. Panduit Corp.
  - 3. Thomas & Betts
  - 4. W. H. Brady, Co.

#### **2.2 ELECTRICAL IDENTIFICATION PRODUCTS**

- A Indoor Pictogram Signs for Equipment and Doors to Electrical Equipment Rooms: Self-adhesive, minimum 7 by 17 inch size.
- B Conductor and Cable Designation Tape Markers: Vinyl, self-adhesive, wraparound, cable and conductor markers with preprinted numbers and letters.

- C Engraved, Plastic-Laminated Labels, Signs, and Instruction Plates: Engraving stock melamine plastic laminate, 1/16-inch minimum thick for signs up to 20 square inches, or 8 inches in length; 1/8-inch thick for larger sizes. Refer to details on drawings for additional engraved nameplate information.
- D Cable Ties (Zip ties): Fungus-inert, self-extinguishing, nylon one-piece, self-locking cable ties, 0.18-inch minimum width, 50-lb minimum tensile strength, and suitable for a minimum temperature range from minus 50 deg F to 350 deg F. Provide ties in specified colors when used for color-coding.
- E Identification Cable Ties: Same as "Cable Ties" above, except with integral tab of suitable size for marking requirements.

### 2.3 LOCATIONS AND REQUIREMENTS OF LABELING AND IDENTIFICATION

- A The Electrical Contractor shall provide signage regarding disconnects per the National Electrical Code.
- B Provide nameplates on all equipment of the type listed in the following schedule:
  - 1. Panelboards including general Arc Flash Warning and Fault Current Data
  - 2. Distribution Equipment including general Arc Flash Warning and Fault Current Data
  - 3. Safety Switches including general Arc Flash Warning
  - 4. Motor Starters including general Arc Flash Warning
  - 5. Variable Frequency Drives (VFD's)
  - 6. System Distribution Junction Boxes and Pullboxes
  - 7. System Control Panels
  - 8. Individual Overcurrent Protection Devices in Distribution Type Panelboards and Switchboards
- C Unless otherwise indicated on the Drawings, lettering shall include the name or designation of equipment, horsepower, voltage rating and service designation.
- D Nameplates for panels and other distribution equipment shall be color coded as indicated below. Nameplates may be attached to wall adjacent to equipment if area for attachment is too small.
- E Nameplates for Normal Power Systems shall be white with black core letters.
- F Cabinet and panel doors shall be marked with the identification numbers as indicated on the Drawings. Recessed panel doors shall be marked on the inside of door. Surface panels and distribution equipment shall be marked on the exterior trim near the top of the cabinet.

~~~~ **PROJECT NOTE** ~~~~~

SELECT SYSTEMS INCLUDED IN PROJECT.

~~~ **END OF PROJECT NOTE** ~~~

- G Junction box Identification shall comply with the following:
  - 1. The outside of the coverplates for all junction boxes, splice boxes, pull boxes shall be permanently marked to identify the following systems:
    - a. Normal System including voltage including panel and/or system serving box
  - 2. The identification shall be inside of the coverplate where located in finished areas.
  - 3. Junction box identification shall comply with the following:

- a. Hand written permanent marker
- H Provide adhesive labels for the following:
  - 1. Spare conduits. Label shall be installed at both ends and shall identify the source and destination of the spare conduit.
- I For device, receptacle or toggle switch coverplate where labeling is required on the inside of the coverplate, refer to specification section 260340.
- J Identification of branch circuits shall be typewritten on directory cards as described elsewhere within these Specifications.
- K Provide new typewritten directory cards with updated schedules for all existing panels with new or modified circuits. Existing load description should be obtained from existing panel schedules in the field and reflected in new, updated directory card

~~~~ **PROJECT NOTE** ~~~~~

INCLUDE ONLY WHEN THE BUILDING WIRING SYSTEM HAS BRANCH CIRCUITS AND FEEDERS SUPPLIED FROM MORE THAN ONE NOMINAL VOLTAGE SYSTEM.

~~~ **END OF PROJECT NOTE** ~~~

- L Identification of branch circuit and feeder conductors shall be made per Article 210.5 and 215.12 of the National Electrical Code.
- M Each ungrounded conductor of a branch circuit or feeder, where accessible, shall be identified by system.
- N The grounded conductor shall be identified in accordance with Article 200.6 of the National Electrical Code.
- O The equipment grounding conductor shall be identified in accordance with Article 250.119 of the National Electrical Code.
- P The means of identification of branch circuit and feeder conductors shall be permanently posted at each branch circuit and distribution panel.

PART 3 EXECUTION

**3.1 INSTALLATION - GENERAL**

~~~~ **PROJECT NOTE** ~~~~~

EXPANDED REQUIREMENT/ENFORCEMENT NOTE: REMEMBER TO PROVIDE PRE-PUNCH CHECK LIST TO CONTRACTORS.

~~~ **END OF PROJECT NOTE** ~~~

- A Request for final punch list shall not be requested by Contractor until all labels are installed.
- B All labels shall be installed as equipment is installed, energized and ready for use.
- C Fastening for Plastic-Laminated and Metal Signs: Refer to details on drawings for installation requirements.
- D Install identification devices in accordance with manufacturer's written instructions and requirements of NEC.
- E Apply identification to areas as follows:

Alterations For: Board of Commissioners for Richland County Courthouse AC Upgrade

1. Clean surface of dust, loose material, and oily films before label installation.
- F Apply warning, caution, and instruction signs and stencils as follows:
1. Install warning, caution, or instruction signs where required by NEC, where indicated, or where reasonably required to assure safe operation and maintenance of electrical systems and of the items to which they connect. Install engraved plastic-laminated instruction signs with Owner approved legend where instructions or explanations are needed for system or equipment operation. Install fiberglass signs or outdoor items.
- G Apply labels of engraved plastic laminate for disconnect switches, circuit breakers, pushbuttons, pilot lights, motor control centers, and similar items for power distribution and control components above, except panelboards and alarm and signal components, where labeling is specified elsewhere. For panelboards, provide framed, typed circuit schedules with explicit description and identification of items served by each individual switch and circuit breaker.
- H Install labels at locations indicated and at locations for best convenience of viewing without interference with operation and maintenance of equipment.
- I Nameplate Data: Provide manufacturer, factory installed, permanent operational data nameplate on each item of power operated equipment, indicating manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data. Locate nameplates in an accessible location.

**END OF SECTION 260500**

## **SECTION 262100 - POWER DISTRIBUTION EQUIPMENT**

### **PART 1 GENERAL**

#### **1.1 WORK INCLUDES**

- A Safety Switches
- B Power Distribution Equipment Mounting
- C Access to Equipment and Devices

#### **1.2 QUALITY ASSURANCE**

- A All equipment specified herein shall be listed by Underwriters Laboratories and bear the UL label.
- B UL 50 and 67 Standard for safety panelboards
- C UL 414 - Standard for safety meter sockets

#### **1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.

### **PART 2 PRODUCTS**

#### **2.1 SAFETY SWITCHES**

- A Safety switches shall be heavy duty fusible or nonfusible type as indicated on the Drawings, and shall be suitable for the voltage and current ratings as shown on the Drawings.
- B Switches shall have switch blades which are visible in the "Off" position when the door is open. Switches shall have removable arc suppressors, where necessary, to permit easy access to the line side lugs. All current carrying parts shall be plated.
- C Switches shall have an integral quick-make, quick-break operating handle mechanism. Switches shall have a dual cover interlock to prevent opening of the switch door in the "ON" position or to prevent closing of the switch mechanism with the door open. Handle position shall indicate if the switch is "ON" or "OFF".
- D Fuse holders shall accept only Class J, R or L fuses.
- E Indoor enclosures shall be NEMA 1.
- F Exterior enclosures shall be NEMA 3R. NEMA 1 enclosures shall be code gauge UL 98 sheet steel, treated with a rust inhibiting phosphate primer and finished in gray baked enamel.
- G Enclosures shall be provided with padlocking and lockout provisions.
- H Acceptable manufacturers shall be:
  - 1. Eaton
  - 2. Schneider Electric
  - 3. ABB
  - 4. Siemens

#### **2.2 OVERCURRENT DEVICE ENCLOSURES**

- A Overcurrent device enclosure shall be as indicated on drawings.
- B Enclosure shall be:
  - 1. Surface Mounted
  - 2. Provided with lockable enclosure door with locking clip accessory overcurrent device

~~~~ **PROJECT NOTE** ~~~~~

USE IF APPLICABLE.

~~~ **END OF PROJECT NOTE** ~~~

**2.3 MATCHING EXISTING OVERCURRENT PROTECTION DEVICES**

- A New circuit breakers or fusible switches installed in existing panels shall match the existing in type, manufacturer (if possible), and short circuit ratings.

**2.4 EQUIPMENT MOUNTING REQUIREMENTS**

- A All Equipment mounted on interior or exterior block or masonry walls or on interior equipment room walls where additional support is required shall be attached to "Strut" type channel or equal. Struts shall be secured to metal studs. Toggle bolts through drywall only are not acceptable. Where struts are used, provide additional wall support by furnishing and installing metal banding near top and bottom of wall mounted electrical equipment prior to drywall installation.
- B Disconnect switches or motor starters (including variable frequency drives) mounted on or adjacent to mechanical and building Equipment shall be located to allow the proper working clearance as defined in Article 110 of the National Electrical Code.
- C It is the responsibility of the Electrical Contractor to provide additional mounting supports such as channel, brackets, angle iron, etc. as may be required to install equipment such as disconnect switches, motor starters (including variable frequency drives), panels, and other Electrical equipment. This requirement extends to field conditions where ample wall space is not available, proper clearances cannot be maintained, or similar instances.

**2.5 ACCESS TO EQUIPMENT AND DEVICES**

- A All electrical equipment and other devices requiring examination, adjustment, service, and maintenance shall be accessible. If located above drywall ceiling or behind finished walls, provide an access door. Coordinate all access door locations with the Architect and General Trades.
- B To ensure accessibility during and after construction, when a device is installed, its location shall be marked with securely attached temporary signage. Signage shall indicate the amount of clearance required for the specific device. Signage shall remain in place until the ceiling or access door is installed or until substantial completion.
- C Clearance shall include not only code required clearance but also clearance for Owner's staff to access the device. This access shall be from the floor or from the floor level using normal maintenance ladders and apparatus to meet all OSHA requirements. Consideration shall be given to accessing a device through an access door.

~~~~ **PROJECT NOTE** ~~~~~

IF COORDINATION DRAWINGS ARE NOT SPECIFIED, DO NOT INCLUDE THE LAST PART OF THE FOLLOWING.

~~~ **END OF PROJECT NOTE** ~~~

- D Corrective action shall be the responsibility of the trade encroaching the access area unless identified that the equipment in question is installed incorrectly or not where indicated on the signed-off Coordination Drawings.

## **2.6 ACCESSORIES**

### **PART 3 EXECUTION**

#### **3.1 GENERAL INSTALLATION**

- A Installation of all equipment specified herein shall be installed following NECA standards for quality installation.

**END OF SECTION 262100**

**SECTION 262115 - GROUNDING OF ELECTRICAL AND TECHNOLOGY SYSTEMS**

**PART 1 GENERAL**

**1.1 WORK INCLUDES**

- A Grounding and Bonding Equipment
- B Extension of existing Grounding System to new Electrical Equipment

**1.2 QUALITY ASSURANCE**

- A UNDERWRITERS LABORATORIES INC. (UL)
  - 1. UL 467 - Grounding and Bonding Equipment
  - 2. UL 486A - Wire Connectors and Soldering Lugs for Use with Copper Conductors
- B NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS
  - 1. NFPA 70 - National Electrical Code Article 250

**1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Submittals
  - 1. Submit product data of manufactured materials.

**1.4 DELIVERY, STORAGE AND HANDLING**

- A Provide marking on wire and cable in accordance with applicable standards.
- B Ship each item of equipment and materials securely wrapped, packaged and labeled for safe handling in shipment and to avoid damage.
- C Store equipment and materials in a secure and dry storage facility remotely or on project site.

**PART 2 PRODUCTS**

**2.1 ELECTRICAL SYSTEM GROUNDING**

- A Ground all electrical system conduits, raceways, motors, panels, cabinets, fixtures, metal boxes, and other exposed non-current carrying metal parts of electrical equipment in accordance with all provisions of the National Electrical Code, State Building Code and local or regional codes.
- B Grounding of the electrical system shall be by means of an insulated grounding conductor installed with feeder and branch circuit conductors in all conduits. Grounding conductors shall be sized in accordance with NEC Article 250.122 and shall run from the grounding bus of serving panel to the grounding bus of served panel, to the grounding screws of receptacles, to lighting fixture housings, to the grounding screws of light switches, to metal boxes and to the metal enclosures of service equipment.

~~~~ **PROJECT NOTE** ~~~~~

KEEP WHEN EXTENDING ELECTRICAL SYSTEM FOR NEW PANELBOARDS FOR RENOVATIONS OR INFRASTRUCTURE PROJECTS.

~~~ **END OF PROJECT NOTE** ~~~~

- C Extension of existing grounding system to new electrical equipment shall be by means of an insulated grounding conductor installed with feeder and branch circuit conductors in all

conduits. Grounding conductors shall be sized in accordance with NEC Article 250.122 and shall run from the grounding bus of serving panel to the grounding bus of served panel, to the grounding screws of receptacles, to lighting fixture housings, to the grounding screws of equipment, to metal boxes and to the metal enclosures of service equipment.

## **2.2 ELECTRICAL GROUNDING SYSTEM COMPONENTS**

- A Acceptable manufacturer of components shall be:
  - 1. Panduit
  - 2. Erico
  - 3. Chatworth
  - 4. Harger
- B Refer to grounding detail on drawing for system requirements.

### **PART 3 EXECUTION**

#### **3.1 LABELING**

- A Refer to grounding detail and specification 260500 for additional labeling requirements.

**END OF SECTION 262115**

**SECTION 262235 - OVERCURRENT PROTECTION DEVICES**

**PART 1 GENERAL**

**1.1 WORK INCLUDES**

- A Fuses
- B Molded Case Thermal Magnetic Circuit Breakers
- C Molded Case Circuit Breakers with Electronic-Trip Unit

**1.2 QUALITY ASSURANCE**

- A UL 248: Low Voltage Fuses
- B UL 489: Molded Case Circuit Breakers, Molded Case Switches and Circuit Breaker Enclosures.
- C Refer to sections herein for additional requirements of each overcurrent device type.

**1.3 SUBMITTALS**

- A Refer to Sections 26 01 00 and 26 01 01 for additional requirements.
- B Submit product data for all manufactured items listed in paragraph 1.1 WORK INCLUDES.
- C Submit wiring diagrams including interconnection wiring between components and remote devices.
- D Installation, operation and maintenance manual with pre-startup, detailed wiring, connections and diagrams, and instructions.
- E Field Test Results as specified herein.

**1.4 DELIVERY, HANDLING AND STORAGE**

- A Deliver, store, protect, and handle devices and components in accordance with recommended practices listed in manufacturer's installation manuals.
- B Store devices and components in a clean, dry space. Maintain factory protection or cover with plastic to keep out dirt, water, construction debris, etc., until time of installation.

**1.5 WARRANTY**

- A Manufacturer shall warrant overcurrent protection devices to be free from defects in materials and workmanship for one year from date of Owner's formal acceptance.

~~~~ **PROJECT NOTE** ~~~~~

KEEP FUSES FOR MANY APPLICATIONS WHERE A FUSE MAY BE REQUIRED, NOT ONLY THE DISTRIBUTION SYSTEM.

~~~ **END OF PROJECT NOTE** ~~~

**PART 2 PRODUCTS**

**2.1 FUSES**

- A Acceptable Manufacturers:
  - 1. Bussman
  - 2. Mersen
  - 3. Littelfuse
- B The Electrical Contractor shall provide a complete set of fuses for all fusible equipment on the project.

- C All fuses shall be UL Listed, current limiting with 200,000 RMS amperes interrupting capacity, unless otherwise indicated on the Drawings or in the Specifications.
- D Fuses rated 600 amperes or less, over 250 volts to 600 volts, serving power distribution system and mechanical equipment shall be UL Class RK-1: Bussmann dual element, time delay "LOW PEAK", type LPS-RK; Mersen type A6DR; or Littelfuse type LLSRK.
  - 1. UL Class J fuses are also acceptable if necessary for equipment fault protection.
- E Fuses rated 600 amperes or less, 250 volts or less, serving power distribution system and mechanical equipment shall be UL Class RK-1: Bussmann dual element, time delay "LOW PEAK", type LPN-RK; Mersen type A2DR; or Littelfuse type LLNRK.
  - 1. UL Class J fuses are also acceptable if necessary for equipment fault protection.
- F Fuse Application for Motor Circuits and Motor Control Circuits:
  - 1. Motor protection dual element fuses installed in individual branch circuits shall be sized at 125% of motor nameplate current rating or the next higher standard fuse size.
  - 2. Where excessive ambient temperature, high inertia motor loads, or frequent "on-off" cycling require larger fuses, consult the Engineer.
  - 3. Provide fuse reducers where fuse gaps are larger than fuse dimension.
  - 4. Exact fuse type required for Variable Frequency Drive (VFD) applications shall be provided as recommended by the (VFD) manufacturer.
  - 5. For motor control circuits, provide UL Class CC fuses, sized for maximum values allowed per NEC Article 430.72.

## 2.2 20A-800A MOLDED CASE THERMAL MAGNETIC CIRCUIT BREAKERS

- A Overcurrent devices shall be designed and manufactured according to the latest revision of the following standards:
  - 1. UL 489: Molded Case Circuit Breakers, Molded Case Switches and Circuit Breaker Enclosures.
- B Acceptable Manufacturers:
  - 1. Eaton
  - 2. GE/ABB
  - 3. Schneider Electric (Square D)
  - 4. Siemens
- C Where applicable, new circuit breakers installed in existing lighting and appliance or power distribution panelboards shall match the existing in type, manufacturer (if possible), and short circuit ratings.
- D For lighting and appliance panelboards, provide molded case thermal magnetic circuit breakers with trip ratings listed on the Drawings. The molded case circuit breakers shall provide for the inverse time delay overload and instantaneous short circuit protection by means of a thermal magnetic element.
- E For power distribution panelboards, provide molded case thermal magnetic circuit breakers with frame and trip ratings listed on the Drawings. The molded case circuit breakers shall provide for the inverse time delay overload and instantaneous short circuit protection by means of a thermal magnetic element.
- F The circuit breaker ampere rating shall be clearly visible without removing the panel cover.
- G Circuit breakers shall be single pole or multi-pole with an integral crossbar to assure simultaneous opening of all poles.

- H Circuit breakers shall have an over-center, trip-free, toggle-type operating mechanism with quick-make, quick-break action and positive handle indication.
- I Handles shall have "ON", "OFF" and "TRIPPED" positions.
- J Circuit breakers shall be fully rated. Series ratings are not permitted.
- K For circuit breakers provided in power distribution panelboards and switchboards, minimum symmetrical short circuit current rating shall be 35,000 amperes, unless otherwise noted on the Drawings.
- L Breaker shall be standard (80%) rated for all units. Where indicated on drawings, circuit breaker shall be rated 100%.
- M Circuit breakers shall include factory installed mechanical lugs. Lugs shall be UL listed and rated 75 degrees C.
- N Lugs for all overcurrent devices shall be coordinated to accommodate the conductor sizes shown on the drawings, prior to procurement.
- O Special Requirements:
  - 1. Circuit breakers serving HVAC loads shall be "HACR" rated.

~~~~ **PROJECT NOTE** ~~~~~

USE MOLDED CASE CIRCUIT BREAKERS WITH ELECTRONIC TRIP WITH LSI (G) FUNCTIONS FOR POWER DISTRIBUTION APPLICATIONS WITH SELECTIVE COORDINATION - MUST BE SHOWN ON DRAWINGS. TYPICALLY USED IN POWER DISTRIBUTION PANELBOARDS AND SWITCHBOARDS.

NOTE: MANY PROJECTS SHOULD CONSIDER ELECTRONIC TRIP, ESPECIALLY IF AN UNCOORDINATED SYSTEM CAUSES DISRUPTION ANYWHERE WHERE LIFE SAFETY/INJURIES CAN OCCUR OR WHERE DISRUPTION TO SYSTEMS CAUSE LOSS OF REVENUE TO THE OWNER.

TRIP UNITS LISTED BELOW ARE A MODERATELY EQUIPPED/PRICED TRIP UNIT. HIGHER LEVEL TRIP UNITS ARE AVAILABLE. EDIT IF YOUR PROJECT REQUIRES A HIGHER LEVEL TRIP FOR MONITORING POWER QUALITY, HARMONICS, ETC.

INTENT FOR THIS TYPE OF BREAKER IS WITHIN A POWER PANELBOARD OR SWITCHBOARD (NOT LIGHTING AND APPLIANCE).

~~~ **END OF PROJECT NOTE** ~~~

**2.3 20A - 800A MOLDED CASE CIRCUIT BREAKERS WITH ADJUSTABLE TRIP SETTING AND ELECTRONIC TRIP (MCCBE)**

- A Overcurrent devices shall be designed and manufactured according to the latest revision of the following standards:
  - 1. UL 489: Molded Case Circuit Breakers, Molded Case Switches and Circuit Breaker Enclosures.
  - 2. IEC 60947-2, IEC 60947-3, ISO 9001, Nema AB-1
- B Where applicable, new circuit breakers installed in existing power distribution panelboards and switchboards shall match the existing in type, manufacturer (if possible), and short circuit ratings.

- C Acceptable Manufacturers and Series Numbers listed below may require a higher trip unit due to LSIG per drawings:
  - 1. Eaton Power Defense PXR series with PXR 25 series trip unit.
  - 2. GE/ABB series SMR2 with trip unit Sace Tmax series - Ekip-Dip (XT4 100-250A, XT5 400-600A, XT7 800A).
  - 3. Schneider Electric (Square D) Mission Critical J and L frame Powerpact series with Micrologic 5.0P trip unit.
  - 4. Siemens Type 3VA6, ETU series 3, 5, or 8 trip unit.
- D MCCBE frames shall be constructed of a high-strength, molded, glass-reinforced polyester case and cover. MCCBE shall have an over-center, toggle handle-operated, trip free mechanism with quick make, quick break action independent of the speed of the toggle handle operation.
- E The design shall provide common tripping of all poles and shall be suitable for reverse feeding.

~~~~ **PROJECT NOTE** ~~~~~

INTENT FOR THIS TYPE OF BREAKER IS WITHIN A POWER PANELBOARD OR SWITCHBOARD (NOT LIGHTING AND APPLIANCE).

~~~ **END OF PROJECT NOTE** ~~~

- F For circuit breakers provided in power distribution panelboards or switchboards, minimum symmetrical short circuit current rating shall be 35,000 amperes, unless otherwise noted on the Drawings.
- G MCCBE shall have ON and OFF position clearly marked on the face of the circuit breaker. The circuit breakers shall include a trip-to-test means on the face of the circuit breaker for manually tripping the breaker and exercising the mechanism and trip latch.
- H MCCBE shall include factory installed mechanical lugs. Lugs shall be UL listed and rated 75 degrees C.
- I MCCBE shall be standard (80%) rated for all units. Where indicated on drawings, MCCBE shall be rated 100%.
- J MCCBE shall use digital true RMS sensing trip units with a rating plug or adjustable feature to determine the actual breaker trip rating. Each main or feeder breaker with a frame size 225A amperes to 800A amperes shall have trip units as specified herein under paragraph DIGITAL ELECTRONIC TRIP UNITS.
- K Lugs for all overcurrent devices shall be coordinated to accommodate the conductor sizes shown on the drawings, prior to procurement.

**2.4 DIGITAL ELECTRONIC TRIP UNITS FOR MOLDED CASE CIRCUIT BREAKERS WITH ELECTRONIC TRIP UNIT (MCCBE)**

- A Electronic Trip Circuit Breakers. Trip units include the following features.
  - 1. Electronic trip unit shall be true RMS sensing.
  - 2. Current transformers shall be used to ensure accurate measurements from low currents up to high currents.
  - 3. The following monitoring functions shall be integral parts of electronic trip units:

- a. A test connector shall be installed for checks on electronic and tripping mechanism operation using an external device.
  - b. LED or LCD for load indication at 105 percent.
  - c. LED or LCD for load indication at 90 percent of load for applications 600 amperes and smaller
  - d. LED or LCD for visual verification of protection circuit functionality for applications 600 amperes or smaller.
  - e. LED or LCD for trip indication for applications above 600 amperes.
  - f. Trip unit functions shall consist of adjustable protection settings with the capability to be set and read locally.
  - g. Long-time pickup shall allow for adjustment to nine long-time pickup settings. This adjustment must be at least from 0.4 to 1 times the sensor plug ( $I_n$ ), with finer adjustments available for more precise settings to match the application.
  - h. Adjustable long-time delay shall be in nine bands. At six times  $I_r$ , from 0.5 to 24 seconds above 600 amperes, and 0.5 to 16 seconds for 600 amperes and below.
  - i. Short-time pickup shall allow for nine settings from 1.5 to 10 times  $I_r$ .
  - j. Short-time delay shall be in nine bands from 0.1-0.4  $I_2t$  ON and 0-0.4  $I_2t$  OFF.
  - k. Instantaneous settings on the trip units with LSI protection shall be available in nine bands.
    - 1) Above 600 amperes, from 2 to 15 times  $I_n$
    - 2) 600 amperes, from 1.5 to 11 times  $I_n$
    - 3) 400 amperes from 1.5 to 12 times  $I_n$
    - 4) 250 amperes and below, from 1.5 to 15 times  $I_n$
  - l. Where indicated on drawings and elsewhere in these specifications, Instantaneous setting shall include defeatable instantaneous feature.
  - m. Where indicated on drawings, four-pole devices shall be equipped for neutral protection with a three-position setting; neutral not protected, neutral tripping threshold equal to half the phase value, and neutral threshold equal to the phase value.
  - n. Where Ground fault is indicated on drawings, Ground fault settings for circuit breaker sensor sizes 800 amperes or below shall be in nine bands from 0.2 to 1.0 times  $I_n$ .
4. It shall be possible to fit the trip unit with a seal to prevent unauthorized access to the settings in accordance with NEC Section 240-6(b).
  5. Trip unit shall provide local trip indication and capability to indicate reason locally and remotely for trip, i.e., overload, short circuit, or ground fault.
  6. Neutral current transformers shall be available for four-wire systems.

~~~~ **PROJECT NOTE** ~~~~~

KE STANDARD - PER BELOW, BREAKER TRIP UNITS HAVE AN ADJUSTABLE TRIP AND THE ABILITY TO SET THE TRIP UNIT TO A "FINER" SETTING. KE DOES NOT DESIGN ANY CONDUCTORS TO THE "FINER" SETTING, ONLY TO THE ADJUSTABLE TRIP.

~~~ **END OF PROJECT NOTE** ~~~

7. Trip units having the capability to electronically adjust the settings locally and remotely to fine increments below the switch settings are acceptable.

~~~~ **PROJECT NOTE** ~~~~~

ELECTRONIC TRIP CIRCUIT BREAKERS INCLUDE LOCAL METERING VISIBILITY. THIS METERING IS FOR INDIVIDUAL CIRCUIT BREAKERS ONLY. KE STANDARD IS TO PROVIDE SEPARATE METERING DEVICES AND SYSTEM, NOT INTERCONNECTED TRIP UNITS. THIS METERING DOES NOT INCLUDE THE INTERCONNECTION WIRING, SOFTWARE, ETC. FOR A COMPLETE REMOTE MONITORING SYSTEM. ADD ADDITIONAL SPEC SECTIONS REQUIRED FOR FULL METERING/MONITORING SYSTEM.

~~~ **END OF PROJECT NOTE** ~~~

8. Trip units shall be available to provide real time metering. Metering functions shall include, but shall not be limited to, the following:
  - a. Current (phases, neutral, average, maximum)
  - b. Voltage (phase-to-phase, phase-to-neutral, average, unbalance)
  - c. Power (active kW, reactive kVAR, apparent kVA, power factor)
  - d. Energy (active kWh, reactive kVAR, apparent kVA)
  - e. Frequency
  - f. Metering accuracy shall be 1.5 percent current (above 600 amperes), 1.0 percent current (600 amperes and below), 0.5 percent voltage, and 2 percent energy. This accuracy shall be total system, including, but not limited to, CT and meter.
9. Measurement chain shall be independent from the protection chain.
10. The measurements shall be displayed on the breaker.

~~~~~ **PROJECT NOTE** ~~~~~

ZONE SELECTIVE INTERLOCKING IS AN ADDITIONAL METHOD OF ENSURING COORDINATION. IT IS DONE BY HARDWIRING BREAKER TRIP UNITS TOGETHER TO COORDINATE WHICH BREAKERS ARE DESIRED TO TRIP IN WHAT ORDER. IF SELECTING THIS OPTION, SHOW ZONES ON ONE LINE DIAGRAM.

~~~ **END OF PROJECT NOTE** ~~~

11. Optional features for applications 600 amperes and smaller:

**2.5 ACCESSORIES**

- A Where indicated on the Drawings, provide circuit breaker with 120-volt shunt trip coil.

PART 3 EXECUTION

**3.1 FUSES**

- A Fuses shall not be installed until equipment is ready to be energized. All fuses shall be of the same manufacturer to assure selective coordination.
- B Spare fuses amounting to 20% (minimum of three) of each type and rating shall be supplied by the Electrical Contractor.
- C Field verify the exact fuse size required for all mechanical and building equipment with the nameplate data of the equipment prior to procurement. Advise the Engineer if the equipment nameplate fuse size differs from the size indicated on the Drawings.
- D Fuses shall be turned over to the Owner upon project completion.

### 3.2 CIRCUIT BREAKER INSTALLATION, SETTINGS AND STARTUP TESTING

~~~~ **PROJECT NOTE** ~~~~~

IF POWER DISTRIBUTION STUDIES ARE SPECIFIED, THE FOLLOWING APPLIES.

~~~ **END OF PROJECT NOTE** ~~~~

- A Settings for circuit breaker trip units shall be in accordance with the final results of the Power Distribution System Studies required elsewhere in these Specifications.
- B For Molded Case Circuit Breakers with Electronic Trip, provide the following installation and testing services as may be applicable to the circuit breaker listed:
  - 1. Manufacturer's Field Installation Support Services:
    - a. The manufacturer's engineering representative shall provide technical support during circuit breaker installation. The manufacturer's engineering representative shall be factory trained and experienced for the breaker installation required for the project. The Electrical Contractor shall be guided by the recommendations of the manufacturer's engineering representative related to such technical support.
    - b. The manufacturer's engineering representative shall provide the instruments necessary to conduct any tests or adjustments recommended during the installation and testing process. The manufacturer's engineering representative shall utilize prepared comprehensive check sheets covering inspections, checks and tests required for the circuit breakers specified herein. Other tests and checks specifically required by the manufacturer's installation and testing instructions shall be included. These check sheets shall be executed and signed by the manufacturer's engineering representative and copies of these documents shall be submitted in the Operating and Maintenance Manuals.
  - 2. Technical Support at System Startup
    - a. The manufacturer's engineering representative shall provide inspections, tests, and evaluations to determine that the circuit breakers are furnished in accordance with the Specifications and installed and adjusted for successful energization and operation.
    - b. The manufacturer's engineering representative shall inspect circuit breakers and report installation or shipping damage, loose material, or contamination that need correction. Inspection shall include installation location such that unfavorable environmental conditions that need correction may also be reported.
    - c. The manufacturer's engineering representative shall participate in the placement of circuit breakers into position and check positioning, operation of racking mechanism and interlocks. Operate breakers manually, check and adjust main and auxiliary contacts. Test each pole of breakers for conductivity. Test insulation of each breaker phase to phase and phase to ground.
    - d. The manufacturer's engineering representative shall participate as interconnections and interlocks are checked and tested. Interconnection and interlock wiring shall be checked against the Drawings for all connections between the circuit breakers, remote sensors, and remote actuators that

function in the system. Tests shall include insulation resistance testing of all control wiring.

- e. The manufacturer's engineering representative shall calibrate and adjust circuit breakers as required prior to initial energization. Work shall include adjustment of all breaker trips to specified settings and verify setting versus manufacturer's curves by passing controlled current through the trip devices. Work shall also include ground fault protection and performance testing where required.
- f. The manufacturer's engineering representative shall test each instrument and meter for proper operation, correct rotation and circuitry. Instruments and meters energized from instrument transformers shall be tested at the transformer secondary level.
- g. The manufacturer's engineering representative shall report problems and unfavorable conditions to the Electrical Contractor and shall recommend corrective actions.

**END OF SECTION 262235**